

# BUFFALO

## SEWER AUTHORITY

**SPDES Permit No. NY0028410**

### **Long Term Control Plan Semi-Annual Status Report** **Reporting Period: *July through December 2022***

**Amended Administrative Order**

**CWA-02-2014-3033**

**(Amends CWA-02-2012-3024)**

**March 2023**



## **Long Term Control Plan Semi-Annual Status Report**

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# **1. INTRODUCTION**

The Buffalo Sewer Authority (Authority) received approval of its Long-Term Control Plan (LTCP) from the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) on March 18, 2014. The Authority entered into an Amended Administrative Order on April 16, 2014 (herein after referred to as the AO), with the USEPA. This AO establishes a schedule for implementation of the Authority's LTCP, approved by the USEPA and NYSDEC.

The AO in part requires that the Authority submit written Semi-Annual Status Reports to the USEPA and NYSDEC by September 1<sup>st</sup> for current year January 1– June 30 reporting period, and March 1<sup>st</sup> for the previous calendar year July 1 – December 31 reporting period. The AO requires that the following be provided in each Semi-Annual Status Report:

- The project milestones, deadlines and other terms that the Authority is required to meet since the date of the last Semi-Annual Status Report, whether and to what extent the Authority has met those requirements, and the reason for any anticipated delays and/or noncompliance.
- A general description of the work completed during the reporting period and the applicability of the work to meet indicated design criteria, as well as the projection of work to be performed during the next reporting period and any anticipated delays for the upcoming work. Any changes in key personnel must also be noted.
- Enclosure of public meeting (if held) materials including: advertisements, handouts, formal meeting notes, and a summary of the meeting (see Attachment C).
- Copies (to USEPA only) of all monthly monitoring reports or other reports pertaining to combined sewer overflows (CSOs) and bypasses that Authority submitted to the NYSDEC during the reporting period. Please note DMRs are now submitted electronically directly to the USEPA and no dry weather CSOs occurred during this period, so this item does not apply during this reporting period.

This report covers July through December 2022 which serves as Semi-Annual Report No. 18.

## **2. REQUIREMENTS DUE IN REPORTING PERIOD**

Attachment A provides the current status of all projects listed in the Administrative Order. Issues with implementing these projects are detailed in Section 4 of this document.

This document serves as the March 1, 2023, Semi-Annual Report.

No Certificates of Acceptance and Occupancy were issued during this reporting period for LTCP related projects.



### **3. WORK COMPLETED IN CURRENT REPORTING PERIOD AND PROJECTION OF WORK TO BE PERFORMED NEXT REPORTING PERIOD**

A general description of the work completed on LTCP projects during the current reporting period and the work projected to be performed during the next reporting period is provided in Attachment A. Items that have been completed have been highlighted orange. Items with Implementation Issues are highlighted in yellow and discussed in Section 4.

A more detailed description of each project including the location and the goal to be achieved through each project is provided in Attachment B.

### **4. IMPLEMENTATION ISSUES**

The ongoing COVID-19 pandemic has continued to impact Authority operations, as well as those of consultants and contractors working on LTCP projects. The Authority continues to experience decreased revenues due to the pandemic, and the Authority, consultants, and contractors have all experienced significantly reduced staff capacity at times during the reporting period. Additionally, as a reflection of nationwide employment trends, during this reporting period, the Buffalo Sewer Authority has experienced unprecedented turnover in staffing and consulting partners have expressed that similar issues, together with a significant decrease in the local labor pool for many engineering and other technical trades, has led to increases in periods of vacancies. Nevertheless, the Authority has been, and will continue to, work with internal staff and all necessary outside parties to facilitate the timely completion of LTCP projects.

#### **4.1 Approval of Collection System Model- Model Update Report (2018)**

As discussed during a May 27, 2022, meeting and reiterated in the September 1, 2022 Semi-Annual Report, Buffalo Sewer developed an array of projects which will achieve compliance and address several implementation issues that have been identified with the existing LTCP projects. Buffalo Sewer submitted this array to the regulators on October 24, 2022. Comments regarding this array of projects were received on January 27, 2023. On January 31, 2023, a proposed schedule and costs associated with these projects (and more refined costs for those projects in the existing approved Long-term Control Plan which has now been determined to not fully address the level of control specified) was submitted to the regulators addressing what comments it was deemed feasible to address in the two business days between receipt of comments and deadline of submission.

#### **4.2 SPP 341A Optimization**

This Optimization involves significantly more work than originally anticipated due to site conditions and was not completed by 2017 with the other Foundation 2 SPP Optimizations. Due to its complexity, for bidding purposes, it is best accomplished in tandem with larger



scale system modifications. As the revised model indicates the need for this project, design is planned to begin in September 2023 and be bid together with other additional optimizations to the Scajaquada system.

#### **4.3 Hertel Northeast In-Line Storage**

This project continues to be contemplated, there are existing flooding concerns in the vicinity and significant traffic issues that will need to be addressed. Additionally, this project in and of itself while impacting the volume of overflows, will have minimal impact on water quality and/or overflow events. Rather this project will work in conjunction with the CSO 055/ Military Road OLS project. Preliminary design for work on this system of projects per the schedule submitted to the regulators on January 31, 2023 is in September 2027. This delay will also facilitate the ability to resolve seiche concerns within this system while concentrating attention on the water quality impaired Black Rock Canal and Scajaquada Creek systems.

#### **4.4 East Ferry In-Line Storage**

This project was to be located at East Ferry near the Kensington Expressway with flows being stored in the severed Ferry trunk sewer to Cornwall per Table 11-5 from the LTCP. Investigations have demonstrated that storage is not available in this section due to low basement and side sewer connections. This project is therefore no longer being contemplated. Alternative projects to address overflows within the Scajaquada-Black Rock system have been provided in the October 24, 2022 and January 31, 2023 submittals to the regulators.

#### **4.5 Colorado In-Line Storage**

This project was to be located on Colorado Street near Scajaquada Street within the footprint of the former American Axle property on East Delavan Street. Construction of an RTC structure at this location would require an easement from a private property owner in a known superfund site and would entail excavation within what are highly suspected to be contaminated soils. Due to the high cost-benefit ratio and the extended legal process entailed with this project, implementation was delayed indefinitely and under the proposed alternative project schedule, a 30" diameter underflow pipe would be installed within the public right of way at Scajaquada and Colorado and would work in conjunction with other projects to meet the target number of activations for both SPP 337 and CSO 053 overall.



#### **4.6 South Bailey In-Line Storage**

A modification of SPP 338 without real-time control was found to have similar impacts to this project and require less long term maintenance. This project as proposed in the January 31, 2023 memo is slated to begin design in September 2023.

#### **4.7 Roslyn In-Line Storage**

This project, also called Texas In-Line storage, reduced but did not eliminate overflows of SPP 339. There were significant issues with low sewers coming into the main, potentially resulting in basement back-ups and due to the size of the storms that required off-line storage to control, the incremental impact of this project was cost prohibitive.

#### **4.8 Amherst Quarry Off-line Storage**

This project is being progressed in phases with the first phase being Real Time Control placement on Bailey Avenue at Minnesota Avenue and Bailey Avenue at East Amherst Street where flows are diverted from and returned to the Bailey Avenue Trunk Sewer, Notice to Proceed for this engineering work was issued on April 8, 2022.

This project, in the interest of ensuring competitive bidding, is being combined with the Breckenridge at Niagara Street In-line Storage (4.6) and Gates Circle In-line Storage (4.7). Together these projects have been retitled “Scajaquada Creek and Black Rock Canal Smart Sewer Project.” 75% Design Documents were submitted to NYSDEC and USEPA on December 7, 2022. Pre-95% Design drawings are attached as Attachment E.

The second phase of this project is expected to start Engineering in 2023 and consist of the station rehabilitation and logic improvements.

#### **4.9 Fillmore North In-Line Storage**

In the updated model, this project did not provide any changes in activations and is therefore no longer being pursued.

#### **4.10 Gibson CSO Line Storage**

In the updated model, this project did not provide any changes in activations and is therefore no longer being pursued.



#### **4.11 Smith Street and Eagle Street In-line Storage (Previously known as Montgomery CSO Line Storage)**

On December 31, 2021, the Smith Street and Eagle Street In-line Storage project was put into operation with localized Real-Time Control signifying Substantial Completion. The site is in the process of being integrated into the facility's SCADA system, however no Certificate of Completion will be issued until a change order to this contract to ensure critical long lead time spare parts are available for both this station and the original Smith Street RTC has been completed. Due to supply chain issues, it is expected that this work will not be completed until the summer of 2023.

#### **4.12 Broadway at Oak RTC**

Engineering of the Broadway at Oak RTC was completed on October 20, 2021. Notice to Proceed for construction was issued on January 21, 2022. Work was originally anticipated to be completed by November 17, 2022, however material with low-level radioactive properties was encountered in the pavement subbase. The testing and remediation of this material resulted in several weeks of delays and together with other unknown and unexpected site conditions has resulted in a time extension into the Spring of 2023. As of the end of this reporting period, all structural work at the site had been completed with instrumentation, site restoration, and some mechanical work remaining. Substantial Completion by March 18, 2024 is still anticipated. Please note that this project is in furtherance of the Hamburg Drain Optimizations as well as being an added RTC project.

#### **4.13 Breckenridge at Niagara Street In-Line Storage**

This project is proposed to replace the LTCP project "CSOs 010,008/010, 061, 004 Underflow Capacity Upsizing." CSOs 061 and 008 were determined by the Recalibrated Hydraulic Model to already have achieved activation levels in compliance with the goals of the Long-Term Control Plan. Site considerations for the proposed underflow sewer and the future potential for globalized control logic drove the decision making to pivot towards this option over the underflow sewer. 75% Design Documents were submitted to NYSDEC and USEPA on December 7, 2022 under the title "Scajaquada Creek and Black Rock Canal Smart Sewer Project." Pre-95% Design drawings are attached as Attachment E.

#### **4.14 Gates Circle In-Line Storage**

This project is an additional project that was not originally included in the Long-Term Control Plan which is proposed to modify SPP 322 to create a globalized control logic balancing of flows between the Scajaquada Tunnel and Bird Avenue Trunk. An engineering contract for this project was awarded on April 8, 2022 in combination with the Breckenridge at Niagara and the first phase of the Amherst Quarry project. 75% Design Documents were submitted to NYSDEC and USEPA on December 7, 2022 under the title



“Scajaquada Creek and Black Rock Canal Smart Sewer Project.” Pre-95% Design drawings are attached as Attachment E.

#### **4.15 Existing RTC Issues**

In depth data analysis by Buffalo Sewer and our consultants has demonstrated that some meters currently being used to determine overflow volumes and volumes prevented from overflowing are mis-calibrated. The meter for determining flows from the Smith Street RTC back to the Southern Interceptor was over estimating flows being conveyed. Recalculation of the impact of these overestimates are still being worked through and will be included in the 2023 Post-Construction Monitoring Report.

The Smith Street controller has been repaired and is awaiting long-lead time parts to be replaced. Buffalo Sewer is replacing and changing the specifications for several components of the actuator/valve/controller system to ensure greater reliability and accuracy in reporting moving forward.

During the construction of the Smith at Eagle RTC contract, the issue of flooding within the Valley neighborhood and backflow over the Smith Street RTC were identified as issues that will be exacerbated by climate change and will harm the long-term effectiveness of the LTCP. A similar issue of the Hertel Avenue RTC experiencing backflow due to seiche events was also identified. With the Smith Street site, it was determined that a two-pronged approach is necessary, first small backflow valves would be installed in localized combined sewer overflow regulators to prevent basement flooding. The first of these backflow valves were installed in December 2022 and prevented localized flooding at specific locations within the Valley during the Christmas weekend blizzard. Modifications to manholes are currently underway and expected to be completed by the end of the next reporting period to install the remaining backflow valves in this neighborhood.

A second, larger scale control system is required for both Smith Street and Hertel Avenue to prevent backflow due to high river levels to ensure that the RTCs remain operational during seiche events and to prevent the widespread backing up of the waterways into the combined sewer during these events. These larger scale projects will be funded in part with NYSDEC WQIP funds which were originally allocated to the Hertel at Deer RTC and Smith at Eagle RTC to ensure that these two projects are functional long-term. Full design for this project will begin in the next reporting period.

#### **4.16 Hamburg Drain Optimizations (Mill Race In-Line Storage)**

Construction of the Mill Race RTC has been delayed due to ongoing land acquisition; ancillary work within the right of way and to ensure the reliability of this and other LTCP projects despite rising Lake Erie levels is ongoing. The Mill Race RTC project together with the Broadway at Oak In-line Storage Project (See 4.12) substantially meet the goals of the Hamburg Drain Optimizations as outlined in the Long-Term Control Plan.



Additional projects which may reduce the size, change the character or location, or eliminate the need for the Foundation 4- Hamburg Drain Storage Project are being considered as outlined in 4.17.

#### **4.17 Foundation 4- Hamburg Drain Storage**

The Hamburg Drain Storage Project was conceived as being constructed in privately held lands. The feasibility of acquiring these lands in a timely and economical matter is highly suspect. Additionally, as discussed in the January 31, 2023 and October 24, 2022 submittals, the construction of this off-line storage facility as sized in the LTCP will not achieve the desired number of activations for CSO 017. Alternative options are therefore being proposed.

#### **4.18 WWTP Improvement Project Alternative C2**

This project is being phased in three parts. The first of these phases is the Secondary System Rehabilitation and Upgrade Project. A groundbreaking ceremony for the Secondary System Rehabilitation and Upgrade Project occurred on October 19, 2022.

In October 2020, Buffalo Sewer awarded a contract with an Engineering firm to provide design services for the second phase of this project, the Primary System NFA project. A copy of the Draft Engineering Report with a 240 MGD pumping station was submitted to the New York State Department of Environmental Conservation (NYSDEC) on October 7, 2021. On February 9, 2022, Buffalo Sewer received comments in response to this report. Meetings were held on March 16, 2022, and May 5, 2022, to discuss NYSDEC and USEPA concerns.

On May 31, 2022, pursuant to comments from NYSDEC and USEPA, a revised Draft Engineering Report with a 160 MGD pumping station was submitted. A meeting was held with regulators to discuss concerns with this report on September 2, 2022. Subsequent to this meeting, NYSDEC and USEPA agreed to provide design criteria for an acceptably sized pumping station to ensure that an acceptable Engineering Report could be submitted to the regulators for approval. As of the writing of this report, the agreed upon design criteria has not been provided. As such an Engineering Report cannot be produced and this project is on hold. Until the Engineering Report is approved, design for this project cannot be completed and bidding and commencement of construction will remain on hold.

Engineering design of the third and final phase, consists of further upgrades to the Secondary System to increase capacity to 400MGD as outlined in the Long-Term Control Plan. Solicitation for design of the third phase are expected to commence in 2023, however there are significant space limitations onsite that prohibit the concurrent construction of all three phases and the pause on the second phase creates significant logistical challenges with additional scheduling unknowns.



#### **4.19 CSO 014/015- Satellite Storage, Conveyance, FM & PS**

The goals of this project were thought to have been achieved with the SPP 206 A&B, SPP 035, and SPP 036 projects within the first year of implementation of the LTCP. The updated model however has indicated that a 5.55 MG off-line storage tank and Real-Time Control modifications to SPP 206 A&B in addition to these completed projects, rather than the originally conceived 0.8 MG storage tank are required to meet the activations allowed to the Erie Basin Marina. Design for this project is currently anticipated to begin in September 2024.

#### **4.20 CSO 013- Satellite Storage, Conveyance, FM & PS**

Rather than an off-line storage system at this location, the removal of an existing underflow orifice plate in combination with upstream proposed off-line storage projects are expected to achieve compliance under the revised model.

#### **4.21 North Relief-Interceptor**

Preliminary subsurface investigation in conjunction with the North Relief-Interceptor concept has revealed concerns with the location of bedrock and the feasibility of the proposed tunnel location. As an initial phase of replacement, the Bird Avenue Underflow Sewer Project has been completed. Additionally, during investigations it was found that there was a significant blockage in a previously unmapped sewer which resulted in decreased overflows to the Black Rock Canal. Initial engineering estimates now place costs for this Interceptor sewer at over \$70,000,000.00, though this cost may rise significantly due to contaminated soils and property acquisition issues. The January 31, 2023 proposed schedule pushes this project back significantly to begin design in February 2027 and complete construction in June of 2038 to allow for exploration of additional cost saving concepts including the potential transformation of the Hertel Avenue Offline storage facility into an extension of the North Relief Tunnel. This would also allow work to focus first on the Scajaquada Creek system where there is greater water quality impact.

#### **4.22 SPP 337 (CSO 053) Satellite Storage, Conveyance, FM & PS**

As described in the LTCP, this project was to entail a 700,000 gallon storage tank with pump station and forcemain located on privately owned lands within a potential superfund site. Not only did the land acquisition and constructability concerns make the viability of this project questionable at best, implementation as specified did not achieve compliance in the model, therefore other, systematic, projects are currently being proposed.



#### **4.23 SPP 336 A&B (CSO 053) Satellite Storage, Conveyance, FM & PS**

The updated model indicates that 336A is already in compliance. Additionally, as described in the Long-term Control Plan, this project would entail the acquisition and demolition of occupied homes in East Buffalo in the neighborhood of the May 14, 2022 Tops Friendly Markets racially motivated massacre. A gravity based 3.26 MG storage tank is proposed on currently vacant lands to be maintained as a parking lot or pocket park by Buffalo Sewer at Sidney and Lark Street instead.

#### **4.24 Jefferson Avenue & Florida Street (CSO 053) Satellite Storage**

Throughout the reporting period, preliminary design work on this project was entered into. Alternatives currently being explored include a tunnel within the right of way of East Delavan and an underground storage tank on Canisius College owned property. Due to property rights issues and potential environmental contamination at the Canisius site, the project is currently progressing towards a tunnel.

#### **4.25 CSO 055 Satellite Storage, Conveyance, FM & PS**

Envisaged as a 7.5 MG storage tank with pumped flow back into the Hertel trunk sewer on a scrapyard site near Military Road, current plans call for an 11.55 MG storage tank with pump station at the West Hertel Academy. An alternative of extending the Northern Relief Tunnel North to capture this flow is also being considered due to maintenance and constructability concerns. Design is expected to commence in earnest in February of 2027.

#### **4.26 CSOs 028/044/047 Satellite Storage, Conveyance, FM & PS**

This project was originally contemplated as a 2.3 MG storage facility with pumping station located within a Tops Friendly Markets owned parking lot. The updated model has revealed that a 0.95 MG tank which can be located in publicly owned lands at Hopkins & Osage OLS will achieve the goal for this project by managing flows to CSO 028 only as CSOs 044 and 047 are already in compliance. Design of this project is expected to commence in September of 2030.

#### **4.27 CSO 052 Satellite Storage, Conveyance, FM & PS**

This project was conceived as a 600,000 gallon off-line storage tank with pumping station and forcemain, however this CSO is already in compliance and this project is no longer warranted.



#### **4.28 CSO 064 Satellite Storage, Conveyance, FM & PS**

This project was conceived of as a 100,000 gallon off-line storage project in the vicinity of the former Ohio Street turning basin. There are significant hydraulic challenges to this project and under the January 31, 2023 proposal, it would be replaced with the construction of two 60" diameter relief sewers constructed at a similar location but within the existing right-of-way and relying on gravity rather than pumped flow.

### **5. CHANGES IN KEY PERSONNEL**

On July 12, 2022, Charles Riley was promoted to Executive Secretary and Chief Financial Officer of the Buffalo Sewer Authority. On August 4, 2022, Thomas Smith, Secretary to the General Manager and Chief of Staff for Buffalo Sewer passed away. On August 22, 2022, Stephanie Hanson was promoted to GIS Specialist II to serve in a project manager role. On August 29, 2022, Jordan Roose was hired as a Forester to oversee Green Infrastructure maintenance. On September 19, 2022, Kaitlin Walsh was hired as a GIS Specialist I to assist with data/mapping updates, reporting and transparency for LTCP and other major projects. On October 17, 2022, Yasmin Abdul-Malik was hired as a GIS Specialist I to assist with data/mapping updates, reporting and transparency for LTCP and other major projects. On October 17, 2022, Adam Sassone was hired as Secretary to the General Manager and Chief of Staff to oversee Buffalo Sewer Authority Operations.

### **6. PUBLIC MEETINGS**

On August 9, 2022, Buffalo Sewer's General Manager, Oluwole A. McFoy, PE was a panelist at the Future of Water Summit discussing Equity, Affordability, Social and Environmental Justice. Agenda from this event is included in Attachment C.

On September 13, 2022, at the US Water Alliance's One Water Summit, Buffalo Sewer's General Manager, Oluwole A. McFoy, PE was a speaker on Balancing Affordable Water Access and Utility Financial Resilience. The program for this summit is included in Attachment C.

On October 9, 2022, at the Water Environment Federation's Technical Exhibition and Conference, Buffalo Sewer's General Manager, Oluwole A. McFoy, PE presented on Reimagining the Water Sector through Equity and Justice. Agenda and slides from this presentation are included in Attachment C.

On October 19, 2022, ground broke on the first of three phases of the \$55 million Bird Island Treatment Facility Secondary System Rehabilitation and Upgrades project. News reports regarding this public meeting are available at:

<https://www.governor.ny.gov/news/governor-hochul-announces-start-construction-55-million-wastewater-treatment-project-buffalo>  
<https://www.buffalony.gov/CivicAlerts.aspx?AID=1168>



<https://www.constructionjournal.com/projects/details/dce00047c32848bdac8ce9fc04b769e5.html>  
<https://www.waterworld.com/wastewater/press-release/14284650/buffalo-begins-construction-on-55m-wastewater-treatment-project>  
<https://www.wkbw.com/news/local-news/55-million-invested-in-buffalos-bird-island-treatment-facility>  
<https://www.youtube.com/watch?v=SlwzUue4PMs>  
<https://www.wnypapers.com/news/article/current/2022/10/19/152721/start-of-construction-on-55-million-wastewater-treatment-project-in-buffalo>

On October 25, 2022, at the Water Environment Association of Ontario's Utility Management Forum, Buffalo Sewer's General Manager, Oluwole A. McFoy, PE presented on Delivering Reliable Water and Wastewater Services in a New Era. Slides from this presentation are included in Attachment C.

On October 28, 2022, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE was asked to present on the approach that Buffalo Sewer is taking to rethink the CSO Long-Term Control Plan at the New York State Society of Professional Engineers' fall meeting. Slides for this presentation are included in Attachment C.

On November 2, 2022, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE was asked to present on Buffalo Sewer's use of Green Infrastructure for water quality improvement and flood resiliency at the New York State Department of Environmental Conservation and New York Sea Grant's watershed training workshop. Agenda and slides for this presentation are included in Attachment C.

On November 10, 2022, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE was asked to present on the approach that Buffalo Sewer is taking to rethink the CSO Long-Term Control Plan at the Wet Weather Partnership's quarterly webinar. Slides for this presentation are included in Attachment C.

On December 6, 2022, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE presented on Equity Analysis in Comprehensive Streetscape Planning at the GI Exchange's Planning & Resilience Workshop. Slides for this presentation are included in Attachment C.

## **7. MODEL MODIFICATIONS**

On October 6, 2021, the United States Environmental Protection Agency (EPA) and New York State Department of Environmental Protection (NYSDEC) approved Buffalo Sewer's "Collection System Model- Model Update Report." The Buffalo Sewer Authority has since been utilizing the updated model to review the physical and financial feasibility and efficacy of projects remaining in the Long-Term Control Plan.



## 8. GREEN INFRASTRUCTURE

Buffalo Sewer remains committed to meeting the original conditions of the LTCP under the Amended Administrative Order to use Green infrastructure (GI) to the extent originally approved. At this time GI is not being proposed as a replacement for gray infrastructure, but rather in conformance with the approved LTCP.

Niagara St. Phase 4A has been completed as of September 21, 2022. With the completion of Niagara St. Phase 4A, Buffalo Sewer has achieved the 677 acres of control required under Phases Green 1 and Green 2 as outlined in the approved LTCP. Notice to Proceed for Niagara Street phase 4B is tentatively scheduled for the First Reporting Period of 2023. Plans and Specifications are attached as Appendix D.

Although the official engineering and program management award was issued on April 6, 2022, the private property green infrastructure grant program is currently on hold pending insurance issue resolution.

Projects to be funded through the Environmental Impact Bond and the American Rescue Plan Act including a mix of bioretention within the right-of-way, permeable pavement, and offline stormwater green infrastructure storage projects within parks and other public spaces are being vetted and developed. In general, these projects are being targeted to provide multiple benefits to the community including increasing climate resiliency, eliminating lead service lines, and replacing aging sewer and water lines while also reducing flow and nutrient loading to the combined sewer system. Through these projects, Buffalo Sewer expects to make significant progress towards Green Phase 3. These projects will be developed in conformance with the New York State Stormwater Management Design Manual.

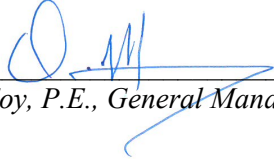
Flow meters are being installed in combined sewers along two streets in East Buffalo near Fillmore where natural experiments regarding vacant lots have presented themselves. In these locations on one side of the street significantly more demolitions have occurred than on the other side, but otherwise both sides of the street, lot characteristics, and sewer characteristics are significantly similar. Please note however, that this is far from common and the highly localized weather patterns in Buffalo and the influences of grading, lot sizing, spacing of receivers, road condition, pipe size, diameter, and slope that identifying streets for which this type of natural experiment could be employed is not straightforward and interpretation of data will similarly require significant analysis.

Additionally, the United States Geologic Survey (USGS) has reached some preliminary conclusions regarding their work along Niagara Street. Their data is not yet peer-reviewed or published and cannot therefore be published in this report. USGS has offered to present to NYSDEC and USEPA on the topic if a mutually agreeable time can be identified.



## 9. CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



*Oluwole A. McFoy, P.E., General Manager*

03/01/2023

Date



**Attachment A to the Semi-Annual Status Report: March 2023**

Work Completed in Current Period/ Projection of Work to be Performed in Next Reporting Period



| Project Name                               | Project Milestone              | AO Project Deadline | Actual Completion Dates | Project Status |
|--------------------------------------------|--------------------------------|---------------------|-------------------------|----------------|
| <b><u>Phase I Projects</u></b>             |                                |                     |                         |                |
| <b>CSO 060 GI Project</b>                  | ---                            | ---                 | Prior to 1/1/2014       | Complete       |
| <b>Bird/Lang RTC Projects</b>              | Construction Start             | 3/17/2014           | 2/24/2014               | Complete       |
|                                            | Completion Date                | 9/2/2014            | 5/9/2016                | Complete       |
|                                            | Operations/ Optimization (RTC) | 9/3/2014 – 9/3/15   | 10/1/2016               | Complete       |
| <i>Bird RTC Project</i>                    | Construction Start             | 3/17/2014           | 2/24/2014               | Complete       |
|                                            | Completion Date                | 9/2/2014            | 5/6/2016                | Complete       |
|                                            | Operations/ Optimization (RTC) | 9/3/2014 – 9/3/15   | 10/1/2016               | Complete       |
| <i>Lang RTC Project</i>                    | Construction Start             | 3/17/2014           | 2/24/2014               | Complete       |
|                                            | Completion Date                | 9/2/2014            | 5/9/2016                | Complete       |
|                                            | Operations/ Optimization (RTC) | 9/3/2014 – 9/3/15   | 10/1/2016               | Complete       |
| <b><u>Foundation Projects</u></b>          |                                |                     |                         |                |
| <b>Foundation 1 - Smith Street Storage</b> | Engineering Start              | 3/18/2014           | Prior to 1/1/2014       | Complete       |
|                                            | Engineering Completion         | 3/18/2015           | 6/10/2015               | Complete       |
|                                            | Notice to Proceed              | 3/18/2015           |                         | Complete       |
|                                            | Substantial Completion         | 3/18/2017           | 10/9/2017               | Complete       |
| <i>CSO No. 026 Sewer Separation</i>        | Engineering Start              | 3/18/2014           | Prior to 1/1/2014       | Complete       |
|                                            | Engineering Completion         | 3/18/2015           | 4/3/2015                | Complete       |
|                                            | Notice to Proceed              | 3/18/2015           | 7/8/2015                | Complete       |
|                                            | Substantial Completion         | 3/18/2017           | 6/22/2016               | Complete       |
| <i>CSO No. 026 RTC Structure</i>           | Engineering Start              | 3/18/2014           | Prior to 1/1/2014       | Complete       |
|                                            | Engineering Completion         | 3/18/2015           | 6/10/2015               | Complete       |
|                                            | Notice to Proceed              | 3/18/2015           | 7/13/2016               | Complete       |
|                                            | Substantial Completion         | 3/18/2017           | 10/9/2017               | Complete       |



| Project Name                                         | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status |
|------------------------------------------------------|------------------------|---------------------|-------------------------|----------------|
| <b>Foundation 2 - SPP Optimization (20 projects)</b> | Engineering Start      | 3/1/2014            | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | 3/18/2015           | 4/20/2015               | Complete       |
|                                                      | Notice to Proceed      | 3/1/2014            | Prior to 1/1/2014       | Complete       |
|                                                      | Substantial Completion | 3/18/2017           |                         |                |
| <i>SPP 180 Optimization</i>                          | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | ---                 | 4/20/2015               | Complete       |
|                                                      | Notice to Proceed      | ---                 | 9/8/2015                | Complete       |
|                                                      | Substantial Completion | 3/18/2017           | 12/16/2015              | Complete       |
| <i>SPP 331 Optimization</i>                          | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | 3/18/2015           | 4/20/2015               | Complete       |
|                                                      | Notice to Proceed      | ---                 | 9/8/2015                | Complete       |
|                                                      | Substantial Completion | 3/18/2017           | 12/16/2015              | Complete       |
| <i>SPP 036 Optimization</i>                          | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | ---                 | 1/20/2014               | Complete       |
|                                                      | Notice to Proceed      | ---                 | 5/30/2014               | Complete       |
|                                                      | Substantial Completion | 3/18/2017           | 8/4/2014                | Complete       |
| <i>SPP 217 Optimization</i>                          | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | ---                 | 4/3/2015                | Complete       |
|                                                      | Notice to Proceed      | ---                 | 7/8/2015                | Complete       |
|                                                      | Substantial Completion | 3/18/2017           | 12/21/2015              | Complete       |
| <i>SPP 318 Optimization</i>                          | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | ---                 | 4/3/2015                | Complete       |
|                                                      | Notice to Proceed      | ---                 | 7/8/2015                | Complete       |
|                                                      | Substantial Completion | 3/18/2017           | 12/21/2015              | Complete       |
| <i>SPP 097A Optimization</i>                         | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                                                      | Engineering Completion | ---                 | 4/20/2015               | Complete       |
|                                                      | Notice to Proceed      | ---                 | 9/8/2015                | Complete       |
|                                                      | Substantial Completion | 3/18/2017           | 12/16/2015              | Complete       |



| Project Name                 | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status |
|------------------------------|------------------------|---------------------|-------------------------|----------------|
| <i>SPP 122 Optimization</i>  | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete       |
| <i>SPP 163 Optimization</i>  | Engineering Start      | ---                 | 3/1/2014                | Complete       |
|                              | Engineering Completion | ---                 | 11/25/2014              | Complete       |
|                              | Notice to Proceed      | ---                 | 3/1/2015                | Complete       |
|                              | Substantial Completion | 3/18/2017           | 8/6/2015                | Complete       |
| <i>SPP 165 Optimization</i>  | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete       |
| <i>SPP 165A Optimization</i> | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Engineering Completion | ---                 | 4/4/2014                | Complete       |
|                              | Notice to Proceed      | ---                 | 7/25/2014               | Complete       |
|                              | Substantial Completion | 3/18/2017           | 11/3/2014               | Complete       |
| <i>SPP 178 Optimization</i>  | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete       |
| <i>SPP 335B Optimization</i> | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete       |
| <i>SPP 336A Optimization</i> | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete       |
|                              | Engineering Completion | ---                 | 4/20/2015               | Complete       |
|                              | Notice to Proceed      | ---                 | 9/8/2015                | Complete       |
|                              | Substantial Completion | 3/18/2017           | 12/16/2015              | Complete       |



| Project Name                 | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                      |
|------------------------------|------------------------|---------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| <i>SPP 341A Optimization</i> | Engineering Start      | ---                 | 1/1/2014                | Complete                                                                                                            |
|                              | Engineering Completion | ---                 |                         | See 4.2; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                              | Notice to Proceed      | ---                 |                         |                                                                                                                     |
|                              | Substantial Completion | 3/18/2017           |                         |                                                                                                                     |
| <i>SPP 342B Optimization</i> | Engineering Start:     | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete                                                                                                            |
| <i>SPP 001 Optimization</i>  | Engineering Start:     | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Engineering Completion | ---                 | 3/27/2014               | Complete                                                                                                            |
|                              | Notice to Proceed      | ---                 | 6/16/2014               | Complete                                                                                                            |
|                              | Substantial Completion | 3/18/2017           | 12/12/2014              | Complete                                                                                                            |
| <i>SPP 183 Optimization</i>  | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete                                                                                                            |
| <i>SPP 283 Optimization</i>  | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete                                                                                                            |
| <i>SPP 211 Optimization</i>  | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete                                                                                                            |
|                              | Substantial Completion | 3/18/2017           | Prior to 1/1/2014       | Complete                                                                                                            |



| Project Name                                                                                      | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                      |
|---------------------------------------------------------------------------------------------------|------------------------|---------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Foundation 3 - Remaining RTC (14 sites)</b>                                                    | Engineering Start      | 3/18/2016           | 8/9/2016                | Ongoing                                                                                                             |
|                                                                                                   | Notice to Proceed      | 3/18/2017           |                         |                                                                                                                     |
|                                                                                                   | Engineering Completion | 3/18/2023           |                         |                                                                                                                     |
|                                                                                                   | Substantial Completion | 3/18/2024           |                         |                                                                                                                     |
| <i>Hertel Northwest (Hertel at Deer) In-Line Storage</i>                                          | Engineering Start      | ---                 | 1/19/2018               | Complete                                                                                                            |
|                                                                                                   | Engineering Completion | ---                 | 12/13/2018              | Complete                                                                                                            |
|                                                                                                   | Notice to Proceed      | ---                 | 2/9/2019                | Complete                                                                                                            |
|                                                                                                   | Substantial Completion | 3/18/2024           | 5/6/2020                | Complete                                                                                                            |
| <i>Hertel South (Hertel at Deer) In-Line Storage</i>                                              | Engineering Start      | ---                 | 1/19/2018               | Complete                                                                                                            |
|                                                                                                   | Engineering Completion | ---                 | 12/13/2018              | Complete                                                                                                            |
|                                                                                                   | Notice to Proceed      | ---                 | 2/9/2019                | Complete                                                                                                            |
|                                                                                                   | Substantial Completion | 3/18/2024           | 5/6/2020                | Complete                                                                                                            |
| <i>Hertel Northeast In-Line Storage</i>                                                           | Engineering Start      | ---                 |                         | See 4.3; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                                   | Engineering Completion | ---                 |                         |                                                                                                                     |
|                                                                                                   | Notice to Proceed      | ---                 |                         |                                                                                                                     |
|                                                                                                   | Substantial Completion | 3/18/2024           |                         |                                                                                                                     |
| <i>Bird East In-Line Storage (Final Bird location between proposed East &amp; West locations)</i> | Engineering Start      | ---                 | 2/24/2014               | Complete                                                                                                            |
|                                                                                                   | Engineering Completion | ---                 | 5/6/2016                | Complete                                                                                                            |
|                                                                                                   | Notice to Proceed      | ---                 | 5/6/2016                | Complete                                                                                                            |
|                                                                                                   | Substantial Completion | 3/18/2024           | 10/1/2016               | Complete                                                                                                            |
| <i>East Ferry In-Line Storage</i>                                                                 | Engineering Start      | ---                 |                         | See 4.4; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                                   | Engineering Completion | ---                 |                         |                                                                                                                     |
|                                                                                                   | Notice to Proceed      | ---                 |                         |                                                                                                                     |
|                                                                                                   | Substantial Completion | 3/18/2024           |                         |                                                                                                                     |
| <i>Colorado In-Line Storage</i>                                                                   | Engineering Start      | ---                 |                         | See 4.5; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                                   | Engineering Completion | ---                 |                         |                                                                                                                     |
|                                                                                                   | Notice to Proceed      | ---                 |                         |                                                                                                                     |
|                                                                                                   | Substantial Completion | 3/18/2024           |                         |                                                                                                                     |



| Project Name                           | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                       |
|----------------------------------------|------------------------|---------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------|
| <i>North Bailey In-Line Storage</i>    | Engineering Start      | ---                 | 12/8/2017               | Complete                                                                                                             |
|                                        | Engineering Completion | ---                 | 6/5/2018                | Complete                                                                                                             |
|                                        | Notice to Proceed      | ---                 | 10/16/2018              | Complete                                                                                                             |
|                                        | Substantial Completion | ---                 | 5/27/2020               | Complete                                                                                                             |
| <i>South Bailey In-Line Storage</i>    | Engineering Start      | ---                 |                         | See 4.6; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results.  |
|                                        | Engineering Completion | ---                 |                         |                                                                                                                      |
|                                        | Notice to Proceed      | ---                 |                         |                                                                                                                      |
|                                        | Substantial Completion | 3/18/2024           |                         |                                                                                                                      |
| <i>Roslyn In-Line Storage</i>          | Engineering Start      | ---                 |                         | See 4.7; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results.  |
|                                        | Engineering Completion | ---                 |                         |                                                                                                                      |
|                                        | Notice to Proceed      | ---                 |                         |                                                                                                                      |
|                                        | Substantial Completion | 3/18/2024           |                         |                                                                                                                      |
| <i>Hazelwood (Kay) In-Line Storage</i> | Engineering Start      | ---                 | 8/9/2016                | Complete                                                                                                             |
|                                        | Engineering Completion | ---                 | 9/22/2017               | Complete                                                                                                             |
|                                        | Notice to Proceed      | ---                 | 2/2/2018                | Complete                                                                                                             |
|                                        | Substantial Completion | 3/18/2024           | 6/19/2019               | Complete                                                                                                             |
| <i>Amherst Quarry Off-Line Storage</i> | Engineering Start      | ---                 | 4/8/2022                | Complete                                                                                                             |
|                                        | Engineering Completion | ---                 |                         | See 4.8                                                                                                              |
|                                        | Notice to Proceed      | ---                 |                         |                                                                                                                      |
|                                        | Substantial Completion | 3/18/2024           |                         |                                                                                                                      |
| <i>Fillmore North In-Line Storage</i>  | Engineering Start      | ---                 |                         | See 4.9; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results.  |
|                                        | Engineering Completion | ---                 |                         |                                                                                                                      |
|                                        | Notice to Proceed      | ---                 |                         |                                                                                                                      |
|                                        | Substantial Completion | 3/18/2024           |                         |                                                                                                                      |
| <i>Gibson CSO Line Storage</i>         | Engineering Start      | ---                 |                         | See 4.10; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                        | Engineering Completion | ---                 |                         |                                                                                                                      |
|                                        | Notice to Proceed      | ---                 |                         |                                                                                                                      |
|                                        | Substantial Completion | 3/18/2024           |                         |                                                                                                                      |



| Project Name                                                | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status     |
|-------------------------------------------------------------|------------------------|---------------------|-------------------------|--------------------|
| <i>Montgomery<br/>(Smith at Eagle)<br/>CSO Line Storage</i> | Engineering Start      | ---                 | 4/4/2019                | Complete           |
|                                                             | Engineering Completion | ---                 | 2/27/2020               | Complete           |
|                                                             | Notice to Proceed      | ---                 | 7/13/2020               | Complete           |
|                                                             | Substantial Completion | 3/18/2024           | 12/31/2021              | Complete; See 4.11 |
| <i>Babcock Pump Station In-Line Storage</i>                 | Engineering Start      | ---                 | 6/19/2019               | Complete           |
|                                                             | Engineering Completion | ---                 | 5/15/2020               | Complete           |
|                                                             | Notice to Proceed      | ---                 | 7/24/2020               | Complete           |
|                                                             | Substantial Completion | 3/18/2024           | 9/21/2021               | Complete           |
| <i>Broadway at Oak In-Line Storage</i>                      | Engineering Start      | ---                 | 4/4/2019                | Complete           |
|                                                             | Engineering Completion | ---                 | 10/20/2021              | Complete           |
|                                                             | Notice to Proceed      | ---                 | 1/21/2022               | Complete; See 4.12 |
|                                                             | Substantial Completion | 3/18/2024           |                         |                    |
| <i>Breckenridge at Niagara Street In-Line Storage</i>       | Engineering Start      | ---                 | 6/15/2021               | Complete           |
|                                                             | Engineering Completion | ---                 |                         | See 4.13           |
|                                                             | Notice to Proceed      | ---                 |                         |                    |
|                                                             | Substantial Completion | 3/19/2024           |                         |                    |
| <i>Gates Circle In-Line Storage</i>                         | Engineering Start      | ---                 | 4/8/2022                | Complete           |
|                                                             | Engineering Completion | ---                 |                         | See 4.14           |
|                                                             | Notice to Proceed      | ---                 |                         |                    |
|                                                             | Substantial Completion | 3/18/2024           |                         |                    |



| Project Name                                                                | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                       |
|-----------------------------------------------------------------------------|------------------------|---------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------|
| Foundation 4 - Hamburg Drain Optimizations                                  | Engineering Start      | 3/18/2015           | Prior to 1/1/2014       | Complete                                                                                                             |
|                                                                             | Engineering Completion | 3/18/2017           | 2/23/2017               | Complete                                                                                                             |
|                                                                             | Notice to Proceed      | 3/18/2016           | 5/16/2017               | Complete                                                                                                             |
|                                                                             | Substantial Completion | 3/18/2018           |                         |                                                                                                                      |
| Mill Race In-Line Storage                                                   | Engineering Start      | ---                 | 4/4/2019                | Complete                                                                                                             |
|                                                                             | Engineering Completion | ---                 | 11/22/2021              | Complete                                                                                                             |
|                                                                             | Notice to Proceed      | ---                 | 5/10/2022               | Complete; See 4.16                                                                                                   |
|                                                                             | Substantial Completion | 3/18/2032           |                         |                                                                                                                      |
| Foundation 4 - Hamburg Drain Storage                                        | Engineering Start      | 3/18/2028           |                         | See 4.17; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                             | Engineering Completion | 3/18/2030           |                         |                                                                                                                      |
|                                                                             | Notice to Proceed      | 3/18/2030           |                         |                                                                                                                      |
|                                                                             | Substantial Completion | 3/18/2032           |                         |                                                                                                                      |
| <a href="#">WWTP</a>                                                        |                        |                     |                         |                                                                                                                      |
| WWTP Improvement Project Alternative C2                                     | Engineering Start      | 3/18/2015           | 11/25/2019              | See 4.18; Design Criteria for Primary System NFA Project are Urgently Requested to Ensure Funding                    |
|                                                                             | Engineering Completion | 3/18/2019           |                         |                                                                                                                      |
|                                                                             | Notice to Proceed      | 3/18/2017           |                         |                                                                                                                      |
|                                                                             | Substantial Completion | 3/18/2022           |                         |                                                                                                                      |
| <a href="#">Green Infrastructure Projects</a>                               |                        |                     |                         |                                                                                                                      |
| Green 1 - Pilot Projects – 267-acres of GI control<br>SEE DETAILS FOLLOWING | Engineering Start      | 3/1/2014            | Prior to 1/1/2014       | Complete                                                                                                             |
|                                                                             | Engineering Completion | 3/18/2016           |                         | Complete                                                                                                             |
|                                                                             | Substantial Completion | 3/18/2018           | 12/31/2016              | Complete.                                                                                                            |
| 2001-2016 Residential (traditional) Demolitions                             | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                             |
|                                                                             | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                             |
|                                                                             | Substantial Completion | 3/18/2018           | 12/31/2016              | Complete.                                                                                                            |
| 2001 - 2016 Commercial and Industrial Demolitions                           | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                             |
|                                                                             | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                             |
|                                                                             | Substantial Completion | 3/18/2018           | 12/31/2016              | Complete.                                                                                                            |



| Project Name                                  | Project Milestone       | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                              |
|-----------------------------------------------|-------------------------|---------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Green 2 – 410 acres of GI Control             | Engineering Start:      | 3/18/2019           | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion: | 3/18/2023           |                         | Complete                                                                                                                    |
|                                               | Substantial Completion: | 3/18/2024           | 9/21/2022               | Complete. See 8.                                                                                                            |
| 2017 - 2024 Demolitions                       | Engineering Start       |                     | Prior to 1/1/2014       | Complete.                                                                                                                   |
|                                               | Engineering Completion: |                     | 5/22/2019               | Complete.                                                                                                                   |
|                                               | Substantial Completion: | 3/18/2018           | 9/21/2022               | Complete. See 8.                                                                                                            |
| Green Demolition Pilot Project                | Engineering Start       |                     | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion  |                     |                         | Complete                                                                                                                    |
|                                               | Substantial Completion  |                     | 7/31/2017               | Complete.                                                                                                                   |
| PUSH Blue Projects                            | Engineering Start       | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion  | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Substantial Completion  | 3/18/2018           | 7/1/2015                | Complete.                                                                                                                   |
| Carlton Street Porous Asphalt                 | Engineering Start       | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion  | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Substantial Completion  | 3/18/2018           | 7/25/2014               | Complete.                                                                                                                   |
| Fillmore Avenue Porous Parking and Green Lots | Engineering Start       | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion  | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Substantial Completion  | 3/18/2018           | 4/23/2015               | Complete.                                                                                                                   |
| Ohio Street                                   | Engineering Start       | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion  | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Substantial Completion  | 3/18/2018           | 12/1/2014               | Complete.                                                                                                                   |
| Kenmore Avenue                                | Engineering Start       | ---                 | 4/30/2014               | Complete                                                                                                                    |
|                                               | Engineering Completion  |                     | 4/20/2015               | Complete                                                                                                                    |
|                                               | Substantial Completion  | 3/18/2018           | 3/1/2017                | Complete.                                                                                                                   |
| Genesee Street                                | Engineering Start       | ---                 | Prior to 1/1/2014       | Complete                                                                                                                    |
|                                               | Engineering Completion  | ---                 | 6/8/2015                | Complete                                                                                                                    |
|                                               | Substantial Completion  | 3/18/2018           | 6/1/2017                | Complete.                                                                                                                   |
| Allen Street                                  | Engineering Start       | ---                 | Prior to 1/1/2014       | Green infrastructure will no longer be implemented as part of the Allen Street streetscape project due to site constraints. |
|                                               | Engineering Completion  | ---                 |                         |                                                                                                                             |
|                                               | Substantial Completion  | 3/18/2018           |                         |                                                                                                                             |



| Project Name                                                               | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status   |
|----------------------------------------------------------------------------|------------------------|---------------------|-------------------------|------------------|
| <i>Willert Park</i>                                                        | Engineering Start      | ---                 | 6/1/2016                | Complete         |
|                                                                            | Engineering Completion | ---                 | 2/1/2017                | Complete         |
|                                                                            | Substantial Completion | 3/18/2018           | 4/26/2019               | Complete         |
| <i>Northland Ave</i>                                                       | Engineering Start      | ---                 | 7/1/2016                | Complete         |
|                                                                            | Engineering Completion | ---                 | 3/1/2017                | Complete         |
|                                                                            | Substantial Completion | 3/18/2018           | 12/17/2019              | Complete         |
| <i>612 Northland Ave</i>                                                   | Engineering Start      | ---                 | 1/1/2019                | Complete         |
|                                                                            | Engineering Completion | ---                 | 6/1/2019                | Complete         |
|                                                                            | Substantial Completion | ---                 | 12/1/2019               | Complete         |
| <i>Niagara Street Phase 1:<br/>Elmwood Street to<br/>Virginia Street</i>   | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete         |
|                                                                            | Engineering Completion | ---                 | 3/19/2014               | Complete         |
|                                                                            | Substantial Completion | 3/18/2018           | 12/1/2016               | Complete.        |
| <i>Niagara Street Phase 2:<br/>Virginia Street to Porter<br/>Avenue</i>    | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete         |
|                                                                            | Engineering Completion | ---                 | 6/3/2015                | Complete         |
|                                                                            | Substantial Completion | 3/18/2018           | 11/16/2017              | Complete.        |
| <i>Niagara Street Phase 3:<br/>Hampshire Street to<br/>Scajaquada Expy</i> | Engineering Start      | ---                 | 10/28/2015              | Complete         |
|                                                                            | Engineering Completion | ---                 | 3/21/2018               | Complete         |
|                                                                            | Substantial Completion | 3/18/2024           | 4/25/2022               | Complete. See 8. |
| <i>Niagara Street Phase 4a:<br/>Scajaquada Expy to<br/>Hertel Ave</i>      | Engineering Start      | ---                 | 10/28/2015              | Complete         |
|                                                                            | Engineering Completion | ---                 | 6/13/2018               | Complete         |
|                                                                            | Substantial Completion | 3/18/2024           | 9/21/2022               | Complete. See 8. |



| Project Name                                                             | Project Milestone       | AO Project Deadline | Actual Completion Dates | Project Status                            |
|--------------------------------------------------------------------------|-------------------------|---------------------|-------------------------|-------------------------------------------|
| <i>Niagara Street Phase 5:<br/>Porter Avenue to<br/>Hampshire Street</i> | Engineering Start       | ---                 | 10/28/2015              | Complete                                  |
|                                                                          | Engineering Completion  | ---                 |                         | There are no GI components for this Phase |
|                                                                          | Substantial Completion  | 3/18/2024           |                         |                                           |
| <b>Green 3 – 375 acres of GI Control</b>                                 | Engineering Start:      | 3/18/2023           | 10/28/2015              | See 8.                                    |
|                                                                          | Engineering Completion: | 3/18/2028           |                         |                                           |
|                                                                          | Substantial Completion: | 3/18/2029           |                         |                                           |
| <i>Niagara Street Phase 4b:<br/>Hertel Ave to Ontario St</i>             | Engineering Start       | ---                 | 10/28/2015              | Complete                                  |
|                                                                          | Engineering Completion  | ---                 | 2/28/2023               | Complete                                  |
|                                                                          | Substantial Completion  | 3/18/2024           |                         | See 8.                                    |
| <b>Green 4 – 263 acres of GI Control</b>                                 | Engineering Start:      | 3/18/2028           |                         |                                           |
|                                                                          | Engineering Completion: | 3/18/2033           |                         |                                           |
|                                                                          | Substantial Completion: | 3/18/2034           |                         |                                           |



| Project Name                                                              | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------|------------------------|---------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Gray Projects</a>                                             |                        |                     |                         |                                                                                                                                                                                                                                               |
| <b>CSOs 014/15 – Erie Basin In-line storage and optimization projects</b> | Engineering Start      | ---                 | Prior to 1/1/2014       | See 4.19 the below projects were completed in 2014 to meet the purpose of the 0.8 MG Off-line Storage Facility proscribed in Table 12-8 of the LTCP, however updated modeling indicates that this has not resulted in compliance for CSO 014. |
|                                                                           | Engineering Completion | ---                 | Prior to 1/1/2014       |                                                                                                                                                                                                                                               |
|                                                                           | Notice to Proceed      | 3/18/2014           | Prior to 1/1/2014       |                                                                                                                                                                                                                                               |
|                                                                           | Substantial Completion | 3/18/2015           | 12/29/2014              |                                                                                                                                                                                                                                               |
| <i>SPPs 206A&amp;B</i>                                                    | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Notice to Proceed      | ---                 | 5/30/2014               | Complete                                                                                                                                                                                                                                      |
|                                                                           | Substantial Completion | 3/18/2015           | 12/29/2014              | Complete                                                                                                                                                                                                                                      |
| <i>SPP 035</i>                                                            | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Notice to Proceed      | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Substantial Completion | 3/18/2015           | 5/31/2014               | Complete                                                                                                                                                                                                                                      |
| <i>SPP 036</i>                                                            | Engineering Start      | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Engineering Completion | ---                 | Prior to 1/1/2014       | Complete                                                                                                                                                                                                                                      |
|                                                                           | Notice to Proceed      | ---                 | 5/30/2014               | Complete                                                                                                                                                                                                                                      |
|                                                                           | Substantial Completion | 3/18/2015           | 12/5/2014               | Complete                                                                                                                                                                                                                                      |
| <b>CSO 013 – Satellite storage, conveyance, FM &amp; PS</b>               | Engineering Start      | 1/1/2020            | 3/12/2020               | See 4.20; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results.                                                                                                                          |
|                                                                           | Engineering Completion | 1/1/2021            |                         |                                                                                                                                                                                                                                               |
|                                                                           | Notice to Proceed      | 1/1/2021            |                         |                                                                                                                                                                                                                                               |
|                                                                           | Substantial Completion | 1/1/2023            |                         |                                                                                                                                                                                                                                               |
| <b>North Relief – Interceptor</b>                                         | Engineering Start      | 3/18/2019           | 5/15/2015               | Complete                                                                                                                                                                                                                                      |
|                                                                           | Engineering Completion | 3/18/2022           |                         | See 4.21;                                                                                                                                                                                                                                     |
|                                                                           | Notice to Proceed      | 3/18/2022           |                         |                                                                                                                                                                                                                                               |
|                                                                           | Substantial Completion | 3/18/2026           |                         |                                                                                                                                                                                                                                               |
| <b>CSOs 010, 008/010, 061, 004 – Underflow capacity upsizing</b>          | Engineering Start      | 3/18/2021           | 6/15/2021               | Complete                                                                                                                                                                                                                                      |
|                                                                           | Engineering Completion | 3/18/2023           |                         | This project is transitioning to an RTC project; See 4.13.                                                                                                                                                                                    |
|                                                                           | Notice to Proceed      | 3/18/2023           |                         |                                                                                                                                                                                                                                               |



| Project Name | Project Milestone      | AO Project Deadline | Actual Completion Dates | Project Status |
|--------------|------------------------|---------------------|-------------------------|----------------|
|              | Substantial Completion | 3/18/2024           |                         |                |



| Project Name                                                                                  | Project Milestone       | AO Project Deadline | Actual Completion Dates | Project Status                                                                                                       |
|-----------------------------------------------------------------------------------------------|-------------------------|---------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>SPP 337 (CSO 053) – Satellite storage, conveyance, FM &amp; PS</b>                         | Engineering Start       | 3/18/2023           |                         | See 4.22; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                               | Engineering Completion  | 3/18/2025           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed       | 3/18/2025           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion  | 3/18/2027           |                         |                                                                                                                      |
| <b>SPP 336A&amp;B (CSO 053) – Satellite storage, conveyance, FM &amp; PS</b>                  | Engineering Start       | 3/18/2024           |                         | See 4.23; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                               | Engineering Completion  | 3/18/2026           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed       | 3/18/2026           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion  | 3/18/2029           |                         |                                                                                                                      |
| <b>Jefferson Avenue &amp; Florida Street (CSO 053) – Satellite storage, conveyance and FM</b> | Engineering Start       | 3/18/2025           | 9/24/2021               | Complete; See 4.24                                                                                                   |
|                                                                                               | Engineering Completion  | 3/18/2027           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed       | 3/18/2027           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion  | 3/18/2030           |                         |                                                                                                                      |
| <b>CSO 055 – Satellite storage, conveyance, FM &amp; PS</b>                                   | Engineering Start:      | 3/18/2027           |                         | See 4.25; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                               | Engineering Completion: | 3/18/2030           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed:      | 3/18/2030           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion: | 3/18/2034           |                         |                                                                                                                      |
| <b>CSOs 028/044/047 - Satellite storage, conveyance, FM &amp; PS</b>                          | Engineering Start:      | 3/18/2028           |                         | See 4.26; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                               | Engineering Completion: | 3/18/2031           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed:      | 3/18/2031           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion: | 3/18/2034           |                         |                                                                                                                      |
| <b>CSO 052 – Satellite storage, conveyance, FM &amp; PS</b>                                   | Engineering Start:      | 3/18/2030           |                         | See 4.27; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                               | Engineering Completion: | 3/18/2032           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed:      | 3/18/2032           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion: | 3/18/2034           |                         |                                                                                                                      |
| <b>CSO 064 – Satellite storage, conveyance, FM &amp; PS</b>                                   | Engineering Start:      | 3/18/2030           |                         | See 4.28; this project is currently being reevaluated in light of the Approved Recalibrated Hydraulic Model Results. |
|                                                                                               | Engineering Completion: | 3/18/2032           |                         |                                                                                                                      |
|                                                                                               | Notice to Proceed:      | 3/18/2032           |                         |                                                                                                                      |
|                                                                                               | Substantial Completion: | 3/18/2034           |                         |                                                                                                                      |



**Attachment B to the Semi-Annual Status Report: March 2023**

Detailed Project Descriptions



| Project Name                  | Project Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Project Purpose*                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Phase I Projects</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>CSO 060 GI Project</b>     | This project consisted of the construction of 4768 CF of rain garden on Windsor, Parkdale and Elmwood Avenues between Bird and Forest Avenues and 39,600 SF of permeable pavement on Clarendon and Claremont Avenues between Bird and Forest Avenues, installation of a Stormceptor unit at Bird Avenue and Granger Place and a total of 6,125 LF of 12-30 inch sewer designed to carry street flow to the existing storm overflow sewer on Forest Avenue from the above mentioned street segments. Additionally, weirs were raised in SPPs 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, and 240. | This project was designed to treat 13,600 cf of stormwater runoff from the 0.9 inch water quality storm event and remove 49.5 cfs of peak flow from the combined sewer system. Thereby reducing overflows through SPPs 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, and 241 to CSO 060. Together with other LTCP projects, this project is projected reduce CSO 060 discharges to Scajaquada Creek based on the 1993 Modified Typical Year (TY) to negligible activations and flow. |
| <b>Bird/Lang RTC Projects</b> | These RTC projects utilize available capacity of large sewers to provide flow control measures during wet weather events through the use of gates which allow continuous dry weather underflow.                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Bird RTC Project</i>       | The Bird RTC Project is located on Bird Avenue between Parkdale Avenue and Hoyt Street.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The Bird RTC project is designed to provide 1.01 MG of storage volume, thereby reducing discharges through SPP 013 to CSO 004. Together with other LTCP projects, this project is projected reduce CSO 004 discharges to the Black Rock Canal based on the TY to 3 activations.                                                                                                                                                                                                               |
| <i>Lang RTC Project</i>       | The Lang RTC Project is located on Lang Avenue between Courtland Avenue and Hagen Street.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The Lang RTC project is designed to have a storage volume of 0.84 MG, thereby reducing discharges through SPP 340 to CSO 053. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the 1993 Modified Typical Year (TY) to 4 activations.                                                                                                                                                                                    |



| Project Name                               | Project Description                                                                                                                                                                                                                                                                                                                                                                         | Project Purpose*                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Foundation Projects</u></b>          |                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Foundation 1 - Smith Street Storage</b> | Originally envisioned as a single project, these two projects have been separated to realize cost advantages due to the different levels of skill required for the projects and to expedite the sewer separation component.                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>CSO No. 026 Sewer Separation</i>        | This project consisted of the installation of collection sewers for street receiver flows on Leddy Street, South Park Avenue, Owahn Place, Prenatt Street, Bolton Place, St. Stephen's Place, and Buffalo River Place, tributary to SPP 88 and 90, in order to discharge these storm flows downstream of regulators, in conjunction with the optimization projects for SPP 217 and SPP 318. | Together with the Smith Street in-line storage project, the Smith Street partial sewer separation project is designed to divert storm flows directly to the Smith Street Drain thereby reducing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations or less.            |
| <i>CSO No. 026 RTC Structure</i>           | The second contract consists of an in-line storage project which is designed to detain wet weather flows along the western side of Smith Street using a weir structure between the I-190 and the I-190 off ramp within the Smith Street Drain for discharge to the South Interceptor thereby diverting combined sewer flows from CSO 026.                                                   | Together with the Smith Street partial sewer separation project, the Smith Street in-line storage project is designed to divert and detain the equivalent of a storage volume of 1.94 MG, thereby reducing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations or less. |



| Project Name                                         | Project Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project Purpose*                                                                                                                                                                                                                                                                         |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Foundation 2 - SPP Optimization (20 projects)</b> | Project consists of multiple smaller projects that will overlap in engineering and construction. SEE DETAILS FOLLOWING FOR SPECIFIC PROJECTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | In general, these projects will reduce discharges to the CSOs by detaining flows within the BSA's system through the modification of existing control structures.                                                                                                                        |
| <i>SPP 180 Optimization</i>                          | This project consisted of raising of the weir associated with SPP 180 by 2.0' along its entire length. SPP 180 is located on Delaware Avenue at the intersection with West Delavan. As part of the revised SPP 331 Optimization, this weir will be raised an additional 1.75' along its entire length.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | The SPP 180 Optimization project was designed to increase the capacity of the CSS at SPP 180 thereby decreasing CSO 006 discharges. Together with other LTCP projects, this project is projected to reduce CSO 006 discharges to the Black Rock Canal based on the TY to 4 activations.  |
| <i>SPP 331 Optimization</i>                          | SPP331 is located at the intersection of Elmwood Avenue and West Delavan Avenue. Preliminary plans were for the diversion of flows from this point through a new sewer to Bird Avenue along the centerline of Elmwood Avenue. This would have required major disruption of a very high traffic commercial area and was deemed impractical. Plans have been developed to instead divert the same flow that was to have been diverted through this project through a system of localized weir modifications rather than extensive pipe installation. These modifications include raising the weir at SPP 180 by 1.75' and the bench located in SPP 332 on the northeast quadrant of Gates Circle which currently directs dry weather flows into the interceptor will be removed and replaced with a 6.2' weir and restored sewer trough which will direct dry weather flows into the Bird Avenue trunk sewer. | The SPP 331 Optimization project is designed to increase the underflow capacity at SPP 331 thereby decreasing CSO 006 discharges. Together with other LTCP projects, this project is projected to reduce CSO 006 discharges to the Black Rock Canal based on the TY to 4 activations.    |
| <i>SPP 036 Optimization</i>                          | This project consisted of the reconstruction of 35' of 30" sewer associated with SPP 036 to reverse the slope. It was located on Church Street between the off and on ramps of the Skyway (State Route 5).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | The SPP 036 Optimization project was designed to increase the underflow capacity at SPP 036 thereby decreasing CSO 015 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 015 to 0 activations. |
| <i>SPP 217 Optimization</i>                          | In association with the Smith Street partial sewer separation project, this project consisted of the removal of two bottom orifice plates totaling 1.42' in height, increasing the orifice size and conveyance capacity of the Emslie Street Sewer. SPP 217 is located on Emslie Street at its intersection with Eagle Street.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The SPP 217 Optimization project is designed to increase the underflow capacity at SPP 217 thereby decreasing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations.       |



| Project Name                 | Project Description                                                                                                                                                                                                                                                                                   | Project Purpose*                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>SPP 318 Optimization</i>  | In association with the Smith Street partial sewer separation project, this project consisted of the removal of an orifice plate, increasing the orifice size and conveyance capacity of the Clinton Avenue Sewer. SPP 318 is located east of the intersection of Fillmore Avenue and Clinton Street. | The SPP 318 Optimization project is designed to increase the underflow capacity at SPP 318 thereby decreasing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations.                                                                                |
| <i>SPP 097A Optimization</i> | This project consisted of abandoning an inactive combined sewer, converting another to a storm sewer and abandoning the underflow connection. SPP 097A is located at the intersection of the extension of Prenatt and Orlando Streets.                                                                | The SPP 097A Optimization project is designed to eliminate SPP 097A thereby decreasing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations.                                                                                                       |
| <i>SPP 122 Optimization</i>  | This project consisted of raising of the weir associated with SPP 122 by 0.5' along its entire length. SPP 122 is located on South Legion Drive just north of the intersection with Meriden Street.                                                                                                   | The SPP 122 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 122 thereby decreasing CSO 037 discharges. Together with other LTCP projects, this project is projected to reduce CSO 037 discharges to the Buffalo River based on the TY to 6 activations.                                                                  |
| <i>SPP 163 Optimization</i>  | The SPP 163 Weir Optimization project consisted of replacing the existing weir with a new weir 0.75' higher. It is located to the East of the intersection of Fillmore Avenue and Northland on Northland Avenue.                                                                                      | The SPP 163 Optimization project is designed to increase the flow volume conveyed by the CSS at SPP 163 thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                                                                    |
| <i>SPP 165 Optimization</i>  | This project consisted of raising of the weir associated with SPP 165 by 0.5' along its entire length. SPP 165 is located on Fillmore Avenue just north of the intersection with East Delavan Street.                                                                                                 | The SPP 165 Optimization project was designed to increase the capacity of the CSS at SPP 165 thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                                                                               |
| <i>SPP 165A Optimization</i> | The weir associated with SPP 165A located at the intersections of Fillmore and Kensington Avenues.                                                                                                                                                                                                    | The SPP 165A Optimization project was designed to increase the capacity of the CSS at SPP 165A by raising the weir by 0.75' and upsizing 675' of 15" pipe to 18" pipe to reduce CSOs in association with CSO 053. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| <i>SPP 178 Optimization</i>  | This project consisted of raising of the weir associated with SPP 178 by 0.5' along its entire length. SPP 178 is located on Masten Avenue just north of the intersection with Northland Avenue.                                                                                                      | The SPP 178 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 178 thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                                                                   |
| <i>SPP 335B Optimization</i> | This project consisted of raising of the weir associated with SPP 335B by 1.0' along its entire length. SPP 335B is located on Hager Street just south of the intersection with Florida Street.                                                                                                       | The SPP 335B Optimization project was designed to increase the flow volume conveyed by CSS at SPP 335B thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                                                                     |



| Project Name                 | Project Description                                                                                                                                                                                                                                                                                                                        | Project Purpose*                                                                                                                                                                                                                                                                                                                                                |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>SPP 336A Optimization</i> | This project has been constructed in association with the SPP 331 optimization. The project consist sof removing a sluice gate and orifice plate and modifying the existing structure by changing the existing side channel opening from 24" to 30". SPP 336A is located on Humboldt Parkway North of the Scajaquada Drain.                | The SPP 336A Optimization project is designed to increase the underflow capacity of the CSS at SPP 336A thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                                                                  |
| <i>SPP 341A Optimization</i> | SPP 341A is located on Genesee Street east of Kerns Avenue. This project is on hold pending the results of post-construction monitoring of Lang and Hazelwood RTCs.                                                                                                                                                                        | The SPP 341A Optimization project would increase the flow volume conveyed by the CSS at SPP 341A thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. Field conditions may require modification to this planned optimization. |
| <i>SPP 342B Optimization</i> | This project consisted of raising of the weir associated with SPP 342B by 1.0' along its entire length. SPP 342B is located on Sprenger Avenue adjacent to Schiller Park.                                                                                                                                                                  | The SPP 342B Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 342B thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                                                               |
| <i>SPP 001 Optimization</i>  | The weir associated with SPP 001 located at the discharge of Cornelius Creek into the Niagara River and tributary to CSO 055 has been raised 1.0' to reduce CSOs.                                                                                                                                                                          | The SPP 001 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 001 thereby decreasing CSO 055 discharges. Together with other LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara River based on the TY to 9 activations.                                                                |
| <i>SPP 183 Optimization</i>  | This project consisted of raising of the weir associated with SPP 183 by 2.0' along its entire length. SPP 183 is located at the intersection of Bradley Avenue and Dewitt Street.                                                                                                                                                         | The SPP 183 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 183 thereby decreasing CSO 059 discharges. Together with other LTCP projects, this project is projected to reduce CSO 059 discharges to Scajaquada Creek based on the TY to 0 activations.                                                                 |
| <i>SPP 283 Optimization</i>  | SPP 283 is located in the median between the I-190 South ramp to Porter Avenue and a service road near the West Side Rowing Club. This project consisted of removing an orifice plate which restricted flows from entering the Swan Trunk and the installation of a new 1.0' tall weir to restrict flows from discharging through CSO 063. | The SPP 283 Optimization project was designed to increase the underflow capacity of the CSS at SPP 283 thereby decreasing CSO 063 discharges. Together with other LTCP projects, this project is projected to reduce CSO 063 discharges to the Niagara River based on the TY to 4 activations.                                                                  |



| Project Name                | Project Description                                                                                                                                                                                                 | Project Purpose*                                                                                                                                                                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>SPP 211 Optimization</i> | This project consisted of constructing a weir to an elevation above the overflow raised pipe invert at SPP 211. SPP 211 is located at the South East corner of the intersection of Clinton and South Ogden Streets. | The SPP 211 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 211 thereby decreasing CSO 066 discharges. Together with other LTCP projects, this project is projected to reduce CSO 066 discharges to the Buffalo River based on the TY to 4 activations. |



| Project Name                                             | Project Description                                                                                                                                                                                                                                                                                                                          | Project Purpose*                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Foundation 3 - Remaining RTC (14 sites)</b>           | These RTC projects propose to utilize available capacity in the CSS to provide flow control measures during wet weather events through the use of active controls.                                                                                                                                                                           | In general, these projects are designed to reduce discharges to the CSOs through the detention of flows within the BSA's CSS system.                                                                                                                                                                     |
| <i>Hertel Northwest (Hertel at Deer) In-Line Storage</i> | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is within the northern portion of the two large combined sewers which are located under Hertel Avenue.                 | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara River based on the TY to 9 activations.    |
| <i>Hertel South (Hertel at Deer) In-Line Storage</i>     | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is within the southern portion of the two large combined sewers which are located under Hertel Avenue.                 | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara River based on the TY to 9 activations.    |
| <i>Hertel Northeast In-Line Storage</i>                  | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. This project will be located within the northern portion of the two large combined sewers which are located under Hertel Avenue.                     | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara River based on the TY to 9 activations.    |
| <i>Bird East In-Line Storage</i>                         | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. This project will be located to the east of the above mentioned Bird RTC project along the same Bird Avenue sewer.                                   | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 004 discharges to the Black Rock Canal based on the TY to 3 activations. |
| <i>East Ferry In-Line Storage</i>                        | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is along the Ferry Street sewer upstream of its leaping weir overflow to the Scajaquada Drain north of Florida Street. | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.     |



| Project Name                           | Project Description                                                                                                                                                                                                                                                                                                                                       | Project Purpose*                                                                                                                                                                                                                                                                                     |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Colorado In-Line Storage</i>        | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is along the Colorado Avenue sewer which runs underneath the manufacturing facility located at 1001 East Delavan Avenue.            | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| <i>North Bailey In-Line Storage</i>    | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is along Bailey Avenue north of Scajaquada Street.                                                                                  | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| <i>South Bailey In-Line Storage</i>    | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is along Bailey Avenue north of Scajaquada Street and south of the afore mentioned North Bailey In-Line Storage project.            | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| <i>Roslyn In-Line Storage</i>          | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is near Roslyn Street on Lang Avenue.                                                                                               | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| <i>Hazelwood (Kay) In-Line Storage</i> | This RTC project, now known as Hazelwood, is proposed to utilize available capacity in the CSS capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is on Hazelwood Avenue between East Delavan and Easton Avenues.                        | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| <i>Amherst Quarry Off-Line Storage</i> | This RTC project proposes to utilize available capacity within the active Amherst Quarry to provide flow control measures during wet weather events, once downstream capacity is available, flows will then be pumped back into the system. The Amherst Quarry is located in an area bounded by Parkridge Avenue, East Amherst Street, and Hewitt Avenue. | This RTC project is proposed to utilize available capacity of the quarry to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.                |



| Project Name                                           | Project Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Project Purpose*                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Fillmore North In-Line Storage</i>                  | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. This project is proposed to be located on Fillmore Avenue, however pending the results of post-construction monitoring, it may be eliminated depending on the efficacy of the Smith Street Storage project.                                                                                                                                                                                                                                                                          | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations. |
| <i>Gibson CSO Line Storage</i>                         | This project is proposed to utilize the available capacity of the CSO pipe downstream of the SPP, but before the discharge point or outfall. It would be designed to convey water to prevent surface flooding and overflows through upstream SPPs. Once the storm event has subsided, it would be designed to dewater back into the combined system. The dewatering rate would be controlled so that it would not cause overflows downstream from the control structure. The proposed project location is on Gibson Street, however pending the results of post-construction monitoring, it may be eliminated depending on the efficacy of the Smith Street Storage project. | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations. |
| <i>Babcock Pump Station In-Line Storage</i>            | This RTC project is proposed to modify the function of an existing pump station to utilize available capacity of a large sewer to provide flow control measures during wet weather events. The proposed project location is at the existing pump station on New Babcock Street at Howard Street.                                                                                                                                                                                                                                                                                                                                                                             | This RTC project is proposed to utilize available capacity within the collection system to reduce the peak flow into the Swan Trunk. Together with other LTCP projects, this project is projected to reduce CSO 027 discharges to the Buffalo River based on the TY to 6 activations.                 |
| <i>Montgomery CSO (Smith at Eagle) In-Line Storage</i> | This RTC project is proposed to utilize available capacity in the Smith St Drain to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is upstream of the existing CSO 026 RTC project on Smith St. and Eagle St.                                                                                                                                                                                                                                                                                                                                                                        | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations. |



| Project Name                                          | Project Description                                                                                                                                                                                                                                                                                                                                                                                              | Project Purpose*                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Broadway at Oak In-Line Storage</i>                | This RTC project is proposed to utilize available capacity in the collection system to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is on Broadway St. at Oak St.                                                                                                                                                      | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 017 discharges to the Buffalo River based on the TY to 6 activations.                                                                                                                             |
| <i>Breckenridge at Niagara Street In-line Storage</i> | This RTC project is proposed to replace the CSOs 010, 008/010, 061- Underflow capacity upsizing project and will be designed to store flows in the Breckenridge Street Sewer and release these flows back into the Northern Interceptor as capacity is available. It will be located at Niagara and Breckenridge Streets.                                                                                        | This RTC project is proposed to utilize available capacity within the existing Breckenridge combined sewer to store flows and then release them when there is available capacity to the Northern Interceptor Sewer rather than directly connecting into the syphon gates connection. It is anticipated to reduce CSO 010 discharges to the Black Rock Canal based in the TY to 4 activations.                                     |
| <i>Gates Circle In-line Storage</i>                   | This project is proposed to be located at the North East corner of Gates Circle and will provideThis project is an additional project that was not originally included in the Long-Term Control Plan which is proposed to modify SPP 322 to create a globalized control logic balancing of flows between the Scajaquada Tunnel and Bird Avenue Trunk. An engineering contract for this project is expected to be | This RTC project is proposed to balance flows between the Bird Avenue Trunk and Scajaquada Tunnel to work together with other projects to reduce discharges to the Black Rock Canal through CSO 061 and CSO 004 in the TY to 4 activations.                                                                                                                                                                                       |
| <b>Foundation 4 - Hamburg Drain Optimizations</b>     | This project will entail several in-system optimizations, e.g. rerouting of flows, installation of weirs, partial sewer separations etc. and/or green infrastructure to reduce the overflow events at a number of upstream SPPs in order to control flows through CSOs 017, 022, and 064. These optimizations would be located within the Hamburg Basin.                                                         | These optimization projects are proposed to increase the flow volume conveyed by the CSS upstream of the SPPs and diverting stormwater flows out of the CSS thereby decreasing CSO 017, 022, and 064 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Buffalo River through CSO 017 to 4 activations, CSO 022 to 5 activations, and CSO 064 to 3 activations. |
| <b>Foundation 4 - Hamburg Drain Storage</b>           | Together with the Hamburg Drain Optimizations, this project would be designed to provide the equivalent of 5 MG of offline storage. This facility would be located within the Hamburg Basin and may involve the installation of RTCs.                                                                                                                                                                            | This storage project is proposed to provide off-line storage thereby decreasing CSO 017, 022, and 064 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Buffalo River through CSO 017 to 4 activations, CSO 022 to 5 activations, and CSO 064 to 3 activations.                                                                                                |



| Project Name                                   | Project Description                                                                                                                                                                                                                                              | Project Purpose*                                                                                                                                                                                                                                                                                      |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Mill Race In-Line Storage</i>               | This RTC project is proposed to utilize available capacity of a large sewer to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is on Larkin Street near Roseville Street. | This RTC project is proposed to utilize available capacity within the collection system to detain flows until downstream capacity becomes available. Together with other LTCP projects, this project is projected to reduce CSO 017 discharges to the Buffalo River based on the TY to 6 activations. |
| <a href="#">WWTP</a>                           |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                       |
| <b>WWTP Improvement Project Alternative C2</b> | The proposed project is expected to rehabilitate the existing primary clarifiers by adding high rate disinfection and provide additional secondary clarifiers at the Bird Island WWTP.                                                                           | This project would be designed to provide treatment of wet weather flows and increased secondary treatment capacity.                                                                                                                                                                                  |



| Project Name                                              | Project Description                                                                                                                  | Project Purpose*                                                                                                                                      |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Green Infrastructure Projects</u>                      |                                                                                                                                      |                                                                                                                                                       |
| <b>Green 1 - Pilot Projects – 267-acres of GI control</b> | Projects consist of multiple green infrastructure projects that will overlap in engineering and construction.                        | In general, this phase is designed to control stormwater flow from 267 acres of impervious area in the various sewer sheds within the targeted areas. |
| <i>2001-2016 Residential Demolitions</i>                  | This project consists of the demolition of vacant houses thereby replacing impervious with pervious surfaces.                        | This project is designed to remove 256 total acres of impervious area and manage stormwater on site.                                                  |
| <i>2001-2016 Commercial and Industrial Demolitions</i>    | This project consists of the demolition of commercial and industrial structures thereby replacing impervious with pervious surfaces. | This project is designed to control stormwater flow from 78 total acres of impervious area.                                                           |



| Project Name                                              | Project Description                                                                                                                                                                                                                                         | Project Purpose*                                                                                                                                                    |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Green 2 – 410 acres of GI Control</b>                  | These projects will consist of multiple green infrastructure projects that will overlap in engineering and construction. Details will be provided in future reports.                                                                                        | In general, these projects would be designed to retain stormwater flow from 410 acres of impervious area in the various sewer sheds in the targeted areas.          |
| <i>2017 -2024 Demolitions</i>                             | This project consists of the demolition of vacant and dilapidated structures thereby replacing impervious surface with pervious surface                                                                                                                     | This project is designed to control stormwater flow for each post demolition vacant lot. Total acreage TBD on a rolling basis depending upon demolitions completed. |
| <i>Green Demolition Pilot Project</i>                     | A three year pilot study where the City of Buffalo's demolition specifications were altered to allow for the use of shallow bioretention to increase onsite infiltration                                                                                    | Over the course of the pilot project the revised demolition specifications/bioretention approach was applied to 221 sites impacting a total of 19.03 acres.         |
| <i>PUSH Blue Projects</i>                                 | PUSH-Buffalo will install rain gardens, porous pavement and a green roof and distribute rain barrels within the CSO 012 sewershed.                                                                                                                          | This project is designed to control stormwater flow from 1 acre of impervious area.                                                                                 |
| <i>Carlton Street Porous Asphalt</i>                      | This project consisted of the installation of pervious pavement to retain stormwater from the area tributary to the Right-of-Way on Carlton Street between Michigan and Jefferson Avenues in the City of Buffalo as part of the City's streetscape project. | This project is designed to control stormwater flow from a 5.9 acre sewershed.                                                                                      |
| <i>Fillmore Avenue Porous Parking Lots and Green Lots</i> | This project consisted of the installation of porous pavement parking lots and modified rain gardens to retain stormwater from the area tributary to the Right-of-Way of Fillmore Avenue in the City of Buffalo as part of the City's streetscape project.  | This project is designed to control stormwater flow from 0.4 total acres of impervious area.                                                                        |
| <i>Ohio Street</i>                                        | This project consisted of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way on Ohio Street in the City of Buffalo as part of the City's streetscape project.                                        | This project is designed to control stormwater flow from 6.1 total acres of impervious area.                                                                        |
| <i>Kenmore Avenue</i>                                     | This project consists of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way on Kenmore Avenue in the City of Buffalo as part of the City's streetscape project.                                      | This project is designed to control stormwater flow from 5.17 total acres of impervious area.                                                                       |
| <i>Genesee Gateway Project</i>                            | This project consists of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way on Genesee Street in the City of Buffalo as part of the City's streetscape project.                                      | This project is designed to control stormwater flow from 2.8 total acres of impervious area.                                                                        |



| Project Name                                                                             | Project Description                                                                                                                                                                                                                                                             | Project Purpose*                                                                                                                                 |
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| <i>Allen Street</i>                                                                      | This project will consist of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way for the portion of Allen Street between Main Street and Elmwood Avenue in the City of Buffalo as part of the City's streetscape project. | This project is designed to control stormwater flow from 2.5 total acres of impervious area.                                                     |
| <i>Willert Park</i>                                                                      | This project will consist of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way for the portion of William Street between Michigan and Jefferson in the City of Buffalo.                                                 | This project is designed to control stormwater flow from 13.9 total acres of impervious area.                                                    |
| <i>Northland Ave</i>                                                                     | This project will consist of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way for the portion of Northland Avenue between Fillmore and Grider in the City of Buffalo.                                                  | This project is designed to control stormwater flow from 6.1 total acres of impervious area.                                                     |
| <i>612 Northland Ave</i>                                                                 | The project consists of a rain garden, permeable gravel pavement, and conversion of impervious pavement to lawn/shrubs.                                                                                                                                                         | The project is designed to control stormwater flow from 0.26 acres of impervious area.                                                           |
| <i>Niagara Street<br/>Phase 1: Elmwood<br/>Street to Virginia<br/>Street</i>             | This project consists of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way for the length of Niagara Street in the City of Buffalo as part of the City's streetscape project.                                           | This project is designed to control stormwater flow from 2 total acres of impervious area.                                                       |
| <i>Niagara Street<br/>Phase 2: Virginia<br/>Street to Porter<br/>Avenue</i>              | This project consists of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way for the length of Niagara Street in the City of Buffalo as part of the City's streetscape project.                                           | This project is designed to control stormwater flow from 7.3 total acres of impervious area.                                                     |
| <i>Niagara Street<br/>Phase 3:<br/>Hampshire Street<br/>to Scajaquada<br/>Expressway</i> | This project consists of the installation of green infrastructure to retain stormwater from the area tributary to the Right-of-Way for the length of Niagara Street in the City of Buffalo as part of the City's streetscape project.                                           | This project is designed to control stormwater flow from 15 total acres of impervious area in MS4 drainage areas and 25.5 in CSO drainage areas. |
| <i>Niagara Street<br/>Phase 4a:<br/>Scajaquada Expy to<br/>Hertel Ave</i>                |                                                                                                                                                                                                                                                                                 |                                                                                                                                                  |



| Project Name                                                                 | Project Description                                                                                                                                                                                | Project Purpose*                                                                                                                                           |
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| <i>Niagara Street<br/>Phase 5: Porter<br/>Avenue to<br/>Hampshire Street</i> |                                                                                                                                                                                                    |                                                                                                                                                            |
| <b>Green 3 – 375 acres<br/>of GI Control</b>                                 | These projects will consist of multiple green infrastructure projects that will overlap in engineering and construction. Details will be provided in the Phase 2 Green Infrastructure Master Plan. | In general, these projects would be designed to retain stormwater flow from 375 acres of impervious area in the various sewer sheds in the targeted areas. |
| <i>Niagara Street<br/>Phase 4b: Hertel<br/>Ave to Ontario St</i>             |                                                                                                                                                                                                    |                                                                                                                                                            |
| <b>Green 4 – 263 acres<br/>of GI Control</b>                                 | These projects will consist of multiple green infrastructure projects that will overlap in engineering and construction. Details will be provided in the Phase 2 Green Infrastructure Master Plan. | In general, these projects would be designed to retain stormwater flow from 263 acres of impervious area in the various sewer sheds in the targeted areas. |



| Project Name                                                     | Project Description                                                                                                                                                                                                                                                                                                                                                   | Project Purpose*                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b><u>Gray Projects</u></b>                                      |                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>CSOs 014/15 – Erie Basin In-line storage and optimization</b> | <b>SEE DETAILS FOLLOWING FOR SPECIFIC PROJECTS</b>                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>SPPs 206A&amp;B</i>                                           | A new 113,000 gallon in-line storage facility was constructed in association with SPPs 206A&B to reduce CSOs at CSO 014. This site is located at Trenton Road/ Village Court north east of Fourth Street.                                                                                                                                                             | This project was designed to provide in-line storage thereby decreasing CSO 014 discharges through SPPs 206A&B. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 014 to 2 activations.                                                                                                                                |
| <i>SPP 035</i>                                                   | A new 50,000 gallon in-line storage facility was constructed between the Genesee Trunk and Swan Trunk sewers to create additional storage capacity in association with SPP 035 (CSO 015). This project is located to the north west of the intersection of South Elmwood Avenue and West Genesee Street.                                                              | This project was designed to provide in-line storage thereby decreasing CSO 015 discharges through SPP 35. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 015 to 0 activations.                                                                                                                                     |
| <i>SPP 036</i>                                                   | This project consisted of the reconstruction of 35' of 30" sewer associated with SPP 036 to reverse the slope. This site is located on Church Street between the off and on ramps of the Skyway bridge (State Route 5).                                                                                                                                               | This sewer reconstruction project was designed to increase the underflow capacity of the CSS thereby decreasing CSO 015 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 015 to 0 activations.                                                                                                            |
| <b>CSO 013 – Satellite storage, conveyance, FM &amp; PS</b>      | CSO 013 is located at the extension of Virginia Street, in LaSalle Park, into the Black Rock Canal, the structure is tentatively planned to be built between the last SPP structure and the Canal. The proposed satellite storage facility would consist of a covered, concrete, underground tank. This project is currently on hold pending the Model Recalibration. | This storage project would provide off-line storage thereby decreasing CSO 013 discharges. Preliminary design is for a 0.3 MG offline storage facility. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Black Rock Canal through CSO 013 to 4 activations.                                                                                  |
| <b>North Relief – Interceptor</b>                                | The original conception of this project was of a deep tunnel relief sewer to run in the vicinity of Niagara Street between Bird Avenue and Albany Street with an additional line connecting the tunnel to the WWTP influent siphon. Preliminary design is for 5,310' of 96" pipe and 571' of 120" pipe. Due to site constraints this project may be redesigned.       | The purpose of this project is to reduce discharges through CSOs 004, 011, and 012, by creating a new relief sewer thereby creating offline storage capacity capacity in the CSS. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Black Rock Canal through CSO 004 to 3 activations, CSO 011 to 4 activation, and CSO 012 to 2 activations. |



| Project Name                                                                                  | Project Description                                                                                                                                                                                                                                                                                                                                                                              | Project Purpose*                                                                                                                                                                                                                                                                                                                                                                                               |
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| <b>CSOs 010, 008/010, 061, 004 – Underflow capacity upsizing</b>                              | This Project is No Longer being Considered and is being superceded by Breckenridge at Niagara Street In-Line Storage                                                                                                                                                                                                                                                                             | This underflow capacity upsizing project would increase the capacity of the CSS thereby decreasing CSO 010, 008, 061 and 004 discharges. Together with other LTCP projects, this project is projected based on the 1993 Modified Typical Year to reduce discharges to the Black Rock Canal through CSO 004 to 3 activations, CSO 010 to 1 activations, CSO 008 to 0 activations, and CSO 061 to 4 activations. |
| <b>SPP 337 (CSO 053) – Satellite storage, conveyance, FM &amp; PS</b>                         | SPP 337 is located at Colorado Street North of Scajaquada Street. The proposed satellite storage facility would consist of a covered, concrete, underground tank.                                                                                                                                                                                                                                | The purpose of this project is to reduce discharges through CSO 53 to the Scajaquada Creek. Preliminary design is for a 0.7 MG off-line storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges to Scajaquada Creek based on the TY to 4 activations.                                                                                                             |
| <b>SPP 336A&amp;B (CSO 053) – Satellite storage, conveyance, FM &amp; PS</b>                  | SPP 336A&B are located on Humboldt Parkway on each side of the Scajaquada Drain. The proposed satellite storage facility would consist of a covered, concrete, underground tank.                                                                                                                                                                                                                 | The purpose of this project is to reduce discharges through CSO 53 to the Scajaquada Creek. Preliminary design is for a 4.2 MG off-line storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges to Scajaquada Creek based on the TY to 4 activations.                                                                                                             |
| <b>Jefferson Avenue &amp; Florida Street (CSO 053) – Satellite storage, conveyance and FM</b> | The proposed location for this facility is in the vicinity of the intersection of Jefferson Avenue and Florida Street. The proposed satellite storage facility would consist of a covered, concrete, underground tank.                                                                                                                                                                           | The purpose of this project is to reduce discharges through CSO 53 to the Scajaquada Creek. Preliminary design is for a 1.5 MG off-line storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges to Scajaquada Creek based on the TY to 4 activations.                                                                                                             |
| <b>CSO 055 – Satellite storage, conveyance, FM &amp; PS</b>                                   | For CSO 055, the proposed storage facility would be located upstream of the regulator, near Military Road. At this location, an offline facility would be constructed and flows above 26 MGD (instantaneous peak) would be diverted from the South Hertel Trunk sewer into the storage facility. The proposed satellite storage facility would consist of a covered, concrete, underground tank. | The purpose of this project is to reduce discharges through CSO 55 to the Niagara River. Preliminary design is for a 7.5 MG off-line storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges to the Niagara River through CSO 55 based on the TY to 9 activations.                                                                                                |



| Project Name                                                         | Project Description                                                                                                                                                                                                                | Project Purpose*                                                                                                                                                                                                                                                                                                                                                                                             |
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| <b>CSOs 028/044/047 - Satellite storage, conveyance, FM &amp; PS</b> | The proposed location for this facility is underneath the Tops parking lot between South Park Avenue and the Buffalo River. The proposed satellite storage facility would consist of a covered, concrete, underground tank.        | The purpose of this project is to reduce discharges through CSO 28 to the Buffalo River and through CSOs 047 and 044 to Cazenovia Creek. Preliminary design is for a 2.3 MG off-line storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges based on the TY to 6 activations through CSO 028, 2 activations through CSO 044 and 3 activations through CSO 047. |
| <b>CSO 052 – Satellite storage, conveyance, FM &amp; PS</b>          | The proposed location for this facility is in the vicinity of South Ogden Street between Mineral Springs Road and Cazenovia Creek. The proposed satellite storage facility would consist of a covered, concrete, underground tank. | The purpose of this project is to reduce discharges through CSO 52 to the Buffalo River. Preliminary design is for a 0.6 MG offline storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges to the Buffalo River through CSO 052 based on the TY to 3 activations.                                                                                              |
| <b>CSO 064 – Satellite storage, conveyance, FM &amp; PS</b>          | The proposed location for this facility is in the vicinity of the confluence of Ohio, Louisiana and Saint Claire Streets. The proposed satellite storage facility would consist of a covered, concrete, underground tank.          | The purpose of this project is to reduce discharges through CSO 064 to the Buffalo River. Preliminary design is for a 0.1 MG off-line storage facility. Together with other LTCP projects, this project is projected reduce CSO discharges to the Buffalo River through CSO 064 based on the TY to 3 activations.                                                                                            |

**\*Note:** Black Rock Canal Performance Criterion is 4 Activations in the Typical Year  
Buffalo River Performance Criterion is 6 Activations in the Typical Year  
Cazenovia Creek - B Performance Criterion is 4 Activations in the Typical Year  
Cazenovia Creek - C Performance Criterion is 6 Activations in the Typical Year  
Erie Basin Performance Criterion is 2 Activations in the Typical Year  
Niagara River Performance Criterion is 9 Activations in the Typical Year  
Scajaquada Creek - Performance Criterion is 4 Activations in the Typical Year



**Attachment C to the Semi-Annual Status Report: March 2023**

Public Meeting Materials



An aerial photograph of a coastline. The water is a deep, vibrant blue, transitioning to a lighter turquoise near the shore. White, craggy cliffs drop down to the water's edge. In the foreground, some green plants with brown, dried flower heads are visible against the white rock.

CONVENE

ELEVATE

INNOVATE

# 2022 THE FUTURE OF WATER SUMMIT

AUGUST 8-10  
THE RITZ-CARLTON  
1 LINCOLN ROAD, MIAMI BEACH

[HTTPS://WWW.FUTUREOFWATER.ONEWATERACADEMY.ORG/](https://www.futureofwater.onewateracademy.org/)



# THE FUTURE OF WATER SUMMIT 2022

Day 1: Monday, August 8, 2022

8:30 AM - 9:00 AM

**Opening Remarks by Dr. Sunil Sinha & Hardeep Anand**

9:00 AM - 9:30 AM

**Opening Keynote Address by Miami-Dade County Mayor  
Daniella Levine Cava**

## KEYNOTE SPEAKERS

9:30 AM - 9:45 AM

**Kishia L. Powell**, DC Water

9:45 AM - 10:00 AM

**Jennifer Sara**, World Bank

10:00 AM - 10:15 AM

**Joe Manous**, USACE Institute for Water Resources

10:15 AM - 10:30 AM

**Maria Lehman**, American Society of Civil Engineers

10:30 AM - 11:00 AM

**Coffee Break**

11:00 AM - 11:15 PM

**Peiffer Brandt**, Ratteflis Financial Consultants

11:15 AM - 11:30 PM

**Jennifer Palmiotto**, National Rural Water Association

11:30 AM - 11:45 PM

**Ken Bagstad**, US Geological Survey

11:45 AM - 12:00 PM

**Roy Coley**, Miami-Dade County WASD & **Louis Aguirre**, WPLG 10

12:00 PM - 1:00 PM

**Networking Lunch**

## PANEL SESSIONS

1:00 PM - 2:00 PM

**Panel 1: Smart One Water: Definition, Framework & Implementation**

**Moderator:** Pierre Glynn, US Geological Survey

**Reporter:** Edgar Westerhof, Arcadis

**Student:** Anmol Vishwakarma, Virginia Tech

**Panelists:** Adel Hagekhalil, Metropolitan Water District of Southern California

David Sumner, USGS Caribbean-Florida Water Science Center

Travis Wagner, SUEZ Smart & Environmental Solutions

Stephen Cauffman, US Department of Homeland Security (USDHS)

Vern Steel, National Rural Water Association

2:00 PM - 3:00 PM

**Panel 2: Watershed/Basin Scale Governance & Policy**

**Moderator:** Irela Bague, Miami-Dade County Chief Bay Officer

**Reporter:** Gemma Dunn, GHD

**Student:** Rhea Dadijala, Virginia Tech

**Panelists:** Eric Summa, US Army Corps of Engineers (USACE)

Jennifer Garigliano, NYC Department of Environmental Protection

Meghna Babbar-Sebens, Oregon State University

Steven C. Williamson, Village of Key Biscayne

Kevin Carter, Broward County Water & Wastewater Services

3:00 PM - 3:30 PM

**Networking Coffee Break**

3:30 PM - 4:30 PM

**Panel Sessions Breakout Discussions**

4:30 PM - 5:00 PM

**Key Takeaways from Day 1**

5:00 PM - 5:15 PM

**Closing Remarks by Dr. Sunil Sinha & Hardeep Anand**

6:30 PM - 7:30 PM

**Networking Reception**

Registered summit attendees are also able to network through the WHOVA Conference App  
(Download from the Apple Store or Google Play Store)



# THE FUTURE OF WATER SUMMIT 2022

Day 2: Tuesday, August 9, 2022

8:00 AM - 8:30 AM

**Opening Remarks by Dr. Sunil Sinha & Hardeep Anand**

## KEYNOTE SPEAKERS

8:30 AM - 8:45 AM

**Eileen Higgins**, *Miami-Dade County D5 Commissioner*

8:45 AM - 9:00 AM

**David Mussington**, *Cybersecurity & Infrastructure Security Agency (CISA)*

9:00 AM - 9:15 AM

**Heather Polinsky**, *Arcadis*

9:15 AM - 9:30 AM

**Inge Wiersema**, *Carollo Engineers*

9:30 AM - 10:00 AM

**Coffee Break**

10:00 AM - 10:15 PM

**Cindy Wallis-Lage**, *Black & Veatch*

10:15 AM - 10:30 PM

**Beverly Stinson**, *AECOM*

10:30 AM - 10:45 PM

**Susan Moio**, *Jacobs*

10:45 AM - 11:00 PM

**Kevin Shafer**, *Milwaukee Metropolitan Sewerage District*

## PANEL SESSIONS

11:00 AM - 12:00 PM

**Panel 3: Climate Change, Sustainability & Resilience**

**Moderator:** Steve Cauffman, *CISA-USDHS*

**Reporter:** Debbie Griner, *Miami-Dade County*

**Student:** Anmol Vishwakarma, *Virginia Tech*

**Panelists:** Ana Carolina Coelho Maran, *South Florida Water Management District*

Steve Moddemeyer, *CollinsWoerman*

Grant Davis, *Sonoma County Water Agency*

Prabhu Chandrasekeran, *Stantec*

Jim Giannopoulos, *GHD*

12:00 PM - 1:00 PM

**Networking Lunch**

1:00 PM - 2:00 PM

**Panel 4: Equity, Affordability, Social & Environmental Justice**

**Moderator:** Joone Lopez, *Moulton Niguel Water District*

**Reporter:** Nicole Bouquet, *Apex Engineering*

**Student:** Rhea Dadiala, *Virginia Tech*

**Panelists:** Oluwole "OJ" McFoy, *Buffalo Sewer Authority*

Sheryl Ude, *DC Water*

Andrew Sawyer, *US Environmental Protection Agency*

Calvin D. Farr, Jr., *Prince William County Service Authority*

Jason Smith, *Office of the Mayor, Miami-Dade County*

2:00 PM - 3:00 PM

**Panel 5: Technological Innovation & Digital Transformation**

**Moderator:** David Dzombak, *Carnegie Mellon University*

**Reporter:** Ken Thompson, *Jacobs*

**Student:** Ramin Anis, *Virginia Tech*

**Panelists:** John McCarthy, *Arcadis*

Srini Vallabhaneni, *Kansas City Water*

Melissa Meeker, *Water Tower*

Rebekah Eggers, *IBM*

William Mundt, *Nextera Energy*

3:00 PM - 3:30 PM

**Networking Coffee Break**

3:30 PM - 4:30 PM

**Panel Sessions Breakout Discussions**

4:30 PM - 5:15 PM

**Key Takeaways from Day 2**

5:15 PM - 5:30 PM

**Closing Remarks by Dr. Sunil Sinha & Hardeep Anand**

7:00 PM - 9:30 PM

**GALA DINNER**





# One Water Summit 2022

September 13–15  
Milwaukee, WI



# One Water, One Future.



# ONE



# Welcome!

## Dear Colleagues,

On behalf of the Board of Directors and staff of the US Water Alliance, thank you so much for joining us in Milwaukee, Wisconsin for One Water Summit. We're honored you chose to spend a few days with us, and we're looking forward to all the wonderful conversations, knowledge sharing, and networking that makes the One Water Summit such a unique and valuable experience.

Our hope is to build a safe Summit that provides a platform for genuine connection and peer exchange, whether you meet emerging artists for the first time or connect with an old friend you've worked with for years. We have an exciting and diverse array of programming featuring an incredible range of professionals and opportunities to visit interesting and innovative projects here in Milwaukee—a city defined by its freshwater resources.

Over the next three days, you will connect with changemakers from diverse walks of life. The One Water Summit is a space for everyone who is committed to a sustainable water future to share experiences, insights, and energy.

Our collective water future is under immense pressure, and we need everyone to bring their **power**, their **purpose**, and their **joy** to this critically important work. The US Water Alliance staff, network, and Board of Directors hope you enjoy seeing old friends and making new ones over the next three days.

## One Water, One Future.



**Mami Hara**  
CEO, US Water Alliance



**Oluwole A. (OJ) McFoy**  
General Manager, Buffalo  
Sewer Authority; Board Chair,  
US Water Alliance



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The US Water Alliance thanks our sponsors for their generous support of One Water Summit 2022—without them this event would not be possible.

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**Thank you to our key partners for their support in advancing One Water.**

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# About the US Water Alliance





The US Water Alliance advances policies and programs to secure a sustainable water future for all. Established in 2008, the Alliance is a nonprofit organization that brings together diverse interests to identify and advance common-ground, achievable solutions to our nation's most pressing water challenges. Our members and partners include community leaders, water providers, public officials, business leaders, environmental organizations, policy organizations, labor unions, and more. We:

**Educate** the nation about the true value of water and water equity, as well as the need for investment in water systems. Our innovative approaches to building public and political will, best-in-class communications tools, high-impact events, media coverage, and publications are educating and inspiring the nation about how water is essential and in need of investment.

**Accelerate** the adoption of One Water principles and solutions that effectively manage water resources and advance a better quality of life for all. As an honest broker and action catalyst, we convene diverse interests to identify and advance practical, achievable solutions to our nation's most pressing water challenges. We do this through our strategic initiatives and One Water Hub, which offer high-quality opportunities for knowledge building and peer exchange. We develop forward-looking and inclusive water policies and programs, and we build coalitions that will change the face of water management for decades to come.

**Celebrate** what works in innovative water management. We shine a light on groundbreaking work through storytelling, analysis of successful approaches, and special recognition programs that demonstrate how water leaders are building stronger communities and a stronger America.

## Vision

**A sustainable water future for all.**

**We are driving the One Water movement—an approach to water stewardship that is innovative, inclusive, and integrated. As a member-supported national nonprofit organization, the Alliance educates the nation about the true value of water and proactively advances policies and programs that manage water resources to advance a better quality of life for everyone.**

## Mission

**To drive One Water breakthroughs that positively transform our environment, economy, and society.**

**Our approach is inclusive. We bring all stakeholders together to co-create and leverage solutions. Through a program of national dialogues, collaborative platforms for knowledge building and peer exchange, the development of forward-looking and inclusive water policies and programs, public education, and coalition building, we are driving a national movement to ensure that clean, reliable water is available for all.**

**One Water, One Future.**



# Our Members

As of September 2022





Our members work across the country in every discipline of water management including drinking water, wastewater, stormwater, water reuse, flood and groundwater management, and watersheds. We represent all who have a stake in America's water future—local water agencies, public officials, the private sector, community organizations, environmental groups, labor, research institutions, and more.

We invite you to join our national membership of change-makers. To learn more about the benefits of US Water Alliance membership, please email:  
[membership@uswateralliance.org](mailto:membership@uswateralliance.org)

We are proud to have the following organizations as members of the US Water Alliance:

**Public Utilities/Agencies:**

[Alexandria Renew Enterprises \(VA\)](#)  
[Atlanta Department of Watershed Management \(GA\)](#)  
[Atlantic County Utilities Authority \(NJ\)](#)  
[Austin Water \(TX\)](#)  
[Baltimore City Department of Public Works \(MD\)](#)  
[Boston Water and Sewer Commission \(MA\)](#)  
[Buffalo Sewer Authority \(NY\)](#)  
[Cape Fear Public Utility Authority \(NC\)](#)  
[Cascade Water Alliance \(WA\)](#)  
[Cedar Rapids Utilities Department \(IA\)](#)  
[Central Arkansas Water \(AR\)](#)  
[Charlotte County Utilities \(FL\)](#)  
[City of Ashland Public Works \(OR\)](#)  
[City of Bend \(OR\)](#)  
[City of Bloomington \(MN\)](#)  
[City of Boerne \(TX\)](#)  
[City of Buena Vista Public Works \(CO\)](#)  
[City of Columbus \(OH\)](#)  
[City of Des Moines Public Works \(IA\)](#)  
[City of Flint \(MI\)](#)  
[City of Fort Collins/Utilities \(CO\)](#)  
[City of Jackson Public Works Department \(MS\)](#)  
[City of Newark Department of Water and Sewer Utilities \(NJ\)](#)  
[City of Richmond Department of Public Utilities \(VA\)](#)  
[Clayton County Water Authority \(GA\)](#)  
[Clean Water Services \(OR\)](#)  
[Cleveland Water \(OH\)](#)  
[DC Water \(DC\)](#)  
[DeKalb County Department of Watershed Management \(GA\)](#)  
[Denver Water \(CO\)](#)  
[Detroit Water and Sewerage Department \(MI\)](#)  
[Great Lakes Water Authority \(MI\)](#)  
[Greater Cincinnati Water Works \(OH\)](#)  
[Guadalupe-Blanco River Authority \(TX\)](#)  
[Hampton Roads Sanitation District \(VA\)](#)  
[Houston Water \(TX\)](#)  
[Independence Water Pollution Control Department \(MO\)](#)  
[Johnson County Public Works & Infrastructure \(KS\)](#)  
[KC Water \(MO\)](#)  
[Los Angeles Department of Water and Power \(CA\)](#)  
[Louisville/Jefferson County Metropolitan Sewer District \(KY\)](#)  
[Louisville Water Company \(KY\)](#)  
[Madison Metropolitan Sewerage District \(WI\)](#)  
[Madison Water Utility \(WI\)](#)  
[Marana Water \(AZ\)](#)  
[Metro Water Recovery \(CO\)](#)  
[Metropolitan Council \(MN\)](#)  
[Metropolitan Water District of Southern California \(CA\)](#)  
[Metropolitan Water Reclamation District of Greater Chicago \(IL\)](#)  
[Miami Conservancy District \(OH\)](#)  
[Miami-Dade County Water and Sewer District \(FL\)](#)  
[Milwaukee Metropolitan Sewerage District \(WI\)](#)  
[Milwaukee Water Works \(WI\)](#)



Mount Pleasant Waterworks (SC)  
New Braunfels Utilities (TX)  
NEW Water (WI)  
New York City Department of Environmental Protection (NY)  
Northeast Ohio Regional Sewer District (OH)  
Orange Water and Sewer Authority (NC)  
Philadelphia Water Department (PA)  
Pittsburgh Water & Sewer Authority (PA)  
Prince William County Service Authority  
Raleigh Public Utilities (NC)  
Saint Paul Regional Water Services (MN)  
San Antonio Water System (TX)  
San Francisco Public Utilities Commission (CA)  
Seattle Public Utilities (WA)  
Seminole County Environmental Services Department (FL)  
Sewerage and Water Board of New Orleans (LA)  
Town of Cary (NC)  
Town of Maysville (NC)  
Tucson Water (AZ)  
Valley Water (CA)  
Wake County (NC)  
WSSC Water (MD)

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HydroDigital, LLC  
Jacobs  
Kennedy/Jenks Consultants, Inc.  
Promise  
Raftelis  
Stantec  
Tetra Tech, Inc.  
Veolia North America  
Xylem

**Nonprofit Organizations:**

Alliance for Water Efficiency  
American Rivers  
American Society of Civil Engineers  
Association of Metropolitan Water Agencies  
Bay Area Council  
California Water Association  
California Water Efficiency Partnership (CA)  
Clean Water Construction Coalition  
Cleveland Neighborhood Progress  
The Conservation Fund  
DigDeep  
Ductile Iron Pipe Research Association  
EJ Water Cooperative  
Freshwater  
The Freshwater Trust  
Golf Course Superintendents Association of America  
Great Lakes Commission  
Green Infrastructure Leadership Exchange  
International Code Council  
Iowa Agriculture Water Alliance  
Iowa Soybean Association  
Moonshot Missions  
National Association of Clean Water Agencies  
National Onsite Wastewater Recycling Association  
National Rural Water Association  
National Wildlife Federation  
Natural Resources Defense Council  
The Nature Conservancy  
The Nature Conservancy- Florida Chapter  
New Jersey Future  
Pacific Institute  
PolicyLink  
River Network  
Rural Community Assistance Partnership  
Soil and Water Conservation Society  
Southeast Rural Community Assistance Project, Inc.  
Water & Wastewater Equipment Manufacturers Association  
Water Design-Build Council  
WaterNow Alliance  
Water Professionals International  
Water Research Foundation

**Labor Unions:**

International Union of Painters and Allied Trades  
Laborers' International Union of North America



# Agenda at a Glance





# Tuesday September 13

All activities will take place on the main floor at the Wisconsin Center.

| Time              | Event                                                                                           | Location                                    |
|-------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|
| 7:00am – 4:00pm   | <b>Registration Open</b>                                                                        | Ballroom Pre-Function                       |
| 7:15am – 8:15am   | <b>Networking Breakfast</b>                                                                     | Ballroom Pre-Function                       |
| 8:00am – 4:00pm   | <b>One Water Summit Open Space</b><br><i>Open to all Summit attendees.</i>                      | Hilton Milwaukee City Center, 6th and Green |
| 8:15am – 8:30am   | <b>One Water Delegations: Welcome</b><br><i>Open to all Summit attendees.</i>                   | Ballroom CD                                 |
| 8:30am – 9:45am   | <b>One Water Delegations: Peer Dialogues, Round One</b><br><i>Open to all Summit attendees.</i> |                                             |
|                   | Climate Resilience and Equitable Water Systems                                                  | Room 102B                                   |
|                   | Improving State Water Infrastructure Funding and Financing                                      | Room 102C                                   |
|                   | Regional Approaches to One Water                                                                | Room 102D                                   |
|                   | Still Waters Run Deep: Artists, Expression, and Impact                                          | Room 103B                                   |
|                   | Connecting Urban and Rural Communities with Natural Infrastructure                              | Room 103C                                   |
| 9:45am – 10:15am  | <b>Break</b>                                                                                    |                                             |
| 10:15am – 11:30am | <b>One Water Delegations: Peer Dialogues, Round Two</b><br><i>Open to all Summit attendees.</i> |                                             |
|                   | Distributed Infrastructure and One Water                                                        | Room 102B                                   |
|                   | The Future of Great Lakes Water Infrastructure                                                  | Room 102C                                   |
|                   | Emerging Leader Perspectives on the Challenges of One Water                                     | Room 102D                                   |
|                   | From Wastewater to One Water: Investing in the Circular Economy                                 | Room 103B                                   |
|                   | The Water Equity Network                                                                        | Room 103C                                   |
| 11:30am – 12:00pm | <b>Break</b>                                                                                    |                                             |



|                  |                                                                                                                                                                                                                                                   |                                                  |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 12:00pm – 3:00pm | <b>Institutes</b><br><i>Space is limited and pre-registration is required. Lunch will be provided.</i>                                                                                                                                            |                                                  |
|                  | Aligned for Action: Water as Part of the Climate Solution                                                                                                                                                                                         | Room 102B                                        |
|                  | Equity in Green Infrastructure: A Guide to Measuring & Evaluating Progress                                                                                                                                                                        | Room 102C                                        |
|                  | Water as a Public Good: Balancing Affordable Water Access and Utility Financial Resilience                                                                                                                                                        | Room 102D                                        |
|                  | One Water Council Meeting (closed session)                                                                                                                                                                                                        | Room 103B                                        |
|                  | A Bridge Over Troubled Waters: Artistic Principles for Strengthening Connection and Culture Change                                                                                                                                                | Room 103C                                        |
| 12:00pm – 3:30pm | <b>Site Visits</b><br><i>Space is limited and pre-registration is required. Lunch and transportation will be provided. Attendees should meet in the Ballroom Pre-Function of the Wisconsin Center 15 minutes before scheduled departure time.</i> |                                                  |
|                  | <b>12:00pm – 3:00pm</b>                                                                                                                                                                                                                           |                                                  |
|                  | Jones Island MMSD Treatment Facility                                                                                                                                                                                                              |                                                  |
|                  | Tour of the UW-Milwaukee School of Freshwater Sciences                                                                                                                                                                                            |                                                  |
|                  | Workforce Development at the IUPAT Training Facility                                                                                                                                                                                              |                                                  |
|                  | <b>12:30pm – 3:30pm</b>                                                                                                                                                                                                                           |                                                  |
|                  | Flood Control Along the Kinnikinic River                                                                                                                                                                                                          |                                                  |
|                  | Milwaukee's Green Infrastructure                                                                                                                                                                                                                  |                                                  |
|                  | Menomonee River Corridor Restoration                                                                                                                                                                                                              |                                                  |
|                  | Milwaukee River and Greenseams                                                                                                                                                                                                                    |                                                  |
| 4:40pm – 5:00pm  | <b>Transportation to the US Water Prize Ceremony</b><br><i>Transportation service will depart at 4:40pm, 4:50pm, and 5:00pm to Discovery World</i>                                                                                                | N. Vel R. Phillips Ave.                          |
| 5:00pm – 7:00pm  | <b>US Water Prize Ceremony and Celebratory Reception</b>                                                                                                                                                                                          | Discovery World<br>500 N Harbor Dr.<br>Milwaukee |
| 7:10pm – 7:30pm  | <b>Transportation to the Wisconsin Center</b><br><i>Transportation service will depart at 7:10pm, 7:20pm, and 7:30pm to Wisconsin Center</i>                                                                                                      | Discovery World                                  |



# Wednesday September 14

All activities will take place on the main floor at the Wisconsin Center.

| Time              | Event                                                                                                                                                                               | Location                                    |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 7:30am – 8:45am   | <b>Continental Breakfast and Networking</b>                                                                                                                                         | Ballroom Pre-Function                       |
| 7:30am – 8:30am   | <b>Value of Water Member Appreciation Breakfast</b> (members only)                                                                                                                  | Room 103D                                   |
| 7:30am – 4:00pm   | <b>Registration Open</b>                                                                                                                                                            | Ballroom Pre-Function                       |
| 8:00am – 4:00pm   | <b>One Water Summit Open Space</b><br><i>Open to all Summit attendees.</i>                                                                                                          | Hilton Milwaukee City Center, 6th and Green |
| 8:45am – 10:15am  | <b>Opening Plenary</b><br><b>Welcome and Opening Remarks</b><br><b>Ebbs and Flows: Milwaukee's Water Story</b>                                                                      | Ballroom CD                                 |
| 10:15am – 10:30am | <b>Break</b>                                                                                                                                                                        |                                             |
| 10:30am – 12:00pm | <b>Series 1: Concurrent Sessions</b>                                                                                                                                                |                                             |
|                   | Utility Strategies to Advance Racial Equity                                                                                                                                         | Room 102B                                   |
|                   | Alternatives for Pricing Water: Learnings from Two Cities                                                                                                                           | Room 102C                                   |
|                   | Understanding and Measuring One Water                                                                                                                                               | Room 102D                                   |
|                   | Arts and Culture in Advancing One Water                                                                                                                                             | Room 103B                                   |
|                   | Climate and Community Resilience: Emerging Approaches that Reach for Justice                                                                                                        | Room 103C                                   |
| 12:00pm – 1:15pm  | <b>Networking Luncheon</b><br><b>Special Video Address: Vice President of the United States Kamala Harris</b><br><b>Meeting Water's Moment: A Fireside Chat with Mitch Landrieu</b> | Ballroom CD                                 |
| 1:15pm – 1:30pm   | <b>Break</b>                                                                                                                                                                        |                                             |



|                 |                                                                    |                       |
|-----------------|--------------------------------------------------------------------|-----------------------|
| 1:30pm – 3:00pm | <b>Series 2: Concurrent Sessions</b>                               |                       |
|                 | Successful Customer Service and Engagement                         | Room 102B             |
|                 | Centering Community Experience and Expertise                       | Room 102C             |
|                 | Community-Centered Capital Financing, Structuring, and Delivery    | Room 102D             |
|                 | Culture Change Insights to Transform the Water Sector              | Room 103B             |
|                 | Governance, Policy, and One Water                                  | Room 103C             |
| 3:00pm – 3:15pm | <b>Break</b>                                                       |                       |
| 3:15pm – 4:45pm | <b>Series 3: Concurrent Sessions</b>                               |                       |
|                 | Strengthening the Labor/Water Partnership                          | Room 102B             |
|                 | Extended Producer Responsibility for PFAS                          | Room 102C             |
|                 | One Water Solutions for Water Supply and Drought                   | Room 102D             |
|                 | Centering Water Stewards                                           | Room 103B             |
|                 | Practical Solutions to Closing the Water and Sanitation Access Gap | Room 103C             |
| 4:45pm – 5:00pm | <b>Break</b>                                                       |                       |
| 5:00pm – 6:30pm | <b>Networking Reception at the Wisconsin Center</b>                | Ballroom Pre-Function |



# Thursday September 15

All activities will take place on the main floor at the Wisconsin Center.

| Time              | Event                                                                                                       | Location              |
|-------------------|-------------------------------------------------------------------------------------------------------------|-----------------------|
| 7:30am – 9:30am   | <b>Registration Open</b>                                                                                    | Ballroom Pre-Function |
| 8:00am – 9:00am   | <b>Continental Breakfast and Networking</b>                                                                 | Ballroom Pre-Function |
| 9:00am – 10:15am  | <b>Morning Plenary</b><br><b>Laboratories of Innovation: One Water in the States</b>                        | Ballroom CD           |
| 10:15am – 10:30am | <b>Break</b>                                                                                                |                       |
| 10:30am – 12:00pm | <b>Series 4: Concurrent Sessions</b>                                                                        |                       |
|                   | Attracting and Retaining the New Water Workforce                                                            | Room 102B             |
|                   | Transforming our Infrastructure Paradigm                                                                    | Room 102C             |
|                   | Anti-Displacement and Social Infrastructure Development                                                     | Room 102D             |
|                   | The Critical Role of Soil and Watersheds in Water Resource Management                                       | Room 103B             |
|                   | Creatively Accessing Capital in a post-BIL World                                                            | Room 103C             |
| 12:00pm – 1:30pm  | <b>Closing Plenary and Luncheon Celebration</b><br><b>Bringing It Home: One Water Commitments to Action</b> | Ballroom CD           |
| 1:30pm            | <b>Adjourn</b>                                                                                              |                       |



**Tuesday** September 13

One Water Delegations Peer Dialogues,  
Site Visits, and Institutes





All activities will take place on the main floor at the Wisconsin Center.

7:00am – 4:00pm

## Registration Open

Ballroom Pre-Function

7:15am – 8:15am

## Networking Breakfast

Ballroom Pre-Function

8:00am – 4:00pm

## One Water Summit Open Space

Hilton Milwaukee City Center—6th and Green

Head outdoors for some fresh air at 6th and Green at the Hilton Milwaukee City Center. **Open to all Summit attendees.**

8:15am – 8:30am

## One Water Delegations: Welcome

Ballroom CD

Welcome by **Mami Hara**, CEO, US Water Alliance, and **Scott Berry**, Director of Policy and Government Affairs, US Water Alliance. **Open to all Summit attendees.**

8:30am – 11:30am

## One Water Delegations Peer Dialogues

The US Water Alliance dedicates the morning of Tuesday, September 13 to a series of strategic peer-to-peer dialogues inspired by our One Water Delegations. These conversations are designed by and for the One Water delegates. **Open to all Summit attendees.**

8:30am – 9:45am

## One Water Delegations: Peer Dialogues, Round One

### Climate Resilience and Equitable Water Systems

Room 102B

Hosted by the Kresge CREWS Delegation

During this Peer Dialogue, attendees will learn about the history, goals, and aspirations of the Kresge Foundation-supported CREWS (Climate Resilient & Equitable Water Systems) Initiative and hear powerful stories and wisdom from practitioners who have been driving their grant-funded work at the intersection of climate, flooding, and equity in communities across the country for more than five years. Come learn from this dynamic community of environmental nonprofit leaders, academics, and community and environmental justice advocates about examples of collaborative governance work happening in partnership between community-based organizations, utilities, and government. Deepen your understanding of the principles and better practices that can help propel such cross-cutting work. Explore and discuss in community what valuable lessons learned from CREWS work and practitioners should help inform and grow the One Water movement to scale.



## Improving State Water Infrastructure Funding and Financing

*Room 102C*

*Hosted by the SRF Advocates Delegation*

Join fellow advocates for a world café-style conversation designed to surface analysis of State Revolving Fund administration and related water infrastructure topics, share learnings, and get to know fellow advocates. Topics may include principal forgiveness and definitions of “disadvantaged communities,” workforce development, lead service line replacement, and more with plenty of room for informal conversation and community building.

## Regional Approaches to One Water

*Room 102D*

*Hosted by the Southern California Regional Delegation*

The Southern California Delegation will be hosting a dialogue focused on Regional Partnerships and Collaboration. In the face of unprecedented water challenges, we truly believe collective action is key in addressing and overcoming governance and institutional barriers. A diverse group of leaders from both the public and private sectors will be framing this discussion. We’re excited to have this important conversation with our fellow delegations to learn and exchange ideas on scaling up data sharing, regional climate readiness strategies, coordinated policies, and creative multi-agency cost-sharing approaches.

## Still Waters Run Deep: Artists, Expression, and Impact

*Room 103B*

*Hosted by the National Arts and Culture Delegation*

We must embrace new forms of knowledge, ideas, and approaches to build effective and equitable One Water solutions and partnerships. By honoring the expertise and processes of artists spanning design, folk arts, visual arts, theater, music, literature, film and media, culinary arts, and dance, as well as storytelling, spiritual rituals, craft traditions, games, and other creative practices, One Water leaders can expand their skills and impact. Participants in this peer to peer dialogue will engage with artists and cultural leaders around experiential insights, creative interventions in our current climate, and the impact of arts partnerships that center artists and communities.

## Connecting Urban and Rural Communities with Natural Infrastructure

*Room 103C*

*Hosted by the Soil and Water Conservation Delegation and the Iowa Delegation*

The management of land and water has been accelerated by agricultural and urban dynamics, and the potential to utilize policy, planning, and partnerships to unite rural and urban landscapes for the betterment of our natural resources and communities is being realized now more than ever. This dialogue will allow for discussion on how we work on a watershed scale to bring together urban and agriculture partners and include all watershed residents to implement a One Water approach in which all water is managed in an integrated, inclusive, and sustainable manner to secure a bright, prosperous future for our children, our communities, and our country.

**9:45am – 10:15am**

**Break**



## One Water Delegations: Peer Dialogues, Round Two

### Distributed Infrastructure and One Water

Room 102B

*Hosted by the Tap into Resilience Delegation*

The Tap into Resilience Peer Exchange will foster discussion about distributed water infrastructure as a key One Water strategy. The Tap into Resilience Delegation invites participants to engage on ideas and bring their questions about:

- The water management and multiple co-benefits of distributed infrastructure, including how localized strategies build resilience to climate change and offer equitable and affordable solutions;
- Distributed infrastructure as a long-term investment that should be financed alongside centralized systems with capital dollars;
- Making the case for distributed strategies to local leaders and policymakers; and
- Opportunities to expand access to equitable, affordable distributed systems in communities that stand to benefit the most from these investments.

WaterNow Alliance and the Tap into Resilience Delegates are hosting this Peer Exchange to accelerate the adoption of distributed strategies as core strategies to transform how communities engage with water and advance the One Water future.

### The Future of Great Lakes Water Infrastructure

Room 102C

*Hosted by the SRF Advocates Delegation*

Join the Alliance for the Great Lakes and Great Lakes Commission staff to workshop the pending document, *Approaches for Improving Great Lakes Water Infrastructure: A Blueprint*. This roadmap for equitable and climate resilient water infrastructure in the Great Lakes region has been created by a Regional Working Group convened by the GLC. Great Lakes Commissioners may consider the resulting blueprint for decision-makers when they convene this October in Erie, Pennsylvania. This effort seeks to advance public health, climate resilience, and equitable community participation in water infrastructure planning and implementation. Lend your expertise to this exciting and timely project!

## Emerging Leader Perspectives on the Challenges of One Water

Room 102D

*Hosted by the Duke University WILD Delegation and the Mentoring Connections Delegation*

The water sector will need to replace nearly three million workers over the next decade, with some areas experiencing staff vacancies of up to 50%. Many utilities are already experiencing significant changes in executive leadership teams and specialized departments. While this “silver tsunami” is putting the sector on edge, a “rising tide” of inspiring young and mid-career professionals is already stepping up. This dialogue will elevate the voices of emerging One Water leaders to discuss their top priorities and challenges the water sector will face as they take on leadership positions, including workforce development, affordability, digital solutions, and diversity, equity, and inclusion. They will also discuss what is needed to shift the water sector’s culture to be more inclusive, equitable, and resilient.

### The Water Equity Network

Room 103C

*Hosted by the Water Equity Network Delegation*

Water is a force for equity and opportunity. Historically marginalized communities face an array of equity challenges: affordability, water quality concerns, flooding, and more. At the same time, water can be an essential part of building thriving, healthy communities for all. As a nationwide community of practice, the Alliance’s Water Equity Network connects leaders from utilities, community organizations, environmental groups, and local government working to advance equitable policies in the water sector on the local, regional, and national levels. Learn from and connect with a broad range of peers during an informal and engaging dialogue about current water equity challenges. This Alliance-led session will include a brief overview of the Water Equity Network followed by deep-dive small group discussions organized around the three pillars of water equity. New and familiar faces are all encouraged to attend.



## From Wastewater to One Water: Investing in the Circular Economy

Room 103B

*Hosted by the International Climate and Water Delegation*

The Ellen McArthur Foundation defines a circular economy as one that “designs out waste and pollution, keeps products and materials in use, and regenerates natural systems.” Many sectors are leveraging this model, putting more money in their pockets and sustainable resources back into society. The water sector has yet to take this leap. Why wait? Wastewater contains water, nutrients, and five times the amount of energy needed to treat it. These are tremendous resources in our current processes just waiting to be put to good use. Leveraging a circular economy in wastewater can displace products society already purchases—swapping synthetic fertilizers for biosolids, transitioning fossil fuel energy to renewable natural gas or electricity produced onsite, and more. These are just the low-hanging fruit. Products from wastewater are better for the environment and locally generated, and revenues can offset the cost of capital upgrades while improving affordability in our communities. Yet current planning and investment processes do not factor in the opportunity to participate in the circular economy when organizations are asked to make critical investments in infrastructure. As a result, many of our treatment trains fall short in fully taking advantage of the great resources entrusted to our care. How can we shift the core business of treating wastewater to an investment in our collective future? How can we take this once-in-a-lifetime federal infrastructure investment and rise to meet market demand? How can we embed investment strategies in capital programs that leverage end use in mind to benefit our environment and communities, as well as produce goods that consumers want?

11:30am – 12:00pm

### Break

12:00pm – 3:00pm

## Institutes

One Water Summit 2022 offers a series of skill-building institutes that are designed to develop practical knowledge and foster dialogue on pressing issues in the water sector. *Space is limited and pre-registration is required. Lunch will be provided.*

### Aligned for Action: Water as Part of the Climate Solution

Room 102B

Every day, we hear more examples of the devastating toll climate change is having on ecosystems and communities. Even when we recognize the critical importance of eliminating emissions and building climate resilience within the water sector, it can be difficult to know where to start or where our actions can have the greatest impact. What we do know is that we can no longer delay or act alone. The scale of this problem requires collaboration and coordination across and beyond our sector. Together with core partners, the US Water Alliance convened over 40 One Water leaders from across the US from September 2021 through June 2022 to reimagine water as a key pathway to address the climate crisis. This “Imagination Team” looked carefully at the data, needs, and opportunities, and identified leverage points for reducing the greenhouse gas emissions of utilities, watersheds, and beyond. The team emerged with a vision and set of recommendations for mobilizing the water sector to take bold and proactive action to ensure a livable and living planet for the long term. This Institute will share and build on the Imagination Team’s insights, deepening our understanding of water’s role in climate mitigation and adaptation and helping us see how we can work across sectors and scales for collective impact. Experts will share how they are setting and pursuing their Net Zero Plus goals. Participants will engage in creative activities to unlock new thinking, overcome barriers, and align around climate action. Participants will leave empowered to act now, with a better sense of how they can contribute to shaping water management strategies and investments for both people and the planet.

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#### Moderators:

- **Alexis Frasz**, Co-Director, Helicon Collaborative
- **Katy Lackey**, Director of Climate Action, US Water Alliance



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**Speakers:**

- **Nureen Faiza Anisha**, Water Resources Engineer, Oregon State University
- **Jason Bregman**, Partner, Singer Studio
- **Al Cho**, Senior Vice President and Chief Strategy and External Affairs Officer, Xylem
- **Sne Desai**, Executive Vice President and Chief Growth & Sustainability Officer, Evoqua Water Technologies LLC
- **Jane Atkinson Gajwani**, Agency Chief Decarbonization Officer, New York City Department of Environmental Protection
- **Erik Meyers**, Vice President, Climate and Water Sustainability, The Conservation Fund
- **Ari Neumann**, Director, Community & Environmental Services, Rural Community Assistance Corporation
- **Cindy Wallis-Lage**, Executive Director, Sustainability and Resilience, Black and Veatch
- **Walt Walker**, Associate / Water Equity Practice Leader, Greeley and Hansen

## **Equity in Green Infrastructure: A Guide to Measuring & Evaluating Progress**

*Room 102C*

*Hosted by the Green Infrastructure Leadership Exchange and Greenprint Partners*

The growth in the use of green infrastructure for stormwater management in the US offers tremendous potential for advancing an equitable future in which one's race, economic status, zip code, and other personal and community identities do not predict one's quality of life. When thoughtfully designed, it not only manages stormwater but can simultaneously reduce residents' exposure to harm (such as polluted water, localized flooding, severe heat, poor air quality, and blight that invites crime and communicates worthlessness) and increase their opportunities to thrive (through visible investments that communicate worth and increased access to naturalized spaces that support health). It is an approach that when developed with community can elevate the power for communities to shape their own future and build their economic vitality. In this session, participants will develop a strong understanding of how GSI influences equity and take an in-depth look at the Equity Guide for GSI Practitioners, developed by the Green Infrastructure Leadership Exchange (the Exchange) in collaboration with Greenprint Partners. At the conclusion of the session, participants will be able to describe how

GSI influences equity and identify what levers practitioners can use to advance equity in their day-to-day practice and interpret the Equity Guide and recognize how to utilize it in their own work to create meaningful change.

## **Water as a Public Good: Balancing Affordable Water Access and Utility Financial Resilience**

*Room 102D*

Universal access to safe, affordable, water and wastewater service is essential to maintaining public health and wellbeing—as the COVID-19 pandemic made clear. It is in our collective national interest that everyone has sustained access to clean water and sanitation. Yet, the reality is that maintaining and operating water systems is incredibly costly, and both people who cannot pay water bills and utilities who cannot cover costs can face severe consequences. The time is right to re-envision how we price and fund water in a way that reflects its value as a public good. Effective tools are emerging to help utilities to reach financial stability alongside more compassionate policies and practices to ensure no residents go without critical water and sanitation services. Participants will hear from water sector leaders about the opportunity for a paradigm shift in affordability, as well as practical insights on strategies they are implementing to support low-income households in the wake of the pandemic.

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**Speakers:**

- **Kelly Caplan**, Division Manager, Customer Engagement & Advocacy, Customer Service, WSSC Water
- **Letitia Carpenter**, Senior Program Manager, US Water Alliance
- **Tony Curtis**, Executive Director, Metropolitan Housing Coalition
- **Oluwole (OJ) McFoy**, General Manager, Buffalo Sewer and Water Authority
- **Zeno Röller**, Consultant, US Water Alliance
- **Emily Simonson**, Director of Strategic Initiatives, US Water Alliance
- **Greg Wukasch**, External Affairs Manager, San Antonio Water System



## One Water Council Meeting

*Room 103B*

Through the One Water Council, the US Water Alliance aims to build, strengthen, and activate a network of innovative leaders who are driving One Water across the country. The One Water Council fosters peer exchange and knowledge building among US Water Alliance members, provides advice and serves as a sounding board on Alliance programming and strategic direction, and produces practical One Water tools and products that are informed by the expertise and innovation of Council members. Through monthly meetings, the Council offers a valuable opportunity to talk candidly with leaders outside the usual sphere of influence and work together to solve today's most difficult water issues. During this annual Council planning and strategy session, we will dive into big trends shaping One Water, impact on individual members' work and joint opportunities for the sector, and guide key work and priorities for the Council and the Alliance over the next year. ***This is a closed session for US Water Alliance One Water Council members only.***

## A Bridge Over Troubled Waters: Artistic Principles for Strengthening Connection and Culture Change

*Room 103C*

We are currently facing the reality that many communities suffer from poor water quality, too much or too little water, and aging water infrastructure that is in urgent need of replacement. Our water systems and management approaches are further stressed by the unprecedented impacts of climate change—unpredictable weather, sea-level rise, flooding, migration, and more. In 2020, the US Water Alliance launched a recurring 18-month One Water Artist-in-Residence (AIR) program as part of a commitment to integrating arts and culture into all aspects of our work. By partnering with artists and using creative interventions, we can accelerate our ability to achieve a sustainable water future for all. To find equitable solutions to water challenges, we must cultivate the necessary conditions that foster collaboration and innovation. Inspired by the Simon and Garfunkel 1970's song, and subsequent Aretha Franklin cover, "Bridge Over Troubled Water," this institute will utilize participatory exercises, dialogue, and reflection to reveal the value of artistic processes as a tool to shift organizational and sector-wide culture, prioritize meaningful engagement, and create space for new possibilities.

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### Speakers:

- **Benny Starr**, Senior Fellow, US Water Alliance
- **sTo Len**, Artist in Residence, NYC Department of Sanitation
- **Runa Ray**, Fashion Designer and Environmentalist



12:00pm – 3:30pm

## Site Visits

One Water Summit 2022 offers a series of site visits that offer an in-depth view into the challenges, opportunities, progress, and partnerships underway in Milwaukee, WI. Site visit partnerships leave from the Milwaukee Center during designated times. *Space is limited and pre-registration is required. Lunch and transportation will be provided. Attendees should meet in the Ballroom Pre-Function of the Wisconsin Center 15 minutes before the scheduled departure time.*

12:00pm – 3:00pm

### Jones Island MMSD Treatment Facility

*Hosted by Milwaukee Metropolitan Sewerage District and Veolia Water Milwaukee*

Tour Wisconsin's largest water reclamation facility that produces a fertilizer cherished by golf course superintendents and master gardeners. Jones Island sits on the shores of Lake Michigan in the City of Milwaukee. The facility is on the National Register of Historic Places and designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. Thousands of people tour Jones Island each year to see one of the greatest inventions for protecting public health and wastewater treatment.

**Speaker: Meredith Wittmann,** Veolia Water Milwaukee, Tour Coordinator & Guide

### Tour of the UW-Milwaukee School of Freshwater Sciences

*Hosted by UWM School of Freshwater Sciences*

The School of Freshwater Sciences at UW-Milwaukee is the first graduate school in the nation dedicated solely to the study of freshwater and the largest academic research institution on the Great Lakes. UWM's freshwater expertise has been key to advancing Milwaukee's reputation as a world water hub. Take a closer look at their state-of-the-art facility and learn how, for more than 50 years, the faculty and scientists have been conducting internationally recognized freshwater research across four essential themes: human and ecosystem health, freshwater system dynamics, freshwater technology, and freshwater policy and economics.

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#### Speakers:

- **Eric Leaf**, Assistant Dean for Advancement, UWM School of Freshwater Sciences
- **Liz Sutton**, Outreach Program Manager, UWM School of Freshwater Sciences

### Workforce Development at the IUPAT Training Facility

*Hosted by IUPAT District Council 7—Finishing Trades Institute*

The International Union of Painters and Allied Trades (IUPAT) will be hosting a walkthrough tour of their training facility in Milwaukee as part of the Finishing Trades Institute Coatings & Glazing Forum. The forum is designed for contractors, developers, engineers, and others to see the IUPAT Finishing Trades Institute (FTI) work on display. IUPAT and FTI are committed to expanding opportunities in our trades, and part of the purpose of the forum is to demonstrate how our career pathway from pre-apprentice to certified journey worker allows opportunities for individual workers and communities alike and will allow us to assist in meeting the needs of our nation's water infrastructure maintenance, climate retrofits, and new construction. To that end, we will be joined by WRTP | Big Step representatives to present a path forward in workforce acceleration in communities throughout Wisconsin.

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#### Speakers:

- **Lindsey Blumer**, President and Chief Executive Officer, WRTP/Big Step
- **Chytania Brown**, President and Chief Executive Officer, Employ Milwaukee
- **Karen Dettmer**, Managing Director for Infrastructure Implementation, EPA Office of Water
- **John Doherty**, SAGP, International Union of Painters and Allied Trades
- **Adam Holmes**, Director of Training, IUPAT District Council 7
- **Amanda Martin**, President, Porta Painting
- **Eric Piotrowski**, Business Development Manager, Global Operations, Association for Materials Protection and Performance
- **Jac Weitzel**



## Flood Control Along the Kinnikinic River

*Hosted by Milwaukee Metropolitan Sewerage District & Sixteenth Street Community Health Center*

Updated rainfall data now shows more than 660 homes and businesses are at risk for flooding in the watershed, up from 60 homes and businesses in a previous floodplain map. It's the most densely populated, urbanized watershed in the State of Wisconsin with little room for storing excess water when heavy rains hit. Miles of concrete-lined riverbeds have claimed lives and become extremely dangerous with flows reaching a rate of 20 feet per second, the equivalent of 400 to 500 pounds of force. More than \$400 million of work is planned to reduce flooding in the watershed and make neighborhoods and homes near the water safer for everyone. The tour includes a couple of sections of the Kinnikinic where work has been completed—the river stripped of concrete lining and returned to a naturalized amenity.

### Speakers:

- **Patrick Elliott**, Senior Project Manager, Milwaukee Metropolitan Sewerage District
- **Kelly Moore Brands**, Sustainability and Environment Project Manager, Sixteenth Street Community Health Centers
- **Christina Taddy**, Senior Public Engagement Specialist, Milwaukee Metropolitan Sewerage District

## Milwaukee's Green Infrastructure

*Hosted by Milwaukee Metropolitan Sewerage District*

There are enough green infrastructure projects completed in the Milwaukee area to capture and store more than 80 million gallons of water each time it rains. Combined, 73 green roofs account for 13 acres of water-absorbing land on top of buildings of all sizes. Hundreds of rain barrels and rain gardens dot the landscape with more and more homeowners reaching out to learn more about the benefits of managing water where it falls. Cities and villages have adopted bioswales, native landscaping, and many other techniques to help reduce water pollution.

### Speakers:

- **Heather Dietzel**, P.E., Sustainability Project Manager, Milwaukee Public Schools
- **Justin Hegarty**, P.E., LEED A.P., Executive Director, Reflo
- **Kyle Heller**, Facilities and IT Manager, 88Nine Radio
- **Chris Schultz**, CPM, Senior Project Manager—Integrated Watershed Management, Milwaukee Metropolitan Sewerage District
- **Andy Kaminski**, P.E., ENV SP, Project Manager—Integrated Watershed Management, Milwaukee Metropolitan Sewerage District
- **Erick Shamberger**, Director, City of Milwaukee Environmental Collaboration Office (ECO)

## Menomonee River Corridor Restoration

*Hosted by Milwaukee Metropolitan Sewerage District*

Fish from Lake Michigan can travel an additional 37 miles upstream on the Menomonee River and its tributaries thanks to the removal of 1,000 feet of steeply-pitched concrete channels. The tour will also highlight hundreds of millions of dollars of flood management projects on the Menomonee, including a 65-acre basin with walking/biking trails around the perimeter. A half-mile-long underground tunnel that's 17 feet in diameter feeds flood water to the basin. Just downstream, a busy park was redesigned to store floodwater until flows in the river subside after heavy rain.

**Speaker: Mark Mittag**, P.E., CFM, MMSD Senior Project Manager



## Milwaukee River and Greenseams

*Hosted by Milwaukee Metropolitan Sewerage District*

Greenseams® permanently protects land that contains “sponge-like” hydric soils, a great asset to have for reducing the risk of future flooding in areas expecting significant growth and development. So far, MMSD has acquired just over 5,000 acres of Greenseams® property, capable of storing 2.4 billion gallons of water. The program only buys land from willing sellers. Properties are restored and in most cases are open to the public for bird watching and passive recreation.

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**Speaker: Kristin Schultheis**, Greenseams® & Working Soils® Program Manager, Milwaukee Metropolitan Sewerage District

4:40pm – 5:00pm

### Transportation to the US Water Prize Ceremony

*N. Vel R. Phillips Ave.*

Transportation service will depart at 4:40pm, 4:50pm, and 5:00pm to Discovery World.

5:00pm – 7:00pm

## US Water Prize Ceremony and Celebratory Reception at Discovery World

*500 N Harbor Dr, Milwaukee, WI*

Awarded on an annual basis, the US Water Prize celebrates outstanding achievements in the advancement of sustainable, integrated, and inclusive solutions to our nation’s water challenges. It is the preeminent national recognition program for exemplary efforts to secure a One Water future for all. *Transportation will be provided.*

7:10pm – 7:30pm

### Transportation to the Wisconsin Center

Transportation service will depart at 7:10pm, 7:20pm, and 7:30pm to the Wisconsin Center.



# Wednesday September 14

## Plenaries and Concurrent Sessions





All activities will take place on the main floor at the Wisconsin Center.

7:30am – 8:45am

## Continental Breakfast and Networking

Ballroom Pre-Function

7:30am – 8:30am

## Value of Water (VOW) Member Appreciation Breakfast

Room 103D

*This breakfast is open only to VOW members.*

Because of you, our Value of Water members, the VOW campaign has inspired the nation and built public support and political will for investment in an equitable and sustainable water future for all. Join your fellow VOW members in a moment of celebration and discuss what the future holds for this important campaign.

7:30am – 4:00pm

## Registration Open

Ballroom Pre-Function

8:00am – 4:00pm

## One Water Summit Open Space

Hilton Milwaukee City Center—6th and Green

Head outdoors for some fresh air at 6th and Green at the Hilton Milwaukee City Center. **Open to all Summit attendees.**

8:45am – 10:15am

## Opening Plenary

### Welcome and Opening Remarks Ebbs and Flows: Milwaukee's One Water Journey

Ballroom CD

#### Welcome and Opening Remarks

- **Mayor Cavalier Johnson**, City of Milwaukee
- **Oluwole A. (OJ) McFoy**, General Manager, Buffalo Sewer Authority; Board Chair, US Water Alliance
- **Mami Hara**, CEO, US Water Alliance

#### Ebbs and Flows: Milwaukee's Water Story

The name "Milwaukee" is a settler variation of the Anishinaabemowin word *minowaki*, which means "good land." The city of Milwaukee sits at the confluence of the Milwaukee, Menomonee, and Kinnikinic rivers and along the shores of Lake Michigan. Water is foundational to the city, and it is at the root of the lives of the many people who have lived here. But, as with many US cities, Milwaukee's history is also rooted in environmental and economic injustice. Milwaukee is one of the most segregated cities in the country—its historically marginalized communities disproportionately bear the weight of environmental challenges associated with water quality, climate change, flooding, aging infrastructure, and combined sewer overflows. Our opening plenary will explore how water and equity shapes and defines our host city. Milwaukee's water story brings a multitude of different perspectives and stories of water access, environmental justice, climate change, infrastructure, innovation, environmental protection, economic development, and more. Hear from Milwaukee leaders on water's ebbs and flows in the region and learn lessons from Milwaukee's water journey to take back to your community.

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**Moderator: Elizabeth Cisar**, Senior Advisor, Office of Water, US Environmental Protection Agency

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#### Speakers:

- **Shalina S. Ali**, Co-Executive Director, TRUE Skool
- **Mark Denning**, Educator, Consultant, and Native American Water Protector
- **Cavalier Johnson**, Mayor, City of Milwaukee
- **Kevin Shafer**, Executive Director, Milwaukee Metropolitan Sewerage District
- **Kirsten Shead**, Co-Executive Director, Milwaukee Water Commons



10:15am – 10:30am

## Break

10:30am – 12:00pm

## Series 1: Concurrent Sessions

### Utility Strategies to Advance Racial Equity

*Room 102B*

With the growing call for racial justice and equity across the country, many water organizations are committing to advancing racial equity in the sector. This includes taking internal action, such as recruiting a diverse workforce and establishing a culture of inclusivity, to ensure the retention of that workforce. Further, recognizing that Black, Indigenous, communities of color, and low-income communities are often disproportionately impacted by water equity issues affecting water access, affordability, quality, and flooding, water organizations are building critically important and authentic relationships with community partners. Hear from key water sector players on how they are working both internally and in relationship with external partners to advance racial equity practices and outcomes and learn about the US Water Alliance's new utility-focused Racial Equity Toolkit.

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**Moderator: Sheryl Ude**, Senior Advisor to the COO, DC Water

#### Speakers:

- **Lorenzo Freeman**, Watershed Manager, Department of Watershed Management, Atlanta Department of Watershed Management
- **Ronnie Versher**, Director of Community Benefits, San Francisco Public Utilities Commission
- **Kellie Watson**, Equity and Compliance Officer, Louisville Metropolitan Sewer District

### Alternatives for Pricing Water: Learnings from Two Cities

*Room 102C*

As part of the Recovering Stronger Initiative and in partnership with Stantec, the US Water Alliance explored innovative pricing models that make residential water bills more affordable and equitable while preserving utility revenue. Using real data from Milwaukee and Cincinnati, the team modeled a local funding scheme that allows for a certain amount of costs and an associated essential level

of water service for all residents to be paid for by property taxes or another similar property-based cost recovery mechanism. While the Alliance and its partners are still early in this work, significant findings are inspiring these two cities to make real change. Hear from representatives from both cities and rate structure experts to learn how these findings might inform how we view, value, and manage our nation's water systems.

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**Moderator: Zeno Röller**, Consultant, US Water Alliance

#### Speakers:

- **Verna Arnette**, Deputy Director, Greater Cincinnati Water Works
- **Andy Burnham**, Vice President, Water Management, Stantec
- **Jane Islo**, Water Business Operations Manager, Milwaukee Water Works

### Understanding and Measuring One Water

*Room 102D*

One Water is an ever-expanding and changing movement. As more water leaders seek to break down silos and manage water in an inclusive, sustainable, and equitable manner, understanding the trajectory of the One Water movement and the growing embodiment of One Water values is becoming paramount. In partnership with the One Water Council, the US Water Alliance started a State of the One Water Field initiative to define baseline information and metrics to track the growth of the One Water movement. In addition, the Water Research Foundation has an ongoing project to create a rating system with key metrics and benchmarks that cities will use to assess their progress toward One Water adoption. Learn about these efforts and understand the synergies between them that can strengthen your own One Water journey.

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**Moderator: John Take**, Executive Vice President, Chief Growth & Innovation Officer, Stantec

#### Speakers:

- **Mazdak Arabi**, Borland Endowed Professor of Water Resources, Colorado State University
- **Joseph Danyluk**, OneWater Director, Jacobs
- **Jennifer Walker**, Director, Texas Coast and Water Program, National Wildlife Federation
- **Inge Wiersema**, Vice President, National One Water Director & Water Resources Practice Lead, Carollo Engineers



## Arts and Culture in Advancing One Water

Room 103B

Working with artists can unlock new approaches to achieving One Water ambitions and also spark innovation across water management. In the Alliance's Arts Accelerator, four utilities engaged artists to explore the power and value of arts, culture, and the creative process for problem-solving, relationship-building, and community engagement. Hear directly from the artists and utilities about how they formed their partnerships, what water issues they chose to address, and key lessons learned. Utilities will share their thoughts about the role of arts and culture in transforming approaches to water management, including helping them build deeper, more authentic relationships with the communities they serve.

**Moderator: Alexis Frasz**, Co-Director, Helicon Collaborative

### Speakers:

- **Catherine Harris**, Pollution Prevention Specialist, Madison Metropolitan Sewerage District
- **Jane Hurley**, H2Outreach Specialist, Central Arkansas Water
- **Tanya Hollifield**, Artist in Residence, Central Arkansas Water
- **Maura Jarvis**, Assistant Manager, Public Engagement Team, Philadelphia Water Department
- **Alex! Jimenez**, Artist in Residence, Tuscon Water
- **James MacAdam**, Administrator, Tuscon Water
- **nipinet landsem**, Artist in Residence, Madison Metropolitan Sewerage District
- **Trapeta Mayson**, Poet, Teaching Artist, Community Organizer

## Climate and Community Resilience: Emerging Approaches that Reach for Justice

Room 103C

Increasingly, water leaders are embracing strategies to address the climate crisis: from innovations in water reuse and decentralized systems, to scaling urban green infrastructure and nature-based solutions, to enhanced sea level rise planning and adaptation. How can these models also address underlying issues of racial, economic, and social inequities in our communities? Speakers will explore how One Water strategies can ensure thriving communities by embedding social justice into water management programs and decisions.

**Moderator: Ayanna McCloud**, Executive Director, Bayou City Waterkeeper]

### Speakers:

- **Ann Grodnik-Nagle**, Climate Policy Advisor, Seattle Public Utilities
- **Marccus Hendricks**, Associate Professor of Urban Studies and Planning, Stormwater Infrastructure Resilience and Justice Lab, University of Maryland
- **Cheyenne Holliday**, Water Justice Coordinator, Verde
- **Jonathan Seefeldt**, Senior Communications Manager, National Wildlife Federation

12:00pm – 1:15pm

### Special Video Address:

#### Vice President of the United States Kamala Harris

Vice President of the United States Kamala Harris addresses the One Water Summit attendees with an important and inspiring message. This special video appearance delivers a critical call to action to ensure all Americans have reliable, long-term access to clean water and conveys some of the Biden Administration's priorities over the coming decade.

## Networking Luncheon Meeting Water's Moment: A Fireside Chat with Mitch Landrieu

Ballroom CD

Mitch Landrieu serves as White House Senior Advisor and Infrastructure Implementation Coordinator. As a former mayor of the iconic water city of New Orleans, he knows first-hand the challenges and opportunities of investing in water infrastructure. US Water Alliance CEO Mami Hara will lead an informative and inspiring "fireside chat" with Mr. Landrieu on the historic federal investment in water infrastructure via the Bipartisan Infrastructure Law, the administration's goals for equitable infrastructure, and how communities can position themselves to be competitive for investment and make the most of available dollars in the coming years.

**Moderator: Mami Hara**, CEO, US Water Alliance

### Speaker:

- **Mitch Landrieu**, Senior Advisor and Infrastructure Implementation Coordinator, White House



1:15pm – 1:30pm

## Break

1:30pm – 3:00pm

## Series 2: Concurrent Sessions

### Successful Customer Service and Engagement

*Room 102B*

Engaged, responsive, and compassionate customer service is a powerful formula for utilities to best serve their communities. While there is no universal approach for effective engagement, many successful strategies have emerged from local programs that share common elements. This session will explore those elements and how they were implemented. In addition to sharing their local stories, speakers will share critical insights, innovations, and strategies that allow for success, meeting community needs, increasing participation in existing programs, and restoring trust.

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**Moderator: Juliet Ellis**, Head of Utilities, Promise Network Inc.

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#### Speakers:

- **Kelly Caplan**, Division Manager, Customer Engagement & Advocacy WSSC
- **Peggy Conerly**, Affordability Specialist, San Antonio Water System
- **Deborah Martinez**, CEO, Mission of Love Charities
- **Shannon Tivitt**, Executive Director, Louisville One Water Partnership

### Centering Community Experience and Expertise

*Room 102C*

From water shutoffs and urban flooding to contamination and drought, the US Water Alliance believes that the people closest to the problem (most often Black, Indigenous, communities of color, and low-income communities) are also closest to the solutions. However, systemic racism and the flawed design of our government and power structures often prevent those closest to water challenges from participating in and influencing decision-making.

The work of the Water Equity Network and other cross-sector partnerships has demonstrated the immense impact that intentionally centering community experience and expertise can have in solving complex water challenges. This session features community leaders and culture bearers who are transforming business-as-usual utility engagement methods into practices that value community expertise as vital to success. This session will explore how to center and lift community voices, as well as how to meaningfully listen. Opportunities will be provided for the audience to share their own expertise.

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**Moderator: Nana Fofie**, Cultural Organizer

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#### Speakers:

- **Ben Hirsch**, Co-Director, West Street Recovery
- **Monica Lewis Patrick**, CEO & President, We the People of Detroit
- **Alice Liu**, Co-Director, West Street Recovery
- **Ben Broadway**, West Street Recovery
- **Frederick Tutman**, CEO, Patuxent Riverkeeper

### Community-Centered Capital Financing, Structuring, and Delivery

*Room 102D*

A powerful movement in program and project development seeks to achieve multiple goals historically perceived to be prohibitively expensive to attain in concert: responsiveness to community priorities such as community wealth-building, sustainable delivery and maintenance, and effectively achieving and lowering the cost of environmental protection. Key models and approaches, such as community based public-private partnerships and cooperatives that have emerged over the past decade, will be explored in this session.

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**Moderator: Dan Kennedy**, Senior Director, Utility & Transportation Contractors Association of New Jersey

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#### Speakers:

- **Michael Burke**, President, Quest2 Consulting
- **Dominique Lueckenhoff**, Senior Fellow, US Water Alliance
- **David St. Pierre**, Senior Advisor, EJ Water Cooperative, Inc.



## Culture Change Insights to Transform the Water Sector

Room 103B

To achieve One Water, the culture of the water sector must transform to be inclusive, environmentally and culturally competent, and co-create solutions in partnership with community. This session will explore successful cross-sector culture change strategies from GSI/distributed infrastructure and tribal and community partners. Participants will learn how these strategies can be applied to the water sector. Speakers will discuss how they have worked to move the culture in the water sector.

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**Moderator: Jamil Bey**, President/CEO, UrbanKind Institute

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### Speakers:

- **Paula Connolly**, Director, Green Infrastructure Leadership Exchange
- **César A. García**, Co-Founder/Co-Director, Lake City Collective
- **Martye Griffin**, Director of Ecosystem Services, Madison Metropolitan Sewerage District

## Governance, Policy, and One Water

Room 103C

When working to achieve One Water, political and governance barriers can be some of the most difficult to overcome. While it is true that it often takes a combination of the right people at the right time with the right methods, what is emerging from the work of our speakers is a demonstration that barrier removal can be achieved as well as scaled. Speakers will share their approaches, lessons learned, and strategies that will help define your approach to overcoming political and governance barriers.

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**Moderator: Albert (Al) Cho**, SVP, Chief Strategy & External Affairs Officer, Xylem

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### Speakers:

- **Emily Barrett**, Environment & Resilience Program Manager, Triangle J Council of Governments
- **Sarah Buck**, Chief Programs Officer, Rural Community Assistance Partnership
- **Adel Hagekhalil**, General Manager, Metropolitan Water District of Southern California
- **Karyn Riley**, Director, Intergovernmental Relations, WSSC Water

3:00pm – 3:15pm

## Break

3:15pm – 4:45pm

## Series 3: Concurrent Sessions

### Strengthening the Labor/Water Partnership

Room 102B

The recently passed Bipartisan Infrastructure Law included \$15 billion in new set-aside funds for lead service line remediation. While this on its own does not solve the lead crisis in this country, it will drive significant water sector action for years. Lead service line replacement is a complicated task and often requires extensive training and certifications. Building the workforce that is needed to meet this moment requires a significant investment of time and resources. For many places, this is a significant opportunity to deepen partnerships with area labor organizations. Hear from labor organization leaders and partners about their strategies for training and workforce development around meeting the lead service line challenge.

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**Moderator: Zach Schafer**, Senior Advisor to the Assistant Administrator, Office of Water, US Environmental Protection Agency

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### Speakers:

- **Steve Breitlow**, Business Manager, United Alliance of Plumbers and Pipefitters Local 75
- **Richard Diaz**, Midwest Regional Field Organizer, BlueGreen Alliance
- **Patrick Pauly**, P.E., Superintendent, Milwaukee Water Works
- **John Swan III**, Secretary Treasurer/Business Representative, Laborers International Union of North America Local 113



## Extended Producer Responsibility for PFAS

*Room 102C*

Contamination of our nation's water by chemicals like PFAS is largely due to the unregulated actions of industry far removed from the water sector. When contamination occurs, families, community members, and water and wastewater utilities are on the front lines of community frustration and end up footing the bill for the infrastructure necessary to respond to the contamination. This workshop will explore what we can learn from producer responsibility efforts in states and from other issue areas (such as plastic waste) and how those learnings can be applied to the water sector. Hear from impacted community members, policymakers, advocates, and utility professionals about ideas and strategies that hold upstream polluters responsible for the downstream impacts on communities and costs to families and utilities.

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**Moderator: Michael Mucha**, Chief Engineer & Director, Madison Metropolitan Sewerage District

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### Speakers:

- **Huda Alkaff**, Founder & Director, Wisconsin Green Muslims
- **Erica Brown**, Chief Strategy and Sustainability Officer, Association of Metropolitan Water Agencies
- **Dune Ives**, Director of Brand and Communications, US Water Alliance
- **Gary Krueger**, Supervisor, Minnesota Pollution Control Agency

## One Water Solutions for Water Supply and Drought

*Room 102D*

Immense areas of our country are facing water scarcity, bringing significant challenges to communities across the United States from East to West and throughout tribal nations. Water supply challenges and historic droughts are becoming the "new normal." The One Water movement can face these challenges head-on using innovative, equitable, and integrated outcomes-based solutions. Watershed planners, utilities, community leaders, and private sector partners all have roles to play in equitably addressing tradeoffs and implementing sustainable strategies. This session will explore the latest drought challenges facing basins across the United States, as well as forward-looking water supply planning to enhance water and watershed resilience.

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**Moderator: Vijay Sundaram**, Global One Water Practice Leader, AECOM

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### Speakers:

- **Marisa Flores-Gonzales**, Program Manager III, Water Resources and Supply, Austin Water
- **David Johnson**, Deputy General Manager, Operations, Southern Nevada Water Authority
- **Cynthia Koehler**, Executive Director, WaterNow Alliance
- **John Kmiec**, Director, Tucson Water

## Centering Water Stewards

*Room 103B*

Great water stewards have managed our nation's waters long before and alongside the development of contemporary utilities and their practices. One Water encompasses Indigenous and local water knowledge and leadership—understanding place, addressing past harm, and co-developing strategies for moving forward is foundational to advancing sustainable One Water practices. Transformational place-based water infrastructure projects center local community partners at every stage of the project—from research and planning to design to ongoing operations and maintenance. This panel highlights model partnerships that illuminate the necessity and benefits of collaboration and knowledge sharing among water stewards, community advocates, and culture bearers.

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**Moderator: Shanai Matteson**, Artist, Cultural Organizer, Honor the Earth

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### Speakers:

- **Rev. Houston Cypress**, Artist and Co-Founder, Love The Everglades Movement, Inc.
- **Carrie Jennings**, Research and Policy Director, The Freshwater Society
- **Paulina López**, Executive Director, Duwamish River Community Coalition
- **Emma Robinson**, Executive Director of the Navajo Water Project, DigDeep



## Practical Solutions to Closing the Water and Sanitation Access Gap

*Room 103C*

In 2019, the US Water Alliance partnered with DigDeep and Michigan State University to conduct extensive field research on the water access challenges facing communities throughout the United States. This work revealed that two million people currently lack access to drinking water and indoor plumbing, and that factors such as race and historic disinvestment are primary indicators of who will experience this reality. The COVID-19 pandemic exacerbated existing disparities and showed that low-income and communities of color that lack access to critical resources are affected much more drastically during a public health crisis. Water equity champions across the country have developed practical, cross-sector solutions to closing this access gap. This session will feature policy leaders, frontline community representatives, and local water professionals working to implement innovative strategies for ensuring universal access to water and indoor plumbing services.

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### Moderator:

**Yasmin Zaerpoor**, Director of Water Equity and Climate Resilience, PolicyLink

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### Speakers:

- **George McGraw**, Founder/CEO, DigDeep
- **Karen Dettmer**, Managing Director for Infrastructure Implementation, EPA Office of Water
- **Susana De Anda**, Executive Director & Co-Founder, Community Water Center
- **Denis Qualls**, Program Manager, Dallas Water Utilities

4:45pm – 5:00pm

## Break

5:00pm – 6:30pm

## Networking Reception at the Wisconsin Center

*Ballroom Pre-Function*



**Thursday** September 15

**Plenaries and Concurrent Sessions**





All activities will take place on the main floor at the Wisconsin Center.

7:30am – 9:30am

## Registration Open

Ballroom Pre-Function

8:00am – 9:00am

## Continental Breakfast and Networking

Ballroom Pre-Function

9:00am – 10:15am

## Morning Plenary Laboratories of Innovation: One Water in the States

Ballroom CD

State leadership is the foundation of achieving One Water breakthroughs. Leveraging historic federal mandates and funding, much of the local implementation is supported at the state level through policy change, funding formulas, regional infrastructure projects, cross-agency collaboration, and more. Hear from exceptional state leaders about how they're moving One Water agendas forward in their own states as well as in the regions where they govern. Gather inspiration and bold ideas for policy and partnerships that can move One Water from a concept to a reality in your state.

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**Moderator: George Hawkins**, Founder & President, Moonshot Missions

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### Speakers:

- **Preston Cole**, Secretary, Wisconsin Department of Natural Resources
- **Shawn LaTourette**, Commissioner, New Jersey Department of Environmental Protection
- **Katrina Kessler**, Commissioner, Minnesota Pollution Control Agency

10:15am – 10:30am

## Break

10:30am – 12:00pm

## Series 4: Concurrent Sessions

### Attracting and Retaining the New Water Workforce

Room 102B

There is a tremendous opportunity in the water sector to meet the sector's workforce needs while also ensuring the growing water workforce reflects the diversity of the communities it serves. Speakers will share their successful approaches to recruiting and retaining the new water workforce, as well as emerging thinking on multi-agency, cross-sector workforce strategy efforts.

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**Moderator: Meishka Mitchell**, President & CEO, Emerald Cities Collaborative

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### Speakers:

- **Korey Gray**, Vice President, Contract Compliance and Business Development, DC Water
- **Dr. Shannah Tharp Gilliam**, Deputy Director, Aging Services, Allegheny County Dept of Human Services
- **August Ball**, CEO/Founder, Cream City Conservation
- **Chris Koch**, CEO, Civic Method



## Transforming our Infrastructure Paradigm

Room 102C

While much of the current focus of the Infrastructure Investment and Jobs Act (IIJA) is on how to quickly and effectively push out the massive infusion of funding through existing mechanisms, ensuring the best use of these funds requires a deeper look. Funds for water, roads, transit, housing, and more are flowing to communities across the country. We need to be taking a whole-of-government approach that thinks about infrastructure holistically across types. We must also ensure every dollar of this historic investment makes the most inter-generational impact by delivering critically important environmental impact and equity goals. Session experts will discuss water's role in this change and what the water sector can learn from working across infrastructure categories to transform the water sector's infrastructure investment and implementation paradigm in a way that centers equity, climate action, and economic opportunity for all communities.

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**Moderator: Cindy Wallis-Lage**, Executive Director, Sustainability and Resilience, Black & Veatch

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### Speakers:

- **Carolyn Berndt**, Legislative Director for Sustainability, National League of Cities
- **Emily Feenstra**, Chief Policy and External Affairs Officer, American Society of Civil Engineers
- **Ifetayo Venner**, Senior Vice President, Arcadis

## Anti-Displacement and Social Infrastructure Development

Room 102D

With new IIJA funding flowing to “disadvantaged” and “underserved” communities, how do we ensure that there are strategies in place to ensure these funds do not perpetuate, or even accelerate, the gentrification and displacement of people and cultures? In this session, participants will learn how policy interventions, investment, culturally competent practices, and cross-sector collaboration can support more equitable infrastructure development that mitigates the unintended negative economic and cultural impacts that large-scale investment has historically had on Black, Indigenous, communities of color, and low-income communities. Topics to cover include community ownership, capital absorption, anti-displacement policies, and inclusive decision-making.

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**Moderator: Zeno Röllner**, Consultant, US Water Alliance

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### Speakers:

- **Daniel Wiley**, Managing Director, Ironbound Community Corporation
- **Omar Carrillo Tinajero**, Director, Center for Community Investment
- **Julie Owens**, Watershed Manager, Atlanta Department of Watershed Management

## The Critical Role of Soil and Watersheds in Water Resource Management

Room 103B

While tremendous benefits of nature-based solutions to watershed health exist, the barriers to implementation can be immense. This session will explore the benefits of soil health, intact forests, wetlands, and agriculture-utility partnerships, key success factors, and challenges of rural and urban conservation. Attendees will leave with the inspiration, knowledge, and tools to return home and partner, fund, and scale up long-term nature-based conservation in their communities' watersheds.

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**Moderator: Clare Lindahl**, CEO, Soil and Water Conservation Society

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### Speakers:

- **Ethan Brown**, InfrastructureNext Partner, Willamette Partnership
- **Susan Kozak**, Division Director of Soil Conservation and Water Quality, Iowa Department of Agriculture and Land Stewardship
- **Denise Savageau**, Board Member, National Association of Conservation Districts



## Creatively Accessing Capital in a post-BIL World

*Room 103C*

A central question of the recently passed Bipartisan Infrastructure Law (BIL), as well as other infrastructure funding sources, is getting investment to places that need it most. Opportunities abound to both work within our existing systems of water finance, as well as imagine alternatives and the removal of policy and structural barriers. In this session, hear from leading experts in infrastructure funding and finance about their creative initiatives around access to capital and improving access in areas of highest need and other communities around the country.

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**Moderator: Arthine Cossey van Duyne**, CEO & Founding Partner, WaterFunder, LLC

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### Speakers:

- **Sanjiv Sinha**, Senior Vice President, Environmental Consulting and Technology
- **Erin Riggs**, Executive Director, Environmental Finance Center at UNC-Chapel Hill
- **Eric Letsinger**, CEO, Quantified Ventures
- **Wendi Wilkes**, Senior Advisor, Office of Water, US Environmental Protection Agency

12:00pm – 1:30pm

## Closing Plenary and Luncheon Celebration

### Bringing It Home: One Water Commitments to Action

*Ballroom CD*

Let's take the next step together by assembling key learnings from the past two days and turning them into action in our own communities. During our closing plenary, we will focus on how to best work with our colleagues, neighbors, and diverse partners to craft America's water future. Our day will close with both celebration and new beginnings as our One Water delegations share past accomplishments and make inspiring commitments to action for the year to come. Come to learn, collaborate, and support each other!

1:30pm

## Adjourn



# Delegations





## **People. Partnerships. Progress.**

Collaboration—it's what drives the One Water movement and everything that we do at the US Water Alliance. The Board and staff of the US Water Alliance recognize Delegations as the heart of the One Water movement. We are thrilled to welcome 41 One Water Delegations to One Water Summit. It is an impressive group of dedicated leaders representing diverse regions and constituencies from across the country. We thank our many partners who helped form these delegations.

Delegates are champions for an equitable, sustainable, and inclusive water future and are dedicated to sharing knowledge, building relationships, and bringing the learnings from One Water Summit 2022 back to their home regions or communities of practice. We look forward to working with you all in the months and years to come.

## **One Water, One Future.**

# **2022 One Water Delegations**

## **American Rivers Delegation**

American Rivers' mission is to protect wild rivers, restore damaged rivers, and conserve clean water for people and nature. We couldn't accomplish our mission without acknowledging the massive impact that cities and the built environment have had in changing the hydrology of our rivers and streams. Water withdrawals, stormwater discharges, and wastewater treatment all change the way our rivers function, impacting not only the natural environment, but also the very cities that depend on this water. The American Rivers delegation is committed to bringing together different stakeholders with a vested interest in water—from the large utility to the small community group—to identify common goals, overlooked efficiencies, and practical solutions to water challenges. Our hope is that by actively working across a broad spectrum of interests that we can work together to make the needed policy changes and solve the funding challenges needed to create both healthy communities and healthy cities.

## **Climate Resilient and Equitable Water Systems (CREWS) Delegation**

The Climate Resilient and Equitable Water Systems (CREWS) Delegation is convened by the US Water Alliance and The Kresge Foundation's Environment Program. The Delegation is composed of environmental non-profits, academics, and community and environmental justice advocates around the nation advancing equitable solutions to address climate-related water impacts on low-income and communities of color. Climate change is placing significant pressure on water management systems and decision-making processes, with a strong emphasis on urban flooding. Low-income, communities of color, and other climate-vulnerable populations feel the compounding impacts of climate change first and more frequently. Yet, they are often left out of the development and implementation of solutions. Local climate resilience planning that supports a One Water approach must include an eye toward water equity and involve communities throughout the decision-making process and resilience project implementation. The CREWS Delegation is seeking to scale efforts and support a national network of learning and practice that amplifies marginalized voices, integrates climate data and lived experience into planning, and strengthens climate-vulnerable communities from a health, wealth, and equity standpoint. We are looking to highlight and share powerful examples of community-government collaboration on strategies and



solutions at the nexus of climate, flooding, and equity, and to learn of other successful strategies for equitable resilience planning, particularly in response to climate-related flood and storm impacts.

### **The Conservation Fund Delegation**

As a national nonprofit working on the integration of environmental and economic outcomes through land and water conservation, partnerships, and leadership training, The Conservation Fund is focused on implementing One Water Solutions in all communities, urban and rural, and across watersheds. Natural green infrastructure provides climate, water quality, economic, and social benefits, especially in historically underserved communities. Advancing green infrastructure is at the center of the Fund's work. Equally important is empowering individuals to become champions for change. The Fund's 2022 One Water Delegation proudly includes community leaders and other partners from Atlanta and other cities to share their stories and ideas on how to improve water equity, advance stewardship, and raise the quality of life on individual and community scales.

### **Duke University WILD Delegation**

The Duke University Water Innovation Leadership Development (WILD) Delegation brings together drinking water, clean water, and stormwater utility leaders from across the United States who participated together in a water leadership curriculum developed by Duke University's Nicholas School of the Environment. While the delegates come from diverse geographies across 11 states, they are driven by shared leadership challenges including improving water equity and affordability; building a sustainable and representative water workforce; becoming more resilient to the impacts of climate change; and developing solutions to aging water infrastructure, revenue shortfalls, and evolving regulatory frameworks. The delegates represent small, medium, and large water utilities, serve in a variety of leadership and functional roles, and contribute to an assortment of national, state, and local water committees and professional organizations for the betterment of our shared water resources. The delegation comes to the Summit with a desire to connect with other One Water stakeholders and exchange innovative, equitable solutions to all aspects of water stewardship and leadership including community relations and trust-building; workforce development; business and financial planning; customer service; operations and maintenance; engineering; regulatory compliance; and more. As a collective of rising utility leaders, the delegation is committed to engaging the next generation of water professionals and growing a circular economy of water nationwide.

### **Environmental Justice Coordinating Committee Delegation**

Created by Public Policy Project, Environmental Justice Coordinating Council (EJCC) is an entirely black and brown leadership base of environmental and social justice agents of change, working cooperatively to understand and address the environmental justice overburden in their community. The vision of EJCC is to eradicate environmental and economic injustices in Minnesota and beyond. EJCC visualizes, creates, and implements ecological, economic, and strategic investments to end environmental racism. EJCC believes "all issues are environmental issues, and all environmental issues are ours." EJCC participants are volunteers who serve a term of one year, receive a stipend for their time, and are reimbursed for all expenses. EJCC participants receive intense training and education on various environmental issues impacting them and their community. EJCC applies what they learn to educate their community and work to correct environmental injustices in black and brown communities. With EJCC cohorts in Minneapolis and St. Paul, Public Policy Project will develop EJCCs in environmental justice communities across the state and throughout the US. The EJCC Delegation includes EJCC participants and partner organizations—Environmental Initiative and Minnesota Environmental Partnership.

### **Environmental Protection Agency Office of Water Delegation**

EPA's Office of Water (OW) works to ensure that drinking water is safe and that our nation's waters are protected to support healthy communities, vibrant ecosystems, agriculture activities, and economic opportunities across the nation. OW plays a key role in implementing the Clean Water Act and Safe Drinking Water Act, investing in America's water infrastructure, and conducting research to advance EPA's mission to protect human health and the environment. Under the Biden-Harris Administration, EPA is working with its partners to invest more than \$50 billion—the largest investment in water infrastructure in the nation's history. The One Water Summit delegation represents leadership and dynamic staff that are playing key roles in implementing BIL, from removing lead service lines to addressing emerging contaminants, lifting climate solutions, creating good jobs, and ensuring disadvantaged communities have equitable access to federal resources and the technical assistance needed to apply for them.



### **Great Lakes Groundwater Governance Delegation**

The Great Lakes Groundwater Governance Delegation includes people working on groundwater in a state, tribal, nonprofit, or legal capacity from the six Great Lakes states in EPA Region 5 (Minnesota to Ohio). They were interviewed during a Joyce Foundation-funded project by a Freshwater-led team regarding the status of groundwater regulation in their jurisdiction; the technical knowledge production informing regulations; the degree of coordination across units of government, and challenges or needs. They are convening here to review the draft report that emerged from their interviews, document research, and shape the next steps for our shared groundwater future.

### **Green Bay/Lower Fox River Regional Delegation**

The Delegation from the Lower Fox River/Green Bay region is comprised of a diverse group representing a tribal nation, county land conservation, municipal wastewater utilities, and multiple nonprofit organizations. Collectively, this group is focused on improving soil health, water quality, habitat, and enhancing the economic value of the region. Green Bay is the largest embayment of Lake Michigan, a Laurentian Great Lake. Collectively, the Laurentian Great Lakes represent 20% of the world's remaining surface freshwater. As the world's largest freshwater estuary, Green Bay captures nutrients and sediment from the surrounding watershed. Excess nutrients can fuel the growth of cyanobacterial harmful algal blooms, which can be detrimental to recreation, health, and safety. The Lower Fox River/Green Bay region is home to nearly half a million people in four counties and most of the Oneida Nation. It is impacted by urban development, industry, and agriculture. The Lower Fox River and Green Bay are listed as impaired waterways, designated an Area of Concern by the EPA and the International Joint Commission, and have a state and federally recognized total maximum daily load (TMDL). This Delegation is a subset of practitioners that are collectively working on watershed recovery and revitalization in the area, looking for long-term sustainable solutions under a changing climate. From this Summit, we are seeking innovative and collaborative examples for our delegates to return to Northeast Wisconsin and put into practice.

### **Green Infrastructure Leadership Exchange Delegation**

The Green Infrastructure Leadership Exchange ("the Exchange") is a highly connected, member-driven peer learning network whose mission is to activate local governments and water agencies in the US and Canada to equitably implement GSI. Our network focuses on three areas: 1) creating new tools, resources and innovations that support equitable implementation of green stormwater infrastructure, 2) building the leadership skills of current and future public water sector leaders, and 3) making the case for green stormwater infrastructure, supportive policies, and funding. Our Delegation is attending the Summit in the spirit of shared learning and collaboration. We recognize the opportunity for GSI to advance shared goals, cut across sectors and siloes, and center One Water strategies for making positive, systemic change. We are excited to explore the synergies GSI can foster and support as part of the One Water movement.

### **Hawaii Freshwater Initiative Delegation**

Hawaii sent their first delegation to the One Water Summit in 2017 with a focus on engaging elected officials in the water sector. In 2018, another Hawaii delegation was sent to the One Water Summit with a focus on digging into the State and County partnerships that were needed to move the needle on expanding water reuse. This year we are excited to be back again, in person, with leaders from water utilities, wastewater utilities, stormwater facilities maintenance, the Department of Health, Office of Climate Change Sustainability and Resiliency, and our Fresh Water Council chair. Many of the delegates are part of the One Water Honolulu Panel, which is one of the first to pass a city ordinance formalizing the commitments of One Water for the City & County of Honolulu. Our focal areas this year are accelerating the water sector's access to federal funding and exploring alternative funding pathways, continuing to pursue solutions to reach our water reuse goal of 30 million gallons per day of reuse by 2030, making connections between water and equity, and finally, knowledge exchange about our One Water Honolulu to build out One Water futures for our city and beyond. Our delegation is excited this year to learn from other municipalities, connect to national programs and water solutions, provide professional development and recognition for Hawaii's leaders, and continue relationship-building with new and old partners.



### **Iowa Delegation**

Across Iowa, there are many examples of the One Water ethos: water management that is innovative, inclusive, and integrated. Joining the Iowa Delegation this year are water sector professionals who span both the urban and rural landscape of Iowa. These individuals and their organizations are coming together to align and engage in leading One Water action in the state. Erratic and variable weather, including perennial flooding and droughts, continues to present challenges to managing water for Iowa communities—both upstream and downstream. While we believe we are seeing good directional progress, achieving downstream performance with implementation of practices at scale remains elusive. Iowa's goal is to continue bringing diverse stakeholders together to advance working solutions to our mutual water challenges. We envision collaboratively reducing flood risk, building stronger soils, fostering investments with upstream and downstream agriculture and municipal partnerships, improving conservation use on farms across watersheds, and investing in conservation infrastructure. Our hope is this will result in an enduring land and water legacy. We believe the value of the One Water approach is driving continuous improvement and delivering better outcomes for all Iowans.

### **International Union of Painters and Allied Trades Delegation**

The International Union of Painters and Allied Trades (IUPAT) is committed to protecting the environment and taxpayer resources by applying protective coatings to the nation's water infrastructure. The Delegation is dedicated to ensuring infrastructure projects utilize a diverse workforce to produce high-quality construction and to contribute to the development of an inclusive middle class. One Water Summit affords our delegation the opportunity to bring our organizational values, expertise, and resources to stand up Pillar Two in the US Water Alliance's *An Equitable Water Future* report with a focus on maximizing the community and economic benefits of water infrastructure investments. IUPAT is committed to making sure water infrastructure remains a public asset, that it protects the health of residents, and that investments in infrastructure benefit communities. In particular, IUPAT works to assure economic opportunities generated from infrastructure investment create union jobs and support low-income communities of color. IUPAT will also be hosting a Site Visit to its Milwaukee Training Facility that will include a panel conversation featuring local and federal speakers discussing the recently passed Bipartisan Infrastructure Law and its workforce implications.

### **International Water and Climate Delegation**

The International Water and Climate Delegation is comprised of water utilities, academics, nonprofits private sector partners, environmental advocates, and climate leaders from watersheds across the globe. Climate change is too big for anyone to address on their own. Improved collaboration is needed to meet the scope and scale of the crisis. The Delegation, therefore, brings together water and climate professionals to advance One Water as a pathway for climate action. Members will engage with one another to share best practices, build knowledge, and foster strategic relationships to strengthen adaptation, resilience, and mitigation efforts in the water sector.

### **Jackson Regional Delegation**

The Jackson Regional Delegation brings together political leaders, utility staff, community members, and other change-makers in a commitment to prioritizing equity as they address the city's most pressing water concerns. This diverse group of water stewards and community leaders hope to gain a deeper understanding of the integrative and equitable solutions and approaches presented throughout the One Water Summit. They also hope to share their expertise and build community with other passionate water leaders from across the nation. In gathering to brainstorm solutions to aging infrastructure, affordability concerns, and climate resiliency, the Jackson Regional Delegation commits to building a water future centered on equity, inclusion, and economic development.

### **Madison Regional Delegation**

The Madison Region Delegation is comprised of water stewards from the Madison area. Communities in the Madison Metropolitan Sewerage District regional service area expect the District to be fair, responsive, and equitable for access to safe, clean, affordable wastewater services. A 2023 focus item is to explore interests in equity fully and outline potential next steps. The Madison Regional Delegation will have exploratory discussions about such opportunities.



### **Mayors' Commission on Water Equity Delegation**

The Mayors Commission on Water Equity was founded by the Great Lakes and St. Lawrence Cities Initiative in 2020 to promote access to safe, clean, and affordable water for all residents of the Great Lakes and St. Lawrence River Basin. The Commission is comprised of 20 mayors representing cities of all sizes from across the basin, from Milwaukee to Rochester. The Commission was proud to partner with the US Water Alliance to develop a policy agenda on lead service line removal, water affordability, urban flooding, and water workforce development, contributing to the infrastructure debate in Washington, DC. The delegation is participating in the One Water Summit to elevate water equity priorities of Great Lakes cities, explore opportunities to be a partner for change to expedite the replacement of lead service lines, and promote the equitable implementation of federal infrastructure investments.

### **Mentoring Connections Delegation**

Underlying the growth of the One Water movement is a story of change leadership that is shifting the water sector toward more holistic, sustainable, and inclusive water management. While technological advancement is a key variable contributing to change within the sector, the human dimensions and essential capacities that successfully drive culture change are equally important, though often overlooked. In 2020, the US Water Alliance launched an inaugural Mentoring Connections Program to match established water leaders with Rising Professionals early on in their One Water leadership development. Through focused one-on-one mentoring relationships, pairs work together to prioritize areas for leadership growth and then develop strategies to strengthen their capacities to affect change. This Mentoring Connections Delegation includes Rising Professionals from the 2020 and 2022 cohorts to continue building on their leadership capacities and also to share their knowledge and perspectives as emerging One Water leaders.

### **Milwaukee Estuary Area of Concern Delegation**

The Milwaukee Estuary Area of Concern Delegation is made up of members of the Waterway Restoration Partnership (WRP). The WRP is a group of long-standing, trusted partners from the private and public sectors that have been working together for years to improve water quality in the Milwaukee River Basin. With a once in a generation opportunity on the horizon, the organizations have formalized their partnership and are redoubling their commitment to work together to clean up and restore the Milwaukee Estuary Area of Concern. With support from the EPA, Wisconsin

DNR, the Milwaukee Metropolitan Sewerage District, and other agencies, the Milwaukee Estuary AOC is on track to be “delisted” in the coming years. This means that contaminated sediment will be removed from Milwaukee’s rivers and harbor and their natural function will be restored by creating habitat, removing invasive plants and animals, planting vegetation, and reducing pollutants. As part of the cleanup, a diverse and representative Community Advisory Committee is working to ensure that Milwaukee residents, especially those underrepresented in/excluded from environmental decision-making, play an active role in shaping the decisions made during the Area of Concern delisting process. The Delegation is especially excited to hear how other attendees are centering community, equity, arts, and cultural assets in their work.

### **Milwaukee Next Generation Water Workforce Delegation**

The Next Generation of Milwaukee’s Water Workforce Delegation is made up of a variety of organizations with current high school internship programs that either currently or are willing to have an environmental and water focus. The goal of this delegation is to continue prior discussions around developing an aligned approach to career awareness/exploration activities, work-based learning (internships, mock interviews, job shadowing), and a sustainable partnership model. We hope to possibly develop joint training, shared metrics, and grant opportunities. We are interested in hearing about ways other areas have developed and implemented approaches to fostering the next generation of water workers.

### **Milwaukee One Water, Our Water Delegation**

In southeast Wisconsin, communities benefit from the abundance of freshwater flowing throughout the region, from the rivers, creeks, and streams to Lake Michigan—the source of drinking water for millions. This water supply belongs to everyone and every community member can play a role in keeping this precious resource clean and safe where they live, work, learn, and play. Milwaukee is equally fortunate to have many organizations and agencies in the region working together to protect our water. Many organizations with a long history of partnering to protect our waterways and Lake Michigan have now come together to create Milwaukee’s One Water, Our Water initiative. This delegation is focused on collaborative strategies that connect water-focused organizations to community-based organizations to strengthen our impact on both our waters and our communities.



### **National Arts and Culture Leaders Delegation**

Convened by the US Water Alliance, the National Arts and Culture Delegation includes arts and culture bearers centered in the Great Lakes region, expanding the ways in which artistic and cultural strategies can advance sustainable, integrated, and equitable water and environmental management. The local Great Lakes artists and culture bearers are joined by artists from the US Water Alliance's 2021 – 2022 Water, Arts, and Culture Accelerator program, which supported utilities and artists in building effective partnerships and using artistic thinking and creative interventions to address water and climate challenges in their locality. The One Water Summit will serve as an important inflection point in connecting artists, culture bearers, and water professionals to leverage one another's diverse expertise and power to co-create equitable paths forward. Our goals are to increase cross-sector collaboration and partnerships by integrating and institutionalizing arts and culture strategies in water management. Through peer exchange at One Water Summit 2022, we seek to deepen connections, strengthen the network of arts and culture leaders working in the water sector, and build a growing field of innovative and creative practice. The Delegation will further provide feedback and guidance for the US Water Alliance as it continues to institutionalize the Accelerator and Artist-in-Residence programs and expand work through an Arts Network to inspire, share, and accelerate artistic processes and creative interventions in the water sector.

### **Natural Resources Defense Council Delegation**

With the support of scientists, lawyers, and policy advocates across the country, the Natural Resources Defense Council Delegation works to ensure safe, sufficient, and affordable water for people and the environment in a changing climate. NRDC believes that access to safe, sufficient, and affordable drinking water from source to tap is a human right. We also believe in a world where climate-changing and other health-harming impacts from our energy system are virtually eliminated and where communities and ecosystems are made resilient to the effects of climate change that cannot be avoided. NRDC is invested in working with partners who foster systems-changes to promote these goals. In coordination with businesses, elected leaders, and community groups—particularly those that represent individuals who have suffered from disinvestment and inequitable distribution of resources—we are working towards the development of equitable, healthy, and sustainable communities.

### **New Jersey Delegation**

The New Jersey Delegation includes representatives from Jersey Water Works, a statewide cross-sector collaborative of more than 600 members working to transform New Jersey's inadequate water infrastructure through investments in sustainable, cost-effective solutions that provide multiple community benefits. Representatives include individuals that work in the water sector via nonprofit organizations, utilities, and businesses. The Delegation will use its time to explore new ways to move the JWW's strategic direction forward. These include 1). Integrating climate resilience in JWW committee work; 2). Promoting the need and prioritization of funding for water infrastructure projects to remove barriers that under-resourced and systemically marginalized communities face; 3). Pursuing partnerships to advance water workforce development and career pathways; and 4). Enhancing understanding of the importance of clean, affordable access for all New Jerseyans to essential water, wastewater, and stormwater services via education and outreach.

### **New Jersey Department of Environmental Protection Delegation**

This year, the NJDEP has carefully selected a delegation consisting of representatives from all Department programs that play a key role in water and watershed management. These programs include the Division of Watershed Protection and Restoration, the Division of Water Quality, the Division of Water Supply and Geoscience, the Division of Water Monitoring and Standards, and the Division of Science and Research. These programs are increasingly coordinated and aligned to implement a One Water approach. The Department is excited to gain insights from other states, communities, and organizations around the nation that are actively addressing the challenges of water quality, quantity, management, and equity. These concerns will only be amplified in the future due to climate change, and as New Jersey strives to be a leader, we will continue to seek the best available solutions through close coordination in light of our shared goals to keep the waters of New Jersey fishable, swimmable and drinkable for the years to come.



### **North Carolina Delegation**

The North Carolina Delegation is composed of leaders in local, regional, and state government, water utilities, community organizations, conservation organizations, and academic institutions from both rural and urban areas of North Carolina. Key represented geographies are the Research Triangle area, including Raleigh-Durham-Chapel Hill, and the Piedmont area, including Greensboro. These regions and the state as a whole are some of the fastest growing areas in the country; the rapidly growing population is outstripping the traditional water management tools upon which these communities have relied. Years of traditional management and single-metric regulatory frameworks have exacerbated conflicts and hindered the ability to solve the region's most pressing and increasingly demanding water resources problems. Area leaders seek to identify innovative water management alternatives to allow multi-variate, multi-benefit approaches and build effective relationships to achieve collective goals. Our delegates are working to integrate One Water principles into a proposed alternative regulatory framework that can be endorsed by state agencies and adopted by diverse partners across the region and possibly the whole state. This framework would allow for a flexible, collaborative approach to water resources management built on the full value of water. Among many other benefits, it will balance human and ecological uses, identify, unlock, and enhance triple bottom line benefits, protect water quality and quantity, and incorporate green infrastructure into redevelopment. This year, the North Carolina Delegation welcomes several leaders of the Jordan Lake One Water Coalition, a new nonprofit working to achieve these goals in a million-acre watershed stretching from the Piedmont to the Triangle.

### **Oregon Delegation**

The Oregon Delegation is composed of water professionals in the public and nonprofit sectors working with Oregon communities on multi-sector collaborative approaches to integrated water management. The challenges our practitioners have and continue to address are systemic and exacerbated by climate change: from water scarcity from droughts and overallocation, to the recovery of ESA-listed salmonid species, to addressing harmful algal blooms, to preparing and recovering from wildfires. The Oregon Delegation seeks to learn from other states and leaders at the One Water Summit about the collaborative models, tested policies, innovative projects, and cross-sector programs that can help us address these challenges to keep Oregon's water clean, clear, and cold.

### **Pittsburgh Water Equity Delegation**

Since releasing its Water Equity Roadmap in 2021, Pittsburgh continues to make progress in addressing its water challenges; though our work is not done. This delegation joins the 2022 One Water Summit comprised of members from the original Water Equity Taskforce and new members representing the City of Pittsburgh, as well as advocates who bring a commitment to environmental preservation, public health, and workforce development. Collectively, our collaboration strives to create an equitable water future for the entire city of Pittsburgh. Our focus is to prepare our city for the impacts of climate change through improved stormwater management, create workforce development opportunities that address demographic shifts in our population, and improve public health and protect water quality by continuing to remove lead service lines from our drinking water system. These efforts require collaboration from a broad cross-section of the population. Together, we strive to attract diverse and talented workers, modernize water infrastructure, and provide equitable water services at affordable rates across the region. The Pittsburgh Delegation works together to address these critical water issues, while also striving to create healthier, safer, and more vibrant communities.

### **Root-Pike Delegation**

The Root-Pike Delegation consists of individuals from the Root-Pike Watershed Initiative Network, Southeastern Wisconsin Regional Planning Commission, school board, and board of park, recreation, and cultural services for the City of Racine. Our delegation combines diverse perspectives and experiences in community outreach, project development, watershed management, regional planning, education, and local government to find solutions to the water quality problems in the Root-Pike Basin. Developmental pressures, residential and agricultural chemical use, and loss of high-quality native landscapes have resulted in eroded streambanks, degraded water quality, and larger volumes of stormwater runoff to be managed. Working together, we will identify clean water initiatives to implement throughout the Root-Pike basin that will reduce flooding, improve recreational opportunities, provide better habitats, and strengthen community connections to Lake Michigan and its tributaries.



### **Soil and Water Conservation Delegation**

The Soil and Water Conservation Delegation, convened by the Soil and Water Conservation Society (SWCS), the National Association of Conservation Districts (NACD), and the National Association of State Conservation Agencies (NASCA) brings soil and water conservationists advancing conservation on natural and working lands to the One Water Summit. The delegation seeks to broaden the participation of the soil and water community in the One Water movement and connect conservation professionals, conservation districts, and state conservation agencies with their counterparts in the drinking, wastewater, and stormwater sectors. Participants in the Soil and Water Conservation Delegation work at the local, state, and federal levels and understand how land and water resources are connected. They bring expertise in watershed management and conservation practice implementation, including climate-smart agriculture practices such as soil health and forest land protection that protect water resources from source to sea. The combined membership of SWCS, NACD, and NASCA includes conservation professionals, academics, students, public officials, and employees of America's nearly 3,000 conservation districts and their state conservation agency partners. Our members champion voluntary, locally-led conservation and are proven leaders in watershed management, implementing soil and water conservation practices at the watershed scale across the nation.

### **Southeast Michigan Delegation**

A delegation from Southeast Michigan convened by the Erb Family Foundation will be in attendance and is looking forward to learning more about how they can address stormwater and water supply issues in Wayne, Oakland, and Macomb counties. The delegation includes representatives from Macomb County Public Works, the Great Lakes Water Authority, Oakland County Water Resources, the Huron River Watershed Council, Wayne State University, the University of Michigan, and the Erb Family Foundation.

### **Southern California Regional Delegation**

The Southern California Regional delegation is formed by public and private sector One Water thinkers that are committed to connecting people, water, projects, and policy to drive regional transformation. Southern California is experiencing unprecedented challenges and severely limited water supplies in the face of a changing climate. These challenges are compounded by a historically complex water governance system. Our delegation is grounded in the belief that partnerships and collective action are crucial in overcoming these barriers. We are committed to bolstering regional climate readiness, equitable outcomes, and community resilience through regional partnerships, multi-beneficial projects, and collaborative policy. Together, we will meet this moment.

### **SRF Advocates Forum Delegation**

The State Revolving Fund (SRF) Advocates Forum is a diverse community of practice for community leaders, researchers, and advocates across the country who work on SRF administration and reform with an equity and climate resilience lens. In light of historic federal investment in water infrastructure flowing through the SRF program, advocates and experts across the country are working to meet the moment by pursuing more equitable and climate-resilient infrastructure investments. The Forum creates opportunities to learn, share lessons, and synergize across geographies and levels of government. Participants include state and national advocates, local leaders, and technical experts motivated to address our nation's most pressing water infrastructure challenges including drinking water safety, affordability, lead service line replacement, and climate resilience while centering procedural, distributive, and restorative justice. The Forum is convened by the Alliance for the Great Lakes, Environmental Policy and Innovation Center, River Network, and PolicyLink. Our delegation is excited to meet in person and connect with like-minded One Water leaders.



### **Tap Into Resilience Delegation**

Decentralized, onsite, and localized water strategies are a critical path to achieving the One Water vision in communities nationwide. From green stormwater infrastructure, to water use efficiency measures, to onsite reuse, to private lead service line replacements, localized options distributed widely across communities have tremendous potential to enhance water supply, manage and control stormwater runoff, and ensure public health. What they have in common is that while not owned and controlled by water utilities, they serve the same functions as centralized utility infrastructure and operate in concert with such systems. They can be financed, incentivized, and supported by utilities as a vital part of their service offerings. At the same time, distributed systems present unique financing and implementation challenges compared with conventional infrastructure. Tap into Resilience is WaterNow's marquee program to elevate these strategies and present clear financial and other pathways for cities, towns, and water resource agencies to adopt them at large scale. The Tap into Resilience Delegation is a group of collaborators working nationwide to create opportunities to expand access to equitable, affordable distributed systems. Together, we hope to make these the new normal, having a central place in planning, budgeting, and financing nationwide and leading to a transformation of how communities engage with water and accelerating the transition to a One Water future.

### **Texas One Water Delegation**

The Texas One Water Delegation represents a broad network of water professionals, advocates, decision makers, and community leaders that are dedicated to working collaboratively towards an equitable, sustainable and resilient water future for all Texans. Texas has one of the fastest growing populations in the nation and has experienced both record-setting droughts and floods over the last decade. Climate change is making these swings more pronounced and will continue to strain both rural and urban water supplies alike. The aquifers, springs, and rivers that have sustained our region for centuries are under mounting stress from growth and development pressures, over-withdrawal of water resources, and a lack of coordinated planning. Communities in Texas are embracing One Water and putting in place policies and practices that will help ensure that we can continue to meet our future water needs while also creating healthier, safer, more sustainable communities. The Texas One Water Delegation is attending the summit to learn about scalable and holistic solutions that help relieve the

current pressures on our surface and groundwater supplies. We are looking for models of development, innovative policy initiatives, and urban-rural collaborations that will enhance livability and the long-term resilience of water supply for all Texans. The Delegation recognizes the importance of centering equity in One Water Planning and commits to partnering with the Texas Water Equity Network Delegation to move our state towards solutions that accelerate the development and adoption of equitable One Water policies and practices.

### **Texas Water Equity Network Delegation**

The Texas Cohort of the US Water Alliance's Water Equity Network is pioneering a regional approach to advancing equitable water management practices. For the past year, representatives from Austin, Dallas, Galveston, Houston, and San Antonio have convened as a Texas Water Equity Network Cohort with the goal of collaboratively advancing equitable water management practices across the state. The Texas Water Equity Network Delegation brings this work to the One Water Summit, serving as a space for this Cohort to continue fostering collaboration and trust while identifying shared priorities and opportunities for cross-sector partnership. Water utilities from each member city anchor The Texas Water Equity Network Delegation. The Delegation also includes community partners and additional utility staff working to build partnerships for water equity. The Delegation recognizes the importance of centering equity in One Water Planning and commits to partnering with the Texas One Water Delegation to move our state towards solutions that accelerate the development and adoption of equitable One Water policies and practices.



### **Tucson Regional Delegation**

The Tucson Regional Delegation is excited to return to the One Water Summit for its fourth year. Our strategy is to build active, impactful One Water leadership and momentum to ensure that our goal of water resiliency and livability for the one million people and unique species of wildlife that make their homes in our southwest desert region is met. In Tucson, local government is at the forefront of strategically managing all available water resources, including multi-generational water. Recognizing that water resource benefits and availability vary by type and that solutions to climate-related challenges are ever evolving, the Tucson Regional Delegation seeks holistic solutions for quantifying and utilizing resources for maximum community and environmental benefit, long-term utility-scale planning, and investing in diverse strategic partnerships. The community engagement campaign that supports our One Water 2100 master plan will help us expand our view through communication and collaboration with employees, elected officials, and the public. Tucson's story is one of long range, visionary planning, innovation, and persistence. Decades ago, the groundwork was laid to add renewable surface water and recycled water to our water portfolio. Over recent decades, the region has embraced harvested rainwater and stormwater runoff as additional resources that can be harnessed to offset potable water demand in the urban environment. Climate forecasts reiterate the need for robust planning tools and diverse strategies that protect our aquifers, restore our watersheds, and mitigate increasing temperatures.

### **Twin Cities Regional Delegation**

The Twin Cities Delegation is comprised of water and planning professionals and policy-makers that work on water supply, wastewater, storm and surface water, and community development at the local, watershed, and regional scale. Our members come from city public works offices, watershed organizations, and staff and Council Members from the Metropolitan Council. The Metropolitan Council is the regional policy-making body, planning agency, and provider of essential services in the seven-county Twin Cities metro area. It operates the regional public transportation and wastewater treatment systems; plans for future population growth and land use development, sustainable water resources and drinking water supplies, and regional park and trail systems; and provides affordable housing for qualified households. The Twin Cities metro area is already home to over half the population of the state of Minnesota and is projected to continue to grow. In addition to planning for our future residents, we know

that we have environmental, social, and infrastructural challenges ahead of us including climate change, severe racial disparities, and aging infrastructure. The Twin Cities Delegation was assembled to help with the 2050 Regional Planning process and desires to learn and share lessons from our peer utility and planning agencies. We want to plan for our regional challenges holistically and through collaboration to create an equitable and resilient region with clean, plentiful, and sustainable water for our future generations.

### **Urban Water Funders Delegation**

The Urban Water Funders Delegation includes leading national and regional funders working on urban water issues. Urban Water Funders explores the role of water in urban settings to the benefit of the environment, equity, and economies of communities, with specific interest in climate resilience, natural infrastructure, green stormwater infrastructure, and One Water or integrated water strategies. Urban Water Funders is designed to create a forum for funders to learn together, build relationships, align efforts to scale up sustainable water practices, and collaborate on joint projects and special initiatives. The Urban Water Funders is a working group of the Funders' Network for Smart Growth and Livable Communities, a membership organization that helps grant-makers across North America advance strategies to create fair, prosperous, and sustainable regions and communities that offer everyone the chance for a good life. The Funders' Network also manages the Partners for Places grant program, which includes targeted funding for green infrastructure projects in partnership with the Green Infrastructure Leadership Exchange and the Urban Sustainability Directors Network.



### **Water Equity Network Delegation**

Water is a force for equity and opportunity. Black, Indigenous, communities of color, and low-income communities face an array of water-related challenges: affordability, water quality concerns, flooding, and more. At the same time, water can be an essential part of building thriving, healthy communities for all. With the collaboration of cross-sector partners like community organizations, environmental groups, and local government, cities can build more equitable water systems. An extension of the Alliance's Water Equity Network, a nationwide community of practice, the Water Equity Network Delegation brings together leaders from water and wastewater utilities, organizations that have strong relationships with or are representative of communities most impacted by inequities, environmental groups, and philanthropy to work toward a more equitable water future. Delegates hail from cities, towns, and regions across the county and are dedicating themselves to addressing a range of issues such as affordability, climate resilience, workforce development, community engagement, internal racial equity programs, and more.

### **Water Equity and Climate Resilience Caucus Delegation**

Launched in April 2018, The Water Equity and Climate Resilience (WECR) Caucus convenes the foremost leaders working at the intersection of water equity and climate resilience to build strategy, peer power, and policy change—all centered around frontline communities. There is a need to build a shared analysis and understanding of the problems, codify policy strategies, and enable members to deliver on water equity results for their communities. The Caucus does this through peer learning, tool and knowledge development, and shared local, state, federal, and sovereign advocacy around three main objectives: obtaining and maintaining safe and affordable drinking water for economically vulnerable residents; ensuring water infrastructure investments build climate resilience and expand economic opportunities for communities of color; and lifting vulnerable communities to have agency in water infrastructure policymaking processes that shape their lives. The WECR Caucus Delegation is seeking to scale frontline efforts for water equity and climate resilience. This platform will be rooted in agreed-upon key policy considerations that address the challenges of our water equity work.

### **West Tennessee H2O Delegation**

The West Tennessee H2O Delegation is a broad group consisting of water authorities, NGOs, agriculture interests, private industry, utilities, and academia. The delegation will discuss regional water management in light of increased development headlined by the \$5.6 billion Ford Motor Company electric vehicle plant. West Tennessee sits atop one of the largest aquifer systems in the country, which provides all water for municipal, industrial, and agricultural needs. The Aquifer Recharge Zone covers the eastern portion of the region. Overall goals include building cross-jurisdictional relationships and determining strategies for wastewater expansion and flood mitigation while increasing the overall resilience of our aquifers and streams to protect human health. The delegation aims to build on TN H2O—Tennessee's first-ever state water plan released in 2018—to find sustainable solutions to an area poised for rapid growth.



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# Reimagining the Water Sector through Equity and Justice

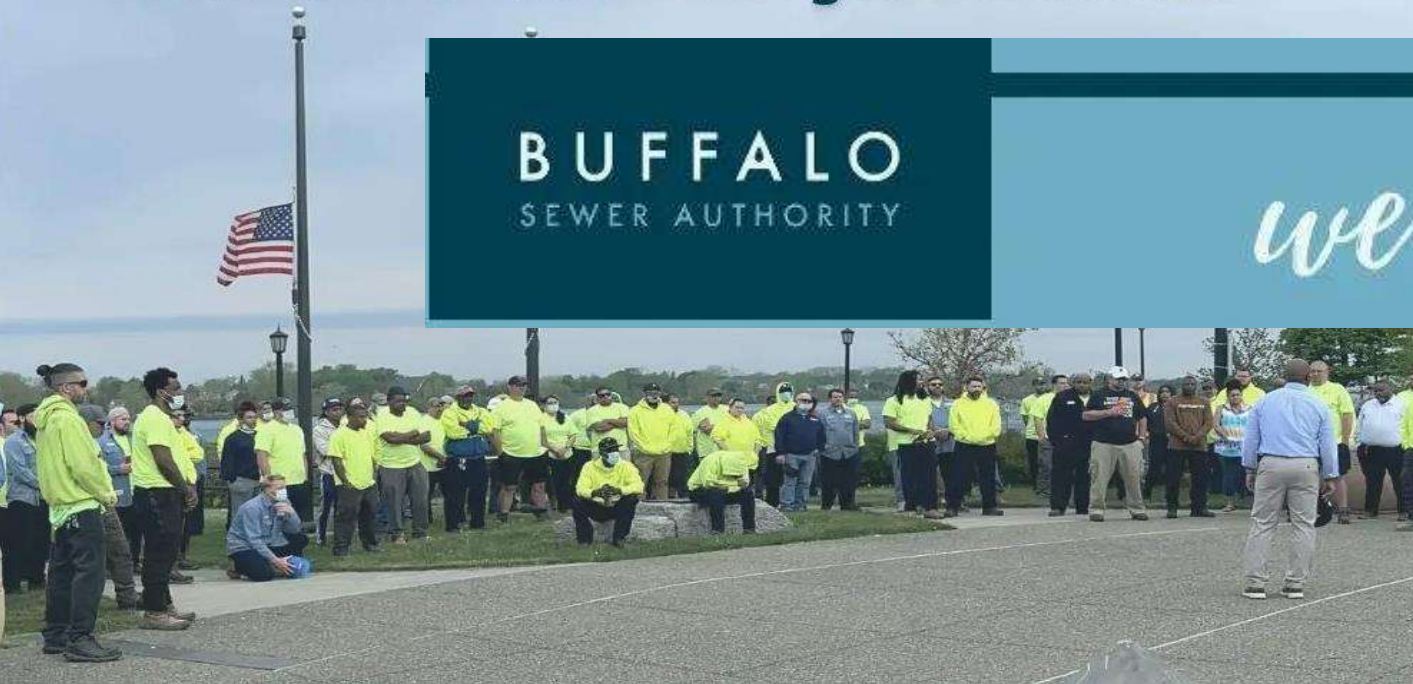
Oluwole (OJ) McFoy, P.E.  
General Manager  
Buffalo Sewer Authority



Aaron Salter • Ruth Whitfield  
Celestine Chaney • Roberta A. Drury  
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## AN EQUITABLE WATER FUTURE Buffalo



## Multi-Year

Peer Reviewed process

## 6 City-wide

workshops and meetings

## 7 Cities

Atlanta, Buffalo, Camden,  
Cleveland, Louisville,  
Milwaukee, and Pittsburgh



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**+ROBUST DATA  
DISCLOSURE**

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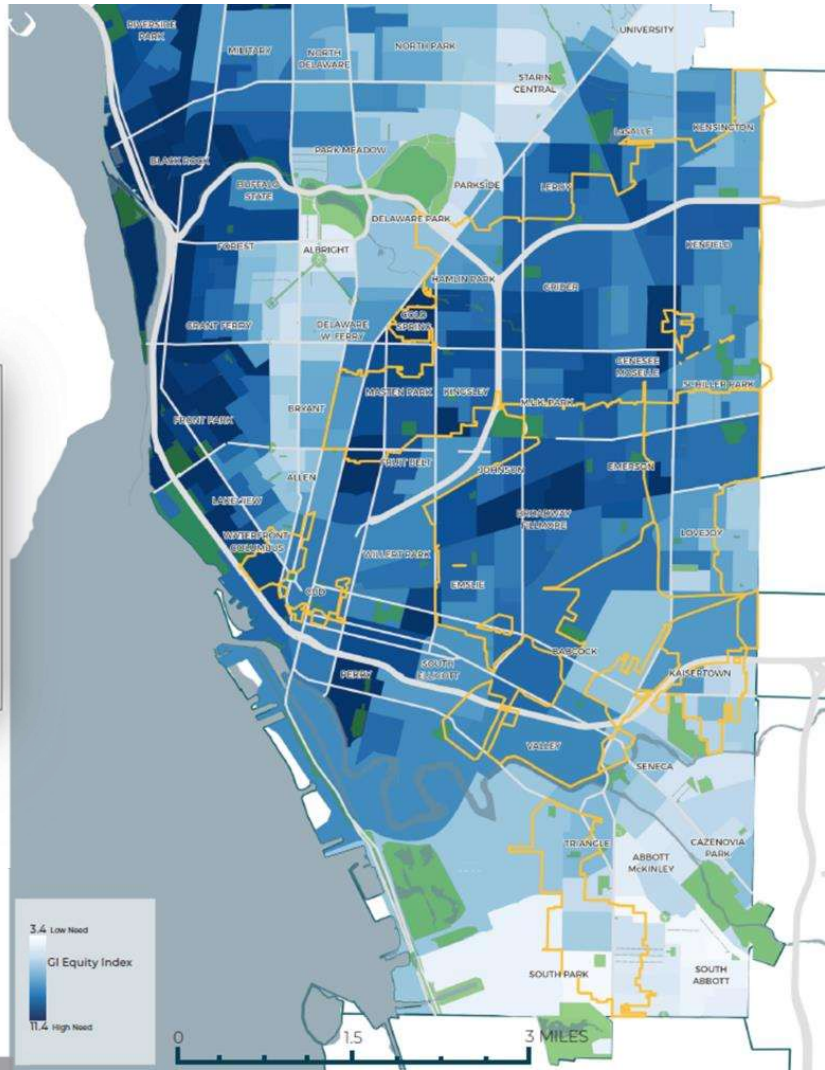
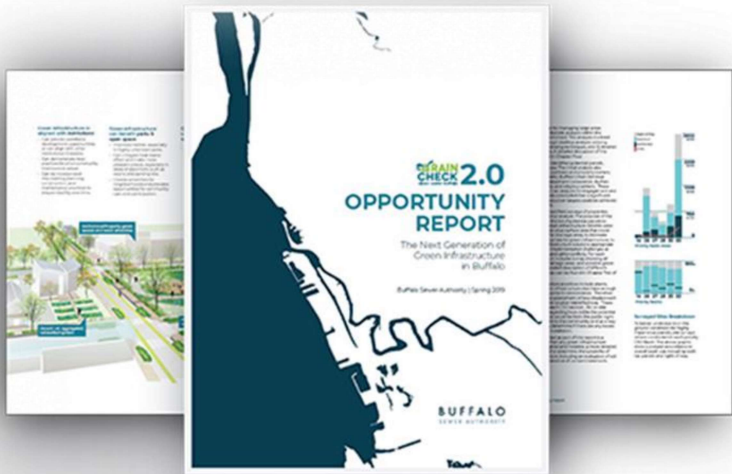
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SOLUTIONS**





**Socio-economic factors:**

- Race and ethnicity
- Income
- Education attainment
- Young children
- Older adults
- Owner occupancy
- Limited English speakers
- Unemployment and labor force participation

**Built environment factors:**

- Traffic proximity
- Ozone levels
- Particulate matter
- Access to public open space
- Tree canopy cover
- Impervious surface cover
- Vacant land
- Residential vacancy rates
- Commercial vacancy rates



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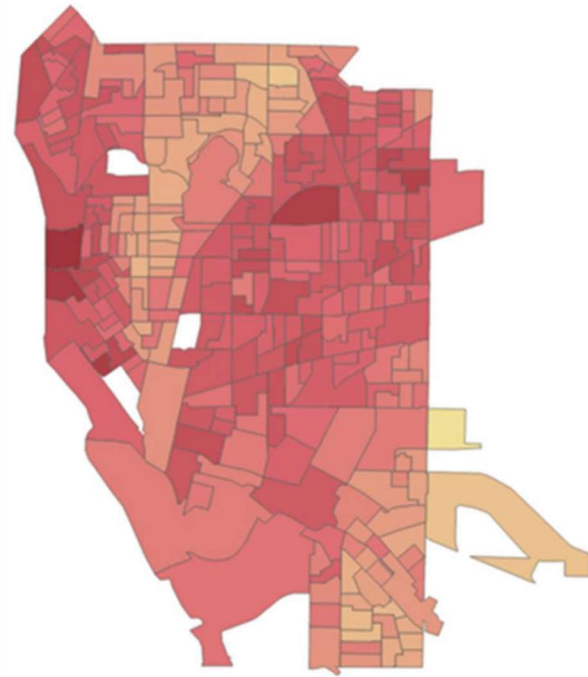




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## Equity Index by Block Group



Equity Index Range

-31.97

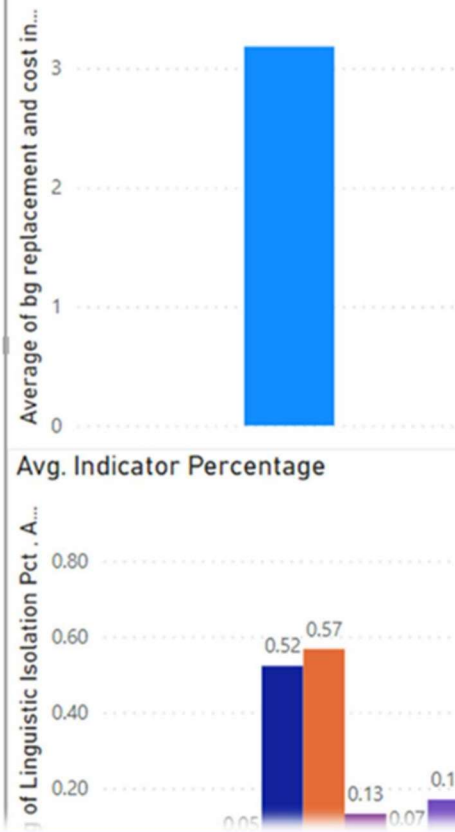
34.29

Average of bg replacement and cost info.number of replacements

Average of bg replacement and cost in...

Avg. Indicator Percentage

of Linguistic Isolation Pct . A...

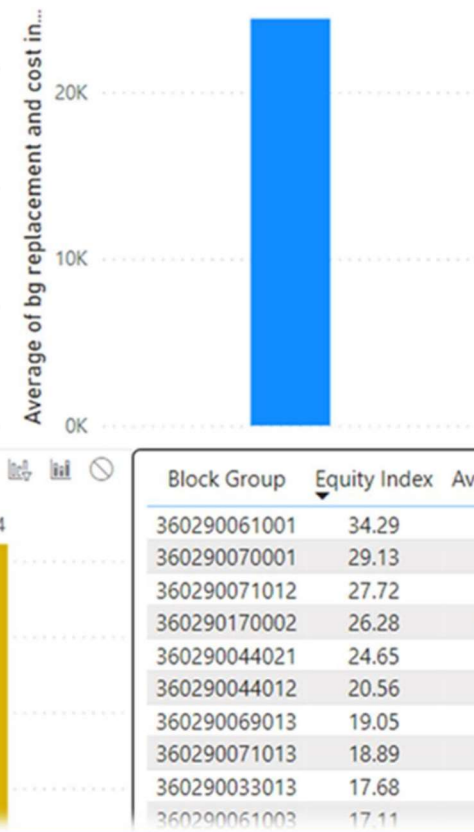


Average of bg replacement info.Total Cost

Average of bg replacement and cost in...

Avg. Indicator Percentage

of Linguistic Isolation Pct . A...



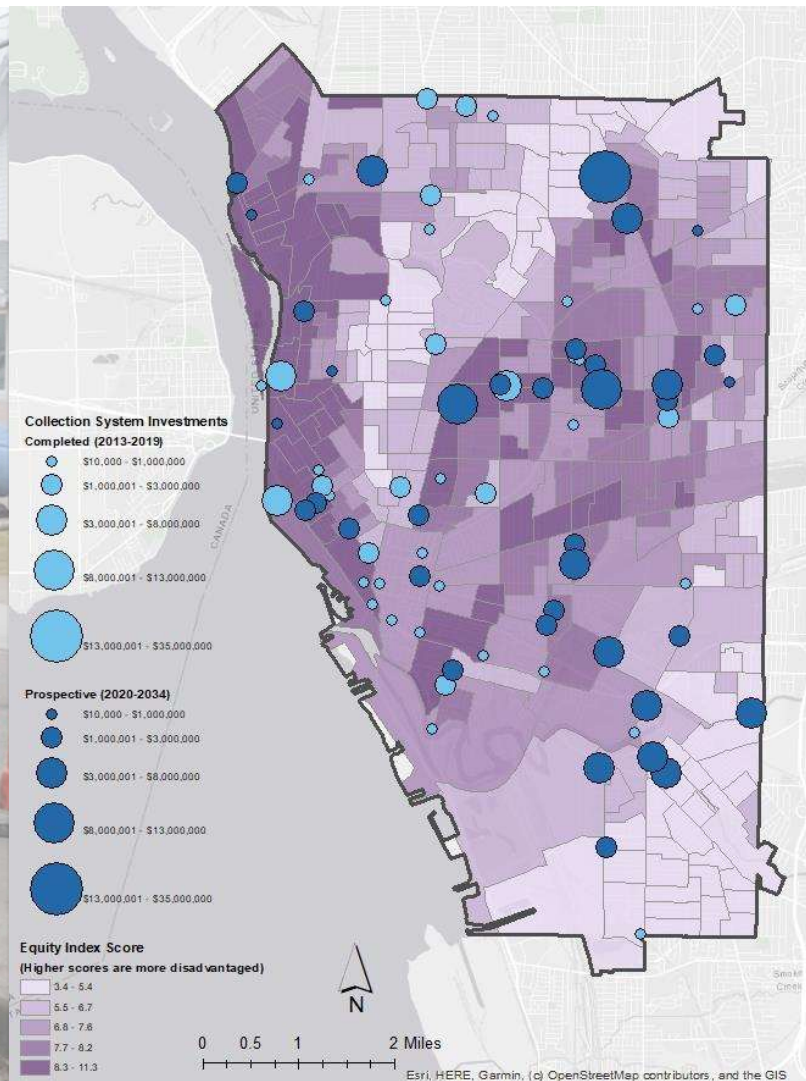
Avg Replacement Cost

Avg Replacement Cost

Block Group Equity Index Avg. Cost Total Cost No. of Replacements

| Block Group  | Equity Index | Avg. Cost | Total Cost | No. of Replacements |
|--------------|--------------|-----------|------------|---------------------|
| 360290061001 | 34.29        | 8,365     | 75,288     | 9                   |
| 360290070001 | 29.13        | 6,590     | 26,362     | 4                   |
| 360290071012 | 27.72        | 11,840    | 11,840     | 1                   |
| 360290170002 | 26.28        | 10,167    | 71,167     | 7                   |
| 360290044021 | 24.65        |           |            |                     |
| 360290044012 | 20.56        | 7,369     | 22,106     | 3                   |
| 360290069013 | 19.05        | 7,429     | 29,714     | 4                   |
| 360290071013 | 18.89        | 10,694    | 10,694     | 1                   |
| 360290033013 | 17.68        | 9,502     | 76,015     | 8                   |
| 360290061003 | 17.11        | 6,646     | 19,938     | 3                   |





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## **For more information:**

**Oluwole (OJ) McFoy, P.E.,  
General Manager  
Buffalo Sewer Authority**

**1038 City Hall  
65 Niagara Square  
Buffalo, NY 14202**

**[omcfoy@buffalosewer.org](mailto:omcfoy@buffalosewer.org)**



A close-up photograph of a young boy with a joyful expression, his face and hair wet with water droplets. He is looking slightly to the right. The background is blurred, showing other people and what appears to be an outdoor water park or pool setting.

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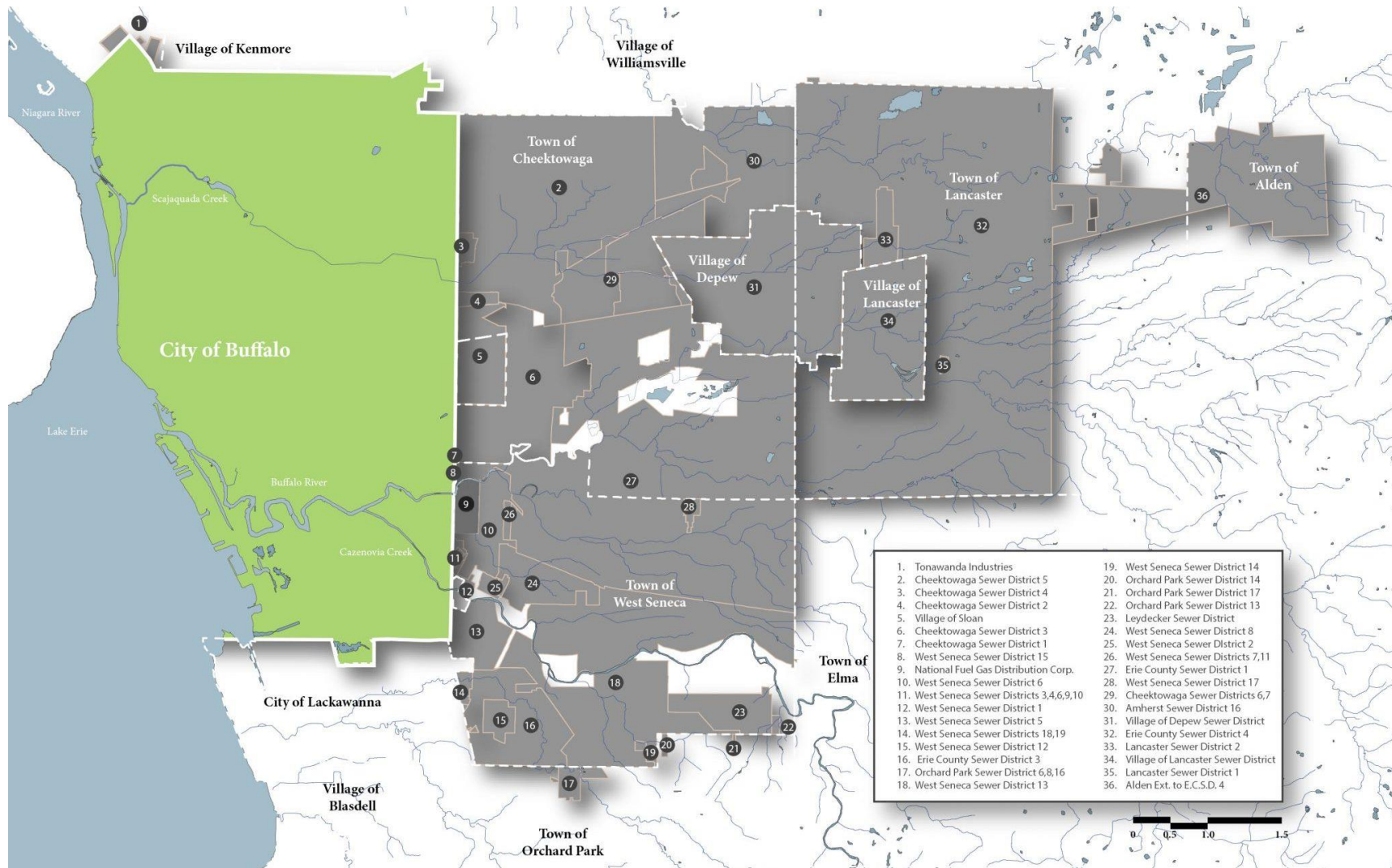
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# BUFFALO

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## DIVERSITY, EQUITY AND INCLUSION

BUILDING A STRONGER WORKFORCE IN THE CITY OF BUFFALO

2005

**0% OF THE**  
BSA EXECUTIVE TEAM  
WERE BIPOC

2020

**50%**  
OF THE BSA  
EXECUTIVE TEAM  
ARE BIPOC



# BUFFALO

SEWER AUTHORITY

## DIVERSITY, EQUITY AND INCLUSION

BUILDING A STRONGER WORKFORCE IN THE CITY OF BUFFALO

**2005**  
**ONLY 5% OF**  
BUFFALO SEWER EMPLOYEES  
WERE BLACK, INDIGENOUS  
AND PEOPLE OF COLOR  
(BIPOC)

2020  
**37%** OF  
BUFFALO SEWER  
EMPLOYEES ARE  
BIPOC





## AN EQUITABLE WATER FUTURE Buffalo



# BUFFALO

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**Multi-Year**  
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workshops and meetings

**7 Cities**  
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thermostat to reduce energy use.

Choose energy-efficient  
appliances and lights.

Switch to electricity p...

CLIMATE





**WATERFRONT**





WORKFORCE



The background of the entire image is a close-up, shallow depth-of-field photograph of several lead pipes. The pipes are heavily corroded, showing a thick, brownish-orange rust. The central pipe is in sharp focus, revealing its hexagonal flange and the dark, hollow interior. Other pipes are visible in the foreground and background, but they are out of focus.

# ROLL

REPLACING OLD LEAD LINES

**WATER QUALITY**





INFRASTRUCTURE



# HOW CAN BUFFALO WATER HELP YOU?

[GetWaterWiseBuffalo.org](http://GetWaterWiseBuffalo.org)



## AFFORDABILITY





**AUTHENTIC  
ENGAGEMENT  
WITH THE  
COMMUNITY**



# COMMUNITY STEWARDSHIP

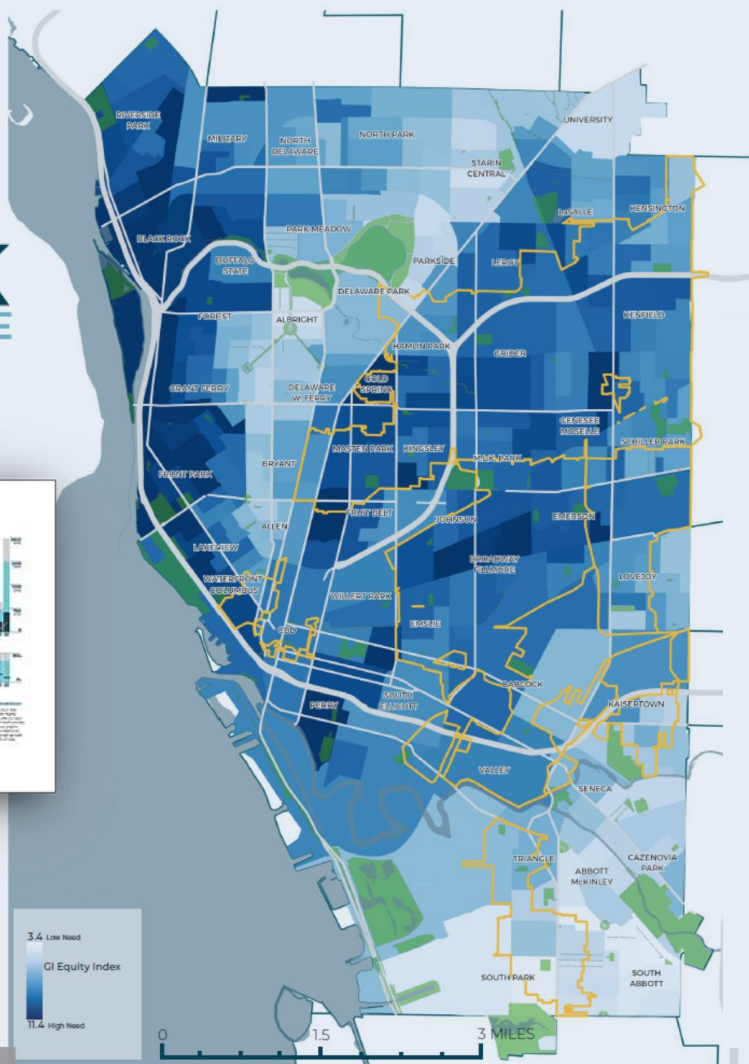
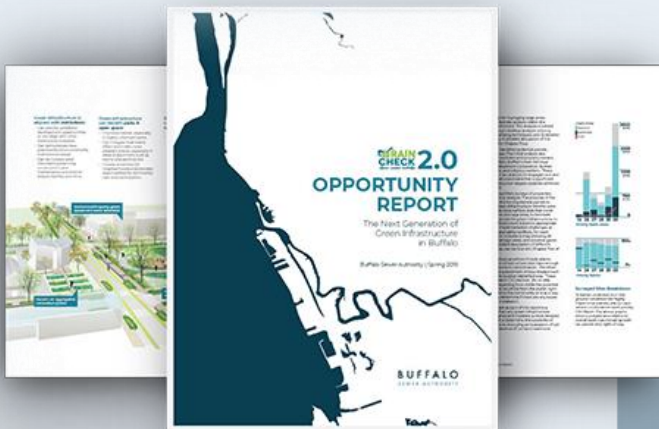




# BUFFALO

SEWER AUTHORITY

## RAINCHECK GREEN INFRASTRUCTURE



## PRIORITIZING EQUITY

### Socio-economic factors:

- Race and ethnicity
- Income
- Education attainment
- Young children
- Older adults
- Owner occupancy
- Limited English speakers
- Unemployment and labor force participation

### Built environment factors:

- Traffic proximity
- Ozone levels
- Particulate matter
- Access to public open space
- Tree canopy cover
- Impervious surface cover
- Vacant land
- Residential vacancy rates
- Commercial vacancy rates







# BUFFALO

SEWER AUTHORITY



**+ROBUST DATA  
DISCLOSURE**

**+3<sup>RD</sup> PARTY  
VERIFICATION**

**+METRIC TRACKING**

**+ENVIRONMENTAL &  
COMMUNITY IMPACT  
INDICATORS**

**ENVIRONMENTAL  
IMPACT  
BOND**

**\$50M  
INVESTMENT  
IN  
GREEN INFRASTRUCTURE  
NATURE BASED  
SOLUTIONS**



# Thank You!

For more information:

**Oluwole “OJ” McFoy, P.E., General Manager**  
**Buffalo Sewer Authority**

**1038 City Hall**  
**65 Niagara Square**  
**Buffalo, NY 14202**

**[omcfoy@buffalosewer.org](mailto:omcfoy@buffalosewer.org)**



# Rethinking Buffalo Sewer's CSO Long Term Control Plan

ROSALEEN B. NOGLE, PE  
PRINCIPAL SANITARY ENGINEER

**BUFFALO**  
SEWER AUTHORITY



# Agenda

- ▶ Buffalo Sewer Authority's System
- ▶ Development of Long-Term Control Plan
- ▶ Eight Years of Progress
- ▶ Recalibration and Retooling

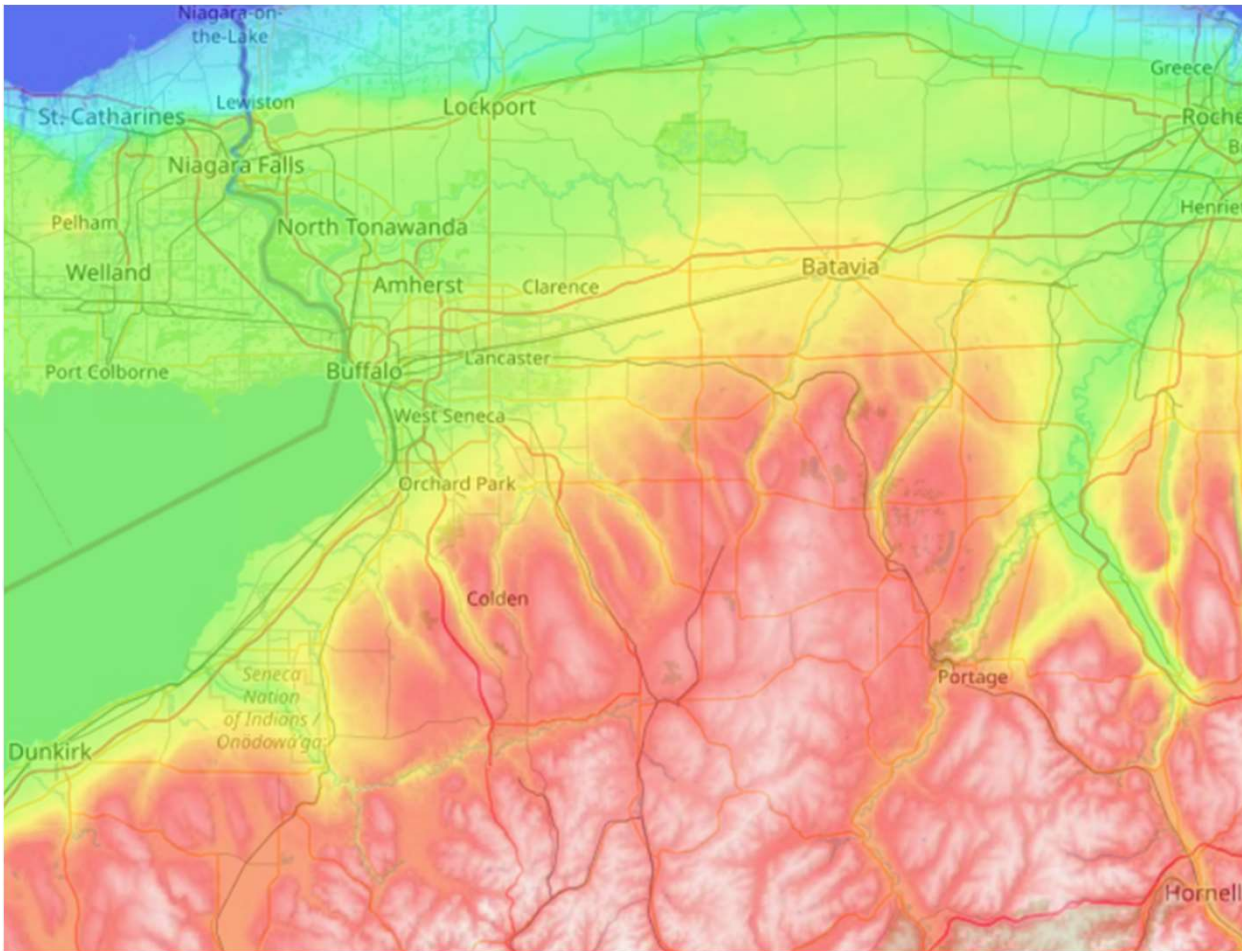


Where is  
Buffalo, NY?





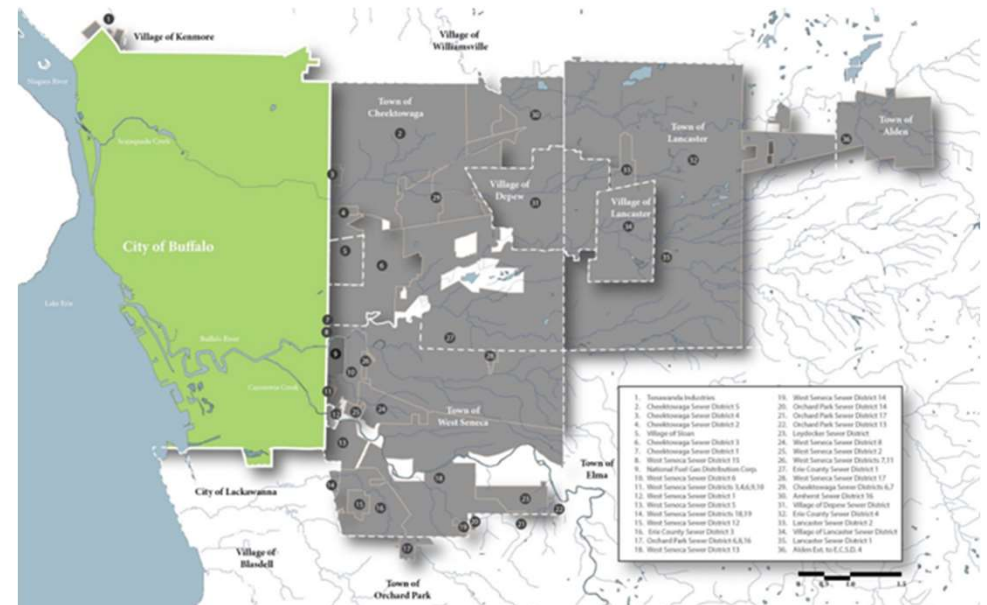
# Topography





# Buffalo Sewer Authority

- ▶ Founded on April 8, 1935
- ▶ Created to “provide an effectual means for relieving the Niagara River, Buffalo River and Lake Erie from pollution by sewage and waste”
- ▶ Approximately 200 employees
- ▶ Serves Buffalo and 11 Outlying Communities





# Bird Island Treatment Facility

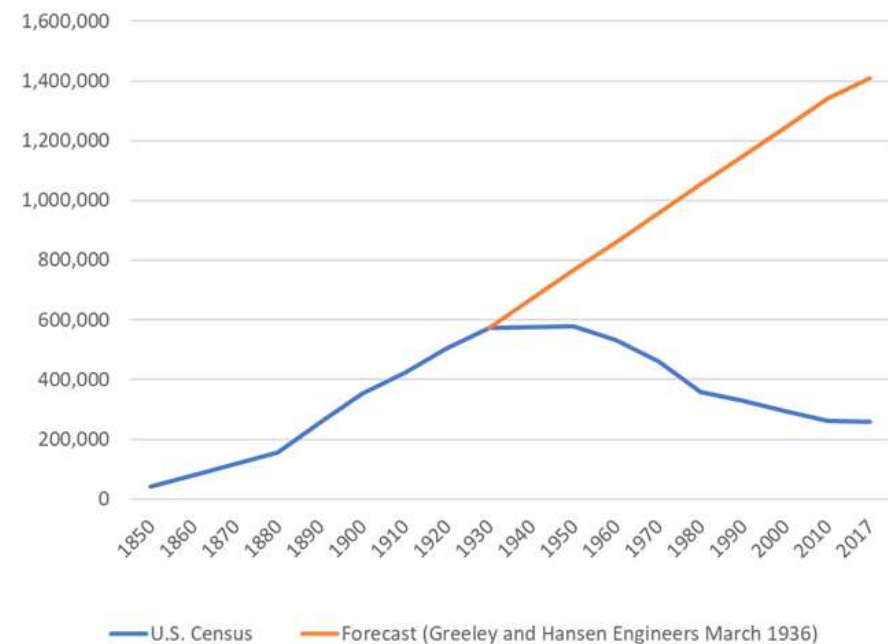
- ▶ 90 MGD Average Flow
- ▶ Rated for 180 MGD
- ▶ Current Peak Flow 520 MGD
- ▶ Long-Term Peak Flow 560 MGD





# Buffalo Sewer's Collection System

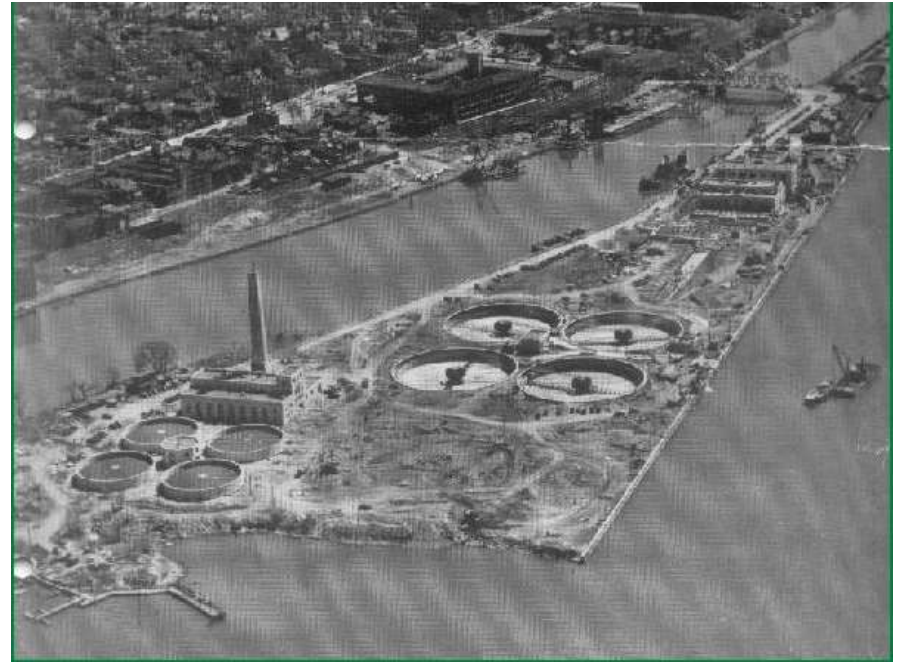
- ▶ Draining of City
  - ▶ Wetlands
  - ▶ Flat topography
- ▶ Rapid expansion
  - ▶ Erie Canal and West
  - ▶ Most pipes laid by 1900
- ▶ Today
  - ▶ 850 Miles of Pipe
  - ▶ 8" PVC - 32' x 17' RCP Box
  - ▶ 52 CSOs
  - ▶ 258 Regulators





# A History of Continuous Improvements

- ▶ Swan Trunk System: Flushed Canal System to Mighty Niagara
- ▶ Scajaquada Creek Drain
- ▶ Primary Treatment Facility and Interceptors
  - ▶ Effectively Eliminated Typhoid in Downstream Communities
  - ▶ Formation of Buffalo Sewer Authority





# A History of Continuous Improvements Continued

- ▶ Storm Relief Sewers
- ▶ Clean Water Act Improvements
  - ▶ Scajaquada Tunnel
  - ▶ Kelly Island Separate Sanitary and Pumping Station System
  - ▶ Bird Island Treatment Facility Secondary System
- ▶ Sewer Separation and Regulator Adjustments





# Development of LTCP

1994

- USEPA CSO Control Policy Issued (Required Development of LTCP)

2004

- Submitted Initial LTCP to New York State Department of Environmental Conservation (NYSDEC)

2007

- NYSDEC/USEPA Request Additional Evaluations

2009

- Negotiation of Consent Decree Begins

2012

- Submitted LTCP Update to USEPA/NYSDEC (as directed by regulatory agencies)

2014

- Final LTCP Report Approved by USEPA/NYSDEC



# Modeling

- ▶ Malcolm Pirnie/Arcadis Hosted
  - ▶ Data Analysis Split Among 3 Consultants
  - ▶ North District: Niagara River
  - ▶ Scajaquada District: Scajaquada Creek and Black Rock Canal
  - ▶ South Central District: Cazenovia Creek and Buffalo River
- ▶ XP-SWMM
  - ▶ 2000-2003 Initial Model
  - ▶ 2008-2009 Focused Recalibration
- ▶ Larger diameter pipes (and CSOs) only





# Components of LTCP

- ▶ 2-9 Activations Allowable per Waterway in Typical Year
- ▶ 20 Year Plan: 3/18/2014-3/18/2034
- ▶ \$380 M (2012 Dollars)
- ▶ Real Time Control Smart Sewers
- ▶ Green Infrastructure
- ▶ Gray Infrastructure
  - ▶ Optimizing Existing System
  - ▶ Off-line Pumped Storage Tanks
  - ▶ Treatment Facility Upgrades (NFA)

## Gray

Expanding the capacity and efficiency of our pipes, pumps, and underground infrastructure.

## Smart

Using “real time” sensors to move stormwater away from parts of the sewer system hit with lots of rain and snowmelt.

## Green

Preventing or slowing water from reaching the sewer system with “green infrastructure.”





# Work Completed to Date

## ► Real-Time Controlled Smart Sewers

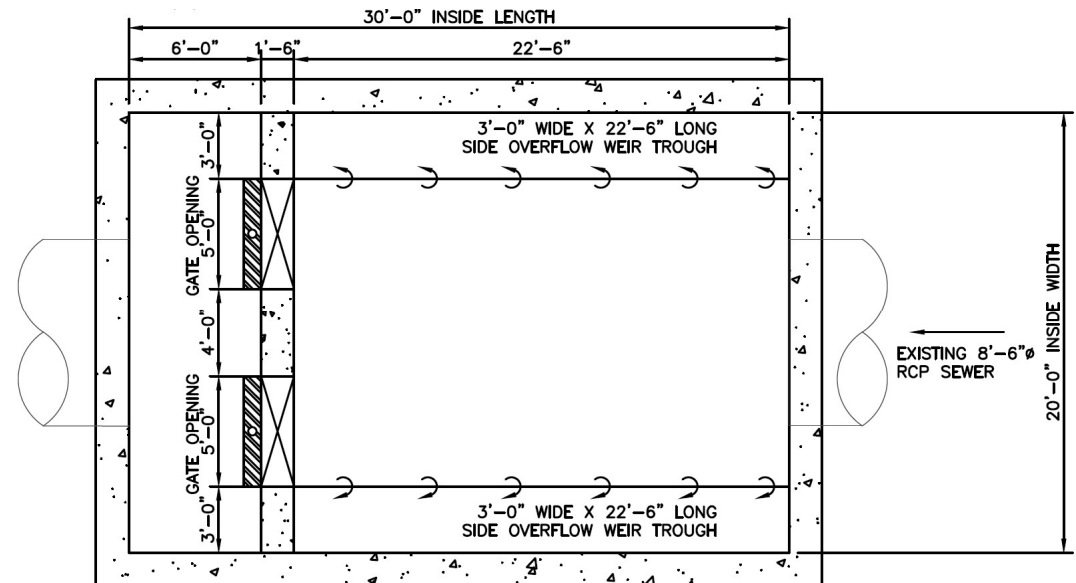
### ► Overflow Recapture

- 1 Complete
- 1 in Construction

### ► Inline Storage

- 6 Complete
- 1 in Construction

### ► Pumping Station





# Work Completed to Date Continued

- ▶ Optimizations
- ▶ Green Infrastructure
  - ▶ 602 Acres Demolitions
  - ▶ 53 Acres Permeable Pavement
  - ▶ 14 Acres Bioretention
- ▶ Sewer Separations
- ▶ NFA Secondary System Preliminary Work





# Recalibration Effort

- ▶ Required by LTCP
  - ▶ Refine Inclusion of Green Infrastructure
  - ▶ Confirm Work to Date
- ▶ Moved Earlier in Project Schedule
  - ▶ 2016 Recalibration Began
  - ▶ October 6, 2021 Recalibrated Model Approved
- ▶ XP-SWMM to PC-SWMM
- ▶ 142 of Flow and Level Gauges



# Approved Recalibration Results

- ▶ Some CSOs Already in Compliance (Some Projects Not Needed)
- ▶ LTCP Does Not Reach Compliance for Others!!!!
- ▶ Niagara River
  - ▶ Target= 9
  - ▶ Projected= 14
- ▶ Scajaquada Creek
  - ▶ Target= 4
  - ▶ Projected= 19
- ▶ Buffalo River
  - ▶ Target= 6
  - ▶ Projected= 15





# Implementation Issues to Date

## ► Pre-Construction and Construction

- NFA Preparation Work Required
- Betterment Lessens Control of Consultants and Contractors
- Land Acquisition
- Electrical Connections
- Industrial Legacy
  - Superfund Sites
  - Radioactive Road Base

## ► Post-Construction

- Gates, Valves, and Actuators
- Level Sensors and Communications
- Site Access and Maintenance



# Feasibility of Remaining Projects

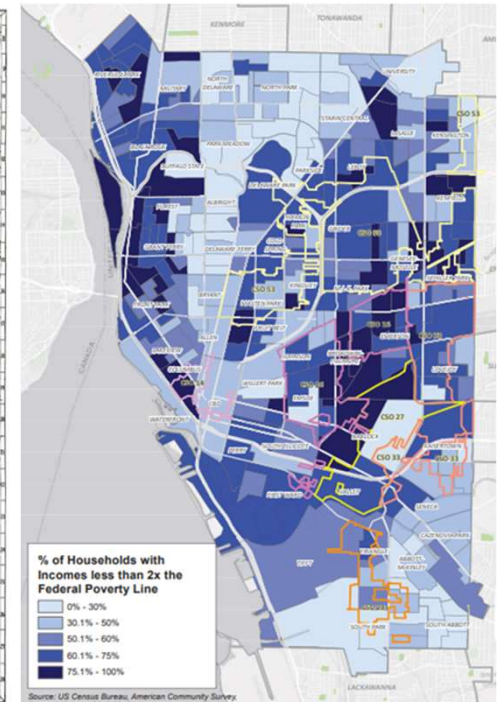
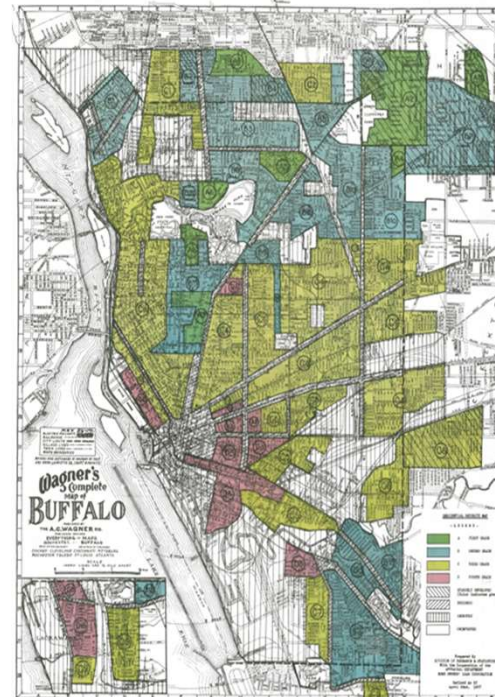
- ▶ Basements and Connecting Sewers
- ▶ Project Constructability
  - ▶ Superfund Sites
  - ▶ Rock Depth
- ▶ Project Costs and Timelines
  - ▶ Land Acquisition
  - ▶ Pumping Stations
  - ▶ Bridging
- ▶ Maintenance



# Equity Issues

- ▶ History of Environmental Justice Issues
- ▶ One of the Most Segregated Metropolitan Areas in the United States
- ▶ Proposed Neighborhood Demolitions
- ▶ Large Storage Tanks and Pump Stations

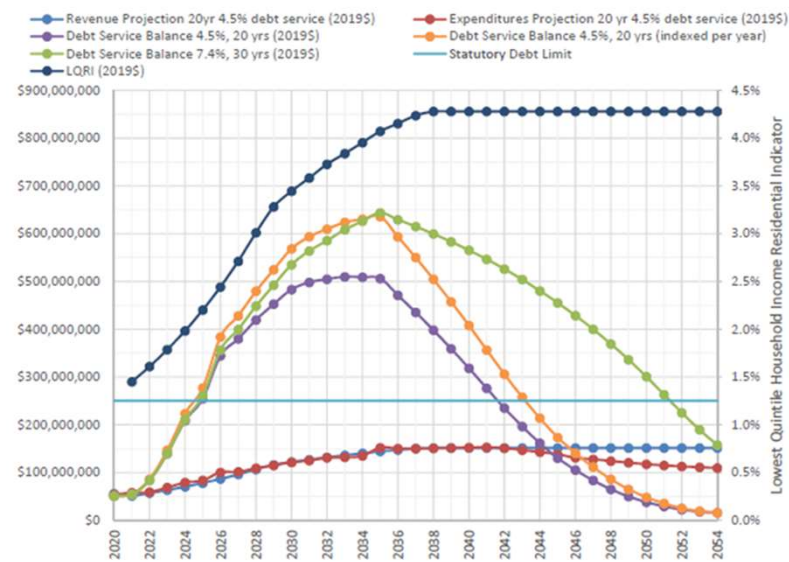
Instructions to HOLC Agents: Any threat of infiltration of foreign-born, negro or lower grade population? If so, indicate these by nationality and rate of infiltration like this: "Negro-rapid."





# Draft Financial Capability Analysis

- ▶ \$180 M Increase in Costs in 2012 Dollars
  - ▶ \$100 M for NFA
  - ▶ \$80 M for GI
- ▶ \$25 M Increase for Inflation
- ▶ 2020 Affordability Criteria
  - ▶ High Burden Community
  - ▶ Decreased Population from 2014
  - ▶ Existing LTCP Projects; 2019 Costs
- ▶ Debt Limit Set at \$250 M
- ▶ 20 Year Extension Required Without Grant Assistances





# Climate Change

- ▶ Climate Refuge
  - ▶ Average Rainfall Stable
  - ▶ Average Temperature Increase Negligible
  - ▶ Winds: Poorly Modeled, But Likely Increasing
- ▶ Seiche and Up-Lake Communities
  - ▶ Average Rainfall Increasing
  - ▶ 2016- Current Historical High Lake Levels
  - ▶ Buffalo and Niagara Rivers
    - ▶ Basement Back-ups
    - ▶ Syphon Risks
    - ▶ Smart Sewer Viability

## **Historic Crests (Station Established 4/1/1860)**

- (1) 12.08 ft on 12/02/1985
- (2) 11.12 ft on 11/15/2020
- (3) 11.06 ft on 01/30/2008
- (4) 10.65 ft on 11/01/2019
- (5) 10.65 ft on 04/06/1979
- (6) 10.57 ft on 12/11/2021
- (7) 10.36 ft on 12/12/2020
- (8) 10.31 ft on 11/10/1975



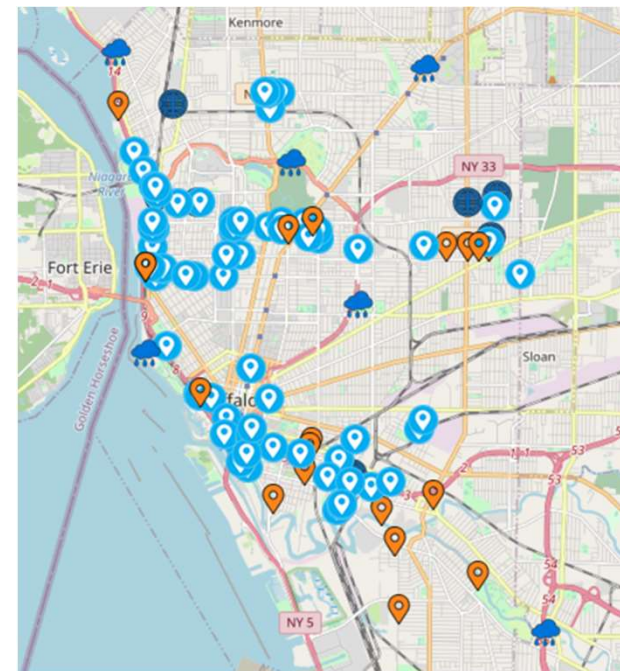
# Staffing

- ▶ Collection System Engineering Department
  - ▶ Current: 2 Engineers; 3 GIS Specialists; 5 Inspectors
  - ▶ Maximum: 5.5 Engineers; 1 Landscape Architect; 1 Public Affairs Specialist; 7 Inspectors; 1 Americorps Worker;
  - ▶ Other Responsibilities: Public Outreach; Collection and MS4 Systems Regulatory Compliance and Permitting; Capital Project Financing; Resilience Planning
- ▶ Facility Capital Projects Department
  - ▶ Current: 1 Engineer; 1 PM/SCADA Technician
  - ▶ Maximum: 2 Engineers; 1 PM/SCADA Technician
  - ▶ Other Responsibilities: SCADA Coordination; Energy Management



# Blu-X and Globalized Logic

- ▶ Benefits with Existing Smart Sewer Installations
  - ▶ Overall Annual Systemwide Reduction: 30.7 MG
  - ▶ Up to 3 Fewer Activations in Critical Locations
- ▶ Future Large Projects Even Greater Benefit
- ▶ Facility Operators can see the System
- ▶ Inter-Municipal Relations
- ▶ Diagnose System Issues
  - ▶ Grit
  - ▶ Grease
  - ▶ Flooding





# Environmental Impact Bond

- ▶ Opportunity Areas
- ▶ Green Infrastructure
- ▶ Public Sites Only
- ▶ Impervious Surface Capture
  - ▶ \$200,000.00/Acre
  - ▶ 0.90" Storm
- ▶ Total: \$49.2 M
- ▶ Closed on June 16, 2021
- ▶ Time Limited (June 16, 2028)





# Funding Opportunities

## ► Federal Initiatives

- American Recovery Plan Act
- Bipartisan Infrastructure Law
- Inflation Reduction Act

## ► FEMA BRIC & HMGP Grants

## ► Environmental Impact Bond

## ► New York State Funding

- Clean Water State Revolving Fund Loans
- Water Quality Improvement Program
- Water Infrastructure Improvement Act
- Green Innovation Grant Program
- NYS Clean Water, Clean Air, and Green Jobs Environmental Bond Act (Proposed)
- Safe Water Infrastructure Action Program "SWAP" (Proposed)

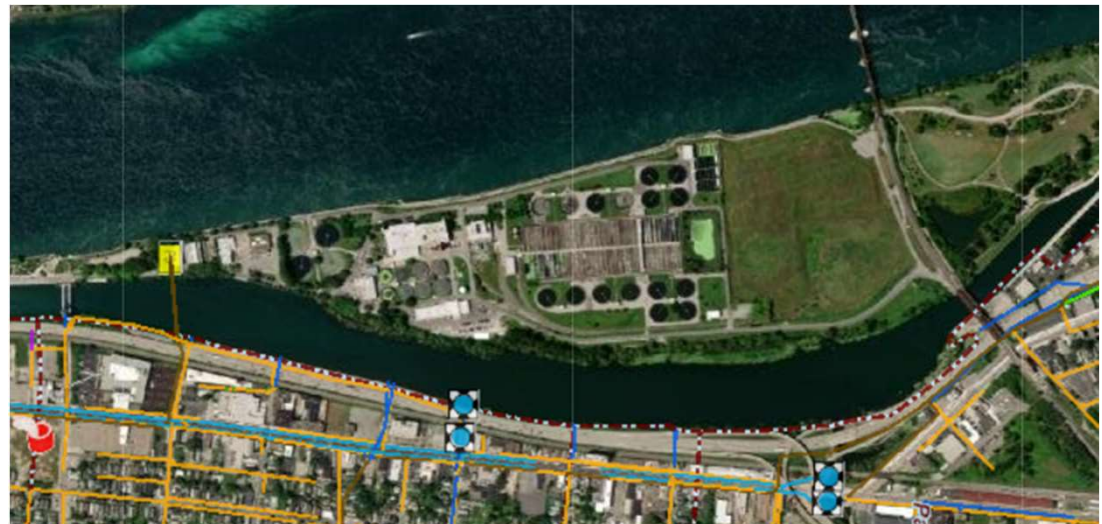
### Municipalities Awarded 50 Percent of Estimated Project Costs

| Applicant Name          | Region     | Estimated Federal Subsidy | Estimated WIIA Grant | Total Grant Award |
|-------------------------|------------|---------------------------|----------------------|-------------------|
| Buffalo Sewer Authority | Western NY | \$9,054,768               | \$9,054,768          | \$18,109,535      |



# New Engineering Opportunities

- ▶ Gravity Flow Systems and Flipping the Script on Smart Sewers
- ▶ Community Development Instead of Community Detriment
  - ▶ Not a Perfume Factory! to What Can We Do?
  - ▶ Redeveloping Parks
  - ▶ Combining Green and Gray
- ▶ Relief Sewers
- ▶ Synergistic Projects
  - ▶ Flooding
  - ▶ Aging Sewers
- ▶ Forgotten Tunnels
  - ▶ Delavan Drain
  - ▶ Albany Tunnel





# Moving Forward Short-Term

- ▶ Development of project lists
- ▶ High level screening
- ▶ Revised cost-estimation
- ▶ Model runs with base system
- ▶ Globalized logic evaluation
- ▶ Continuous project work
  - ▶ EIB
  - ▶ ARPA
  - ▶ Low-hanging fruit

**B U F F A L O**  
SEWER AUTHORITY

**xylem**  
Let's Solve Water



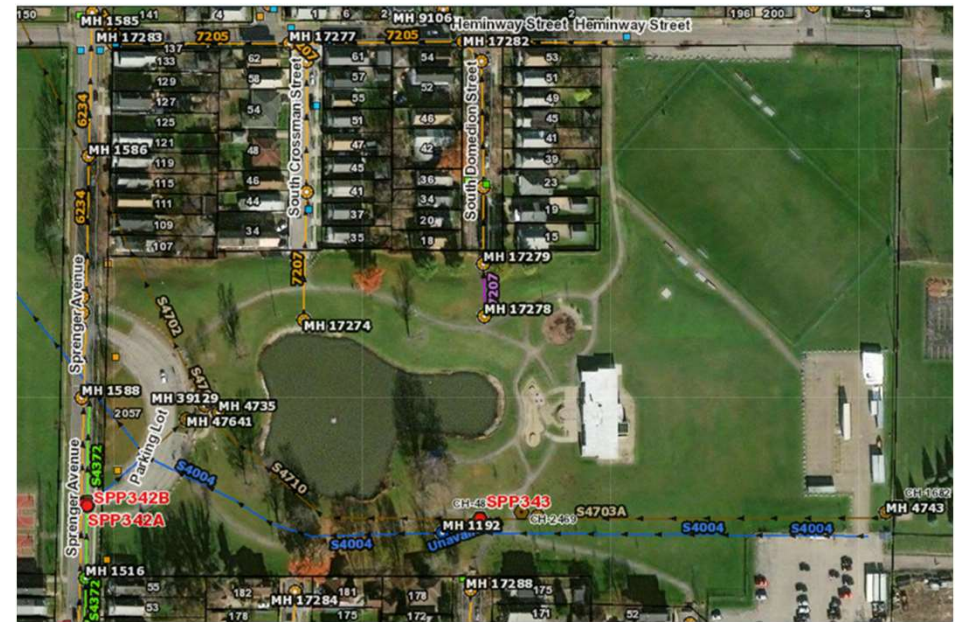
**JM Davidson**  
— Engineering, D.P.C.

A CERTIFIED WBE/DBE ENGINEERING FIRM



# Development of Project Lists

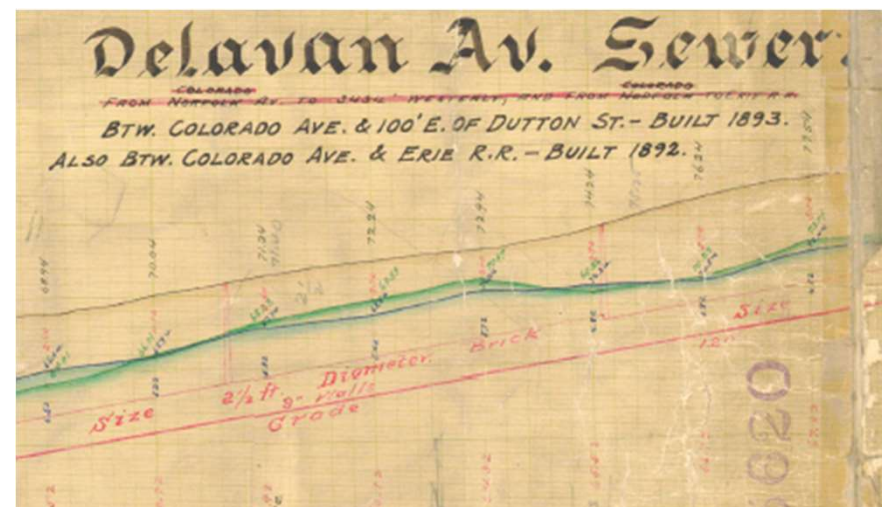
- ▶ Holistic and watershed thinking over individual CSO
    - ▶ Informed by Individual CSO Needs
    - ▶ Globalization Opportunities
  - ▶ City owned lands
    - ▶ Parks
    - ▶ Vacant Lots
    - ▶ Right of Ways
  - ▶ Minimizing maintenance
  - ▶ Relief Sewers
  - ▶ Synergistic Thinking
- 





# High Level Feasibility Analysis

- ▶ Brownfields
  - ▶ Active Superfund Sites
  - ▶ Historic Industrial locations
  - ▶ Allowability of “Slag”
- ▶ Depth to Bedrock
- ▶ Ownership
- ▶ Revised Cost-Estimation
- ▶ Current Land Uses and Community Impacts
- ▶ Model Runs with Different Combinations: Local and Global Controls





# Continuous Project Work

- ▶ EIB & ARPA
  - ▶ Comprehensive Street Work
  - ▶ Lead Service Lines
  - ▶ Street Trees
  - ▶ Permeable Pavement
  - ▶ New Combined Sewers
- ▶ Smart Sewers
  - ▶ Jefferson & Delavan Off-line Smart Sewer Project
  - ▶ Black Rock Canal & Scajaquada Creek Smart Sewers
- ▶ Backflow Prevention





# Thank you to our partners!

(apologies to those I missed)

- ▶ Funding and Regulatory: USEPA, NYSDEC, NYSEFC
- ▶ LTCP Modeling and Planning: GHD, Arcadis, Xylem
- ▶ Design: Wendel, AECOM, CHA, Watts, Bergmann, JM Davidson, Greeley and Hansen, Kheops, Stantec, Hazen
- ▶ Research: USGS, University at Buffalo, Buffalo State College, Buffalo-Niagara Waterkeeper
- ▶ Cooperating Agencies: NYSDOT, Erie County, City of Buffalo DPW
- ▶ Overall: The City of Buffalo and Our Residents



## Quiz: Part 1

1. When was the Buffalo Sewer Authority founded?  
April 8, 1935
2. Before what date were most sewer mains laid?  
1900
3. True or False: Buffalo Sewer's approved CSO LTCP calls for complete sewer separation.  
False



## Quiz: Part 2

4. How long, between the issuance of EPA policy and approval of the LTCP, did it take for the approved LTCP to be developed?  
20 years
5. When is all work under the LTCP to be completed?  
2034
6. True or False: If the LTCP is completed as approved the water quality objectives will be achieved.  
False



## Quiz: Part 3

7. In addition to not achieving water quality objectives, what issues have been identified with the existing LTCP?  
inaccurate cost estimates; environmental justice concerns; rock depth; industrial contamination; maintenance
8. What engineering firms are involved in the LTCP redevelopment project?  
Xylem; GHD; Arcadis; JM Davidson
9. True or False: While the LTCP is being redeveloped, all project work has ground to a halt.  
False



# Q & A





# Understanding and Managing Floodplains for Healthy Watersheds and Resilient Communities

November 2, 2022

Clarion Hotel; 30 Lake Shore Drive East; Dunkirk, NY 14048

## Goal

To empower municipal and Tribal decision makers to reduce risks and improve water quality throughout the Great Lakes watershed by maintaining/enhancing healthy floodplains.

## Workshop Objectives

1. **Educate** – Provide information about floodplains and the role they play in our watersheds, natural and anthropogenic drivers that impact the health of floodplains, and land use tools and best practices to reduce risks to our waterways.
2. **Experience** – Engage participants in an interactive format that will provide them with an environment that they can apply or think through ways to implement the tools/practices shared with them.
3. **Connect** – Connect participants with their watershed neighbors, technical assistance & resources.

## Additional Resources

For additional resources, visit the *Great Lakes Resources for Healthy Watersheds and Resilient Communities* document, using the QR code to the right. Instructions: Open the camera app on your phone, point the camera at the QR Code, and click the link that pops up.



## Notes

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*Face masks are not required for this in-person event; however, NY Sea Grant will make them available should people want them.*

*Funding for this workshop series is partially provided by Federal Emergency Management Agency's Cooperating Technical Partners Program, National Sea Grant Office Visioning Funding, Central New York Regional Planning and Development Board, Chautauqua Lake Watershed Management Alliance with support by the Chautauqua Watershed Conservancy, and the New York State Environmental Protection Fund under the authority of the New York Ocean and Great Lakes Ecosystem Conservation Act.*



| TIME                                   | AGENDA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00AM – 9:30AM<br><i>30 minutes</i>   | <b>Check-In and Refreshments</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 9:30AM – 9:35AM<br><i>5 minutes</i>    | <b>Welcome</b><br><i>Whitney Gleason, Chautauqua Watershed Conservancy</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9:35AM – 10:00AM<br><i>25 minutes</i>  | <b>Local Climate and Weather Impacts</b><br><i>Judy Levan, National Weather Service</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:00AM – 10:05<br><i>5 minutes</i>    | <b>Development Trends Over Time</b><br><i>Mary Austerman, New York Sea Grant</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10:05AM – 10:25AM<br><i>20 minutes</i> | <b>Watersheds and Floodplains</b><br><i>Shannon Dougherty, New York State Department of Environmental Conservation and Joanna Panasiewicz, Lake Erie Watershed Protection Alliance</i>                                                                                                                                                                                                                                                                                                                                                                               |
| 10:25AM – 10:55AM<br><i>30 minutes</i> | <b>The Fundamentals of Proactive &amp; Protective Floodplain Management</b><br><i>Brienna Wirley, New York State Department of Environmental Conservation</i>                                                                                                                                                                                                                                                                                                                                                                                                        |
| 10:55AM – 11:05AM<br><i>10 minutes</i> | <b>Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 11:05AM – 11:15AM<br><i>10 minutes</i> | <b>Introduction to the Watershed Game</b><br><i>Mary Austerman and Megan Kocher, New York Sea Grant</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 11:15AM – 12:00PM<br><i>45 minutes</i> | <b>River of Resources</b><br>Flow through stations to visit presenters and partners to network, ask questions and learn about resources that are helpful to your communities.                                                                                                                                                                                                                                                                                                                                                                                        |
| 12:00PM – 1:00PM<br><i>60 minutes</i>  | <b>Lunch</b><br>Additional time for networking, visiting tables, and personal business.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1:00AM – 2:40PM<br><i>100 minutes</i>  | <b>Issues and Solutions Panel</b> (4 panelists, 20 minutes each; 20 minutes Q&A) <ul style="list-style-type: none"> <li>o Collaborative Regional Conservation Implementation Strategy for Chautauqua County; <i>Twan Leenders, Chautauqua Watershed Conservancy</i></li> <li>o Model Local Laws to Increase Resiliency; <i>Barbara Kendall, New York Department of State</i></li> <li>o Title TBD; <i>Cassandra Pinkoski, Chautauqua County Soil and Water Conservation District</i></li> <li>o Title TBD; <i>Rosaleen Nogle, Buffalo Sewer Authority</i></li> </ul> |
| 2:40PM – 2:50PM<br><i>10 minutes</i>   | <b>Break and Refreshments</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2:50PM – 4:00PM<br><i>70 minutes</i>   | <b>Watershed Game</b><br><i>Mary Austerman and Megan Kocher, New York Sea Grant</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4:00PM – 4:20PM<br><i>20 minutes</i>   | <b>Group Discussion</b><br><i>Mary Austerman and Megan Kocher, New York Sea Grant</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4:20PM – 4:30PM<br><i>10 minutes</i>   | <b>Parting Words</b><br><i>Mary Austerman and Megan Kocher, New York Sea Grant</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4:30PM                                 | <b>Adjourn</b><br>Hand in workshop evaluations to receive your Certificate of Completion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



# Green Infrastructure in an Urban Environment for Water Quality and Flood Resiliency

ROSALEEN B. NOGLE, PE, CFM  
PRINCIPAL SANITARY ENGINEER

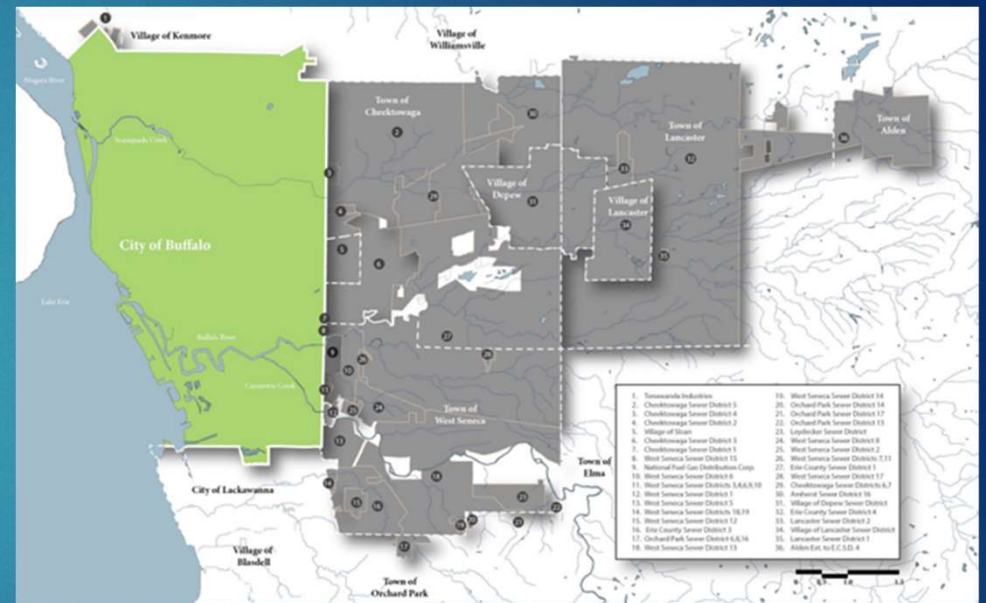
**B U F F A L O**  
SEWER AUTHORITY



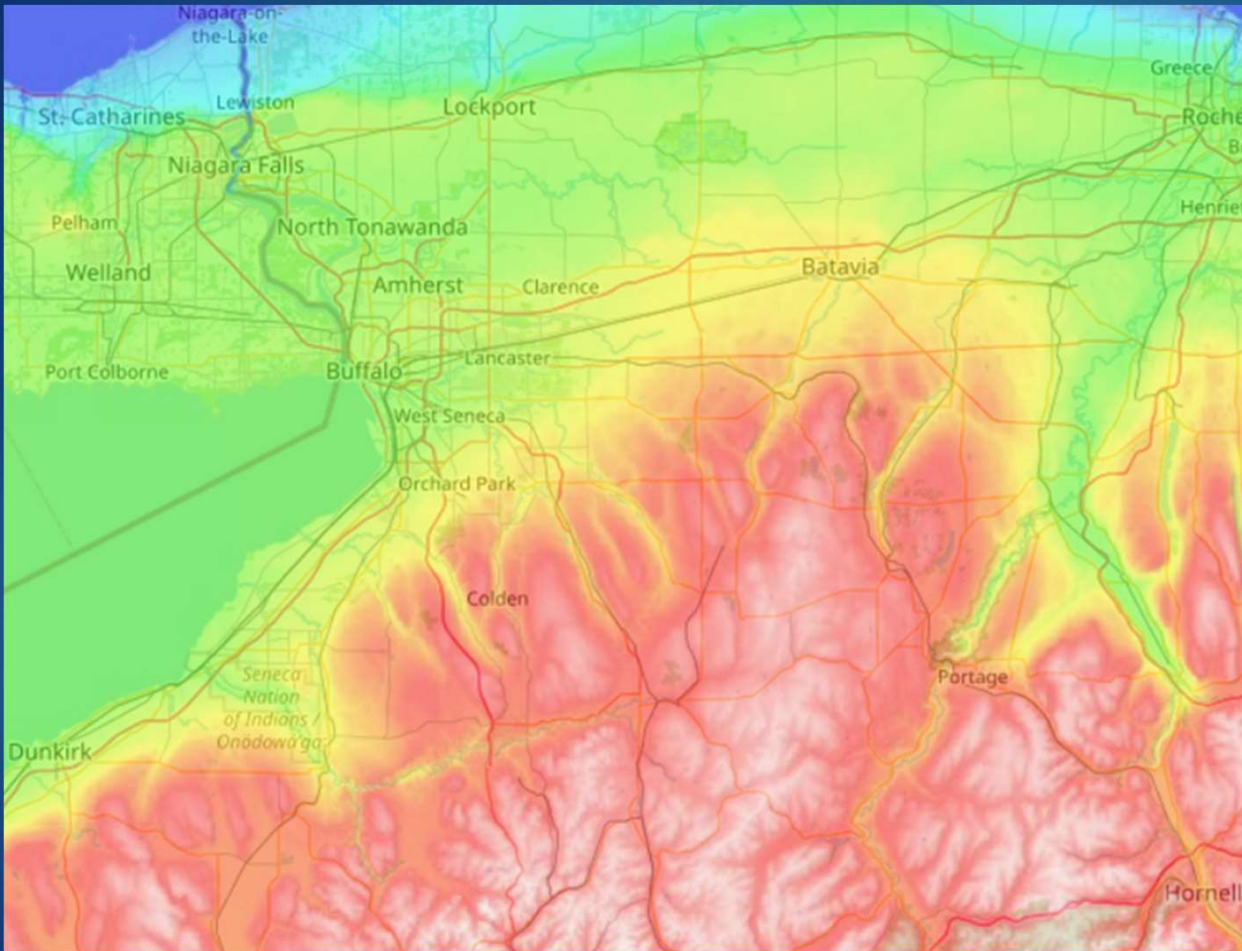
# Buffalo Sewer Authority

2

- ▶ Founded on April 8, 1935
- ▶ Created to “provide an effectual means for relieving the Niagara River, Buffalo River and Lake Erie from pollution by sewage and waste”
- ▶ Approximately 200 employees
- ▶ Serves Buffalo and 11 Outlying Communities



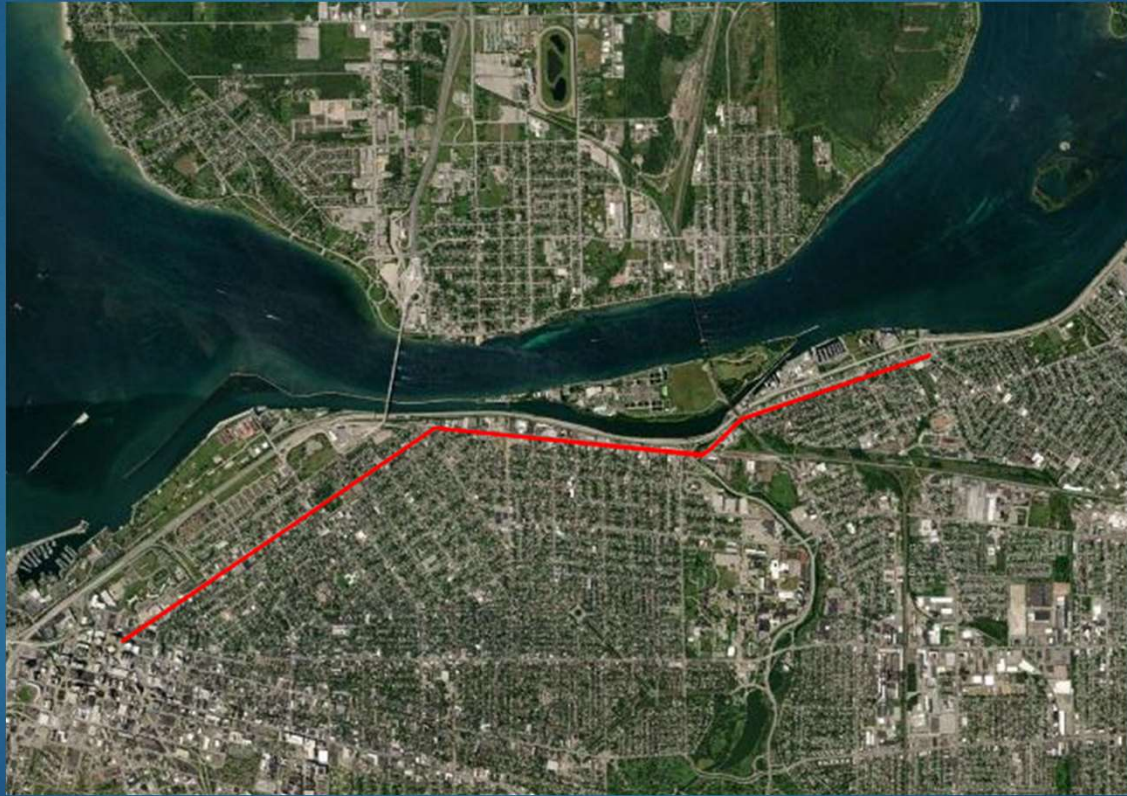




# Topography



# Location: Niagara Street, Buffalo





# Combined Sewer Systems

- ▶ Stormwater and wastewater in one pipe
- ▶ Typical of older cities
- ▶ During dry weather all flows go to treatment facility
- ▶ During wet weather, first flush generally gets to treatment facility, but as storm progresses, more flows overflow to receiving waters
- ▶ Over 90% of City of Buffalo's landmass



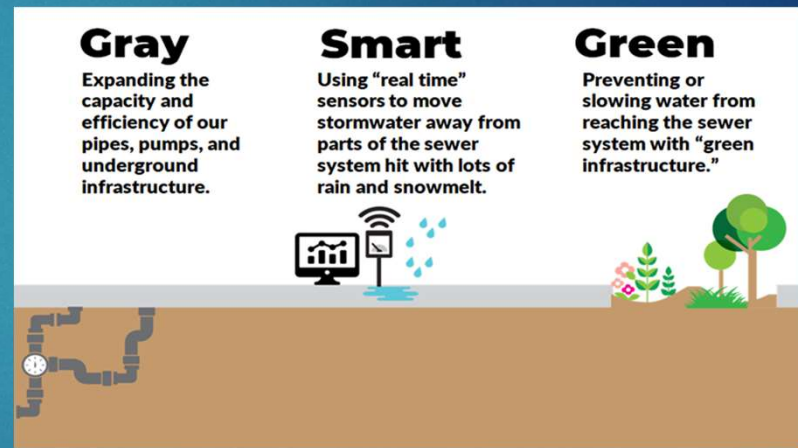
# Separate Storm Sewer Systems

- ▶ Typical of systems constructed after World War II
- ▶ Parallel pipes for wastewater and stormwater
- ▶ Designed to carry wastewater to treatment facility
- ▶ Stormwater directly discharges to surface waters
- ▶ New construction since 2003 may have some treatment of stormwater
- ▶ Inflow and infiltration can lead to sanitary sewer overflows



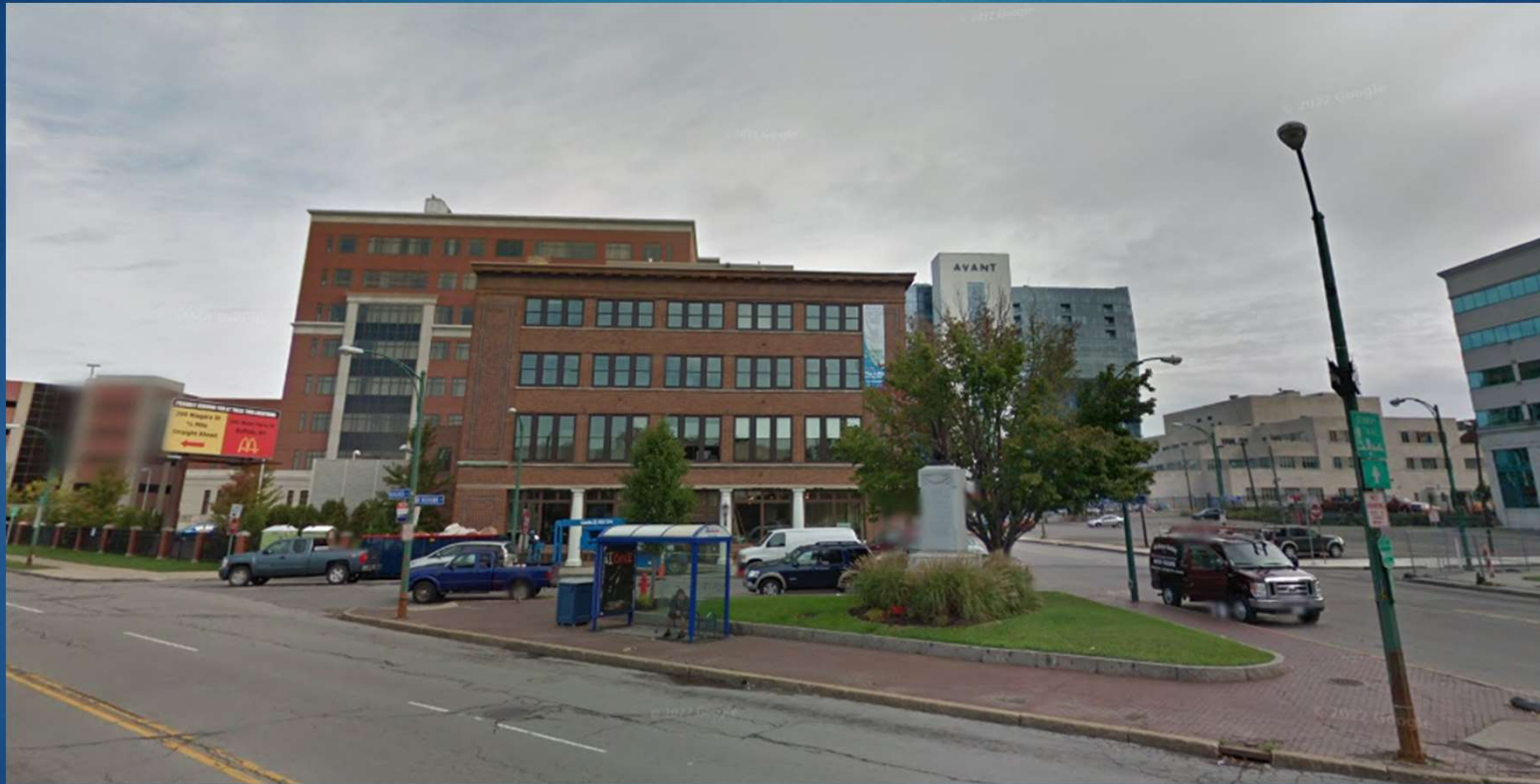
# Long-Term Control Plan

- ▶ 1994 USEPA Issued CSO Control Policy
- ▶ 2014 Final Long-Term Control Plan Approved by USEPA/NYSDEC
- ▶ 20 year plan
- ▶ Real Time Control Smart Sewers
- ▶ Green Infrastructure
- ▶ Gray Infrastructure
  - ▶ Optimizing Existing System
  - ▶ Off-line Pumped Storage Tanks
  - ▶ Treatment Facility Upgrades (NFA)



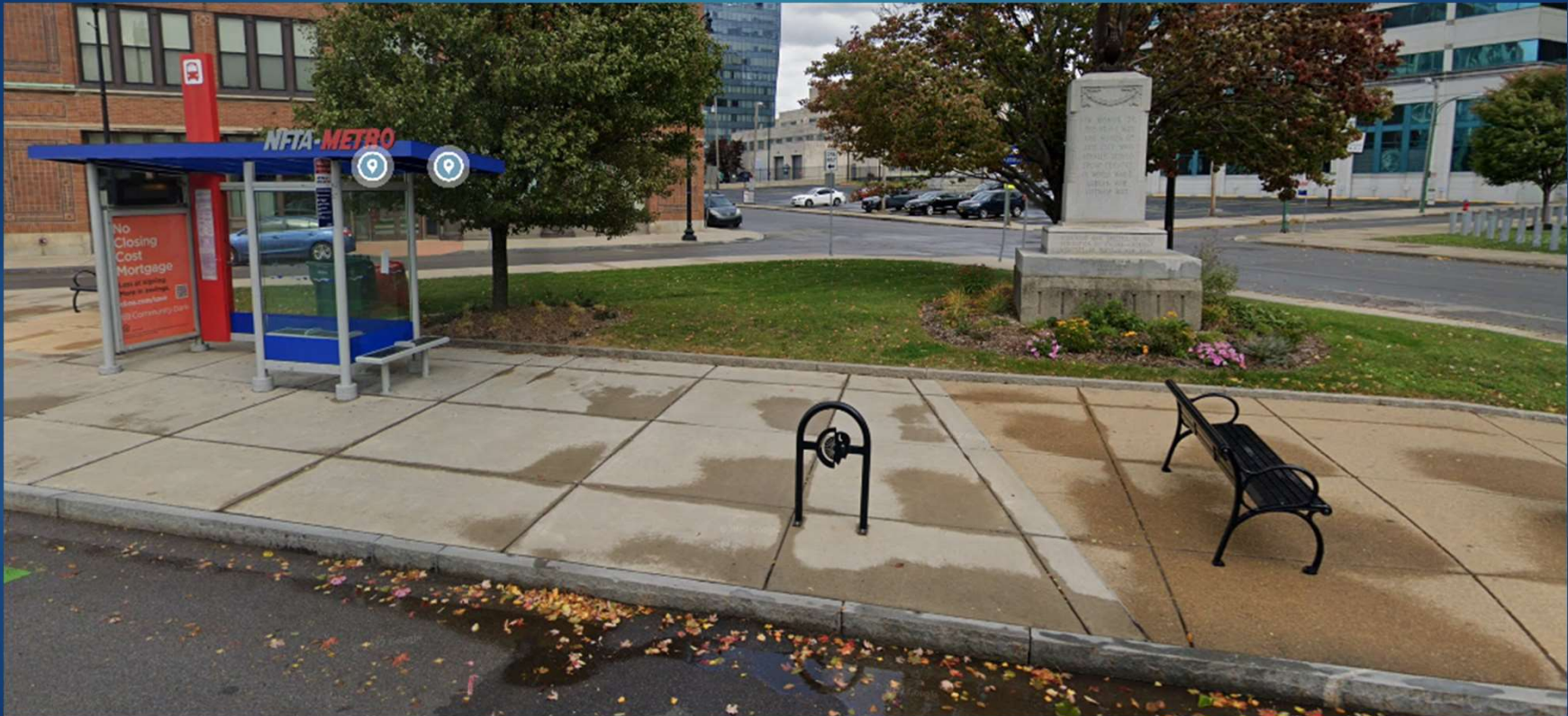


# Niagara Street Corridor Work





# Niagara Street Corridor Work





# Niagara Street Corridor Work





# Niagara Street Corridor Work





# Scajaquada Creek





# Seiche Events

## Historic Crests

**(Station Established 4/1/1860)**

(1) 12.08 ft on 12/02/1985

(2) 11.12 ft on 11/15/2020

(3) 11.06 ft on 01/30/2008

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(5) 10.65 ft on 04/06/1979

(6) 10.57 ft on 12/11/2021

(7) 10.36 ft on 12/12/2020

(8) 10.31 ft on 11/10/1975



# Surface Site Limitations

- ▶ Bicycle track
- ▶ Three driving lanes
- ▶ Two parking lanes
- ▶ Sidewalks





# Subsurface Site Limitations

- ▶ Major watermains
- ▶ Fiberoptic lines
- ▶ Underground electrical
- ▶ Gas mains
- ▶ Old combined sewers
- ▶ Deep interceptors



# Designs

- ▶ Geomatrix
- ▶ Underdrain piping
- ▶ Underground filtration and storage
- ▶ Vegetation primarily aesthetic



# Outcomes

## ▶ Benefits

- ▶ Air quality and heat island impacts
- ▶ Water treatment
- ▶ Surcharge relief for Creek and Street

## ▶ Cautions

- ▶ Green Infrastructure is not Gray Infrastructure
- ▶ Differences of opinion in aesthetics
- ▶ Functionality and form
- ▶ Safety considerations



# Rethinking Buffalo Sewer's CSO Long Term Control Plan

ROSALEEN B. NOGLE, PE  
PRINCIPAL SANITARY ENGINEER

**BUFFALO**  
SEWER AUTHORITY



# Agenda

- ▶ Buffalo Sewer Authority's System
- ▶ Development of Long-Term Control Plan
- ▶ Eight Years of Progress
- ▶ Recalibration and Retooling

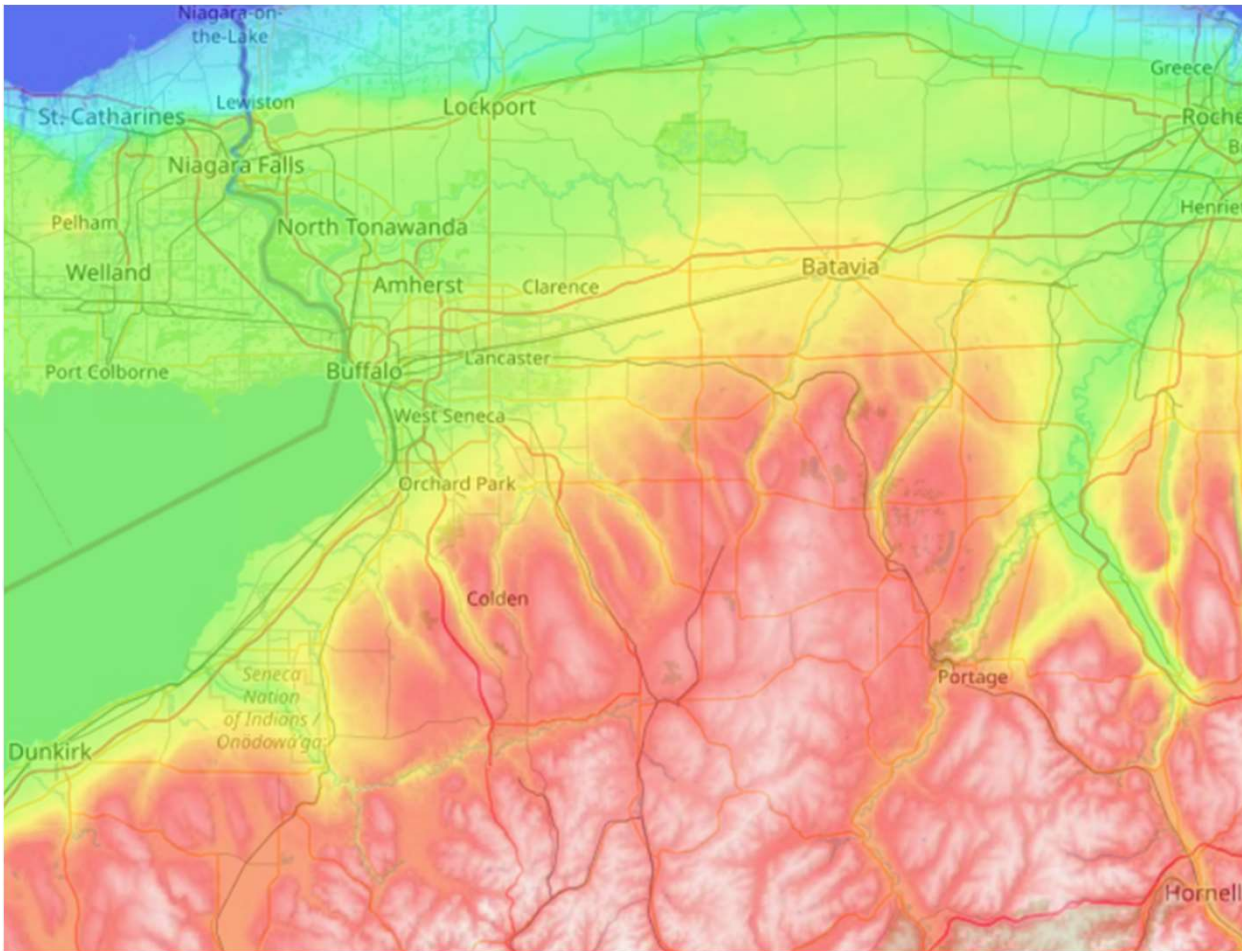


Where is  
Buffalo, NY?





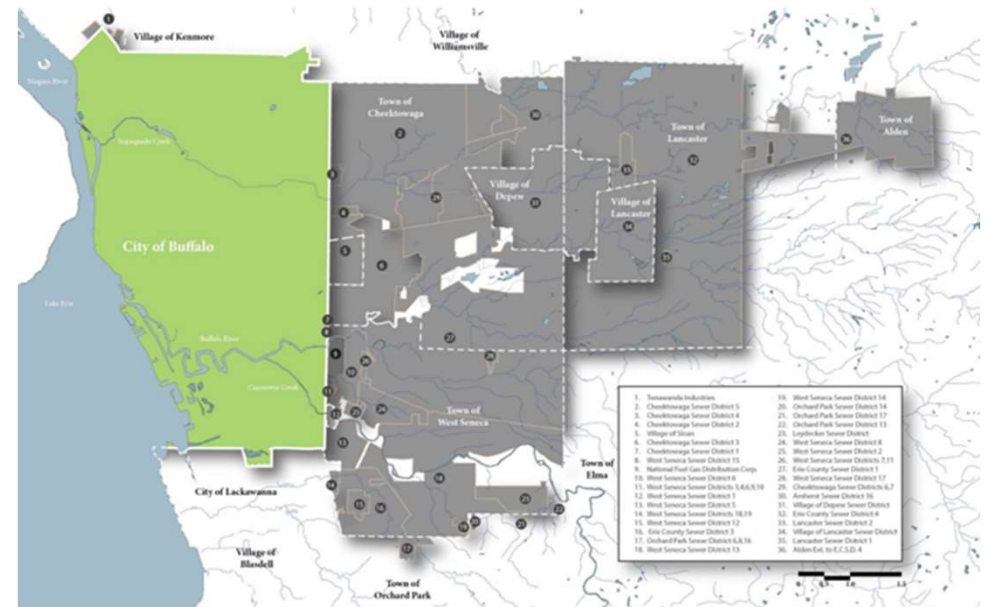
# Topography





# Buffalo Sewer Authority

- ▶ Founded on April 8, 1935
- ▶ Created to “provide an effectual means for relieving the Niagara River, Buffalo River and Lake Erie from pollution by sewage and waste”
- ▶ Approximately 200 employees
- ▶ Serves Buffalo and 11 Outlying Communities





# Bird Island Treatment Facility

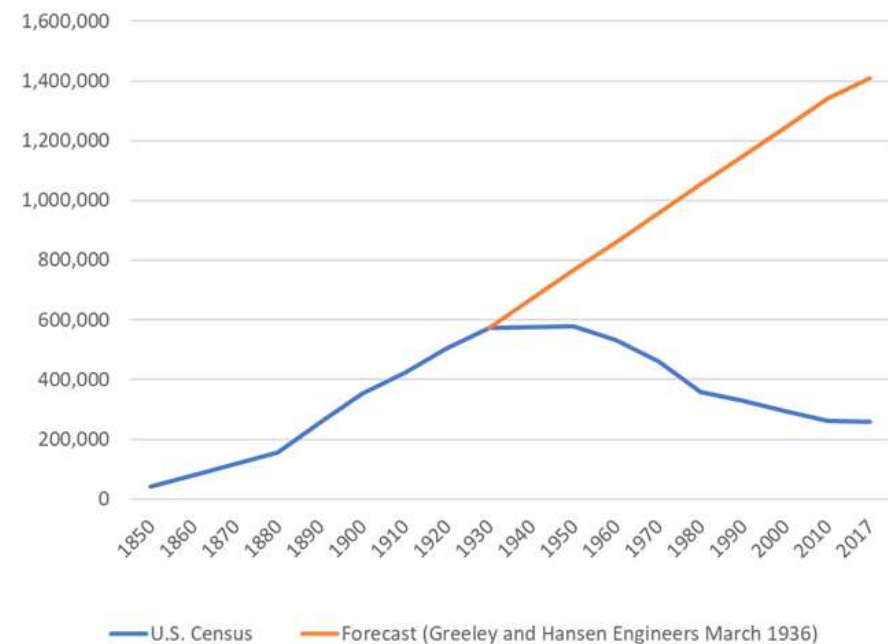
- ▶ 90 MGD Average Flow
- ▶ Rated for 180 MGD
- ▶ Current Peak Flow 520 MGD
- ▶ Long-Term Peak Flow 560 MGD





# Buffalo Sewer's Collection System

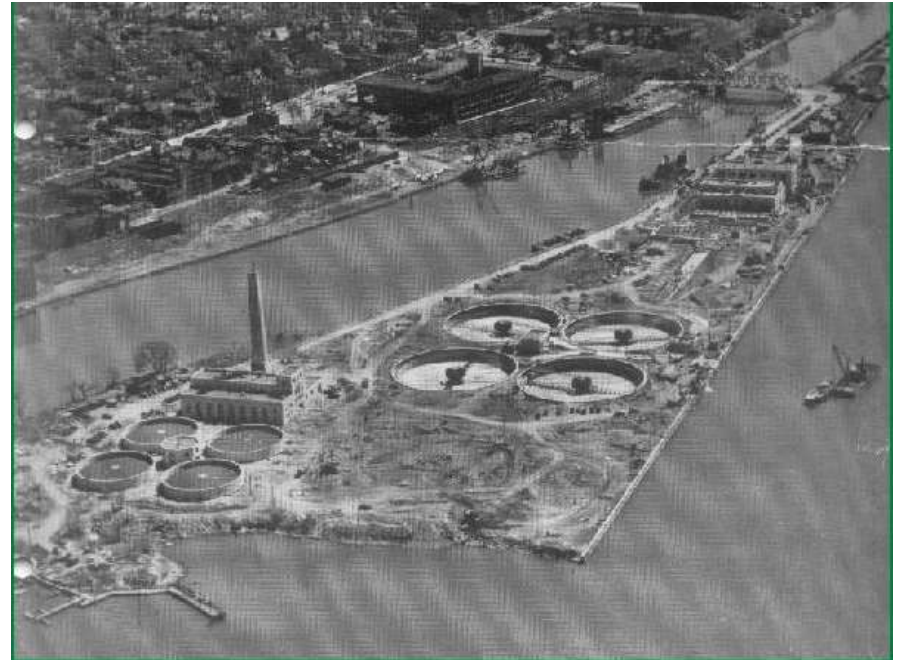
- ▶ Draining of City
  - ▶ Wetlands
  - ▶ Flat topography
- ▶ Rapid expansion
  - ▶ Erie Canal and West
  - ▶ Most pipes laid by 1900
- ▶ Today
  - ▶ 850 Miles of Pipe
  - ▶ 8" PVC - 32' x 17' RCP Box
  - ▶ 52 CSOs
  - ▶ 258 Regulators





# A History of Continuous Improvements

- ▶ Swan Trunk System: Flushed Canal System to Mighty Niagara
- ▶ Scajaquada Creek Drain
- ▶ Primary Treatment Facility and Interceptors
  - ▶ Effectively Eliminated Typhoid in Downstream Communities
  - ▶ Formation of Buffalo Sewer Authority





# A History of Continuous Improvements Continued

- ▶ Storm Relief Sewers
- ▶ Clean Water Act Improvements
  - ▶ Scajaquada Tunnel
  - ▶ Kelly Island Separate Sanitary and Pumping Station System
  - ▶ Bird Island Treatment Facility Secondary System
- ▶ Sewer Separation and Regulator Adjustments





# Development of LTCP

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- USEPA CSO Control Policy Issued (Required Development of LTCP)

2004

- Submitted Initial LTCP to New York State Department of Environmental Conservation (NYSDEC)

2007

- NYSDEC/USEPA Request Additional Evaluations

2009

- Negotiation of Consent Decree Begins

2012

- Submitted LTCP Update to USEPA/NYSDEC (as directed by regulatory agencies)

2014

- Final LTCP Report Approved by USEPA/NYSDEC



# Modeling

- ▶ Malcolm Pirnie/Arcadis Hosted
  - ▶ Data Analysis Split Among 3 Consultants
  - ▶ North District: Niagara River
  - ▶ Scajaquada District: Scajaquada Creek and Black Rock Canal
  - ▶ South Central District: Cazenovia Creek and Buffalo River
- ▶ XP-SWMM
  - ▶ 2000-2003 Initial Model
  - ▶ 2008-2009 Focused Recalibration
- ▶ Larger diameter pipes (and CSOs) only





# Components of LTCP

- ▶ 2-9 Activations Allowable per Waterway in Typical Year
- ▶ 20 Year Plan: 3/18/2014-3/18/2034
- ▶ \$380 M (2012 Dollars)
- ▶ Real Time Control Smart Sewers
- ▶ Green Infrastructure
- ▶ Gray Infrastructure
  - ▶ Optimizing Existing System
  - ▶ Off-line Pumped Storage Tanks
  - ▶ Treatment Facility Upgrades (NFA)

## Gray

Expanding the capacity and efficiency of our pipes, pumps, and underground infrastructure.

## Smart

Using “real time” sensors to move stormwater away from parts of the sewer system hit with lots of rain and snowmelt.

## Green

Preventing or slowing water from reaching the sewer system with “green infrastructure.”





# Work Completed to Date

## ► Real-Time Controlled Smart Sewers

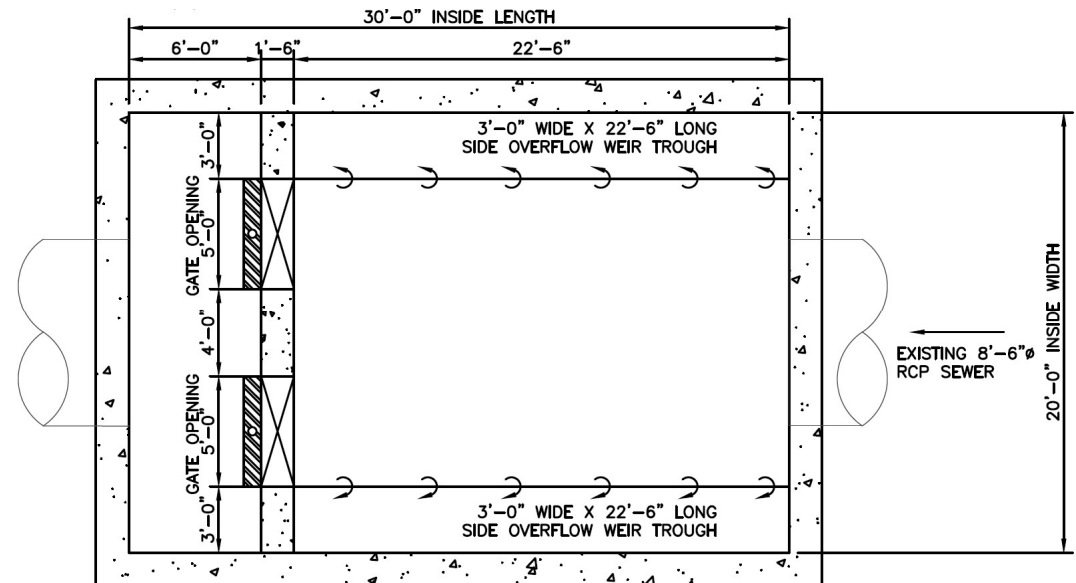
### ► Overflow Recapture

- 1 Complete
- 1 in Construction

### ► Inline Storage

- 6 Complete
- 1 in Construction

### ► Pumping Station





# Work Completed to Date Continued

- ▶ Optimizations
- ▶ Green Infrastructure
  - ▶ 602 Acres Demolitions
  - ▶ 53 Acres Permeable Pavement
  - ▶ 14 Acres Bioretention
- ▶ Sewer Separations
- ▶ NFA Secondary System Preliminary Work





# Recalibration Effort

- ▶ Required by LTCP
  - ▶ Refine Inclusion of Green Infrastructure
  - ▶ Confirm Work to Date
- ▶ Moved Earlier in Project Schedule
  - ▶ 2016 Recalibration Began
  - ▶ October 6, 2021 Recalibrated Model Approved
- ▶ XP-SWMM to PC-SWMM
- ▶ 142 of Flow and Level Gauges



# Approved Recalibration Results

- ▶ Some CSOs Already in Compliance (Some Projects Not Needed)
- ▶ LTCP Does Not Reach Compliance for Others!!!!
- ▶ Niagara River
  - ▶ Target= 9
  - ▶ Projected= 14
- ▶ Scajaquada Creek
  - ▶ Target= 4
  - ▶ Projected= 19
- ▶ Buffalo River
  - ▶ Target= 6
  - ▶ Projected= 15





# Implementation Issues to Date

## ► Pre-Construction and Construction

- NFA Preparation Work Required
- Betterment Lessens Control of Consultants and Contractors
- Land Acquisition
- Electrical Connections
- Industrial Legacy
  - Superfund Sites
  - Radioactive Road Base

## ► Post-Construction

- Gates, Valves, and Actuators
- Level Sensors and Communications
- Site Access and Maintenance



# Feasibility of Remaining Projects

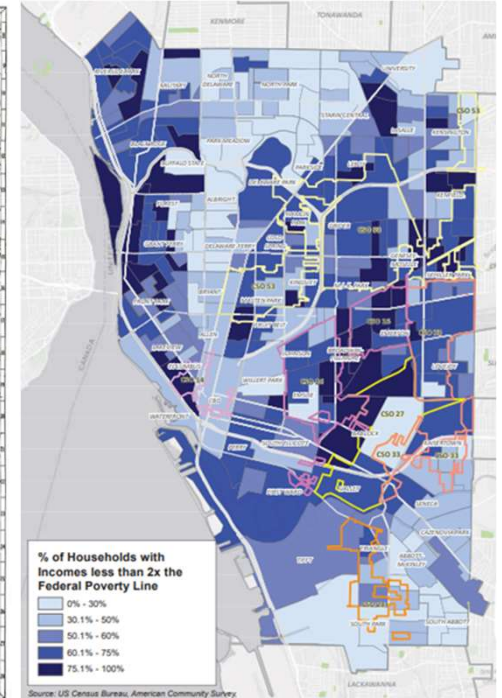
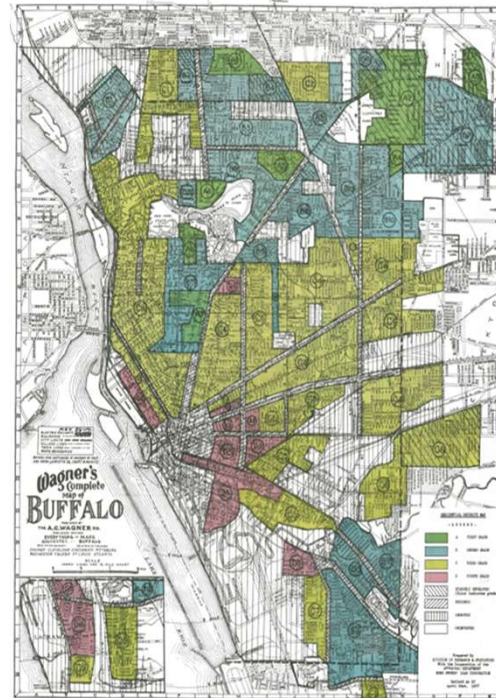
- ▶ Basements and Connecting Sewers
- ▶ Project Constructability
  - ▶ Superfund Sites
  - ▶ Rock Depth
- ▶ Project Costs and Timelines
  - ▶ Land Acquisition
  - ▶ Pumping Stations
  - ▶ Bridging
- ▶ Maintenance



# Equity Issues

- ▶ History of Environmental Justice Issues
- ▶ One of the Most Segregated Metropolitan Areas in the United States
- ▶ Proposed Neighborhood Demolitions
- ▶ Large Storage Tanks and Pump Stations

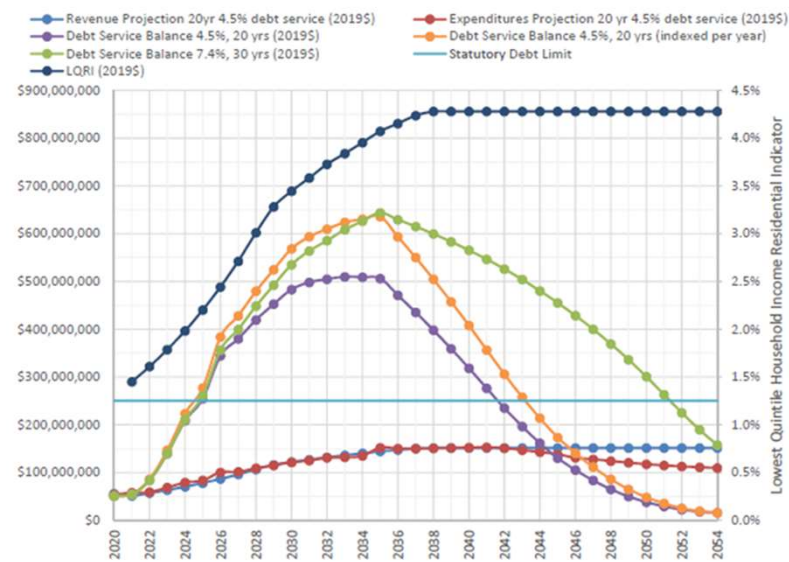
Instructions to HOLC Agents: Any threat of infiltration of foreign-born, negro or lower grade population? If so, indicate these by nationality and rate of infiltration like this: "Negro-rapid."





# Draft Financial Capability Analysis

- ▶ \$180 M Increase in Costs in 2012 Dollars
  - ▶ \$100 M for NFA
  - ▶ \$80 M for GI
- ▶ \$25 M Increase for Inflation
- ▶ 2020 Affordability Criteria
  - ▶ High Burden Community
  - ▶ Decreased Population from 2014
  - ▶ Existing LTCP Projects; 2019 Costs
- ▶ Debt Limit Set at \$250 M
- ▶ 20 Year Extension Required Without Grant Assistances





# Climate Change

- ▶ Climate Refuge
  - ▶ Average Rainfall Stable
  - ▶ Average Temperature Increase Negligible
  - ▶ Winds: Poorly Modeled, But Likely Increasing
- ▶ Seiche and Up-Lake Communities
  - ▶ Average Rainfall Increasing
  - ▶ 2016- Current Historical High Lake Levels
  - ▶ Buffalo and Niagara Rivers
    - ▶ Basement Back-ups
    - ▶ Syphon Risks
    - ▶ Smart Sewer Viability

## **Historic Crests (Station Established 4/1/1860)**

- (1) 12.08 ft on 12/02/1985
- (2) 11.12 ft on 11/15/2020
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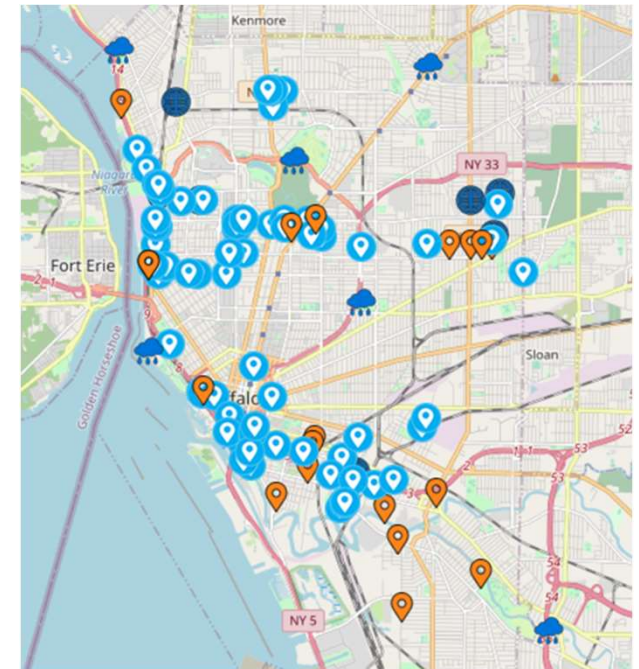
# Staffing

- ▶ Collection System Engineering Department
  - ▶ Current: 2 Engineers; 3 GIS Specialists; 5 Inspectors
  - ▶ Maximum: 5.5 Engineers; 1 Landscape Architect; 1 Public Affairs Specialist; 7 Inspectors; 1 Americorps Worker;
  - ▶ Other Responsibilities: Public Outreach; Collection and MS4 Systems Regulatory Compliance and Permitting; Capital Project Financing; Resilience Planning
- ▶ Facility Capital Projects Department
  - ▶ Current: 1 Engineer; 1 PM/SCADA Technician
  - ▶ Maximum: 2 Engineers; 1 PM/SCADA Technician
  - ▶ Other Responsibilities: SCADA Coordination; Energy Management



# Blu-X and Globalized Logic

- ▶ Benefits with Existing Smart Sewer Installations
  - ▶ Overall Annual Systemwide Reduction: 30.7 MG
  - ▶ Up to 3 Fewer Activations in Critical Locations
- ▶ Future Large Projects Even Greater Benefit
- ▶ Facility Operators can see the System
- ▶ Inter-Municipal Relations
- ▶ Diagnose System Issues
  - ▶ Grit
  - ▶ Grease
  - ▶ Flooding





# Environmental Impact Bond

- ▶ Opportunity Areas
- ▶ Green Infrastructure
- ▶ Public Sites Only
- ▶ Impervious Surface Capture
  - ▶ \$200,000.00/Acre
  - ▶ 0.90" Storm
- ▶ Total: \$49.2 M
- ▶ Closed on June 16, 2021
- ▶ Time Limited (June 16, 2028)





# Funding Opportunities

## ► Federal Initiatives

- American Recovery Plan Act
- Bipartisan Infrastructure Law
- Inflation Reduction Act

## ► FEMA BRIC & HMGP Grants

## ► Environmental Impact Bond

## ► New York State Funding

- Clean Water State Revolving Fund Loans
- Water Quality Improvement Program
- Water Infrastructure Improvement Act
- Green Innovation Grant Program
- NYS Clean Water, Clean Air, and Green Jobs Environmental Bond Act (Proposed)
- Safe Water Infrastructure Action Program "SWAP" (Proposed)

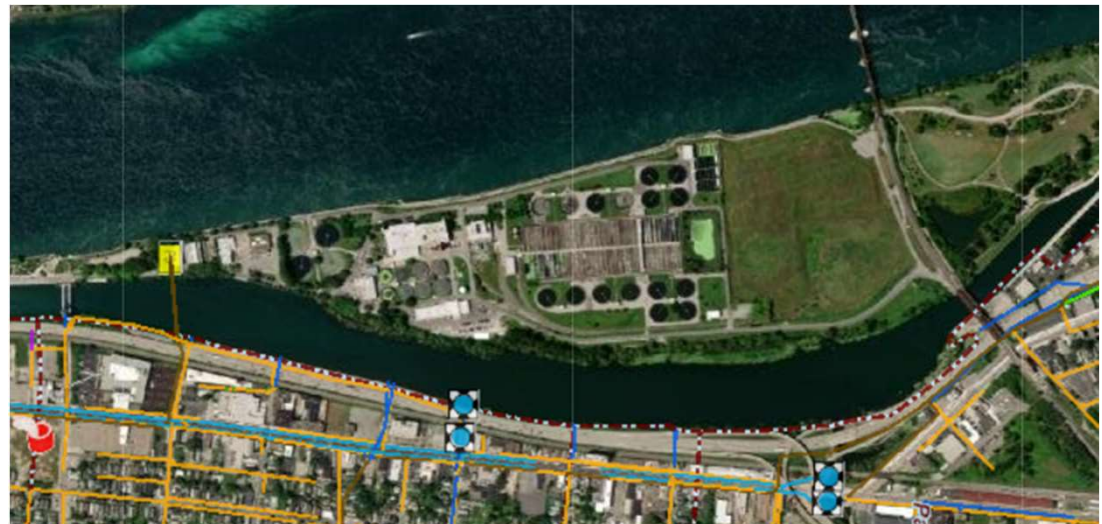
### Municipalities Awarded 50 Percent of Estimated Project Costs

| Applicant Name          | Region     | Estimated Federal Subsidy | Estimated WIIA Grant | Total Grant Award |
|-------------------------|------------|---------------------------|----------------------|-------------------|
| Buffalo Sewer Authority | Western NY | \$9,054,768               | \$9,054,768          | \$18,109,535      |



# New Engineering Opportunities

- ▶ Gravity Flow Systems and Flipping the Script on Smart Sewers
- ▶ Community Development Instead of Community Detriment
  - ▶ Not a Perfume Factory! to What Can We Do?
  - ▶ Redeveloping Parks
  - ▶ Combining Green and Gray
- ▶ Relief Sewers
- ▶ Synergistic Projects
  - ▶ Flooding
  - ▶ Aging Sewers
- ▶ Forgotten Tunnels
  - ▶ Delavan Drain
  - ▶ Albany Tunnel





# Moving Forward Short-Term

- ▶ Development of project lists
- ▶ High level screening
- ▶ Revised cost-estimation
- ▶ Model runs with base system
- ▶ Globalized logic evaluation
- ▶ Continuous project work
  - ▶ EIB
  - ▶ ARPA
  - ▶ Low-hanging fruit

**B U F F A L O**  
SEWER AUTHORITY

**xylem**  
Let's Solve Water



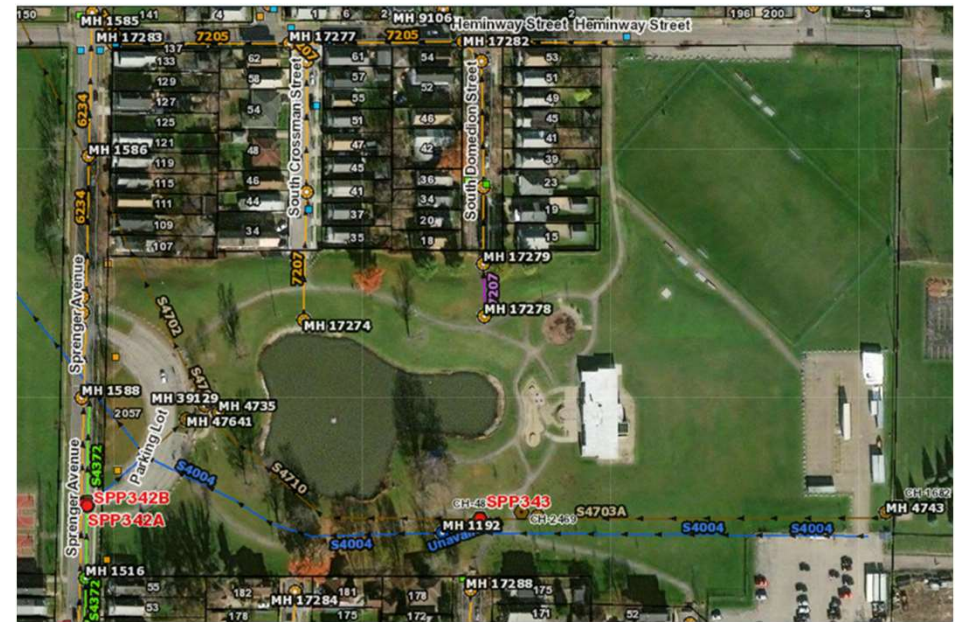
**JMDavidson**  
— Engineering, D.P.C.

A CERTIFIED WBE/DBE ENGINEERING FIRM



# Development of Project Lists

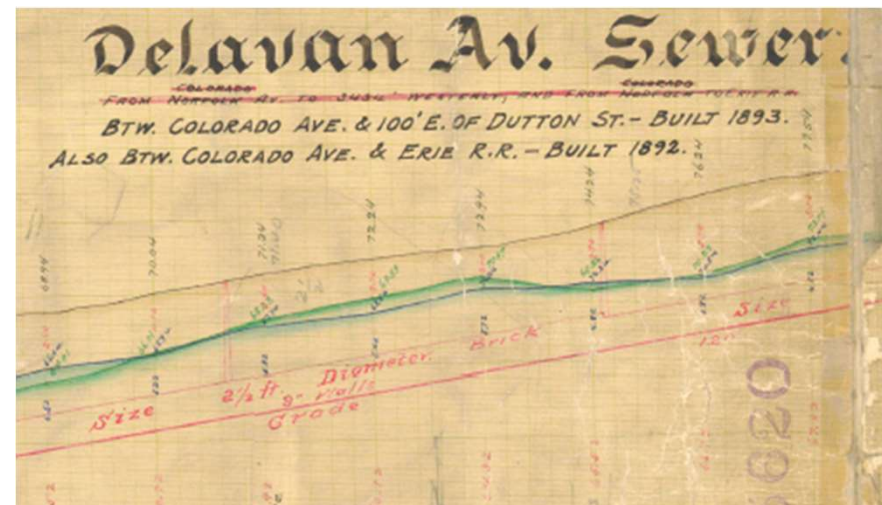
- ▶ Holistic and watershed thinking over individual CSO
    - ▶ Informed by Individual CSO Needs
    - ▶ Globalization Opportunities
  - ▶ City owned lands
    - ▶ Parks
    - ▶ Vacant Lots
    - ▶ Right of Ways
  - ▶ Minimizing maintenance
  - ▶ Relief Sewers
  - ▶ Synergistic Thinking
- 





# High Level Feasibility Analysis

- ▶ Brownfields
  - ▶ Active Superfund Sites
  - ▶ Historic Industrial locations
  - ▶ Allowability of “Slag”
- ▶ Depth to Bedrock
- ▶ Ownership
- ▶ Revised Cost-Estimation
- ▶ Current Land Uses and Community Impacts
- ▶ Model Runs with Different Combinations: Local and Global Controls





# Continuous Project Work

- ▶ EIB & ARPA
  - ▶ Comprehensive Street Work
  - ▶ Lead Service Lines
  - ▶ Street Trees
  - ▶ Permeable Pavement
  - ▶ New Combined Sewers
- ▶ Smart Sewers
  - ▶ Jefferson & Delavan Off-line Smart Sewer Project
  - ▶ Black Rock Canal & Scajaquada Creek Smart Sewers
- ▶ Backflow Prevention





# Thank you to our partners!

(apologies to those I missed)

- ▶ Funding and Regulatory: USEPA, NYSDEC, NYSEFC
- ▶ LTCP Modeling and Planning: GHD, Arcadis, Xylem
- ▶ Design: Wendel, AECOM, CHA, Watts, Bergmann, JM Davidson, Greeley and Hansen, Kheops, Stantec, Hazen
- ▶ Research: USGS, University at Buffalo, Buffalo State College, Buffalo-Niagara Waterkeeper
- ▶ Cooperating Agencies: NYSDOT, Erie County, City of Buffalo DPW
- ▶ Overall: The City of Buffalo and Our Residents



# Q & A





# Equity Analysis in Comprehensive Streetscape Planning

ROSALEEN B. NOGLE, PE  
PRINCIPAL SANITARY ENGINEER

**BUFFALO**  
SEWER AUTHORITY

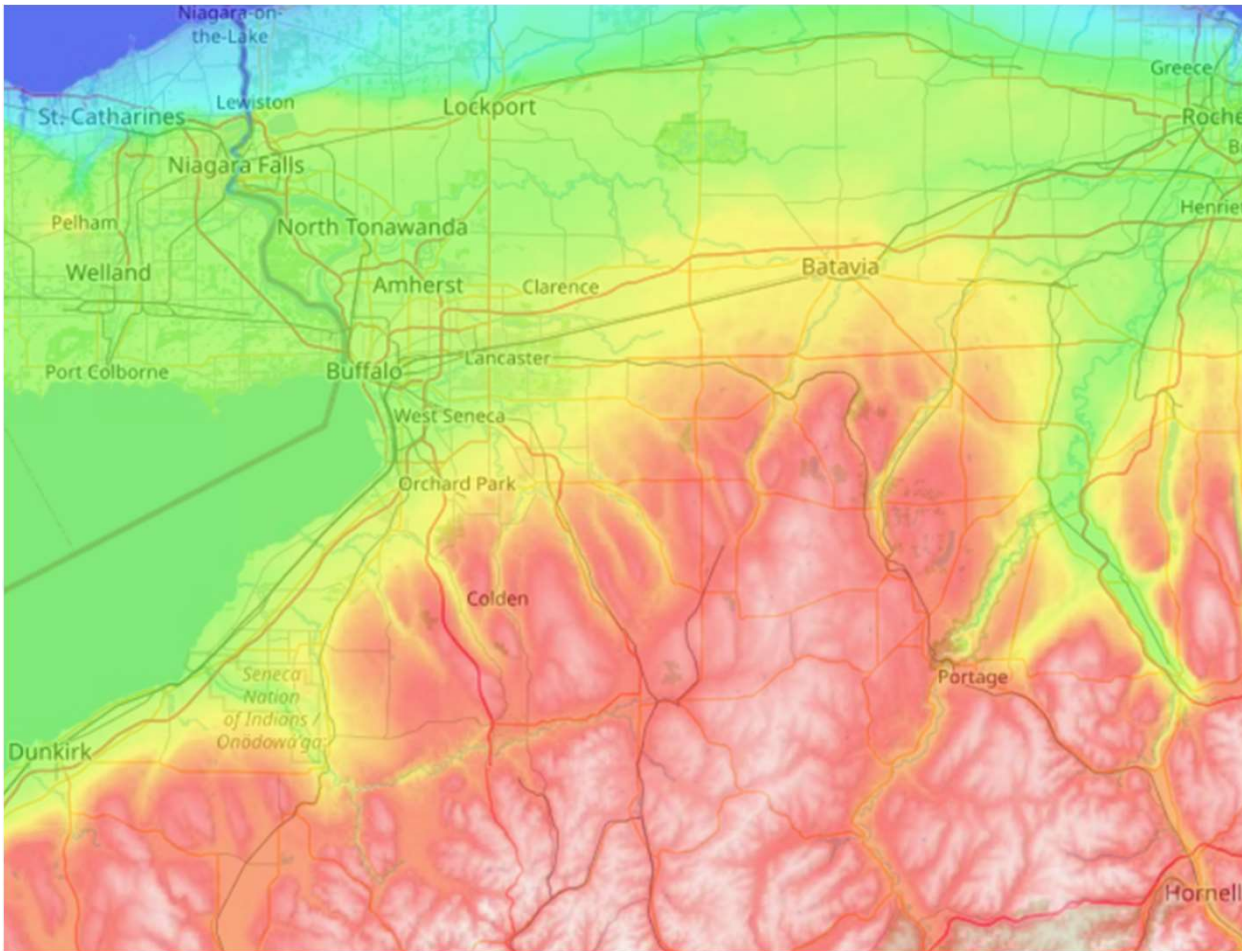


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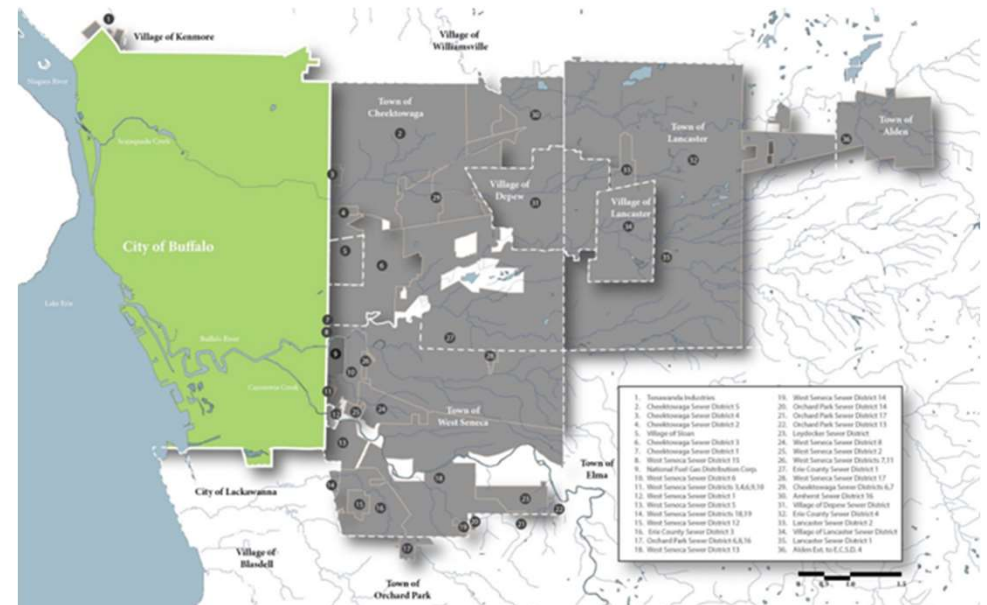
# Topography





# Buffalo Sewer Authority

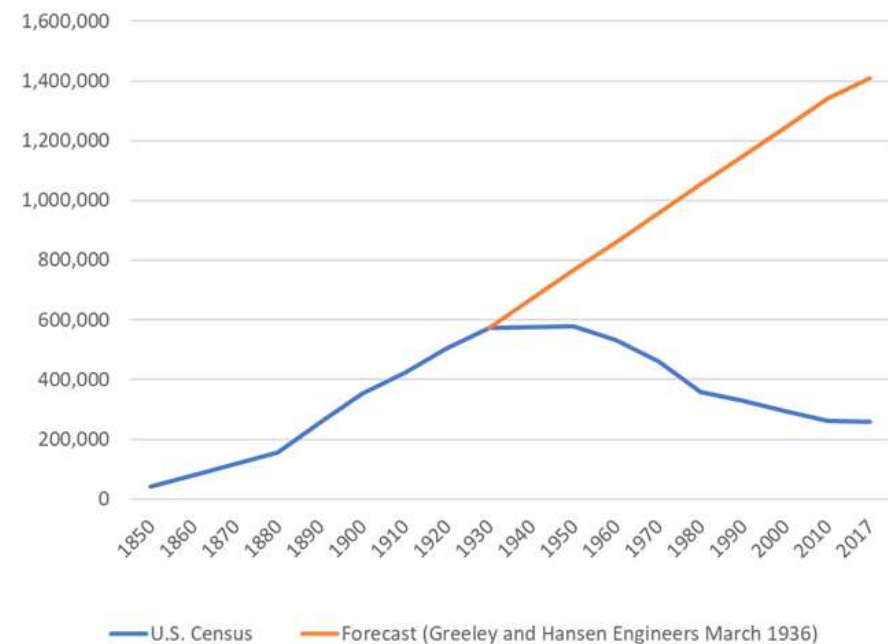
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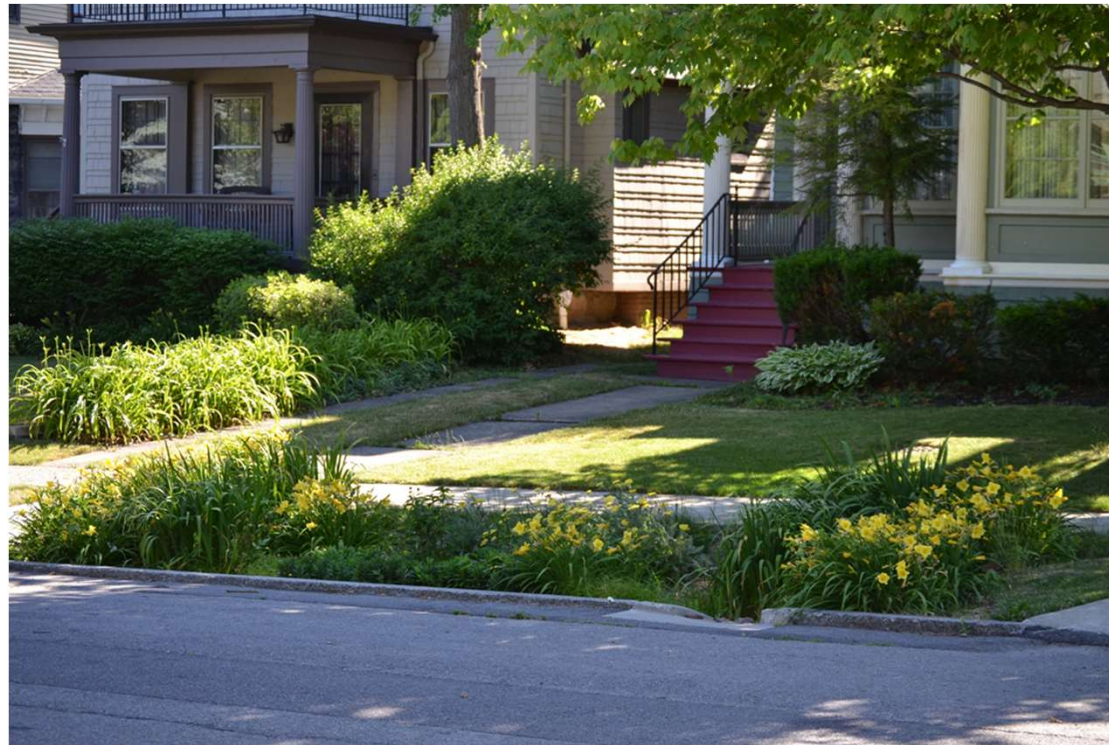


# GI Work Completed to Date

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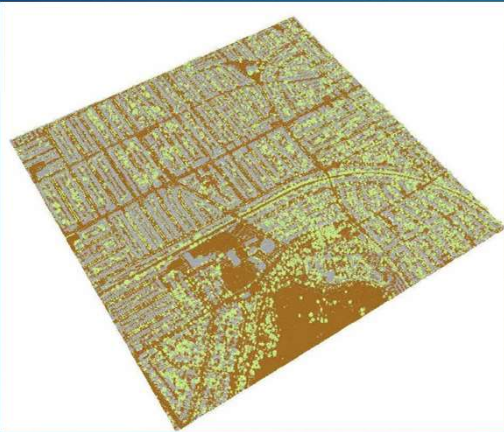
**POROUS  
ASPHALT**

**RAIN  
GARDEN**

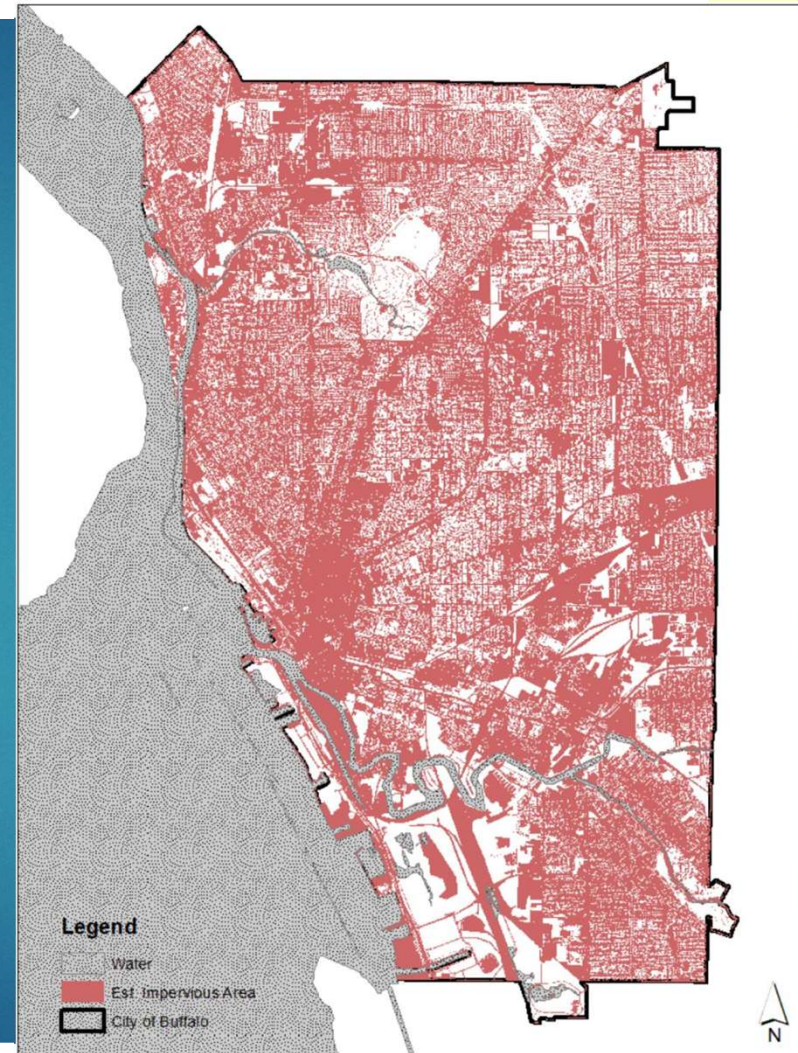
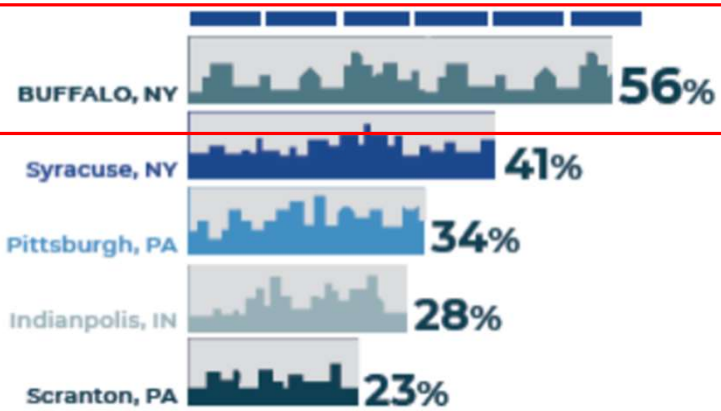
**SWALES**





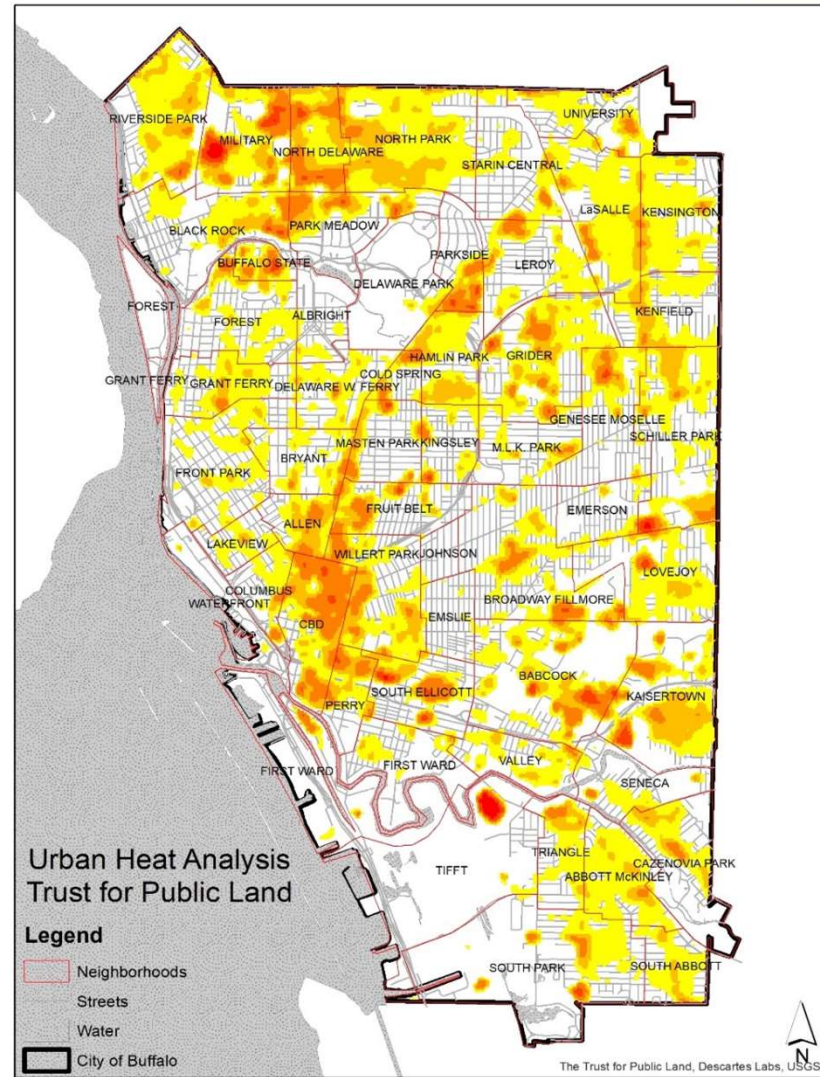
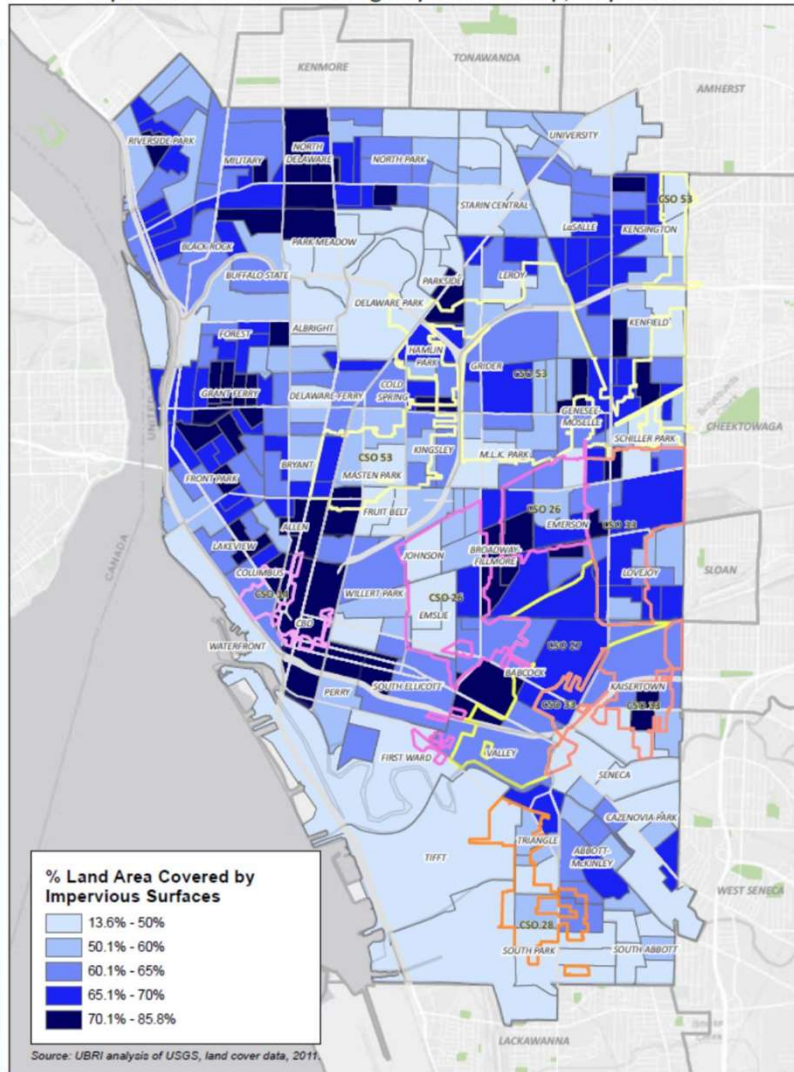


## IMPERVIOUS AREA





Impervious Surface Coverage by Block Group, City of Buffalo

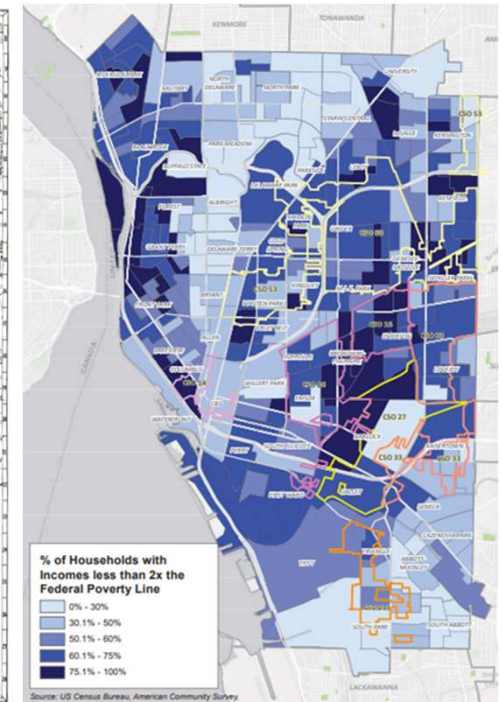
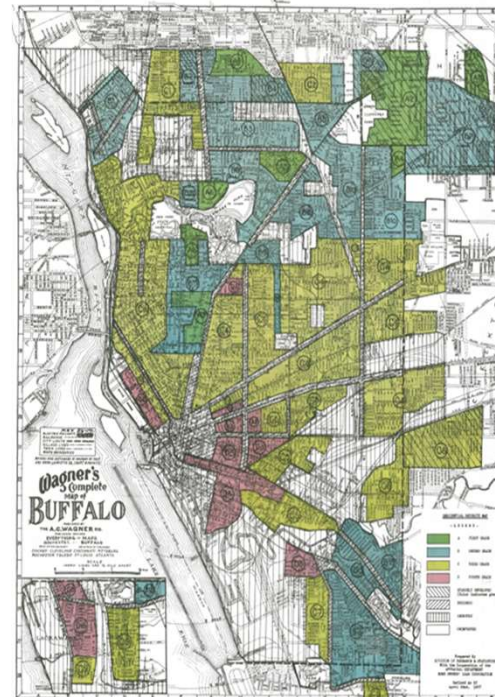




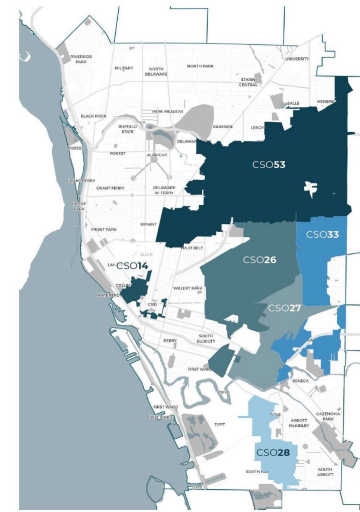
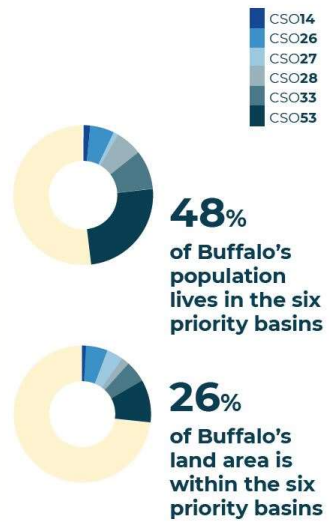
# Equity Issues

- ▶ History of Environmental Justice Issues
- ▶ One of the Most Segregated Metropolitan Areas in the United States
- ▶ Jefferson Avenue Tops

Instructions to HOLC Agents: Any threat of infiltration of foreign-born, negro or lower grade population? If so, indicate these by nationality and rate of infiltration like this: "Negro-rapid."







## Priority CSO Basins



# Environmental Impact Bond

- ▶ Opportunity Areas
- ▶ Green Infrastructure
- ▶ Public Sites Only
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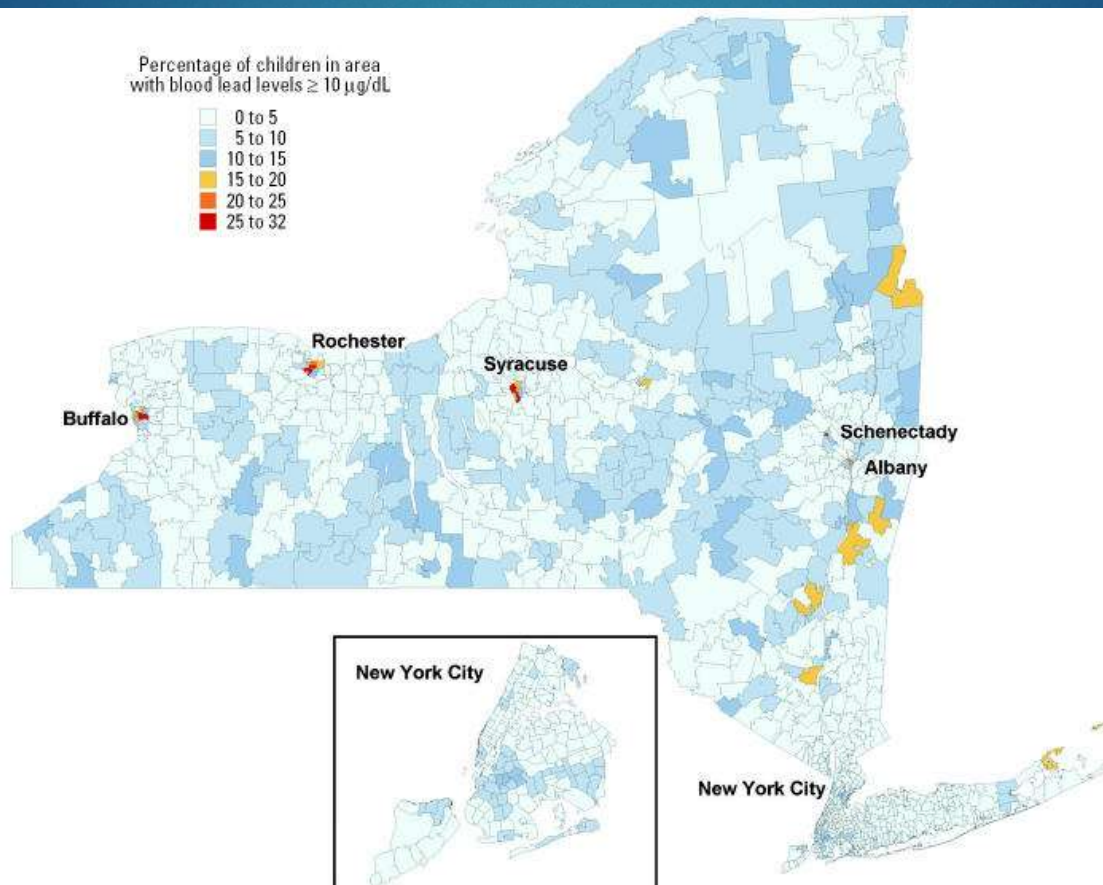


# Funding Opportunities

- ▶ Federal Initiatives
  - ▶ American Recovery Plan: funding for sewers and waterlines
  - ▶ Bipartisan Infrastructure Law: funding for lead service line replacements



# Lead Service Lines





# Lead Service Lines

- ▶ Primary issue is lead paint
  - ▶ Lead in soils also very prevalent
  - ▶ Lead mains have been replaced
  - ▶ Many homes still have lead service lines
- ▶ Concentration of lead service lines per census tract, generalized to block groups
  - ▶ Educational attainment levels (less than high school)
  - ▶ Number of children proportional
  - ▶ Instances of high blood lead levels in children within that zip code.
- ▶ Streets were scored based on the priority resulting from the analysis above (0-3)
  - ▶ Multiplied by 2
  - ▶ Omnipresent within focus areas
  - ▶ Low level of certainty for any one line; census data is from 2010



# Sewer Mains

- ▶ Centerline mains prioritized
- ▶ Need to be replaced to make permeable pavement viable
- ▶ Issue of leaking through permeable pavement to main below
- ▶ Most pipes 120+ years old, a few 150+
- ▶ Clay tile, brick, box tile
- ▶ Tended to be laid in contract groups
  - ▶ Same material
  - ▶ Same crews
  - ▶ Same issues
  - ▶ Complaints can inform, but disenfranchised groups do not have capacity or expectation of response to complain
- ▶ Mains scored 0-3; multiplied by 4 due to overall certainty in criteria



# Green Infrastructure: Why Permeable Pavement?

- ▶ Not a lot of space for anything else...
  - ▶ Alternate parking
  - ▶ Plowing
  - ▶ Snow storage
- ▶ Maintenance and aesthetic
  - ▶ One person's wildflower is the next's weed
  - ▶ Flowers and other plantings would need to be maintained by BSA staff
  - ▶ Weekly plant maintenance vs. twice annual sweeping
- ▶ Timelines for funding
  - ▶ Public meetings simplified
  - ▶ Design simplified
  - ▶ Construction simplified



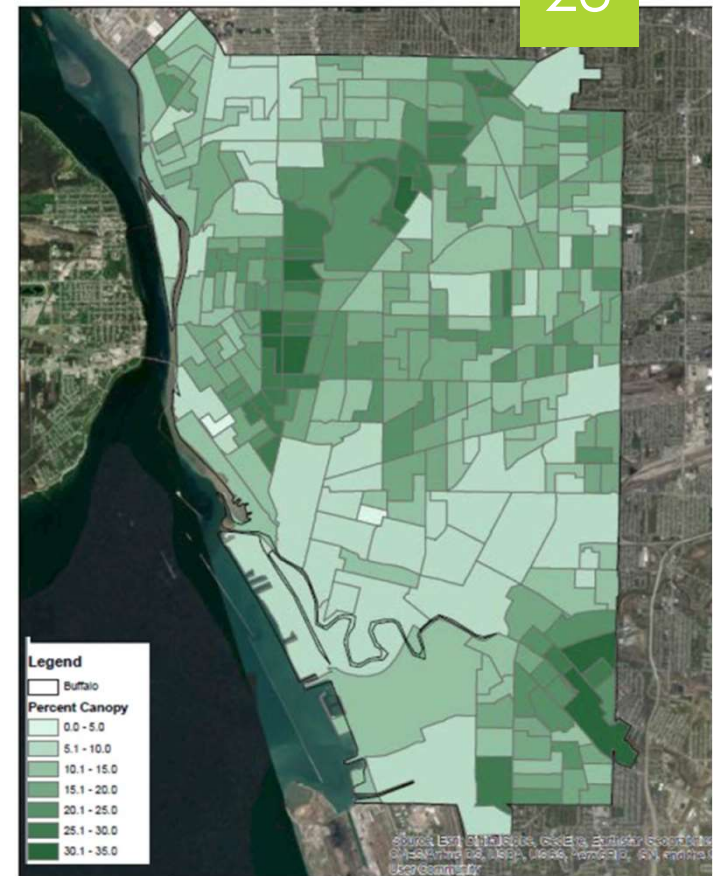
# Green Infrastructure

- ▶ Permeable pavement does reduce heat island impact
- ▶ Reduces rather than increases street maintenance
- ▶ Holds up over time in Buffalo's Climate
  - ▶ Self-heals
  - ▶ Less cracking than traditional pavement
  - ▶ Less ice build up
  - ▶ On residential streets maintains permeability even under less than ideal maintenance
- ▶ Focus given to RainCheck 2.0 areas
  - ▶ Effectiveness given weight
  - ▶ RainCheck 2.0 already incorporated equity
  - ▶ Multiplied by 3 as certainty of effectiveness relatively high and funding available through EIB



# Tree Planting

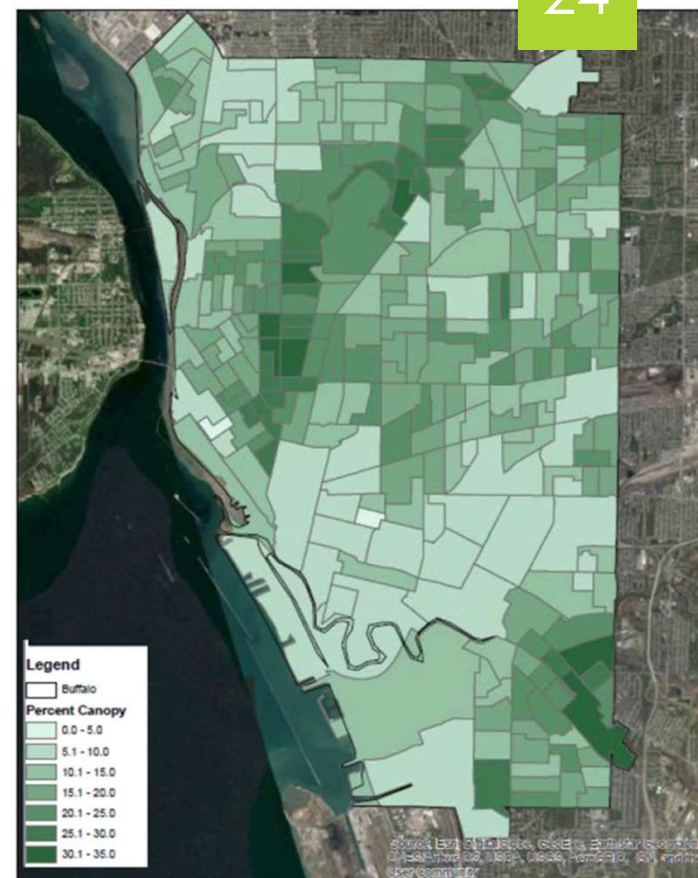
- ▶ Existing canopy lowest in most disenfranchised communities
- ▶ Contributes to urban heat island impacts and makes pedestrians more vulnerable
  - ▶ Urban heat impacts
  - ▶ Vehicular speed
- ▶ Trees require maintenance to establish
  - ▶ Property owners sometimes in opposition
  - ▶ City crews limited
  - ▶ Leaf maintenance





# Tree Planting

- ▶ Streets within 35 feet of a potential tree planting site.
- ▶ 0.125 miles of a park or school
- ▶ 0.125 miles of a census block with greater than 2 people older than 65/acre
- ▶ Low levels of high school diploma attainment were prioritized
- ▶ Areas where tree planting locations were located within the public ROW were scored highest from those remaining sites.
- ▶ Analysis was multiplied by 1 for the overall score calculation (low canopy everywhere, particularly in areas of concern)





# Q & A





**Attachment D to the Semi-Annual Status Report: March 2023**

Niagara Phase 4 B Plans and Specifications



**CITY OF BUFFALO**  
**DEPARTMENT OF PUBLIC WORKS, PARKS AND STREETS**  
**DIVISION OF ENGINEERING**

**PROPOSAL**

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**PROJECT IDENTIFICATION NO. (P.I.N.) 5762.90**  
**NIAGARA STREET**  
**HIGHWAY REHABILITATION & RECONFIGURATION PROJECT, PHASE 4B**  
**HERTEL AVENUE TO ONTARIO STREET**  
**ERIE COUNTY, CITY OF BUFFALO**

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**Byron W. Brown**  
**Mayor**

**Nathan R. Marton**  
**Commissioner**

**Nolan R. Skipper, P.E.**  
**City Engineer**



**March 08, 2023**



**NOTE: THE FOLLOWING PINK PAGES MUST BE  
FILLED OUT COMPLETELY IN ORDER FOR  
THIS BID TO BE READ AND RECORDED:**

**P – 2**

**AA – 1**

**BC – 1**

**APPENDIX 12-1A.4**

**APPENDIX 12-1A.5**

**APPENDIX 12-1A.6**

**APPENDIX 12-1A.7**

**AAP 14LL**

**(NOTE: THIS PAGE AND ALL PAGES LISTED ABOVE ON THIS PAGE  
MUST BE ON "BUFF" PAPER – REMOVE NOTE BEFORE PRINT)**



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The following advertisement for bids shall be published in the City of Buffalo City Record and the Buffalo News on the following date: **WEDNESDAY, MARCH 08, 2023**

Notice is hereby given that the City of Buffalo will accept sealed bids for:



**Document Printing at 40 La Riviere Dr, Suite 150, Buffalo, NY 14202, upon the non-refundable deposit of FIFTY-EIGHT DOLLARS (\$58.00) per set. Payment can be submitted only by company check or money order made payable to the City of Buffalo, Dept. of Public Works, Parks and Streets. NO CASH AND NO PERSONAL CHECKS.**

**NOTE: A pre-bid meeting will be held at 10:00 a.m. on WEDNESDAY, MARCH 29, 2023.**

Due to the ongoing COVID-19 global pandemic, the pre-bid meeting will be held via video meeting/conference call. Bidder representatives can attend the pre-bid meeting by emailing **jross@watts-ae.com** by **Tuesday, March 28, 2023, at 5:00 PM** to be added to the meeting invitation. A **meeting invitation will be sent by Wednesday, March 29, 2023, at 9:00 AM** to all that requested to be added. Please have a responsible representative attend this meeting.

No questions or inquiries regarding this bid will be accepted within three (3) business days prior to the bid opening.

The City of Buffalo will not be responsible for full or partial set of Contract Documents, including any Addenda obtained from any other source. The City of Buffalo reserves the right to reject any and all bids and to waive any informalities therein.

Addenda will be emailed from Avalon Document Services to Bidders listed on the official Plan Holders List. Bidders must acknowledge receipt of all Addenda by securely stapling in place all addenda within the front or back covers of the proposal book. All Addenda so issued shall become part of the Contract Documents.

Questions regarding the Contract Documents should be directed to **pgalbo@watts-ae.com**. Bidders shall promptly notify **pgalbo@watts-ae.com** of any errors, omissions, conflicts or ambiguity within the Contract Documents within 3 days of bid opening.

All bids must include the completed Bid Form, Non-Collusive Bidding and Disbarment Certifications, and Lobbying Certifications. This is a unit price bid as described in the Instructions to Bidders. No bidder may withdraw his/her bid within forty-five (45) calendar days after the actual date of the opening thereof.

Bids to be considered must be received by the Commissioner of Public Works, Parks & Streets no later than: **WEDNESDAY, APRIL 05, 2023, AT 11:00 AM.**

**It is the bidder's responsibility to ensure the sealed proposal is delivered before the bid opening and bidders must utilize one of the following methods:**

- 1.) Drop off the sealed proposal (one bidder representative in-person) to a designated location just inside of the S. Elmwood Avenue entrance of City Hall, Buffalo, New York, 14202 on: **WEDNESDAY, APRIL 05, 2023 between the hours of 9:00 AM and 11:00 AM.** The DPW will set a box up for the bidder to deposit the sealed proposal. There may be multiple bids on this date; it is the bidder's responsibility to properly label the sealed proposal and place the proposal inside the correct box.
- 2.) Mail the sealed proposals to Room 10, City Hall, Buffalo, New York, 14202 with ATTN to the Commissioner of Public Works, Parks and Streets. Bidders should allow for delivery before the bid opening (highly encouraged to schedule for delivery on or prior to: **TUESDAY, APRIL 04, 2023.**). It is also highly encouraged that bidders track delivery of their mailed proposals and use appropriate priority mail as necessary.



City of Buffalo staff is available to accept deliveries on standard business days Monday-Friday from 8:00 AM to 4:00 PM.

Bids will be opened by City of Buffalo Representatives on : **WEDNESDAY, APRIL 05, 2023, AT 11:00 AM. LOCAL TIME.** Due to the ongoing COVID-19 global pandemic, in-person attendance at the bid opening will not be permitted; however, bids will be opened via video meeting/conference call. Bidders representatives can view the public bid by emailing **[jross@watts-ae.com](mailto:jross@watts-ae.com)** by, **TUESDAY, APRIL 04, 2023 at 5:00 PM** to be added to the meeting invitation. A meeting invitation will be sent by **WEDNESDAY, APRIL 05, 2023 at 10:00 AM** to all that requested to be added.

#### **BIDDERS SHALL COMPLY WITH ALL APPLICABLE LOCAL LAWS AND ORDINANCES.**

The Bidder to whom the Contract is awarded will be required to furnish Performance, Payment and Guarantee Bonds from an acceptable Surety Company for an amount not less than 100% of the accepted bid. The successful Bidder and all subcontractors must have an approved CCA-2 on file with NYSDOT prior to being awarded a contract. If the successful Bidder does not currently have a CCA-2 on file with NYSDOT, the Bidder may find the CCA-2 forms and instruction for completion online at [https://osc.state.ny.us/venrep/form\\_cca2.htm](https://osc.state.ny.us/venrep/form_cca2.htm).

The successful Bidder will be required to comply with all provisions of the Federal Government Equal Employment Opportunity clauses issued by the Secretary of Labor on May 2, 1968 and published in the Federal Register (41 CFR Part 60-1, 33 F.2 7804). Successful bidders will be required to pay prevailing wage rates on this contract.

The City of Buffalo reserves the right to consider the bids for forty-five (45) days after receipt before awarding any Contract, and to waive any minor informalities in, and to reject, any and all bids. All bids are subject to final review and approval by the City of Buffalo Common Council before any award of contract may be made. Receipt of bids by the City of Buffalo shall not be construed as authority to bind the City of Buffalo.

The work will be substantially completed **294 working days** from Notice to Proceed

The New York State Department of Transportation, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C 2000d to 2000d-4 and Title 49 Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation and Title 23 Code of Federal Regulations, Part 200, Title VI Program and Related Statutes, as amended, issued pursuant to such Act, hereby notifies all who respond to the related solicitation, request for proposal or invitation to bid that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, sex, age, disability/handicap and income status in consideration for an award.

#### **City of Buffalo Contact**

Thomas Duk Senior Engineer  
Dept. of Public Works, Parks & Streets  
65 Niagara Square, Room 512 City Hall  
Buffalo, New York 14202  
(716) 851-4076, [tduk@ch.ci.buffalo.ny.us](mailto:tduk@ch.ci.buffalo.ny.us)

#### **Engineer's Contact**

Phillip M. Galbo, P.E. Vice President  
Watts Architecture & Engineering  
95 Perry Street, Suite 300  
Buffalo, New York 14203  
(716) 206-5121, [pgalbo@watts-ae.com](mailto:pgalbo@watts-ae.com)

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Nolan R. Skipper, P.E. City Engineer



**DEPARTMENT OF PUBLIC WORKS, PARKS AND STREETS**

Room 502 City Hall  
Buffalo, New York

**PROPOSAL**

To the Commissioner of Public Works, Buffalo, NY, Pursuant to and in compliance with your Advertisement for Bids, dated the \_\_\_\_ day of \_\_\_\_\_ the undersigned hereby offers to enter into an agreement in the form annexed to the specifications for furnishing all plant, labor, material supplies, equipment, and other facilities and things necessary and proper for or incidental to the work as specified in the contract documents for:

**(P.I.N.) 5762.90  
NIAGARA STREET  
HIGHWAY REHABILITATION & RECONFIGURATION PROJECT, PHASE 4B  
HERTEL AVENUE TO ONTARIO STREET  
ERIE COUNTY, CITY OF BUFFALO**

As required by and in strict accordance with the plans and specifications and with all addenda issued by the Commissioner of Public Works prior to the date of opening bids, whether received by the undersigned or not, for the following prices, to wit:

---

Bidder's Name

---

Signature of authorized  
representative of bidder

Bidders are hereby advised that the Department of Public Works may exercise its rights to reject any proposal in which unit bid prices appear in the Commissioner's judgment to constitute an unbalanced bid for the work. The City of Buffalo reserves the right to reject any or all bids and to waive any informalities therein.



**NOTE: THIS PAGE MUST BE FILLED OUT PROPERLY IN  
ORDER FOR YOUR BID TO BE READ AND ACCEPTED**

BIDS TO BE WRITTEN IN BOTH WORDS AND FIGURES

The sum of the bid amount for the UNIT PRICE SHEETS

BASE BID TOTAL (EXCLUDES ALTERNATE BID ITEMS):

\_\_\_\_\_ DOLLARS  
AND \_\_\_\_\_ CENTS  
(\$ \_\_\_\_\_)

\_\_\_\_\_  
CONTRACTOR'S COMPANY NAME  
(PLEASE PRINT OR TYPE)

The Commissioner of Public Works, Parks and Streets reserves the right to award a Contract to the lowest responsible Bidder based on either the Base Bid Total or the Base Bid Total plus the Alternate Bid Total.



## **LICENSE REQUIREMENT**

Landscape contractors must now be licensed to do business in the City of Buffalo. Applications and information regarding the license procedure are available from the Division of Licenses, Room 313, City Hall, 851-4078.

Lowest responsible bidder on this project must provide proof of being licensed to perform landscape work within the City of Buffalo prior to being awarded the contract.



## **UNIT BID PRICE SHEET INSTRUCTIONS**

The Contractor must assume all risk of variance in any computation or statement of amounts or quantities necessary to complete said work in accordance with the Plans and Specifications for the price bid. Any item of work contained either in the Unit Bid Price Sheet or on the Plans but omitted from the others respectively will be considered part of the work.

The Unit Bid Price Sheet, although stated with as much accuracy as is possible in advance, is approximate only, and is assumed only for the purposes of comparing bids. The quantities on which payment will be made to the Contractor are to be determined by measurements of the work actually performed by the Contractor as specified in the Contract Documents.

The quantities estimated and used for taking bids represents the best judgment of the Department of Public Works based upon past experience and an on site inspection. However, such quantities are not guaranteed, and the amount of work, which the Contractor will be required to do under this Contract, may vary considerably from such estimated quantities.

Bidders shall not at any time after submission of their Proposal dispute or complain of the aforesaid schedule or assert that there was a misunderstanding in regard to the amount of character of the work to be done, and shall not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work assumed for comparison of bids and the quantities of work actually performed.



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                              | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|---------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                 |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 203.02         | UNCLASSIFIED EXCAVATION AND DISPOSAL<br><br>\$ _____ PER CY                     | 2358     | CY   |                |       |            |       |
| 203.03         | EMBANKMENT IN PLACE<br><br>\$ _____ PER CY                                      | 60       | CY   |                |       |            |       |
| 204.01         | CONTROLLED LOW STRENGTH MATERIAL<br><br>\$ _____ PER CY                         | 9        | CY   |                |       |            |       |
| 205.0201       | SEGREGATION AND STORAGE OF CONTAMINATED SOIL - SITE 1<br><br>\$ _____ PER LS    | 1        | LS   |                |       |            |       |
| 205.0202       | SEGREGATION AND STORAGE OF CONTAMINATED SOIL - SITE 2<br><br>\$ _____ PER LS    | 1        | LS   |                |       |            |       |
| 205.03         | FIELD ORGANIC VAPOR MONITORING OF CONTAMINATED SOIL HOUR<br><br>\$ _____ PER HR | 48       | HR   |                |       |            |       |
| 205.0401       | PETROLEUM CONTAMINATION PARAMETER ANALYSIS EACH<br><br>\$ _____ PER EA          | 4        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                           | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|----------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                              |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 205.0402       | LABORATORY ANALYSIS FOR HAZARDOUS WASTE RCRA TOXICITY CHARACTERISTIC EACH<br>\$ _____ PER EA | 2        | EA   |                |       |            |       |
| 205.0403       | LABORATORY ANALYSIS FOR IGNITABILITY EACH<br>\$ _____ PER EA                                 | 2        | EA   |                |       |            |       |
| 205.0404       | LABORATORY ANALYSIS FOR PH EACH (CORROSIVITY)<br>\$ _____ PER EA                             | 2        | EA   |                |       |            |       |
| 205.0405       | LABORATORY ANALYSIS FOR POLYCHLORINATED BIPHENYLS (PCB'S) EACH<br>\$ _____ PER EA            | 2        | EA   |                |       |            |       |
| 205.050101     | DISPOSAL OF CONTAMINATED HAZARDOUS WASTE SOIL<br>\$ _____ PER TON                            | 2        | TON  |                |       |            |       |
| 205.050201     | DISPOSAL OF CONTAMINATED NON-HAZARDOUS WASTE SOIL<br>\$ _____ PER TON                        | 60       | TON  |                |       |            |       |
| 206.0201       | TRENCH AND CULVERT EXCAVATION<br>\$ _____ PER CY                                             | 985      | CY   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                         | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|--------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                            |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 206.03         | CONDUIT EXCAVATION AND BACKFILL INCLUDING SURFACE RESTORATION<br>\$ _____ PER LF           | 503      | LF   |                |       |            |       |
| 206.03010010   | CONDUIT EXCAVATION AND BACKFILL - (RESTORING TOP SURFACES NOT INCLUDED)<br>\$ _____ PER LF | 609      | LF   |                |       |            |       |
| 206.04010011   | PNEUMATIC EXCAVATION AND BACKFILL OF TRENCHES<br>\$ _____ PER LF                           | 520      | LF   |                |       |            |       |
| 206.05         | TEST PITS<br>\$ _____ PER EA                                                               | 18       | EA   |                |       |            |       |
| 207.22         | GEOTEXTILE DRAINAGE<br>\$ _____ PER SY                                                     | 2604     | SY   |                |       |            |       |
| 207.25         | GEOMEMBRANE<br>\$ _____ PER SY                                                             | 113      | SY   |                |       |            |       |
| 209.11010024   | TEMPORARY CATCH BASIN INSERTS TRASH, SEDIMENT, AND DEBRIS REMOVAL<br>\$ _____ PER EA       | 45       | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                        | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-----------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                           |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 304.010000ER   | OPEN GRADED PERMEABLE AGGREGATE<br>\$ _____ PER CY                                                        | 122      | CY   |                |       |            |       |
| 304.12         | SUBBASE - TYPE 2<br>\$ _____ PER CY                                                                       | 1023     | CY   |                |       |            |       |
| 404.018901     | TRUING & LEVELING F9, ASPHALT, 80 SERIES COMPACTION<br>\$ _____ PER TON                                   | 183      | TON  |                |       |            |       |
| 404.098301     | 9.5 F3 TOP COURSE ASPHALT, 80 SERIES COMPACTION<br>\$ _____ PER TON                                       | 1070     | TON  |                |       |            |       |
| 404.198901     | 19 F9 BINDER COURSE WMA, 80 SERIES COMPACTION<br>\$ _____ PER TON                                         | 25       | TON  |                |       |            |       |
| 407.0102       | DILUTED TACK COAT<br>\$ _____ PER GAL                                                                     | 1362     | GAL  |                |       |            |       |
| 490.30110011   | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 1 (0 TO 2 INCH DEEP)<br>\$ _____ PER SY | 7200     | SY   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                        | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-----------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                           |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 490.30120011   | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITYRANGE 2 (>2 TO 4 INCH DEEP)<br>\$ _____ PER SY | 3700     | SY   |                |       |            |       |
| 503.1010       | PCC FOUNDATION FOR PAVEMENT, CLASS C<br>\$ _____ PER CY                                                   | 27       | CY   |                |       |            |       |
| 601.01110001   | EXPOSED AGGREGATE CONCRETE SURFACE<br>\$ _____ PER SY                                                     | 18       | SY   |                |       |            |       |
| 603.99050002   | CONCRETE PLUGS FOR SEWER PIPE<br>\$ _____ PER EA                                                          | 2        | EA   |                |       |            |       |
| 604.070501     | ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES (RAISE)<br>\$ _____ PER EA                     | 6        | EA   |                |       |            |       |
| 604.070502     | ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES (LOWER)<br>\$ _____ PER EA                     | 7        | EA   |                |       |            |       |
| 604.070503     | ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES<br>\$ _____ PER EA                             | 6        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                                  | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|---------------------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                                     |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 605.1001       | UNDERDRAIN FILTER TYPE 2<br><br>\$ _____ PER CY                                                                     | 154      | CY   |                |       |            |       |
| 605.1502       | PERFORATED CORRUGATED POLYETHYLENE UNDERDRAIN TUBING, 6"<br><br>\$ _____ PER LF                                     | 450      | LF   |                |       |            |       |
| 605.1701       | OPTIONAL UNDERDRAIN PIPE, 4 INCH DIAMETER<br><br>\$ _____ PER LF                                                    | 3814     | LF   |                |       |            |       |
| 607.41010010   | TEMPORARY PLASTIC BARRIER FENCE<br><br>\$ _____ PER LF                                                              | 2800     | LF   |                |       |            |       |
| 608.0101       | CONCRETE SIDEWALKS AND DRIVEWAYS<br><br>\$ _____ PER CY                                                             | 600      | CY   |                |       |            |       |
| 608.020102     | HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS ,AND VEGETATION CONTROL STRIPS<br><br>\$ _____ PER TON | 93       | TON  |                |       |            |       |
| 608.21         | EMBEDDED DETECTABLE WARNING UNITS<br><br>\$ _____ PER SY                                                            | 44       | SY   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                 | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                    |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 609.0212       | STONE CURB NEAR VERTICAL FACE (NVF)<br>\$ _____ PER LF                             | 3821     | LF   |                |       |            |       |
| 610.01100210   | PLANTER BACKFILL MIX - AS SPECIFIED<br>\$ _____ PER CY                             | 96       | CY   |                |       |            |       |
| 610.1101       | MULCH FOR PLANTING TYPE A, B & D - WOOD CHIPS AND SHREDDED BARK<br>\$ _____ PER CY | 117      | CY   |                |       |            |       |
| 610.1403       | TOPSOIL - LAWNS<br>\$ _____ PER CY                                                 | 225      | CY   |                |       |            |       |
| 610.1404       | TOPSOIL - SPECIAL PLANTING MIX<br>\$ _____ PER CY                                  | 480      | CY   |                |       |            |       |
| 610.1602       | TURF ESTABLISHMENT - LAWNS<br>\$ _____ PER SY                                      | 1350     | SY   |                |       |            |       |
| 610.19         | WATERING VEGETATION<br>\$ _____ PER MGAL                                           | 210      | MGAL |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                              | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-----------------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                                 |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 611.0171       | PLANTING - MAJOR DECIDUOUS TREES - 3 INCH CALIPER BALL & BURLAP, FIELD POTTED OR FIELD BOXED<br>\$ _____ PER EA | 23       | EA   |                |       |            |       |
| 611.0452       | PLANTING - DECIDUOUS SHRUBS - 3 FOOT HEIGHT/SPREAD<br>\$ _____ PER EA                                           | 64       | EA   |                |       |            |       |
| 611.0651       | PLANTING - VINES, GROUNDCOVERS - NUMBER 1 CONTAINER<br>\$ _____ PER EA                                          | 22835    | EA   |                |       |            |       |
| 611.17         | PORTABLE DRIP IRRIGATION SYSTEM<br>\$ _____ PER EA                                                              | 23       | EA   |                |       |            |       |
| 611.19010024   | POST PLANTING CARE WITH REPLACEMENT - MAJOR DECIDUOUS TREES<br>\$ _____ PER EA                                  | 23       | EA   |                |       |            |       |
| 613.010000OD   | RAIN GARDEN FACILITY TOPSOIL<br>\$ _____ PER CY                                                                 | 209      | CY   |                |       |            |       |
| 614.0411       | CARE OF TREES UP TO 12 INCHES DIAMETER AT BREAST HEIGHT PRUNING<br>\$ _____ PER EA                              | 9        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                        | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                           |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 614.0421       | CARE OF TREES OVER 12 TO 24 INCHES DIAMETER AT BREAST HEIGHT PRUNING<br>\$ _____ PER EA   | 13       | EA   |                |       |            |       |
| 614.060104     | TREE REMOVAL OVER 4" TO 6" DIAMETER AT BREAST HEIGHT, STUMPS GRUBBED<br>\$ _____ PER EA   | 7        | EA   |                |       |            |       |
| 614.060204     | TREE REMOVAL OVER 6" TO 12" DIAMETER AT BREAST HEIGHT, STUMPS GRUBBED<br>\$ _____ PER EA  | 8        | EA   |                |       |            |       |
| 614.060304     | TREE REMOVAL OVER 12" TO 18" DIAMETER AT BREAST HEIGHT, STUMPS GRUBBED<br>\$ _____ PER EA | 1        | EA   |                |       |            |       |
| 614.09         | TREE ROOT PRUNING<br>\$ _____ PER LF                                                      | 1400     | LF   |                |       |            |       |
| 614.11040011   | MULCH FOR TEMPORARY TREE PROTECTION<br>\$ _____ PER CY                                    | 130      | CY   |                |       |            |       |
| 615.01010110   | LITTER (TRASH) RECEPTACLE<br>\$ _____ PER EA                                              | 2        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                      | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                         |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 615.08010005   | BENCH, TYPE 1<br>\$ _____ PER EA                                        | 2        | EA   |                |       |            |       |
| 615.27020010   | BICYCLE RACK (DESIGN CAPACITY 2 BICYCLES)<br>\$ _____ PER EA            | 4        | EA   |                |       |            |       |
| 619.01         | BASIC WORK ZONE TRAFFIC CONTROL<br>\$ _____ PER LS                      | 1        | LS   |                |       |            |       |
| 619.04         | TYPE III CONSTRUCTION BARRICADE<br>\$ _____ PER EA                      | 69       | EA   |                |       |            |       |
| 619.080102     | REMOVE PAVEMENT MARKING STRIPES, EPOXY PAINT<br>\$ _____ PER LF         | 730      | LF   |                |       |            |       |
| 619.0901       | TEMPORARY PAVEMENT MARKINGS STRIPES (TRAFFIC PAINT)<br>\$ _____ PER LF  | 17352    | LF   |                |       |            |       |
| 619.0903       | TEMPORARY PAVEMENT MARKINGS STRIPES (REMOVABLE TAPE)<br>\$ _____ PER LF | 2500     | LF   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                                               | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                                                  |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 619.100101     | INTERIM PAVEMENT MARKINGS, STRIPES, TRAFFIC PAINT<br>\$ _____ PER LF                                                             | 18460    | LF   |                |       |            |       |
| 619.100201     | INTERIM PAVEMENT MARKINGS, SYMBOLS, TRAFFIC PAINT<br>\$ _____ PER EA                                                             | 10       | EA   |                |       |            |       |
| 619.110511     | (PVMS) STANDARD SIZE - FULL MATRIX (LED) NO OPTIONAL EQUIPMENT SPECIFIED, NO CELLULAR COMMUNICATIONS REQUIRED<br>\$ _____ PER EA | 2        | EA   |                |       |            |       |
| 619.1611       | MAINTAIN TRAFFIC SIGNAL EQUIPMENT (REQUIREMENT A)<br>\$ _____ PER INTM                                                           | 30       | INTM |                |       |            |       |
| 625.01         | SURVEY OPERATIONS<br>\$ _____ PER LS                                                                                             | 1        | LS   |                |       |            |       |
| 627.50140008   | CUTTING PAVEMENT<br>\$ _____ PER LF                                                                                              | 3488     | LF   |                |       |            |       |
| 629.01         | REMOVAL/DISPOSAL OF LIQUIDS FROM PETROLEUM TANKS<br>\$ _____ PER GAL                                                             | 40       | GAL  |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                         | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|--------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                            |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 629.0201       | PETROLEUM STORAGE TANK CLOSURE (LESS THAN 2000 GALLONS)<br><br>\$ _____ PER EA             | 1        | EA   |                |       |            |       |
| 629.0301       | ENDPOINT SAMPLE COLLECTION AND ANALYSIS (SUSPECT GASOLINE - VOCs)<br><br>\$ _____ PER EA   | 6        | EA   |                |       |            |       |
| 629.0302       | ENDPOINT SAMPLE COLLECTION AND ANALYSIS (SUSPECT DIESEL - SVOCs)<br><br>\$ _____ PER EA    | 6        | EA   |                |       |            |       |
| 629.0303       | ENDPOINT SAMPLE COLLECTION AND ANALYSIS (SUSPECT WASTE OIL)<br><br>\$ _____ PER EA         | 2        | EA   |                |       |            |       |
| 645.5101       | GROUND-MOUNTED SIGN PANELS WITHOUT Z-BARS<br><br>\$ _____ PER SF                           | 59       | SF   |                |       |            |       |
| 645.5102       | GROUND-MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF, WITH Z-BARS<br><br>\$ _____ PER SF | 272      | SF   |                |       |            |       |
| 645.61         | OVERHEAD SIGN PANELS<br><br>\$ _____ PER SF                                                | 18.0     | SF   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                                                           | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                                                              |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 645.81         | TYPE A SIGN POSTS<br><br>\$ _____ PER EA                                                                                                     | 27       | EA   |                |       |            |       |
| 645.8107       | CONCRETE FOOTING FOR TYPE A, HIGH-CAPACITY TYPE A OR BREAKAWAY WOODEN SIGN POSTS WITH STEEL TUBE INSERTS<br><br>\$ _____ PER EA              | 27       | EA   |                |       |            |       |
| 645.85         | POLE MOUNTED SIGN SUPPORT SYSTEM (BAND MOUNTED)<br><br>\$ _____ PER EA                                                                       | 63       | EA   |                |       |            |       |
| 646.40         | FLEXIBLE DELINEATOR, SINGLE UNIT, ONE WAY ON FLEXIBLE POST<br><br>\$ _____ PER EA                                                            | 4        | EA   |                |       |            |       |
| 647.31         | RELOCATE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET)<br><br>\$ _____ PER EA                                                | 3        | EA   |                |       |            |       |
| 647.51         | REMOVE AND DISPOSE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET)<br><br>\$ _____ PER EA                                      | 13       | EA   |                |       |            |       |
| 647.61         | REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET)<br><br>\$ _____ PER EA | 17       | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                    | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                       |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 656.01         | MISCELLANEOUS METALS<br>\$ _____ PER LB               | 342      | LB   |                |       |            |       |
| 663.010601ER   | DUCTILE IRON WATER MAIN PIPE 6"<br>\$ _____ PER LF    | 100      | LF   |                |       |            |       |
| 663.010801ER   | DUCTILE IRON WATER MAIN PIPE - 8"<br>\$ _____ PER LF  | 40       | LF   |                |       |            |       |
| 663.011001ER   | DUCTILE IRON WATER MAIN PIPE - 10"<br>\$ _____ PER LF | 40       | LF   |                |       |            |       |
| 663.100600ER   | WATERLINE VALVES AND BOXES - 6"<br>\$ _____ PER EA    | 5        | EA   |                |       |            |       |
| 663.131000ER   | HYDRANT<br>\$ _____ PER EA                            | 5        | EA   |                |       |            |       |
| 663.201000ER   | WATER MAIN PIPE SPECIALS<br>\$ _____ PER LB           | 1973     | LB   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                   |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 663.302000ER   | WATERLINE VALVE BOX - TOP SECTION-ADJUSTMENT<br>\$ _____ PER EA   | 30       | EA   |                |       |            |       |
| 663.321400ER   | WATER SERVICE BOX - COMPLETE - INSTALL/REPLACE<br>\$ _____ PER EA | 24       | EA   |                |       |            |       |
| 663.322000ER   | WATER SERVICE BOX - ADJUST<br>\$ _____ PER EA                     | 28       | EA   |                |       |            |       |
| 664.010601ER   | PVC SEWER PIPE - 6 INCH<br>\$ _____ PER LF                        | 360      | LF   |                |       |            |       |
| 664.011001ER   | PVC SEWER PIPE – 10 INCH<br>\$ _____ PER LF                       | 10       | LF   |                |       |            |       |
| 664.011201ER   | PVC SEWER PIPE - 12 INCH<br>\$ _____ PER LF                       | 578      | LF   |                |       |            |       |
| 664.092000ER   | FRESH AIR INLET – REPLACE STANDPIPE AND CAP<br>\$ _____ PER EA    | 13       | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                    | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                       |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 664.093000ER   | FRESH AIR INLET – REPLACE CAP ONLY<br>\$ _____ PER EA | 5        | EA   |                |       |            |       |
| 664.094000ER   | FRESH AIR INLET – ADJUSTMENT<br>\$ _____ PER EA       | 7        | EA   |                |       |            |       |
| 664.503100ER   | RECEIVER – NEW<br>\$ _____ PER EA                     | 5        | EA   |                |       |            |       |
| 664.503300ER   | REMOVE AND PLUG LATERAL<br>\$ _____ PER EA            | 20       | EA   |                |       |            |       |
| 664.503400ER   | RECEIVER CURB BOX – REPLACE<br>\$ _____ PER EA        | 1        | EA   |                |       |            |       |
| 664.503600ER   | RECEIVER – RISER SECTION<br>\$ _____ PER EA           | 1        | EA   |                |       |            |       |
| 664.505220ER   | 2' x 2' CATCH BASIN<br>\$ _____ PER EA                | 14       | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                    | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|---------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                       |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 664.506140ER   | 4' MANHOLE CONSTRUCTION<br>\$ _____ PER LF                                            | 58       | LF   |                |       |            |       |
| 670.0105       | FOUNDATION FOR LIGHT STANDARDS, 5 FEET LONG<br>\$ _____ PER EA                        | 18       | EA   |                |       |            |       |
| 670.024201ER   | LED ROADWAY LUMINAIRE - TEARDROP LUMINAIRE<br>\$ _____ PER EA                         | 22       | EA   |                |       |            |       |
| 670.10010005   | LIGHT STANDARD, SPECIAL - 30' DECORATIVE ARM AND POLE NO LUMINAIRE<br>\$ _____ PER EA | 18       | EA   |                |       |            |       |
| 670.2602       | RIGID PLASTIC CONDUIT, 2"<br>\$ _____ PER LF                                          | 3190     | LF   |                |       |            |       |
| 670.3006       | PULLBOXES 5 CUBIC FEET TO 7.5 CUBIC FEET, INSIDE VOLUME (LIGHTING)<br>\$ _____ PER EA | 19       | EA   |                |       |            |       |
| 670.7004       | SINGLE CONDUCTOR CABLE, NUMBER 6 GAGE<br>\$ _____ PER LF                              | 21300    | LF   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                  | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-----------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                     |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 670.7006       | SINGLE CONDUCTOR CABLE, NUMBER 10 GAGE<br><br>\$ _____ PER LF                                       | 2817     | LF   |                |       |            |       |
| 670.80         | REMOVE AND STORE LAMPPOST ASSEMBLY<br><br>\$ _____ PER EA                                           | 16       | EA   |                |       |            |       |
| 670.82         | REMOVE LAMPPOST FOUNDATION<br><br>\$ _____ PER EA                                                   | 16       | EA   |                |       |            |       |
| 670.91100010   | WOOD POLE<br><br>\$ _____ PER EA                                                                    | 1        | EA   |                |       |            |       |
| 680.5001       | POLE EXCAVATION AND CONCRETE FOUNDATION<br><br>\$ _____ PER CY                                      | 9        | CY   |                |       |            |       |
| 680.50010008   | NON-RIPPABLE MATERIAL EXCAVATION FOR SIGNAL POLE FOUNDATION,WITHOUT BLASTING<br><br>\$ _____ PER CY | 10       | CY   |                |       |            |       |
| 680.5002       | CONCRETE BASE FOR CONTROLLER CABINET<br><br>\$ _____ PER EA                                         | 1        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                          | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|-----------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                             |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 680.50500005   | REMOVE POLE FOUNDATIONS<br>\$ _____ PER LF                                  | 24       | LF   |                |       |            |       |
| 680.510201     | PULLBOX-CIRCULAR, 18 INCH DIAMETER, REINFORCED CONCRETE<br>\$ _____ PER EA  | 3        | EA   |                |       |            |       |
| 680.510301     | PULLBOX-CIRCULAR, 24 INCH DIAMETER, REINFORCED CONCRETE<br>\$ _____ PER EA  | 6        | EA   |                |       |            |       |
| 680.520506     | TRAFFIC SIGNAL CONDUIT, RIGID PLASTIC, CLASS 1, 2"<br>\$ _____ PER LF       | 39       | LF   |                |       |            |       |
| 680.520508     | TRAFFIC SIGNAL CONDUIT, RIGID PLASTIC, CLASS 1, 3"<br>\$ _____ PER LF       | 687      | LF   |                |       |            |       |
| 680.58801008   | WIRELESS VEHICLE DETECTION SYSTEM REPEATER - (LONG LIFE)<br>\$ _____ PER EA | 1        | EA   |                |       |            |       |
| 680.58803008   | WIRELESS VEHICLE DETECTION SYSTEM INTERSECTION SENSOR<br>\$ _____ PER EA    | 13       | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                                                        | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|---------------------------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                                                           |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 680.58804008   | WIRELESS VEHICLE DETECTION SYSTEM CONTACT CLOSURE INTERFACE (APCC)<br>\$ _____ PER EA                                     | 1        | EA   |                |       |            |       |
| 680.58806008   | WIRELESS VEHICLE DETECTION SYSTEM ISOLATOR MODULE (ISO)<br>\$ _____ PER EA                                                | 1        | EA   |                |       |            |       |
| 680.58807008   | WIRELESS VEHICLE DETECTION SYSTEM SERIAL PORT PROTOCOL DIGITAL RADIO (SPP)<br>\$ _____ PER EA                             | 1        | EA   |                |       |            |       |
| 680.641830     | TRAFFIC SIGNAL POLE, MAST ARM WITH LIGHTING ARM, 18 FEET MOUNTING HEIGHT, 30 FEET ARM LENGTH<br>\$ _____ PER EA           | 1        | EA   |                |       |            |       |
| 680.641832     | TRAFFIC SIGNAL POLE, MAST ARM WITH LIGHTING ARM, 18 FEET MOUNTING HEIGHT, 32 FEET ARM LENGTH<br>\$ _____ PER EA           | 1        | EA   |                |       |            |       |
| 680.651828     | TRAFFIC SIGNAL POLE, WITH DUAL MAST ARMS AND LIGHTING ARM, 18 FEET MOUNTING HEIGHT, 28 FEET ARM LENGTH<br>\$ _____ PER EA | 1        | EA   |                |       |            |       |
| 680.730314     | SIGNAL CABLE 3 CONDUCTORS, 14 AWG<br>\$ _____ PER LF                                                                      | 453      | LF   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                       | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|----------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                          |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 680.730514     | SIGNAL CABLE 5 CONDUCTORS, 14 AWG<br>\$ _____ PER LF     | 487      | LF   |                |       |            |       |
| 680.730714     | SIGNAL CABLE 7 CONDUCTORS, 14 AWG<br>\$ _____ PER LF     | 699      | LF   |                |       |            |       |
| 680.77000105   | MODIFY TRAFFIC SIGNAL INSTALLATION<br>\$ _____ PER ELOC  | 1        | ELOC |                |       |            |       |
| 680.77000205   | MODIFY TRAFFIC SIGNAL INSTALLATION<br>\$ _____ PER ELOC  | 1        | ELOC |                |       |            |       |
| 680.78010005   | ALTER PULLBOX FOR CONDUITS<br>\$ _____ PER EA            | 2        | EA   |                |       |            |       |
| 680.79000105   | REMOVE TRAFFIC SIGNAL INSTALLATION<br>\$ _____ PER ELOC  | 1        | ELOC |                |       |            |       |
| 680.80324708   | MICROCOMPUTER CABINET BASE (ALUMINUM)<br>\$ _____ PER EA | 1        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                   | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|--------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                      |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 680.810101     | TRAFFIC SIGNAL MODULE - 12 INCH, RED BALL, LED<br>\$ _____ PER EA                    | 8        | EA   |                |       |            |       |
| 680.810103     | TRAFFIC SIGNAL MODULE - 12 INCH, YELLOW BALL, LED<br>\$ _____ PER EA                 | 8        | EA   |                |       |            |       |
| 680.810105     | TRAFFIC SIGNAL MODULE - 12 INCH, GREEN BALL, LED<br>\$ _____ PER EA                  | 8        | EA   |                |       |            |       |
| 680.810601     | TRAFFIC SIGNAL SECTION - POLYCARBONATE, TYPE I, 12 INCH<br>\$ _____ PER EA           | 24       | EA   |                |       |            |       |
| 680.8111       | TRAFFIC SIGNAL BRACKET ASSEMBLY - 1 WAY<br>\$ _____ PER EA                           | 8        | EA   |                |       |            |       |
| 680.813105     | PEDESTRIAN SIGNAL MODULE - 12 INCH BI-MODAL, HAND/MAN SYMBOLS LED<br>\$ _____ PER EA | 4        | EA   |                |       |            |       |
| 680.813106     | PEDESTRIAN SIGNAL SECTION - POLYCARBONATE, TYPE I, 12 INCH<br>\$ _____ PER EA        | 8        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                                     | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|----------------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                        |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 680.81330010   | AUDIBLE PEDESTRIAN SIGNAL<br>\$ _____ PER EA                                           | 3        | EA   |                |       |            |       |
| 680.81340010   | AUDIBLE PEDESTRIAN SIGNAL - WITH POST<br>\$ _____ PER EA                               | 1        | EA   |                |       |            |       |
| 680.8141       | PEDESTRIAN SIGNAL BRACKET MOUNT ASSEMBLY<br>\$ _____ PER EA                            | 4        | EA   |                |       |            |       |
| 680.81500010   | PEDESTRIAN COUNT-DOWN TIMER MODULE<br>\$ _____ PER EA                                  | 4        | EA   |                |       |            |       |
| 680.94997008   | FURNISH AND INSTALL ELECTRICAL DISCONNECT GENERATOR TRANSFER SWITCH<br>\$ _____ PER EA | 1        | EA   |                |       |            |       |
| 680.95020615   | SERVICE CABLE 2 CONDUCTOR NO. 06 AWG<br>\$ _____ PER LF                                | 270      | LF   |                |       |            |       |
| 683.150100ER   | 5.8 GHZ WIRELSS RADIO/ANTENNA SYSTEM<br>\$ _____ PER EA                                | 1        | EA   |                |       |            |       |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                                             | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|--------------------------------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                                                |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 685.01         | WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS<br>\$ _____ PER LF        | 7115     | LF   |                |       |            |       |
| 685.02         | YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES- 15 MILS<br>\$ _____ PER LF        | 3384     | LF   |                |       |            |       |
| 685.04         | WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MILS<br>\$ _____ PER EA        | 45       | EA   |                |       |            |       |
| 690.04000105   | SPECIALTY WORK (ELECTRICAL) - SERVICE PEDESTAL INSTALLATION<br>\$ _____ PER LS | 1        | LS   |                |       |            |       |
| 697.03         | FIELD CHANGE PAYMENT<br>\$ <u>ONE DOLLAR AND ZERO CENTS</u> PER DC             | 249000   | DC   | 1              | 00    | \$249,000  | 00    |
| 698.04         | ASPHALT PRICE ADJUSTMENT<br>\$ <u>ONE DOLLAR AND ZERO CENTS</u> PER DC         | 4799     | DC   | 1              | 00    | \$4,799    | 00    |
| 698.05         | FUEL PRICE ADJUSTMENT<br>\$ <u>ONE DOLLAR AND ZERO CENTS</u> PER DC            | 800      | DC   | 1              | 00    | \$800      | 00    |



| ITEM<br>NUMBER | ITEMS WITH UNIT BID PRICE IN WORDS                     | QUANTITY | UNIT | UNIT BID PRICE |       | AMOUNT BID |       |
|----------------|--------------------------------------------------------|----------|------|----------------|-------|------------|-------|
|                |                                                        |          |      | DOLLARS        | CENTS | DOLLARS    | CENTS |
| 699.040001     | MOBILIZATION (NOT TO EXCEED 4%)<br><br>\$ _____ PER LS | 1        | LS   |                |       |            |       |

TOTAL IN NUMBERS: \$ \_\_\_\_\_

TOTAL WRITTEN IN WORDS:

DOLLARS

CENTS

- NOTES:
- 1. Please make sure a bid is entered for each item.
  - 2. In the event that there are discrepancies within the bid schedule, the written words will be the accepted value.



## BIDDERS DECLARATION

The undersigned hereby declares that he has carefully examined the Specifications, drawings, plans and schedules, subsurface information and the Contract and other Contract Documents on file in the office of the Commissioner, has visited the site and has fully informed himself of all existing conditions and limitations affecting the work to be done and the labor and material to be furnished, and that the Contractor accepts all such existing conditions and limitations; and that no claim for damages or additional compensation will be made by the Contractor against the City by reason of any such conditions or limitations, or by reason of any estimates of quantities, tests, or representations made by any officer, employee or agent of the City; and that the Contractor is satisfied with his ability to perform the work of the Contract Documents in strict accordance with the Plans and Specifications therefore.

I agree to obtain and pay for all permits and licenses required, shall give all notices, pay all fees and comply with laws, ordinances, rules and regulations affecting the conduct of the work.

That no officer, agent or employee of the City is interested directly or indirectly in this Proposal or in any labor or materials to which it relates; that this Proposal is made without collusion with any other Bidder or other person and that it is in all respects fair and just.

By submission of this bid, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of their knowledge and belief:

The prices in this bid have been arrived at independently without collusion, consultation, communication, or competition, as to any matter relating to such prices with any other Bidder or with any competitor;

Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidders or to any competitor; and

No attempt has been made or will be made by the Bidder to induce any other person, partnership or corporation; to submit or not to submit a bid for the purpose of restricting competition.

SIGNATURE OF BIDDER \_\_\_\_\_

(SEAL)

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_



## Bidders Declaration – page 2

To facilitate correct drawing and execution of contracts; Bidders shall supply full information concerning legal status as follows:

NAME: \_\_\_\_\_

Corporation – Partnership – An Individual – Trade Name  
(Strike out classifications not applicable)

FEDERAL TREASURY NO. \_\_\_\_\_

ADDRESS OF PRINCIPAL OFFICE:

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

BUFFALO BRANCH OFFICE ADDRESS:

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

CONTRACTOR MUST SUBMIT CERTIFICATION OF INCORPORATION IN NEW YORK STATE OR MUST PROVIDE PROOF OF AUTHORIZATION TO DO BUSINESS IN NEW YORK STATE.

If Foreign Corporation, state if authorized to do business in the State of New York

\_\_\_\_\_  
Yes                      No

PRINCIPAL OFFICERS:

|                  |                 |                    |
|------------------|-----------------|--------------------|
| _____<br>(Title) | _____<br>(Name) | _____<br>(Address) |
| _____<br>(Title) | _____<br>(Name) | _____<br>(Address) |
| _____<br>(Title) | _____<br>(Name) | _____<br>(Address) |
| _____<br>(Title) | _____<br>(Name) | _____<br>(Address) |



**Bidders Declaration – page 3**

PRINCIPAL STOCKHOLDERS:

|         |        |           |
|---------|--------|-----------|
| (Title) | (Name) | (Address) |
| (Title) | (Name) | (Address) |
| (Title) | (Name) | (Address) |
| (Title) | (Name) | (Address) |

IF PARTNERSHIP: Name of Partners and addresses are:

|      |         |
|------|---------|
| NAME | ADDRESS |
|      |         |
|      |         |

IF DOING BUSINESS UNDER TRADE NAME, ASSUMED NAME OR FIRM STYLE:

Name of Owner \_\_\_\_\_

Certificate Filed \_\_\_\_\_  
(Place and date)

**PROPOSAL SURETY BOND**

Accompanying this proposal is a surety company bond in the penal amount of

\_\_\_\_\_ DOLLARS. (\$\_\_\_\_\_)

which is not less than ten percent (10%) of the amount of this Proposal.



**DEPARTMENT OF PUBLIC WORKS  
DIVISION OF ENGINEERING  
PROPOSAL BOND**

Approved by  
Corporation Counsel

---

KNOW ALL MEN BY THESE PRESENTS, That we \_\_\_\_\_  
\_\_\_\_\_ as principal, and \_\_\_\_\_  
\_\_\_\_\_ a corporation authorized to guarantee the  
performance of contracts and to do business in the City of Buffalo, County of Erie, and  
State of New York as surety ARE HELD AND FIRMLY BOUND UNTO THE CITY OF  
BUFFALO in the penal sum of \_\_\_\_\_ DOLLARS,  
which is 10% of the amount of the proposal, to be paid to the said City of Buffalo, its  
certain attorney or assigns, for which payment, well and truly to be made, we bind  
ourselves, our heirs, executors, administrators, successors and assigns, jointly and  
severally, firmly by these presents.

Sealed with our seals. Dated the \_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_ WHEREAS, the said  
principal obligor \_\_\_\_\_  
has herewith presented a proposal in writing to the City of Buffalo for:

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in accordance with plans and specifications prepared under the direction of the  
Commissioner of Public Works of the City of Buffalo.



**Proposal Bond – Page 2**

NOW, THEREFORE, The condition of this obligation is such that if the said principal obligor, in case said proposal is accepted by the City of Buffalo, shall and will whenever required enter into a written contract with the City of Buffalo for the performance of the work or improvement mentioned in said proposal in accordance with the terms and conditions as provided in the plans and specifications, and upon the execution of such contract, shall and will furnish a bond for the faithful performance of the same, then this obligation shall be void, otherwise of full force; provided, however, and it is expressly stipulated and agreed that the penal sum of this bond in the amount of one-hundred percent (100%) thereof shall be and become the minimum amount of damage suffered by the City of Buffalo as liquidated damages if said principal obligor shall fail to enter into such contract and give the security for the performance of the same, as herein required.

\_\_\_\_\_(L.S.)  
\_\_\_\_\_(L.S.)  
\_\_\_\_\_(L.S.)  
\_\_\_\_\_(L.S.)

**INDIVIDUAL ACKNOWLEDGMENT**

STATE OF NEW :  
COUNTY OF ERIE : ss: -  
CITY OF BUFFALO :

On this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, before me appeared \_\_\_\_\_  
\_\_\_\_\_ to me personally known to be the individual  
\_\_\_\_\_ described in and who executed the foregoing  
bond, and \_\_\_\_\_ duly acknowledged to me that  
\_\_\_\_\_ executed the same.

\_\_\_\_\_  
Notary Public, Erie County, New York  
Commissioner of Deeds in and for the  
City of Buffalo, New York



**PROPOSAL BOND – Page 3**

**PARTNERSHIP ACKNOWLEDGMENT**

STATE OF NEW YORK :  
COUNTY OF ERIE : ss: -  
CITY OF BUFFALO :

On this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, before me personally  
appeared \_\_\_\_\_ to me known and known to be  
members of the firm of \_\_\_\_\_,  
described in and who executed the foregoing instrument, and they thereupon  
acknowledge to me that they executed the same as and for the act and deed of said  
partnership.

\_\_\_\_\_  
Notary Public, Erie County, New York  
Commissioner of Deeds in and for the  
City of Buffalo, New York

**CORPORATE ACKNOWLEDGMENT**

STATE OF NEW YORK :  
COUNTY OF ERIE : ss: -  
CITY OF BUFFALO :

On this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, before me personally appeared  
\_\_\_\_\_ to me known, who, being by me duly sworn,  
did depose and say that he resides in \_\_\_\_\_  
that he (or she) is the \_\_\_\_\_ of \_\_\_\_\_  
the corporation described in, and which executed the above instrument; that he knows  
the seal of such corporation; that the seal affixed to said instrument is such corporate  
seal; and that it was so affixed by order of the Board of Directors of said corporation;  
and that he signed his name thereto by like order.

\_\_\_\_\_  
Notary Public, Erie County, New York  
Commissioner of Deeds in and for the  
City of Buffalo, New York



**Proposal Bond – Page 4**

**SURETY ACKNOWLEDGMENT**

STATE OF \_\_\_\_\_ ss: -

COUNTY OF \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, before me, a Notary Public in and for said State and County, residing therein, duly commissioned and sworn, personally appeared \_\_\_\_\_, known to me to be the Attorney-in-Fact of \_\_\_\_\_ the corporation described in and that executed the within and foregoing instrument and known to me to be the person who executed the said instrument in behalf of the said corporation, and he/she duly acknowledged to me that said corporation executed the same.

IN WITNESS THEREOF, I have hereunto set my hand and affixed my official seal, the day and year herein above set forth.

\_\_\_\_\_  
Notary Public, Erie County, New York  
Commissioner of Deeds in and for the  
City of Buffalo, New York

\_\_\_\_\_  
If the foregoing bond is acknowledged without the State of New York a certificate as to the genuineness of the signature of the officer taking the acknowledgment must be attached.



## EXPERIENCE QUESTIONNAIRE

Approved and recommended by the Joint Conference on Construction Practices For  
use in investigating the responsibility of Bidders

Submitted to \_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_Corporation \_\_\_\_Partnership \_\_\_\_An Individual

Principal Office \_\_\_\_\_

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made.

How many years has your organization been in business as a general contractor under your present business name?

How many years experience in \_\_\_\_\_ construction work has your organization had:

(a) As a general Contractor \_\_\_\_\_

(b) As a Sub-Contractor \_\_\_\_\_

What projects has your organization completed?

[illegible]

Have you ever failed to complete any work awarded to you?

Yes/No: \_\_\_\_\_ If so, where and why?

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## Experience Questionnaire – page 2

Has any officer or partner of your organization ever been officer or partner of some other organization that failed to complete a construction contract?

Yes/No: \_\_\_\_\_. If so, state name of individual, other organization and reason therefore:

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6. Has any officer or partner of your organization ever failed to complete a construction contract in his own name? Yes/No: \_\_\_\_\_. If so, state name of \_\_\_\_\_ individual, name of owner, and reason therefore. \_\_\_\_\_

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7. In what other lines of business do you have financial interest in? \_\_\_\_\_

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8. For what corporations or individuals have you performed work, and who should be contacted for references? \_\_\_\_\_

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9. For what Municipalities have you performed work, and who should be contacted for references? \_\_\_\_\_

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10. For what counties have you performed work, and who should be contacted for references? \_\_\_\_\_

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11. For what State Bureaus or Departments have you performed work, and who should be contacted for references? \_\_\_\_\_

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12. Have you ever performed work for the U.S. Government? If so, who should be contacted for references? \_\_\_\_\_

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13. Have you filed performance record reports with the Bureau of Contract Information, Inc., Washington, D.C.? Yes/No: \_\_\_\_\_



### Experience Questionnaire – page 3

14. What is the construction experience of all principal individuals of your organization?

| INDIVIDUAL'S<br>NAME | PRESENT<br>POSITION<br>OR OFFICE | YEARS OF<br>CONSTRUCTION<br>EXPERIENCE | MAGNITUDE &<br>TYPE OF WORK | IN WHAT<br>CAPACITY |
|----------------------|----------------------------------|----------------------------------------|-----------------------------|---------------------|
| _____                | _____                            | _____                                  | _____                       | _____               |
| _____                | _____                            | _____                                  | _____                       | _____               |
| _____                | _____                            | _____                                  | _____                       | _____               |
| _____                | _____                            | _____                                  | _____                       | _____               |

15. Is any principal of this Corporation (partnership) or a member of his immediate family employed by the City of Buffalo? Yes/No: \_\_\_\_\_ If yes:

What Department? \_\_\_\_\_  
Name of City Employee: \_\_\_\_\_

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

Name of Organization: \_\_\_\_\_

By \_\_\_\_\_

Title of Person Signing \_\_\_\_\_

.....  
State of \_\_\_\_\_

County of \_\_\_\_\_ ss: -

\_\_\_\_\_ being duly sworn deposes and says that

he is \_\_\_\_\_ of \_\_\_\_\_

Name of Organization

and that answers to the foregoing questions and all statements therein contained are true and correct.

Sworn to me before this

\_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

(signature)

\_\_\_\_\_  
Notary Public My commission expires \_\_\_\_\_



## REQUIRED INSURANCE

### Casualty Insurance

The Contractor shall procure and maintain at the Contractor's own expense, without cost to the City, casualty insurance, as distinguished from fire insurance, for liability for damages arising from operations under the Contract until final acceptance by the City, and resulting in bodily injury, sickness and disease, including death, and for damage to or loss of property.

The certificate of insurance shall name the City as additional insured on the general liability, automobile liability and any excess umbrella liability policy. If funding also comes from other agencies (Sewer Authority, Water Authority, Community Development, etc.), a separate certificate of insurance is required for each agency, naming each agency as additional insured.

The Contractor shall procure insurance coverage as hereinafter indicated by the "x" mark opposite each form of insurance policy required.

  X   **WORKMAN'S COMPENSATION AND EMPLOYER'S LIABILITY AND  
DISABILITY COVERAGE ON THE NEW YORK FORM**

Insurance to cover the contractor as named insured for his liability under the law. \*NOTE: Please be sure to include the new "Certificate of NYS Workers' Compensation Insurance Coverage" Form.

  X   **PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY**

Insurance to cover the Contractor as named insured, and City of Buffalo as additional insured, and including thereunder as hereafter required:

\_\_\_\_\_ Blasting and explosion.

\_\_\_\_\_ Collapse or structural injury to any building or structure.

  X   Injury or destruction to underground property.

\_\_\_\_\_ Completed operations insurance between date of completion of the work and its final acceptance of the City.

\_\_\_\_\_ "Broad Form Property Damage" insurance, where Contract involves work on existing structures.

  X   **"BROAD FORM" CONTRACTUAL LIABILITY**

insurance to indemnify the City for liability assumed by the Contractor on behalf of the owner under the terms of the Contract.

  X   The Contractor shall provide an "All Risk" Builders Risk policy in an amount equal to the contract price.



## **Required Insurance – page 2**

### **X AUTOMOBILE LIABILITY AND PROPERTY DAMAGE**

Comprehensive automobile liability insurance to cover the Contractor, as named insured, for his ownership, maintenance or use, including loading and unloading, of any owned, hired or non-owned automobile used under this agreement both at and away from the job site.

### **X OWNERS PROTECTIVE LIABILITY INSURANCE**

The Contractor shall also take out, pay for and maintain until completion and acceptance of the work required by this Contract, a separate contract, a separate policy of insurance naming the City of Buffalo as the sole insured. The original policy shall be submitted for retention by the City of Buffalo. Said separate policy shall be in amounts of Two Million Dollars (\$2,000,000.00) per occurrence for bodily injury, and property damage and shall provide coverage for the City of Buffalo, its officers and employees, with respect to said work. Said policy shall provide that the coverage afforded thereby shall be primary coverage to the full limits of liability stated in the declarations, and if said City of Buffalo, its officers and employees have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only.

### **X EXCESS LIABILITY/UMBRELLA FROM INSURANCE**

#### **Policy Limits**

The following amounts on policy limits shall be provided:

Automobiles – Bodily Injury and Property Damage combined per occurrence  
\$2,000,000.00.

Comprehensive General Liability including Contractual Liability, Bodily Injury and Property Damage combined per occurrence \$2,000,000.00.

#### **Subcontractor's Insurance**

Any Subcontractor performing work under this Contract shall procure and maintain statutory insurance and other insurance as determined by the Contractor so as to properly cover the liability of both the Contractor and Subcontractor(s). The policy limits shall be the same as required of the Contractor and certificates of insurance shall be delivered to the Contractor.



## **Other Insurance Provisions**

### **Certification of Effective Insurance**

The Contractor shall furnish or have on file with the City a certified copy of each kind of insurance policy herein required of the Contractor and shall furnish the City with certificates in form and substance acceptable to the City in duplicate evidencing that the required insurance's are in effect for the particular Contract.

### **Cancellation Notice**

Each insurance policy and certificate of insurance shall contain a provision providing that it shall not be canceled, changed in any respect or not renewed without thirty (30) days prior of written notice to the City of the intention to cancel, change, or not renew.

### **Renewal of Policy**

All required insurance policies shall be kept in full form and effect until the satisfactory completion of the work to be performed under the Contract Documents and the Contractor shall provide the City with satisfactory evidence of renewal of such policies and the payment of applied premiums at least thirty (30) days prior to the stated expiration date.

### **State Authorization**

Insurance policies shall only be written on insurance companies admitted and authorized to do such business in the State of New York. Said insurance companies are subject to the approval of the City.



## **ARTICLE 100 – GENERAL CONDITIONS**

### **ARTICLE 101 – DEFINITIONS AND TERMS**

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When used herein or in the Contract Documents (as hereafter defined) the following terms shall have the meanings specified unless the context otherwise requires:

#### **101.01 ABBREVIATIONS**

Whenever the following abbreviations are used in Specifications or on the plans, they shall have the Respective meanings following:

|              |                                                                    |
|--------------|--------------------------------------------------------------------|
| A.A.S.H.T.O. | American Association of State Highway and Transportation Officials |
| A.S.T.M.     | American Society for Testing and Materials                         |
| A.W.P.A.     | American Wood-Preservers Association                               |
| A.W.W.A.     | American Water Works Association                                   |
| A.O.B.E.     | As Ordered by Engineer                                             |
| E.I.C.       | Engineer in Charge                                                 |

#### **101.02 ADDENDA**

Additions, deletions, and modifications to the provisions the Standard Specifications which are in effect on the date of advertisement.

#### **101.03 BEST**

The first grade or quality of the material or equipment specified.

#### **101.04 BIDDER**

An individual, firm or corporation formally submitting a Proposal for the work contemplated acting directly or through a duly authorized representative.

#### **101.05 CALENDAR DAY**

Any day shown on the calendar.

#### **101.06 CITY**

The City of Buffalo, New York.

#### **101.07 COMMISSIONER**

The Commissioner of Public Works of the City, or the Employee of one of the Divisions in the Department of Public Works of the City, designated by such Commissioner of Public Works to act in the Commissioners place during the performance of the Contract.

#### **101.08 CONSULTANT**

The engineer or architect, with the status of independent contractor, retained by the City under a contract to prepare plans and specifications for the work and to monitor and inspect the performance thereof if so required by the City.

#### **101.09 CONTRACT**

The agreement covering the performance of the work and furnishing of labor and materials in the construction of the work in conformance with the requirements of the Contract Documents.



**101.10 CONTRACT DOCUMENTS**

The advertisement for bids, schedule of quantities, supplemental instructions to bidders, required insurance, proposal, proposal bond, experience questionnaire, Contract, bonds to accompany contract, instructions to bidders, the general conditions, the specifications, the contract items, the affirmative action program, the plans, the drawings, together with all the addenda issued prior to the opening of bids and all notifications thereof recorded in the documents, and all provisions required by law to be inserted in the contract whether actually inserted or not.

**101.11 CONTRACT ITEM**

A specifically described unit of work for which a price is provided in the Contract and which shall be sometimes referred to as "Pay Item".

**101.12 CONTRACTOR**

The person, firm or corporation who has contracted with the City for the execution of work specified.

**101.13 EMPLOYEE**

Any person working on the project mentioned in the Contract of which these specifications are a part, and who is under the direction or control, or receives compensation from the Contractor or Subcontractor.

**101.14 EQUIPMENT**

All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the work.

**101.15 EXECUTION**

The sole and exact compliance or conformity with the provisions and requirements expressed or implied in the Contract Documents and the completion of the work in accordance therewith.

**101.16 EXTRA WORK**

An item of work not provided for in the Contract as awarded but found essential to the satisfactory completion of the Contract within its intended scope.

**101.17 MAINTENANCE CONTRACT**

A Contract issued by the Division of Engineering – Street Paving for maintenance of streets and sidewalks and sometimes described as following: Reclamation & Overlay Phase I and II, Repair of City Pavements, Crack Filling, Heater/Scarifying, Cold Milling, Curb Replacement, Construction of Sidewalk and Water cut Repair.

**101.18 MATERIAL**

Any approved material acceptable to the Commissioner and conforming to the requirements of the specifications.

**101.19 PLANS**

The official contract drawings and applicable standard sheets, which show the location, character, dimension and details of the work to perform.

**101.20 PROJECT**

The construction work to be performed under one or more construction contracts to complete an undertaking.

**101.21 PROPOSAL**

The offer of the bidder for the work, when executed and submitted on the prescribed approved form on which the City requires formal bids to be prepared and submitted for the work.

**101.22 RIGHT-OF-WAY (R.O.W.)**

A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to a street.



**101.23 SPECIFICATIONS**

The body of directions, requirements, etc., contained in the Standard Specifications, together with all documents of any description and agreements made (or to be made), pertaining to the methods (or manner) of performing the work or to the quantities and quality as shown by the test records of accepted materials to be furnished under a contract. Within these specifications there are two formats for numbering. One is used for the Specifications and the other for the Contract Pay Items.

Specifications use a format, which always include a dash and occasionally a decimal (for example XX-XXX.X). This format never denotes a pay item.

Contract pay items uses a format which includes one decimal point only. The basic format contains digits just to the left of the decimal point denoting the specification section to which it relates and digits to the right of the decimal point denoting the particular pay item within the specification. (For example XX.XXX). When a pay item has three or more digits just left of the decimal these items are to be found in the Standard Specifications of the New York State Department of Transportation.

**101.24 STANDARD SHEETS**

The standard drawings approved for repetitive use, showing details to be used where appropriate.

**101.25 STANDARD SPECIFICATIONS**

The Standard Specifications for Construction & Materials (New York State and/or City of Buffalo) promulgated from time to time by the Commissioner.

**101.26 SUBCONTRACTOR**

Any person, firm, or corporation, other than employees of the Contractor who act for or on behalf of the Contractor as an independent contractor in executing any part of the Contract Documents but does not include one who furnished only materials.

**101.27 SURETY**

The corporate body bound with and for the Contractor, for the full and complete performance of the Contract, and for the payment of the debts, pertaining to the work.

**101.28 TEST**

Methods adopted by the Commissioner to ascertain the quality, character and acceptability of the materials and processes utilized in performing the Contract.

**101.29 TON**

Short ton of 2,000 pounds.

**101.30 UTILITY**

A public, privately, or cooperatively owned agency or agencies operated by one or more persons or corporations for public service.

**101.31 WORK**

The furnishing of labor, materials, and equipment.

**101.32 WORK DAY**

A calendar day, exclusive of Saturday, Sunday and City recognized legal holidays, on which weather and other conditions not under the control of the Contractor, will permit construction operations to proceed for the major part of the day on the principal item or items of work which normally are in progress at the time.

**101.33 WRITTEN NOTICE**

Written notice shall be considered to have been duly served upon the Contractor under this Contract if delivered in person to the individual Contractor or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered mail to the last business address of the Contractor known to the City. Written notice to the City shall be considered to have been duly served if delivered or sent by registered mail to the office of the Commissioner of Public Works, Parks and Streets 502 City Hall, Buffalo, New York, 14202.



## **ARTICLE 102 – STATUS OF THE COMMISSIONER**

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### **102.01 INTERPRETATION OF CONTRACT DOCUMENTS**

The Commissioner shall have authority to make decisions which shall be final, binding, and conclusive upon the City and Contractor with respect to the following matters, except where questions of law are involved.

The true intent and meaning of any of the provisions or stipulations in the drawings, plans, specifications and addenda thereto, and

- Any inconsistencies or conflicts in the Contract Documents, and
- All claims of the City or Contractor, and
- All other matters relating to the execution and rate of progress of work.

### **102.02 INSPECTION**

The Commissioner shall monitor the proper performance of the work and shall inspect the quality of material and condition of the work and require the same to be executed in strict conformity with all the terms of the Contract Documents. The Commissioner shall determine the amount, quality, acceptability and fitness of all parts of the work and reject all materials and work which do not conform to the terms of the Contract Documents.

### **102.03 NOTICES AND ORDERS**

The Commissioner shall give all notices and orders required of the Commissioner in the Contract Documents. Upon request, the Commissioner shall confirm in writing any oral order, direction, requirement or determination. If the City has not employed a Consultant in connection with this work, any reference in the Contract Documents to “Engineer” or “Architect” should be deemed to refer to the Commissioner, or to the Director of one of the Divisions in the Department of Public Works designated by the Commissioner to act in the Commissioner’s place on such work.

### **102.04 WORK STOPPAGE**

The Commissioner shall have the authority to stop the work, wholly or in part, as the Commissioner may deem necessary to insure proper execution of the Contract Documents. The Contractor shall not suspend any operations without the permission of the Commissioner.

### **102.05 PERFORMANCE BY CONTRACTOR**

The Contractor shall abide by all orders, directions, requirements and perform all work under the Contract Documents to the satisfaction of the Commissioner.

### **102.06 EMPLOYMENT OF CONSULTANT**

When the City shall have employed the professional services of a Consultant in connection with the work, then all of the rights and responsibilities of the Commissioner referred to in ARTICLE 102 shall be transferred to and assumed by the Consultant, provided however, the City reserves the absolute right to make final decisions in all matters as defined under articles herein entitled:

- a) Changes in Order of Work.....(Article 114.04)
- b) Additions and Deductions.....(Article 115)
- c) Extra Work.....(Article 116)
- d) Delays and Extension of Time....(Article 119)
- e) Default of Contractor.....(Article 120)

### **102.07 EXERCISE OF OPTIONS**

Wherever in the Contract Documents the City is authorized or entitled to exercise an option, the Commissioner shall have the power and right to exercise the same on behalf of the City.



#### **102.08 ACCEPTANCE OF COMPLETED WORK**

The completed work shall be to the satisfaction of the Commissioner in accordance with the duties and responsibilities imposed upon by Article 10 of the Charter of the City of Buffalo, and shall be fit for its intended purposes as provided in the Contract Documents.

### **ARTICLE 103 – STATUS OF CONSULTANT**

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When the City has employed a Consultant to prepare the Contract Documents, including drawings and specifications, together with monitoring and inspection of the work while in progress, but subject to the reservation of the rights and obligations of the Commissioner, then the status of the Consultant shall be as hereinafter stated.

#### **103.01 INTERPRETATION OF CONTRACT DOCUMENTS**

The Consultant shall have the authority to make decisions which shall be final, binding, and conclusive upon the City and Contractor with respect to the following matters, except where questions of law are involved:

The true intent and meaning of any of the provisions or stipulations in the drawings, plans, specifications and addenda thereto, and

- Any inconsistencies or conflicts in the Contract Documents, and
- All claims of the City or Contractor, and
- All other matters relating to the execution and rate of the progress of the work.

#### **103.02 INSPECTION**

The Consultant shall monitor the proper performance of the work and shall inspect the quality of material and conditions of the work and require the same to be done in strict conformity with all of the terms of the Contract Documents. The Consultant shall determine the amount, quality, acceptability and fitness of all parts of the work and reject all materials and work which do not conform to the terms of the Contract Documents.

#### **103.03 NOTICES AND ORDERS**

The Consultant shall give all notices and orders required of the Consultant in the Contract Documents; upon request, the Consultant shall confirm in writing any oral order, direction, requirement, or determination.

#### **103.04 WORK STOPPAGE**

The Consultant shall have the authority to stop the work, wholly or in part, as he may deem necessary to insure proper execution of the Contract Documents. The Contractor shall not suspend any operations without the permission of the Consultant.

#### **103.05 PERFORMANCE BY CONTRACTOR**

The Contractor shall abide by all orders, directions and requirements and perform all work under the Contract Documents to the satisfaction of the Consultant.

### **ARTICLE 104 – DRAWINGS, SPECIFICATIONS AND RELATED DATA**

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#### **104.01 DRAWINGS, SPECIFICATIONS AND INSTRUCTIONS FURNISHED**

Unless otherwise provided in the Contract Documents, the City shall furnish to the Contractor, free of charge, all copies of drawings and specifications reasonably necessary for the execution of the work. The City shall furnish the Contractor, with reasonable promptness, additional instruction, by means of drawings or otherwise, necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom. The work shall be executed in conformity therewith and the Contractor shall not commence work without proper drawings and instructions.



#### **104.02 SHOP DRAWINGS**

The Contractor shall submit to the City, with such promptness as to cause no delay in the Contractor's own work or in that of any other contractor employed in such work, three copies of all shop or setting drawings required for the proper execution of the work herein specified.

Each shipment of drawings must be accompanied by a letter of transmittal, giving name of contractor, list of drawings included with each drawing marked with the name and location of structure and each series of drawings numbered consecutively.

Shop drawings shall be submitted in the order and time required for construction. Shop drawings submitted ahead of time will be held by the City for checking in the order as set forth above.

Under no condition will any claim for delay in the completion of contracts, because of shop drawings being held by the City for checking, be recognized.

If it is found necessary to make changes in shop drawings, two prints will be returned to the Contractor, who, after making corrections indicated, shall furnish without charge three additional copies. The Contractor shall continue to furnish the drawings, as above mentioned, until all drawings are satisfactory to the City who, however, will not be responsible for their accuracy.

If during the checking and return of checked prints, the Contractor makes any additional changes or corrections on the original shop drawings, the Contractor shall call attention to such markings on the prints by a letter written to the Commissioner.

Shop drawings without the approval of the Commissioner will not be permitted on the premises. Actual fabrication of the work shall not proceed until these shop drawings have received the approval of the Commissioner.

It is understood that the approval of any shop drawings by the Commissioner in no way relieves the Contractor from assuming the responsibility for the accuracy of same, nor does it relieve the Contractor from any of the required conditions as set forth in these specifications or accompanying drawings.

#### **104.03 DRAWINGS AND SPECIFICATIONS AT JOB SITE**

One complete set of Contract drawings and details, and one copy of the specifications shall be kept on the work site, in good order, by the Contractor.

#### **104.04 OWNERSHIP OF DRAWINGS, SPECIFICATIONS AND MODELS**

All drawings, specifications and copies thereof furnished the Contractor by the City, with the exception of the signed Contract, shall be returned to the City at the completion of the work, and shall not be used by the Contractor or any Subcontractor on any other work. All models are the property of the City.

#### **104.05 LAYOUT OF WORK AND MEASUREMENTS EXAMINATION OF DRAWINGS**

Before ordering any materials or commencing any work hereunder, the Contractor shall thoroughly examine the drawings and specifications, carefully check the figured dimensions therein and shall take his own measurements of the work.

The Contractor shall report to the Commissioner any discrepancy or error or defect appearing therein and shall not order any materials or proceed with any work until the Commissioner shall have advised the Contractor with respect to such discrepancy, error or defect.

No extra compensation shall be allowed to the Contractor on account of any difference between the actual dimensions and measurements and those indicated on the drawings and specifications. The Contractor shall lay out the work or employ a competent engineer to do so, doing all necessary leveling and measuring. If so requested, the Contractor shall furnish the Commissioner with competent personnel for checking the work after it has been laid out.



#### **104.06 LINES AND GRADES**

All work under the Contract Documents shall be built in accordance with the lines and grades shown on the plans or as given by the City. The Contractor will set all stakes necessary for line and grade unless otherwise noted. The Contractor shall carefully protect and maintain such stakes and keep the same uncovered for examination during the progress of the work.

The Contractor shall inform the Commissioner at least twenty-four (24) hours in advance of the Contractor need for additional grades and lines. Work shall be suspended for such reasonable time as the City may require to provide such information.

All work done without lines, levels or instructions will not be estimated or paid for unless such work is authorized in writing by the Commissioner. Work done without authority from the Commissioner, may be ordered removed and replaced at the Contractor's sole cost and expense.

### **ARTICLE 105 – CONTRACTOR'S RESPONSIBILITIES**

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#### **105.01 MATERIALS, METHODS, EQUIPMENT AND APPLIANCES**

Unless otherwise specified, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, power, transportation and other facilities necessary for the proper and safe execution and completion of the work in full accordance with the Contract Documents and the true intent thereof. The Contractor shall provide without extra charge all incidental items required as part of the work even though not particularly specified or indicated.

The Contractor shall be responsible for each and every part of the work under the Contract Documents. The Contractor will be held responsible for the execution of a satisfactory and complete piece of work in accordance with the true intent of the drawings and specifications. If the Contractor has good reason for objecting to the use of any material, equipment, appliance or method of construction as shown or specified, the Contractor must make a written report of such objection to the Commissioner before execution of the form of Contract and obtain a determination by the Commissioner before such execution.

Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of the best quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials to be furnished.

The Contractor is responsible for possessing or obtaining the most recent and updated copy of the Standard Specifications for Construction & Materials.

#### **105.02 SAMPLES**

Whenever directed by the Commissioner, the Contractor, at the Contractor's own expense, shall furnish for approval, samples of materials to be incorporated in the work. The samples shall be properly identified and submitted sufficiently in advance of the time when such materials are to be incorporated in the work so that rejections thereof will not cause delay in the performance of the work. A letter of transmittal from the Contractor requesting approval shall accompany all samples.

#### **105.03 DELIVERY OF MATERIALS**

The Contractor shall arrange for the delivery of materials at such times and in such quantities that the progress of the work shall not be interrupted and that the work shall be completed within the specified time. The Contractor shall also coordinate the deliveries of materials with the work of other contractors in order to avoid delay.



#### **105.04 PATENT RIGHTS**

As part of the Contractor's obligation hereunder and without any additional compensation, the Contractor shall and will indemnify and at all times save harmless the City against any and all loss and damage, claims or demands, costs and charges that may arise or accrue by reason of the adoption or use by the Contractor of any patented article, device or improvement or by reason of the acceptance, adoption or use by the City of any patented article, device or improvement furnished or delivered by the Contractor. The Contractor shall not adopt or make use of any patented article, device or improvement unless the Contractor first obtains the right and privilege to do so and also the right and privilege of the owner to use such patented article, device, or improvement without infringing the rights of the patentee.

#### **105.05 PERMITS**

The Contractor shall obtain and pay for all permits and licenses required for work inside or outside of the property of the City and shall give all notices, pay all fees and comply with all laws, ordinances, rules and regulations affecting the conduct of the work. All work on water service lines and sewer laterals require permits issued by the proper City Department. All work on water and sewer lines must be performed by a plumber licensed by the City.

#### **105.06 PROTECTION OF WORK AND PROPERTY**

The Contractor shall continuously maintain adequate protection of all his work from damage or loss and shall protect the City's property from damage or loss during the performance of this work. Any damage caused by the Contractor during construction shall be corrected by the Contractor at no expense or cost to the City. The Contractor shall be responsible for all parts of the work, both temporary and permanent, until the entire work under the Contract Documents are accepted by the City. The Contractor shall make good any such damage or loss, including fire loss, whether or not covered by insurance.

The Contractor shall provide and maintain all passage ways, guard fences, lights and other facilities for protection required by public authority or by the nature of the work. The Contractor shall adequately protect adjacent property as provided by law and by the Contract Documents.

#### **105.07 SAFETY – UNREASONABLE HAZARDS**

The Contractor shall be responsible at all times for the carrying out of all operations hereunder in a safe and prudent manner so that workers and the general public will be protected from unreasonable hazards.

The Contractor shall not load nor permit any part of any structure to be loaded with a weight that will endanger its safety.

The Contractor shall keep upon the premises, at each location where work is going on, a completely equipped first aid kit and shall provide ready access thereto at all times when men are employed on the work. The Contractor shall designate some proper person in each shift to be in charge of first-aid work and shall cause such persons to receive proper instructions therein.

#### **105.08 STORAGE AND PROTECTION OF MATERIALS, EQUIPMENT AND TOOLS**

The Contractor shall be solely responsible for the proper care and protection of all of the materials, equipment, tools and other like items on the site and the Contractor shall make no claim against the City on account of damage to or loss of such materials and other items.

Materials, equipment, tools and related items may be stored on the premises but the placing of the same shall be subject to the direction of the Commissioner or the Consultant.

#### **105.09 SUPERVISION AND EMPLOYEES**

The Contractor shall give the work adequate personal supervision and keep a competent superintendent constantly on the site from the commencement of work until the completion to receive instructions in the absence of other representatives of the Contractor.

None but competent superintendents, foremen, and workmen, are to be employed on any part of the work. Upon notice to the Contractor that the Commissioner deems any employee incompetent or negligent or for any cause unfit for duty, the Contractor shall immediately require such employee to correct his conduct and if he is unable to do so, the Contractor shall immediately remove him from employment on the work.



No officer or employee of the City shall be employed by the Contractor or any Subcontractor or agent to do any of the work or engage in any of the services included within the Contract Documents.

#### **105.10 USE AND CARE OF PREMISES**

The Contractor shall confine the Contractor's apparatus, the storage of materials and the operations of the Contractor's workmen to limits indicated by law, ordinances, permits, or direction of the City authorities and shall not unreasonably encumber the premises with the materials.

The Contractor shall not enter or occupy with tools, materials, or equipment any land outside of the boundaries of the work site except as the City may otherwise specifically permit.

The Contractor may display only its name and the names of other contractors engaged on the work. The Contractor shall not permit other persons without the consent of the Commissioner, to display any advertising matter in or upon the site of the work.

The Contractor shall enforce the Commissioner's instructions regarding fire, smoking and sanitation. Adequate sanitary facilities shall be provided by the Contractor for the use of all workers on the site prior to beginning any contract work. The Contractor shall rigorously prohibit the committing of any nuisances upon the lands of the City, about the work or upon adjacent property. Any employee found violating these provisions shall be discharged upon the request of the Commissioner.

The Contractor shall, from time to time, and at least once a week remove all dirt, rubbish, and waste material resulting from the Contractor's operations. At the completion of this work, the Contractor shall leave the work and site clean and fit for the use intended, and the Contractor shall leave the premises and streets about the work clean, free from obstructions and otherwise fit for the normal use thereof.

#### **105.11 SHORING AND SUPPORTS**

All temporary shoring necessary for the removal of existing work or for the installation of new work shall be deemed to be required by the Contract Documents and must be done in accordance with the directions and to the satisfaction of the Commissioner. The Contractor must assume all responsibility for this work and make good any damage caused by improper supports or failure of shoring in any respect. On completion of permanent supports, all temporary shoring shall be removed. The Contract Documents shall be deemed to require all necessary cutting and patching of masonry, plaster, wood, steel and similar items as may be required for the installation of shoring and supports.

#### **105.12 LAWNS, SHRUBBERY AND TREES**

Lawns, shrubbery and trees in the vicinity of the work shall not be damaged or destroyed except as may be permitted by the City for the purposes of construction within the lines and dimensions shown on the Plans or other contract drawings. All trees and shrubs, except those ordered to be removed, shall be adequately protected by boxes or otherwise. No excavated material shall be placed so as to injure trees or shrubs. All trees or shrubs damaged or destroyed by the Contractor shall be replaced with new, live growing stock of similar size and age at the proper season for planting. Lawns and parkways shall be left in as good condition as before the commencement of the work or shall be restored to their former condition at the proper season for planting.

#### **105.13 STREETS AND TRAFFIC**

The Contractor will be required to arrange the work so as to obstruct traffic as little as possible. Whenever the performance of the work under the Contract Documents requires the closing or obstruction of a portion of a street or other public way, the Contractor shall provide signs, barriers, lights, and other similar items which conform with the instructions outlined in the New York State Manual of Uniform Traffic Control Devices of July 1, 1983 and such may be amended from time to time, and as directed by the Commissioner of Police and the Commissioner of Public Works.

The Contractor shall carry out without delay any instructions of the Commissioner of Police or of the Commissioner of Public Works as they deem necessary to maintain the flow of traffic on such street or other public way. The Contractor shall notify the Commissioner of Police and the Commissioner of Fire at least forty-eight hours in advance of the need for the closing of any such street or other public way by reason of work hereunder. No street or other public way shall be entirely closed to traffic without the prior approval of the Commissioner of Police and the Commissioner of Fire and the Commissioner of Public Works.



#### **105.14 SPECIAL PRECAUTIONS**

In the event that the performance of the work hereunder requires blasting or other operations involving an unusually high degree of danger to persons and property, the Contractor shall comply with all the terms of the Specifications and all laws and ordinances relating to the storage, handling, and use of explosives and inflammable materials and the protection of the work, the workmen, the general public, and the property of other persons from injuries or damages. The Contractor shall promptly comply with any other instructions, written or verbal, which the Commissioner or the Consultant shall give to the Contractor with respect to the storage, handling and use of explosives and inflammable materials as the work progresses. The amount of explosives and inflammable materials stored on the premises shall be kept at all times to the minimum required by the nature of the work.

#### **105.15 PUBLIC SERVICE AND GOVERNMENTAL STRUCTURES AND INSTALLATIONS**

The Contractor's attention is directed to ARTICLE 205 and 206 of the Instructions to Bidders, entitled "Visit Site and Examine the Contract Documents" and "Subsurface Conditions" and to the contract drawings.

At least one week before commencing operations, the Contractor shall notify all public service corporations and governmental bodies whose buildings, tracks, wires, pipes, conduits, poles or other structures will or may be affected. When required by law or by the terms of the franchise or other agreement, such removed and replaced or relocated by the parties owning or controlling the same at their own cost and expense. Otherwise, the cost of such removal and replacement or relocation shall be borne by the Contractor. Also, the cost of relocation of any street lighting plant (i.e. manhole, foundation, etc.) within the right-of-way, exclusive of the area within the curb line, will be borne by the Contractor.

The Contractor shall allow reasonable opportunity and access for such public service corporation and governmental bodies to accomplish such removal and replacement or relocation.

Such structures which adjoin the proposed work but which do not obstruct the carrying out of the work shall be carefully protected by the Contractor in such a manner as to secure the safety of the public and the structures. The use of pipes, conduits, wires, poles and other structures shall not be interrupted without the consent of the parties owning or controlling the same.

#### **105.16 LAYOUT OF WORK**

The Contractor shall layout the work or employ a competent engineer to do so, doing all necessary leveling and measuring and shall locate and layout all utility devices in the pavement. If so requested, the Contractor shall furnish the Commissioner with competent personnel for checking the work after it has been laid out.

### **ARTICLE 106 – REMOVAL OF CITY OWNED EQUIPMENT AND MATERIALS**

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Unless otherwise specified or unless written approval is obtained from the City to the contrary, all existing City-owned equipment and materials that are removed during the process of the work of this Contract will remain the property of the City and are to be delivered by the Contractor to a location designated by the City.

### **ARTICLE 107 – LAWS AND ORDINANCES**

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The laws of the State of New York and the ordinances of the City of Buffalo, now in force or which may be adopted hereafter applicable to the Contract Documents and to the work thereunder, shall govern construction of the Contract.

The Contract Documents are subject to the provisions of Article 8 of the Labor Law of the State of New York, as amended, particularly paragraphs 200, 220A, 220B, 220E and 222, thereof, and the Contractor and each Subcontractor performing work at the site of the project shall comply with the provisions thereof.



## **ARTICLE 108 – PROVISIONS REQUIRED BY LAW DEEMED INSERTED**

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Each and every provision of law and clause required by law to be inserted in the Contract Documents shall be deemed to be inserted therein and the Contract Documents shall be read and enforced as though it were included and if, through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then, upon application of either party the Contract Documents shall forthwith be physically amended to make such insertion.

## **ARTICLE 109 – GUARANTEE**

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NOT APPLICABLE

## **ARTICLE 110 – MAINTENANCE BOND**

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NOT APPLICABLE

## **ARTICLE 111 – PERFORMANCE BOND**

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- A. A performance and labor and material bond shall be in the penal amount of the contract price is based on a lump-sum price or of the unit-price bid multiplied by the number of units estimated in the plans and specifications if based upon a unit price and shall be conditioned for the faithful and complete performance of the contract for the work or improvement or the furnishing of the materials, supplies or equipment in strict compliance with the provisions of the contract documents. [The] A labor and material bond shall also be required and the bond shall contain a clause that the bidder entering into the contract with a city agency will pay for all services rendered and materials used in the execution of the contract and that a person rendering services or furnishing materials in or about the execution of the contract may maintain an action to recover for the services rendered or the materials furnished against the obligors in the bond as though the person were named therein, provided that such action shall be brought within one (1) year after the cause of action accrued. The obligors in the bond shall be liable and may be sued accordingly. Notice of the commencement of the action and of all proceedings therein shall be given to the Corporation Counsel, and in default of such notice, no recovery shall be had in the action.
- B. The right of a person rendering services or furnishing materials to maintain an action on such labor and material bond shall be subject, however, to the prior rights to the City of Buffalo against the obligors in said bond.

## **ARTICLE 112 – INDEMNITY**

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### **112.01 INDEMNITY OF THE CITY**

The Contractor shall, to the fullest extent permitted by law, indemnify, defend and hold harmless the City, to be named as additionally insured, its officers, agents and employees from and against all claims, suits actions, damages, losses and costs of every name and description to which the City may be subjected or put by reason of injury to the person or property of another, or the property of the City, resulting from or relating to or in connection with Contractor's activities in the performance of or failure to perform this Contract. This provision shall include, but not be limited to, all losses, costs and damages which the City may suffer by reason of injury to the person or property of another, or the property of the City resulting from but not limited to the negligence or carelessness, active or passive, of the Contractor or the joint negligence, active or passive, of the Contractor and or third parties under the direction or control of the Contractor, it's or their employees, agents or subcontractors, in the performance of any work under the Contract Documents, or in the delivery of materials and supplies. The whole, or so much money to become due under the Contract Documents as shall be considered necessary by the City, may be retained by it until all suits or claims for damages shall have been settled or otherwise disposed of any evidence to that effect furnished to the satisfaction of the City.



## **112.02 INDEMNITY OF OTHER AGENCIES, AUTHORITIES OR ENTITIES**

Additionally, the Contractor shall indemnify, defend and hold harmless all other Agencies, Authorities or Entities named as additionally insured for this project, it's or their officers, agents and employees from all claims, suits, actions, damages, losses and costs of every name and description for which the Agencies, Authorities or Entities may be subjected or put by reason of injury to the person or property of another, or the property of the Agencies, Authorities or Entities, resulting from or relating to or in connection with Contractor's activities in the performance of or failure to perform this Contract.

This provision shall include, but not be limited to, all losses, costs and damages which the City may suffer by reason of injury to the person or property of another, or the property of the such Agencies, Authorities or Entities resulting from, but not limited to, the negligence or carelessness, active or passive, of the Contractor or the joint negligence, active or passive, of the Contractor and or third parties under the direction or control of the Contractor, it's or their employees, agents or Subcontractors, in the performance of any work under the Contract Documents, or in the delivery of materials and supplies. The whole, or so much of the money to become due under the Contract Documents as shall be considered necessary by the Agencies, Authorities or Entities, may be retained by them (or by the City) until all suits or claims for damages shall have been settled or otherwise disposed of and evidence to that effect furnished to the satisfaction of the Agencies, Authorities or Entities.

## **ARTICLE 113 – REPORT OF ACCIDENTS AND OTHER OCCURRENCES**

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### **113.01 WRITTEN REPORT**

Within 48 hours after the happening of any accident or other occurrence on the site of the work involving personal injuries or property damage or both, the Contractor shall make a full report, in writing, of such accident or occurrence to the Commissioner or to the Consultant. Such report should include the time, place of the accident or occurrence, the nature thereof, persons or property involved or both, the extent of injuries or damages, the witnesses, if any, the cause of such accident or occurrence if the same be known to the Contractor, and any other pertinent information which would enable the City to conduct a proper investigation of such matter.

### **113.02 VERBAL REPORT**

In the event of serious accident or occurrence warranting immediate investigation, a verbal report to the Commissioner or to the Corporation Counsel of the City should be made by the Contractor as soon after the happening of such accident or occurrence as may be reasonably possible.

### **113.03 COPY OF INSURANCE REPORT**

The Contractor shall furnish the City with a copy of all accident reports submitted by it to its insurance carriers.

## **ARTICLE 114 – RIGHTS OF CITY**

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### **114.01 INSPECTION OF WORK**

The City and its representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. The Contractor shall keep the Commissioner informed of the progress of the work.

No work shall be closed or covered until it has been duly inspected by the City. Should any uninspected work be covered, the Contractor shall, at the Contractor's own expense, uncover all such work so that it can be properly inspected. After such inspection, the Contractor shall repair and replace at the Contractor's own expense all work interfered with including the work of other contractors.

Re-examination of work may be ordered by the Commissioner and, if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the Contract Documents, the Contractor shall pay such cost including the cost of repairing or replacing the work of other contractors.



#### **114.02 TESTING**

Wherever in the Specifications inspection and testing of materials is called for, such inspection and testing shall be done by the Department of Public Works Laboratory or by a laboratory designated by the Commissioner unless otherwise specified.

Satisfactory documentary evidence that the material has passed the required inspection and testing must be furnished to the Commissioner prior to its incorporation in the work and rejected materials must be promptly removed from the premises.

#### **114.03 DEFECTIVE WORK AND MATERIALS**

Any material or work found on inspection to be defective or not in strict conformity with requirements of the drawings and specifications, or defaced or injured through the acts of fire or elements or any other cause shall be removed immediately from the premises and satisfactory materials or work, or both, substituted therefore without delay. This shall include the making good of all work of other contractors destroyed or damaged by such removal or replacement. Cost of the above removal and replacement shall be at the sole expense of the Contractor's responsible for the defective work or materials.

If the Contractor does not remove such work or materials disapproved by the Commissioner within the time fixed by written notice, the City may cause the same to be done and may store all materials at the expense of such removal within ten (10) days thereafter, the City may, upon (10) days written notice, sell such materials at auction or at a private sale and shall account for the net proceeds thereof after deducting all costs and expenses that should have been borne by the Contractor.

#### **114.04 CHANGES IN ORDER OF WORK**

If, in the judgment of the Commissioner, it becomes necessary to change the schedule of operations in order to accelerate the work, each Contractor or Subcontractor, when so ordered by the Commissioner, shall cease work at any particular point and transfer the Contractor's workmen and equipment to such points and execute such portions of the work as the Commissioner may direct. Any such changes in the schedule of operations shall not entitle the Contractor to an extension of time nor to extra compensation.

#### **114.05 POSSESSION AND USE**

The City shall have the right to take possession and use any completed or partially completed portion of the work. Such possession or use, however, shall not be considered an acceptance of work so taken or used.

### **ARTICLE 115 – ADDITIONS AND DEDUCTIONS**

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Wherever it becomes impossible or impractical to perform the work strictly in accordance with the Plans and Specifications, the City reserves the right to make changes in the work not inconsistent with, but, for the purpose of completing the work or improvement, in accordance with the Contract Documents. No changes by altering, adding to, or deducting from the work pursuant to this article shall be made without the prior written order of the City by its Commissioner. The value of the changes shall be determined by the City and the Contractor in one of the following ways:

- A. By estimate and acceptance in a lump sum; or
- B. By unit prices named in the Contract Documents or, if not named therein subsequently agreed upon by the Commissioner and the Contractor; or
- C. If neither one of the above methods is agreed upon, the Contractor, upon written order of the City by its Commissioner, shall proceed with the additional work or the work as altered and shall keep and present, in such form as the Commissioner may direct, a correct account of the net cost of labor, equipment and materials together with vouchers in support thereof. In such event, it is agreed by the City and the Contractor that said additional work or said work as altered shall be performed by the Contractor pursuant to the following general terms and conditions together with such further detailed stipulations as may be required to govern fully the manner in which said payment under this third alternative will be made by the City.



1. The actual cost for direct labor, material and use of equipment, plus ten (10) percent of the total overhead.
2. Plus actual cost of workmen's compensation and liability insurance, health and welfare benefits, Social Security deductions and unemployment compensation benefits.
3. Plus six (6) percent of the total of (1) and (2) plus actual proportionate cost or surety bond. For work performed for the Contractor by a Subcontractor, dealer or vendor, the Contractor shall accept as full payment, therefore, an amount equal to the actual cost to the Contractor of such work or services as determined by the City plus ten (10) percent of such cost. No allowance shall be made for general supervision and the use of small tools and manual equipment.
4. Where a change involves the omission of work, the net cost of the work omitted shall be computed in one of the above-mentioned ways, except that no allowance for overhead and profit shall be figured, and a credit shall be allowed the City for such omitted work.

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#### **ARTICLE 116 – EXTRA WORK**

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No claim for work outside the scope of the Contract Documents shall be made and no additional work performed unless the same be done in pursuance of a written order from the City, as approved by the Commissioner, and given to the Contractor prior to the doing of said additional work and, except as provided in ARTICLE 115 unless and until such additional work shall have been ordered by the Common Council in conformity with the provisions of Article 22 of the City Charter. The value of said extra work shall be determined by one of the methods provided for in ARTICLE 115.

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#### **ARTICLE 117 – DEDUCTIONS FOR WORK NOT CORRECTED**

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If the City determines not to correct work which is damaged or work which is not in accordance with the contract provisions an equitable deduction from the contract price shall be made in the manner provided in ARTICLE 116.

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#### **ARTICLE 118 – POWER OF CONTRACTOR TO ACT IN EMERGENCY**

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In case of an emergency which threatens the loss of or injury to property and/or life, the Contractor shall act as instructed or authorized by the Commissioner or his duly authorized representative. In the absence of instructions or authorization from the Commissioner or duly authorized representative, the Contractor shall be allowed to act as he deems advisable. The Contractor shall notify the City of such emergency and the action taken as soon as possible and within twenty-four (24) hours thereafter.

The amount of any reimbursement claimed by the Contractor on account of such emergency action under this paragraph shall be determined in the manner provided in ARTICLE 116.

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#### **ARTICLE 119 – DELAYS AND EXTENSIONS OF TIME**

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ALL TIME LIMITS STATED IN THE CONTRACT DOCUMENTS FOR PERFORMANCE BY THE CONTRACTOR ARE OF THE ESSENCE OF THE CONTRACT. If, however, the Contractor is delayed in the progress of the work by any act or neglect of the City or any of its officers, employees, or agents, or by changes in the work, or by any neglect, default, or delay of any other Contractor upon such work, or by weather, fire, earthquake or other unavoidable occurrence, or any other causes beyond the control of the Contractor, the time of completion of the work shall be extended for such reasonable time as the Commissioner may decide.

No extension shall be granted for a delay that occurs more than seven (7) days before a written request by the Contractor is given to the City. In the case of a continuing cause or delay only one such request for extension is necessary.



Claims by the Contractor against the City for damages or for additional compensation by reason of any such delay will not be allowed. Any such extension of time granted by the Commissioner shall release the Contractor from the payment of stipulated damages for the additional work certified and no more.

With respect to any time limits stated in the Contract Documents for performance by the City, such time limits shall not be of the essence of the Contract unless otherwise specifically stated.

## **ARTICLE 120 – DEFAULT OF CONTRACTOR**

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**RIGHT OF CANCELLATION.** The City may, at its option, declare the Contractor in default and cancel this Contract for any one or more of the following reasons:

- a. Failure to commence work. If the Contractor fails to begin work when notified to do so.
- b. Insolvency. If the Contractor becomes insolvent.
- c. Bankruptcy. If proceedings in bankruptcy are instituted by or against the Contractor or if the Contractor makes any assignment for benefit of creditors.
- d. Supplementary Proceedings. If proceedings relating to the Contractor supplementary to judgment are issued against the City.
- e. Abandonment of Work. If the Contractor shall cease operations on the work or improvement herein specified for three (3) consecutive working days.
- f. Assignment of Contract. If the Contractor shall assign, transfer, convey, sublet, or otherwise dispose of the Contract Documents or the Contractor's right, title or interest therein, or the Contractor's power to execute the same to any other person, company or corporation without the previous consent in writing of the City.
- g. Delay in Progress of Work. If at any time during the progress of the work it should appear that the force employed, the quantity or quality of the tools, appliances or workers provided, or that the progress of character of the work or materials furnished are not sufficient, in the opinion of the Commissioner, to insure the completion of the work under the Contract Documents within the time stipulated, or are not in accordance with the specifications; or if the Contractor shall make default or shall violate any of the provisions of the Contract Documents, then, in any of such cases, the City may serve written notice on the Contractor to at once apply such improvements in the character of the work or materials to be made as may be required to make the same conform to the stipulations of the specifications, or to remedy any and all defects and default.

### **120.02 REMEDY IN CASE OF DEFAULT**

In the event of default by the Contractor for any of the reasons stated in Section 120-01 and in addition to the right of the City to cancel the Contract, the City may enter and take possession of said work, or any part thereof, and other appurtenances thereon. The City shall hold the same as security for any and all damages or liabilities that may arise by reason of the Contractor's failure to fulfill the contents of the Contract Documents or by reason of the Contractor's failure to complete the work within the time therein stipulated.

Furthermore, the City may employ the said tools, materials, plans, appliances, buildings, machinery, and other appurtenances and all materials belonging to said Contractor delivered on the site and, at the cost and expense of said Contractor, may complete or have completed the said work. In the event that the cost thereof shall exceed the amounts then due or thereafter falling due to the Contractor, the said Contractor and Contractor's sureties on the bond given for the faithful performance of the Contract Documents shall be liable for such excess and for any and all other breaches of the Contract Documents by the Contractor.

The remedies herein provided shall not be exclusive and the City may enforce other provisions of the Contract Documents in the event of any default, and it may pursue other remedies allowed by law.



In the event the City undertakes to perform the work, or any part thereof, the certificate of the Commissioner regarding the amount of the work to be done and the amount of liquidated damages shall be binding and conclusive upon the Contractor, its assigns, its sureties and upon all other claimants. The certificate of the Commissioner shall be filed with the Comptroller of the City.

### **120.03 LIQUIDATED DAMAGES**

If the Contractor fails to complete the work within the time agreed upon or within any extensions granted in accordance with the Contract Documents, the City may elect to permit the Contractor to proceed with and complete the work provided that such permission not be deemed a waiver by the City of the Contractor's liability for damages or expenses incurred by the City as a result of the Contractor's failure to complete the work within the specified time. Such liability shall continue in full force against the Contractor as if such permission had not been granted.

In order to avoid all controversy and the determination of actual damages or expenses for the delay in completion of the work by reason of the City's election not to terminate the right of the Contractor to proceed, the Contractor and the Contractor's Surety shall be liable for and shall pay or allow to the City the sums specified in the Supplemental Instructions to Bidders, as fixed and agreed liquidated damages for each and every working day, Sundays and Holidays excluded, after the date fixed for the completion of the work. During this time damages and expenses may be deducted by the City from any payment or payments then due or thereafter falling due to the Contractor.

If the work has reached or thereafter reaches such a degree of completion that, in the City's opinion, makes the work reasonably safe, fit and convenient for the use for which it was intended, the City may take possession of the work although uncompleted and not accepted. In this case the Contractor shall not be charged thereafter with liquidated damages, but the City thereafter may assess against the Contractor and the Contractor's Sureties only the actual damages or expenses caused to the City by the delay in completion after the City has taken possession of the work.

## **ARTICLE 121 – PAYMENTS**

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### **121.01 RETENTION**

The City shall hold no retainage from the Contractor. The Contractor is prohibited from holding retainage from subcontractors.

### **121.02 SCHEDULE OF VALUES**

Before the first monthly estimate is submitted all estimates referred to in this section shall be subject to the approval of the Commissioner. The Contractor shall furnish a schedule of values, the total thereof equaling the contract price in such a form as may be directed by the Commissioner. This schedule shall be for the use of the Commissioner in preparing estimates for payments, but he may alter the same at any time before or after payments are started if it appears to him that any items are unreasonable or do not represent the fair cost of such items in proportion to the total amount of the contract price.

### **121.03 APPROVAL OF CONTRACTOR'S ESTIMATES**

On or before the 5th day of each month, during the progress of the work, the Contractor shall submit an estimate of the work performed and materials furnished during the previous month, properly dated and signed, and in such form as directed by Commissioner. This estimate will be checked by the Commissioner, and if approved, will be submitted to the Comptroller of the City for payment. If not approved, it will be returned to the Contractor for correction and no payment shall be made to the Contractor until such monthly estimate has been approved and submitted by the Commissioner to the Comptroller as stated above.

NO PAYMENTS WILL BE MADE BY THE CITY FOR MATERIALS NOT ACTUALLY INCORPORATED IN THE WORK, EXCEPT WHERE PAYMENT FOR SUCH MATERIALS IS SPECIFICALLY AUTHORIZED BY THE COMMON COUNCIL OF THE CITY OF BUFFALO AT OR PRIOR TO THE TIME IT ORDERS THE WORK HEREIN TO BE ADVERTISED FOR BIDS PURSUANT TO THE REQUIREMENTS OF PAR. 90, ARTICLE X, CHARTER III OF THE ORDINANCES OF THE CITY OF BUFFALO.



**121.04 WITHHOLDING OF PAYMENTS**

Any payment may be withheld by the City, pending correction, when work is not progressing to the satisfaction of the Commissioner or when any required insurance policy or bond is not in force. Payment will not be made for work which is required to be covered by fire insurance and allied line insurance until policies of such insurance have been filed with and approved by the City.

**121.05 LIENS OR CLAIMS AGAINST THE CONTRACTOR**

If at any time the City shall have evidence of a lien or claim against the Contractor, or any Subcontractors for materials furnished or for services or labor performed under the Contract Documents, the City shall have the right to retain out of any payment an amount to completely indemnify the City against such lien or claim. Before final payment is made, the Contractor shall furnish satisfactory evidence that there are no claims or liens against him or Subcontractors, for materials furnished or for services or labor performed under the Contract Documents. Should there prove to be such a lien or claim after final payment is made, the Contractor agrees to pay the City promptly all money the Contractor may be compelled to pay in discharging the same.

The City may retain sufficient money, as it may believe necessary, to protect itself from any other claims filed against the City arising out of the performance of this work.

**121.06 FINAL PAYMENT BY CITY**

Final payment to the Contractor shall not become due until after the final inspection and acceptance of the work by the City and after the Contractor has furnished the City with satisfactory maintenance bonds or guarantees as may be called for under the Contract Documents.

**121.07 NON-WAIVER OF CITY'S RIGHTS UNDER CONTRACT**

No certificate of the Commissioner of Public Works or the Consultant, or any acceptance of the work or any part thereof, by the City, or any payment, final or partial, shall operate to release the Contractor, or the Contractor's Sureties, from any obligation under these Contract Documents to furnish sound materials and to perform satisfactory work in accordance with the contract requirements.

No such certificate or approval or acceptance shall be deemed to be an acceptance on the part of the City of defective workmanship or improper materials used by the Contractor in the performance of this work, or a waiver on the part of the City of any claims or demands for or on account of such defective workmanship or improper materials or for or on account of any other breach of the Contract Documents.

**121.08 FINAL PAYMENT TO RELEASE CITY**

Acceptance by the Contractor of final payment shall be and operate as a release by the Contractor to the City of all claims and all liability for all things done or performed by the Contractor or in any manner relating to the work herein, including any claims for extra work, labor, or materials under ARTICLE 116 and any claims on account of changes in the work under ARTICLE 115 and of all claims and all liabilities for any act or alleged neglect of the City, its officers, employees, or agents, relating to or arising out of the work.

**ARTICLE 122 – SEPARATE CONTRACTS**

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The City reserves the right to let other contracts in connection with the work contemplated hereby. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials in the execution of their work and shall properly coordinate and connect the Contractor's work with theirs. The Contractor and other contractors of record shall have equal rights on the premises for the performance of their work.



If any part of the Contractor's work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Commissioner any defects in such work that render it unsuitable. The Contractor's failure to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper, except as to defects, which may develop in the other contractor's work after the execution of the Contractor's own work. To ensure the proper execution of the Contractor's work, the Contractor shall measure the work of other contractors already in place and shall at once report to the Commissioner any discrepancy between the executed work and the drawings or specifications. Copies of drawings and specifications relating to these separate contracts will be furnished to the Contractor on request for information in carrying out the above provisions. The Contractor will be held responsible for any damages, additional work, or defective work resulting from failure or neglect to comply with the foregoing requirements.

## **ARTICLE 123 – SUBCONTRACTORS**

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The successful Bidder shall submit a list of proposed Subcontractors to the Commissioner for his approval and obtain his written consent thereto prior to the execution of the form of Contract. The subcontracting of any part of the work or services under the Contract Documents to any person, firm or corporation by whom a Proposal was submitted to the City for the same Contract Documents shall be absolutely prohibited.

Subcontractors shall comply with all the provisions set forth in the Contract Documents relating to their work. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind the subcontractors to the Contract Documents by the terms of the Specifications, General Conditions, and other Contract Documents in so far as applicable to the work of the Subcontractor; and to give the Contractor the same power with respect to the terms of any subcontract that the City may exercise over the Contractor under any provision of these Contract Documents.

The Contractor shall be fully responsible to the City for the acts and omissions of the subcontractors and the persons directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by the Contractor. It is the responsibility of the Contractor and the Subcontractors to see that appropriate provisions are inserted in all contracts or purchase orders for supplies and materials requiring the suppliers or material men to make delivery within such time as will enable the Contractor to meet the time of completion. Failure of the Contractor or a Subcontractor to comply with the requirements of this article shall be sufficient reason for the Commissioner to deny a request for an extension of time by the Contractor because of failure of a Subcontractor, supplier or material man to complete the work or to deliver supplies or materials on time.

The Contractor shall perform with the Contractor's own organization contract work amounting to not less than 50 percent of the original total contract price. "the Contractor's own organization" shall be construed to include only workers employed and paid directly by the Contractor and equipment owned or rented by the Contractor, with or without operators.

## **ARTICLE 124 – WAGE SCALE**

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The prevailing rate as officially established by the State of New York Department of Labor for all classes of workers is bound in the Proposal. It shall be examined by the Contractor and paid by the Contractor to employees as a minimum wage during the life of the Contract Documents, except as a higher rate of wage is required to be paid by the Contractor as set forth in this Contract.

The Contractor shall, at the time of filing each request for payment, file a statement in writing, certifying that the rate of wages paid to any and all laborers, mechanics, etc., employed on this Project has been and are being paid the prevailing scale of wages as herein specified.

With each application for payment under this Contract, the Contractor and every Subcontractor shall deliver to the City a written verified statement in a form satisfactory to the City.



The submission shall show in detail all amounts then due and unpaid by such Contractor or Subcontractor to all laborers for daily or weekly wages, employed by him under the Contract Documents for the performance of the work at the site thereof, or to other persons for materials, equipment or supplies delivered at the site of the work. The term "laborers" as used herein shall include workers and mechanics.

Article 8, Section 220 of the Labor Law, as amended by Chapter 750 of the Laws of 1956, provides, among other things, that it shall be the duty of the fiscal officer to make a determination of the schedule of wages and supplements to be paid to all laborer, workmen and mechanics employed on public work projects. The amount for supplements listed on the schedule does not necessarily include all types. The Industrial Commissioner may require the Contractor to provide additional supplements.

The Contractor shall make provisions for disability benefits, workmen's compensation, unemployment insurance and social security, as required by law.

An authorized officer or representative of the Contractor shall certify to the Commissioner of Public Works substantially in the form as follows:

"I hereby certify that in accordance with Par. 220 of the Labor Law, as amended by Chapter 731 of the Laws of 1933, I ascertained and determined the schedule of wages to be paid workers, laborers, and mechanics on this Contract. The said wages so ascertained and determined by me to be paid workers, laborers, and mechanics are as follows: (make appropriate insertions)". The wage scale set forth in the Proposal is in accordance with rates fixed by the State of New York, Department of Labor, see Proposal for Wage Rate Schedules.

In case it becomes necessary for the Contractor or any Subcontractor to employ on the Project under this Contract any person in a trade or occupation (except executive, supervisory, administrative, clerical or other non-manual as such) for which no minimum wage rate is herein specified, the Contractor shall immediately notify the City who will promptly thereafter furnish the Contractor with the minimum rate. The minimum rate thus furnished shall be applicable as the minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

#### **ARTICLE 125 – POSTING WAGE SCALE**

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The Contractor shall post, at conspicuous points on the site of the project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned.

#### **ARTICLE 126 – OVERTIME WORK AND HOLIDAYS**

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The regular workweek for the project inspection forces is 8:00 AM to 4:30 PM daily, five (5) days per week, holidays as follows excluded:

|                             |                                     |
|-----------------------------|-------------------------------------|
| New Year's Day              | Labor Day                           |
| Martin Luther King, Jr. Day | Columbus Day                        |
| President's Day             | Election Day                        |
| Good Friday                 | Veteran's Day                       |
| Memorial Day                | Thanksgiving Day & Following Friday |
| Independence Day            | Christmas Day                       |

If the Contractor elects to work any time other than the regular working hours, the Contractor must do so only with permission of the Commissioner.

In case of overtime, permission must be requested twenty-four (24) hours in advance, except for any Maintenance Contract which permission must be requested four (4) hours in advance.



## **ARTICLE 127 – PROGRESS REPORTS**

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After filing the necessary certificates of insurance and before starting, the work the Contractor shall submit to the Commissioner, for approval, an outline of proposed methods and manner of executing the work including sequences of operation and a time schedule of performing the same. If found satisfactory, the Commissioner shall approve, and the work shall be done in accordance with, such schedules or approved amendments thereto.

When requested by the Commissioner, the Contractor shall furnish weekly work schedules indicating number of personnel, kind of equipment and location and nature of work to be performed.

## **ARTICLE 128 – VAULTS**

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The location of subterranean vaults as shown on the plans represent the best information available to the City. The City is not responsible for number and actual locations of such vaults, which may vary from those indicated on the drawings.

Prior to construction in areas adjacent to vaults, the Contractor shall schedule inspection of all vaults. This inspection shall be made jointly by representatives of the Contractor, the City and the registered owners and/or users of the vault. At this inspection, the structural integrity and general condition of each vault shall be determined.

The owners of such vaults not in conformance with City standards and ordinances shall be given notices by the City to repair such vaults immediately at the owner's expense. The Contractor shall inform the City of any potential delays in his work resulting from incomplete rehabilitation of deteriorated vaults.

The Contractor is responsible for ascertaining the location of all vaults within the project area. The Contractor is responsible to protect and preserve all vaults in the project area. The Contractor is responsible for damage to any vaults occurring as a result of the execution of the work under this contract and such repairs shall be made at no cost to the owner or the City.

The Contractor shall notify the City of any vaults that are located during Construction.

## **ARTICLE 129 – CURB CUTS**

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A cut into or lowering of the street curbing to permit access by vehicles to private property is allowed only after a permit is filed, approved and the fee paid. Written application must be made to the Commissioner to alter any curbing.

Any curb cut wider than twelve (12') feet or for entrance or exit to a commercial establishment must be approved by the Traffic Engineer of the Division of Engineering before the issuance of a permit by the Commissioner.

The cut in the curb must be made according to the instructions in the Specifications of Department of Public Works. Normally the curb in the central section of the cut should be set 1 1/2" above the street asphalt. There should be two transition sections in each cut area, one on each side of the central section.



## **ARTICLE 130 – OTHER REQUIRED DOCUMENTS**

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The LOW BIDDER shall provide the following documents along with the return of the completed four (4) Contract Documents:

- a. Federal I.D. Number
- b. Copy of Company Certificate of Incorporation
- c. Photocopy of current and valid City of Buffalo Contractor's License, which must be in force for the entire length of the contract period.



## **ARTICLE 200 – INSTRUCTIONS TO BIDDERS**

### **ARTICLE 201 – RECEIPT, OPENING, AND WITHDRAWAL OF PROPOSAL**

**201-01 RECEIPT.** Proposals will be received by the Commissioner at his office, Room 502 City Hall, Buffalo, New York, until the time and date stated in the advertisement for bids. The time for which proposals will be received will be found in the published notice calling for proposals. Detailed plans of the work, standard sheets and proposals may be examined in the Department of Public Works Main Office or the Consulting Engineer's Office as specified in the Advertisement for Bids.

**201-02 ENVELOPE.** The envelope containing the Proposal must be sealed, addressed to the Commissioner. The envelope must also state on its exterior that it contains a Proposal for work, also described as to its nature and location, and the name of the Bidder.

**201-03 INFORMALITIES.** The City may consider informal any Proposal not prepared and submitted in accordance with these instructions and may waive any informalities in any bid or may reject any or all Proposals.

**201-04 LATE PROPOSALS.** Any Proposal received after the time and date specified for opening will not be considered.

**201-05 WITHDRAW PRIOR TO OPENING.** Any Proposal may be withdrawn prior to the scheduled time for the opening of bids or authorized postponed date thereof.

**201-06 WITHDRAW AFTER OPENING.** AFTER THE OPENING OF THE PROPOSALS, NO BIDDER MAY WITHDRAW HIS PROPOSAL WITHIN FORTY-FIVE (45) DAYS AFTER THE DATE OF SUCH OPENING. AFTER THE EXPIRATION OF THE SAID FORTY-FIVE (45) DAYS, ANY BIDDER WISHING TO WITHDRAW HIS PROPOSAL MUST SO STATE IN WRITING TO THE COMMISSIONER. UNTIL THE COMMISSIONER RECEIVES SUCH WRITTEN NOTICE OF WITHDRAWAL, THE CITY MAY ACCEPT ANY PROPOSAL EVEN THOUGH THE FORTY-FIVE (45) DAY PERIOD HAS EXPIRED.

### **ARTICLE 202 – PREPARATION OF PROPOSAL.**

**202-01 GENERAL.** Proposals must be submitted on the forms provided by the City. Unless instructed otherwise all blank spaces in the forms shall be filled in and amounts shall be stated both in words and in numerals. The signatures shall be in longhand and the completed forms shall be without erasure, inter-lineation, alteration or any conditions inserted by the Bidder. No limitation letters of any kind will be accepted with the Proposal.



**202-02 STATUS.** The Proposal shall state whether the Bidder is a corporation, partnership, or individual. If it is a corporation, it must be stated under the laws of what state it is incorporated and the Proposal must have the corporate seal affixed thereto. If it is a partnership, then the full name of all members of the partnership and the name of the partnership must be stated.

### **ARTICLE 203 – DISCREPANCIES OR OMISSIONS IN CONTRACT DOCUMENTS.**

Should a Bidder find discrepancies or omissions in the drawings, Specifications, or other Contract Documents, or should a Bidder fail to understand any part of the drawings, Specifications, or other Contract Documents, the Contractor shall at once notify the Commissioner. If the Commissioner deems it necessary, the Commissioner shall at once send a written Addenda or instructions to all Bidders and to all other parties known to the Commissioner to be potential Bidders. The City will not be responsible for any oral Addenda or instructions given by any officer, agent, or employee nor shall the City be responsible for the failure of any Bidder to receive such written Addenda or additional instructions.

### **ARTICLE 204 – ADDENDA.**

All Addenda or additional instructions issued during the time of bidding shall be included in the Proposal and shall become part of the Contract Documents.

### **ARTICLE 205 – SITE AND EXAMINE CONTRACT DOCUMENTS.**

**205-01 EXAMINE DOCUMENTS.** Before submitting Proposals, Bidders shall carefully examine the Specifications and drawings, the form of Contract, and all other Contract Documents.

The Contractor is responsible for possessing or obtaining the most recent and updated copy of the Standard Specifications for Construction & Materials.

**205-02 SITE VISIT.** Bidders shall visit the site and acquaint themselves with the existing conditions and limitations and assure themselves of the ability to perform the work. The Proposal shall contain a statement to this effect.

### **ARTICLE 206 – SUBSURFACE CONDITIONS.**

Subsurface information obtained by the City is available for the Bidder's inspection upon the Bidder's request. It should be understood that it was obtained with reasonable care and recorded in good faith with reasonable interpretations placed in the results and character of materials and conditions to be expected.



The Bidder must interpret this information according to its own judgment and not rely upon such information as accurately descriptive of subsurface conditions which may be found to exist. The information is made available to the Bidder only in order that the Bidder may have access to the information available to the City.

The Bidder must verify all utility locations within the job limits by contacting the Underground Facilities Protective Organization (UFPO) before digging.

The Bidder must verify all sewer locations with the Buffalo Sewer Authority, in Room 1023 of City Hall, and all Water locations with the Water authority, in Room 601 of City Hall.

## **ARTICLE 207 – SECURITY TO ACCOMPANY PROPOSALS.**

**207-01      AMOUNT IN FORM.** The Proposal shall be accompanied by either:

- A. Proposal bond for bids greater than two-hundred fifty thousand dollars (\$250,000.00) or
- B. Proposal bond, certified check or bank draft for bids less than or equal to two-hundred fifty thousand dollars (\$250,000.00).

A proposal bond shall run to the City and be executed by the Bidder or Contractor as the case may be as principal and by a duly incorporated company authorized to guarantee the performance of contracts and to do business in the State of New York as Surety.

A certified check or bank draft shall run to the City as payee and shall be drawn upon a bank authorized to do business in the State of New York.

The proposal bond, certified check or bank draft shall be in the penal amount of not less than ten percent (10%) of the bid if based upon a lump sum price or ten percent (10%) of the total arrived at by multiplying the unit prices by the quantities estimated in the drawings and Specifications; and shall be conditioned that the principal named on the bond, certified check or bank draft will enter into a written contract for the performance of the work or improvement in accordance with the terms and conditions as provided in the Specifications; and upon execution of such Contract, the principal will furnish a bond for the faithful performance of the Contract Documents.

In the event that the Bidder fails to enter into a contract for the work or improvement or fails to furnish a performance bond in the amount of the contract price, then one-hundred percent (100%) of the penal sum of the proposal bond, certified check or bank draft shall be and become the minimum amount of liquidated damages suffered by the City as a result of such failure.

All bids are subject to whichever of the following provisions is applicable to the particular the Contract Documents.



**207-02 AWARD OF CONTRACTS WHICH MUST BE REPORTED TO THE COMMON COUNCIL.** Within five (5) days after being notified by the City's Department of Public Works that the Contractor's bid is being recommended to the Common Council as the lowest responsible bid, a Bidder shall furnish to the City a letter from the qualified Surety company that such Surety company will furnish the Bidder with a performance bond in the amount and form required by the Specifications. Failure to do so will result in the withdrawal by the City's Department of Public Works of such recommendation.

**207-03 CONTRACTS WHICH DO NOT HAVE TO BE REPORTED TO THE COMMON COUNCIL.** Within five (5) days after being notified that the Contractor's bid has been approved by the City's Department of Public Works as the lowest responsible bid, a Bidder shall furnish to the City a letter from a qualified Surety company that such Surety company will furnish the Bidder with a performance bond in the amount and form required by the Specifications. Failure to do so will result in the withdrawal by the City's Department of Public Works of such approval.

**207-04 FOR INFORMAL CONTRACTS.** The required performance bond and insurance shall be submitted to the City for approval by the lowest Bidder within five (5) days after receipt of bids. Failure to do so will give the City the right to reject the bid and either award the Contract to the next lowest Bidder or re-advertise the work.

#### **ARTICLE 208 – PROPOSAL BOND, CERTIFIED CHECK OR BANK DRAFT.**

The proposal bond, certified check or bank draft must be approved as to form by the City's Corporation Counsel and as to sufficiency the Comptroller of the City prior to the award of the Contract.

#### **ARTICLE 209 – RETURN OF PROPOSAL BOND, CERTIFIED CHECK OR BANK DRAFT.**

The proposal bond will be returned to each respective Bidder, except the lowest three bidders within three days of the formal openings of the Proposals. The remaining proposal bonds will be returned within forty-eight hours (48) after the City and the accepted Bidder have executed the Contract.

In the event that a Certified Check or Bank Draft is submitted in lieu of a Proposal Bond, a refund check equal to the amount of the Certified Check or Bank Draft will be mailed to the unsuccessful bidders by the City of Buffalo within Four (4) weeks after the bid date.

#### **ARTICLE 210 – CONTRACT AND BONDS.**

The Contract, the Performance Bond, the Maintenance and Guaranty Bond, as required, shall be executed in accordance with the forms prepared by the Commissioner and made a part of the Contract Documents herein. The Contract and the Bonds must be executed in quadruplicate.



## **ARTICLE 211 – STATEMENT OF EXPERIENCE.**

The Bidder must complete the experience questionnaire included within the Proposal.

## **ARTICLE 212 – AWARD OF CONTRACT.**

The Contract will be awarded to the lowest responsible Bidder in accordance with the terms and conditions of the Contract Documents.

The ability of any Bidder to obtain a performance bond shall not be regarded as the sole test of such Bidder's competency or responsibility.

Such award shall be contingent on the grant of authority to commence construction of the work of this Contract by any federal, state or local agency having jurisdiction.

## **ARTICLE 213 – EQUIVALENT QUALITY.**

Unless otherwise noted, wherever the Contract Documents specifies an article, material, apparatus, equipment or process by trade name or by the name of a patentee, manufacturer, dealer, or by reference to a catalog of a manufacturer or dealer, it shall be understood as intending to mean and specify the article, material, apparatus, equipment or process designated, or any equal thereto in quality, finish, design, efficiency and durability and equally serviceable for the purpose for which it is intended. The opinion of the Commissioner as to equivalence shall be final. The Bidder must submit with Bidder's Proposal the name of all articles, materials, apparatus, equipment or process being offered as equivalents.

Upon rejection of any article, material, apparatus, equipment or process submitted as the equivalent of that specifically named in the Contract Documents, the Bidder shall be given a reasonable opportunity to state in writing that Bidder will furnish the specified article, material, apparatus, equipment, or process at no increase in the contract cost.

In the event that the Contract Documents call for a particular article, material, apparatus, equipment or process, and no other, the Bidder must submit a base bid for the particular item. Any Bidder, however, may submit an alternate Proposal either in the Proposal form or on the Bidder's letterhead for any item which he believes to be equivalent or superior to that specifically called for by the Contract Documents. Alternate Proposals must be accompanied by full description and technical data on the item proposed together with a statement of the amount of addition to or deduction from the base bid if such alternate is accepted.



## **ARTICLE 214 – ESTIMATES OF QUANTITIES.**

With respect to only unit price bids, Bidders are cautioned that the estimate of quantities listed in the schedule of quantities will serve, as far as the Contract Documents are concerned, only for the purpose of comparing bids and as a basis for computing the amounts of the bid bond, performance bond, and maintenance bonds. The actual quantities may be greater or less. Payment will be made by the City only for the actual quantity of authorized work performed under each scheduled item and only at the unit bid price.

## **ARTICLE 215 – SECTION 103-D OF THE GENERAL MUNICIPAL LAW.**

Section 103-d of the General Municipal Law, requires a non-collusion clause to be inserted by Bidders in Proposals for the furnishing of work, labor or services or supplying goods to municipalities. If the Bidder is a corporation, the execution of the non-collusive certification in the Proposal shall be deemed to have been authorized by the Board of Directors of the Bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation. No bid shall be considered if the Proposal does not include the statement as to non-collusion. However, if the Bidder cannot make the foregoing certification, the Bidder shall so state and furnish a signed statement which sets forth the reasons in detail.

In this event the bid shall not be considered for award nor shall any award be made unless the Commissioner determines that such disclosure was not made for the purpose of restricting competition. In this connection it should be noted that a Bidder who has published price lists, rates or tariffs covering items being procured or has informed prospective customers of the proposed or pending publication of new or revised price list for such items, or has sold the same items to other customers at the same price as being bid, does not constitute, without more, a disclosure to any other Bidder or to any competitor within the meaning of the non-collusive certification included in the form of Proposal. Please note that it is not necessary to adopt an authorizing resolution for the person executing the Proposal on behalf of the corporation.

## **ARTICLE 216 – PAYMENT OF TAXES, GENERALLY.**

The Contractor shall pay any and all Federal, State, County or City taxes which may be applicable to the Contract Documents.

## **ARTICLE 217 – SALES AND COMPENSATING USE TAX.**

**217-01 CITY EXEMPTION.** The City is exempt from payment of sales and compensating use taxes imposed by the State of New York or by any County, school district, or City within the State on all supplies and materials furnished by the Contractor for incorporation into the work pursuant to the provisions of the Contract Documents.



The purchase by the Contractor of the supplies and materials sold hereunder will be a purchase or procurement for an exempt project pursuant to Section 115 (a)(15) of the New York State Tax Law and, therefore, not subject to any sales or compensating use taxes. No such taxes shall be included in the bids.

**217-02 CONTRACTOR'S RESPONSIBILITY.** The Contractor shall comply with all acceptable laws and regulations concerning exemption from sales and compensating use taxes, and the Contractor shall cause the Subcontractor to do the same.

**217-03 NON-EXEMPT MATERIALS.** The Contractor's attention is called to the fact that materials not actually incorporated into the work will not be exempt from the payment of a sales tax. This will apply to such things as:

- A. Construction machinery and equipment including rentals or repair parts.
- B. Contractor's office supplies.
- C. Contractor's supplies, tools and miscellaneous equipment, including forms, materials and scaffolding (whether purchased or rented).
- D. Temporary heat.
- E. Telephone and electric services.
- F. Any other items purchased or rented by the Contractor for use in performing the Contract Documents and not incorporated into the realty.

**217-04 MATERIALS.** The term "materials" shall be deemed to include "Supplies" and "Equipment" incorporated into the work.

## **ARTICLE 218 – EXCISE TAXES.**

Excise tax exemption certificates will be issued by the City, when requested by the Contractor, for items which fall within the scope of the Contract Documents and may properly be exempt from the Federal Excise Tax. Bidders shall not include amounts for such taxes in any bids submitted by them, and all Bidders shall so instruct their Subcontractors and material men.

## **ARTICLE 219 – FEDERAL, STATE AND LOCAL TAXES.**

**219-01 CITY'S STATUS.** The City is exempt from payment of all Federal excise taxes and all State and Local Sales and Compensating Use Taxes on all materials physically incorporated into the real property.

**219-02 EXCLUDING TAXES IN BID PRICE.** The Contractor and each of the Subcontractors warrant and represent that the said Taxes are not included in the bid or contract price.



## **ARTICLE 220 – ADJUSTMENTS FOR FEDERAL, STATE AND LOCAL TAXES.**

**220-01 GENERAL.** If the Contractor is required to pay or bear the burden of any tax or duty which was not to be included in the contract price pursuant to the requirements of ARTICLE 216, 217, and 218 or any interest or penalty on any tax or duty, the contract price shall be increased by the amount of such tax, duty, interest, or penalty allocated to the Contract Documents provided:

- A. The Contractor has warranted in writing that no amount of such tax or duty was included in the contract price as a contingency reserve or otherwise; and
- B. Liability for such tax, duty, interest or penalty was not incurred through the fault of negligence of the Contractor or his failure to follow instructions of the City; and
- C. The Contractor and its Subcontractors and Buyers obtain any and all necessary resale exemption certificates from the appropriate governmental agency or agencies; and furnish a resale certificate to all persons, firms or corporations from which they purchase supplies and materials for the performance of the work covered by the Contract Documents; and
- D. The City is afforded the opportunity, before any payment of tax is made, to contest said claim in the manner and to the extent that the City may choose and to settle or satisfy said claims and such attorney as the City may designate is authorized to act for the purpose of contesting, settling and satisfying said claim; and
- E. The Contractor and its Subcontractors give immediate notice to the City and its designated attorney in contesting said claim and furnish promptly to the City and said attorney all information and documents necessary or convenient for contesting said claim, said information and documents to be preserved for six years after the date of final payment for the sale, or longer if such a claim is pending or threatened at the end of such six years. If the City elects to contest any such claim, it will bear the expense of such contest.

**220-02 INVOICES & VOUCHERS.** Invoices or vouchers covering any adjustment of the contract price pursuant to ARTICLE 219 shall set forth the amount thereof as a separate item and shall identify the particular tax or duty involved.



**220-03 SOCIAL SECURITY, INCOME, AND FRANCHISE TAXES.** ARTICLE 220 shall not be applicable to social security taxes on income and franchise taxes, other than those levied on or measured by (i) sales of receipts from sales, or (ii) the Contractor's possession of interest in or use of property, title to which is the City, excess profits taxes, capital stock taxes, unemployment compensation taxes, or property taxes, other than such property taxes, allocated to the Contract Documents as are assessed either on the Contractor's possession of, interest in, or use of property, title to which is in the City.

**220-04 AGGREGATE AMOUNT OVER \$100.00.** No adjustment pursuant to ARTICLE 220 will be made under the Contract Documents unless the aggregate amount thereof is or may reasonably be expected to be over \$100.00.

**220-05 ESTABLISHING EXEMPTION.** Unless there does not exist any reasonable basis to sustain an exemption, the City, upon request of the Contractor, without further liability, agrees, except as otherwise provided in the Contract Documents, to furnish evidence appropriate to establish exemption from any tax which the contract warrants in writing was excluded from the contract price. In addition, the City may furnish evidence appropriate to establish exemption from any tax that may, pursuant to this clause, give rise to an increase in the contract price.

**220-06 EQUITABLY ADJUSTED.** The Contractor shall promptly notify the City all matters pertaining to Federal, State and local taxes, and duties that reasonably can be expected to result in an increase in the contract price. Whenever an increase in the contract price may be required under this clause, the Contractor shall take action as directed by the City and the contract price shall be equitably adjusted to cover the costs of such taxes including any interest, penalty, and necessary attorney's fees.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

### **1. GENERAL**

Initially capitalized terms used herein shall have the same meanings specified in the Standard Specification for Construction & Materials promulgated by the Commissioner of Public Works, Parks and Streets for the City of Buffalo from time to time, unless the context otherwise requires.

### **2. NATURE OF WORK**

Sealed Proposals are invited by the City for all plant, labor, services, materials, supplies, equipment, tools, transportation and other facilities and things necessary or proper for or incidental to the work.

### **3. WORK INCLUDED**

The work will be done under one Contract and the Proposal shall include the following:

- **Street Narrowing, Sign & Pavement Markings.**
- **Replacement of Drainage Structures; Sanitary & Storm Sewers.**
- **Green Infrastructure Work.**
- **Spot Curb & Underdrain Replacements.**
- **New Traffic Signals, New Street Lights, Conduit, Wiring & Related Power Sources.**
- **Spot Sidewalk & Driveway Replacements.**
- **Water Line Work.**
- **Mill & Inlay of Pavement.**
- **Landscaping**
- **Maintenance and Protection of Traffic, Maintaining Existing Traffic Signals.**
- **All Other Labor and Material Necessary For Performing & Completing The Work.**

### **4. ADDITION OF FEDERAL CLAUSES**

The Bidder shall be aware that this project will be partially funded by Federal Aid. Therefore, the Bidder shall read the included sections entitled "Chapter 12, Appendix 12-1 Construction Contract Requirements"; "Chapter 12, Appendix 12-2 Additional Construction Contract Requirements" and Appendix A-1. The covenants therein shall be reviewed and adhered to. This project has a required **5% DBE** participation goal.

All bidders must submit their DBE Participation Commitments on Company Letterhead with their bid. If the Contractor (Bidder) cannot meet the DBE goal, you must submit Good Faith Effort documentation with your bid. This must document your good faith efforts to obtain DBE participation. Solicitation of DBEs must begin prior to the submission of your bid. See Proposed DBE Commitment Form Letter at the end of this contract proposal, which must be submitted with your bid on letterhead.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 2**

### **5. LOCATION OF WORK**

The Contractor is to perform work as directed at locations on the street by representatives of the Commissioner. Attached herewith is a tentative list of streets, which have been selected for the location of work during the construction season. The Department of Public Works, Parks and Streets reserves the right during the performance of the work contemplated hereby, to add or delete from such list in order to comply with the amount of funding made available for the Project.

**Niagara Street from Hertel Avenue to Ontario Street**

### **6. NOTIFICATION**

Proper pre-notification to all affected businesses and home residents of the intended project. This project notification shall be delivered 48 hours in advance of start of work, and shall be in the form as supplied by the Commissioner of Public Works.

### **7. LIQUIDATED DAMAGES**

Pursuant to General Conditions, Article 120, "DEFAULT OF CONTRACTOR", and In order to avoid all controversy and the determination of actual damages or expenses for the delay in completion of the work by reason of the City's election not to terminate the right of the Contractor to proceed, the Contractor and his Surety shall be liable for and shall pay or allow to the City the sum of:

**TWO THOUSAND DOLLARS (\$2,000.00)**

per day as fixed and agreed liquidated damages for each and every working day, Sundays and Holidays excluded, after the date fixed for the completion of the work. During this time damages and expenses may be deducted by the City from any payment or payments then due or thereafter falling due to the Contractor.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 3**

### **8. TIME OF COMPLETION**

Pursuant to General Conditions, Article 119, “DELAYS AND EXTENSIONS OF TIME”. The Contractor shall complete the work within **294 working days** from the date work is started. If weather conditions prevent this contract from being completed in this calendar year, a winter shut-down or suspension of work may be ordered by the Commissioner of Public Works. Working days will not be counted during this shut-down period. The Contractor is solely responsible for Maintenance and Protection of Traffic and shall inspect the work site during the suspension period on a regular basis, and perform all necessary work to ensure the public area work site is safely maintained as per City of Buffalo Standard Specifications.

### **9. AUTHORITY TO CONDUCT BUSINESS IN N.Y.S.**

All vendors competing for City contracts by whatever means of award, be required to submit proof of their authority to conduct business within New York State as part of their offer documentation. Proof for partnerships and corporations could consist of providing a copy of the most recent business filing with N.Y.S. Department of State.

### **10. CONTRACT DRAWINGS**

The Drawing List is provided on the Cover Sheet of the Contract Plans. The list of applicable NYSDOT and City of Buffalo Standard Sheets that also form a part of this Contract is shown on the Covering Sheet of the Contract Plans.



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 4

### 11. PERMITS

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED FOR THE PROJECT.

### 12. SEQUENCE AND SCHEDULE OF WORK

The work is expected to be completed within **294 working days**.

### 13. SPECIAL NOTES

- A. *With this bid* the Contractor shall supply the name of the Contractor's proposed superintendent and proof of previous experience in reference to work on similar projects. This shall include the project name, description, Owner's name, contact person and telephone number. Should sufficient evidence of previous successful experience not be provided it shall be considered grounds for rejecting the Contractor's bid.
- B. Within 30 calendar days after receipt of the Notice of Award, the contractor shall submit a comprehensive bar-chart type progress schedule indicating a time bar for each significant category or unit of work to be performed on the project. Arrange schedule to indicate required sequencing of units, and to show time allowances for submittals, inspections, testing and similar time margins. Show critical dates related to each time bar or prepare separate coordinated listing of critical dates.  
  
Following initial revision of the schedule after the Engineer's review, print and distribute schedule to entities with a need to know responsibility, including 3 copies to the Engineer. Revise at intervals matching payment requests, and redistribute. Provide copies required with payment requests.
- C. The Contractor is required to obtain all necessary permits prior to start of any work.
- D. Coordination, cooperation and scheduling with the operations of the businesses in the area is required and shall be included in the bid price for Item 619.01. Where the construction conflicts with the business operations, the Contractor shall brief the Engineer and local officials regarding the anticipated duration and location of operations. These briefings shall occur daily or as prescribed by the Engineer. The Contractor shall make every effort to accommodate the reasonable request of the Engineer and business officials in regard to his operations and work schedule. This may include split shifts, altered work hours and irregular days.



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 5

Any additional cost required for these efforts should be included in the bid price for Item 619.01.

The Contractor shall be advised that shutdown and cleanup of the construction site will be required at the end of each workday. This cleanup shall include, but not be limited to, securely plating open trenches with steel plate, removal of piled debris and stone, placing compacted stone in trench limits and generally making the site safe to the satisfaction of the Engineer. The cost of these efforts shall be included in the unit bid cost of Item 619.01.

The Contractor shall be aware of the provisions of Item 619.01, Maintenance and Protection of Traffic, in regards to fines. Non-compliance with these plans and specifications and/or the direction of the Engineer shall result in the assessment of a fine as provided for in the specification or a minimum of **\$200 per day**.

- E. The plans and specifications for this project have been prepared with care and are intended to show as clearly as is practicable the work required to be done. The Contractor must realize, however, that construction details cannot always be accurately anticipated and that in executing the work, field conditions may require reasonable modifications in the details of plans and quantities of work involved. All work must be carried out to meet actual field conditions to the satisfaction of the Engineer and in accordance with his instructions.
- F. The Contractor shall be advised that an Engineer's Field Office is not required for this project. The Engineer will secure a field office for the project. Costs associated with operation and maintenance of the Engineer's Field office shall be the responsibility of the Engineer.
- G. Material submittals, specifications and/or catalog cuts will be required for the items of the contract. These submittals must be approved by the Engineer and the City prior to the Contractor's ordering of materials. The Contractor shall schedule a sufficient period for review and approval into his progress plan for this work. No claims or complaint for delays shall be allowed due to the late or untimely delivery and acceptance of material submittals. Furthermore, no materials of any kind shall be placed on the project without prior written approval of each item.
- H. A standard City of Buffalo Department of Public Works subcontractor approval form shall be submitted for each and every subcontractor that is proposed to work on the project. No subcontractor shall perform any work without prior approval by the Engineer and the City.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 6**

- I. The drawings and specifications contain information relating to conditions below the ground surface at the site of proposed work, but such information is furnished without express or implied guarantee as to its being complete or correct. The Contractor shall assume all risks and responsibilities and shall complete the work in whatever manner and under whatever conditions he may encounter or create, without extra cost to the City.

The Contractor is also advised that numerous public and private utilities exist within the ROW. Some of these utilities may require relocation, repair or removal during the ongoing construction phasing. The Contractor shall not make any claims for delays or damages due to the activities of the utility companies.

- J. The Contractor shall be responsible for, and make all repairs, to correct all damages incurred by the Contractor during construction at the Contractor's sole expense. Contractor shall restore all damaged areas to pre construction condition or better, to the satisfaction of the Owner and Engineer.
- K. The Fire and Police Authorities for the area concerned in this Contract shall be notified in advance of the start of construction. Local Authorities shall be kept appraised of the construction schedule and schedule updates, and be kept appraised of the progress of the work in order to coordinate and maintain sufficient Fire and Police Protection.

The Contractor shall file with the above agencies a list of names, addresses and telephone numbers of the principles or their authorized representatives who can be contacted at any time in the event of an emergency. The Contractor shall also provide the Engineer with a copy of the list noted above.

- L. If the Contractor intends to utilize a landfill for the disposal of excavated materials, a landfill license must be requested. See additional forms and requirements herein.
- M. This entire proposal book shall be submitted in its entirety. Any addenda or attachments shall be stapled securely in place within the front or back covers or as appropriately located throughout the book.
- N. The Contractor is advised that little or no public ROW is available along the project length for use as a storage/marshalling yard. The Contractor must perform a site inspection and locate a privately owned site for this purpose. A written agreement with the owner for use of the property should be executed with a copy given to the Engineer.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 7**

- O. The Contractor is responsible for coordination with utility companies and other contractors that are working within the project area as necessary in order to complete all project work within the specific contract duration.

The following work involving utility companies and City agencies is anticipated, but not limited to, and shall require the Contractor to schedule and coordinate his operations with each utility company and City agency as necessary and required:

**NATIONAL GRID:** The existing street-lighting system on Niagara Street is currently operated by National Grid. This project will construct a new street-lighting system that will be owned and operated by the City of Buffalo. Upon completion of the project, National Grid will only supply electric power for the new system. During construction, National Grid will remove the wiring and luminaires from the existing street-lights under a work order with the City. The Contractor shall coordinate with National Grid and schedule his operations accordingly to accommodate National Grid's removal work. After the wiring and luminaires have been removed by National Grid, the remaining foundations, light standards, and conduit shall be removed and the new street-lighting system constructed by the Contractor as described in the Contract Documents. The Contractor shall coordinate with National Grid as necessary with regard to the installation of service equipment at the power centers and new meters, including National Grid's reviews and inspections. In addition, the Contractor shall coordinate as needed with National Grid to supply electric power to the new street-lighting system and to the new traffic-control signals.

**CONTRACTOR MUST ABIDE BY NATIONAL GRID ELECTRIC OPERATING PROCEDURE NG-EOP T009A (MOST CURRENT VERSION) REQUIREMENTS FOR WORKING AROUND THE 230KV OIL-FILLED PIPE THAT RUNS ALONG THE EAST SIDE OF THE NIAGARA STREET.**

**BUFFALO DIVISION OF WATER:** This project involves the relocation of existing fire hydrants. The Contractor shall perform this work as described in the Contract Documents. The Contractor shall coordinate with the Buffalo Division of Water as necessary and required with regard to all hydrant relocation work, including, but not limited to, proposed water-main shutdowns; tapping operations; valve operations; and inspections.

**BUFFALO SEWER AUTHORITY (BSA):** This project involves the installation of drainage structures; storm water collection and treatment infrastructure; tree plantings; landscaping; erosion and sediment control; and improvements to the BSA metering station. The Contractor shall perform this work as described in the Contract Documents. The Contractor shall coordinate with the Buffalo Sewer Authority as necessary and required with regard to this work, including inspections. The Contractor shall anticipate time in his schedule for coordination purposes and to accommodate changes that may be necessary to adjust for actual site-conditions as revealed at the time of construction.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 8**

**NATIONAL FUEL:** National Fuel has infrastructure in many locations within the project limits and anticipates having a high-level of communication/coordination during the construction phase to ensure their facilities are protected and accommodated. There are manholes and shallow duct banks in the parking lanes on Niagara Street which will need to be reviewed and adjustments made for in order to build the proposed curb-extensions (bump-outs). The Contractor shall anticipate time in his schedule for coordination purposes and to accommodate changes that may be necessary to adjust for actual site-conditions as revealed at the time of construction.

**ALL OTHER UTILITY OWNERS & CITY DEPARTMENTS WITHIN THE PROJECT LIMITS:** Utility companies with known facilities within the project limits include, but are not limited to, the following: City of Buffalo Division of Traffic; Buffalo Police; Lighttower; Verizon; Time Warner/Spectrum; and National Fuel. The Contractor shall coordinate with these entities as necessary and required in order to progress his work while making accommodations for and working within the vicinity of existing utility-infrastructure.

**COORDINATION PRIOR TO FINAL PAVING:** There are several utility companies within the project limits that are anticipated to make minor repairs and upgrades to their facilities prior to the Contractor's final paving operation. The Contractor shall allow the utility companies a reasonable amount of time, as determined by the Engineer, to review and assess their facilities and complete the necessary repairs and upgrades including, but not limited to, adjusting surface facilities to proposed grade; repairing structures; replacing valves and manhole frames and covers, etc. The exact locations and scheduling of this work will be determined during the construction phase by each utility company as the work progresses.

### **OTHER CONSIDERATIONS:**

1. There are no known major utility-line-relocations associated with this project.
  2. All Bidders are advised that their bids shall reflect the required coordination, scheduling and accommodation of work by utility companies and as required by City agencies as generally described in this note.
  3. The Contractor shall make no claims against the City for additional compensation and/or time extension due to the required coordination, scheduling and accommodation of work by utility companies and as required by City agencies anticipated under this contract.
- P. Project progress meetings will be held on a regular basis. The contractor's superintendent for the project or approved qualified representative is required to be in attendance at all progress meetings. Failure to provide appropriate representation at each progress meeting will result in work stoppage until the next scheduled meeting. No contract extension will be given due to such work stoppage.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 9**

**NOTE:** Bidders must examine for themselves the Plans, Specifications and Contract Documents and the location of the proposed work and shall exercise their own judgment as to the nature and quantities of the work that will be required.

**Whenever local requirements conflict with Federal Requirements, the Federal requirements shall prevail.**

### **14. FUNDING SOURCE REQUIREMENTS**

The Contractor is hereby advised that there are multiple funding sources for this project and each have requirements and obligations in their respective grant agreements and/or related funding agreements that will be passed on to the Contractor. Notwithstanding any provision to the contrary in this specification or in Federal, State and or local law, the Contractor shall be obligated to the City to carry out the funding source requirements as related to all construction activities, as may be set forth in the various grant and/or related funding agreements including, but not limited to, procurement, reporting and warranty requirements. In addition, the Contractor shall be obligated to the City to indemnify the various funding sources and provide insurance coverage and additional insured status as required. The Contractor will be provided with copies of all grant agreements and/or related funding source agreements to which it will be obligated as soon as those agreements become available.

### **15. TRUCK ROUTES**

The following streets that intersect Niagara Street within the project limits are designated truck routes:

- Hertel Avenue
- Ontario Street



**16. CONTAMINATION AND UNDERGROUND STORAGE TANKS**

Federal and State records, Sanborn Fire Insurance Maps, City of Buffalo records, city directories and other sources of information were reviewed, and have indicated that 17 sites of potential environmental concern are located along the project corridor, including 11 sites with a history of petroleum storage and tanks. At least one site, 2151 Niagara Street was identified with a tank within the right-of-way based on historical information.

In addition, contaminated soils were previously identified in the vicinity of the following addresses:

- 2151 Niagara Street
- 2156 Niagara Street
- 2207 Niagara Street
- 2212 Niagara Street
- 2235 Niagara Street
- 2257 Niagara Street
- 2271 Niagara Street
- 2280 Niagara Street

The sites of potential environmental concern are listed in the following table. The sites with tanks near the right-of-way have been marked with X\* in the table below.

The Contractor shall be alert for evidence of contamination, unusual odors, discolored/stained soils, oily sheens, sludge, unusual fill material and tanks/piping, etc. at all of these locations. If signs of contamination or underground storage tanks are encountered, the Contractor shall immediately stop work and notify the Engineer so that the appropriate evaluations can be made for whatever conditions are encountered.

If contaminated materials are encountered the work shall consist of segregating contaminated soil from non-contaminated soil during excavation, and its temporary storage and management or its direct loading for transport in accordance with an accepted Contaminated Material Handling Plan (CHMP) as described in NYSDOT standard specification Section 205. A Sampling Plan (SP) must also be prepared either individually or as part of the CHMP that describes the sampling and analytical work to be performed. The Contractor shall be required to conduct whatever additional laboratory analyses are required to develop a waste profile for acceptance of contaminated materials into a NYSDEC permitted Part 360 solid waste landfill. Common analytes are identified in the underlying bid items. A Disposal Plan (DP) shall be prepared either individually or as part of the CHMP that describes the transport and disposal work if contamination is identified.



## **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 11**

Any underground storage tanks discovered during the project will be closed in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) as well as local fire and police agencies. NYSDEC shall be notified before prior to the initiation of tank closure activities and as soon as possible after discovery of the tank(s). Excavation shall be performed in accordance with NYSDOT Section 206 Trench, Culvert and Structure Excavation. Segregation and stockpiling of contaminated soils shall be performed in accordance with Section 205 Contaminated Soil.

Any unexpected conditions shall be brought to the attention of the Engineer-In-Charge or his field representatives immediately. The EIC shall immediately notify the City of Buffalo Contact, and the NYS Department of Environmental Conservation at (716) 851-7220 or (800) 457-7362 in the event that a petroleum spill occurs or evidence of a historical petroleum spill is encountered.

The following items have been included in the Estimate of Quantities for use if contaminated soil is encountered:

|            |                                                                         |          |
|------------|-------------------------------------------------------------------------|----------|
| 205.0201nn | Segregation and Storage of Contaminated Soil                            | Lump Sum |
| 205.03     | Field Organic Vapor Monitoring of Contaminated Soil                     | Hour     |
| 205.0401   | Petroleum Contaminated Parameter Analysis                               | Each     |
| 205.0402   | Laboratory Analysis for Hazardous Waste RCRA<br>Toxicity Characteristic | Each     |
| 205.0403   | Laboratory Analysis for Ignitability                                    | Each     |
| 205.0404   | Laboratory Analysis for pH (corrosivity)                                | Each     |
| 205.0405   | Laboratory Analysis for PCBs                                            | Each     |
| 205.0501nn | Disposal of Contaminated Hazardous Waste Soil                           | Ton      |
| 205.0502nn | Disposal of Contaminated Non-Hazardous Waste Soil                       | Ton      |
| 629.01     | Removal/Disposal of Liquids from Petroleum Tanks                        | Gallon   |
| 629.02xx   | Petroleum Storage Tank Closure                                          | Each     |
| 629.0301   | Endpoint Sample Collection and Analysis (Gas)                           | Each     |
| 629.0302   | Endpoint Sample Collection and Analysis (Diesel)                        | Each     |
| 629.0303   | Endpoint Sample Collection and Analysis (Waste Oil)                     | Each     |

Each category of surplus or waste soil shall be handled and disposed of based upon its characterization in accordance with the requirements outlined in NYSDOT specification section 107-10 Managing Surplus Material and Waste and NYSDEC Part 360 and 375 regulations for the following categories:



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 12

- **Excess native soil and rock [General Fill]** that is uncontaminated (is to be considered property of the Contractor) and may be reused by the Contractor. This category does not include any non-soil constituents. Only native soil, sand, gravel or rock may be present. These materials cannot be placed within parklands, wetlands, streams, residential developments or school yards. These materials may be excess because the quantity available exceeds the quantity required, or they do not have the engineering properties required for use, or they may not be of economic value in the current location. Provided these materials are uncontaminated, in accordance with 6 NYCRR Parts 360-12 and 360-13 they are not considered waste when used as fill material.
- **Spoil** is considered recognizable and uncontaminated concrete and concrete products, asphalt pavement, brick, and rock, in accordance with 6 NYCRR Parts 360-12 and 360-13. Spoil is presumed uncontaminated but it is not reused within the contract limits. Spoil shall be evaluated in accordance with 6 NYCRR 360.13 for placement as fill for beneficial use. The Contractor may dispose of Spoil that qualifies as fill under 6 NYCRR 360.13 Table 2 as General Fill, Restricted Use Fill or Limited Use Fill. Otherwise the Contractor shall dispose of these materials elsewhere subject to appropriate environmental and land use regulations, likely in a NYSDEC Part 360 licensed and permitted landfill facility.
- **Construction and demolition (C&D) debris**, is defined in accordance with 6 NYCRR Part 360. C&D debris means uncontaminated solid waste in this case resulting from construction activities associated with the project. C&D debris shall be disposed of in a NYSDEC licensed and permitted C&D waste management or processing facility. If a C&D waste facility is not available, C&D debris may be disposed of at a Part 360 licensed and permitted solid waste facility.
- **Contaminated non-hazardous waste soil** (non-hazardous industrial waste) including asbestos, contaminated soil, and construction and demolition debris comingled with contaminated soils. These wastes require disposal at a NYSDEC licensed and permitted solid waste management facility and often times include petroleum contaminated soils.

Waste Management shall mean the collection, transportation, transfer, processing, recovery, storage, reclamation, treatment, handling and disposal of waste whether performed directly by the Contractor. Unless specifically noted in the contract documents, placement of surplus materials or spoil will not be allowed within the right of way. Payment for managing surplus material and solid waste shall be included in the various contract pay items. No hazardous waste is known to be associated with this project at this time.



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 13

All excavated materials either assumed to be contaminated or identified as contaminated in the field during construction shall undergo additional sampling as required by the regulations and the receiving facility to prepare the waste profile and gain acceptance of that waste stream into the appropriate landfill facility. The Contractor shall be responsible for this work (sampling, laboratory analysis, preparation of the waste profile and all shipping paperwork) and all associated costs. Laboratory results shall be shared with the City and the Engineer. Any changes with regards to the management, handling and disposal of the excavated materials must be approved by the City or EIC.

### SITES OF ENVIRONMENTAL CONCERN

| Property Name and Address                                | Current or Former Uses                                                        |             |                        |                                    |       |          | Potential Environmental Concerns                                        |
|----------------------------------------------------------|-------------------------------------------------------------------------------|-------------|------------------------|------------------------------------|-------|----------|-------------------------------------------------------------------------|
|                                                          | Auto Related Industry<br>(Gas Station, Repair Shop, Auto Sales, & Auto Parts) | Dry Cleaner | Manufacturing Facility | Other                              | Tanks | Railroad |                                                                         |
| Vacant Lot – 2080 Niagara St                             | X                                                                             |             | X                      | Lumber Storage                     | X     |          | Petroleum Contamination, Chemical/Solvent Contamination, Abandoned USTs |
| Mario Campanella Concrete Construction – 2128 Niagara St | X                                                                             |             |                        | Paint & Varnish Co.                |       |          | Petroleum Contamination, Chemical/Solvent Contamination, Abandoned USTs |
| Commercial Storefront – 2150 Niagara St                  | X                                                                             |             | X                      | Machine Shop                       |       |          | Petroleum Contamination, Chemical/Solvent Contamination                 |
| Ultimate Auto Service – 2151 Niagara St                  | X                                                                             |             |                        |                                    | X*    |          | Petroleum Contamination, Abandoned USTs                                 |
| McDonalds – 2156 Niagara St                              | X                                                                             |             |                        |                                    | X     |          | Petroleum Contamination, Abandoned USTs                                 |
| Harbour Place Marina – 2190-2192 Niagara St              | X                                                                             |             |                        | Marina, Boat Sales and Service     | X     |          | Petroleum Contamination, Chemical/Solvent Contamination, Abandoned USTs |
| Ontario Street Off-Ramp – 2194-2196 Niagara St           | X                                                                             |             |                        |                                    | X     | X        | Petroleum Contamination, Abandoned USTs                                 |
| Riverfront Market – 2205 Niagara St                      |                                                                               |             | X                      | Lumber Yard, Paint and Varnish Co. | X     |          | Petroleum Contamination, Chemical/Solvent Contamination, Abandoned USTs |



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 14

| Property Name and Address                            | Current or Former Uses                                                        |             |                        |             |       |          | Potential Environmental Concerns                        |
|------------------------------------------------------|-------------------------------------------------------------------------------|-------------|------------------------|-------------|-------|----------|---------------------------------------------------------|
|                                                      | Auto Related Industry<br>(Gas Station, Repair Shop, Auto Sales, & Auto Parts) | Dry Cleaner | Manufacturing Facility | Other       | Tanks | Railroad |                                                         |
| Vacant Lot – 2206 Niagara St                         |                                                                               |             |                        | Malting Co. |       |          | Chemical/Solvent Contamination                          |
| Plaza – 2207 Niagara St                              | X                                                                             | X           |                        | Paper Co.   |       | X        | Petroleum Contamination, Dry Cleaning Compounds         |
| Kwik-Fill – 2212 Niagara St                          | X                                                                             |             |                        | Malting Co. | X     | X        | Petroleum Contamination, Abandoned USTs                 |
| Tim Horton's – 2235 Niagara St                       | X                                                                             |             |                        |             | X     |          | Petroleum Contamination, Abandoned USTs                 |
| NYS Inspection Plus – 2246 Niagara St                | X                                                                             |             |                        |             | X     |          | Petroleum Contamination, Abandoned USTs                 |
| NFTA Metro Transit Center – 2259 Niagara St          | X                                                                             |             |                        |             | X     |          | Petroleum Contamination, Abandoned USTs                 |
| Everything Automotive – 2266 Niagara St              | X                                                                             |             | X                      | Hose Co.    |       |          | Petroleum Contamination, Chemical/Solvent Contamination |
| Former Gas Station – 2271 Niagara St                 | X                                                                             |             |                        |             | X     |          | Petroleum Contamination, Abandoned USTs                 |
| Vacant Manufacturing Facility – 2280-2282 Niagara St | X                                                                             |             | X                      |             |       |          | Petroleum Contamination, Chemical/Solvent Contamination |

X\* = Tank(s) present in or near the right of way based on historical information.



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 15

### 18. WATER SYSTEM REQUIREMENTS

The following are the requirements of the Owner of the water system for this contract. All manufacturer or proprietary material designations are the requirement of the Owner. Approval of an equal item other than that specified must be granted by the Owner.

**Owner:** City of Buffalo DPW - Division of Water  
**Address:** Room 602 City Hall  
**City, State, ZIP:** Buffalo, N.Y. 14202  
**Contacts:** Fouad Arab **Phone #:** (716) 563- 4996  
Sr. Engineer

The Owner requires review and approval of materials and details. The estimated time required for approval by the Owner of materials and details during construction is (1) week.

#### Pipe:

**Type of Material:** Ductile Iron - AWWA C151, C111, C104, C600

**Pressure/Thick Class or DR:** Class 52 - rated working pressure of 350 psi

**Lining:** Cement

**Type of Joint:** Push-on; bell/spigot and/or MJ

**Depth:** (5' cover) with pipe identification tape 24" above top of pipe

**Bedding Requirements:** 4" in stable soil – (in rock-6" of 3/4" clean crushed stone)

**Fittings:** (Compact Ductile Iron [C153] required unless otherwise noted)  
C110 Full Body Required For Size 4 NPS to 24 NPS  
Mechanical Joint Retainer Gland - AWWA C111

**Special Requirements:** None

#### Thrust Restraint Type:

**Horizontal Bends:** Mega Lugs & Tie Rods & Concrete Thrust Blocks, as applicable

**Vertical Bends:** Mega Lugs & Tie Rods & Concrete Thrust Blocks, as applicable

**Tees & Crosses:** Mega Lugs & Tie Rods & Concrete Thrust Blocks, as applicable



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 16

**Valves:** Mega Lugs & Tie Rods & Concrete Thrust Blocks, as applicable

**Hydrants:** Mega Lugs & Tie Rods & Concrete Thrust Blocks, as applicable

Concrete shall have compressive strength of 3,000 psi  
Mega Lugs shall be used on all mechanical joint fittings.

### **Tie Rods:**

**Type:** Stainless steel or “cor-ten” steel w/ fluorocarbon coating\_\_\_\_\_

**Size:** 3/4”

### **Valves: Smaller than 16”:**

**Manufacturer:** Mueller

**Type:** Resilient Wedge Gate Valve, Mechanical Joint - AWWA C509 and C111

(Different types may be required for different uses.)

**Open:** Right (Clockwise)

**Valves may not be operated by personnel other than Owner’s staff.**

### **16” and greater**

**Manufacturer:** Henry Pratt Company Groundhog Butterfly Valve

**Type:** Butterfly Valve, Mechanical Joint - AWWA C504 for short body design, Class 150B

(Different types may be required for different uses.)

**Open:** Right (Clockwise)

**Valves may not be operated by personnel other than Owner’s staff.**

### **Valve Boxes:**

(Slide type adjustable required unless otherwise noted)

**Type:** 7” Three Piece Cast Iron, screw type w/oval base







## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 18

### Curb Stop:

**Type:** Ball Valves

**Manufacturer:** Mueller – Ball Valves 300psi

**Connection Size:**  $\frac{3}{4}$ " - 2"

Curb Valve T-Head Construction shall be of  $\frac{1}{2}$ " thickness, 1 $\frac{1}{4}$ " length and  $\frac{3}{4}$ " clear height (flat wrench engagement surface) above the center dome of the T-Head.

### Curb Box:

**Manufacturer:** Bingham & Taylor - Provide 3" Service Box to Grade.

**Type:** 3" Cast Iron Telescopic Extension

Curb boxes shall as near as possible to the existing box or be within 1 foot of the curb.

### Fittings:

**Manufacturer:** Mueller Brass Compression type up to 3" & then Ductile Iron Pipe

### Taps:

**Wet Taps Required:** varies      **Fee:** varies

**All water service components shall be installed by a City of Buffalo licensed plumber.**



## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS – page 19

### 19. ASPHALT AND FUEL PRICE ADJUSTMENTS

#### A. ASPHALT PRICE ADJUSTMENT:

The PGB Index Price which shall apply to this Contract shall be the Price per Ton as published by NYSDOT Engineering Bulletin for the month in which the project is let. The table below lists conversion factors used in computing the Asphalt Price Adjustment.

| MATERIAL DESCRIPTION                         | CONVERSION FACTOR | ITEM NUMBER <sup>1</sup> |
|----------------------------------------------|-------------------|--------------------------|
| True & Leveling F9, Superpave HMA, 80 Series | See Note 2        | 402.018903               |
| 12.5 F3 Top Course HMA, 80 Series            | 0.055 t PGB/t     | 402.128303               |
| 19 F9 Binder Course HMA, 80 Series           | 0.049 t PGB/t     | 402.198903               |
| 37.5 F9 Base Course HMA, 80 Series           | 0.040 t PGB/t     | 402.378903               |
| Diluted Tack Coat                            | 0.0016 t PGB/gal  | 407.0102                 |

1. Item Number: This is the pay item number under which these materials are most frequently paid. Unless indicated otherwise, all materials similar to those indicated under the column entitled "Material Description: are also eligible for adjustment using the factor listed for a similar material with the same pay units regardless of the actual contract pay item number assigned.
2. The conversion factor for Truing & Leveling will be based on the actual mixtures used.

#### B. FUEL PRICE ADJUSTMENT:

The PGB Index Price which shall apply to this Contract shall be the Price per Gallon as published by NYSDOT Engineering Bulletin for the month in which the project is let. The table below lists conversion factors used in computing the Fuel Price Adjustment.

| MATERIAL DESCRIPTION                | USAGE FACTOR | ITEM NUMBER <sup>1</sup> |
|-------------------------------------|--------------|--------------------------|
| Unclassified Excavation             | 0.35 gal/cy  | 203.02                   |
| Select Granular Fill                | 0.45 gal/cy  | 203.07                   |
| Controlled Low Strength Material    | 1.00 gal/cy  | 204.01                   |
| Trench/Culvert Structure Excavation | 0.50 gal/cy  | 206.01, 206.0201         |
| Subbase Course                      | 1.00 gal/cy  | 304.12                   |
| Hot Mix Asphalt                     | 2.50 gal/ton | 402 Items <sup>2</sup>   |
| Cold Milling                        | 0.10 gal/sy  | 490.10                   |
| Portland Cement Concrete Pavement   | 1.00 gal/cy  | 502 Items <sup>2</sup>   |
| Concrete for Structures             | 1.00 gal/cy  | 555 Items                |
| Concrete Sidewalks and Driveways    | 1.00 gal/cy  | 608.01, 608.01030005     |
| Topsoil                             | 0.45 gal/cy  | 610.1101, 610.14XX(XXXX) |

1. Item Number: This is the pay item number under which these materials are most frequently paid. Unless indicated otherwise, all materials similar to those indicated under the column entitled "Material Description: are also eligible for adjustment using the factor listed for a similar material with the same pay units regardless of the actual contract pay item number assigned.
2. Quality Adjustment Items (402/502/608/624) are not eligible for fuel price adjustment.



**DEPARTMENT OF PUBLIC WORKS  
LANDFILL LICENSE APPLICATION**  
(DISREGARD IF LANDFILL IS OUTSIDE OF CITY LIMITS)

DATE: \_\_\_\_\_ FEE (\$25.00) \_\_\_\_\_

LOCATION OF LANDFILL: \_\_\_\_\_

NAME OF OWNER OF PROPERTY: \_\_\_\_\_

**RESPONSIBLE PARTIES:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

---

TYPE OF MATERIAL: \_\_\_\_\_

SOURCE OF MATERIAL: \_\_\_\_\_

TRUCKING CONTRACTOR: \_\_\_\_\_

(Written authorization issued by the license holder and attached to this application must be in the possession of every driver entering this landfill and must be produced on request of the enforcement agency.)

**NAME AND ADDRESS OF SUPERVISOR OR GUARD ASSIGNED TO PREMISES:**

---

PLOT PLAN: Sketch to be provided showing entrance and exits of adjacent property.

DEPARTMENT OF PUBLIC WORKS RECOMMENDATIONS: (Attached)

CERTIFICATION BY THE DEPT. OF ASSESSMENT THAT THERE ARE NO  
DELINQUENT GENERAL OR REAL ESTATE TAXES AGAINST THE LAND:

NEWSPAPER NOTIFICATION DATE: \_\_\_\_\_

PUBLIC HEARING DATE: \_\_\_\_\_

CITY PLANNING BOARD: APPROVE \_\_\_\_\_ REJECT \_\_\_\_\_

APPROVE WITH CONDITIONS \_\_\_\_\_

CASH BOND AMOUNT \_\_\_\_\_ DATE \_\_\_\_\_

GRADING PLAN \_\_\_\_\_

EXPIRATION DATE \_\_\_\_\_



**ITEM 206.04010011 - PNEUMATIC EXCAVATION AND BACKFILL OF TRENCHES**

**ITEM 206.04020011 - PNEUMATIC EXCAVATION AND BACKFILL OF TEST PITS**

**DESCRIPTION**

This work shall consist of performing Pneumatic Excavation and Backfill of Trenches or Test Pits in accordance with the contract documents and as directed by the Engineer. This work shall include the protection of tree roots for purposes of installing conduits, direct burial cables and other subsurface utilities.

**MATERIALS**

Materials shall meet the following requirements, as modified by any supplemental landscape specifications or special notes included in the contract documents:

**Pneumatic Excavating Tool.** Excavation shall be performed through the use of a pneumatic excavation tool with the following requirements:

The high air velocity excavation tool shall be specifically designed to fracture, pulverize, and displace porous and semi-porous soils without harming or causing damage to tree roots, existing subsurface utilities or other non-porous objects. The Contractor shall submit catalog cuts from the manufacturer verifying that the pneumatic excavation tool meets the following criteria:

|                                      |                       |
|--------------------------------------|-----------------------|
| Rated Operating Pressure:            | 90 – 101.5 psi        |
| Air Stream Velocity at Cutting Head: | 2,005 – 2,278 fps     |
| Air Displacement:                    | 1,050 – 1,320 gal/min |

**Air Compressor.** The air compressor may be either a portable or truck-mounted unit and shall be adequately sized as required to power the pneumatic excavation tool in accordance with the manufacturer's recommendations for the pneumatic excavating tool.

**Vacuum Truck.** A vacuum truck should be used to collect excavated spoil directly from the trench or pit.

**Containment Structure.** To prevent the spread of excavated soil onto adjacent roadways and areas beyond the designated work zone limits, the Contractor shall provide a mobile structure or barrier to contain the material dislodged by the pneumatic excavation tool from the trench or pit. Timber or corrugated metal shields, tents supported on tubular frames or other structures as approved by the engineer may be used.

**Root Protection**

|             |        |
|-------------|--------|
| Cotton Mats | 711-02 |
| Burlap      | 711-06 |



**ITEM 206.04010011 - PNEUMATIC EXCAVATION AND BACKFILL OF TRENCHES**

**ITEM 206.04020011 - PNEUMATIC EXCAVATION AND BACKFILL OF TEST PITS**

**Backfill**

|                  |        |
|------------------|--------|
| Topsoil          | 713-01 |
| Limestone        | 713-02 |
| Fertilizer       | 713-03 |
| Organic Material | 713-13 |

**CONSTRUCTION DETAILS**

The work shall be in accordance with SECTION 206-3 TRENCH, CULVERT and STRUCTURE EXCAVATION with modifications as follows:

The following is to be executed **PRIOR TO PNEUMATIC EXCAVATION**.

**Work Site Safety.** Pneumatic excavation shall be performed in compliance with all applicable OSHA regulations and the manufacturer's operating instructions. Adequate eye and ear protective equipment shall be worn by all crew members present at the work site.

The Contractor shall be responsible to provide adequate equipment and perform pneumatic excavation techniques properly to preclude movement of any air-borne soils onto adjacent roadways or other areas beyond the designated work zone limits. Failure to contain and/or collect the excavated soil will result in the immediate termination of pneumatic excavation until soil containment and/or collection procedures are determined adequate by the Engineer.

The Contractor shall keep the public at a safe distance from the work zone at all times by means approved by the Engineer.

**Operator Qualifications.** The excavating tool shall be utilized only by personnel having at least one year of experience operating the pneumatic excavation tool. The Contractor shall submit to the Engineer written certification from the equipment manufacturer or supplier of the operator's training and experience in the use of the pneumatic excavation tool.

**Arborist:** Unless otherwise directed by the EIC, all pneumatic excavation work shall be performed under the direction of an International Society of Arboriculture (ISA) Certified Arborist provided by the NYSDOT.

**Pre-Pneumatic Excavation Meeting.** Prior to the start of such excavation, the Contractor and its approved Operator for pneumatic excavation shall attend a meeting arranged by the Engineer with the Regional Landscape Architect, certified Arborist and other parties as appropriate, to review the requirements of this item including the schedule of operations, the mandatory presence of the Arborist, safety measures, reporting, etc.



**ITEM 206.04010011 - PNEUMATIC EXCAVATION AND BACKFILL OF  
TRENCHES**

**ITEM 206.04020011 - PNEUMATIC EXCAVATION AND BACKFILL OF TEST  
PITS**

The contractor is required to submit a schedule of his anticipated pneumatic excavations at this meeting.

**PNEUMATIC EXCAVATION PROCEDURES**

**Dust Control.** The work area shall be watered thoroughly at least 24 hours in advance of but no more than 48 hours prior to the start of any pneumatic excavation to reduce the incidence of airborne dust resulting from the pneumatic excavation operation.

**Excavation - General.** Trench and test pit excavation using the pneumatic excavation tool shall be performed in accordance with the manufacturer's recommendations to remove soil without damage to the roots of trees and/or utilities either in or adjacent to the excavation.

**Test Pit Excavation.** Test pits indicated in the drawings or as directed by the Engineer to be dug within limits designated for pneumatic excavation shall be excavated prior to other trenching using the pneumatic excavating tool.

The limits of the excavation shall be those sufficient to determine existing utility type, size and/or condition. This work shall not relieve the Contractor of the responsibility to locate underground facilities as required under 16 NYCRR Part 753.

**Trench Excavation.** Pneumatic excavation shall be performed at locations as indicated in the drawings or as directed by the Engineer where trench excavation for conduit installation will occur within or in close proximity to the drip-lines of trees.

Trenches shall be excavated to a depth of 3 feet, as indicated in the drawings or as directed by the Engineer.

**Root Protection.** The Contractor shall place wet burlap or cotton mats upon both the fibrous and structural roots immediately after they have been exposed by the pneumatic excavating tool. The burlap or cotton covering may be removed to perform inspection or utility installation operations, but the Contractor shall be required to keep the burlap or cotton towels wet and the roots moist until backfilling is complete.

The Engineer shall be immediately informed of any damaged tree roots. No tree roots may be pruned except as specifically authorized by the Arborist. In the case that the concentration of roots obstructs the placement of the conduit to the required line and grade, limited pruning may be necessary as directed by the Arborist. Tree roots in excess of 1 inch in diameter, measured at the edge of the excavation, shall be cut cleanly at the edge of excavation using a sharp cutting tool. All root pruning shall be performed under the direction of the ISA Certified Arborist.

**Conduit Installation.** Conduit and direct burial cables shall be installed in accordance with the applicable conduit specifications and details shown on the drawings, including bedding materials.



**ITEM 206.04010011 - PNEUMATIC EXCAVATION AND BACKFILL OF TRENCHES**

**ITEM 206.04020011 - PNEUMATIC EXCAVATION AND BACKFILL OF TEST PITS**

In order to facilitate trench backfilling on an expedited basis, the Contractor shall install conduit and direct burial cables in a continuous operation along with the pneumatic excavation operations to allow for backfilling of the trench within the same work shift.

The exposed root system will make “rolling” multiple sections of assembled conduit from the adjacent surface into the trench impossible. Therefore, workers shall pass each individual conduit section carefully through the root system for placement and assembly within the excavated trench.

**Trench and Test Pit Backfill.** Excavated trenches and test pits containing exposed tree roots shall be backfilled immediately after the Engineer approves the conduit and cable installations within the trench and/or the inspection of the test pit. The Contractor shall provide adequate work crews to backfill trenches and test pits within 24 hours of excavation.

Upon completion of inspection or installation work, the Contractor shall remove the burlap or cotton matting and begin backfilling operations.

Suitable excavated material may be used as backfill up to a depth of 12 inches below finish grade. The existing soil shall be amended with humus, peat, peat moss, or source-separated compost in the ratio of one part organic to seven parts excavated soil. If required, provide additional clean backfill material.

Backfilling of the trench and test pit excavations shall be performed with care not to damage the exposed roots. The Contractor shall compact the backfill material under the direction of the ISA Certified Arborist. The Contractor shall compact the backfill material to be commensurate with the density of the undisturbed adjacent soils unless otherwise directed by the ISA Certified Arborist.

Surface restoration including backfilling the top 12 inches of the excavation with approved topsoil, shall be performed separately under the appropriate items.

The Contractor shall properly dispose of excess and unsuitable excavated materials.

**Tree Condition Report.** The Contractor shall supply the ISA Certified Arborist with information as needed for the Arborist to prepare periodic reports to the Engineer and Regional Landscape Architect summarizing the number, type and condition of trees adjacent to each pneumatic trench excavation, duration of open trenches, and identify any root damage and actions taken.

**METHOD OF MEASUREMENT**

**Pneumatic Excavation and Backfill of Trenches** will be measured as the number of linear feet along the centerline of the excavated trench, including backfill, regardless of the number of conduits or direct burial cables installed within the trench.

**Pneumatic Excavation and Backfill of Test Pits** will be measured as the number of test pits excavated and backfilled in accordance with the contract documents or where directed by the Engineer.

**BASIS OF PAYMENT**

The unit price per bid shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work.



## **ITEM 209.11XXNN24 – TEMPORARY CATCH BASIN INSERT (CBI)**

### **DESCRIPTION:**

The work shall consist of furnishing, installing, maintaining, removing, replacing, and disposing of a temporary catch basin insert at the locations indicated in and according to the contract documents, and as directed by the Engineer.

The work shall also consist of removing and storing a temporary catch basin insert prior to a catastrophic storm event (e.g., flooding), and replacing and reinstalling it after the event at the locations indicated in and according to the contract documents, and as directed by the Engineer.

### **Acronyms**

CBI – Temporary Catch Basin Insert

### **MATERIALS:**

The following sections of the standard specification shall apply:

|                              |        |
|------------------------------|--------|
| Temporary Catch Basin Insert | 713-21 |
|------------------------------|--------|

### **CONSTRUCTION DETAILS**

The following section of the standard specifications shall apply:

|                                   |          |
|-----------------------------------|----------|
| Soil Erosion and Sediment Control | 209-3.01 |
|-----------------------------------|----------|

with the following exceptions:

- Torn or punctured geotextile must be replaced (see Maintenance below)
- Sediment deposition removed from the CBI shall be disposed of in accordance with §107-10 E.

**Installation:** Install the CBI according to manufacturer's instructions.

**Inspection:** Using the most restrictive inspection criteria listed below, the Contractor shall inspect each CBI:

- daily,
- after a rainfall event of 0.5" or more per twenty-four (24) hour period,
- as per manufacturer's instructions, and
- as per the conditions of the Stormwater Pollution Prevention Plan (SWPPP) (if the contract includes one).

**Maintenance:** Maintenance shall include the following:

- Removal of all accumulated sediment and debris from the vicinity of the CBI after each rainfall event of 0.5" or more per twenty-four (24) hour period and prior to removal of the insert for maintenance.
- Removal of CBI according to manufacturer's instructions.
- Emptying the CBI when the CBI's containment area is more than one third (1/3) full or



## **ITEM 209.11XXNN24 – TEMPORARY CATCH BASIN INSERT (CBI)**

before the sediment/trash/debris reaches the overflow openings. The Contractor shall ensure that the CBI is not so full that removing it causes the geotextile to rip, tear or become non-functioning. CBIs damaged during removal shall be replaced at the Contractor's expense. Sediment and/or debris that has been released into the drainage structure shall be removed by the Contractor and disposed of as below.

- Refer to the manufacturer's instructions for emptying and re-installing the CBI. Removal of trash, sediment and debris from the CBI shall be done in a manner that ensures no trash, sediment or debris will enter an unprotected drainage structure.
- Disposal of the removed sediment shall occur at an upland location away from all stormwater conveyances.
  - Trash shall be disposed of according to §107-10 E. of the standard specifications.
- If a CBI's fabric or strap is torn,
  - dispose of the sediment and debris contained within the unit according to this specification, and
  - replace the entire CBI. A CBI shall be replaced at no additional cost to the state.
- When CBI servicing results in a non-functioning or poorly functioning CBI, the CBI shall be replaced at no additional cost to the state.
- CBIs shall be removed prior to winter shut down. Re-installation of the CBIs shall occur prior to ground disturbance or first thaw in the following spring, whichever occurs first, and according to manufacturer's instructions.

**Emergency Removal, Storage and Reinstallation:** Emergency removal, storage and reinstallation shall be performed in association with catastrophic events (e.g. storms and flooding) as follows:

- As directed in consideration of forecasted events (e.g. moderate or major flood warnings) in impacted urban or residential locations where flooding is likely to result in hazardous public conditions.
- Removal, storage, and reinstallation as specified and applicable under Maintenance above. This includes replacing any damaged, poorly functioning, or non-functioning CBI.
- CBIs removed for emergency flooding events shall be reinstalled prior to resuming construction.

CBIs shall be removed according to §209-3.01 and disposed of according to §107-01 E. after all soil disturbance areas have been fully stabilized with an established, permanent, and approved vegetative cover at a uniform density of eighty percent (80%).

## **METHOD OF MEASUREMENT**

Temporary Catch Basin Insert. The work will be measured as the number of each CBI furnished, installed, maintained, removed, replaced, and disposed.

Temporary Catch Basin Insert Emergency Removal and Reinstallation. The work will be measured as the number of each CBI removed, stored, replaced, and reinstalled.

## **BASIS OF PAYMENT**

Temporary Catch Basin Insert. The unit price bid for each CBI furnished, installed, maintained, removed, replaced, and disposed shall include the cost of all labor, materials, and equipment



### **ITEM 209.11XXNN24 – TEMPORARY CATCH BASIN INSERT (CBI)**

necessary to satisfactorily complete the work.

Temporary Catch Basin Insert Emergency Removal and Reinstallation. The unit price bid for each CBI removed, stored, replaced, and reinstalled shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work.

Progress payments will be made at fifty percent (50%) of the unit price bid upon installation of each CBI. The remaining fifty percent (50%) will be paid after soil disturbance areas have been fully stabilized with an established, permanent, and approved vegetative cover at a uniform density of eighty percent (80%) and the CBI has been removed. No progress payments are offered for the emergency removal and reinstallation of CBI.

Payment will be made under:

| <b>Item Number</b> | <b>Description</b>                                                                   | <b>Unit</b> |
|--------------------|--------------------------------------------------------------------------------------|-------------|
| 209.11010024       | Temporary Catch Basin Insert – Trash, Sediment, and Debris Removal                   | EA          |
| 209.11020024       | Temporary Catch Basin Insert – Oil, Hydrocarbons, Trash, Sediment and Debris Removal | EA          |
| 209.11030024       | Temporary Catch Basin Insert – Oil and Hydrocarbon Absorbent Pouches                 | EA          |
| 209.11040024       | Temporary Catch Basin Insert – Removal, Storage and Reinstallation                   | EA          |



## **ITEM 304.010000ER – OPEN GRADED PERMEABLE AGGREGATE**

### **DESCRIPTION**

This work shall consist of furnishing and placing, as shown on the plans or as directed by the Engineer, a subbase course consisting of crushed stone or crushed gravel.

### **MATERIALS**

The subbase materials shall be a Size Designation #3 or 3A, crushed stone or crushed gravel, meeting the requirements of 703-02, Coarse Aggregate. The material shall be free of fines, with no particles smaller than 1-1/2". All stone must be washed at the quarry.

The subbase material must be compacted to a 95% proctor density, washed, with no fines or deleterious materials.

### **CONSTRUCTION DETAILS**

Place the subbase material on the grade with a mechanical spreader. The Engineer may waive this requirement for those locations where it is deemed not practical. In those locations, place the subbase material with trucks and carefully unload on the grade so that the distance the material must be moved is minimized. Do not spread material from piles dumped on the grade. Remove and replace any and all portions of this course which become contaminated, degrade or otherwise do not conform to the requirements of these specifications.

The subbase material must be compacted to the satisfaction of the Engineer.

### **METHOD OF MEASUREMENT**

The quantity to be paid for shall be the number of cubic yards of material placed, measured in the completed work, within the payment lines, as shown on the plans or as ordered by the Engineer.

### **BASIS OF PAYMENT**

The unit price bid shall include costs of all labor, material, and equipment necessary to properly complete the work.

*Payment will be made under:*

| <b>Item No.</b> | <b>Item</b>                     | <b>Pay Unit</b> |
|-----------------|---------------------------------|-----------------|
| 304.010000ER    | Open Graded Permeable Aggregate | Cubic Yard      |



**ITEM 490.10XX0011 - COLD MILLING**

All the provisions of Section 490 - Cold Milling shall apply except that payment shall be made under:

| <b>ITEM NO.</b> | <b>ITEM</b>                                                                                                              | <b>PAY UNIT</b> |
|-----------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|
| 490.10110011    | PRODUCTION COLD MILLING OF BITUMINOUS CONCRETE<br><b>Quantity Range 1 ( 0 to 2" deep )</b>                               | Square Yard     |
| 490.10120011    | PRODUCTION COLD MILLING OF BITUMINOUS CONCRETE<br><b>Quantity Range 2 (&gt; 2" to 4" deep )</b>                          | Square Yard     |
| 490.10130011    | PRODUCTION COLD MILLING OF BITUMINOUS CONCRETE<br><b>Quantity Range 3 (&gt;4" deep )</b>                                 | Square Yard     |
| 490.10140011    | PRODUCTION COLD MILLING OF BITUMINOUS CONCRETE<br><b>Quantity Range 4 ( Overlay for Single lane or Restricted area )</b> | Square Yard     |
| 490.30110011    | MISCELLANEOUS COLD MILLING OF BITUMINOUS<br>CONCRETE <b>Quantity Range 1 ( 0 to 2" deep )</b>                            | Square Yard     |
| 490.30120011    | MISCELLANEOUS COLD MILLING OF BITUMINOUS<br>CONCRETE <b>Quantity Range 2 (&gt;2" to 4" deep )</b>                        | Square Yard     |
| 490.30130011    | MISCELLANEOUS COLD MILLING OF BITUMINOUS<br>CONCRETE <b>Quantity Range 3 (&gt;4" deep )</b>                              | Square Yard     |



## **ITEM 601.01110001- EXPOSED AGGREGATE CONCRETE SURFACE**

**DESCRIPTION.** Provide an exposed aggregate finish on newly placed portland cement concrete.

### **MATERIALS.**

|                                                            |        |
|------------------------------------------------------------|--------|
| Water.....                                                 | 712-01 |
| Water Reducing and Retarding Admixtures (ASTM TYPE D)..... | 711-08 |
| Penetrating Type Protective Sealer .....                   | 717-03 |

In addition to meeting the requirements of 711-08, the water reducing and retarding admixture must meet NYSDEC Regulation Part 205: Architectural and Industrial Maintenance (AIM) Coatings, with a maximum volatile organic compound (VOC) limit of 780 g/l. Submit supporting documentation to the Engineer before producing concrete.

In addition to meeting coarse aggregate requirements in Section 501, Portland Cement Concrete, coarse aggregate must meet the appearance indicated in the contract documents, if any. Submit a sample to the EIC before producing concrete.

### **CONSTRUCTION DETAILS.**

**Job Site Sample.** Construct a 5 ft. X 5 ft. (minimum) job site sample at a location approved by the Engineer using the same concrete that will be used for the permanent work. Construct a maximum of three samples to demonstrate the proposed process and final texture to the satisfaction of the Engineer (in conjunction with Designers and/or Landscape Architects). The sample(s) will not be part of the permanent work. If constructed on site, remove the sample(s) at the completion of the work.

**Concrete placement.** Place concrete according to the specified concrete item(s), except as modified herein.

**Expose aggregate.** Apply the retarding admixture in accordance with the manufacturer's instructions after any bleed water has evaporated, but before the concrete has set to the extent that renders the retarder ineffective. (This time frame will vary with the environment, equipment, and concrete admixtures used.) Provide those instructions to the Engineer. Pressure wash the retarded surface at the appropriate time such that an exposed aggregate surface is achieved that substantially conforms to the accepted jobsite sample.

**Curing.** After any standing water dries, cure in accordance with the specified concrete item(s), except substitute a clear membrane curing compound for a white-pigmented curing compound when membrane curing compounds are specified.

**Apply Sealant.** Power wash the exposed aggregate surface 2 weeks (minimum) after curing to remove curing compounds, laitance, oil, dirt or other foreign particles. Allow the concrete to dry a minimum of 24 hours prior to applying a penetrating type protective sealer in accordance with the manufacturer's instructions. Provide those instructions to the Engineer before pressure washing.

**METHOD OF MEASUREMENT.** The work will be measured as the number of square yards of 601.01110001, Exposed Aggregate Concrete Surface, measured to the nearest 0.1 sy

**BASIS OF PAYMENT.** Include the cost of all labor, material, and equipment necessary to perform the work in the unit price bid for Exposed Aggregate Concrete Surface. Concrete placement is paid for under a separate pay item.



## **ITEM 603.99050002 - CONCRETE PLUGS FOR SEWER PIPE**

### **DESCRIPTION:**

Under this item, the Contractor shall construct plugs in storm, sanitary or combined sewers at locations shown on the Plans or where directed by the Engineer.

### **MATERIALS:**

The plugs shall be constructed of either concrete poured in place, concrete blocks or common brick set in mortar beds.

Concrete for structures (appurtenant placements) shall conform to the requirements of Section 555, Concrete Block to Section 704-04, Common Brick to Section 704-01, and Mortar to Subsection 705-21 of the Standard Specifications.

### **CONSTRUCTION DETAILS:**

All work shall be performed in a workmanlike manner by competent personnel. The minimum thickness of the plugs shall be the inside diameter of the pipe being plugged or 24 inches, whichever is less.

### **METHOD OF MEASUREMENT:**

This work will be measured by the number of concrete plugs constructed in accordance with the Plans, specifications or as ordered by the Engineer.

### **BASIS OF PAYMENT:**

The unit price bid shall include the cost of all labor, materials and equipment necessary to complete the work. Excavation and backfill shall be paid for under their respective items in accordance with the details shown on the Plans.



## **ITEM 607.41010010 - TEMPORARY PLASTIC BARRIER FENCE**

### **DESCRIPTION**

This work shall consist of furnishing, installing, and maintaining Temporary Plastic Barrier Fences of the type and at the locations shown in the plans or where directed by the Engineer.

### **MATERIALS**

Materials for Temporary Plastic Barrier Fences shall meet the following requirements:

- **Fence:** High-density polyethylene mesh, ultraviolet-stabilized min. 2 years; minimum height 4.0 feet. Color: high-visibility orange or green. When used to protect trees or other vegetation, color shall be high-visibility orange.
- **Posts:** Rigid metal or wood posts, minimum length 6.0 feet.
- **Ties:** Steel wire, #14 gauge or nylon cable ties.
- **Warning signs:** Sheet metal, plastic or other rigid, waterproof material, 1.5 feet by 2.0 feet with 4 inch black letters on a white background. Text shall be: "Protected Site - Keep Out" unless otherwise specified.

### **CONSTRUCTION DETAILS**

Fences shall be erected prior to moving construction equipment onto any area designated for protection.

The line of fences as indicated on the plans shall be staked or marked out on the ground by the Contractor and approved by the Engineer before any fence is installed. Where used for protection of individual trees, fence shall be placed at the drip line (extent of canopy). If not possible, placement shall be as close to the drip line as possible and in no case less than 5.0 feet away from the tree trunk.

On approval of the stakeout, posts shall be securely driven on 6.0 foot-maximum centers, normal to the ground, to a depth 1/3 of the total post length. Plastic barrier fence shall be placed along the side of all posts. Ends of fencing segments shall overlap a distance of at least one half the fence height.

Fencing shall be secured to posts with wire or cable ties at top, middle and bottom of post. Fastener shall be tight enough to prevent the fencing from slipping down. Overlaps shall also be securely fastened.

Barrier fence which is not orange in color shall be flagged at 6.0 foot intervals with red or orange florescent tape. Warning signs shall be mounted on the fence at no more than 100 foot intervals.

Maintenance shall commence immediately after erection of the fence and continue until one week prior to acceptance of the contract, and shall consist of: replacing damaged post(s) and fencing; re-fastening and tightening fencing; and restoring fence to its intended height.

Fencing used for tree or other vegetation protection shall not be temporarily removed to allow equipment access over a protected area, except as required for items of work specifically shown on the plans and approved by the Engineer in writing.



## **ITEM 607.41010010 - TEMPORARY PLASTIC BARRIER FENCE**

### **METHOD OF MEASUREMENT**

The quantity to be measured for payment will be the number of feet of Temporary Plastic Barrier Fence erected, measured along the top, to the nearest whole foot.

### **BASIS OF PAYMENT**

The unit price bid shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work. Relocation of a fence from one location to another as directed by the Engineer shall be considered as a new location and will be separately paid.

Seventy percent (70%) of the price bid will be paid after satisfactory installation of the fence. The remaining Thirty percent (30%) will be paid after complete removal of the fence.



## **ITEM 610.0110XX10 -PLANTER BACKFILL MIX**

### **DESCRIPTION**

Under this item the Contractor shall furnish and place planter backfill mix in accordance with the contract documents and as approved by the Engineer.

The mix shall be used in all landscape locations indicated in the contract documents.

When using the “as specified” payment item, refer to a special note in the contract documents titled, “**Planter Backfill Mix**”. This note will include the

- specifications for the mix,
- material requirements,
- references to NYSDOT standard material specifications,
- references to ASTM specifications,
- mix components and proportions,
- acceptance criteria, and
- other construction details.

### **MATERIALS**

The following sections of the standard specifications shall apply:

|                             |        |
|-----------------------------|--------|
| Topsoil                     | 713-01 |
| Moisture Retention Additive | 713-10 |
| Compost                     | 713-15 |

The following ASTM specifications shall apply:

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| Standard Specification for Lightweight Aggregates for Structural Concrete    | ASTM C330 |
| Standard Specification for Lightweight Aggregates for Concrete Masonry Units | ASTM C331 |

Refer to the contract documents for replacement/additional material requirements when the “as specified” payment item is used.

### **Planter Backfill Mix - Standard**

The “standard” planter backfill mix shall contain the following components:

1. Compost shall be as per §713-15 D. Leaf Compost OR E. Well Rotted Manure.
2. Topsoil shall be as per §713-01 B.2. – Topsoil – Lawns.
3. Moisture Retention Additive (MRA) shall be as per §713-10.
4. Expanded Shale shall:
  - be a lightweight aggregate
  - meet size gradation of 0.35 inch to 1.0 inch
  - comply with ASTM Standards C-330 and C-331.
  - weigh approximately 1215 lbs/ cubic yard.
  - be accompanied by a producer’s or supplier’s certification as per §10 of ASTM C330 and ASTM C331. Certification must be received prior to including this material in



## **ITEM 610.0110XX10 -PLANTER BACKFILL MIX**

the mix.

### **Planter Backfill Mix – “As Specified”**

Refer to the contract documents for replacement/additional planter backfill mix components when the “as specified” payment item is used.

### **CONSTRUCTION DETAILS**

Planter backfill material shall be thoroughly premixed in the proportions stated in this specification or in the contract documents and shall be placed to the depths and dimensions shown in the contract documents. The planter backfill mix shall be thoroughly settled by firming or tamping in an approved manner. All other construction details shall be as per the contract documents.

### **Planter Backfill Mix - Standard**

- The topsoil shall be premixed with MRA at a rate of 1.5 lbs of MRA/cubic yard of topsoil prior to mixing with other materials.
- The resulting topsoil/MRA mix shall be combined with compost material and expanded shale in the following proportions:

|                                          |     |
|------------------------------------------|-----|
| Expanded Shale                           | 60% |
| Topsoil with Moisture Retention Additive | 25% |
| Compost                                  | 15% |

Planter backfill mix areas shall be accepted when:

- The materials to be incorporated into the mix satisfy the material requirements described above or in the contract documents and are approved.
- The topsoil is properly premixed with the MRA in the manner described above and is approved. If the topsoil and MRA are mixed off-site, the Contractor needs to provide the state access to the mix to verify the mix materials, as previously approved, and proportions.
- The planter backfill mix is thoroughly premixed in the proportions described above and approved. If the planter backfill mix is prepared off-site, the Contractor needs to provide the state access to the mix to verify the materials, as previously approved, and proportions.
- The planter backfill mix is installed at the locations indicated and in the manner described in this specification and in the contract documents.

### **Planter Backfill Mix – “As Specified”**

Refer to the special note in the contract documents titled, “**Planter Backfill Mix**” for replacement/additional planter backfill mix proportions, acceptance criteria and other construction details when the “as specified” payment item is used.

### **METHOD OF MEASUREMENT**

The work will be measured as the number of cubic yards of planter backfill mix furnished and placed. Measurement shall be made “in place”.



## **ITEM 610.0110XX10 -PLANTER BACKFILL MIX**

### **BASIS OF PAYMENT**

The unit price bid per cubic yard for planter backfill mix shall include the cost of furnishing all labor, material and equipment necessary to complete the work.

No direct payment will be made for losses of material resulting from compaction, foundation settlement, erosion or any other cause. The cost of such losses shall be included in the price bid for this item. No deductions will be made for the volumes occupied by light poles, sign pedestals and any other such objects.

Payment will be made under the following pay items:

| <b>Item</b>  | <b>Description</b>                  | <b>Unit</b> |
|--------------|-------------------------------------|-------------|
| 610.01100110 | Planter Backfill Mix – Standard     | CY          |
| 610.01100210 | Planter Backfill Mix – As Specified | CY          |



**ITEM 611.19010024 - POST-PLANTING CARE WITH REPLACEMENT - MAJOR DECIDUOUS TREES**

**ITEM 611.19020024 - POST-PLANTING CARE WITH REPLACEMENT - MINOR DECIDUOUS TREES**

**ITEM 611.19030024 - POST-PLANTING CARE WITH REPLACEMENT - CONIFEROUS TREES**

**ITEM 611.19040024 - POST-PLANTING CARE WITH REPLACEMENT - DECIDUOUS SHRUBS**

**ITEM 611.19050024 - POST-PLANTING CARE WITH REPLACEMENT - EVERGREEN SHRUBS**

**ITEM 611.19060024 - POST-PLANTING CARE WITH REPLACEMENT- VINES, GROUNDCOVERS**

**ITEM 611.19070024 - POST-PLANTING CARE WITH REPLACEMENT - HERBACEOUS PLANTS**

**DESCRIPTION**

This work consists of the care of newly planted and transplanted trees, shrubs, vines, groundcovers and other plants and replacement of plants in kind and as necessary, in accordance with the contract documents and as directed by the Engineer.

**MATERIALS**

Materials shall meet the requirements of the following subsections of Section 700 *Materials and Manufacturing*.

|                                        |        |
|----------------------------------------|--------|
| Water                                  | 712-01 |
| Topsoil                                | 713-01 |
| Mulch for Landscape Bedding            | 713-05 |
| Trees, Shrubs and Vines                | 713-06 |
| Materials for the Protection of Plants | 713-08 |
| Pesticides                             |        |
| 713-13                                 |        |

**CONSTRUCTION**

**Post-Planting Care.** The Contractor shall perform all work as specified under Standard Specification section **611-3.05 Post-Planting Care**.

**Replacement Planting.** Plants that die, become diseased or badly impaired during Post-Planting Care shall be removed and replaced in kind once with new, healthy plant material, in the same location as the initial planting. Replacement planting shall occur within the planting seasons shown in Standard Specification **Table 611-1**. For any plants replaced during the Post-Planting Care period, Post-Planting Care shall continue to the end of the period.

Replacement plants shall be planted, maintained and accepted per Standard Specification **Section 611-3.01**. Planting soil used in the initial planting shall be reused for replacement plants and shall be supplemented with topsoil at no additional cost if additional material is needed to meet grade and surface finish. Watering shall accompany backfilling, at no additional cost. No replacement tree shall be staked, guyed or anchored.



**ITEM 611.19010024 - POST-PLANTING CARE WITH REPLACEMENT - MAJOR DECIDUOUS TREES**

**ITEM 611.19020024 - POST-PLANTING CARE WITH REPLACEMENT - MINOR DECIDUOUS TREES**

**ITEM 611.19030024 - POST-PLANTING CARE WITH REPLACEMENT - CONIFEROUS TREES**

**ITEM 611.19040024 - POST-PLANTING CARE WITH REPLACEMENT - DECIDUOUS SHRUBS**

**ITEM 611.19050024 - POST-PLANTING CARE WITH REPLACEMENT - EVERGREEN SHRUBS**

**ITEM 611.19060024 - POST-PLANTING CARE WITH REPLACEMENT- VINES, GROUNDCOVERS**

**ITEM 611.19070024 - POST-PLANTING CARE WITH REPLACEMENT - HERBACEOUS PLANTS**

**METHOD OF MEASUREMENT.**

The quantity to be measured for payment will be the number of plants of each type cared for and, if necessary, replaced in kind.

**BASIS OF PAYMENT.**

The unit price bid shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work.

Payment will be made under:

| <b>Item No.</b> | <b>Item</b>                                                 | <b>Pay Unit</b> |
|-----------------|-------------------------------------------------------------|-----------------|
| 611.19010024    | Post Planting Care with Replacement - Major Deciduous Trees | Each            |
| 611.19020024    | Post Planting Care with Replacement - Minor Deciduous Trees | Each            |
| 611.19030024    | Post Planting Care with Replacement - Coniferous Trees      | Each            |
| 611.19040024    | Post Planting Care with Replacement - Deciduous Shrubs      | Each            |
| 611.19050024    | Post Planting Care with Replacement - Evergreen Shrubs      | Each            |
| 611.19060024    | Post Planting Care with Replacement- Vines, Groundcovers    | Each            |
| 611.19070024    | Post Planting Care with Replacement - Herbaceous Plants     | Each            |



## **ITEM 613.010000OD – RAIN GARDEN FACILITY TOPSOIL**

### **DESCRIPTION:**

This work shall consist of furnishing, stockpiling and placing rain garden facility topsoil at the locations shown in the plans and in conformance with the lines, grades and thicknesses shown in the Contract Documents or as directed by the Engineer.

### **MATERIALS:**

Rain garden facility topsoil shall comply with Subsection 713-01, Topsoil, of the Standard Specifications, except as noted herein:

Organic Granular Soil: The organic granular soil material shall be free from refuse, foreign materials, roots, hard dirt, stiff clay, cobbles, materials deleterious to plant growth, or others which will prevent the formulation of a uniform mixture when blended with pulverized, well composted leaf mulch or rotted manure meeting NYSDOT specification 713-15. The pH of the blended material shall not be less than 5.5 and not greater than 7.0. Any blended material that is stockpiled on site shall be located high and dry, outside of the stream channel and pond basin, protected from precipitation, and prevented from mingling with storm water runoff.

A) Granular soil shall be guaranteed clean fill material obtained from a commercial sand and gravel pit, not originating from reconstituted or recycled pavement materials. The granular soil portion shall constitute 65- 75 % of the mixture, and shall have the following gradation:

| <b><u>Sieve Size</u></b> | <b><u>Percent Passing</u></b> |
|--------------------------|-------------------------------|
| 1 inch                   | 100                           |
| # 4                      | 75 -100                       |
| # 10                     | 40-100                        |
| # 40                     | 15-50                         |
| # 100                    | 5-25                          |
| # 200                    | 5-15                          |

B) The organic portion shall constitute 25-35% of the mixture, and be comprised a mix of the following: well pulverized and composted of plant-derived materials under conditions designed to promote aerobic decomposition, leaf mulch, and/ or rotted manure. The material shall be well composted, free of viable weed seeds. The compost shall have no visible free water and produce no dust when handled

C) The Contractor shall blend the organic portion with the granular portion under dry conditions to produce a homogenous mixture. A 2 pound representative sample of the blend, for each 650 cubic yards of stockpiled material shall be submitted to the Engineer for approval prior to use. Any required testing of the soil materials shall be conducted at the Contractor's expense. Sampling and testing shall be performed in accordance with section 713-01.



## **ITEM 613.010000OD – RAIN GARDEN FACILITY TOPSOIL**

### **CONSTRUCTION DETAILS:**

Rain Garden Topsoil shall be furnished and placed at the locations and to the depth as shown in the Contract Documents. Placement Rain Garden Facility Topsoil shall be done in lifts of 12” to 18”. The soil shall be loosely compacted, such as by tamping lightly by a hand tamper or backhoe bucket.

Placing and Spreading of Rain Garden Topsoil shall occur such that the plantings can be installed immediately thereafter, as practicable, as approved by the Engineer. Rain Garden topsoil in an unworkable condition due to excessive moisture, frost or other conditions shall not be placed until it is suitable.

### **METHOD OF MEASUREMENT:**

This work will be measured as the number of cubic yards of Rain Garden Topsoil installed.

### **BASIS OF PAYMENT:**

The unit price bid shall include the cost of furnishing all equipment, labor, and materials necessary to satisfactorily complete the work, including the cost for handling, stockpiling, placement, material testing and soil amendments.



## **ITEM 614.11040011 – MULCH FOR TEMPORARY TREE PROTECTION**

### **DESCRIPTION:**

This work shall consist of furnishing, placing and maintaining mulch for temporary tree protection in accordance with the contract documents, and as directed by the Engineer.

### **MATERIAL:**

The following sections of the standard specifications shall apply:

Mulch for Planting

713-05

Mulch shall be Type A – Seasoned Wood Chips, unless otherwise specified.

### **CONSTRUCTION DETAILS:**

#### **Notification:**

The Contractor shall provide notification a minimum of 48 hours prior to commencing work under this item.

#### **Application:**

Mulch for temporary tree root protection shall be applied by hand to the surface of the tree protection area(s) shown in the contract documents.

Unless otherwise specified, wood chips shall be applied to a uniform depth of six (6”) inches over the entire area and shall be distributed to create a smooth level cover.

#### **Maintenance:**

Mulch for temporary tree protection shall remain in place and not be moved or removed without written permission until all work which might result in soil compaction or root damage has been completed.

If any mulch is dislocated or depleted during the course of the work, it shall be replaced at no additional cost with new mulch within 24 hours of the EIC’s notification to the Contractor.

#### **Removal:**

At the completion of the work, the Contractor shall remove the mulch by hand.

The Contractor may submit a written request to remove the mulch by machine including a work plan detailing access route and equipment to be used. No machine removal shall be allowed before and unless this request is approved.

If any trees are damaged during the application, maintenance or removal of mulch, the provisions of §§107-08, 107-09 shall apply.



**ITEM 614.11040011 – MULCH FOR TEMPORARY TREE PROTECTION**

**METHOD OF MEASUREMENT:**

This work shall be measured as the number of cubic yards, to the nearest whole cubic yard of mulch for temporary tree protection furnished, maintained and placed.

**BASIS OF PAYMENT:**

The unit price bid per cubic yard of mulch for temporary tree protection shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work.

Payment for work performed under this item will be made as follows:

50% - upon initial installation

50% - upon removal of wood chips, having maintained the wood chips at six (6") inch depth for the construction period.



## **ITEM 615.0101NN10 – LITTER (TRASH) RECEPTACLE**

### **DESCRIPTION**

The work shall consist of furnishing and installing litter (trash) receptacles in accordance with the contract documents and as directed by the Engineer.

### **MATERIALS**

The materials for this work shall conform to the requirements listed here and in the contract documents, unless otherwise approved.

Litter (trash) receptacles shall be as manufactured by the Manufacturers listed in the contract documents or approved equals. Litter (trash) receptacles that are received chipped, scratched, bent, dented or damaged in any way will not be accepted and shall be removed and replaced with new containers or parts which are free from all defects.

### **CONSTRUCTION DETAILS**

Prior to ordering litter (trash) receptacles, the Contractor shall submit catalog cuts and/or shop drawings along with color samples for approval and shall verify the quantity and location of each type of litter receptacle with the Engineer.

Litter (trash) receptacles shall be installed in the positions and manner shown on the plans, according to the Manufacturer's instructions, and as approved by the Engineer.

### **METHOD OF MEASUREMENT**

This work will be measured as the number of litter (trash) receptacles installed in accordance with the contract documents and as directed by the Engineer.

### **BASIS OF PAYMENT**

The unit bid price for each litter (trash) receptacle shall include the cost of furnishing all equipment, hardware, materials and labor necessary to complete the work.

Payment will be made under

| <b><u>Item</u></b> | <b><u>Description</u></b>        | <b><u>Pay Unit</u></b> |
|--------------------|----------------------------------|------------------------|
| 615.01010110       | Litter (Trash) Receptacle Type 1 | Each                   |
| 615.01010210       | Litter (Trash) Receptacle Type 2 | Each                   |
| 615.01010310       | Litter (Trash) Receptacle Type 3 | Each                   |
| 615.01010410       | Litter (Trash) Receptacle Type 4 | Each                   |
| 615.01010510       | Litter (Trash) Receptacle Type 5 | Each                   |



## **ITEM 615.08XX0005 – BENCH, TYPE XX**

### **DESCRIPTION:**

The Contractor shall furnish and install benches as shown in the Contract Documents. The Contractor shall verify the type, quantity, location and installation method for each bench with the Engineer prior to ordering. This may include approval by owning or maintaining agencies other than NYSDOT.

### **MATERIALS:**

As indicated in the contract documents.

### **CONSTRUCTION DETAILS:**

The benches shall be installed in the locations indicated in the contract documents, in accordance with the manufacturer's instructions and as approved by the Engineer.

### **METHOD OF MEASUREMENT:**

Quantity will be measured by the number of benches installed to the satisfaction of the Engineer.

### **BASIS OF PAYMENT:**

The unit price bid for each bench shall include the cost of all labor, materials and equipment necessary to satisfactory complete the work.



## **ITEM 615.27XX0010 - BICYCLE RACK (DESIGN CAPACITY XX BICYCLES)**

### **DESCRIPTION:**

This work shall consist of furnishing and installing bicycle racks in accordance with the plans and specifications or as directed by the Engineer.

### **MATERIALS:**

The bicycle rack shall be constructed of ASTM F1083 schedule 40 steel pipe or approved equal. The Contractor shall submit shop drawings and/or catalog cuts to the Engineer for review and approval prior to the installation of the bicycle rack. Drawings shall show clearly all materials, finishes, and connecting methods.

Class A concrete shall be used for the footing.

### **CONSTRUCTION DETAILS:**

Bicycle racks shall be constructed in accordance with this specification, the contract documents, and as directed by Engineer.

Each bicycle rack shall be permanently installed on the surface by embedding the bottom portion of the galvanized steel frame, or an extension of the frame, into concrete or by installing a surface flange mount as recommended by the manufacturer.

Assembly of bicycle rack components shall be performed in strict accordance with manufacturer's recommendations for installation if applicable. All work shall be free of blemishes or defects, which can affect durability, strength, safety or appearance. Bicycle racks or parts that are received chipped, scratched, bent, dented, stained, or damaged or are damaged during installation as determined by the Engineer will not be accepted and shall be removed immediately from the project site and replaced with new bicycle racks or parts, which are free from all defects.

The contractor shall set the bicycle rack plumb to the height indicated in the contract documents or as directed by the Engineer.

The contractor shall protect all parts of the bicycle rack and maintain it in an undamaged condition until completion and acceptance of the contract. Any sections damaged at any time prior to final acceptance shall be repaired or replaced at the contractor's expense.

All sidewalk restoration and excavation shall be included in the price bid for this item.

### **METHOD OF MEASUREMENTS:**

This work will be measured as the number of bicycle racks satisfactorily furnished and installed at the locations shown on the plans or ordered by the Engineer.

### **BASIS OF PAYMENT:**

The unit price bid for each bicycle rack shall include the cost of furnishing all labor, materials and equipment necessary to complete the work, including sidewalk restoration where necessary.



## **ITEM 627.50140008 - CUTTING PAVEMENT**

### **DESCRIPTION:**

The contractor shall cut existing asphalt pavement, concrete pavement, asphalt surface course, or asphalt concrete overlay on concrete pavement at the locations indicated and detailed on the plans and as directed by the Engineer.

### **MATERIALS:**

None specified.

### **CONSTRUCTION DETAILS:**

Existing pavement and overlay shall be cut perpendicular to the roadway surface along neat lines, and to the depth indicated on the plans and typical sections, using appropriate equipment. After the pavement has been cut through, the Contractor may use pry bars, pneumatic tools or other methods, to pry loose the pavement to be removed from the pavement that is to remain. A pavement breaker may be used to break up the pavement to be removed after the pavement has been completely cut through and completely free from the pavement to remain.

When pavement cutting is called for in the Contract documents, if a neat vertical face with minimal shatter is obtained by performing an adjacent operation (such as milling) which eliminates the need to perform a separate pavement cutting operation, payment will be made for both the pavement cutting item and the item for the adjacent operation.

Any existing pavements and curbs not indicated to be removed that are damaged by the contractor's operations, shall be repaired at no additional cost to the State. Pavement cutting that the contractor chooses to do for his/her own convenience shall not receive any additional payment from the State.

### **METHOD OF MEASUREMENT:**

The quantity to be measured will be the number of linear feet of pavement cutting satisfactorily completed.

### **BASIS OF PAYMENT:**

The unit price bid per linear foot of pavement cutting shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work.

Payment for prying, breaking, removal and disposal of cut pavement shall be made through other appropriate items.



**ITEM 655.13000015 – ASPHALT PAVEMENT SUPPORTED MANHOLE FRAME AND APPROVED COVER**

**DESCRIPTION**

This work shall consist of furnishing and installing Asphalt Pavement Supported Manhole Frame and an Approved Cover, in accordance with the contract documents and as directed by the Engineer. Frame and cover shall be manufactured by the same company.

**MATERIALS**

All the provisions of §715-07 *Proof-Loaded Iron Castings* or §715-09 *Malleable Iron Castings* shall apply. The clear inside diameter of the upper frame shall be 30” and the seat shall be designed to receive an approved 32” diameter manhole cover. At the top of the upper frame, a lip shall project so that the frame may rest on the pavement surface. The lip shall be clearly marked with the words “pavement supported” or something similar on the top. The edge of the lip shall project a minimum of 3¾” radially beyond the outside face of the barrel of the upper frame. The lip also shall curve down so that its edge is min. ¼” below the top surface of the lip.

Manufacturer shall cast a slightly raised triangle into the inner surface of the lower frame. This triangle shall project 1/16” from the inside face of the frame. In addition, the triangle shall have a base width of 1” - 1 ¼” and an apex width of ¼”. The apex shall be 2” below the top edge of the lower frame, i.e. its height shall be 2” smaller than the frame height. The interface of the lower and upper frame shall have a gasket to prevent ingress of material through the interface.

Asphalt Pavement Supported frame and an approved cover shall be manufactured by:

| <b>Manufacturer Name</b>                                                                                                           | <b>Product</b>                                                      |
|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| EJ USA, Inc.<br>301 Spring Street<br>East Jordan, MI 49727<br>Tel: (800) 874-4100<br><a href="http://ejco.com">http://ejco.com</a> | 30” Self Level ®<br>Frame and their cover from<br>the approved list |

**CONSTRUCTION DETAILS**

All the provisions of §655-3 *CONSTRUCTION DETAILS* shall apply. Asphalt Pavement Supported frame shall not be installed at crown of the road nor on pavement grades greater than 5 percent. The lower frame shall be oriented so that the triangular gauging mark is on the downslope of the road when the lower frame is set. The initial set of upper frame shall be ½ inch above lower frame to allow for settlement of compacted pavement. Manufacturer’s installation instructions shall be followed.

**METHOD OF MEASUREMENT**

This work will be measured as the number of Asphalt Pavement Supported Frame/Cover systems satisfactorily furnished and installed. A complete “unit” shall consist of an upper and lower frame, gasket and cover.



**ITEM 655.13000015 – ASPHALT PAVEMENT SUPPORTED MANHOLE FRAME AND  
APPROVED COVER**

**BASIS OF PAYMENT**

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work, including the cost of any field repair work for improperly fitting castings, or to render the frame and cover non-rocking.

*Payment will be made under:*

| <b>Item No.</b> | <b>Description</b>                                  | <b>Pay Unit</b> |
|-----------------|-----------------------------------------------------|-----------------|
| 655.13000015    | Pavement Supported Manhole Frame and Approved Cover | Each            |



# ITEM 655.13000015 – ASPHALT PAVEMENT SUPPORTED MANHOLE FRAME AND APPROVED COVER



## Product Number

00302713

## Design Features

- Materials  
Ductile Iron (80-55-06)
- Load Rating  
Heavy Duty
- Open Area  
n/a
- Coating  
Undipped
- ✓ Designates Machined Surface

## Certification

-ASTM A536

-Country of Origin: USA

## Drawing Revision

7/29/2008 Designer: DEF

5/12/2017 Revised By: DEF

## Disclaimer

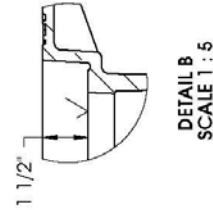
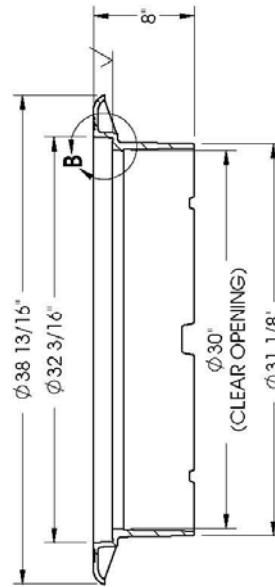
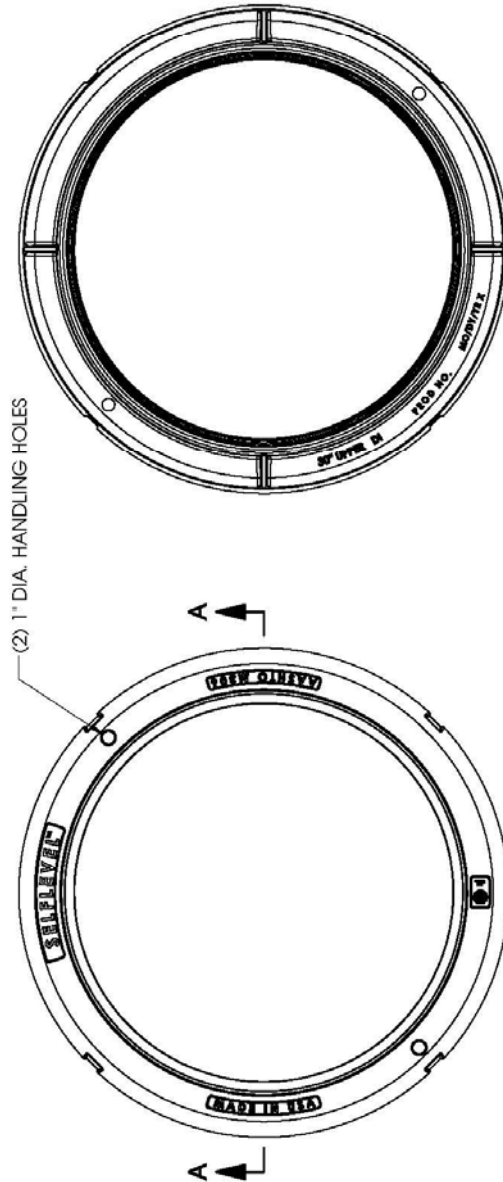
Weights (lb/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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## Contact

800 628 4653  
ejco.com

## 30" SELFLEVEL Frame





# ITEM 655.13000015 – ASPHALT PAVEMENT SUPPORTED MANHOLE FRAME AND APPROVED COVER



**Product Number**  
00302716

**Design Features**  
-Materials  
Gray Iron (CL35B)  
-Load Rating  
Heavy Duty  
-Open Area  
n/a  
-Coating  
Undipped  
-√ Designates Machined Surface

**Certification**  
-ASTM A48  
-Country of Origin: USA

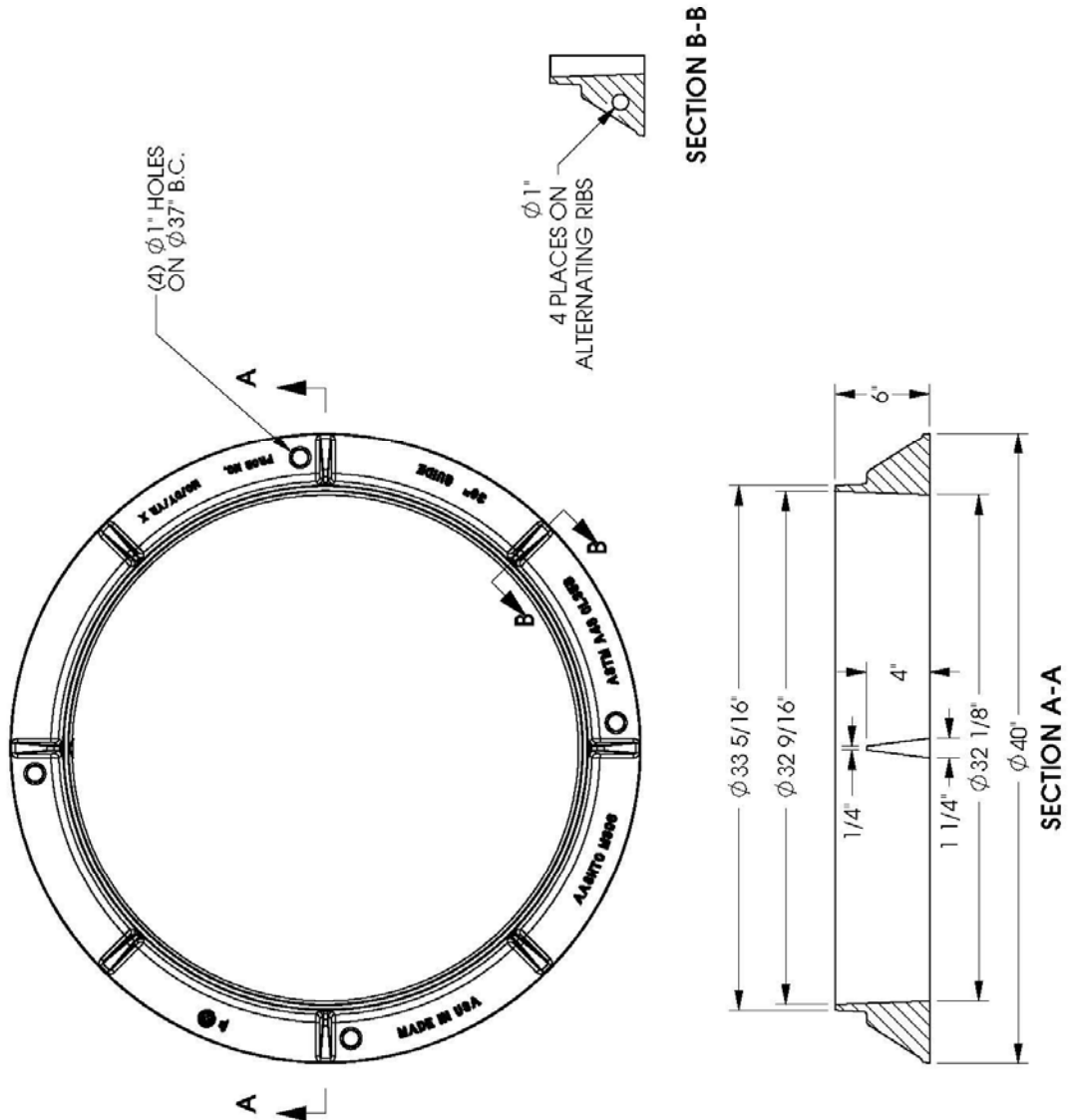
**Drawing Revision**  
10/20/2008 Designer: SBB  
05/05/2017 Revised By: DEF

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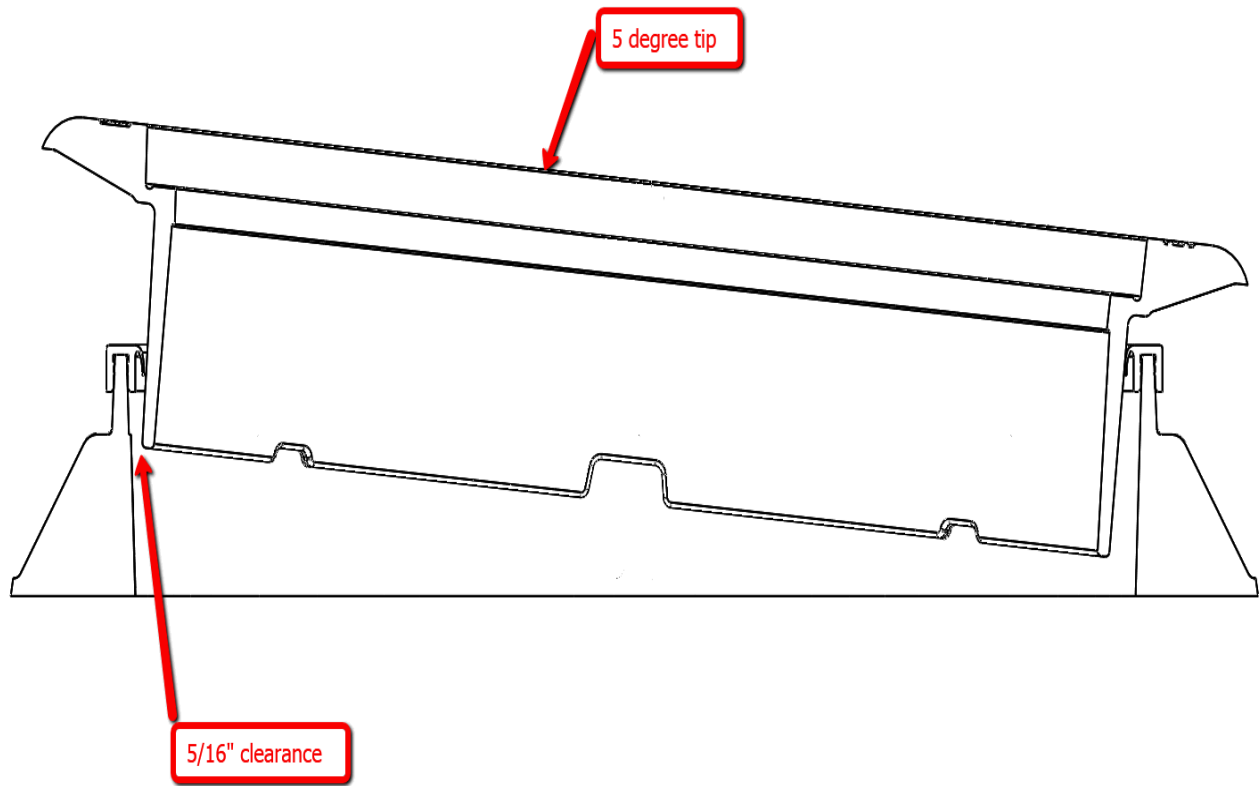
## 30" SELFLEVEL Frame





**ITEM 655.13000015 – ASPHALT PAVEMENT SUPPORTED MANHOLE FRAME AND  
APPROVED COVER**

**Maximum acceptable tilt of inner frame**





**ITEM 663.01XX01ER – DUCTILE IRON WATER MAIN PIPE**

**ITEM 663.02XX02ER – POLYETHYLENE ENCASUREMENT FOR DUCTILE IRON PIPE AND FITTINGS**

**DESCRIPTION**

This work shall consist of supplying various piping materials and constructing the planned waterline according to the contract documents and as directed by the Engineer

**MATERIALS**

All pipe and fitting shall comply with the latest AWWA, ANSI and Buffalo Water Division specifications for waterline pressure pipe. Unless otherwise noted in the Contract Documents, all piping shall be ductile iron, class-52. All ductile iron pipe shall have a factory applied cement-mortar lining conforming to the latest specifications such as ANSI-A-21.4 and AWWA-C-104. The outside of the pipe shall be coated with a black tar paint conforming to the latest ANSI and AWWA specifications.

**Ductile Iron Pipe** - All pipes and fittings, shall be bell and spigot type and shall comply with the latest AWWA or ANSI specifications. All joints are either gasket seal or mechanical joint. Any mechanical joint fittings shall conform to ANSI-A-21.11 (AWWA-C111) specifications. All ductile iron pipes shall be in accordance with the latest ANSI-A-21.51 or AWWA-C-151 specifications. Unless otherwise specified, the thickness class shall be class-52 minimum with a rated working pressure dictated by the size of the pipe and the amount of cover for laying condition “B”.

**Polyethylene Encasement For Ductile Iron Pipe and Fittings** - Polyethylene encasement shall be used for ductile iron pipe and fittings and on ductile iron fittings when using PVC pipe, conforming to AWWA Specification C105. Polyethylene film shall be manufactured of virgin polyethylene material conforming to the following requirements of ASTM Standard Specification D1248 - Polyethylene Plastics Molding and Extrusion Materials. Polyethylene film shall have a tensile strength of 1,200 psi minimum and shall allow elongation of 300 percent minimum and have a dielectric strength of 800 V/mil thickness minimum. Polyethylene film shall have a minimum nominal thickness of 0.008 in (8 mils). The minus tolerance of thickness shall not exceed 10 percent of the nominal thickness. Tape required to complete the installation shall be approximately two (2) inches wide, plastic backed adhesive tape such as Polyken #900, Scotchrap #50 or approved equal. Tube size or sheet width for each size of pipe shall be in accordance with AWWA C-105.

**CONSTRUCTION DETAILS**

The approved pipe and fittings shall be carefully placed in the properly excavated trench according to the recommendations in the AWWA specifications for laying condition “B”. Installation, testing and backfilling will be supervised by the Water Division personnel or their representative.

All work is to be performed in accordance with the requirements defined under the Special Notes pertaining to Water Mains and Appurtenances contained in the Supplemental Instruction to Bidders.

All piping, valve boxes, fittings and appurtenances on pipelines to be removed become the Contractor’s property. Pipe to be abandoned in place must be capped or plugged with an 8" class “A” concrete plug. Plugging of pipe (ends) that will remain in service is to be accomplished with a mechanically anchored pipe plug or cap with an appropriately sized concrete thrust block.



**ITEM 663.01XX01ER – DUCTILE IRON WATER MAIN PIPE**

**ITEM 663.02XX02ER – POLYETHYLENE ENCASEMENT FOR DUCTILE IRON PIPE AND FITTINGS**

Trench cuts for waterline installation and restoration of concrete base and asphalt concrete pavement; curbing and concrete sidewalks shall be performed in accordance with the Special Notes pertaining to Water Mains and Appurtenances contained in the Supplemental Instruction to Bidders.

**METHOD OF MEASUREMENT**

The quantity paid for shall be the actual number of lineal feet of pipe furnished and incorporated in the completed work, measured along the centerline of the pipe, excluding any valves and specials.

**BASIS OF PAYMENT**

The unit price bid per linear foot shall include the cost of furnishing and installing the pipe and polyethylene encasement (where called for in the contract documents), excavation of all materials, backfill, temporary sidewalk, temporary pavement restoration and all labor, equipment and material necessary to complete the work.

The cost of cutting and plugging existing waterlines to be abandoned as directed by the Engineer will not be paid for separately, but shall be included in the unit bid price per linear foot of waterline pipe. Also included shall be all costs for installing concrete cap/saddles for all sewer line crossings as indicated on the plans or as directed by the Engineer.

The cost for excavating, backfilling and resurfacing test pits for subsurface exploration purposes as shown on the plans or as directed by the Engineer shall be included in the unit bid price per linear foot of waterline pipe.

**NOTE:** All valves and specials such as bends, tees, crosses, reducers, caps, plugs, etc. as well as pavement/sidewalk restoration shall be paid for under their respective items.

Payment will be made under:

| <b>Item No.</b> | <b>Item</b>                                                | <b>Pay Unit</b> |
|-----------------|------------------------------------------------------------|-----------------|
| 663.01xx01ER    | Ductile Iron Water Main Pipe                               | Lin. Ft.        |
| 663.02xx02ER    | Polyethylene Encasement for Ductile Iron Pipe and Fittings | Lin. Ft.        |

xx = diameter, inches



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

### **DESCRIPTION**

This work shall consist of furnishing and installing new valves and boxes where shown on the plans or as ordered by the Engineer.

### **MATERIALS**

**General** - All materials shall comply with applicable provisions and recommendations of the following specifications:

1. AWWA C-500 for valve bodies, seals, bushings and bearings.
2. AWWA C-509 for resilient seat gate valves.
3. AWWA C-504 for rubber seated Butterfly valves
4. AWWA C-504B, Class 250 for rubber seated Butterfly valves
5. ANSI B16.1-67 for flanged ends.
6. AWWA C-111 for mechanical joint ends.

All valves shall be approved by the Engineer and Owner prior to ordering. All externally exposed bolts and nuts shall be type 304 stainless steel.

All valves shall be designed for 150 psi working pressure unless otherwise specified or noted on the contract plans.

All gate valves (valves under 16") shall be resilient seated valves unless otherwise specified or noted on the contract plans.

An approved side gear valve shall be used when the cover between final surface and the top of an upright operating nut is less than 3 feet.

By-pass valves and valve boxes shall only be required on 16 inch or larger gate valves except where shown on the plans or directed by the owner. By-pass valves that are not required shall be determined by the Owner prior to ordering.

### **1.1) Gate Valves (Resilient Seated)(valves less than or equal to 16 inches)**

**1.1.1)** The resilient seated gate valves supplied to the City of Buffalo, Division of Water, shall be in full compliance with the contents of these specifications and shall also meet or exceed the latest AWWA C-509 valve specifications.

The valves shall have a cast iron body internally and externally epoxy coated in conformance with AWWA C-550 and ANSI/NSF 61, a double seating gate of cast iron fully encapsulated with a special corrosion resistant synthetic elastomer, a bronze stem (non-rising) and a stem nut,



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

special thrust washer, “O” ring seals of synthetic rubber or Buna-N and shall provide a bubble tight, no leakage seal at a 200 psi differential from both directions. They shall be able to withstand a maximum working pressure of 150 psi and test pressure of 300 psi. They shall open to the right or with a clockwise motion. All valves shall be Mueller Co. or approved equal.

**1.1.2) Operators** - Operators shall be suitable for buried service and shall be as specified in AWWA C509 for submerged, buried or in-plant service or as directed by the Engineer. Operators shall be equipped with a 2-inch square operating nut and shall be full gasket and grease packed for buried service. Operating nuts shall turn to the right or clockwise to open the valve. A cast arrow showing the direction of valve opening and the word “OPEN” shall be cast on the nut’s top surface.

**1.1.3) Painting** - All exterior surfaces and interior wetted ferrous surfaces of gate valves except finished or bearing surfaces shall be shop painted with an approved epoxy paint system in accordance with ANSI/NSF 61 specifications for potable water and in accordance with the manufacturer’s recommendations.

**1.1.4)** All internal parts shall be accessible without removing the main body from the pressure line.

**1.1.5)** Gate valves shall be as manufactured by Mueller or approved equal.

### **2.1) Butterfly Valves (valves greater than 16 inches) with Rubber Seats in Valve Body**

**2.1.1)** Butterfly valves, 16 inch and smaller, shall only be used with written approval from the City of Buffalo, Division of Water.

**2.1.2) General** - All butterfly valves shall be of the tight closing, rubber-seated type with recessed rubber seats that are securely fastened to the valve body. No metal-to-metal seating surfaces will be permitted. Valves shall be bubble-tight at rated pressures with flow in either direction, and shall be satisfactory for applications involving throttling service and/or frequent operation, and for applications involving valve operation after long periods of inactivity. Valve discs shall rotate 90 degrees from full open position to the shut-off position. Valves shall meet structural requirements of AWWA Standard C504, Class 150B, the latest revision.

Valves shall be rated to withstand a working pressure of 150 psi and a test pressure of 300 psi. They shall open right (i.e.: with a clockwise motion). Valve laying length shall be according to AWWA C504 standard for Short Body design. The manufacturer shall have manufactured tight-closing, rubber-seated butterfly valves for a period of at least 10 years.

All valves shall be the Henry Pratt Company Groundhog Butterfly Valve or approved equal.



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

**2.1.3) Valve Body and Ends** - Valve body shall be constructed of cast iron ASTM A-126, Class B and shall have integrally cast mechanical joint ends. Two trunnions for shaft bearings shall be in strict accordance with AWWA C504, Class 150B.

**2.1.4) Valve Discs** - Valve discs shall be of one piece design, constructed of cast iron ASTM A-126, Class B or ASTM A-48 Class 40 for valves 24 inch and smaller. Valves 30 inch and larger shall be constructed of ductile iron conforming with ASTM A-536.

All discs shall be furnished with 316 stainless steel seating edges fusion bonded to the disc that shall mate to the rubber seat in the valve body. The Seating edge shall be hand polished with no machining allowed.

**2.1.5) Valve Shafts** - Shafts of all valves shall be turned, ground and polished. Valves shall be constructed of 18-8 Type 304 stainless steel in conformance with ASTM A-276 and shall be of one piece construction for 20 inch and smaller valves and 2 piece construction for 24 inch and larger valves. Shaft diameters shall be in accordance with AWWA C 504, Class 150B. Shaft seals shall be standard self-adjusting, split V packing. Design shall allow replacement of seals without removal of valve shaft.

**2.1.6) Valve Seats** - Valve seats shall be a synthetic rubber compound. Valves 20" and smaller shall have bonded seats that are simultaneously molded in, vulcanized and bonded to the body. The rubber to body bond shall withstand a 75 pound pull under test procedure ASTM D429 method B. Valves 24 inch and larger shall be mechanically retained in a dove tail groove cast into the valve body without the use of metal retainers or other devices.

**2.1.7) Valve Bearing** - Valves shall be fitted with sleeve-type bearings. Bearings shall be corrosion resistant and self-lubricating. Bearing load shall not exceed 1/5 of the compressive strength of the bearing or shaft material. Bearings shall conform to AWWA C504.

**2.1.8) Valve Operators** - Valve operators shall conform to AWWA C504 and shall be of the traveling nut, self-locking, designed to hold the valve in any intermediate position between full open and fully closed without creeping or fluttering. The traveling nut shall be guided by alignment grooves in the housing and cover. In sizes 14" and greater a link-lever design operator shall be used. All operators shall exhibit characterized closure which will slow the operator travel as it approaches the closed position to minimize possibility of line shock. Mechanical stops shall be provided in the operator to prevent over-travel of the disc in the open or closed position. Operators shall be mounted to the valve trunnion with four bolts, and shall be equipped with a 2" square AWWA operating nut. Valves shall open with a clockwise rotation of the operating nut. The operators shall be gasketed and full grease packed for buried, submersible service. The operator lever shall be directly connected to the valve shaft by a key. Pins or other adapter are not acceptable. Operators shall be capable of withstanding an input torque of 450 foot-pounds at the extreme operator position without damage to the operator.



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

**2.1.9) Painting** - All valve interior and exterior surfaces shall be epoxy coated in accordance with the latest AWWA C-504 and ANSI/NSF 61 requirements.

**2.1.10) Testing** - Hydrostatic, leakage and performance tests shall be conducted in strict accordance with AWWA C504, its latest revision, on each valve supplied. Certified bi-directional leak tests shall be submitted with each valve supplied, performed at the rated working pressure. A torque table shall be submitted for each size valve supplied illustrating operating shaft torque vs. flow rate in accordance with AWWA C504 Class 150B flow conditions.

**2.1.11) Proof of Design** - At the owner's request, the manufacturer shall provide test results as required by AWWA C504, including the 100,000 cycle test. Test results for valves 20 inch in diameter and smaller tested according to ASTM D429 Method B shall also be provided

**2.1.12) Valve Extension Stem & Position Indicator** - A valve position indicator and stem extension shall be furnished for each valve. The indicator shall be hermetically sealed for installation inside a cast iron box, and shall show valve disc position, direction of rotation and the number of turns from full open to full closed.

The valve extension stem shall be 1 ¼ inch diameter carbon steel and shall extend to within 12 to 18 inches of proposed finish grade. The stem shall be provided with a coupling to mate with the 2 inch operating nut at the valve operator. The stem shall be field cut to the appropriate length and provided with a cast centering plate ("spider") and a two inch AWWA nut on top. The nut shall be secured to the stem with a shear pin designed to fail at approximately 250 foot-pounds. A 350 foot-pound shear pin shall be installed at the bottom adaptor, which shall be furnished with two set screws to attach to the valve operation nut.

## **2.2) Butterfly Valves (valves greater than 16 inches) with Rubber Seats on Valve Discs**

**2.2.1)** Butterfly valves, 16 inch and smaller, shall only be used with written approval from the City of Buffalo, Division of Water.

**2.2.2) General** - All butterfly valves shall be of the tight closing, rubber-seated type with recessed rubber seats that are securely fastened to the valve disc. No metal-to-metal seating surfaces will be permitted. Valves shall be bubble-tight at rated pressures with flow in either direction, and shall be satisfactory for applications involving throttling service and/or frequent operation, and for applications involving valve operation after long periods of inactivity. Valve discs shall rotate 90 degrees from full open position to the shut-off position. Valves shall meet structural requirements of AWWA Standard C504, Class 150B, the latest revision.

Valves shall be rated to withstand a working pressure of 150 psi and a test pressure of 300 psi. They shall open right (i.e.: with a clockwise motion). Valve laying length shall be according to AWWA C504 standard for Short Body design. The manufacturer shall have manufactured tight-closing, rubber-seated butterfly valves for a period of at least 10 years.

All valves shall be the Mueller Company Butterfly Valve or approved equal.



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

**2.2.3) Valve Body and Disc** – For valves 16” and smaller, valve body and disc shall be high strength cast iron to ASTM A126, Class B or high strength ductile iron to ASTM A536 with ASTM A276 Type 304 stainless steel body seat.

For valves 18” and larger, valve body shall be constructed of high strength ductile iron ASTM A536, Grade 65-45-12 with ASTM A276 Type 304 stainless steel body seat. Discs shall be high strength cast iron conforming with ASTM A126, Class B.

**2.2.4) Valve Shafts** - Shafts of all valves shall be turned, ground and polished. Valves shall be constructed of 18-8 Type 304 stainless steel in conformance with ASTM A-276 and shall be of one piece construction for 12 inch and smaller valves and 2 piece construction for 14 inch and larger valves. Shaft diameters shall be in accordance with AWWA C 504, Class 150B. Shaft seals shall be standard self-adjusting, split V packing. Design shall allow replacement of seals without removal of valve shaft. Shaft seals shall be of the O-ring type and utilize the same elastomer as the valve seats.

**2.2.5) Valve Seats** - Valve seats shall be a full circle 360-degree synthetic rubber compound not penetrated by the shaft. The valve seat shall be attached to the disc by ASTM A276 Type 304 stainless steel self-locking fastener, easily adjustable and replaceable without special tools.

**2.2.6) Valve Bearing** - Valves shall be fitted with sleeve-type bearings. Bearings shall be corrosion resistant and self-lubricating. Bearing load shall not exceed 1/5 of the compressive strength of the bearing or shaft material. Bearings shall conform to AWWA C504.

**2.2.7) Valve Operators** - Valve operators shall conform to AWWA C504 and shall be of the traveling nut, self-locking, designed to hold the valve in any intermediate position between full open and fully closed without creeping or fluttering. The traveling nut shall be guided by alignment grooves in the housing and cover. In sizes 14" and greater a link-lever design operator shall be used. All operators shall exhibit characterized closure which will slow the operator travel as it approaches the closed position to minimize possibility of line shock. Mechanical stops shall be provided in the operator to prevent over-travel of the disc in the open or closed position. Operators shall be mounted to the valve trunnion with four bolts, and shall be equipped with a 2" square AWWA operating nut. Valves shall open with a clockwise rotation of the operating nut. The operators shall be gasketed and full grease packed for buried, submersible service. The operator lever shall be directly connected to the valve shaft by a key. Pins or other adapter are not acceptable. Operators shall be capable of withstanding an input torque of 450 foot-pounds at the extreme operator position without damage to the operator.

**2.2.8) Painting** - All valve interior and exterior surfaces shall be epoxy coated in accordance with the latest AWWA C-504 and ANSI/NSF 61 requirements.

**2.1.9) Testing** - Hydrostatic, leakage and performance tests shall be conducted in strict accordance with AWWA C504, its latest revision, on each valve supplied. Certified bi-directional leak tests shall be submitted with each valve supplied, performed at the rated working pressure. A torque table shall be submitted for each size valve supplied illustrating operating shaft torque vs. flow rate in accordance with AWWA C504 Class 150B flow conditions.



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

**2.1.10) Proof of Design** - At the owner's request, the manufacturer shall provide test results as required by AWWA C504, including the 100,000 cycle test. Test results for valves 20 inch in diameter and smaller tested according to ASTM D429 Method B shall also be provided

**2.1.11) Valve Extension Stem & Position Indicator** - A valve position indicator and stem extension shall be furnished for each valve. The indicator shall be hermetically sealed for installation inside a cast iron box, and shall show valve disc position, direction of rotation and the number of turns from full open to full closed.

The valve extension stem shall be 1 ¼ inch diameter carbon steel and shall extend to within 12 to 18 inches of proposed finish grade. The stem shall be provided with a coupling to mate with the 2 inch operating nut at the valve operator. The stem shall be field cut to the appropriate length and provided with a cast centering plate ("spider") and a two inch AWWA nut on top. The nut shall be secured to the stem with a shear pin designed to fail at approximately 250 foot-pounds. A 350 foot-pound shear pin shall be installed at the bottom adaptor, which shall be furnished with two set screws to attach to the valve operation nut.

### **2.3) Torque Guard Assembly**

**2.3.1) General** - All Butterfly valves shall be equipped with a mechanical torque limiter. The torque shall be preset nominally at 200 foot-pounds.

The input connection shall be 2" AWWA nut with additional provision for mounting directly to a 1.25" diameter extension stem. The output connection shall be suitable for mounting on a 2" AWWA nut that is normally attached to the valve operator or the top of the extension stem. The torque limiter shall be dimensionally sized for mounting in a minimum 5" soil pipe, a 5¼" valve box, or pinned to a wrench. The torque-limiting device shall be the Henry Pratt "Torque Guard" or equal, as approved by the Engineer.

**2.3.2) Driver** - The drive with 2" AWWA nut shall be one piece constructed of ASTM A-126 Class B cast iron and shall house the torque limiting mechanisms. The word "OPEN" is cast into the driver with a clockwise arrow indicating the direction to open the valve.

**2.3.3) Output Socket** - The output socket shall be one piece, constructed of ductile iron and consist of an output connection and a retainer shaft.

**2.3.4) Torque Limiting Mechanism** - the torque limiting mechanism shall consist of a set of ball bearings in a retainer ring that is held into détentés by a thrust bearing, disc springs and a retainer nut. The torque limiting mechanism shall be grease packed, fully contained in the driver housing and sealed. The release level of the unit will be preset at the factory at the specified torque  $\pm 10\%$ .

**2.3.5) Coating** - All surfaces of the torque-limiting device shall be clean, dry and free from grease before painting. The torque limiting exterior surfaces shall be evenly coated with asphalt varnish in accordance with Federal Specification TT-C-494A.



## **ITEM 663.10XX00ER – WATER VALVES AND BOXES**

**2.3.6) Testing** - The manufacturer shall submit a certification of “Proof of Design” test consisting of trips at 200 foot-pounds rated torque.

**2.3.7)** The wrench nut on the stem shall be two (2) inches square.

### **3.1) Valve Boxes**

**3.1.1)** The cast iron valve box shall be of the screw type, adjustable and made of cast iron and shall consist of base center section and top section with a cover, and extension piece, where necessary. The valve boxes shall be adjustable for height and the cover shall be marked “WATER”. Valve boxes shall be the standard, City of Buffalo, 7-inch size with screw type adjustment. The threads shall be cast into the boxes, not welded to the boxes. Riser rings shall not be used on new valve and valve boxes.

### **CONSTRUCTION METHODS**

Valves shall be set in true alignment with the pipes they serve, and with the stems plumb. A firm foundation consistent to that provided for the pipe shall be used to support the weight of the valve so that no unnecessary strain is allowed to act on the joints due to uneven settlement of the pipe and valve. Retainer glands shall be installed on each end of the valve to prevent lateral movement of the valve when it is operated.

Valves boxes shall be firmly supported, blocked in an approved manner, plumbed and centered over the valve nut and the box cover flush with the finished grade. Any box, which has moved from its original position, so that the valve nut is not centered, shall be reset at the expense of the Contractor.

Trench cut for waterline valve and box installation, restoration of concrete base and asphalt concrete pavement, curbing and concrete sidewalks disturbed shall be performed in accordance with the requirements of Section 206 – Trench, Culvert and Structure Excavation. Backfilling shall be in accordance with the requirements of listed under the Special Notes pertaining to Water Mains and Appurtenances contained in the Supplemental Instruction to Bidders.

### **METHOD OF MEASUREMENT**

The quantity to be paid for under this item will be the number of water valves, including boxes furnished and installed in accordance with the contract documents.



**ITEM 663.10XX00ER – WATER VALVES AND BOXES**

**BASIS OF PAYMENT**

The unit price shall include the cost of furnishing all labor, material and equipment including excavations and backfill necessary to complete the work.

Payment will be made under:

| <b>Item No.</b> | <b>Item</b>            | <b>Pay Unit</b> |
|-----------------|------------------------|-----------------|
| 663.10xx00ER    | Water Valves and Boxes | Each            |

xx = diameter, inches



**ITEM 663.131000ER – HYDRANTS**

**ITEM 663.132000ER – RELOCATE EXISTING FIRE HYDRANT**

**ITEM 663.133000ER – MODIFY EXISTING STANDPIPE SYSTEM**

**DESCRIPTION**

This work shall consist of relocating existing or installing new fire hydrants and relocating/modifying fire suppression standpipes at the locations indicated on the plans or approved by the Engineer. The work will include all excavation, materials and equipment necessary to complete the installation, including removal of existing designated hydrants and returning them to the Division of Water and coordination with operations to be performed by City work forces. Painting of the hydrants shall also be included in this item. Fire hydrants purchased or installed shall meet or exceed all latest applicable requirements and tests of ANSI and the latest revisions of AWWA Standard C-502. Fire hydrants shall be UL Listed and FM approved. Fire hydrants shall meet the following requirements:

1. Fire hydrants shall be rated for a minimum working pressure of 200 PSI
2. Hydrants shall be of a true compression type, opening against pressure and closing with the pressure. The main valve seat shall 5-1/4" in diameter.
3. Hydrants shall be a three-way design, having one 4" pumper nozzle with thread gauge 6-640 and two 2-1/2" NTS hose nozzles. All nozzles shall fit into barrel and be field replaceable. The operating nut shall be a one-piece design, 1-3/8" square in size and shape. The direction of opening shall be RIGHT (clockwise).
4. The bonnet assembly shall be provided with an oil or grease lubrication system that circulates lubricant to all stem threads and bearing surfaces each time the hydrant is operated. This lubrication system shall be sealed from the waterway by use of "o" ring pressure seals.
5. Hydrants shall be of the traffic-model design having upper and lower barrels joined at the ground line (grade @ bury elevation) by a separate and breakable "swivel" flange providing 360 degree rotation of upper barrel for proper nozzle facing, and provided with a stainless steel or cast coupling between the upper and lower stems.
6. Hydrants shall be equipped with drain valves, which drain the barrel when the hydrant is closed. The bronze seat ring shall thread into a bronze drain ring.
7. Hydrants shall have a 6" MJ shoe and be five foot bury, unless otherwise approved by the Engineer.
8. Hydrants shall be Mueller Super Centurion 250 or Kennedy K81 models. Barrel height shall be available in 6" length increments to allow for field installation.

It is the Contractor's responsibility to examine the hydrants delivered to them for any defects before accepting them. Once the Contractor has taken possession of the hydrants, they are responsible for maintaining and repairing the hydrants until the project has been completed and accepted.

Before setting hydrant, the contractor shall unplug the waste opening in the bowl of the hydrant as directed by the Engineer if it has not already been unplugged.

**CONSTRUCTION DETAILS**

Hydrants must be set plumb with the pumper nozzle facing the street. The hydrant must be set on a concrete block and braced against unexcavated earth with a poured concrete thrust block or anchored with steel rods and clamps. All bends shall be braced with concrete thrust blocks against unexcavated earth or the joints shall be restrained by methods acceptable to the Engineer.



**ITEM 663.131000ER – HYDRANTS**

**ITEM 663.132000ER – RELOCATE EXISTING FIRE HYDRANT**

**ITEM 663.133000ER – MODIFY EXISTING STANDPIPE SYSTEM**

The pumper nozzle must be 20 inch +/- 1 inch above surrounding grade. The bury line on the hydrant shall match up with the final grade and a concrete collar (4'x4'x6") shall be installed if the hydrant is not in a sidewalk. Offsets may be used to achieve proper hydrant elevations. The 6" pipe, 6" valve and valve box are described under their respective section. The hydrant and valve shall be located on the same side of the water main. The hydrant valve shall be located as close to the main as possible. Hydrants are to be flushed out by operating the hydrant nut and the hydrant valve. The hydrant shall be flushed for a minimum of 15 minutes after the water runs clear.

The Contractor shall use every precaution in handling hydrants to insure that no damage occurs. If any hydrants are damaged as a result of the Contractor's actions, the Contractor shall replace such damaged material at his own expense.

The Contractor shall excavate and remove existing hydrants, indicated to be removed on the Contract Drawings or as directed by the Engineer and return the hydrants to the City of Buffalo, Division of Water's storage yard. The sites where hydrants are removed shall be restored to original or better condition. The cost of this work shall be included for in the item bid for Hydrant Installations. Offsets in the hydrant branch line can be used to adjust the pipe to accommodate for proper hydrant bury. The cost for offsets shall be paid for under the bid item for pipe specials. The Contractor is advised to periodically check with the vendor for currently stocked hydrant sizes. Typically, hydrants are available in 6-inch increments; however, if the supply of particular size required is unavailable the Contractor shall make necessary adjustments during their pipe laying operations to accommodate the next closest size.

Hydrants not in service shall be painted yellow until put into service or removed from the job site. Bagging of hydrants will not be acceptable at any time.

Before final acceptance by the City, the Contractor shall give hydrants a final coat of paint. Before painting, damaged areas of the existing coat shall be prepared as follows:

**SURFACE PREPARATION (shop and/or field)**

All surfaces to be coated should be dry, free of all dust, dirt, oils or materials detrimental to the adhesion of the coating to the surface.

- 1.) Areas contaminated by oil etc. should be washed clean with a strong solvent such as xylene etc. as described and in conjunction with the methods and practices set by the Steel Structures Painting Council for SSPC-SP-1 cleaning.
- 2.) If the area to be coated has oxidation build up, those areas should be either "power tool" cleaned to SSPC-SP-3 Standards or "commercial" cleaned to SSPC-SP-6 Standards as set by the Steel Structures Painting Council for surface preparations.



**ITEM 663.131000ER – HYDRANTS**

**ITEM 663.132000ER – RELOCATE EXISTING FIRE HYDRANT**

**ITEM 663.133000ER – MODIFY EXISTING STANDPIPE SYSTEM**

**METHODS OF APPLICATION:**

All surfaces shall be dry and free of all dust, dirt, oil or contaminates and shall be between 45° to 95° Fahrenheit.

- 1) Prime Coat: Rust-Oleum # 7669 primer, or equal. Apply minimum of one coat DFT 1 mil thick.
- 2) Final Coat: Benjamin Moore M22 Urethane Alkyd with DFT of 2.mil, or equal. Color shall be as selected by the Engineer.

**METHOD OF MEASUREMENT**

The quantity paid for this work will be the number of hydrants installed, replaced and relocated or standpipes modified and relocated.

**BASIS OF PAYMENT**

The unit price bid for hydrant installation and relocation shall include the cost of furnishing all labor, material and equipment necessary to complete the work of installation of the new hydrant and coordination with City operations as defined under the contract documents; excavation (except rock excavation); pumping, draining, sheeting, shoring, backfilling, tamping and disposal of surplus excavation material; concrete thrust collar, thrust block or restraint and all other labor, equipment and materials necessary to complete the work not specifically included for payment under other items of the Contract. In addition, the price bid shall include removal and transportation to the Col. Ward Plant of any old hydrant left abandoned due to new work included in the contract plans. Removed hydrants are City Property and are to be returned to the City Stockyard.

Any required new valves, pipe and pipe specials shall be paid under their respective items.

Concrete or asphalt concrete replacement at the hydrant shall be paid for under their respective items.

The unit price bid for standpipe modification and relocation shall include the cost of furnishing all labor, material and equipment necessary to complete the work of relocation of the existing standpipe; excavation (except rock excavation); pumping, draining, sheeting, shoring, backfilling, tamping and disposal of surplus excavation material; concrete thrust collar, thrust block or restraint and all other labor, equipment and materials necessary to complete the work shall be included for payment under this item. In addition, any required new valves, pipe, pipe specials, concrete and/or asphalt concrete replacement shall be paid for under this item.



**ITEM 663.131000ER – HYDRANTS**

**ITEM 663.132000ER – RELOCATE EXISTING FIRE HYDRANT**

**ITEM 663.133000ER – MODIFY EXISTING STANDPIPE SYSTEM**

Payment will be made under:

| <b>Item No.</b> | <b>Item</b>                      | <b>Pay Unit</b> |
|-----------------|----------------------------------|-----------------|
| 633.131000ER    | Installation of New Fire Hydrant | Each            |
| 663.132000ER    | Relocate Existing Fire Hydrant   | Each            |
| 663.133000ER    | Modify Existing Standpipe System | Each            |



## **ITEM 663.201000ER – WATER MAIN PIPE SPECIALS**

### **DESCRIPTION**

This work shall consist of furnishing and installing all specials such as bends, tees, crosses, reducers, caps, plugs, etc. required to complete the installation not included in other items of work shown on the plans and in accordance with these specifications.

### **MATERIALS**

All fittings shall be mechanical joint short-body (compact) ductile iron Class 350 fittings for water conforming to all applicable terms and provisions of ANSI/AWWA C-153/A21.53 and ANSI/AWWA C-111/A21.11 for 24 inch and smaller pipe. Ductile iron Class 250 mechanical joint fittings for water conforming to all applicable terms and provisions of ANSI/AWWA C-110/A21.10, ANSI/AWWA C-111/A21.11 shall be used for required fitting sizes that are not available in short body design. All joints shall be gasket seal.

Ductile iron specials shall be cement lined on the inside and coated with coal tar or asphalt base on the outside. Cement lining for ductile iron pipe shall conform to ANSI A21.4.

All ductile to ductile connections shall be made with solid sleeves. Retainer glands shall be ductile iron and of the type having break-away set screws to assure proper torque as manufactured by EBAA -Series 1100 Megalug or approved equal.

Where solid sleeves cannot accommodate existing pipe diameters, sleeve couplings shall be Smith-Blair Omni type coupling - Style 441 for 16-inch diameter or less and Dresser Style #38 for 20-inch diameter and greater or approved equal. Outside diameter of cast iron pipe may vary. Contractor shall measure outside diameter of pipe to assure proper fit to couplings prior to ordering materials. Coupling assembly shall be thoroughly coated with a cold applied type bitumen coating.

All nuts and bolts shall be type 304 stainless steel, or “Cor-Ten” steel (AWWA C111) coated with a fluorocarbon resin as manufactured by NSS Industries or approved equal.

### **CONSTRUCTION DETAILS**

Trench cutting for waterline specials installation and restoration of concrete base and asphalt concrete pavement, curbing and concrete sidewalks shall be performed in accordance with the requirements of Section 206 – Trench, Culvert and Structure Excavation. Backfilling shall be in accordance with the requirements listed under the Special Notes pertaining to Water Mains and Appurtenances contained in the Supplemental Instruction to Bidders.

### **METHOD OF MEASUREMENT**

Quantity paid for shall be the number of pounds of water pipe specials furnished and placed in accordance with the plans and specifications.



## **ITEM 663.201000ER – WATER MAIN PIPE SPECIALS**

### **BASIS OF PAYMENT**

The unit price bid per pound shall include the cost of furnishing and installing the specials, excavation of all materials, backfill and all labor, materials and equipment necessary to complete the work. All accessories (i.e. bolts, gaskets, retainer glands, etc.) required to complete the installation of the pipe special will **not** be paid for separately, but the cost of furnishing and installing the accessories shall be included in the unit price bid per pound.

Payment will be paid under:

| <b>Item No.</b> | <b>Item</b>              | <b>Pay Unit</b> |
|-----------------|--------------------------|-----------------|
| 663.201000ER    | Water Main Pipe Specials | Pound           |



**ITEM 663.301000ER – WATER VALVE BOXES**

**ITEM 663.301200ER - WATERLINE VALVE BOX - TOP SECTION - INSTALL/REPLACE**

**ITEM 663.301400ER - WATERLINE VALVE BOX - COMPLETE - INSTALL/REPLACE**

**ITEM 663.302000ER - WATERLINE VALVE BOX - TOP SECTION - ADJUSTMENT**

**ITEM 663.303000ER - WATERLINE VALVE BOX - EXTENSION - INSTALL/REPLACE**

**DESCRIPTION**

This work shall consist of the installation, replacement or adjustment of all or some components of waterline valve boxes, when the valve is not replaced, as shown on the plans or as ordered by the E.I.C.

Valve box materials shall comply with AWWA/ANSI specifications for water work service. Valve boxes are made of cast iron and are usually 7" in diameter. Replacement parts are to be furnished and installed by the Contractor. They are made up of five sections: the oval base that covers the valve, a threaded bottom section, an optional, screw able threaded extendable section for deep valves, a screw able top section and a cover with the word "WATER" cast into its top surface.

**MATERIALS**

The cast iron valve box shall comply with the latest AWWA/ANSI specifications. Supporting materials, such as concrete or asphalt, shall meet requirements of their respective sections. Valve boxes shall be cast iron, 7" diameter and of design for H-20 loading. They shall have threads cast into the body, no welds. They shall be manufactured by Bingham & Taylor or approved equal.

**CONSTRUCTION DETAILS**

Adjustment of existing valve boxes to a new elevation should be done in a careful manner to prevent damaging the box components and to keep debris from falling into the open box section. The box should be centered, plumbed and supported over the valve nut until the top section can be concreted in place with concrete materials described in Section 501 – Portland Cement Concrete – General, Class A.

A 10-mil poly wrap bond breaker shall be wrapped around the valve box at the elevation of the concrete road base to allow adjustment to final grade.

Excavation replacement of box components must be done with care to prevent damage or debris from entering the open box. The components must be centered and plumbed over the valve-operating nut with the base set on 2 concrete blocks at either side of the valve and then concreted in place at the proper elevation. Top of box shall be adjusted prior to asphalt top placement so that boxes are flush with final pavement elevation.

**METHOD OF MEASUREMENT**

The quantity to be paid for will be the number of components satisfactorily adjusted, replaced or installed.

**BASIS OF PAYMENT**

The unit price bid includes furnishing all labor, construction materials and equipment necessary to complete the specified work or the work ordered by the Engineer. All excavation, select granular backfill and adjustment to final grade will be included in the unit price bid for this item.



**ITEM 663.301000ER – WATER VALVE BOXES**

**ITEM 663.301200ER - WATERLINE VALVE BOX - TOP SECTION - INSTALL/REPLACE**

**ITEM 663.301400ER - WATERLINE VALVE BOX - COMPLETE - INSTALL/REPLACE**

**ITEM 663.302000ER - WATERLINE VALVE BOX - TOP SECTION - ADJUSTMENT**

**ITEM 663.303000ER - WATERLINE VALVE BOX - EXTENSION - INSTALL/REPLACE**

Payment will be made under:

| <b>Item No.</b> | <b>Item</b>                                         | <b>Pay Unit</b> |
|-----------------|-----------------------------------------------------|-----------------|
| 663.301000ER    | Waterline Valve Box - Cover - Install/Replace       | Each            |
| 663.301200ER    | Waterline Valve Box - Top Section - Install/Replace | Each            |
| 663.301400ER    | Waterline Valve Box - Complete - Install/Replace    | Each            |
| 663.302000ER    | Waterline Valve Box - Top Section - Adjustment      | Each            |
| 663.303000ER    | Waterline Valve Box - Extension - Install/Replace   | Each            |



**ITEM 663.321000ER – WATER SERVICE BOXES**

**ITEM 663.321200ER - WATER SERVICE BOX - TOP SECTION - INSTALL/REPLACE**

**ITEM 663.321400ER - WATER SERVICE BOX - COMPLETE - INSTALL/REPLACE**

**ITEM 663.322000ER - WATER SERVICE BOX - ADJUST**

**DESCRIPTION**

This work shall consist of the Contractor furnishing and installing water service box components either as new or replacement parts of the system.

**MATERIALS**

Water service boxes shall conform to AWWA specifications for screw type curb boxes and shall be cast iron cylinders three inches in diameter and coated inside and out with a tar base enamel. Components consist of base, extension (for deep services), top section and cover. Cover must attach to top section and have the word "WATER" cast in. Three inch curb boxes shall be as manufactured by Bingham & Taylor or approved equal.

**CONSTRUCTION DETAILS**

The Contractor shall carry out the work described such as:

- A. Fastening a new cover in place.
- B. Replacing an upper section and cover.
- C. Excavating and extending the top half to a new elevation and then backfilling around the box **carefully** to keep it properly aligned over the wrench nut of the curb stop.
- D. Replacement of the existing box with a new one.
- E. Resetting of existing box.

When the existing curb stop is being replaced, a new curb box and cover shall be installed. The existing box shall be removed and disposed of by the Contractor.

All boxes will be supported firmly over the curb stop in proper alignment to enable turning the stop on or off once the backfill is properly in place. The work site shall be restored to its original or planned condition. For ease in backfilling, the Contractor may use Duct Tape to cover opening at base.

The two cylindrical halves of the valve box shall be threaded so that they may be adjusted to the proper height. The box cover shall be bolted to the top half.

The Contractor is to furnish, install and adjust the necessary components of the box to complete the work as described in the Contract Documents. Before the Contractor starts work the existing box condition shall be recorded in the service survey.



**ITEM 663.321000ER – WATER SERVICE BOXES**

**ITEM 663.321200ER - WATER SERVICE BOX - TOP SECTION - INSTALL/REPLACE**

**ITEM 663.321400ER - WATER SERVICE BOX - COMPLETE - INSTALL/REPLACE**

**ITEM 663.322000ER - WATER SERVICE BOX - ADJUST**

The water service box shall be set plumb over the curb stops so that a wrench can be properly fitted onto the valve nut. The water box shall not bear on the water service pipe or curb stop. The cover of the box is to be flush with the finished surface and the surrounding area restored to its original state or better.

**METHOD OF MEASUREMENT**

The quantity to be paid will be the number of the units satisfactorily installed/replaced or adjusted in accordance with the plans and specifications.

**BASIS OF PAYMENT**

The unit price bid includes furnishing all labor, construction materials and equipment necessary to complete the specified work or the work ordered by the Engineer.

Payment will be made under:

| <b>Item No.</b> | <b>Item</b>                                        | <b>Pay Unit</b> |
|-----------------|----------------------------------------------------|-----------------|
| 663.321000ER    | Water Service Box - Cover & Bolt - Install/Replace | Each            |
| 663.321200ER    | Water Service Box - Top Section - Install/Replace  | Each            |
| 663.321400ER    | Water Service Box - Complete - Install/Replace     | Each            |
| 663.322000ER    | Water Service Box - Adjust                         | Each            |



**ITEM 664.01XX01ER – PVC Sewer Pipe**

**ITEM 664.01XX02ER – RCP Sewer Pipe**

**DESCRIPTION**

This work shall consist of furnishing and installing sewer pipe as shown on the plans and as directed by the Engineer. All specifications of the Buffalo Sewer Authority shall apply and the bidder shall inform himself of all sewer locations, depths, and all other information necessary for installation of any pipe. Sewer information is on file in Room 1023 City Hall of the Buffalo Sewer Authority (BSA).

**MATERIALS**

|             |                                                    |
|-------------|----------------------------------------------------|
| 4" to 8":   | For sewer laterals, (including plastic pipe & Y's) |
| 10" pipe:   | For standard street receivers                      |
| 12" pipe:   | For 2' x 2' special catch basins                   |
| 12" pipe:   | For standard side inlet catch basins               |
| 15" pipe:   | For standard catch basins (single length)          |
| 18" pipe:   | For standard catch basins (double length)          |
| 6" to 15":  | Plastic pipe & Y's with an SDR ratio of 35         |
| 18" to 24": | Plastic pipe & Y's with an SDR ratio of 35         |

All sewer pipe material shall conform to Section 664. All reinforced concrete pipe shall be Class IV Pipe conforming to requirements of ASTM-C76 or as otherwise noted on the drawing or in the specifications. Polyvinyl chloride (PVC) non-pressure sewer pipe shall conform to ASTM requirements in D-3034 or F679 and D-1784 with rubber-ring bell joints as in D-3212. At least one test pipe of each size for each three hundred (300) feet of length required may be selected by the Engineer for the purpose of physical tests.

All pipe shall be inspected upon delivery. Pipe that does not conform to the requirements of these specifications, and which are not suitable for use, will be rejected and must be immediately removed from the work site.

Any defective pipe shall be removed from the work site before laying of the pipe is commenced.

Dimensions – The pipes shall be at least two (2) feet in length. Shorter or cut lengths shall be used only where necessary to make closure. Branches, bends and other specials, where shown or required, shall be made to dimensions approved by the Engineer

Joints – Joints shall be made in accordance with the specifications for Bell and Spigot Pipe under Sewer Pipe Joints. All pipe shall be installed in accordance with manufacturers recommendations.

**CONSTRUCTION DETAILS**

The Contractor shall construct in an open-cut trench the pipe to the required lines, grades and dimensions, complete with all appurtenances, as shown on the contract drawings and as specified by the BSA.

The work shall include all excavation (except rock excavation): removal and disposal of abandoned sewers, drains, water pipes, house connections and any other obstructions and



**ITEM 664.01XX01ER – PVC Sewer Pipe**

**ITEM 664.01XX02ER – RCP Sewer Pipe**

conduits; sheeting, shoring, bracing, and timbering; Coring and connections to existing piping; furnishing, laying, and jointing all pipes; all forms, form work, concrete, concrete cradles, stone bedding, pre-cast concrete blocks and concrete or reinforced concrete manhole bases to top of concrete; furnishing and placing reinforcing steel; brick masonry and bulkheads, backfilling with selected fill (except when ordered by the BSA); tamping, disposal of surplus excavated material; pumping, removal and control of water: handling, bypassing, fluming, maintenance of and/or disposal of all sewage and storm water flows: protection of adjacent structures; protection and maintenance and removal and replacement, as directed of all police and fire alarm signal wires, street lighting lamp standards, street lighting conduits and cables, manholes and appurtenances, water pipes, drains and sewers with house connections and appurtenances encountered in the construction; filling unauthorized excavations; temporary and permanent restoration of street surfaces, restoration of sidewalks and curbs where disturbed, damaged, or destroyed; cleansing and all other appurtenant work and operations required to construct the sewer complete as described, shown on the drawings and as specified by the BSA.

The Contractor shall backfill the trench for Concrete pipe with #2 Run of Crusher stone from 1 foot below the bottom of the pipe to 1 foot above the top of pipe; for PVC pipe from 6 inches below the bottom of the pipe to 1 foot above the top of pipe; for all pipe backfill with select granular fill conforming to SECTION 304 for Type 2 SUBBASE COURSE and SECTION 203 for SELECT GRANULAR FILL from 1 foot above the top of pipe to the bottom of the proposed street subbase. The backfilling shall be carefully executed to make certain that no future settlement is possible and to permit construction of permanent pavement immediately upon its completion.

**METHOD OF MEASUREMENT**

The quantity to be paid for under this item will be the number of linear feet of sewer pipe installed.

**BASIS OF PAYMENT**

The unit price bid per linear foot for this work shall include but not be limited to excavation for pipe, furnishing and laying of pipe, concrete cradles, brick masonry and bulkheads, backfilling with select granular fill, tamping, disposal of surplus material, pumping, removal and control of water, and all other appurtenances and operations necessary to complete the work.

Payment will be made under:

| <b>Item No.</b>         | <b>Item</b>             | <b>Pay Unit</b> |
|-------------------------|-------------------------|-----------------|
| 664.01xx01ER            | PVC Sewer Pipe, xx inch | Lin. Ft.        |
| 664.01xx02ER            | RCP Sewer Pipe, xx inch | Lin. Ft.        |
| xx = diameter in inches |                         |                 |



**ITEM 664.091000ER – FRESH AIR INLET**

**ITEM 664.092000ER -FRESH AIR INLET– REPLACE STANDPIPE AND CAP**

**ITEM 664.093000ER - FRESH AIR INLET – REPLACE CAP ONLY**

**ITEM 664.094000ER - FRESH AIR INLET – ADJUSTMENT**

**ITEM 664.095000ER - FRESH AIR INLET – CAPPING**

**DESCRIPTION**

The work shall consist of supplying and installing the various components of a fresh air inlet to the proper grade as shown on the plans and as directed by the Engineer.

The following work will be covered under this item:

1. Fresh Air Inlet – Complete including cap, standpipe, single-hand-hole running trap, and lateral installation
2. Fresh Air Inlet – Installation of cap and standpipe
3. Fresh Air Inlet – Installation of cap only
4. Fresh Air Inlet – Adjustment of cap and standpipe
5. Capping Fresh Air Inlets

**MATERIALS**

The fresh air inlet, adjustable two-piece standpipe shall be made of cast iron and the cap of perforated cast iron. The single-hand-hole running trap and sewer lateral shall be of the same type of material used in the original construction unless otherwise specified by the Engineer. Capping of fresh air inlets shall be accomplished by filling a one-foot standpipe section with 1-3-6 concrete mix. Care must be taken so as not to disturb or plug the sewer lateral.

All materials and workmanship shall meet City of Buffalo Plumbing Code.

**CONSTRUCTION DETAILS**

Care shall be taken in removing existing parts of the fresh air inlet to ensure that no debris goes into the sewer lateral. The standpipe, trap and lateral shall be installed straight with no offsets, and adjusted to conform to the new grade. In adjustment of the inlet, the top half of the standpipe and cap shall be moved to coincide with the new grade.

**METHOD OF MEASUREMENT**

The quantity to be paid for will be the number of fresh air inlet items satisfactorily replaced or adjusted.

**BASIS OF PAYMENT**

The unit price bid shall include the cost of furnishing all labor, materials and equipment, including excavation and select granular fill, necessary to satisfactorily complete the work as specified and as directed by the Engineer.



**ITEM 664.091000ER – FRESH AIR INLET**  
**ITEM 664.092000ER -FRESH AIR INLET– REPLACE STANDPIPE AND CAP**  
**ITEM 664.093000ER - FRESH AIR INLET – REPLACE CAP ONLY**  
**ITEM 664.094000ER - FRESH AIR INLET – ADJUSTMENT**  
**ITEM 664.095000ER - FRESH AIR INLET – CAPPING**

Payment will be made under:

| <b>ITEM No.</b> | <b>ITEM</b>                                    | <b>PAY UNIT</b> |
|-----------------|------------------------------------------------|-----------------|
| 664.091000ER    | Fresh Air Inlet – Complete                     | Each            |
| 664.092000ER    | Fresh Air Inlet – Replace<br>Standpipe and Cap | Each            |
| 664.093000ER    | Fresh Air Inlet – Replace Cap Only             | Each            |
| 664.094000ER    | Fresh Air Inlet – Adjustment                   | Each            |
| 664.095000ER    | Fresh Air Inlet – Capping                      | Each            |



## **664.50XXXXER – MANHOLES AND STRUCTURES**

### **DESCRIPTION**

This work shall consist of the furnishing, constructing, installing, replacing, relocating and modifying or adjusting structures for sewers and drains as shown and specified in the contract documents and specified by the Engineer in accordance with Buffalo Sewer Authority (BSA) requirements.

This work shall include any special work required for the lower portion of the manholes including side outlets or bottom inverts: transportation of manhole frames and covers to the site; the installation of these frames and covers, all brick work or ring work, excavation (except rock excavation), by-pass pumping, de-watering, sheeting and shoring, backfilling, tamping, disposal of surplus excavated material; reinforcing steel, cast iron manhole steps and everything necessary to complete the work.

### **MATERIALS**

Manhole reconstruction, rehabilitation or adjustment will be carried out using materials similar to the original construction materials. The manhole frames may be purchased from the BSA. The old frames and covers are to be returned to the BSA. Any Contractor causing damage to manhole materials during construction will correct it at their own expense.

Reconstruction of a manhole may include the removal of sections of the existing manhole and rebuilding of same as directed by the Engineer.

Manhole frame adjustments to a new elevation shall be carried out using the same materials in the original manhole, unless otherwise specified by the Engineer.

New receivers may be purchased from the BSA for use in all contracts. Receivers for relocate, reset and replace items shall be supplied by the BSA on a trade-in basis. Grating riser steel and steel curb boxes shall conform to ASTM designation A-36. If the receiver is not purchased from the BSA, contractor must supply a shop drawing to the Engineer for approval. All old parts removed will remain the property of the BSA. These parts will be set aside for pickup by the BSA.

Catch basin materials shall conform to the requirements shown on the details. Concrete shall be Class A-Special (3,000 #psi, 6 bag/c.y., 5.5 gal./sack, with six (6) percent air entrainment).

### **CONSTRUCTION DETAILS**

All structure types shall be constructed, modified or adjusted as detailed and shown in the contract documents.

Where old twelve (12) inch type manhole frames are being removed and replaced, new six (6) inch manhole frames supplied by the B.S.A. shall be installed. New brick courses or one-piece concrete rings will be used to adjust the new frame to proper grade.



## **664.50XXXXER – MANHOLES AND STRUCTURES**

Manhole Capping involves the removal of the existing frame and cover and the return to the BSA. The old manhole chimney is to be backfilled with select granular fill to within eight (8) inches of the top. The remaining eight (8) inches shall be filled with Class A concrete in accordance with Section 501.

Work associated with receivers shall include securing the necessary materials (receiver, stone, concrete, pipe) to place in the excavation, stabilization of the receiver and piping, and restoration of the surface. The grate adjustment shall be made by installing a riser assembly of angled iron which is spot welded in place. When replacing curb boxes, the existing curb box shall be exchanged for another one at the BSA supply department. If the curb box is missing, another will be supplied by the BSA at no cost. Any damage to receiver components due to carelessness will be charged to the contractor.

The work associated with catch basins includes all excavation (except rock excavation), form work, concrete, brick work and reinforcing steel, all shoring and bracing, removing existing receivers, protection of adjacent structures and facilities, restoration of street surfaces and adjacent pavements, cleaning and all other appurtenant work necessary to construct the standard catch basin complete as shown on the drawings and as directed by the Engineer

Curing and placing of concrete in cold weather shall conform to the requirements of Section 501. Concrete shall be cured by applying a mixture of fifty (50) percent boiled linseed oil and fifty (50) percent mineral spirits.

Existing receivers which are removed shall be stored on the site for pick up by, and remain the property of the BSA.

Any adjustments to existing catch basins will be made in accordance with BSA requirements with the same type of materials used in the original construction unless otherwise indicated in the contract documents or specified by the Engineer.

### **METHOD OF MEASUREMENT**

Standard manholes, construction or reconstruction, will be measured per foot from the top of the concrete base to the top of the frame and cover as set. Standard manholes built on existing sewers will be measured from a point twelve (12) inches below the invert to the top of the frame and cover as set.

Modifications and adjustments shall be paid per each location.

The quantity of receivers shall be paid for the number of receivers installed, relocated, reset, removed, replaced or raised to grade.

The quantity of catch basins to be paid for shall be the number of catch basins installed or adjusted.



## **664.50XXXXER – MANHOLES AND STRUCTURES**

### **BASIS OF PAYMENT**

The unit price bid for the various items shall include the cost of furnishing all labor, materials and equipment necessary to complete the work as specified and as directed by the Engineer.

This price includes all excavation, removal of the existing structures, frames and grates, purchase of new structures, frames and grates from the BSA or furnished in accordance with BSA requirements, formwork, installation, grating adjustment, concrete embedment, backfill and compaction, connections, concrete bases, disposal of the surplus excavation material and the replacement of topsoil and/or sidewalk, where not indicated for payment elsewhere.

Payment will be made under:

| <b>Item No.</b> | <b>Description</b>                                       | <b>Pay Unit</b> |
|-----------------|----------------------------------------------------------|-----------------|
| 664.503100ER    | Receiver – New                                           | Each            |
| 664.503120ER    | Receiver – Relocate                                      | Each            |
| 664.503140ER    | Receiver – Reset                                         | Each            |
| 664.503160ER    | Receiver – Replace                                       | Each            |
| 664.503200ER    | Receiver – 2” Grating Riser                              | Each            |
| 664.503300ER    | Remove and Plug Lateral                                  | Each            |
| 664.503400ER    | Receiver Curb Box – Replace                              | Each            |
| 664.503500ER    | Receiver Curb Box – Adjustment                           | Each            |
| 664.503600ER    | Receiver – Riser Section                                 | Each            |
| 664.505100ER    | Standard Single Length Catch Basin<br>(Type 1, 2, and 3) | Each            |
| 664.505200ER    | Standard Double Length Catch Basin<br>(Type 1, 2, and 3) | Each            |
| 664.505220ER    | 2’ x 2’ Catch Basin                                      | Each            |
| 664.505240ER    | 2’ x 4’ Catch Basin                                      | Each            |
| 664.505500ER    | Catch Basin Adjustment                                   | Each            |



**664.50XXXXER – MANHOLES AND STRUCTURES**

|              |                                          |          |
|--------------|------------------------------------------|----------|
| 664.506140ER | 4' MH Construction                       | Lin. Ft. |
| 664.506300ER | Manhole Rehabilitation                   | Lin. Ft. |
| 664.506400ER | Manhole Adjustment                       | Each     |
| 664.506450ER | Manhole -<br>Resurfacing Ring Adjustment | Each     |
| 664.506500ER | Standard Manhole - Capping               | Each     |
| 664.506600ER | Brick Manhole - Adjustment               | Each     |



## **ITEM 670.WWWWNNER - LED ROADWAY LUMINAIRE**

### **DESCRIPTION**

This work shall consist of furnishing and installing LED roadway luminaires in accordance with the contract documents and as directed by the Engineer.

All provisions of Section 670 shall apply to this specification except as modified below:

### **MATERIALS**

All electrical equipment shall conform to the NEMA Standards and be UL approved. All material and workmanship shall conform to the latest requirements of the National Electric Code; the rules of the New York State Public Service Commission; ANSI and ASTM Standards; local power company rules and any local ordinances which may apply. Differences in standards or code requirements shall be resolved as determined by the Engineer.

The luminaire shall be of Lighting Emitting Diode (LED) type multi bars designed for pole mounting. The luminaire housing shall be cast aluminum. The luminaire shall be equipped with a built-in power driver. The power driver shall be 120-277 Volt, 50/60 Hz, Class 1 or Class 2 LED driver. The luminaire shall be a UL listed and IP 66 classified enclosure and pass a 3G vibration test.

Materials will be subject to inspection at any time during the contract. Failure of the Engineer to note faulty material or workmanship during construction will not relieve the Contractor of his responsibility for removing or replacing such materials or redoing work which may fail to pass any of the electrical inspector's inspection of this work.

### **CONSTRUCTION DETAILS**

Luminaires of the type and wattage specified, complete with all components shall be installed as shown in the contract documents. All necessary field adjustments required to achieve the specified light distribution shall be performed as directed by the Engineer.

Luminaires shall be installed on light standard mast arms with the vertical axis perpendicular to the roadway and the longitudinal axis parallel to the roadway centerline. The luminaires shall be installed, though not necessarily powered, immediately after the mast arms are connected to the shaft. Otherwise, vibration dampeners shall be used until the luminaires are installed. Photocontrol receptacle shall be provided where noted on plans.

### **METHOD OF MEASUREMENT**

This work will be measured as the number of LED roadway luminaires satisfactorily furnished, installed and energized/lit.

### **BASIS OF PAYMENT**

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.



**ITEM 670.WWWWNNER - LED ROADWAY LUMINAIRE**

WWWW — denotes wattage of luminaire

NN – denotes serialization

ER – denotes County



## **ITEM 670.10XX0005 – LIGHT STANDARD, SPECIAL**

### **DESCRIPTION:**

Under this item the Contractor shall furnish and install light standard assemblies in accordance with the plans, specifications and/or as directed by the Engineer.

Where not specifically covered in the Contract Documents, the Contractor shall follow the manufacturer's written recommendations.

### **MATERIALS:**

Light standard assemblies shall meet the material requirements specified in the Contract Documents.

In addition, all electrical equipment shall conform to the NEMA Standards and be UL approved. All material and workmanship shall conform to the latest requirements of the National Electric Code; the rules of the New York State Public Service Commission; the standards of the ASTM; the ASA; local power company rules and any local ordinances which may apply. Differences in standards or code requirements shall be resolved as determined by the Engineer.

Materials will be subject to inspection at any time during the contract. Failure of the Engineer to note faulty material or workmanship during construction will not relieve the Contractor of his responsibility for removing or replacing such materials or redoing work which may fail to pass any of the electrical inspector's inspection of this work.

Shafts and luminaire arms shall be tie-wrapped with a heavy water resistant paper, for protection during shipping and installation unless indicated otherwise on the Contract Documents.

### **CONSTRUCTION DETAILS:**

The requirements of Subsection 670-3, Construction Details, shall apply with the following modifications.

Delete Subsection 670-3.06 in its entirety and replace with the following:

670-3.06 Light Standards. Each light standard shall be set on a foundation or anchorage, employing approved shims when necessary, either with or without a transformer base as shown on the plans or in the proposal. The transformer base, or the anchor base when transformer base is not used, shall be securely bolted to the anchorage by the anchor bolts previously set.

Luminaire arms shall be mounted on the shaft so that the proper luminaire height is obtained. The luminaire mounting height shall be measured from the center of the light source to the pavement. The arms shall be in a plane perpendicular to the roadway centerline unless indicated otherwise.

The protective wrapping shall not be removed from any of the shafts or arms until the Engineer instructs the Contractor to do so. The Contractor shall be held responsible for any damage to the



## **ITEM 670.10XX0005 – LIGHT STANDARD, SPECIAL**

light standards during loading, shipping, unboarding and storing and he shall repair, to the satisfaction of the Engineer, or replace any component so damaged.

### **METHOD OF MEASUREMENT:**

Light standards will be measured as each standard of the type specified, complete, in place, in accordance with the plans, specifications or as directed by the Engineer.

### **BASIS OF PAYMENT:**

The provisions of Subsection 670-5.01, General, shall apply. The unit price bid for each light standard shall include the cost of the light standard, luminaire arms, anchor bolts set in the foundation, and all labor and other materials necessary to complete the work.

Payment shall be made under:

Item 670.10XX0005, where XX shall represent the type of special light standard serialized in the contract documents.



## **ITEM 670.91100010 - WOOD POLE**

### **DESCRIPTION**

Under this item the Contractor shall furnish and install Wood Poles for street lighting bracket arm mounting, service point connection and support of new overhead conductors, as shown on the plans or as directed by the Engineer.

### **MATERIALS**

Wood pole shall be Southern Pine or Douglas Fir and meet the requirements of ANSI No. O 5.1 for Class 4 Utility type poles. Length shall be as shown on the plans.

Poles shall be given a preservative treatment in accordance with Subsection 708-31, Wood Preservative - Water Borne or Subsection 708-32, Wood Preservative - Oil Borne.

### **CONSTRUCTION DETAILS**

The poles shall be erected plumb in an augered hole to the depth shown on the plans. The area around the pole shall be backfilled with suitable excavated material and thoroughly compacted to the satisfaction of the Engineer.

### **METHOD OF MEASUREMENT**

This work will be measured as the number of Wood Poles furnished and installed in accordance with the plans, specifications and direction of the Engineer.

### **BASIS OF PAYMENT**

The unit price bid shall include the cost of furnishing all labor, materials and equipment necessary to complete the work, including excavation, pole installation and backfill.

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**ITEM 680.58801008 WIRELESS VEHICLE DETECTION SYSTEM REPEATER-(LONG LIFE)**  
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**ITEM 680.58803008 WIRELESS VEHICLE DETECTION SYSTEM INTERSECTION SENSOR**  
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**(APCCM-E) WITH ETHERNET COMMUNICATIONS**

## **DESCRIPTION**

Under these items the contractor shall furnish and install a wireless, battery-powered magnetometer vehicle detection system as shown in the contract documents or where directed by the engineer.

The wireless, battery-powered magnetometer vehicle detection system shall consist of one or more of the following:

- Battery-powered sensors installed in-pavement in each traffic lane (paid under its respective item).
- Access Point Contact Closure (APCC) Card to interface between a standard 170/2070 controller using contact closure signals.
- Access Point Contact Closure (APCCM-E) Card to interface to a central control system using Ethernet and TCP/IP networking.
- Serial Port Protocol Digital Radio (SPP) mounted on the side of the roadway, serving as the communications hub for the installation. Multiple SPPs may be employed per installation.
- Optional wireless repeaters mounted on the side of the roadway, serving to extend the radio range of an APCC.
- Contact Closure Extension cards to support the interface between an APCC and a standard 170/2070 controller using contact closure signals (paid under its respective item)
- Isolation Module for each SPP
- Software to control and configure the sensors, APCCs and repeaters
- Software to store and retrieve detection data

Communications between the sensors and the SPP or repeater and between the repeater and SPP shall be via radio. For traffic signal applications, detection data shall be relayed from each SPP to a local 170/2070 controller for real-time vehicle presence detection using contact closure signals. If an APCCM-E is specified in the contract documents, data shall be relayed from each APCCM-E to a central software system or central server over standard IP (Internet Protocol) networks. NYSDOT shall provide the contractor with network configuration information necessary for the configuration of each APCCM-E.

## **MATERIALS**

All sensor components shall be contained within a single housing. The sensor housing shall conform to NEMA Type 6P and IEC IP68 standards. All SPP components shall be contained within a single housing. The SPP housing shall conform to NEMA Type 4X and IEC IP67 standards. All repeater components shall be contained within a single housing. The repeater housing shall conform to NEMA Type 4X and IEC IP67 standards.

The sensor components shall be fully encapsulated within the housing to prevent moisture from degrading the



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components. The sensor housing shall be capable of being installed in a 4" diameter hole approximately 2 1/4" deep. An SPP shall be no larger than 12" H x 8" W x 4"D. A repeater shall be no larger than 5"H x 4"W x 4"D. An SPP and a repeater shall weigh no more than 4 pounds (1.8 kg) each. An SPP shall support at least 48 sensors. A repeater shall support at least 10 sensors.

The sensor, SPP/APCC, ISO and the repeater shall operate at temperatures from -37 F to +176 F. A sensor shall be battery-powered with an average lifetime of ten (10) years when the sensor is configured for and operating under normal traffic conditions. The long life repeater shall be battery- powered, have a life expectancy a minimum of 7 years and the battery shall be field replaceable. An APCC shall be factory-configurable to support at least two (2) different power options:

- Power shall be supplied via an isolated nominal 48 VDC (36-58 VDC) input, consuming a maximum of 3W and providing 1500 V isolation and 5 kV surge protection
- Power shall be supplied via a non-isolated nominal 12 VDC (10-15 VDC) input, consuming a maximum of 2W

Each sensor shall detect a vehicle by magnetometer-type detection by measuring changes in the earth's magnetic field near the sensor as caused by a stopped or passing vehicle. The sensor shall sample the earth's magnetic field at a rate of 128 Hz and shall communicate time-stamped ON and OFF vehicle detection events. As an option, the sensor shall provide a mode where the complete X-Y-Z magnetic signatures of detected vehicles are transmitted as data. In the event of a detector lock, each sensor shall automatically recalibrate. Each sensor shall communicate by radio to a nearby SPP/APCC or repeater. Each sensor shall transmit its detection data within 150 ms of a detected event. Each sensor shall automatically re-transmit a detected event if no acknowledgement is received from the access point. Each sensor may stop retransmission after 8 attempts. After losing radio contact because of stopped vehicles over or near the sensor, each sensor shall be capable of re- establishing the radio link with its supporting access point or receiver in less than 2 seconds. Each sensor shall transmit a unique identifying code and shall respond within 100 seconds when the access point is powered on. When no APCC or repeater is present or powered on, the sensors shall not be required to detect vehicles.

The radio links between each sensor and SPP/APCC or repeater and between each repeater and SPP/APCC shall conform to the following requirements: The physical layer of the radio links between each sensor and SPP/APCC or repeater and between each repeater and SPP/APCC shall conform to published standards. The center frequencies, bandwidths, and transmit power levels of the radio links shall allow operation in an

unlicensed frequency band. Frequency channels shall be employed by the sensors, SPP/APCC, and repeaters to avoid interference with other devices operating in the unlicensed band. The frequency channels shall be user-configurable and at least 16 frequency channels shall be supported. The link budget (transmit power plus transmit antenna gain plus receive antenna gain minus receive sensitivity, where receive sensitivity shall assume a 1% packet error rate) for all radio links shall be 93 dB or greater.



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Each sensor in an installation shall be capable of being individually configured with its own sensitivity level. A single sensor shall be capable of being configured with a sensitivity level that approximates the detection zone of a standard 6' x 6' inductive loop. Each sensor shall be capable of being configured with relatively higher or lower sensitivity levels as may be required to detect bicycles or motorcycles. Up to two sensors properly configured shall be capable of detecting motorcycles in a standard traffic lane and bicycles in a designated bicycle lane.

An SPP/APCC shall support the relay of sensor detection data through several interfaces as required by the application. Detection data shall be communicated to a standard roadside 170/2070 controller via APCC card capable of being installed in standard contact closure input shelves. As an option, detection data shall be communicated over TCP/IP via an integrated 10 Base-T and 100 Base-T Ethernet interface. As an option, detection data shall be communicated as IP data over GSM-based cellular data services via an integrated GPRS cellular modem. As an option, detection data shall be communicated as IP data over CDMA-based cellular data services via an integrated 1xRTT and EVDO/LTE cellular modem. The APCC shall be capable of simultaneously communicating detection data via the contact closure interface, optional Ethernet interface, and optional cellular data modem interface.

Each sensor, APCC, and repeater shall be capable of accepting software and firmware upgrades. The wireless battery-powered magnetometer vehicle detection system shall provide software operating on conventional notebook/portable PCs to support configuration of a sensor, APCC, repeater and store & retrieve detection data.

Each Access Point Contact Closure Interface APCC card shall provide detector data as contact closure signals to the 170/2070 controller. An APCC card shall directly plug in to standard 170/2070 input files or NEMA detector racks. Additional Extension Contact Closure cards shall provide up to 256 channels of detection data from a single APCC's supported sensors, where each channel comprises an optically isolated contact closure relay and, if configured for TS2 operation, an additional contact closure relay to indicate the channel status. Each Extension Contact Closure card shall be configurable by providing contact closure signals in either presence or pulse mode with up to 31 seconds of delay timing and 7.5 seconds of extension (carryover) timing. The Extension Contact Closure card front panel shall provide status LEDs to monitor detection channel status, line quality and fault monitor. The Extension Contact Closure card front panel shall provide switches to select and configure presence or pulse mode, delay timing and extension timing. An Extension Contact Closure card shall be powered by the 170/2070 controller backplane via an 11-26 VDC input. Contact closure cards shall be powered from input file assembly rack or detector rack, not from controller back panel. An Extension Contact Closure card shall be surge protected to GR-1089 standards. An Extension Contact Closure card shall operate at Temperatures from -37 F to +176 F.

An Extension Contact Closure card shall operate in humidity up to 95% (non- condensing).

The APCCME shall have all the features and functions of the APCC in addition to the following when polled by a Central management Software Application.



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If detection data is relayed to a central software system or central server, each installation of the Wireless Battery-Powered Magnetometer Vehicle Detection System shall provide the following measurements, as required by the application:

Vehicle volume (count) per lane over a specified time interval

Lane occupancy (percent) over a specified time interval

Vehicle speed (mph or kph) when more than one sensor is deployed in a lane

Per-vehicle speed

Median speed over a specified time interval

Mean speed over a specified time interval

Distribution of speeds over a specified time interval, with a resolution of 1 mph / 2 kph

Vehicle classification when more than one sensor is deployed in a lane

Per-vehicle length

Report distribution of vehicle lengths over a specified time interval, with a resolution of 1 foot / 0.5 meters

The time interval for measurements shall be selectable, including at least the following intervals:

30 seconds

1 minute

5 minutes

6 minutes

15 minutes

1 hour

24 hours

Silicone sealant used to secure and cover the sensor in the cored hole in the pavement shall conform to the provisions of §705-05, Silicone Joint Sealants for Pavements.

## **CONSTRUCTION DETAILS**

Each sensor shall be installed in the roadway at the locations shown on the contract drawings or as ordered by the engineer. The roadway shall be core drilled to provide a 4" diameter hole, 2.25" deep. A small layer of silicone sealant shall be applied to cover the bottom of the hole. The sensor shall then be placed on top of this layer in the correct orientation as clearly marked on the sensor. The sensor shall be fully encapsulated with the



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silicone sealant to the lip of the cored hole.

The maximum distance between a sensor installed in the roadway and an SPP or a repeater with a clear line-of-sight between devices shall be at least 150' for an access point or repeater installed 24' above the roadway, at least 100' for an APCC or repeater installed 18' above the roadway and at least 75' for an APCC or repeater installed 12' above the roadway. The maximum distance between an APCC and a repeater shall be at least 750' when both units are installed 18' above the roadway and with a clear line-of-sight between devices.

The SPP Digital Radio can be wired up to 2000' from the APCC. Up to 2 SPP's can be wired to an APCC. Each SPP requires an ISO for proper operation. The ethernet cable shall be provided in the appropriate length as indicated on the plans. There will be no separate payment for this cable.

Each installation of the wireless battery-powered magnetometer vehicle detection system shall consist of one or more sensors installed in each traffic lane where presence detection is required, avoiding sources of magnetic noise such as underground power cables, overhead high tension power cables, light rail or subway tracks, and power generation stations and sub-stations. The sensors shall be located as specified by the contract drawings, with each sensor's supporting access point or receiver installed no farther than the maximum range indicated above.

The contractor shall not damage the sensors and other equipment during construction. The sensors shall be removed and installed during various phases and sub-phases in accordance with the contract drawings. Core holes left in the pavement upon removal of sensors shall be filled with asphalt cold patch by the contractor at no additional cost to the State. The contractor shall ensure that the wireless battery-powered magnetometer vehicle detection system operates according to specification during all phases and sub-phases of construction. All equipment shall become the property of NYSDOT upon project completion.



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### **METHOD OF MEASUREMENT**

The wireless, battery-powered magnetometer vehicle detection system will be measured as the number of units satisfactorily installed in accordance with the contract documents.

At a minimum, the wireless, battery-powered magnetometer vehicle detection system requires:

- (1) Access Point Contact Closure Interface Card (APCC); paid under its respective item  
-- OR --
- (1) Access Point Contact Closure Interface Card with Ethernet (APCCM-E); paid under its respective item
- (1) Serial Port Protocol Digital Radio (SPP) and Ethernet cable as required; paid under its respective item
- (1) Isolation Module (ISO); paid under its respective item

Intersection sensors, Freeway sensors, Long Life Repeaters and Extension Contact Closure Cards will be specified on the plans and will be paid under their respective items.

### **BASIS OF PAYMENT**

The unit price bid for furnishing and installing each item shall include the cost of furnishing all labor, materials, equipment, tools and all necessary tests to satisfactorily complete the work in accordance with the contract documents.



**ITEM 680.50010008 - NON-RIPPABLE MATERIAL EXCAVATION FOR SIGNAL POLE FOUNDATION, WITHOUT BLASTING**

**DESCRIPTION:**

This work shall consist of removing non-rippable material for signal pole foundations as shown in the contract documents or where directed by the Engineer, using a method, without the use of blasting, that is acceptable to the Engineer. This item shall be used for the extra work incurred in the foundation excavation involving removal of non-rippable material.

**MATERIALS:**

The term “non-rippable material” in this item shall be defined as that material which cannot be field ripped within the foundation excavation dimensions given on the Standard Sheets, contract documents, or to the satisfaction of the Engineer without prior cutting, hammering, or non-blasted fracturing.

Mechanical or pneumatic breakers will be allowed. If a chemical expanding agent is selected, it shall be used in accordance with the manufacturer’s requirements, and in a manner acceptable to the Engineer.

**CONSTRUCTION DETAILS:**

Care shall be taken not to damage property during the non-ripple material excavation operation. The contractor shall be responsible for the repairs of all damage resulting from this excavation work, to the satisfaction of the Engineer and at no cost to the State.

The contractor may submit for approval, shop drawings for an alternative design to the non-ripple material excavation work. The alternate design must not incur any additional cost above the total based on the bid price of this item. Such a design shall be performed and certified by a Professional Engineer currently licensed to practice in the State of New York.

All work shall be performed and completed to the satisfaction of the Engineer.

**METHOD OF MEASUREMENT:**

This work will be measured as the number of cubic yards of non-ripple material excavated for signal pole foundations, computed from the payment lines shown in the contract documents and/or as directed by the Engineer.

**BASIS OF PAYMENT:**

The unit price bid per cubic yard shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work.



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**ITEM 680.79XXXX05 - REMOVE TRAFFIC SIGNAL INSTALLATION**  
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**ITEM 680.50500005 - REMOVE POLE FOUNDATION**  
**ITEM 680.51XXXX05 - ALTER ELEVATION OF PULL BOXES**  
**ITEM 680.90000005 - RESET POLE**

**DESCRIPTION:**

This work shall consist of modifying, removing, storing and/or disposing, reinstalling, refurbishing or replacing of elements of a traffic signal system in accordance with the contract documents and/or directions of the Engineer.

Where not specifically covered in the contract documents the work shall be in accordance with the latest national, local and industrial standards or codes which are usually applied to such work and the requirements of the maintaining agency.

**MATERIALS:**

When an existing system is to be altered, modified or relocated, the existing material shall be reused in the revised system, removed, salvaged or disposed of as shown in the contract documents, as specified in the special provisions or as directed by the Engineer. When new materials must be provided under the modification work they shall conform to the requirements of Standard Specifications Section 680-2, Materials whenever applicable. Materials not specified in Section 680-2 shall match the existing system as nearly as possible and meet the requirements of the owning agency.

**CONSTRUCTION DETAILS:**

The applicable provisions of Standard Specifications Section 680-3, Construction Details shall be complied with, in addition to the following:

**Removing and Salvaging**

Care shall be exercised in removing signal and electrical equipment and any appurtenances attached to them so that elements to remain or be salvaged will not be damaged.

The Contractor will be required to replace or repair, to the satisfaction of the Engineer, any equipment damaged, destroyed or lost by the Contractor's operations or negligence as determined by the Engineer.

Existing equipment or material intended to be reused and found to be missing or unsatisfactory, through no fault of the Contractor, shall be properly replaced by the Contractor, using equipment or material supplied by the owning agency or under other items.

All equipment or materials specified for removal but not intended to be incorporated in the work shall be removed and disposed of as specified in the contract documents.

The owners of appurtenances attached to signal equipment (e.g. street lighting) must be given adequate notification to allow sufficient time for them to remove or maintain their work

**Alter Elevation of Pole Foundation or Pull Boxes**

When adjustments to existing pole foundations and pull boxes are specified, the poles or frames and covers shall be removed and the foundation (anchor bolts, conduits, ground wires, conductor cables, etc.) or walls



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reconstructed as required in the contract documents.

**Remove Pole Foundations**

Support poles are to be removed in their entirety to permit reuse by the owner. Anchor base poles shall be removed from the foundation and the foundation shall be cut one foot below final grade surface or subgrade, whichever is lower, unless the foundation interferes with the construction and will have to be removed in order to complete the work. Embedded poles shall be removed in their entirety (including all foundation materials from around the pole) unless it is determined by the Engineer that such removal will cause damage to existing underground facilities. If the Engineer orders the Contractor in writing to leave an embedded pole foundation in place, the pole and foundation shall be cut one foot below finished grade or subgrade, whichever is lower.

**Holes**

All holes resulting from this work shall be backfilled with suitable material and if so specified the disturbed areas restored to match the adjacent surface as approved by the Engineer.

**METHOD OF MEASUREMENT:**

**Each**

The following items will be measured for payment as the number of each operation completed in accordance with the contract documents to the satisfaction of the Engineer.

680.50XXXX05 - Alter Elevation of Pole Foundation  
680.51XXXX05 - Alter Elevation of Pull Boxes  
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**Foot**

The following item will be measured for payment as the number of feet of pole foundation removed measured (to the nearest one half foot) from the top of anchor bolts, for anchor base poles, and the top of concrete, for embedded poles, to the depth of removal.

680.50500005 - Remove Pole Foundation.

**Each Location**

The quantity for each location includes all the work described in the contract documents for each serialized pay item. The following items will be measured for payment as the number of locations completed in accordance with the contract documents to the satisfaction of the Engineer.

680.77XXXX05 - Modify Traffic Signal Installation  
680.79XXXX05 - Remove Traffic Signal Installation

**BASIS OF PAYMENT:**

The requirements of Standard Specifications Section 680-5.01, General shall apply with the following



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additional provisions:

**Modify Traffic Signal Installation**

The unit bid per location shall include all costs for grounding and the repairing or replacing of equipment damaged, destroyed or lost by the Contractor's operations or negligence. Installation of replacement equipment and materials supplied by the owning agency is also included unless provided for under other items.

Progress payments for each location will be made in the following manner:

Sixty-five percent of the bid price of each location modified will be paid after it is completed and ready for testing.

Twenty-five percent of the bid price will be paid after satisfactory completion of all tests required by these specifications, including the function test for ten days of continuous satisfactory operation of the traffic signal system at each location.

The remaining ten percent will be paid when all the traffic signals in the contract are functioning to the satisfaction of the Engineer.

**Remove Traffic Signal Installation**

The unit price bid for each location removed shall include the cost for removing, storing and/or disposing as indicated in the contract documents.

Progress payments for each location removed will be made in the following manner:

Sixty-five percent will be paid when the elements to be removed are taken down.

Twenty percent will be paid when the elements are disposed of off the job site or salvaged by the owning agency.

The remaining fifteen percent will be paid when the location is restored to the satisfaction of the Engineer.

**Alter Elevation of Pull Boxes and Pole Foundations**

The unit price bid for each alteration operation as specified in the contract documents shall include all costs for excavation, backfill, removing and/or cutting off concrete, reinforcing or anchor bolts, furnishing and installing concrete, bonding compounds, reinforcing bars, anchor bolt extensions and necessary drilling and grouting, removing, storing or resetting frames and grates and restoration of the site as specified. Removing and resetting poles made necessary by this work shall be paid for under their respective items.

**Remove Pole Foundations**

The unit price bid per foot of pole foundation removed shall include all costs for excavation and disposal, backfill, removing and/or cutting off reinforcing or anchor bolts and restoring the site if specified in the



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contract documents.

**Reset Pole**

The unit price bid for each pole reset shall include the cost for refurbishing, handling, erecting (including signs, push buttons, street lighting and other appurtenances if attached), furnishing anchor bolts (installed under another item) if required, field galvanizing, drag wires, conductor cable connection, grounding and incidental connecting hardware as specified. Removing the pole will be paid for under the item for Remove Traffic Signal Installation.

Payment will be made under:

| <b><u>ITEM NO.</u></b> | <b><u>ITEM DESCRIPTION</u></b>             | <b><u>PAY UNIT</u></b> |
|------------------------|--------------------------------------------|------------------------|
| <b>680.77XXXX05</b>    | <b>Modify Traffic Signal Installation</b>  | <b>Each</b>            |
|                        | <b>Location _____</b>                      | <b>Location</b>        |
| <b>680.79XXXX05</b>    | <b>Remove Traffic Signal Installation</b>  | <b>Each</b>            |
|                        | <b>Location _____</b>                      | <b>Location</b>        |
| <b>680.50000105</b>    | <b>Alter Elevation of Pole Foundations</b> |                        |
|                        | <b>Type 1</b>                              | <b>Each</b>            |
| <b>680.50000205</b>    | <b>Alter Elevation of Pole Foundations</b> |                        |
|                        | <b>Type 2</b>                              | <b>Each</b>            |
| <b>680.50000305</b>    | <b>Alter Elevation of Pole Foundations</b> |                        |
|                        | <b>Type 3</b>                              | <b>Each</b>            |
| <b>680.50500005</b>    | <b>Remove Pole Foundations</b>             | <b>Foot</b>            |
| <b>680.51000105</b>    | <b>Alter Elevation of Pull Boxes</b>       |                        |
|                        | <b>Type 1</b>                              | <b>Each</b>            |
| <b>680.51000205</b>    | <b>Alter Elevation of Pull Boxes</b>       |                        |
|                        | <b>Type 2</b>                              | <b>Each</b>            |
| <b>680.51000305</b>    | <b>Alter Elevation of Pull Boxes</b>       |                        |
|                        | <b>Type 3</b>                              | <b>Each</b>            |
| <b>680.90000005</b>    | <b>Reset Pole</b>                          | <b>Each</b>            |



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**DESCRIPTION:**

This work shall consist of modifying, removing, storing and/or disposing, reinstalling, refurbishing or replacing of elements of a traffic signal system in accordance with the contract documents and/or directions of the Engineer.

Where not specifically covered in the contract documents the work shall be in accordance with the latest national, local and industrial standards or codes which are usually applied to such work and the requirements of the maintaining agency.

**MATERIALS:**

When an existing system is to be altered, modified or relocated, the existing material shall be reused in the revised system, removed, salvaged or disposed of as shown in the contract documents, as specified in the special provisions or as directed by the Engineer. When new materials must be provided under the modification work they shall conform to the requirements of Standard Specifications Section 680-2, Materials whenever applicable. Materials not specified in Section 680-2 shall match the existing system as nearly as possible and meet the requirements of the owning agency.

**CONSTRUCTION DETAILS:**

The applicable provisions of Standard Specifications Section 680-3, Construction Details shall be complied with, in addition to the following:

**Removing and Salvaging**

Care shall be exercised in removing signal and electrical equipment and any appurtenances attached to them so that elements to remain or be salvaged will not be damaged.

The Contractor will be required to replace or repair, to the satisfaction of the Engineer, any equipment damaged, destroyed or lost by the Contractor's operations or negligence as determined by the Engineer.

Existing equipment or material intended to be reused and found to be missing or unsatisfactory, through no fault of the Contractor, shall be properly replaced by the Contractor, using equipment or material supplied by the owning agency or under other items.

All equipment or materials specified for removal but not intended to be incorporated in the work shall be removed and disposed of as specified in the contract documents.

The owners of appurtenances attached to signal equipment (e.g. street lighting) must be given adequate notification to allow sufficient time for them to remove or maintain their work

**Alter Elevation of Pole Foundation or Pull Boxes**

When adjustments to existing pole foundations and pull boxes are specified, the poles or frames and covers shall be removed and the foundation (anchor bolts, conduits, ground wires, conductor cables, etc.) or walls



**ITEM 680.77XXXX05 - MODIFY TRAFFIC SIGNAL INSTALLATION**  
**ITEM 680.79XXXX05 - REMOVE TRAFFIC SIGNAL INSTALLATION**  
**ITEM 680.50XXXX05 - ALTER ELEVATION OF POLE FOUNDATION**  
**ITEM 680.50500005 - REMOVE POLE FOUNDATION**  
**ITEM 680.51XXXX05 - ALTER ELEVATION OF PULL BOXES**  
**ITEM 680.90000005 - RESET POLE**

reconstructed as required in the contract documents.

**Remove Pole Foundations**

Support poles are to be removed in their entirety to permit reuse by the owner. Anchor base poles shall be removed from the foundation and the foundation shall be cut one foot below final grade surface or subgrade, whichever is lower, unless the foundation interferes with the construction and will have to be removed in order to complete the work. Embedded poles shall be removed in their entirety (including all foundation materials from around the pole) unless it is determined by the Engineer that such removal will cause damage to existing underground facilities. If the Engineer orders the Contractor in writing to leave an embedded pole foundation in place, the pole and foundation shall be cut one foot below finished grade or subgrade, whichever is lower.

**Holes**

All holes resulting from this work shall be backfilled with suitable material and if so specified the disturbed areas restored to match the adjacent surface as approved by the Engineer.

**METHOD OF MEASUREMENT:**

**Each**

The following items will be measured for payment as the number of each operation completed in accordance with the contract documents to the satisfaction of the Engineer.

680.50XXXX05 - Alter Elevation of Pole Foundation  
680.51XXXX05 - Alter Elevation of Pull Boxes  
680.90000005 – Reset Pole

**Foot**

The following item will be measured for payment as the number of feet of pole foundation removed measured (to the nearest one half foot) from the top of anchor bolts, for anchor base poles, and the top of concrete, for embedded poles, to the depth of removal.

680.50500005 - Remove Pole Foundation.

**Each Location**

The quantity for each location includes all the work described in the contract documents for each serialized pay item. The following items will be measured for payment as the number of locations completed in accordance with the contract documents to the satisfaction of the Engineer.

680.77XXXX05 - Modify Traffic Signal Installation  
680.79XXXX05 - Remove Traffic Signal Installation

**BASIS OF PAYMENT:**

The requirements of Standard Specifications Section 680-5.01, General shall apply with the following



**ITEM 680.77XXXX05 - MODIFY TRAFFIC SIGNAL INSTALLATION**  
**ITEM 680.79XXXX05 - REMOVE TRAFFIC SIGNAL INSTALLATION**  
**ITEM 680.50XXXX05 - ALTER ELEVATION OF POLE FOUNDATION**  
**ITEM 680.50500005 - REMOVE POLE FOUNDATION**  
**ITEM 680.51XXXX05 - ALTER ELEVATION OF PULL BOXES**  
**ITEM 680.90000005 - RESET POLE**

additional provisions:

**Modify Traffic Signal Installation**

The unit bid per location shall include all costs for grounding and the repairing or replacing of equipment damaged, destroyed or lost by the Contractor's operations or negligence. Installation of replacement equipment and materials supplied by the owning agency is also included unless provided for under other items.

Progress payments for each location will be made in the following manner:

Sixty-five percent of the bid price of each location modified will be paid after it is completed and ready for testing.

Twenty-five percent of the bid price will be paid after satisfactory completion of all tests required by these specifications, including the function test for ten days of continuous satisfactory operation of the traffic signal system at each location.

The remaining ten percent will be paid when all the traffic signals in the contract are functioning to the satisfaction of the Engineer.

**Remove Traffic Signal Installation**

The unit price bid for each location removed shall include the cost for removing, storing and/or disposing as indicated in the contract documents.

Progress payments for each location removed will be made in the following manner:

Sixty-five percent will be paid when the elements to be removed are taken down.

Twenty percent will be paid when the elements are disposed of off the job site or salvaged by the owning agency.

The remaining fifteen percent will be paid when the location is restored to the satisfaction of the Engineer.

**Alter Elevation of Pull Boxes and Pole Foundations**

The unit price bid for each alteration operation as specified in the contract documents shall include all costs for excavation, backfill, removing and/or cutting off concrete, reinforcing or anchor bolts, furnishing and installing concrete, bonding compounds, reinforcing bars, anchor bolt extensions and necessary drilling and grouting, removing, storing or resetting frames and grates and restoration of the site as specified. Removing and resetting poles made necessary by this work shall be paid for under their respective items.

**Remove Pole Foundations**

The unit price bid per foot of pole foundation removed shall include all costs for excavation and disposal, backfill, removing and/or cutting off reinforcing or anchor bolts and restoring the site if specified in the



**ITEM 680.77XXXX05 - MODIFY TRAFFIC SIGNAL INSTALLATION**  
**ITEM 680.79XXXX05 - REMOVE TRAFFIC SIGNAL INSTALLATION**  
**ITEM 680.50XXXX05 - ALTER ELEVATION OF POLE FOUNDATION**  
**ITEM 680.50500005 - REMOVE POLE FOUNDATION**  
**ITEM 680.51XXXX05 - ALTER ELEVATION OF PULL BOXES**  
**ITEM 680.90000005 - RESET POLE**

contract documents.

**Reset Pole**

The unit price bid for each pole reset shall include the cost for refurbishing, handling, erecting (including signs, push buttons, street lighting and other appurtenances if attached), furnishing anchor bolts (installed under another item) if required, field galvanizing, drag wires, conductor cable connection, grounding and incidental connecting hardware as specified. Removing the pole will be paid for under the item for Remove Traffic Signal Installation.

Payment will be made under:

| <b><u>ITEM NO.</u></b> | <b><u>ITEM DESCRIPTION</u></b>             | <b><u>PAY UNIT</u></b> |
|------------------------|--------------------------------------------|------------------------|
| <b>680.77XXXX05</b>    | <b>Modify Traffic Signal Installation</b>  | <b>Each</b>            |
|                        | <b>Location _____</b>                      | <b>Location</b>        |
| <b>680.79XXXX05</b>    | <b>Remove Traffic Signal Installation</b>  | <b>Each</b>            |
|                        | <b>Location _____</b>                      | <b>Location</b>        |
| <b>680.50000105</b>    | <b>Alter Elevation of Pole Foundations</b> |                        |
|                        | <b>Type 1</b>                              | <b>Each</b>            |
| <b>680.50000205</b>    | <b>Alter Elevation of Pole Foundations</b> |                        |
|                        | <b>Type 2</b>                              | <b>Each</b>            |
| <b>680.50000305</b>    | <b>Alter Elevation of Pole Foundations</b> |                        |
|                        | <b>Type 3</b>                              | <b>Each</b>            |
| <b>680.50500005</b>    | <b>Remove Pole Foundations</b>             | <b>Foot</b>            |
| <b>680.51000105</b>    | <b>Alter Elevation of Pull Boxes</b>       |                        |
|                        | <b>Type 1</b>                              | <b>Each</b>            |
| <b>680.51000205</b>    | <b>Alter Elevation of Pull Boxes</b>       |                        |
|                        | <b>Type 2</b>                              | <b>Each</b>            |
| <b>680.51000305</b>    | <b>Alter Elevation of Pull Boxes</b>       |                        |
|                        | <b>Type 3</b>                              | <b>Each</b>            |
| <b>680.90000005</b>    | <b>Reset Pole</b>                          | <b>Each</b>            |



## **ITEM 680.78010005 - Alter Pullbox for Conduit(s)**

### **DESCRIPTION**

The work shall consist of providing openings in an existing pullbox to facilitate the installation of new conduit(s).

### **MATERIALS**

None

### **CONSTRUCTION DETAILS**

The Contractor shall create the opening using industry accepted standards. The area around the conduit shall be sealed as shown on the standard sheets. The Contractor will be required to replace or repair, to the satisfaction of the Engineer, any equipment damaged or destroyed by the Contractors operations or negligence as determined by the Engineer.

### **METHOD OF MEASUREMENT**

The work shall be measured as the number of pullboxes altered.

### **BASIS OF PAYMENT**

The unit price bid for each altered pullbox shall include the cost of all equipment, labor and materials, to satisfactorily complete the work.

Conduit(s) will be paid for under its respective item.



**ITEM 680.80149305 – NEMA TS 2 SOLID STATE MENU DRIVEN ACTUATED  
TRAFFIC SIGNAL CONTROLLER AND CABINET**

**Description**

Under this item, the contractor shall furnish and install a solid state controller, cabinet and peripheral equipment at each location on the plans and where directed by the engineer.

**Materials**

1. Controller

The contractor shall supply a NEMA TS 2 solid state controller as specified in the contract documents.

2. Cabinet Details

A. General

The purpose of this specification is to describe the minimum acceptable design requirement for the fabrication, wiring, and installation of aluminum weather-tight traffic signal controller cabinets.

The cabinets shall be pole or ground mounted as shown on the plans and be of sufficient size to house all necessary equipment for the traffic signal operation specified, including detector amplifiers or transreceivers.

The cabinets shall be clean cut in design and appearance and be fabricated from minimum 14 gauge or deep drawn aluminum or approved equal. Grinding, sanding, or other appropriate means shall be used to effect a smooth surface. All non-aluminum parts shall be made of stainless steel.

B. Cabinet

Door – The main door of all cabinets shall include substantially the full area of the front of the cabinet. All doors shall be reinforced on the inside in such a manner as to prevent warping. Two hinge lugs shall be integrally cast in the right side of the door in such a way that together with the stainless steel hinge pins, they shall provide proper mounting and operation of the door. A gasket bead shall be installed on the inside of the door, which together with the neoprene air-cored cabinet gasket, shall form a weather-tight seal between the housing and the cabinet door.

The main door shall be equipped with a 3 cylinder lock, keyed for the maintaining authority's standard locks and a dust cover. An adjustable stainless steel striker plate shall be attached to the inside of the housing to ensure positive locking. Door shall be designed so that it can be removed and replaced if damaged.

C. Police Door

Cabinets shall have a secondary police panel door. A manual control grip switch and cord approximately 6 feet long shall be installed in each police door housing. The cord shall retract itself into a 6 inches length. The secondary door shall also provide access to switches for flashing operation and manual operation.



**ITEM 680.80149305 – NEMA TS 2 SOLID STATE MENU DRIVEN ACTUATED  
TRAFFIC SIGNAL CONTROLLER AND CABINET**

D. Mounting Hardware

Cabinets shall be furnished with mounting plates, condulets, anchor bolts and/or other necessary hardware for installing cabinets to poles or foundations as indicated on the plans.

E. Ventilation

Cabinets shall be equipped with a thermostatically controlled ventilation fan. The vent shall be designed to prohibit entry of rain, insects, and foreign objects. The fan shall have a minimum rating of 125 cubic feet per minute. The thermostat shall be adjustable from 70<sup>0</sup> F to 160<sup>0</sup> F with a differential of not more than 25<sup>0</sup> F between automatic turn "on" and turn "off."

F. Exterior Finish

Natural aluminum.

G. Keys

Two keys shall be provided for each controller cabinet and two keys for each secondary police panel door.

H. Interior Equipment

All cabinets shall contain a mounting table, sliding ways, or other suitable support for a controller. Each cabinet shall contain no less than the following equipment:

- Main switch and circuit breaker
- Solid state switch packs
- Solid state conflict monitor
- Automatic flash switch
- Duplex convenience outlet
- Coordination switch, on-off
- Standard NEMA lamp receptacle
- Flash transfer delay
- Radio interference filter and suppressor
- Ground bus
- Powerline surge protector
- Mercury contractor
- Terminal blocks (including interconnect, detector and signal lamp)
- Programming flasher sequence
- Solid state flasher, Type 1-20 amp – single circuit
- Harnesses for detector amplifiers or transceivers
- Flasher operation switch (Police Door)
- Manual operation switch (Police Door)
- 6 foot manual operation cord (Police Door)

- 1.) The circuit breaker or approved equal line disconnect switch, shall be of adequate amperage and installed for operation in a vertical direction. An enclosure for this switch shall not be required unless otherwise shown on the



**ITEM 680.80149305 – NEMA TS 2 SOLID STATE MENU DRIVEN ACTUATED**  
**TRAFFIC SIGNAL CONTROLLER AND CABINET**

plans or required by Underwriters' Laboratory or utility company supplying electric power.

- 2.) All cabinets containing a flasher and other kinds of interrupting devices shall be equipped with a suitable radio interference suppressor installed at the Circuit Breaker. The suppressor shall provide a minimum attenuation of 50 kilocycles to 75 megacycles. The suppressor shall be hermetically sealed in a substantial metal case, filled with a suitable insulation compound.

The suppressor terminals shall be nickel plated, 10-24 brass studs of sufficient external length to provide space for connection of two No. 8 AWC conductors, and shall be so mounted that the terminals cannot be turned in the case. The suppressors shall be designed for operation on 30 Amperes, 125 volts, 60 Hertz, single phase operation and shall be approved by UL and EIA.

- 3.) The gauge of all insulated wires between various parts and components of the cabinet shall be of adequate size. Where signal lamp currents are carried, the minimum wire size shall be No. 14 AWG.

All cabinet wiring where connected to terminal strips, flasher, relays, switches, radio interference suppressors, etc., shall be identified by the use of either insulated pre-printed sleeving slipped over the wire before attachment of the lug or making the connection, or by the use of heat stenciled wire designations on the wire itself. Where numerical wire designations are used, an appropriate translating sheet shall be supplied with the controller.

All wires shall be cut to the proper length before assembly. No wire shall be doubled back to take up slack. Wires shall be neatly laced into cables with nylon lacing. Cables shall be secured with nylon cable clamps. The grounded side of the electric service shall be carried through the cabinet without a break.

The electrical connections between the controller unit and the terminal panel shall be made by "MS" type, female cable socket to enable the rapid exchange of the complete mechanism without disconnecting and reconnecting individual wires.

All electrical connections in the cabinet, including relays, flashers, terminal strips, etc., shall have sufficient clearance between each terminal and cabinet to provide an adequate distance to prevent a leakage path or physical contact under stress. Where these distances cannot be maintained, barriers must be provided.

All equipment grounds shall run directly and independently to the ground buss. The lay of the interconnect cable between the components must be such that when the door is closed, it does not press against the cables or force the cables against the various components inside the cabinet.

Terminal strips located within the cabinet shall be accessible to the extent that it shall not be necessary to remove the controller from the cabinet to make an inspection or connection. The right side of the cabinet shall have the detection terminals. The electric service connections shall be on the left side of the



**ITEM 680.80149305 – NEMA TS 2 SOLID STATE MENU DRIVEN ACTUATED  
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cabinet. The signal lamp circuit shall be located at the rear wall, and interconnection wiring, where required, shall be to the right wall. All terminal strips shall be provided with barriers between each terminal, be brass screw type

hot dipped finish and rated for 15 amp 120 volt A.C. Signal lamp circuit terminals shall be marked for each controller phase with a subscript denoting the particular phase, in consecutive order as follows:

R1, A1, G1, DW1, W1, R2, A2, G2, etc.

Terminals shall also be provided for all other circuits for the controller specified, including, but not limited to detector circuits, yield circuits, coordination circuits, etc.

A grounding strip having a minimum of nine connections shall be provided and grounded to the cabinet.

4.) The Automatic-Flash switch shall extinguish all signal indication except the yellow on the major street and the red on the minor street or streets, which shall flash. The power supply to the controller is not to be affected and the controller will continue to function in a normal manner.

5.) It shall be possible to disconnect the controller without interfering with the flash operation. One contact on the flash switch shall extinguish the A.C. plus voltage used to feed power to the pedestrian signals.

**3. Details for Solid State Load Switches**

The solid state load switches shall be triple-signal load switches as specified in NEMA Pub. TS 1-1976, and all subsequent revisions.

The solid state load switches shall be mounted external to the controller unit, and shall be jack mounted in compliance with NEMA Pub. 1-1976, and all subsequent revisions.

Each solid state load switch shall be furnished with three built-in indicator lights on the output side for phase identification.

No mechanical means shall be employed to mount the solid state load switches, which shall prohibit the interchangeability between the manufacturers.

**4. Details for Signal Conflict Monitor**

A conflict monitor unit shall be supplied for all solid state load switches. The conflict monitor shall be of make and model specified in the contract documents.

**5. Details for Solid State Flasher and Flash Relay**

A. A solid state flasher, Type 1-20 ampere-single circuit, as described in NEMA Pub. TS 1-1976, and all subsequent revisions, shall be furnished and produce between 50 and 60 flashes per minute with an on period of 50±5 percent. The flasher shall mate with a Clinch-Jones socket type S-406-SB or equivalent.



**ITEM 680.80149305 – NEMA TS 2 SOLID STATE MENU DRIVEN ACTUATED  
TRAFFIC SIGNAL CONTROLLER AND CABINET**

- B. The flashing output shall consist of one output rated at 20 amperes. The combined load connected to circuits 1 and 2 shall not exceed 20 amperes.
- C. The flasher relay shall energize the solid state flasher and transfer the signal light circuits from the controller unit to the flasher. The flasher relay shall have a plug-in mounting.

**Construction Details**

Subsections 680.3.01, Equipment List and Drawings; 680-3.06, Work Sites; 680-3.07, Schedule of Work; 680-3.12, Grounding; and 680-3.32, Test shall apply.

**Method of Measurement**

Subsection 680-4.01, Each Unit, shall apply.

**Basis of Payment**

Section 680-5.08 shall apply and be modified as follows:

“The unit price bid for each controller assembly shall include all labor, materials, and equipment necessary to complete the installation of the controller wiring harness, cabinet, all needed conduits, mounting fittings, power supply meter installation (if required), and all auxiliary equipment necessary to meet plans and specifications.



## **ITEM 680.80324708 - MICROCOMPUTER CABINET BASE (ALUMINUM)**

### **DESCRIPTION:**

Under this item the contractor shall furnish and install a microcomputer cabinet base at locations shown on the plans or as directed by the Engineer.

### **MATERIALS:**

The base bottom, sides, top and door shall be constructed of ¼ inch grade 5052-H32 aluminum, with full weld seams and shall conform in all respects to the attached drawing.

The bottom plate of the cabinet base shall be constructed to form a flange with the sides so that the bottom of the base is completely open. Four 1.25 inch anchor bolt holes shall be cut into the base plate.

A door shall be constructed in the front of the base by attaching a piece of ¼ inch ∇ aluminum inside the base to form a 1 inch lip. The door shall fit flush to the front of the base, against the lip. The door shall be secured at the top and bottom with ¼ inch Allen screws.

The top plate shall have one 8 inch hole cut into it.

A ½ inch hex nut to be used for grounding purposes shall be welded to the inside of the front of the base.

The base shall be of untreated and unpainted aluminum.

### **CONSTRUCTION DETAILS:**

The cabinet base shall be fabricated and mounted on a concrete base in accordance with the details shown on the plans, standard sheets and as directed by the Engineer.

### **METHOD OF MEASUREMENT:**

This work will be measured by the number of cabinet bases furnished and installed in accordance with the plans, specifications, and directions of the Engineer.

### **BASIS OF PAYMENT:**

The unit price bid for each cabinet base shall cover the cost of fabrication, installation, all labor, material and equipment necessary to complete the work.

When the plans call for mounting the cabinet base on an existing foundation the cost of removing



**ITEM 680.80324708 - MICROCOMPUTER CABINET BASE (ALUMINUM)**

the existing anchor bolts and installing new anchor bolts shall be included in the price bid for this item. When plans call for mounting the cabinet base on a new foundation, the installation of anchor bolts in the foundation shall be included in the price bid for this item. New concrete foundations will be paid for under a separate payment item.



**ITEM 680.81330010 – AUDIBLE PEDESTRIAN SIGNAL**  
**ITEM 680.81340010 – AUDIBLE PEDESTRIAN SIGNAL - WITH POST**

**DESCRIPTION**

Under this item the contractor shall furnish, install and configure an ADA compliant pedestrian push button station with audio capability, and its control unit, at each location as indicated in the contract documents or where directed by the Engineer.

**MATERIALS**

Each installed location shall have the following:

**1. Pedestrian Push Button Station**

The station housing shall be no larger than 14.25 inch high, 5.50 inch wide and 2.50 inches in depth.

The station housing shall be constructed of cast aluminum, have a powder coated paint finish and be dark green in color.

The station shall include a weather proof speaker to emit the audible sounds. This speaker shall be recessed and located in back of the unit

The station shall include a weatherproof ADA compliant 2" diameter push button that is pressure activated and includes a raised direction arrow. The push button shall be constructed of cast aluminum, have a powder coated paint finish and be dark green in color.

The station shall include a 9 inches x 15 inches aluminum pedestrian message sign. The sign supplied shall have the following information included on it: "To Cross Push Button" statement and explanations of the pedestrian signal indications controlling the intersection crossing - "Illuminated Person", "Flashing Hand" and "Steady Hand".

**2. Control Unit**

Each pedestrian push button station shall be controlled by a control unit. The control unit shall be designed so that it fits into any pedestrian signal head used by NYS. The control unit will be installed inside of the pedestrian signal head that is associated with the station, unless otherwise indicated by the contract documentation or directed by the Engineer. The input side of the control unit will be connected in parallel to the Walk and

Don't Walk AC signals that control the hand/person pedestrian LED's installed in the pedestrian signal head. The output side of the control unit will connect and control the push button station. Mounting hardware, to facilitate mounting of the control unit inside

of the pedestrian signal head, shall also be provided.

**3. Programming Device**

If an external device is needed to set up, configure and program the pedestrian push station, one device, unless this requirement is waived by the contract documents or by the Engineer, shall be supplied for each intersection that a pedestrian push button station is installed in.



**ITEM 680.81330010 – AUDIBLE PEDESTRIAN SIGNAL**  
**ITEM 680.81340010 – AUDIBLE PEDESTRIAN SIGNAL - WITH POST**

**OPERATIONAL FEATURES**

The stations push button shall be capable of providing the following:

An LED light indication and an audible tone for confirmation of push button activation.

A vibrating push button during the pedestrian walk cycle.

The audio sounds and messages emitted during the pedestrian walk cycle and in any combination shown below:

- A Standard pre-programmed voice walk message stating that the walk sign is on.
- Custom (programmed by vendor) walk messages as a substitute for the standard walk message.
- Audible chirp (for East/west intersection crossings) and cuckoo (for North/South intersection crossings).
- A minimum of one non-custom (pre-programmed and field configurable) voice informational message stating direction of intersection crossing.
- Custom (programmed by vendor) voice information messages.

Sounds/tones or the clearance countdown time remaining verbally during the pedestrian clearance cycle.

A standard pre-programmed station “locate” tone during the pedestrian don’t walk phase. Custom (programmed by vendor) tones shall be available as a substitute for the standard locate tone.

The ability to detect and measure ambient sounds and make volume adjustments for all sounds so that they are produced above this ambient sound.

**AUDIO SPECIFICATIONS**

Speaker Ratings – 15 Watts, 8 Ohms.

Volume Settings – Independent minimum and maximum volume settings for locate sounds, clearance sounds, walk sounds. Minimum volume setting informational messages. Sounds played will not be less than the minimum setting or more than the maximum setting.

Maximum Output Level - Locate sounds, clearance sounds and informational messages shall be capable of producing 60db of audio output.

Volume Over Ambient – All sounds shall be capable of being played relative to the measured ambient sound at the intersection, but restricted to the minimum and maximum volume settings of each sound. The adjustment range of volume over ambient should be from at least from 0db to 20db over ambient in increments of at least 5db steps.

Audible Station Locating Tone – 880Hz plus harmonic, 0.1 second duration, 1 second interval.

Audible Chirp Sound – From 2700 to 1700 Hz, 0.2 second duration, 1 second interval.

Audible Cuckoo Sound – From 1250 to 1000 Hz, 0.6 second duration, 1.8 second interval.

**ENVIRONMENTAL SPECIFICATIONS**



**ITEM 680.81330010 – AUDIBLE PEDESTRIAN SIGNAL**  
**ITEM 680.81340010 – AUDIBLE PEDESTRIAN SIGNAL - WITH POST**

The push button station and push button control unit shall operate over the temperature range of -40 deg F to +165 deg F.

*POST* – Post installed shall be in accordance with the standard sheet for *Pedestrian Signal Details*.

**CONSTRUCTION DETAILS**

The contractor shall install pedestrian push button station(s), any associated control unit(s), and furnish per the requirements of this specification any programming device as shown in the contract. Unless otherwise waived, the Contractor shall submit to the Regional Director, within 30 days following the award of contract, detailed specifications and catalog cuts of all equipment that is to be installed or furnished.

The post and sign shall be installed in accordance with the details specified on the standard sheet.

**METHOD OF MEASUREMENT**

This item will be measured by the number of pedestrian push button stations, control units and programming devices furnished and installed in accordance with the contract.

**BASIS OF PAYMENT**

The unit price bid shall include the cost of all labor, material and equipment necessary to complete the work.

Where the pushbutton and sign assembly is installed on its own post, the unit price bid shall also include the cost of post, sawcutting, excavation, backfill, concrete, restoration of surfaces, and conduit bend and fittings.



## **ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE**

### **1.0 DESCRIPTION.**

The purpose of this specification is to provide the minimum performance requirements for a Pedestrian LED Countdown Timer Module to be used in conjunction with Pedestrian Signal Indications. The unit will provide Pedestrians with numerical Pedestrian timing of the Pedestrian Clearance Interval. The unit will be connected in parallel with LED Pedestrian Signal Indications, Hand and Walking Person, and in series with the Model 200 switch packs controlling the LED Pedestrian Signal Indications.

This specification refers to definitions and practices described in “Vehicle Traffic Control Signal Heads” referred to in this document as “VTCSH.” and “Pedestrian Traffic Control Signal Indications”, referred to in this document as “PTCSI”, published in the *Equipment and Materials Standards of the Institute of Transportation Engineers*.

### **2.0 MATERIALS.**

#### **A. PHYSICAL AND MECHANICAL REQUIREMENTS**

**A.1** The countdown timer shall be designed to fit in the message bearing area of a 12 inch pedestrian traffic signal housing built to the PTCSI Standard.

The unit shall be a single, self-contained device, not requiring on-site assembly for installation into an existing traffic signal housing and not require special tools for installation. The timer module shall fit into Pedestrian Traffic Signal housings that are void of any incandescent lamp components - bulb sockets, gaskets, and reflector - and without the need to modify the housing. The module shall be sealed to provide a weather tight enclosure and an insulating covering for all electrical connections and electronic components. The unit shall fit securely in the housing and shall connect directly to existing electrical connections inside of the housing by means of push on type connectors.

A one piece “U” shaped cross section rubber gasket or other suitable means shall be provided with each module to insure a weather tight fit between the door of the signal housing and the module. The quality of gasketing supplied, and any method used to adhere the gasketing to the module if the gasketing is affixed to the module using adhesive, shall be such that the gasketing and adhesion technique shall not appreciably deteriorate over the life of the module when the module is used in its intended application.

The message bearing surface of the module shall be supplied with two numerical LED displays to display a count from “00” to “99”. These displays shall be a minimum 7 inches high and 3.75 inches wide. The display segments that comprise the numbers shall be approximately 0.5 inches wide and be formed by two or more rows of LED’s.

Materials used for the lens and signal module construction shall conform to ASTM specifications for those materials.

The lens of the LED countdown timer shall be polycarbonate UV stabilized and a minimum of 1/8" thick

Each module shall be identified on the back side with the following:



## **ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE**

- Manufacturer's Trade Mark/Name
- Part number as shown in the NYS DOT's Transportation Management Equipment QPL
- Serial number
- Voltage rating
- Power consumption (Watts and Volt-Ampere)
- Each module shall have a sticker stating compliance to FCC Title 47 Subpart B, Section 15 regulations
- An Indication to orient the user to the Top of the Unit (such as an Arrow symbol or the word top)

**A.2** Barcoding. All Modules shall be barcoded using Barcode type 128. Barcodes shall be printed on a quality polyester white label (Black print only) where the print on the label and adhesion of the label to the surface shall be weather, UV and temperature resistant. Size of the label shall be 0.5 inch wide by 1.75 inch long. All barcodes shall be printed entirely on the label and be completely legible. Text of the Barcode Information shall also be legibly printed on the label.

Information on the Barcode shall be separated into the following four parts, but printed continuously on the label in the order shown:

- Model Number - 2 Digits (Assigned Model Number for Pedestrian LED Countdown Timers is CT)
- Manufacturer - 2 Digits. Digits assigned by NYSDOT upon Product Qualification
- Date of Manufacture - 4 Digits. First two digits represents Month of Manufacture, Second two digits represent Year of Manufacture
- Serial Number - minimum 6 digits assigned, maximum 10 digits assigned

An example of the information printed on the barcode for a Pedestrian LED Countdown Timer built to these specifications manufactured in June of 2008 with a serial number of 018356 by a company whose manufacturers' code is XX would be CTXX0608018356.

Barcode labels, meeting the same requirements of the labels above, shall also be placed on the outside of all shipping boxes. Example: Should the shipping box contain six modules, individual barcode labels for all of the six modules inside the box shall be affixed to the outside of the box. The labels shall also be grouped together so that they can be easily and quickly scanned by a barcode reader.

**A.3** The contractor shall provide the barcode ID numbers for all LED's installed. This information shall be provided in the form of an electronic file (Excel Spreadsheet) and summarized by intersection. Barcode IDs will be collected by one of the following methods selected by NYSDOT:

- 1) Scanning the bar codes of each module with a bar code scanner provided by NYSDOT for use on this project only. The information will be downloaded to a spreadsheet.
- 2) Manually entering the bar code IDs of each module into an electronic spreadsheet.

This information shall be provided to the EIC on a weekly basis. The cost for this work shall be included



## **ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE**

in the bid price for various LED modules.

### **B. ENVIRONMENTAL REQUIREMENTS**

**B.1** The Countdown Timer signal module shall be rated for use in the ambient temperature range of -40 deg F to +165 deg F. The module shall be sealed to prevent dust and moisture intrusion and to protect all internal LED and electrical components. The module shall be capable of operating at rated voltage in an environment of +74 degrees Centigrade / 85% Relative Humidity for 1000 hours without the formation of internal condensing moisture.

### **C. OPTICAL REQUIREMENTS**

**C.1** The measured chromaticity coordinates of the individual led light sources used in the module shall conform to the chromaticity requirements of the Pedestrian “Hand” symbol of the PTCSI standard.

**C.2** The module shall be designed so that when operated over the specified ambient temperature and voltage ranges during the warranty period of the unit, the numeric display shall attract the attention of, and be readable to, a viewer (both day and night) at all distances from 3 m to the full width of the area to be crossed.

**C.3** To minimize luminous degradation over the life of the unit, the individual led light sources used in the unit shall be manufactured using AlInGaP technology or equal.

**C.4** Variations in operating line voltage of between 80 and 135 volts rms shall have minimal effect, less than +/- 10 percent, on the luminous output of the module.

### **D. OPERATIONAL REQUIREMENTS**

**D.1** The module will be designed to countdown to zero only the “Clearance” time of the Pedestrian Interval. During the Steady Don’t Walk Indication the display will always be dark.

**D.2** The module, when connected to the appropriate Pedestrian switch pack outputs, shall have an automatic learn mode in order to learn and store the Pedestrian clearance times in its memory and to self-adjust for subsequent changes in Pedestrian Clearance time.

**D.2.1** Following power restoration to the unit after a power outage of greater than two seconds the unit will remain dark for one pedestrian cycle to learn, acquire the current pedestrian clearance timing, replace any values that were stored in memory prior to the power outage with the newly acquired values and display the newly acquired times on the next pedestrian cycle.

**D.2.2** The unit shall detect changes in pedestrian clearance timing during normal operation and act upon them as described below:

**D.2.2.1** The unit will automatically re-program itself should it detect any increase in Pedestrian clearance timing. The increased timing shall be displayed on the subsequent pedestrian cycle.



## **ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE**

**D.2.2.2** The unit will detect any reductions in pedestrian clearance timing (such as those occurring during a traffic Preemption cycle) and display on the subsequent pedestrian cycle the timing stored in its memory prior to the shortened pedestrian cycle.

**D.2.2.3** The unit will re-program itself should it detect two consecutive identical shortened pedestrian clearance cycles and display this timing on the next pedestrian cycle.

**D.3** The unit shall be designed to suspend any timing and go dark when, for any reason, the timing of the Ped Clearance cycle is terminated before reaching the “zero” count and the clearance switchpack output reverts to a steady “On” condition.

**D.4** The unit shall be capable of timing consecutive complete Pedestrian cycles outputted by the traffic control system.

**D.5** The unit shall be designed to retain the Pedestrian timing stored in its memory for all power outages of less than one second and to continue timing of the Pedestrian timing if the traffic control system has resumed Pedestrian timing following this duration outage. For outages of between one and two seconds memory may or may not be retained. For all power outages greater than two seconds the unit will resume operation as described in Paragraph 4.2.

### **E. ELECTRICAL**

**E.1** All wiring shall meet the requirements of Section 13.02 Wiring of the VTCSH standard. Each wire shall be approximately 1 m long. All wiring shall be rated for use over the temperature range of -40 deg F to +165 deg F. Under normal handling of the module over the specified temperature range, the wiring insulation shall not crack or fray along its entire length. The wires of the module shall be terminated in insulated 0.250 inch female quick disconnect push on terminals.

Units shall be supplied with three colored coded wires as defined below:

Red (Connection to Pedestrian Hand Switch pack output), Brown (Connection to Pedestrian Man Switch pack output) & White (AC Neutral)

**E.2** The module shall operate with 603 Hz AC line voltage ranging from 80 volts to 135 volts rms. The circuitry shall prevent flicker over this voltage range. Rated voltage for all optical and power measurements shall be 1203 volts rms.

**E.3** The on-board circuitry of the module shall include voltage surge protection, to withstand high-repetition noise transients and low-repetition high-energy transients as stated in Section 2.1.8, NEMA Standard TS 2-2003.

**E.4** Each module shall be designed so that the timer and displays do not function when connected to any voltage between 80 and 135 volts rms and in series with an impedance of 15 kohm (either resistive or capacitive) or greater.



## **ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE**

**E.5** The individual LED light sources of the unit shall be wired so that a catastrophic failure of one LED light source will not result in the loss of illumination of more than one display segment.

**E.6** All modules shall contain filtering dedicated to prevent inducing electronic noise into the AC power lines. In addition the module and associated on-board circuitry shall meet the requirements of the Federal Communication Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise by Class A digital devices.

**E.7** All Modules shall be fused. The fuse shall be located before any electronic component used in the module and placed in series with the colored wire of the unit. Should fusing be external to the unit by placing inline fuse holders into the wiring of the unit, the fuse holder shall be installed so that it is between six to ten inches from the housing of the unit. Each individual circuit in the unit shall be fused separately. Fuse selection shall be such that it provides reliable operation for its intended operation.

**E.8** All unit types shall be operationally compatible with the traffic signal equipment that each type is designed and intended to interface with. This equipment includes all controllers, conflict monitors, current monitors, switch packs and flashers and LED Signal Modules currently in use by the New York State Department of Transportation.

**E.9** Power Requirements. The maximum power consumption of each circuit in the unit, when on, shall not exceed 10 Watts at rated voltage.

### **F. PERFORMANCE TESTS**

**F.1** Prior to shipment, each module shall be energized (burned-in), for a minimum of 24 hours, at rated voltage, and at a 100 percent on-time duty cycle. This test shall be conducted in an ambient temperature of 60 degrees Centigrade. Any failure of the module occurring during burn-in shall be cause for rejection

**F.2** Each timer module shall be visually inspected for any exterior physical damage or assembly anomalies. Careful attention shall be paid to the surface of the lens to ensure there are no scratches (abrasions), cracks, chips, discoloration, or other defects.

**F.3** Each shipment from the manufacturer shall be furnished with a Certificate of Compliance. The certificate shall certify that the modules comply with the requirements of these specifications. The certificate shall include the signature of the person responsible for certifying the tests. In addition to the certificate, the modules shall be supplied with copies of all applicable test reports.

### **G. SAMPLE SUBMISSION**

Low bidder(s) may be required to submit a sample unit. In the event that a sample is required, it shall be provided within ten (10) working days of receipt of the request. Each device submitted shall be accompanied by five copies of the complete circuit schematic for the unit, one standard catalog cut and one manufacturers specification sheet for the individual LED light sources used in the unit.

Documentation shall also be provided describing the techniques used to ensure the units will satisfy the luminous intensity requirements over the life of the warranty. This documentation may include items such as the description of circuitry incorporated in the module needed to meet this requirement or literature from the LED manufacturer describing the expected degradation of luminous intensity of the individual



## **ITEM 680.81500010 – PEDESTRIAN COUNT-DOWN TIMER MODULE**

LED light sources used in the fabrication of the module over the life of the unit and operating temperature range.

### **3.0 CONSTRUCTION DETAILS**

The contractor shall install the Pedestrian Count-Down Timer Module in new or existing traffic signal heads as shown on the plans or as ordered by the engineer. Unless otherwise waived, the Contractor shall submit to the Regional Director within 30 days following the award of contract, detailed specifications and catalog cuts of the equipment he proposes to install.

### **4.0 METHOD OF MEASUREMENT**

This item will be measured for payment as the number of Pedestrian Count-Down Timer Modules furnished, installed in accordance with the contract documents or as ordered by the Engineer.

### **5.0 BASIS OF PAYMENT**

The unit price bid shall include the cost of all labor, material, and equipment necessary to complete the work as shown on the plans, on the standard sheets, or as ordered by the Engineer. The cost of the pedestrian signal heads shall be paid for under their respective items.



**ITEM 680.94997008 – FURNISH AND INSTALL ELECTRICAL  
DISCONNECT/GENERATOR TRANSFER SWITCH**

**DESCRIPTION**

Under this item, the Contractor shall furnish and install a electrical disconnect/generator transfer switch as shown on the contract documents, or the standard sheets or as directed by the Engineer.

**MATERIALS**

The Contractor shall furnish a electrical disconnect/generator transfer switch from a manufacture listed on the current New York State Department of Transportation Traffic Signal Laboratory's Qualified Product List.

**CONSTRUCTION DETAILS**

The electrical disconnect/generator transfer switch shall be attached to the pole or cabinet as shown on the contract documents or the standard sheet or as directed by the Engineer.

**METHOD OF MEASUREMENT**

This item will be measured for payment as the number of electrical disconnects/generator transfer switches furnished installed and accepted by the Engineer-in-Charge.

**BASIS OF PAYMENT**

The unit price bid shall include the cost of all labor, material and equipment necessary to complete the work as shown on the contract documents, on the standard sheets, or as directed by the Engineer.



**ITEM 680.95010415 - SERVICE CABLE 1 CONDUCTOR, NO. 04 AWG**  
**ITEM 680.95010615 - SERVICE CABLE 1 CONDUCTOR, NO. 06 AWG**  
**ITEM 680.95010815 - SERVICE CABLE 1 CONDUCTOR, NO. 08 AWG**  
**ITEM 680.95011015 - SERVICE CABLE 1 CONDUCTOR, NO. 10 AWG**  
**ITEM 680.95020415 - SERVICE CABLE 2 CONDUCTOR, NO. 04 AWG**  
**ITEM 680.95020615 - SERVICE CABLE 2 CONDUCTOR, NO. 06 AWG**  
**ITEM 680.95020815 - SERVICE CABLE 2 CONDUCTOR, NO. 08 AWG**  
**ITEM 680.95021015 - SERVICE CABLE 2 CONDUCTOR, NO. 10 AWG**

**Description.** Under this item the Contractor shall furnish and install in a raceway or conduit service entrance cable which is suitable for wet or dry locations at the location indicated on the plans and as directed by the Engineer. This cable will transmit current from the power source to the signal controller cabinet.

**Material.** The cable shall conform to the requirements for service entrance cable of the National Electrical Code and be Underwriters Laboratory approved. The cable shall be rated for 600 volt service and the conductors shall be stranded copper wire or as specified in the contract documents.

**Construction Details.** Service cable shall be installed in accordance with Details: the contract documents and as directed by the Engineer. A sufficient length of cable, not less than 24 inches, shall be left at the end of the run to allow for the tap to be made by the utility company at the power source entrance. The Contractor shall make all connections at the fused disconnect and the ground bar in the signal controller cabinet.

**Method of Measurement.** Service cable will be measured as the number of linear feet actually installed in accordance with the contract documents or as directed by the engineer.

**Basis Of Payment.** The unit price bid per linear foot shall include the cost of all materials, labor, connections, incidental fittings, equipment, tools, and all necessary tests to complete the installation.



## **ITEM 683.150100ER— 5.8 GHZ WIRELESS RADIO/ANTENNA SYSTEM ASSEMBLY**

### **DESCRIPTION**

This work shall consist of furnishing and installing pole mounted 5.8 GHZ spread spectrum radio modems and all associated hardware, software, antennas, cabinet termination boards, and other appurtenances, in accordance with the contract documents and as directed by the Engineer. The modems are used to provide wireless signal interconnection.

The Spread Spectrum Radios are organized into groups as indicated on the plans. Each group consists of a master and one or more slaves. All radios in a group will operate on the same channel.

The master radio will be co-located with fiber optic and/or communications equipment through which there is data transmission to and from the owner's traffic signal control center. The slave radios will be located in equipment cabinets that are not connected to the traffic signal control center.

### **MATERIALS**

A Spread Spectrum Radio System Assembly consists of a spread spectrum radio, antenna lead-in cable, lightning surge protector, cabinet termination and directional antenna. The master and slave radios shall be fully compatible and functionally identical, the difference being in how they are configured in the field.

The Contractor shall supply a 5.8 GHZ Wireless Radio/Antenna "Simrex DM WB-K58B 23 Datamover wideband integrated panel antenna" or approved equal.

### **FUNCTIONAL REQUIREMENTS:**

- Wireless Radio
  1. Master Mode — for a network of devices providing data to a roadside cabinet.
    - a. Capable of servicing up to seven (7) devices in real time.
    - b. Capable of polling up to sixty-two (62) devices on the same network.
  2. Minimum 23 dBi high gain antenna with articulating die cast mounting bracket with adjustment for pan/tilt and rotation (polarization change).
  3. Capability to be used back-to-back to provide relay of data in non-line of sight applications. Supports following variants:
    - a. Single radio, single antenna
    - b. Dual radio, dual antenna
    - c. Single radio, dual antenna
    - d. Single radio, external antenna
  4. Supports Point-To-Point and Point-To-Multipoint communication modes and may be used in back-to-back or as a dual antenna unit to provide relay of data in non-line of sight operations.
  5. FCC certified for license free operation.
  6. Outdoor ranges – as construction plans require.



## **ITEM 683.150100ER— 5.8 GHZ WIRELESS RADIO/ANTENNA SYSTEM ASSEMBLY**

7. Supports high-speed data rate from 1.5 Mbps to 54 Mbps.
8. Power requirements Active: Ethernet POE or External: 100 -240 VAC and 18V POE.
9. CSMA/CA media access protocol.
10. Operating Temperature range: -40°F to 167°F.
11. Orthogonal Frequency, Division Multiplexing (OFDM).
12. Security Requirements: WPA, WPA2, AES-CCM & TKIP Encryption, 802.1x, 64/128/152bit WEP.

- **Cabinet Termination**

1. Shelf Mount or DIN Rail
2. RS-422/485 to RS-232 protocol conversion of data signals.
3. Solid state surge protection on all data and power lines.
4. Gas tube Surge protection on all data and power lines.
5. RJ-45 RS 232 Connection for computer set-up.
6. Fused Power Input.

### **CONSTRUCTION DETAILS**

The Contractor shall install the spread spectrum radios and surge protectors and antennas at the locations indicated on the plans. The protector shall be electrically bonded to the cabinet grounding system using a #8 AWG stranded copper ground wire. The Contractor shall install the antenna drop cables between the radio and surge protector. The spread spectrum radio at a master location shall be configured as a DTE device. The spread spectrum radio at a slave location shall be configured as a DCE device.

The Contractor shall install the antenna on the pole by means of a mast bracket. The mast bracket shall be of a diameter and construction as recommended by the manufacturer and approved by the Engineer. The mast bracket shall be electrically and physically bonded to the pole. The bracket shall maintain good physical contact with the pole to assure proper grounding. The Contractor shall connect the antenna to the drop cable. Waterproof antenna sealant shall be used to fully seal the connection.

The Contractor shall aim the antenna to optimize the received signal level. The Contractor shall select the channel for each group and set each radio in the group to that channel. The Contractor shall adjust the output power to optimize the received signal level and to comply with all regulations. The Contractor shall record the channel and power level to which each radio is set and submit this data to the Engineer.

### **METHOD OF MEASUREMENT**

This work will be measured as the number of units satisfactorily furnished, installed, verified functionality with the owner's traffic signal control center, tested, and approved.



**ITEM 683.150100ER— 5.8 GHZ WIRELESS RADIO/ANTENNA SYSTEM ASSEMBLY**

**BASIS OF PAYMENT**

The unit price bid for each 5.8 GHZ wireless modem shall include the cost of furnishing all labor, materials, tools, equipment and incidentals as necessary to complete the work of installation and make functional.

Progress payments will be made as follows:

Fifty percent (50%) of the bid price of each Assembly will be paid upon satisfactory completion of the On-Site Stand Alone Tests for each radio/antenna at the individual location provided on the plan set. An additional fifty percent (50%) will be paid upon satisfactory completion of a System Interface Test showing satisfactory operation of all radios/antennas from the Master location with each slave location and the owner's traffic signal control center.



**ITEM 690.0100NN05 - SPECIALTY WORK (GENERAL)**  
**ITEM 690.0200NN05 - SPECIALTY WORK (PLUMBING AND GAS)**  
**ITEM 690.0300NN05 - SPECIALTY WORK (HVAC)**  
**ITEM 690.0400NN05 - SPECIALTY WORK (ELECTRICAL)**

**DESCRIPTION:**

Under this item, the Contractor shall furnish all labor, equipment, and materials necessary for the construction, reconstruction, repair, or demolition of the facilities described in the contract documents, complete in accordance with the specifications and in a manner satisfactory to the Engineer.

This item is intended to separate each area of specialty work into its own payment unit. All specialty work required is to be included under this item, unless the general work has been included in a larger prime contract, in which case the payment for the general work will be made in accordance with the provisions stated in the prime contract documents.

**MATERIALS:**

All materials shall meet the requirements specified in the contract documents.

When materials substitutions are permitted, they shall be subject to review and approval by the Engineer and representatives of the owning and/or maintaining agency or agencies.

**BASIS OF ACCEPTANCE:**

Materials required to conform to established Department specifications shall be accepted in accordance with those specifications.

Materials which do not fall into the above category shall be accepted based on the manufacturer's certification that the material supplied meets the requirements stated in the contract documents.

The contractor shall supply the Engineer with catalog cuts for products which require his approval a minimum of two weeks prior to the proposed installation date.

All materials supplied shall bear the manufacturer's identifying markings in order to positively identify products approved for use.

**CONSTRUCTION DETAILS:**

Construction details shall conform to the requirements specified in the contract documents, the manufacturer's recommendations, and as ordered by the Engineer.

Any Contractor performing work on the project will be required to coordinate his/her operations with those of other Contractors to ensure orderly and timely progression of the work.



**ITEM 690.0100NN05 - SPECIALTY WORK (GENERAL)**  
**ITEM 690.0200NN05 - SPECIALTY WORK (PLUMBING AND GAS)**  
**ITEM 690.0300NN05 - SPECIALTY WORK (HVAC)**  
**ITEM 690.0400NN05 - SPECIALTY WORK (ELECTRICAL)**

**METHOD OF MEASUREMENT:**

Payment will be made on a lump sum basis.

**BASIS OF PAYMENT:**

The lump sum price bid shall include the cost of furnishing all labor, equipment, and materials necessary to furnish, deliver, install, and prepare for placement into service, the facilities described in the contract documents.

Progress payments will be made, in proportion to the total amount bid, for work completed to the satisfaction of the Engineer. The Engineer shall have the right to revise this amount at any time to reflect his judgment of the value of the work performed in relation to the total work required.

Serialization shall be as described in the contract documents.



## FORM 2A – CONTRACTORS AFFIRMATIVE ACTION STATEMENT

The \_\_\_\_\_  
(Company Name)

hereby states that we will make good faith efforts to ensure a diverse workforce and minority business participation in for this project in accordance with the City of Buffalo Charter, Chapter 96, Bonds and Contracts.

\_\_\_\_\_  
(Signature of authorized representative of Bidder)

Dated: \_\_\_\_\_

BIDS FAILING TO INCLUDE OR COMPLETE ANY OF THE ABOVE ITEMS  
WILL BE CONSIDERED NON-RESPONSIVE AND WILL NOT BE ACCEPTED.



### **BIDDER'S CERTIFICATION**

\_\_\_\_\_ certifies that:  
(Bidder)

It is not on the U.S. Comptroller General's list of ineligible Contractors for Federal financed or assisted construction; and

It will obtain from each of its subcontractors and submit to the contracting or administering agency prior to the award of any subcontract under this contract the subcontractor certification attached hereto.

\_\_\_\_\_  
(Signature of authorized representative of Bidder)

Dated: \_\_\_\_\_

\_\_\_\_\_  
(Exact name of Individual, Firm, or Corporation)

(CORPORATE SEAL)      by: \_\_\_\_\_  
(Name and Title)

NOTE:      If the Bidder be a corporation and this Proposal be signed by an Officer other than the President or a Vice President, the Bidder shall furnish a certified copy of by-law or resolution authorizing said Officer to sign, unless same has previously been furnished to the Authority.

NOTE:      **BIDS FAILING TO INCLUDE OR COMPLETE ANY OF THE ABOVE ITEMS WILL BE CONSIDERED NON-RESPONSIVE AND WILL NOT BE ACCEPTED.**





Kathy Hochul, Governor

Roberta Reardon, Commissioner

COB Department of Public Works

Jeanette Koch, Senior Associate  
95 Perry Street, Suite 300  
Buffalo NY 14203

Schedule Year 2022 through 2023  
Date Requested 11/16/2022  
PRC# 2022012813

Location City of Buffalo  
Project ID# PIN 5762.90  
Project Type HIGHWAY REHABILITATION & RECONFIGURATION PROJECT, PHASE 4B HERTEL AVENUE TO ONTARIO STREET

### PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2022 through June 2023. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website [www.labor.ny.gov](http://www.labor.ny.gov). Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

#### NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: \_\_\_\_\_ Date Cancelled: \_\_\_\_\_

Name & Title of Representative: \_\_\_\_\_

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240







# **General Provisions of Laws Covering Workers on Article 8 Public Work Contracts**

## **Introduction**

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

## **Responsibilities of the Department of Jurisdiction**

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission; a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion [online](#).

## **Hours**

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

There are very few exceptions to this rule. Complete information regarding these exceptions is available on the ["Request for a dispensation to work overtime" form \(PW30\)](#) and ["4 Day / 10 Hour Work Schedule" form \(PW 30.1\)](#).

## **Wages and Supplements**

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website [www.labor.ny.gov](http://www.labor.ny.gov).

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website [www.labor.ny.gov](http://www.labor.ny.gov).

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website [www.labor.ny.gov](http://www.labor.ny.gov).

## **Payrolls and Payroll Records**

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid



or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed \$100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds \$25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

### **Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties**

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

### **Withholding of Payments**

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

### **Summary of Notice Posting Requirements**

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.



The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers' compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

## **Apprentices**

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

## **Interest and Penalties**

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

## **Debarment**

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

## **Criminal Sanctions**

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

## **Discrimination**

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).



No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b) ).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of \$50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c) ).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d) ).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

### **Workers' Compensation**

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

### **Unemployment Insurance**

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.





Kathy Hochul, Governor

Roberta Reardon, Commissioner

COB Department of Public Works

Jeanette Koch, Senior Associate  
95 Perry Street, Suite 300  
Buffalo NY 14203

Schedule Year 2022 through 2023  
Date Requested 11/16/2022  
PRC# 2022012813

Location City of Buffalo  
Project ID# PIN 5762.90  
Project Type HIGHWAY REHABILITATION & RECONFIGURATION PROJECT, PHASE 4B HERTEL AVENUE TO ONTARIO STREET

### Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

### Contractor Information

All information must be supplied

|                                               |                                                    |            |
|-----------------------------------------------|----------------------------------------------------|------------|
| Federal Employer Identification Number: _____ |                                                    |            |
| Name: _____                                   |                                                    |            |
| Address: _____<br>_____                       |                                                    |            |
| City: _____                                   | State: _____                                       | Zip: _____ |
| Amount of Contract: \$ _____                  | Contract Type:                                     |            |
| Approximate Starting Date: ____/____/____     | <input type="checkbox"/> (01) General Construction |            |
| Approximate Completion Date: ____/____/____   | <input type="checkbox"/> (02) Heating/Ventilation  |            |
|                                               | <input type="checkbox"/> (03) Electrical           |            |
|                                               | <input type="checkbox"/> (04) Plumbing             |            |
|                                               | <input type="checkbox"/> (05) Other : _____        |            |

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240







### **Social Security Numbers on Certified Payrolls:**

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

### **Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d**

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to \$1,500 for a first offense and up to \$5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, <https://dol.ny.gov/public-work-and-prevailing-wage>

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: [dol.misclassified@labor.ny.gov](mailto:dol.misclassified@labor.ny.gov) .

### **Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)**

#### **Effective June 23, 2020**

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub*\*. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website [www.labor.ny.gov](http://www.labor.ny.gov) or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. \*In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.



**To all State Departments, Agency Heads and Public Benefit Corporations  
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND**

## **Budget Policy & Reporting Manual**

# **B-610**

### **Public Work Enforcement Fund**

*effective date December 7, 2005*

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#### **1. Purpose and Scope:**

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

#### **2. Background and Statutory References:**

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

#### **3. Procedures and Agency Responsibilities:**

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.



**To all State Departments, Agency Heads and Public Benefit Corporations**  
**IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND**

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor  
Administrative Finance Bureau-PWEF Unit  
Building 12, Room 464  
State Office Campus  
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.









## Required Notice under Article 25-B of the Labor Law

### **Attention All Employees, Contractors and Subcontractors: You are Covered by the Construction Industry Fair Play Act**

#### **The law says that you are an employee unless:**

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

**It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.**

**Employee Rights:** If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

**Independent Contractors:** If you are an independent contractor, **you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

**Penalties** for paying workers off the books or improperly treating employees as independent contractors:

- **Civil Penalty**
  - First offense: Up to \$2,500 per employee
  - Subsequent offense(s): Up to \$5,000 per employee
- **Criminal Penalty**
  - First offense: Misdemeanor - up to 30 days in jail, up to a \$25,000 fine and debarment from performing public work for up to one year.
  - Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a \$50,000 fine and debarment from performing public work for up to 5 years.

**If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to [dol.misclassified@labor.ny.gov](mailto:dol.misclassified@labor.ny.gov). All complaints of fraud and violations are taken seriously. You can remain anonymous.**

**Employer Name:**

IA 999 (09/16)







# Attention Employees

## THIS IS A: **PUBLIC WORK PROJECT**

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007:

**These wages are set by law and must be posted at the work site. They can also be found at:**

<https://dol.ny.gov/public-work-and-prevailing-wage>

If you feel that you have not received proper wages or benefits, please call our nearest office.\*

|               |                |              |                |
|---------------|----------------|--------------|----------------|
| Albany        | (518) 457-2744 | Patchogue    | (631) 687-4882 |
| Binghamton    | (607) 721-8005 | Rochester    | (585) 258-4505 |
| Buffalo       | (716) 847-7159 | Syracuse     | (315) 428-4056 |
| Garden City   | (516) 228-3915 | Utica        | (315) 793-2314 |
| New York City | (212) 932-2419 | White Plains | (914) 997-9507 |
| Newburgh      | (845) 568-5156 |              |                |

\* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or [www.comptroller.nyc.gov](http://www.comptroller.nyc.gov) – click on Bureau of Labor Law.

Contractor Name: \_\_\_\_\_

Project Location: \_\_\_\_\_







## Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is \$250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

### The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record or other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

\*\*A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

## WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is \$3 million in Bronx, Kings, New York, Queens and, Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)



## Introduction to the Prevailing Rate Schedule

### Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

#### Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

#### Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

#### Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

#### Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

#### Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

#### Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website ([www.labor.ny.gov](http://www.labor.ny.gov)) for current wage rate information.

#### Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.



| Title (Trade)                                  | Ratio   |
|------------------------------------------------|---------|
| Boilermaker (Construction)                     | 1:1,1:4 |
| Boilermaker (Shop)                             | 1:1,1:3 |
| Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder) | 1:1,1:4 |
| Carpenter (Residential)                        | 1:1,1:3 |
| Electrical (Outside) Lineman                   | 1:1,1:2 |
| Electrician (Inside)                           | 1:1,1:3 |
| Elevator/Escalator Construction & Modernizer   | 1:1,1:2 |
| Glazier                                        | 1:1,1:3 |
| Insulation & Asbestos Worker                   | 1:1,1:3 |
| Iron Worker                                    | 1:1,1:4 |
| Laborer                                        | 1:1,1:3 |
| Mason                                          | 1:1,1:4 |
| Millwright                                     | 1:1,1:4 |
| Op Engineer                                    | 1:1,1:5 |
| Painter                                        | 1:1,1:3 |
| Plumber & Steamfitter                          | 1:1,1:3 |
| Roofer                                         | 1:1,1:2 |
| Sheet Metal Worker                             | 1:1,1:3 |
| Sprinkler Fitter                               | 1:1,1:2 |

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor  
Bureau of Public Work  
State Office Campus, Bldg. 12  
Albany, NY 12240

| District Office Locations:             | Telephone #  | FAX #        |
|----------------------------------------|--------------|--------------|
| Bureau of Public Work - Albany         | 518-457-2744 | 518-485-0240 |
| Bureau of Public Work - Binghamton     | 607-721-8005 | 607-721-8004 |
| Bureau of Public Work - Buffalo        | 716-847-7159 | 716-847-7650 |
| Bureau of Public Work - Garden City    | 516-228-3915 | 516-794-3518 |
| Bureau of Public Work - Newburgh       | 845-568-5287 | 845-568-5332 |
| Bureau of Public Work - New York City  | 212-932-2419 | 212-775-3579 |
| Bureau of Public Work - Patchogue      | 631-687-4882 | 631-687-4902 |
| Bureau of Public Work - Rochester      | 585-258-4505 | 585-258-4708 |
| Bureau of Public Work - Syracuse       | 315-428-4056 | 315-428-4671 |
| Bureau of Public Work - Utica          | 315-793-2314 | 315-793-2514 |
| Bureau of Public Work - White Plains   | 914-997-9507 | 914-997-9523 |
| Bureau of Public Work - Central Office | 518-457-5589 | 518-485-1870 |



## Erie County General Construction

### Boilermaker

11/01/2022

**JOB DESCRIPTION** Boilermaker

**DISTRICT** 12

#### ENTIRE COUNTIES

Allegany, Cattaraugus, Chautauqua, Chemung, Erie, Genesee, Livingston, Monroe, Niagara, Ontario, Orleans, Schuyler, Steuben, Wayne, Wyoming, Yates

#### WAGES

Per hour: 07/01/2022

Boilermaker \$ 35.10

The wage rate will be 90% of the above for Maintenance work on boilers less than 100,000 pph.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

#### SUPPLEMENTAL BENEFITS

Per hour: \$ 31.04\*

\*NOTE: \$29.85 of this amount is for every Hour "Paid"

#### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

#### REGISTERED APPRENTICES

1st Term at 12 Months

Terms 3-8 at 6 Months

Per Hour:

1st 65%

3rd 70% 4th 75% 5th 80% 6th 85% 7th 90% 8th 95%

Supplemental Benefits per hour:

All Terms \$ 31.04\*\*

\*\*NOTE: \$29.85 of this amount is for every Hour "Paid"

12-7

### Carpenter - Building

11/01/2022

**JOB DESCRIPTION** Carpenter - Building

**DISTRICT** 12

#### ENTIRE COUNTIES

Erie

#### PARTIAL COUNTIES

Cattaraugus: Townships of Persia and Perrysburg

#### WAGES

Per hour: 07/01/2022

Building:

Carpenter \$ 33.53

FloorLayer 33.53

Certified Welder 34.53

Hazardous Waste Worker 35.03

Diver-Dry Day 34.53

Diver Tender 34.53

Diver-Wet Day\*\*\* 61.25

Hazardous Waste Worker: Hazardous sites requiring personal protective equipment.

\*\*\* Diver rate applies to all hours worked on the day of dive.



|                       |                 |                            |
|-----------------------|-----------------|----------------------------|
| Depth pay for divers: | 0' to 80'       | no additional fee          |
|                       | 81' to 100'     | additional \$0.50 per foot |
|                       | 101' to 150'    | additional \$0.75 per foot |
|                       | 151' and deeper | additional \$1.25 per foot |
| Penetration pay:      | 0' to 50'       | no additional fee          |
|                       | 51' to 100'     | additional \$0.75 per foot |
|                       | 101' and deeper | additional \$1.00 per foot |

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

### SUPPLEMENTAL BENEFITS

Per hour worked:

|              |          |
|--------------|----------|
| Carpenter(s) | \$ 29.00 |
| Diver(s)     | 29.00    |

### OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

### HOLIDAY

|           |                            |
|-----------|----------------------------|
| Paid:     | See (1) on HOLIDAY PAGE    |
| Overtime: | See (5, 6) on HOLIDAY PAGE |

### REGISTERED APPRENTICES

Wages per hour:

One year terms at the following percentage of Journeyman's base wage:

Floorlayer Apprentices:

|     |     |     |     |
|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th |
| 55% | 60% | 70% | 80% |

Carpenter Apprentices:

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th | 5th |
| 55% | 60% | 65% | 70% | 80% |

Supplemental Benefits per hour worked:

|         |         |         |         |         |
|---------|---------|---------|---------|---------|
| 1st     | 2nd     | 3rd     | 4th     | 5th     |
| \$12.65 | \$12.65 | \$15.30 | \$15.30 | \$15.30 |

12-276B-Cat

### Carpenter - Building / Heavy&Highway

11/01/2022

**JOB DESCRIPTION** Carpenter - Building / Heavy&Highway

**DISTRICT** 2

### ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

### PARTIAL COUNTIES

Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing west to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

### WAGES

|                                                                    |            |            |            |
|--------------------------------------------------------------------|------------|------------|------------|
| Wages per hour:                                                    | 07/01/2022 | 07/01/2023 | 07/01/2024 |
|                                                                    |            | Additional | Additional |
| Carpenter - ONLY for<br>Artificial Turf/Synthetic<br>Sport Surface | \$ 33.08   | \$ 2.25*   | \$2.25*    |

\*To be allocated at a later date

Note - Does not include the operation of equipment. Please see Operating Engineers rates.



## SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 25.45

## OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE

## HOLIDAY

Paid: See (5) on HOLIDAY PAGE

Overtime: See (5, 6, 16) on HOLIDAY PAGE

Notes:

When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. When a holiday falls upon a Sunday, it shall be observed on the following Monday.

An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

## REGISTERED APPRENTICES

Wages per hour (1300 hour terms at the following percentage of Journeyman's wage):

| 1st | 2nd | 3rd | 4th |
|-----|-----|-----|-----|
| 65% | 70% | 75% | 80% |

Supplemental Benefits per hour:

|          |          |
|----------|----------|
| 1st term | \$ 16.97 |
| 2nd term | 17.41    |
| 3rd term | 19.40    |
| 4th term | 19.84    |

2-42AtSS

## Carpenter - Heavy&Highway

11/01/2022

**JOB DESCRIPTION** Carpenter - Heavy&Highway

**DISTRICT** 12

## ENTIRE COUNTIES

Erie

## WAGES

Per hour: 07/01/2022

|                                 |          |
|---------------------------------|----------|
| Carpenter                       | \$ 37.44 |
| Certified Welder                | 39.94    |
| Diver-Dry Day                   | 38.44    |
| Diver-Wet Day**                 | 62.44    |
| Diver Tender                    | 38.44    |
| Hazardous Material Worker       | 39.44    |
| Piledriver                      | 37.44    |
| Effluent & Slurry Diver-Dry Day | 57.66    |
| Effluent & Slurry Diver-Wet Day | 93.66    |

Hazardous Waste Worker: Hazardous sites requiring personal protective equipment.

\*\* Diver rate applies to all hours worked on the day of dive.

|                       |              |                            |
|-----------------------|--------------|----------------------------|
| Depth pay for divers: | 0' to 50'    | no additional fee          |
|                       | 51'to 100'   | additional \$0.50 per foot |
|                       | 101' to 150' | additional \$0.75 per foot |
|                       | 151' to 200' | additional \$1.25 per foot |

|                  |                |                            |
|------------------|----------------|----------------------------|
| Penetration pay: | 0' to 50'      | no additional fee          |
|                  | 51' to 100'    | additional \$0.75 per foot |
|                  | 101' to deeper | additional \$1.00 per foot |

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

## SUPPLEMENTAL BENEFITS

Per hour worked:

Carpenter(s) \$ 31.09



Diver(s) 31.09

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (2, 17) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

One year terms at the following percentage of Journeyman's wage:

Carpenter Apprentice:

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th | 5th |
| 65% | 70% | 75% | 80% | 85% |

Pile Driver Apprentice(1300hour terms at percentage of Pile Driver Rate)

|     |     |     |     |
|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th |
| 65% | 70% | 75% | 80% |

Supplemental benefits Carpenter/Pile Driver per hour worked:

|         |         |         |         |         |
|---------|---------|---------|---------|---------|
| 1st     | 2nd     | 3rd     | 4th     | 5th     |
| \$17.95 | \$18.46 | \$20.53 | \$21.04 | \$21.56 |

12-276HH-Erie

**Electrician**

**11/01/2022**

**JOB DESCRIPTION** Electrician

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie

**PARTIAL COUNTIES**

Cattaraugus: Only the Townships of Ashford, East Otto, Ellicottville, Farmersville, Freedom, Franklinville, Lyndon, Machias, Mansfield, New Albion, Otto, Perrysburg, Persia and Yorkshire.

Genesee: Only the Townships of Alabama, Alexander, Darien, Oakfield, Pembroke and that portion of the Towns of Batavia and Elba that are west of Little Tonawanda Creek; Tonawanda Creek; the City limits of Batavia (in effect prior to Feb. 1, 1970) and State Highway 98 north of the City of Batavia, then north on Highway 98 to the Orleans County line.

Wyoming: Only the Townships of Arcade, Attica, Bennington, Eagle, Java, Orangeville, Sheldon and Wethersfield.

**WAGES**

|              |            |            |
|--------------|------------|------------|
| Per hour:    | 07/01/2022 | 05/30/2023 |
|              |            | Additional |
| Electrician* | \$ 38.99   | \$ 2.00    |

\* Includes teledata work

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

17.3% for work from 4:30PM - 1:00AM

31.4% for work from 12:30AM - 9:00AM

Additional \$0.50/hr in shafts over 25 ft. deep and in underground tunnels over 75 ft. long.

Additional \$0.75/hr for work on toothpicks, structural steel, temporary platforms, swinging scaffolds, boatswain chairs, smoke stacks or water towers 30 ft above the floor or for work on rolling scaffolds and ladders over 50 ft.

Additional \$1.50/hr for Cable Splicers on such work as lead, and shielded cable and splices or terminations on cable 5KV and above.

Additional \$1.00/hr for Hot work (Atomic plants).

Additional \$2.00/hr for work on radio, TV, light towers and floating platforms or climbing ladders in excess of 100 ft. high.

**SUPPLEMENTAL BENEFITS**

Per hour:  
\$ 30.55\*

\* NOTE - add 3% of the posted straight time or applicable premium wage rate.

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following wages:



0 to 1000 to 2000 to 3500 to 5000 to 6500 to 8000  
\$ 14.45 \$ 15.60 \$ 17.55 \$ 21.45 \$ 27.30 \$ 31.20

Supplemental benefits per hour:

0 to 2000 to 6500 to 8200  
\$ 13.51\* \$ 24.40\* \$ 30.55\*

\* NOTE - add 3% of the posted straight time or applicable premium wage rate.

3-41

## Elevator Constructor

11/01/2022

**JOB DESCRIPTION** Elevator Constructor

**DISTRICT** 3

### ENTIRE COUNTIES

Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

### WAGES

|                      |            |
|----------------------|------------|
| Per hour:            | 07/01/2022 |
| Elevator Constructor | \$ 54.98   |
| Helper               | 38.49      |

**\*\* IMPORTANT NOTICE - EFFECTIVE 04/01/2009 \*\***

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

### SUPPLEMENTAL BENEFITS

Per hour:  
\$ 36.89

Note - add 6% of regular hourly rate for all hours worked.

### OVERTIME PAY

See (D, O) on OVERTIME PAGE

### HOLIDAY

Paid: See (5, 6, 15, 16) on HOLIDAY PAGE  
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:

One year (1,700 hour each) terms at the following percentage of Journeyman's wage:

|      |     |     |     |
|------|-----|-----|-----|
| 1st* | 2nd | 3rd | 4th |
| 55%  | 65% | 70% | 80% |

Supplemental benefits per hour:

\$ 36.89

\* Note - 0-6 months of the 1st year term is paid at 50% of Journeyman's wage with no Supplemental benefits.

Note - add 6% of regular hourly rate for all hours worked.

3-14

## Glazier

11/01/2022

**JOB DESCRIPTION** Glazier

**DISTRICT** 3

### ENTIRE COUNTIES

Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

### WAGES

Per hour: 07/01/2022

|                                              |          |
|----------------------------------------------|----------|
| Glazier                                      | \$ 29.48 |
| Working off Suspended Scaffold (Swing Stage) | 31.48    |
| Maintenance                                  | 19.00*   |

\* Note - This rate to be used only for all repair and replacement work such as glass breakage, glass replacement, door repair and board ups.



**\*\* IMPORTANT NOTICE \*\***

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:

|                    |          |
|--------------------|----------|
| Journeyman Glazier | \$ 25.09 |
| Maintenance        | 16.06    |

**OVERTIME PAY**

See (B, E2, F, R) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE for Glazier and Glazier Apprentices.

Paid: See (5, 6) on HOLIDAY PAGE for Maintenance

Overtime: See (5, 6) on HOLIDAY PAGE.

**REGISTERED APPRENTICES**

Wages per hour:

Glazier: 1000 hour terms at the following percentage of Journeyman's wage:

|          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|
| 1st      | 2nd      | 3rd      | 4th      | 5th      | 6th      | 7th      | 8th      |
| \$ 17.50 | \$ 18.50 | \$ 19.50 | \$ 20.50 | \$ 21.50 | \$ 22.50 | \$ 23.50 | \$ 24.50 |

Supplemental benefits per hour:

|                 |         |
|-----------------|---------|
| 1st & 2nd terms | \$ 8.60 |
| 3rd & 4th terms | 11.10   |
| 5th & 6th terms | 12.60   |
| 7th & 8th terms | 14.10   |

3-660

**Insulator - Heat & Frost**

**11/01/2022**

**JOB DESCRIPTION** Insulator - Heat & Frost

**DISTRICT 3**

**ENTIRE COUNTIES**

Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming

**PARTIAL COUNTIES**

Genesee: Only the Townships of Alabama, Alexander, Darien, Oakfield and Pembroke.

**WAGES**

|                        |            |
|------------------------|------------|
| Per Hour:              | 07/01/2022 |
| Heat & Frost Insulator | \$ 35.50   |

**SUPPLEMENTAL BENEFITS**

|           |          |
|-----------|----------|
| Per hour: | \$ 26.79 |
|-----------|----------|

**OVERTIME PAY**

See (B, \*E, \*\*Q) on OVERTIME PAGE

\* Note - Double time after 10 hours on Saturday.

\*\* Note - Triple time on Labor Day if WORKED.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

One year terms at the following percentage of Journeyman's wage:

|     |     |     |     |
|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th |
| 60% | 70% | 75% | 80% |

Supplemental Benefits per hour:

|     |         |
|-----|---------|
| 1st | \$ 7.96 |
|-----|---------|



|     |       |
|-----|-------|
| 2nd | 11.54 |
| 3rd | 26.79 |
| 4th | 26.79 |

3-4

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**Ironworker****11/01/2022**

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**JOB DESCRIPTION** Ironworker**DISTRICT** 3**ENTIRE COUNTIES**

Cattaraugus, Chautauqua

**PARTIAL COUNTIES**

Allegany: Entire county except the Towns of Birdsall, Burns and Grove.

Erie: All except the Town of Grand Island north of Whitehaven Road.

Genesee: Only the Townships of Alabama, Alexander, Darien and Pembroke

Steuben: Only the Townships of Canisteo, Freemont, Greenwood, Hartsville, Hornell, Hornellsville, Howard, Jasper, Troupsburg and West Union

Wyoming: Only the Townships of Arcade, Attica, Bennington, Eagle, Gainsville, Java, Orangeville, Pike, Sheldon, Warsaw and Wethersfield.

**WAGES**

Per hour: 07/01/2022

|                        |          |
|------------------------|----------|
| Structural             | \$ 32.36 |
| Ornamental             | 32.36    |
| Layout                 | 32.36    |
| Rodmen                 | 32.36    |
| Reinforcing            | 32.36    |
| Welders                | 32.36    |
| Riggers & Mach. Movers | 32.36    |
| Curtain Wall Erector   | 32.36    |
| Window Erector         | 30.01    |
| Fence Erector          | 30.93    |

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

10% for second shift work from 2:00PM - 7:00PM

15% for third shift work from 7:00PM - 12:00AM

When a single irregular shift is worked outside the standard workday with the start times based on second and third shifts, a 10% premium on hours worked applies.

**SUPPLEMENTAL BENEFITS**

Per hour:

|                |          |
|----------------|----------|
| Fence erectors | \$ 30.17 |
| All others     | 31.67    |

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

One year terms at the following wage:

| 1st      | 2nd      | 3rd      | 4th      |
|----------|----------|----------|----------|
| \$ 19.50 | \$ 21.50 | \$ 23.50 | \$ 25.50 |

Supplemental benefits per hour:

| 1st      | 2nd      | 3rd      | 4th      |
|----------|----------|----------|----------|
| \$ 14.17 | \$ 23.97 | \$ 25.37 | \$ 26.77 |

3-6

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**Ironworker****11/01/2022**

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**JOB DESCRIPTION** Ironworker**DISTRICT** 3**ENTIRE COUNTIES**

Niagara

**PARTIAL COUNTIES**



Erie: Only that portion of the Township of Grand Island north of Whitehaven Road.  
Orleans: Only the Townships of Ridgeway, Shelby and Yates.

### WAGES

Per hour: 07/01/2022

|                      |          |
|----------------------|----------|
| Structural           | \$ 32.00 |
| Ornamental           | 32.00    |
| Reinforcing          | 32.00    |
| Rigger & Mach. Mover | 32.00    |
| Pre-Engineered       | 32.00    |
| Fence Erector        | 32.00    |
| Pre-Cast Erector     | 32.00    |
| Welder               | 32.00    |
| Window Erector       | 32.00    |

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

10% for second shift work from 2:00PM - 7:00PM

15% for third shift work from 7:00PM - 12:00AM

When a single irregular shift is worked outside the standard workday with the start times based on second and third shifts, a 10% premium on hours worked applies.

### SUPPLEMENTAL BENEFITS

Per hour: \$ 32.29

### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:

One year terms at the following wage:

|          |          |
|----------|----------|
| 1st term | \$ 19.50 |
| 2nd term | 21.50    |
| 3rd term | 23.50    |
| 4th term | 25.50    |

Supplemental benefits per hour:

|          |          |
|----------|----------|
| 1st term | \$ 12.53 |
| 2nd term | 20.23    |
| 3rd term | 21.33    |
| 4th term | 22.43    |

3-9

## Laborer - Building

11/01/2022

**JOB DESCRIPTION** Laborer - Building

**DISTRICT** 3

### ENTIRE COUNTIES

Erie

### PARTIAL COUNTIES

Cattaraugus: Only the Townships of Perrysburg and the Village Gowanda.

### WAGES

CLASS A: Basic, Safety Man, Flagman, Tool Room Man, Nurseryman, Demolition Worker, Top Man, Wrecker, IBC Barriers Except on Structures, Guard Rail, Asphalt Shovelers, Foundation Laborer over 8' in Depth, Hod Carriers, Plaster Tender, Plaster Scaffold Builder, Pneumatic Gas, Electric Tool Operator including all forms of Busters, Jackhammers and Chipping Guns, Steel Burners.

CLASS B: Mortar Mixer, Asphalt Smoothers, Pneumatic Gas, Electric Tool Operator including all forms of Busters, Jackhammers and Chipping Guns over 8' in depth.

CLASS C: Worker on any Swing Scaffold, Blaster, Plumbing Laborer, Wagon Drill Operator, Bottomman (caisson or cofferdam), Laser Setter, Asphalt Rakers, Asphalt Screed Man.

CLASS D: Stone Cutter, Curb Setter and Flag Layer.



CLASS E: Wearing of replaceable cartridge respirator.

CLASS F: Asbestos Removal, Deleader.

CLASS G: Hazardous Waste Worker.

Per hour: 07/01/2022  
Building Laborer:  
CLASS A \$ 30.33  
CLASS B 30.50  
CLASS C 30.61  
CLASS D 31.08  
CLASS E 31.33  
CLASS F 31.83  
CLASS G 32.33

**SUPPLEMENTAL BENEFITS**

Per hour:  
\$ 27.65

**OVERTIME PAY**

See (B, E, E2, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (22) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 1500 to 3000 to 4000  
70% 80% 90%

Supplemental benefits per hour:

\$ 27.65

3-210b

**Laborer - Heavy&Highway**

**11/01/2022**

**JOB DESCRIPTION** Laborer - Heavy&Highway

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie

**WAGES**

Heavy/Highway Laborer:

GROUP A: Basic, Drill Helper, Flagman, Outboard and Hand Boats, Demolition Worker, Nurseryman, IBC Barriers (except on structures), Guard Rails, Road Markers.

GROUP B: Grade Checker, Chain Saw, Concrete Aggregate Bin, Concrete Bootmen, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of Steel Mesh, Small Generators for Laborers' Tools, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Water Pump Operators (2" and Single Diaphragm), Nozzle (Asphalt, Guniting, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other Gas, Electric, Oil and Air Tool Operators, Wrecking Laborer and Laser Man.

GROUP C: All Rock or Drilling Machine Operators (Except Quarry Master and Similar Type), Acetylene Torch Operators, Asphalt Raker, Powderman and Welder.

GROUP D: Blasters, Curb and Flatwork Formsetter not on structures, Stone or Granite Curb Setters and Stone Cutter.

Per hour: 07/01/2022  
Heavy/Highway Laborer:  
GROUP A \$ 33.66  
GROUP B 33.86  
GROUP C 34.06  
GROUP D 34.26

For all Deleader & Asbestos work add \$1.50 to Group A rate.

For all Hazardous waste work add \$2.00 to Group A rate.



For use of replaceable cartridge respirator add \$1.00 to Group A rate.

An additional \$4.00 per hour is required when an irregular work shift starting any time from 3:30PM to 1:00AM is mandated either in the job specification or by the contracting agency.

Sewer/Water Laborer:

GROUP A: Basic, Flagman, Top man, Wreckers.

GROUP B: Foundation, Plaster tender, Scaffold bootman, Pneumatic, gas, electric, tool operator, jackhammer, chipping guns.

GROUP C: Mortar Mixer, over 8 ft. in depth.

GROUP D: Pavement formsetter, Steelburner, Caisson, Wagon Drill Oper., PipeLayer, Swing Scaffold.

GROUP E: Utility pave driver, Laser operator.

GROUP F: Blaster.

Per hour: 07/01/2022

Sewer/Water Laborer:

GROUP A \$ 33.66

GROUP B 33.76

GROUP C 33.81

GROUP D 33.91

GROUP E 34.26

GROUP F 34.66

For all Deleader & Asbestos work add \$1.50 to Group A rate.

For all Hazardous waste work add \$2.00 to Group A rate.

An additional \$4.00 per hour is required when an irregular work shift starting any time from 3:30PM to 1:00AM is mandated either in the job specification or by the contracting agency.

#### **SUPPLEMENTAL BENEFITS**

Per hour:

\$ 27.65

#### **OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

#### **HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

#### **REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 1500 to 3000 to 4000

70% 80% 90%

Supplemental benefits per hour:

\$ 27.65

3-210h

#### **Laborer - Tunnel**

**11/01/2022**

**JOB DESCRIPTION** Laborer - Tunnel

**DISTRICT 3**

**ENTIRE COUNTIES**

Erie

#### **WAGES**

CLASS A: Mole Nipper, Powder Handler, Changehouse Attendant and Top Laborer.

CLASS B: Air Spade, Jackhammer, Pavement Breaker.

CLASS C: Top Bell.

CLASS D: Bottom Bell, Side or Roofbelt Driller, Maintenance men, Burners, Block Layers, Rodmen, Caulkers, Miners helper, Trackmen, Nippers, Deraillmen, Electrical Cablemen, Hosemen, Groutmen, Gravelmen, Form Workers, Movers and Shaftmen, Conveyor men.

CLASS E: Powder Monkey.



CLASS F: Blasters, Ironmen and Cement Worker, Miner, Welder, Heading Driller.

CLASS G: Steel Erectors, Piledriver, Rigger.

Per hour: 07/01/2022

Tunnel Laborer:

|         |          |
|---------|----------|
| CLASS A | \$ 35.16 |
| CLASS B | 35.31    |
| CLASS C | 35.41    |
| CLASS D | 35.91    |
| CLASS E | 36.01    |
| CLASS F | 36.41    |
| CLASS G | 36.66    |

For all Deleader & Asbestos work add \$1.50 to Class A rate.

For all Hazardous waste add \$2.00 to Class A rate.

For use of replaceable cartridge respirator add \$1.00 to Group A rate.

An additional \$3.00 per hour is required when a single irregular work shift starting any time from 5:00PM to 1:00AM is mandated either in the job specification or by the contracting agency.

#### **SUPPLEMENTAL BENEFITS**

Per hour:

\$ 27.65

#### **OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

#### **HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

#### **REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 1500 to 3000 to 4000  
70% 80% 90%

Supplemental benefits per hour:

\$ 27.65

3-210t

### **Lineman Electrician**

**11/01/2022**

**JOB DESCRIPTION** Lineman Electrician

**DISTRICT** 6

#### **ENTIRE COUNTIES**

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

#### **WAGES**

A Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors, assembly of all electrical materials, conduit, pipe, or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. (Ref #14.01.01)



| Per hour:               | 07/01/2022 | 05/01/2023 | 05/06/2024 |
|-------------------------|------------|------------|------------|
| Lineman, Technician     | \$ 56.00   | \$ 57.40   | \$ 58.90   |
| Crane, Crawler Backhoe  | 56.00      | 57.40      | 58.90      |
| Welder, Cable Splicer   | 56.00      | 57.40      | 58.90      |
| Digging Mach. Operator  | 50.40      | 51.66      | 53.01      |
| Tractor Trailer Driver  | 47.60      | 48.79      | 50.07      |
| Groundman, Truck Driver | 44.80      | 45.92      | 47.12      |
| Equipment Mechanic      | 44.80      | 45.92      | 47.12      |
| Flagman                 | 33.60      | 34.44      | 35.34      |

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work". (Ref #14.02.01-A)

|                         |          |          |          |
|-------------------------|----------|----------|----------|
| Lineman, Technician     | \$ 56.00 | \$ 57.40 | \$ 58.90 |
| Crane, Crawler Backhoe  | 56.00    | 57.40    | 58.90    |
| Cable Splicer           | 61.60    | 63.14    | 64.79    |
| Certified Welder -      |          |          |          |
| Pipe Type Cable         | 58.80    | 60.27    | 61.85    |
| Digging Mach. Operator  | 50.40    | 51.66    | 53.01    |
| Tractor Trailer Driver  | 47.60    | 48.79    | 50.07    |
| Groundman, Truck Driver | 44.80    | 45.92    | 47.12    |
| Equipment Mechanic      | 44.80    | 45.92    | 47.12    |
| Flagman                 | 33.60    | 34.44    | 35.34    |

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates apply on switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. (Ref #14.02.01-B)

|                         |          |          |          |
|-------------------------|----------|----------|----------|
| Lineman, Tech, Welder   | \$ 57.32 | \$ 58.72 | \$ 60.22 |
| Crane, Crawler Backhoe  | 57.32    | 58.72    | 60.22    |
| Cable Splicer           | 63.05    | 64.59    | 66.24    |
| Certified Welder -      |          |          |          |
| Pipe Type Cable         | 60.19    | 61.66    | 63.23    |
| Digging Mach. Operator  | 51.59    | 52.85    | 54.20    |
| Tractor Trailer Driver  | 48.72    | 49.91    | 51.19    |
| Groundman, Truck Driver | 45.86    | 46.98    | 48.18    |
| Equipment Mechanic      | 45.86    | 46.98    | 48.18    |
| Flagman                 | 34.39    | 35.23    | 36.13    |

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. (Ref #14.03.01)

|                         |          |          |          |
|-------------------------|----------|----------|----------|
| Lineman, Tech, Welder   | \$ 58.51 | \$ 59.91 | \$ 61.41 |
| Crane, Crawler Backhoe  | 58.51    | 59.91    | 61.41    |
| Cable Splicer           | 58.51    | 59.91    | 61.41    |
| Digging Mach. Operator  | 52.66    | 53.92    | 55.27    |
| Tractor Trailer Driver  | 49.73    | 50.92    | 52.20    |
| Groundman, Truck Driver | 46.81    | 47.93    | 49.13    |
| Equipment Mechanic      | 46.81    | 47.93    | 49.13    |
| Flagman                 | 35.11    | 35.95    | 36.85    |

Additional \$1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

|           |                                              |
|-----------|----------------------------------------------|
| 1ST SHIFT | 8:00 AM to 4:30 PM REGULAR RATE              |
| 2ND SHIFT | 4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %  |
| 3RD SHIFT | 12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 % |



Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

### SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

|                                                                    | 07/01/2022                                         | 05/01/2023                                         | 05/06/2024                                         |
|--------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| Journeyman                                                         | \$ 25.90<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.40<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.90<br>*plus 7% of<br>the hourly<br>wage paid |
| Journeyman Lineman or<br>Equipment Operators<br>with Crane License | \$ 27.90<br>*plus 7% of<br>the hourly<br>wage paid | \$ 29.40<br>*plus 7% of<br>the hourly<br>wage paid | \$ 30.90<br>*plus 7% of<br>the hourly<br>wage paid |

\*The 7% is based on the hourly wage paid, straight time or premium time.

### OVERTIME PAY

See (B, E, Q,) on OVERTIME PAGE. \*Note\* Double time for all emergency work designated by the Dept. of Jurisdiction.

NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

### HOLIDAY

|          |                                                                            |
|----------|----------------------------------------------------------------------------|
| Paid     | See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day. |
| Overtime | See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day. |

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

### REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th |
| 60% | 65% | 70% | 75% | 80% | 85% | 90% |

SUPPLEMENTAL BENEFITS per hour:

|  | 07/01/2022                                         | 05/01/2023                                         | 05/06/2024                                         |
|--|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
|  | \$ 25.90<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.40<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.90<br>*plus 7% of<br>the hourly<br>wage paid |

\*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a

### Lineman Electrician - Teledata

11/01/2022

### JOB DESCRIPTION Lineman Electrician - Teledata

### DISTRICT 6

### ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

### WAGES

Per hour:

For outside work, stopping at first point of attachment (demarcation).

|                      | 07/01/2022 | 01/01/2023 | 01/01/2024 | 01/01/2025 |
|----------------------|------------|------------|------------|------------|
| Cable Splicer        | \$ 36.28   | \$ 37.73   | \$ 39.24   | \$ 40.81   |
| Installer, Repairman | \$ 34.43   | \$ 35.81   | \$ 37.24   | \$ 38.73   |
| Teledata Lineman     | \$ 34.43   | \$ 35.81   | \$ 37.24   | \$ 38.73   |



|                        |          |          |          |          |
|------------------------|----------|----------|----------|----------|
| Tech., Equip. Operator | \$ 34.43 | \$ 35.81 | \$ 37.24 | \$ 38.73 |
| Groundman              | \$ 18.25 | \$ 18.98 | \$ 19.74 | \$ 20.53 |

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

|           |                       |
|-----------|-----------------------|
| 1ST SHIFT | REGULAR RATE          |
| 2ND SHIFT | REGULAR RATE PLUS 10% |
| 3RD SHIFT | REGULAR RATE PLUS 15% |

#### SUPPLEMENTAL BENEFITS

|            |                                        |                                        |                                        |                                        |
|------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| Per hour:  | 07/01/2022                             | 01/01/2023                             | 01/01/2024                             | 01/01/2025                             |
| Journeyman | \$ 5.14                                | \$ 5.14                                | \$ 5.14                                | \$ 5.14                                |
|            | *plus 3% of<br>the hourly<br>wage paid | *plus 3% of<br>the hourly<br>wage paid | *plus 3% of<br>the hourly<br>wage paid | *plus 3% of<br>the hourly<br>wage paid |

\*The 3% is based on the hourly wage paid, straight time rate or premium rate.

#### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

### Lineman Electrician - Traffic Signal, Lighting 11/01/2022

**JOB DESCRIPTION** Lineman Electrician - Traffic Signal, Lighting

**DISTRICT** 6

#### ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

#### WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.  
(Ref #14.01.01)

|                         |            |            |            |
|-------------------------|------------|------------|------------|
| Per hour:               | 07/01/2022 | 05/01/2023 | 05/06/2024 |
| Lineman, Technician     | \$ 48.19   | \$ 49.32   | \$ 50.54   |
| Crane, Crawler Backhoe  | 48.19      | 49.32      | 50.54      |
| Certified Welder        | 50.60      | 51.79      | 53.07      |
| Digging Machine         | 43.37      | 44.39      | 45.49      |
| Tractor Trailer Driver  | 40.96      | 41.92      | 42.96      |
| Groundman, Truck Driver | 38.55      | 39.46      | 40.43      |
| Equipment Mechanic      | 38.55      | 39.46      | 40.43      |
| Flagman                 | 28.91      | 29.59      | 30.32      |



Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

|           |                     |                         |
|-----------|---------------------|-------------------------|
| 1ST SHIFT | 8:00 AM TO 4:30 PM  | REGULAR RATE            |
| 2ND SHIFT | 4:30 PM TO 1:00 AM  | REGULAR RATE PLUS 17.3% |
| 3RD SHIFT | 12:30 AM TO 9:00 AM | REGULAR RATE PLUS 31.4% |

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

### SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

|                                                                    | 07/01/2022                                         | 05/01/2023                                         | 05/06/2024                                         |
|--------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| Journeyman                                                         | \$ 25.90<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.40<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.90<br>*plus 7% of<br>the hourly<br>wage paid |
| Journeyman Lineman or<br>Equipment Operators<br>with Crane License | \$ 27.90<br>*plus 7% of<br>the hourly<br>wage paid | \$ 29.40<br>*plus 7% of<br>the hourly<br>wage paid | \$ 30.90<br>*plus 7% of<br>the hourly<br>wage paid |

\*The 7% is based on the hourly wage paid, straight time or premium time.

### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE. \*Note\* Double time for all emergency work designated by the Dept. of Jurisdiction.

NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

### HOLIDAY

Paid: See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day.

Overtime: See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

### REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th |
| 60% | 65% | 70% | 75% | 80% | 85% | 90% |

SUPPLEMENTAL BENEFITS per hour:

|  | 07/01/2022                                         | 05/01/2023                                         | 05/06/2024                                         |
|--|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
|  | \$ 25.90<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.40<br>*plus 7% of<br>the hourly<br>wage paid | \$ 26.90<br>*plus 7% of<br>the hourly<br>wage paid |

\*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a-LT

### Lineman Electrician - Tree Trimmer

11/01/2022

JOB DESCRIPTION Lineman Electrician - Tree Trimmer

DISTRICT 6

ENTIRE COUNTIES



Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

### WAGES

Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

| Per hour:          | 07/01/2022 | 01/01/2023 |
|--------------------|------------|------------|
| Tree Trimmer       | \$ 28.25   | \$ 29.80   |
| Equipment Operator | 24.98      | 26.35      |
| Equipment Mechanic | 24.98      | 26.35      |
| Truck Driver       | 20.80      | 21.94      |
| Groundman          | 17.13      | 18.07      |
| Flag person        | 13.20*     | 13.20*     |

\*NOTE: Subject to change due to any minimum wage increases.

### SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

|            | 07/01/2022                             | 01/01/2023                             |
|------------|----------------------------------------|----------------------------------------|
| Journeyman | \$ 10.23                               | \$ 10.48                               |
|            | *plus 3% of<br>the hourly<br>wage paid | *plus 3% of<br>the hourly<br>wage paid |

\* The 3% is based on the hourly wage paid, straight time rate or premium rate.

### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

### HOLIDAY

Paid: See (5, 6, 8, 15) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday.

All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

## Mason - Building

11/01/2022

**JOB DESCRIPTION** Mason - Building

**DISTRICT** 3

### ENTIRE COUNTIES

Erie, Niagara

### PARTIAL COUNTIES

Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

### WAGES

|           |            |
|-----------|------------|
| Per hour: | 07/01/2022 |
| Plasterer | \$ 30.15   |

Additional \$3.00/hr for work on swing stage over 20 feet.

### SUPPLEMENTAL BENEFITS

|           |          |
|-----------|----------|
| Per hour: | \$ 23.49 |
|-----------|----------|

### OVERTIME PAY

Exterior work only See ( B, E, E2, Q ) on OVERTIME PAGE.

All other work See ( B, E, Q ) on OVERTIME PAGE.

### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:



Hour terms at the following dollar amounts:  
07/01/2022

|           |          |
|-----------|----------|
| 0-1000    | \$ 13.20 |
| 1000-2000 | \$ 14.00 |
| 2000-3000 | \$ 15.00 |
| 3000-4000 | \$ 16.00 |
| 4000-4700 | \$ 17.00 |
| 4700-5400 | \$ 18.00 |
| 5400-6000 | \$ 19.00 |
| 6000-7000 | \$ 20.00 |
| 7000-8000 | \$ 21.00 |

Supplemental benefits per hour:

Hour terms at the following dollar amounts:

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| 0       | to 4000 | to 4700 | to 5400 | to 6000 | to 8000 |
| \$ 2.50 | \$ 3.50 | \$ 4.50 | \$ 5.50 | \$ 7.50 |         |

3-9-Pltr

**Mason - Building**

**11/01/2022**

**JOB DESCRIPTION** Mason - Building

**DISTRICT 5**

**ENTIRE COUNTIES**

Erie, Niagara

**PARTIAL COUNTIES**

Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

**WAGES**

|              |            |
|--------------|------------|
| Per Hour:    | 07/01/2022 |
| Building:    |            |
| Bricklayer   | \$ 34.82   |
| Stone Mason  | 34.82      |
| Tuck Pointer | 34.82      |

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:

|            |          |
|------------|----------|
| Journeyman | \$ 31.76 |
|------------|----------|

**OVERTIME PAY**

See (B,E,E2\*,Q) on OVERTIME PAGE

\*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

**HOLIDAY**

|           |                            |
|-----------|----------------------------|
| Paid:     | See (1) on HOLIDAY PAGE    |
| Overtime: | See (5, 6) on HOLIDAY PAGE |

**REGISTERED APPRENTICES**

Wages per hour:

1250 hour terms at the following wage:

|          |          |          |          |
|----------|----------|----------|----------|
| 1st      | 2nd      | 3rd      | 4th      |
| \$ 27.20 | \$ 27.67 | \$ 29.51 | \$ 32.23 |

Supplemental benefits per hour:

|          |          |          |          |
|----------|----------|----------|----------|
| 1st      | 2nd      | 3rd      | 4th      |
| \$ 12.65 | \$ 18.85 | \$ 23.70 | \$ 27.67 |

5-3B-Z3

**Mason - Building / Heavy&Highway**

**11/01/2022**



**JOB DESCRIPTION** Mason - Building / Heavy&Highway

**DISTRICT** 3

**ENTIRE COUNTIES**

Erie

**PARTIAL COUNTIES**

Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

**WAGES**

Per hour: 07/01/2022

Cement Mason \$ 32.00

Additional \$0.25 per hr for Swing scaffold or exterior scaffold 42' or higher.

Additional \$1.00 per hr when required to wear respirator.

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 33.22

**OVERTIME PAY**

See (B, E, Q, V) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

750 hour terms at the following dollar amounts:

|          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|
| 1st      | 2nd      | 3rd      | 4th      | 5th      | 6th      |
| \$ 19.20 | \$ 20.80 | \$ 22.40 | \$ 24.00 | \$ 25.60 | \$ 27.20 |

Supplemental benefits per hour:

|         |          |          |          |          |          |
|---------|----------|----------|----------|----------|----------|
| 1st     | 2nd      | 3rd      | 4th      | 5th      | 6th      |
| \$ 8.86 | \$ 11.86 | \$ 11.80 | \$ 15.05 | \$ 17.21 | \$ 20.54 |

3-111Erie

**Mason - Heavy&Highway**

**11/01/2022**

**JOB DESCRIPTION** Mason - Heavy&Highway

**DISTRICT** 5

**ENTIRE COUNTIES**

Allegany, Broome, Chautauqua, Chemung, Chenango, Cortland, Delaware, Genesee, Livingston, Monroe, Ontario, Orleans, Otsego, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

**PARTIAL COUNTIES**

Cattaraugus: Entire county except in the Township of Perrysburg and the Village of Gowanda only the Bricklayer classification applies.

Erie: Only the Bricklayer classification applies.

Niagara: Only the Bricklayer classification applies.

**WAGES**

Per hour: 07/01/2022

Heavy & Highway:

Cement Mason \$ 34.88

Bricklayer 34.88

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 23.53

**OVERTIME PAY**

See (B, E, E2, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE



## REGISTERED APPRENTICES

Wages per hour:

1500 hour terms at the following percentage of Journeyman's wage:

|     |     |     |     |
|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th |
| 50% | 60% | 70% | 80% |

Supplemental benefits per hour:

|          |          |
|----------|----------|
| 1st term | \$ 14.03 |
| 2nd term | \$ 22.97 |
| 3rd term | \$ 23.11 |
| 4th term | \$ 23.25 |

5-3h

### Mason - Tile Finisher

11/01/2022

**JOB DESCRIPTION** Mason - Tile Finisher

**DISTRICT** 5

#### ENTIRE COUNTIES

Erie, Niagara, Orleans

#### PARTIAL COUNTIES

Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

#### WAGES

Per hour: 07/01/2022

Building:

Marble, Slate, Terrazzo \$ 31.71  
and Tile Finisher

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

#### SUPPLEMENTAL BENEFITS

Per hour: \$ 16.97

#### OVERTIME PAY

See (B,E,E2\*,Q) on OVERTIME PAGE

\*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

## REGISTERED APPRENTICES

Wages per hour:

1200 hours 1st and 2nd term and 1300 hours 3rd term at the following wage:

|          |          |          |
|----------|----------|----------|
| 1st      | 2nd      | 3rd      |
| \$ 20.17 | \$ 22.94 | \$ 26.02 |

Supplemental benefits per hour:

|         |          |          |
|---------|----------|----------|
| 1st     | 2nd      | 3rd      |
| \$ 8.94 | \$ 11.05 | \$ 12.87 |

5-3TF - Z3

### Mason - Tile Setter

11/01/2022

**JOB DESCRIPTION** Mason - Tile Setter

**DISTRICT** 5

#### ENTIRE COUNTIES

Erie, Niagara, Orleans

#### PARTIAL COUNTIES

Cattaraugus: Only in the Township of Perrysburg and the Village of Gowanda.



## WAGES

Per hour: 07/01/2022  
Building:  
Marble, Slate, Terrazzo  
and Tile Setter \$ 34.85

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

## SUPPLEMENTAL BENEFITS

Per hour: \$ 31.23

## OVERTIME PAY

See (B,E,E2\*,Q) on OVERTIME PAGE

\*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

## HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

## REGISTERED APPRENTICES

Wages per hour:

1250 hour terms at the following wage:

|          |          |          |          |
|----------|----------|----------|----------|
| 1st      | 2nd      | 3rd      | 4th      |
| \$ 27.08 | \$ 27.50 | \$ 29.12 | \$ 32.54 |

Supplemental benefits per hour:

|          |          |          |          |
|----------|----------|----------|----------|
| 1st      | 2nd      | 3rd      | 4th      |
| \$ 12.47 | \$ 18.68 | \$ 23.69 | \$ 26.91 |

5-3TS - Z3

## Millwright

11/01/2022

## JOB DESCRIPTION Millwright

## DISTRICT 6

## ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

## WAGES

THE FOLLOWING RATE APPLIES TO ANY GAS/STEAM TURBINE AND OR RELATED COMPONENT WORK, INCLUDING NEW INSTALLATIONS OR MAINTENANCE AND ANY/ALL WORK PERFORMED WITHIN THE PROPERTY LIMITS OF A NUCLEAR FACILITY.

Per hour: 07/01/2022

Millwright - Power Generation \$ 41.23

NOTE: ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

- Certified Welders shall receive an additional \$1.75 per hour provided he/she is directed to perform certified welding.
- If a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive an additional \$1.50 per hour.
- An employee performing the work of a machinist shall receive an additional \$2.00 per hour. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional \$1.00 per hour.

## SUPPLEMENTAL BENEFITS

Per hour paid:

Journeyman \$ 26.72\*

\*NOTE: Subject to OT premium

## OVERTIME PAY

See (B, E, \*E2, Q, V) on OVERTIME PAGE



\*NOTE - Saturday may be used as a make-up day and worked at the straight time rate of pay during a work week when conditions such as weather, power failure, fire, or natural disaster prevent the performance of work on a regular scheduled work day.

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

NOTE: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

#### REGISTERED APPRENTICES

WAGES per hour: One year terms at the following percentage of Journeyman's wage:

|                |       |
|----------------|-------|
| Appr. 1st year | 65 %* |
| Appr. 2nd year | 75 %* |
| Appr. 3rd year | 80 %* |
| Appr. 4th year | 90 %* |

\*NOTE: Additional premium for the following work listed below:

|                      |         |
|----------------------|---------|
| Certified Welder     | \$ 1.75 |
| Hazardous Waste Work | 1.50    |
| Machinist            | 2.00    |
| Underground          | 1.00    |
| (500' and below)     |         |

SUPPLEMENTAL BENEFITS per hour:

|                |          |
|----------------|----------|
| Appr. 1st year | \$ 11.83 |
| Appr. 2nd year | 22.26    |
| Appr. 3rd year | 23.74    |
| Appr. 4th year | 25.24    |

6-1163Power

#### Millwright

11/01/2022

**JOB DESCRIPTION** Millwright

**DISTRICT** 12

#### ENTIRE COUNTIES

Erie, Genesee, Niagara

#### WAGES

Per hour: 07/01/2022

|                  |          |
|------------------|----------|
| Building         | \$ 36.65 |
| Heavy & Highway* | 38.65    |

\*All Heavy & Highway Millwright construction will be paid at the rate indicated above. H/H work performed on hazardous waste sites where employees are required to wear protective gear shall receive an additional \$2.00 per hour over the Millwright H/H rate for all hours worked on the day protective gear was worn.

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

- Certified Welders shall receive \$1.75 per hour in addition to the current Millwright's rate provided he/she is directed to perform certified welding.
- If a building work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a \$1.50 premium per hour.
- An employee performing the work of a machinist shall receive \$2.00 per hour in addition to the current Building & Heavy Millwright's rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional \$1.00 per hour.

#### SUPPLEMENTAL BENEFITS

Per hour Paid:

|                     |          |
|---------------------|----------|
| All Classifications | \$ 30.37 |
|---------------------|----------|

#### OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE



## REGISTERED APPRENTICES

Wages per hour:

1300 hour terms at the following percentage of Journeyman's wage:

| 1st | 2nd | 3rd | 4th |
|-----|-----|-----|-----|
| 60% | 70% | 80% | 90% |

Supplemental Benefits per hour worked:

| 1st     | 2nd      | 3rd      | 4th      |
|---------|----------|----------|----------|
| \$12.28 | \$ 24.95 | \$ 26.75 | \$ 28.57 |

12-1163-Gen/Nia/Orl/Wyo

## Operating Engineer - Building

11/01/2022

**JOB DESCRIPTION** Operating Engineer - Building

**DISTRICT** 12

### ENTIRE COUNTIES

Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

### PARTIAL COUNTIES

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

### WAGES

CLASS A: Air Hoist, All Boom Type Equipment, All Pans and Carry-Alls, Archer Hoist, Asphalt Curb and Gutter Machines, Asphalt Roller, Asphalt Spreader or Paver, Automatic Fine Grade Machine (CMI or similar, first and second operator), Backhoe and Pullhoe, Backhoe and Pullhoe (tractor mounted, rubber tired), Back Filling Machine, Belt Placer (CMI or similar type), Bending Machine (Pipe), Bituminous Spreader and Mixer, Blacktop Plants (Automated and Non-automated), Blast or Rotary Drill (Truck or Track Mounted), Blower for Burning Brush, Boiler (when used for power), Boom Truck (excluding pick-up and delivery), Boring Machine, Bulldozer, Cableway, Cage Hoist, Caisson Auger, Central Mix Plant (and all concrete batching plants), Cherry Picker, Concrete Cleaning Decontamination Machine Operator, Concrete Curb and Gutter Machine, Concrete Curing Machine, Concrete Cutters (Vermeer or Similar Type), Concrete Mixer (over 1/2 cu yd.), Concrete Pavement Spreaders and Finishers, Concrete Paver, Concrete Pump, Conveyor, Core Drill, Crane, Crusher, Decon of Equipment, Derrick, Dragline, Dredge, Drill Rig (Tractor Mounted), Dual Drum Paver, Electric Pump used in conjunction with Well Point Systems, Elevating Grader (self propelled or towed), Elevator, Excavator (all purpose, hydraulically operated), Farm Tractor with Accessories, Fine Grade Machine, Forklift, Front End Loader, Generator (10 outlets or more), Gradall, Grader, Grout or Guniting Machine, Head Tower, Heavy Equipment Robotics Operator/Mechanic, Helicopter (when used for hoisting), Hoist (one drum), Hoisting Engine, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator, Hydraulic Boom, Hydraulic Hammer (self-propelled), Hydraulic Pipe Jack Machine (or similar type machine), Hydraulic Rock Expander (or similar type machine), Hydraulic System Pumps, Hydro Crane, Hydro Hammer (or similar type), Industrial Tractor, Jersey Spreader, Kolman Plant Loader (and similar type loaders), Laser Screed, Locomotive, Lubrication Truck, Maintenance Engineer, Maintenance, Lubrication Unit or Truck, Mine Hoist, Mixer for Stabilized Base (self-propelled), Monorail, Motorized Hydraulic Pin Puller, Motorized Hydraulic Seeder, Mucking Machine, Mulching Machine, Multiple Drum Hoist (more than one drum in use), Overhead Crane, Peine Crane (or similar type), Pile Driver, Plant Engineer, Pneumatic Mixer, Post Hole Digger and Driver, Power Broom, Pumpcrete, Push Button Hoist, Push or Snatch Cat, Quarry Master or equivalent, Road Widener, Rock Bit Sharpener (all types), Roller (all), Rolling Machine (pipe), Rotomill, Scissors Trucks, Lift, or Boom Lift of any type (when used for hoisting), Scoopmobile, Shovel, Sideboom, Skidsteer/Bobcat (Similar Type), Skimmer, Slip Form Paver (CMI or similar type), Snorkel/Vacuum Truck, Strato-Tower, Stump Chipping Machine, Tire Truck and Drivers performing tire repair (exclude outside vendor), Towed Roller, Tractor Drawn Belt-Type Grader/Loader, Tractor Shovel, Tractor with Towed Accessories, Tractor (when using winch power), Tractors, Trencher, Truck Crane, Truck Mechanic and Helper (exclude Teamsters when repairing their own trucks), Tunnel Shovel, Tube Finisher (CMI and similar type), Ultra High Pressure Waterjet Cutting Tool System Operator/Mechanic, Vacuum Blasting Machine Operator/Mechanic, Vibratory Compactor, Vibro Tamp, Well Drilling Machine, Well Point, Winch, Winch Truck with A Frame.

CLASS B: Aggregate Bin, Aggregate Plant, Apprentice Engineer, Apprentice Engineer Driver, Articulated Off Road Material Hauler, Boiler (used in conjunction with production), CMI and similar type Concrete Spreads (Apprentice Engineer), Cement Bin, Chipping Machine and Chip Spreader, Compressors (4 or less), Compressors (any size, but subject to other provisions for Compressors, Dust Collectors, Generators, Mechanical Heaters, Pumps, Welding Machines - four of any type or combination), Concrete Mixer (1/2 cu. yd. and under), Fireman, Form Tamper, Form Trucks (excluding Teamster or delivery), Fuel Truck or Drivers (exclude Teamster or delivery), Heaters, Heating Boiler (used for temporary heat), Helper on Lubrication Unit or Truck, Jeep Trencher, Power Heaterman, Power Plant in excess of 10 K.W., Pumps, Revinus Widener, Steam Boilers (if manning or license by local law is required), Steam Cleaner (when used for cleaning equipment on the job site), Welding Machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

Operating Engineer- Building:

|                      |            |
|----------------------|------------|
| Per hour:            | 07/01/2022 |
| Class A              | \$ 40.23   |
| Class B              | 35.57      |
| Crane(Up to 60 Tons) | 42.73      |
| " (61 to 199 Tons)   | 43.73      |



|                      |       |
|----------------------|-------|
| " (200 to 399 Tons)  | 44.23 |
| " (400 Tons or more) | 44.73 |

Additional \$5.00/hr. for Any Tower Crane  
Additional \$2.50/hr. for Hazardous Work Site  
Additional \$1.00/hr. for Tunnel Work  
Additional \$2.25/hr. for Agency Mandated Shift Work

### SUPPLEMENTAL BENEFITS

Per Hour:

Journeyman \$ 32.65\*\*

\*\*Note: For Overtime Hours \$24.20 of this amount is paid a straight time, the remaining balance of \$8.45 is paid at the same premium as the wage.

### OVERTIME PAY

See (B, E, \*E2, P, V) on OVERTIME PAGE

\* Only Saturdays between October 15th and April 15th.

### HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:

1 year Terms

|         |         |         |         |
|---------|---------|---------|---------|
| 1st     | 2nd     | 3rd     | 4th     |
| \$29.63 | \$30.55 | \$31.47 | \$32.39 |

Supplemental benefits Per Hour:

All Apprentices \$31.75\*\*

\*\*Note: For Overtime Hours \$24.20 of this amount to be paid a straight time rate remaining balance of \$7.55 is paid at same premium as the wage.

12-17b

## Operating Engineer - Heavy&Highway

11/01/2022

**JOB DESCRIPTION** Operating Engineer - Heavy&Highway

**DISTRICT** 12

### ENTIRE COUNTIES

Chautauqua, Erie, Niagara, Orleans

### WAGES

Marine Construction/Dredging

Class 1: Diver/Wet Tender, Engineer, Engineer(hydraulic dredge), Blaster.

Class 2(A): Crane, Backhoe Operator, Material Handler, ALL Self-propelled Drill Rigs, Mechanic/Welder, Asst. Engineer(hydraulic dredge), Leverman(hydraulic dredge), Diver/Dry Tender.

Class 2(B): Friction, Lattice Boom, or Crane License Certificate, Endorse Tug or Tow Boat Operator.

Class 3: Deck Equipment Operator, (Machineryman), Maintenance of Crane, Tug/Launch Operator, Loader/Dozer on Barge.

Class 4: Deck Equipment Operator and Machinery Man/Fireman on 4 equipment units or more, Off Road Trucks, Deck Hand, Tug Engineer, Crane Maintenance(50 tons and under/ backhoe 115,000lbs or less), Asst. Tug Operator, Blaster Helper.

Per hour: 07/01/2022

|            |          |
|------------|----------|
| Class 1    | \$ 48.80 |
| Class 2(A) | 47.30    |
| Class 2(B) | 50.30    |
| Class 3    | 42.10    |
| Class 4    | 35.00    |

Hazardous/Toxic Waste based on EAP Levels

Additional:

Level A - \$2.50/Hr.



Level B - 2.00/Hr.  
Level C - 1.00/Hr.  
Level D - 0.50/Hr.

## SUPPLEMENTAL BENEFITS

Per Hour Paid:

ALL CLASSES \$ 32.04

## OVERTIME PAY

See (B, E, I, \*S) on OVERTIME PAGE

\* If the Holiday is Worked

## HOLIDAY

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

12-17 Marine

## Operating Engineer - Heavy&Highway

11/01/2022

**JOB DESCRIPTION** Operating Engineer - Heavy&Highway

**DISTRICT** 12

## ENTIRE COUNTIES

Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

## PARTIAL COUNTIES

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

## WAGES

CLASS A: Air Hoist, All Boom Type Equipment, All Pans and Carry-All's, Asphalt Curb and Cutter Machines, Asphalt Roller, Asphalt Spreader or Paver, Automatic Fine Grade Machine (CMI or similar, first and second operator), Backhoe and Pullhoe (all), Back Filling Machine, Belt Placer (CMI or similar type), Bending Machine (pipe), Bituminous Spreader and Mixer, Blacktop Plant (all), Blast or Rotary Drill (Truck or Track Mounted), Blower for Burning Brush, Boiler (when used for power), Boom Truck, Boring Machine, Bulldozer, Cableway, Cage Hoist, Caisson Auger, Central Mix Plant (and all Concrete Batching Plants), Cherry Picker, Concrete Cleaning Decontamination Machine, Concrete Curb and Gutter Machine, Concrete Curing Machine, Concrete Mixer (over 1/2 cu. yd.), Concrete Pavement Spreaders and Finishers, Concrete Paver, Concrete Pump, Concrete Saw (self propelled), Conveyor, Conveying Vehicles Conveying Engineer's Equipment, Core Drill, Crane, Crusher, Decontamination of Equipment, Derrick, Dragline, Dredge, Drill Rig (Tractor Mounted), Dual Drum Paver, Electric Pump used in conjunction with Well Point Systems, Elevating Grader (self propelled or towed), Elevator, Excavator (all purpose, hydraulically operated), Farm Tractor with Accessories, Fine Grade Machine, Forklift, Front End Loader, Gradall, Grader, Grout or Guniting Machine, Head Tower, Heavy Equipment Robotics Operator/Mechanic, Hoist (all types), Hoisting Engine, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator, Hydraulic Boom, Hydraulic Hammer (self propelled), Hydraulic Pipe Jack Machine, (or similar type machine), Hydraulic Rock Expander (or similar type machine), Hydraulic System Pumps, Industrial Tractor, Jersey Spreader, Kolman Plant Loader (and similar type Loaders), Laser Screed, Locomotive, Log Skidder (similar type), Maintenance Engineer, Maintenance, Lubrication Unit or Truck, Mine Hoist, Mixer for Stabilized Base (self propelled), Monorail, Motorized Hydraulic Pin Puller, Motorized Hydraulic Seeder, Mucking Machine, Mulching Machine, Overhead Crane, Parts Chasing, Peine Crane (or similar type), Pile Driver, Plant Engineer, Pneumatic Mixer, Post Hole Digger and Post Driver, Power Broom, Pump Crete, Push Button Hoist, Push or Snatch Cat, Quarry Master (or equivalent), Road Widener, Rock Bit Sharpener (all types), Roller (all), Rolling Machine (Pipe), Rotomill, Scoopmobile, Shovel, Side Boom, Skidsteer/Bobcat (similar type), Skimmer, Slip Form Paver (CMI or similar, first and second operator), Snorkel/Vacuum Truck, Strato-Tower, Tire Truck & Repair, Towed Roller, Tractor Drawn Belt-Type Grader/Loader, Tractor Shovel, Tractor with Towed Accessories, Tractors (when using winch power), Trencher, Truck Crane, Tug Boats, Tunnel Shovel, Tube Finisher (CMI and similar), Vacuum Blasting Machine Operator/Mechanic, Vibratory Compactor, Vibro Tamp, Waterjet Cutting Tool System Operator/Mechanic (Ultra High Pressure), Well Drilling Machine, Well Point, Winch, Winch Truck with A Frame.

CLASS B: Aggregate Bin, Aggregate Plant, Apprentice Engineer, Apprentice Engineer Driver, Articulated Off Road Material Hauler, CMI and similar type Concrete Spreads (Apprentice Engineer), Cement Bin, Chipping Machine and Chip Spreader, Compressors (4 or less), Compressors: any size, but subject to other provisions for Compressors, Dust Collectors, Generators, Mechanical Heaters, Pumps, Welding Machines (four of any type or combination), Concrete Mixer (1/2 cu. yd. and under), Fireman, Form Tamper, Fuel Truck, Heating Boiler (used for temporary heat), Helper on Lubrication Unit or Truck, Jeep Trencher, Power Heaterman, Power Plant in excess of 10 K.W., Pumps (4" or over), Revinus Widener, Steam Cleaner, Stump Chipping Machine, Welding Machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

Operating Engineer- Heavy & Highway, Sewer (includes cleaning, lining & rehab), Water & Tunnel

|                    |            |
|--------------------|------------|
| Per hour:          | 07/01/2022 |
| Class A            | \$ 41.39   |
| Class B            | 36.89      |
| Crane 5 to 60 tons | 44.39      |
| " 61 to 199 tons   | 44.89      |
| " 200 to 399 tons  | 45.39      |
| " 400 and over     | 45.89      |

Additional \$2.50/hr. for Hazardous Work Site



Additional \$1.00/hr. for Tunnel Work  
Additional \$4.00/hr. for Agency Mandated Off-Shift Work

### SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 34.26\*

\*Note: For Overtime Hours \$26.06 of the amount paid at straight time, the remaining balance of 8.20 is paid at the same premium as the wage.

### OVERTIME PAY

See (B, E, Q, W) on OVERTIME PAGE

### HOLIDAY

Paid: See (\*5, \*\*6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

\*Saturday Holidays will be recognized on the Friday before

\*\*Sunday Holidays will be recognized on the Monday after

### REGISTERED APPRENTICES

Wages per hour:

Apprentices at 1 year terms

| 1st     | 2nd     | 3rd     | 4th     |
|---------|---------|---------|---------|
| \$33.89 | \$34.89 | \$35.89 | \$36.89 |

Supplemental Benefits

All Apprentices \$ 33.86\*

\*Note: For Overtime Hours \$26.06 of the amount paid at straight time, the remaining balance of \$7.80 is paid at same premium as the wage.

12-17 hh/sw/t

## Operating Engineer - Survey Crew

11/01/2022

**JOB DESCRIPTION** Operating Engineer - Survey Crew

**DISTRICT** 12

### ENTIRE COUNTIES

Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

### PARTIAL COUNTIES

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

### WAGES

These rates apply to Building, Heavy and Highway Construction.

Per hour:

SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.

Instrument Person - One who operates the surveying instruments.

Rod Person - One who holds the rods and assists the Instrument Person.

07/01/2022

|                   |          |
|-------------------|----------|
| Party Chief       | \$ 45.62 |
| Instrument Person | 43.01    |
| Rod Person        | 29.78    |

Additional \$3.00 per hr. for work in a Tunnel.

Additional \$2.50 per hr. for EPA or DEC certified toxic or hazardous waste work.

### SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman \$ 29.60

### OVERTIME PAY

See (B, E, Q, \*V, X) on OVERTIME PAGE

\*Note: \$24.25 Only for "ALL" premium hours paid.



## HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

## REGISTERED APPRENTICES

WAGES: 1000 hour terms based on the Percentage of Rod Person wage:

07/01/2022

|               |     |
|---------------|-----|
| 0-1000 Hrs    | 60% |
| 1001-2000 Hrs | 70% |
| 2001-3000 Hrs | 80% |

SUPPLEMENTAL BENEFITS per hour worked:

|               |                        |
|---------------|------------------------|
| 0-1000 Hrs    | \$ 17.76 / PHP \$14.55 |
| 1001-2000 Hrs | 20.72 / " 16.98        |
| 2001-3000 Hrs | 23.68 / " 19.40        |

NOTE: PHP is premium hours paid when worked.

12-17D Sur

## Operating Engineer - Survey Crew - Consulting Engineer

11/01/2022

**JOB DESCRIPTION** Operating Engineer - Survey Crew - Consulting Engineer

**DISTRICT** 12

### ENTIRE COUNTIES

Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

### PARTIAL COUNTIES

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

## WAGES

These rates apply to feasibility and preliminary design surveying, line of grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:

### SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.

Instrument Person - One who operates the surveying instruments.

Rod Person - One who holds the rods and assists the Instrument Person.

07/01/2022

|                   |          |
|-------------------|----------|
| Party Chief       | \$ 45.62 |
| Instrument Person | 43.01    |
| Rod Person        | 29.78    |

## SUPPLEMENTAL BENEFITS

Per hour worked:

|            |          |
|------------|----------|
| Journeyman | \$ 29.60 |
|------------|----------|

## OVERTIME PAY

See (B, E, Q, \*V, X) on OVERTIME PAGE

\*Note: \$24.25 Only for "ALL" premium hours paid.

## HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

## REGISTERED APPRENTICES

WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

07/01/2022

|           |     |
|-----------|-----|
| 0-1000    | 60% |
| 1001-2000 | 70% |
| 2001-3000 | 80% |

SUPPLEMENTAL BENEFITS per hour worked:



|           |                        |
|-----------|------------------------|
| 0-1000    | \$ 17.76 / PHP \$14.55 |
| 1001-2000 | 20.72 / " 16.98        |
| 2001-3000 | 23.68 / " 19.40        |

NOTE: PHP is premium hours paid.

12-17D Con Eng

**Painter**

**11/01/2022**

**JOB DESCRIPTION** Painter

**DISTRICT 3**

**ENTIRE COUNTIES**

Allegany, Erie, Genesee, Niagara, Orleans, Wyoming

**PARTIAL COUNTIES**

Cattaraugus: Entire County except the Townships of Conewango, Leon, Napoli, New Albion, Randolph and South Valley.

Chautauqua: Only the Townships of Awkright, Dunkirk, Hanover, Pomfret, Portland, Sheridan and Villenova.

Livingston: Only the Townships of North Dansville, Nunda, Ossian, Portage, Sparta, Spring Water and West Sparta.

Steuben: Only the Townships of Avoca, Canisteo, Cohocton, Dansville, Fremont, Greenwood, Hartsville, Hornellsville, Howard, Jasper, Prattsburg, Pulteney, Troupsburg, Tuscarora, Urbana, Wayland, Wayne, Woodhull, West Union, Wheeler, and the City of Hornell.

**WAGES**

Per hour: 07/01/2022

|                              |          |
|------------------------------|----------|
| Basic Rate (Brush & Roll)    | \$ 29.27 |
| Spray painting, wallcovering | 29.27    |
| Abrasive and hydroblasting   | 29.27    |
| Taping/DryWall Finisher      | 29.97    |
| Skeleton Steel*              | 30.02    |

\* Skeleton Steel: No floors, walls or ceiling are constructed, including radio and television towers, flagpoles, smokestacks, cranes and the abatement of coatings with lead, asbestos and/or arsenic, etc. All work within the confines of a plant shall be paid the skeleton steel rate (except in-plant tank work (see Tank Rate)).

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

**SUPPLEMENTAL BENEFITS**

Per hour:

\$ 26.45

**OVERTIME PAY**

Exterior work only See ( B, E4, F\*, R ) on OVERTIME PAGE.

All other work See ( B, F\*, R ) on OVERTIME PAGE.

\* Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Painter/Decorator: 750 hour terms at the following percentage of Journeyman's Basic wage rate:

| 1st      | 2nd      | 3rd      | 4th      | 5th      | 6th      | 7th      | 8th      |
|----------|----------|----------|----------|----------|----------|----------|----------|
| \$ 18.00 | \$ 19.00 | \$ 20.00 | \$ 21.00 | \$ 22.00 | \$ 23.00 | \$ 24.00 | \$ 25.00 |

Taper/Drywall Finisher: 750 hour terms at the following percentage of Journeyman's Taper wage:

| 1st      | 2nd      | 3rd      | 4th      | 5th      | 6th      |
|----------|----------|----------|----------|----------|----------|
| \$ 20.00 | \$ 21.00 | \$ 22.00 | \$ 23.00 | \$ 24.00 | \$ 25.00 |

Supplemental benefits per hour:

Painter/Decorator and Taper/Drywall Finisher:

| 1st     | 2nd     | 3rd     | 4th     | 5th     | 6th     | 7th     | 8th     |
|---------|---------|---------|---------|---------|---------|---------|---------|
| \$ 3.35 | \$ 5.35 | \$ 6.35 | \$ 6.85 | \$ 7.35 | \$ 7.85 | \$ 8.35 | \$ 8.60 |

3-4-Buf, Nia, Olean

**Painter**

**11/01/2022**



**JOB DESCRIPTION** Painter

**DISTRICT** 3

**ENTIRE COUNTIES**

Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Cortland, Delaware, Erie, Genesee, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

**WAGES**

Per hour: 07/01/2022

|        |          |
|--------|----------|
| Bridge | \$ 41.06 |
| Tunnel | 41.06    |
| Tank*  | 39.06    |

For Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

Tank rate applies to indoor and outdoor tanks, tank towers, standpipes, digesters, waste water treatment tanks, chlorinator tanks, etc. Covers all types of tanks including but not limited to steel tanks, concrete tanks, fiberglass tanks, etc.

Note an additional \$1.50 per hour is required when the contracting agency or project specification requires any shift to start prior to 6:00am or after 12:00 noon.

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 29.89

**OVERTIME PAY**

Exterior work only See ( B, E4, F\*, R ) on OVERTIME PAGE.

All other work See ( B, F\*, R ) on OVERTIME PAGE.

\*Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage rate:

| 1st      | 2nd      | 3rd      | 4th      | 5th      | 6th      |
|----------|----------|----------|----------|----------|----------|
| \$ 24.00 | \$ 26.00 | \$ 28.00 | \$ 30.00 | \$ 34.00 | \$ 38.00 |

Supplemental benefits per hour:

| 1st     | 2nd     | 3rd     | 4th     | 5th     | 6th     |
|---------|---------|---------|---------|---------|---------|
| \$ 6.60 | \$ 6.95 | \$ 7.30 | \$ 7.65 | \$ 8.00 | \$ 8.35 |

3-4-Bridge, Tunnel, Tank

**Painter - Metal Polisher**

**11/01/2022**

**JOB DESCRIPTION** Painter - Metal Polisher

**DISTRICT** 8

**ENTIRE COUNTIES**

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

**WAGES**

|                  |            |
|------------------|------------|
|                  | 07/01/2022 |
| Metal Polisher   | \$ 37.78   |
| Metal Polisher*  | 38.80      |
| Metal Polisher** | 41.78      |

\*Note: Applies on New Construction & complete renovation

\*\* Note: Applies when working on scaffolds over 34 feet.

**SUPPLEMENTAL BENEFITS**

Per Hour: 07/01/2022

Journeyworker:  
All classification \$ 11.24



## OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

## HOLIDAY

Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE  
Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

## REGISTERED APPRENTICES

Wages per hour:

One (1) year term at the following wage rates:

07/01/2022

|            |          |
|------------|----------|
| 1st year   | \$ 16.00 |
| 2nd year   | 17.00    |
| 3rd year   | 18.00    |
| 1st year*  | \$ 16.39 |
| 2nd year*  | 17.44    |
| 3rd year*  | 18.54    |
| 1st year** | \$ 18.50 |
| 2nd year** | 19.50    |
| 3rd year** | 20.50    |

\*Note: Applies on New Construction & complete renovation

\*\* Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

|          |         |
|----------|---------|
| 1st year | \$ 7.99 |
| 2nd year | 7.99    |
| 3rd year | 7.99    |

8-8A/28A-MP

## Plumber

11/01/2022

**JOB DESCRIPTION** Plumber

**DISTRICT** 3

## ENTIRE COUNTIES

Erie, Niagara, Wyoming

## PARTIAL COUNTIES

Allegany: Only the Townships of Allen, Angelica, Belfast, Caneadea, Centerville, Granger, Hume, New Hudson and Rushford  
Cattaraugus: Only the Townships of Ashford, Dayton, East Otto, Ellicottville, Farmersville, Franklinville, Freedom, Leon, Lyndon, Machias, Mansfield, New Albion, Otto, Perrysburg, Persia and Yorkshire.  
Chautauqua: Only the Townships of Arkwright, Charlotte, Cherry Creek, Dunkirk, Hanover, Pomfret, Portland, Ripley, Sheridan, Stockton, Villenova, Westfield, City of Dunkirk and Village of Fredonia.  
Genesee: Only the Townships of Alabama, Alexander, Batavia, Darien, Elba, Oakfield, Pembroke and the City of Batavia.  
Orleans: Only the Townships of Ridgeway, Shelby and Yates.

## WAGES

Per hour: 07/01/2022

|             |          |
|-------------|----------|
| Plumber     | \$ 38.05 |
| Steamfitter | \$ 38.05 |

Note - Add 10% (ten-percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

## SUPPLEMENTAL BENEFITS

Per hour:

\$ 28.20

Note - \$4.64 of this amount must be paid at the same premium as the wage.

## OVERTIME PAY

See (\*B, \*\*E, Q) on OVERTIME PAGE

\* Double time after 11 hours per day on Weekdays.

\*\* Double time after 10 hours per day on Saturday.

## HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 16) on HOLIDAY PAGE

## REGISTERED APPRENTICES



Wages per hour:

One year terms at the following percentage of Journeyman's wage:

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 1st | 2nd | 3rd | 4th | 5th |
| 45% | 55% | 65% | 75% | 90% |

Note - Add 10% (ten-percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

Supplemental benefits per hour:

\$ 23.40

Note - \$4.64 of this amount must be paid at the same premium as the wage.

3-22-Buffalo, Niagara

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**Roofer****11/01/2022**

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**JOB DESCRIPTION** Roofer

**DISTRICT** 3

**ENTIRE COUNTIES**

Erie, Genesee, Niagara, Orleans, Wyoming

**WAGES**

Per hour: 07/01/2022

|                        |          |
|------------------------|----------|
| Asbestos Removal       | \$ 34.96 |
| Slate, Tile            | 32.11    |
| Precast tile / slabs   | 32.11    |
| Crete / gypsum planks  | 32.11    |
| Damp and waterproofer  | 31.96    |
| Composition, sprayers, | 31.96    |
| Asphalt mastic,        | 31.96    |
| Steep roofers          | 31.96    |

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

15.0% for work from 4:30PM - 1:00AM or second shift

20.0% for work from 12:30AM - 9:00AM or third shift

**SUPPLEMENTAL BENEFITS**

Per hour: \$ 24.76

**OVERTIME PAY**

See (B, \*E, \*\*E2, Q) on OVERTIME PAGE

\* and \*\* Double time after 8 hours on Saturday.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

|     |        |         |         |         |         |         |         |
|-----|--------|---------|---------|---------|---------|---------|---------|
| 0   | to 999 | to 1499 | to 1999 | to 2499 | to 2999 | to 3499 | to 4499 |
| 65% | 70%    | 75%     | 80%     | 85%     | 90%     | 95%     |         |

Supplemental benefits per hour:

|         |          |          |          |          |          |          |         |
|---------|----------|----------|----------|----------|----------|----------|---------|
| 0       | to 999   | to 1499  | to 1999  | to 2499  | to 2999  | to 3499  | to 4499 |
| \$ 9.70 | \$ 13.87 | \$ 14.10 | \$ 21.92 | \$ 22.63 | \$ 23.34 | \$ 24.05 |         |

3-74

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**Sheetmetal Worker****11/01/2022**

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**JOB DESCRIPTION** Sheetmetal Worker

**DISTRICT** 3

**ENTIRE COUNTIES**

Erie, Genesee, Niagara, Orleans, Wyoming

**WAGES**

Per hour: 07/01/2022



Sheet Metal Worker \$ 37.44

Additional \$0.50 per hour for work more than 30" above floor on boatswain chair.

Additional \$1.00 per hour for work in "Hot" areas of atomic laboratories, atomic plants, or any premises where radio-active materials are stored or handled and personal protective equipment is required.

Additional \$1.00 per hour for work when required to have 40-hour HAZMAT training or the use of OSHA compliant respirator is required.

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

Shift Premium per hour:

Second Shift \$ 3.25

Third Shift \$ 5.00

#### SUPPLEMENTAL BENEFITS

Per hour:

\$ 27.63\*

\* Note - \$17.73 of this amount must be paid at the same premium as the wages per overtime hours.

#### OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16) on HOLIDAY PAGE

#### REGISTERED APPRENTICES

Wages per hour:

One year terms at the following wage:

1st term \$ 19.59

2nd term 23.94

3rd term 26.51

4th term 28.07

5th term 31.19

Supplemental benefits per hour:

1st term \$ 17.10 Note - \$8.20 of this amount must be paid at the same premium as the wage.

2nd term 20.82 Note - \$11.92 of this amount must be paid at the same premium as the wage.

3rd term 25.46 Note - \$15.56 of this amount must be paid at the same premium as the wage.

4th term 25.77 Note - \$15.87 of this amount must be paid at the same premium as the wage.

5th term 26.39 Note - \$16.49 of this amount must be paid at the same premium as the wage.

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply;

Shift Premium per hour:

Second Shift

1st term \$ 1.46

2nd term \$ 1.63

3rd term \$ 1.79

4th term \$ 2.28

5th term \$ 2.60

Third Shift

1st term \$ 2.25

2nd term \$ 2.50

3rd term \$ 2.75

4th term \$ 3.50

5th term \$ 4.00

3-71

#### Sprinkler Fitter

11/01/2022

**JOB DESCRIPTION** Sprinkler Fitter

**DISTRICT** 1

#### ENTIRE COUNTIES

Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

#### WAGES

Per hour 07/01/2022



Sprinkler \$ 38.15  
Fitter

### SUPPLEMENTAL BENEFITS

Per hour

Journey person \$ 27.68

### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

### HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

### REGISTERED APPRENTICES

Wages per hour

One Half Year terms at the following wage.

| 1st      | 2nd      | 3rd      | 4th      | 5th      | 6th      | 7th      | 8th      | 9th      | 10th     |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| \$ 18.30 | \$ 20.34 | \$ 22.12 | \$ 24.15 | \$ 26.19 | \$ 28.22 | \$ 30.25 | \$ 32.29 | \$ 34.32 | \$ 36.35 |

Supplemental Benefits per hour

| 1st     | 2nd     | 3rd      | 4th      | 5th      | 6th      | 7th      | 8th      | 9th      | 10th     |
|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| \$ 8.37 | \$ 8.37 | \$ 19.76 | \$ 19.76 | \$ 20.01 | \$ 20.01 | \$ 20.01 | \$ 20.01 | \$ 20.01 | \$ 20.01 |
|         |         |          |          |          |          |          |          |          | 1-669    |

### Teamster - Building / Heavy&Highway

11/01/2022

**JOB DESCRIPTION** Teamster - Building / Heavy&Highway

**DISTRICT** 3

### ENTIRE COUNTIES

Erie, Niagara

### PARTIAL COUNTIES

Genesee: Only in the Townships of Alabama, Darien and Pembroke.  
Orleans: Only the Townships of Ridgeway, Shelby and Yates.  
Wyoming: Only in the Townships of Arcade, Bennington, Java and Sheldon.

### WAGES

GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks (straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers.

GROUP 2: Tandems and Batch Trucks, Mechanics, Dispatcher.

GROUP 3: Semi-Trailers, Low-Boy Trucks, Asphalt Distributor Trucks and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel Trucks

GROUP 4: Specialized Earth Moving Equipment, Euclid type, or similar off-highway, where not self-loading, Straddle (Ross) Carrier, and self-contained concrete mobile truck.

GROUP 5: Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

Per hour: 07/01/2022  
All GROUPS \$ 43.22

Add \$2.00 when required to use personal protection when performing hazardous waste removal work.

An additional \$3.00 per hour is required when a single irregular work shift starting any time from 5:00PM to 1:00AM is mandated either in the job specification or by the contracting agency.

### SUPPLEMENTAL BENEFITS

Per hour:  
\$ 16.19\*

\*Note - Only \$ 7.66 per hour needs to be paid for overtime hours.

### OVERTIME PAY

See (B, G, P) on OVERTIME PAGE

### HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE



Overtime: See (5, 6) on HOLIDAY PAGE

3-449

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**Teamster - Building / Heavy&Highway****11/01/2022**

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**JOB DESCRIPTION** Teamster - Building / Heavy&Highway**DISTRICT** 3**ENTIRE COUNTIES**

Erie, Niagara

**WAGES**

Per hour: 07/01/2022  
Dump Truck Operator\* \$ 27.00

\*Does not include Single Axle Dump Trucks (see Teamster Group 1).

\*Does not include Off-highway Dump Trucks (see Teamster Groups 2-5).

**SUPPLEMENTAL BENEFITS**

Per hour:  
\$ 2.02

**OVERTIME PAY**

See (B, B2, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6) on HOLIDAY PAGE  
Overtime: See (5, 6) on HOLIDAY PAGE

3-449d-DT

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**Welder****11/01/2022**

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**JOB DESCRIPTION** Welder**DISTRICT** 1**ENTIRE COUNTIES**

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuylar, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

**WAGES**

Per hour 07/01/2022

Welder: To be paid the same rate of the mechanic performing the work.\*

\*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

**OVERTIME PAY****HOLIDAY**

1-As Per Trade



## Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- ( AA ) Time and one half of the hourly rate after 7 and one half hours per day
- ( A ) Time and one half of the hourly rate after 7 hours per day
- ( B ) Time and one half of the hourly rate after 8 hours per day
- ( B1 ) Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday.  
Double the hourly rate for all additional hours
- ( B2 ) Time and one half of the hourly rate after 40 hours per week
- ( C ) Double the hourly rate after 7 hours per day
- ( C1 ) Double the hourly rate after 7 and one half hours per day
- ( D ) Double the hourly rate after 8 hours per day
- ( D1 ) Double the hourly rate after 9 hours per day
- ( E ) Time and one half of the hourly rate on Saturday
- ( E1 ) Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
- ( E2 ) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- ( E3 ) Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
- ( E4 ) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- ( E5 ) Double time after 8 hours on Saturdays
- ( F ) Time and one half of the hourly rate on Saturday and Sunday
- ( G ) Time and one half of the hourly rate on Saturday and Holidays
- ( H ) Time and one half of the hourly rate on Saturday, Sunday, and Holidays
- ( I ) Time and one half of the hourly rate on Sunday
- ( J ) Time and one half of the hourly rate on Sunday and Holidays
- ( K ) Time and one half of the hourly rate on Holidays
- ( L ) Double the hourly rate on Saturday
- ( M ) Double the hourly rate on Saturday and Sunday
- ( N ) Double the hourly rate on Saturday and Holidays
- ( O ) Double the hourly rate on Saturday, Sunday, and Holidays
- ( P ) Double the hourly rate on Sunday
- ( Q ) Double the hourly rate on Sunday and Holidays
- ( R ) Double the hourly rate on Holidays
- ( S ) Two and one half times the hourly rate for Holidays



- ( S1 ) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
- ( T ) Triple the hourly rate for Holidays
- ( U ) Four times the hourly rate for Holidays
- ( V ) Including benefits at SAME PREMIUM as shown for overtime
- ( W ) Time and one half for benefits on all overtime hours.
- ( X ) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)



## Holiday Codes

### PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

### OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- ( 1 ) None
- ( 2 ) Labor Day
- ( 3 ) Memorial Day and Labor Day
- ( 4 ) Memorial Day and July 4th
- ( 5 ) Memorial Day, July 4th, and Labor Day
- ( 6 ) New Year's, Thanksgiving, and Christmas
- ( 7 ) Lincoln's Birthday, Washington's Birthday, and Veterans Day
- ( 8 ) Good Friday
- ( 9 ) Lincoln's Birthday
- ( 10 ) Washington's Birthday
- ( 11 ) Columbus Day
- ( 12 ) Election Day
- ( 13 ) Presidential Election Day
- ( 14 ) 1/2 Day on Presidential Election Day
- ( 15 ) Veterans Day
- ( 16 ) Day after Thanksgiving
- ( 17 ) July 4th
- ( 18 ) 1/2 Day before Christmas
- ( 19 ) 1/2 Day before New Years
- ( 20 ) Thanksgiving
- ( 21 ) New Year's Day
- ( 22 ) Christmas
- ( 23 ) Day before Christmas
- ( 24 ) Day before New Year's
- ( 25 ) Presidents' Day
- ( 26 ) Martin Luther King, Jr. Day
- ( 27 ) Memorial Day
- ( 28 ) Easter Sunday



( 29 )      Juneteenth





New York State Department of Labor - Bureau of Public Work  
State Office Building Campus  
Building 12 - Room 130  
Albany, New York 12240

**REQUEST FOR WAGE AND SUPPLEMENT INFORMATION**

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

**This Form Must Be Typed**

Submitted By:

(Check Only One)

☐

Contracting Agency

☐

Architect or Engineering Firm

☐

Public Work District Office

Date:

**A. Public Work Contract to be let by:** (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone: ( )

Fax: ( )

E-Mail:

2. NY State Units (see Item 5)

☐ 01 DOT

☐ 02 OGS

☐ 03 Dormitory Authority

☐ 04 State University  
Construction Fund

☐ 05 Mental Hygiene  
Facilities Corp.

☐ 06 OTHER N.Y. STATE UNIT

☐ 07 City

☐ 08 Local School District

☐ 09 Special Local District, i.e.,  
Fire, Sewer, Water District

☐ 10 Village

☐ 11 Town

☐ 12 County

☐ 13 Other Non-N.Y. State  
(Describe)

3. SEND REPLY TO ☐ (check if new or change)  
Name and complete address:

Telephone:( )

Fax: ( )

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR  
THIS PROJECT :

OFFICE USE ONLY

**B. PROJECT PARTICULARS**

5. Project Title \_\_\_\_\_

Description of Work \_\_\_\_\_

Contract Identification Number \_\_\_\_\_

Note: For NYS units, the OSC Contract No. \_\_\_\_\_

6. Location of Project:  
Location on Site \_\_\_\_\_

Route No/Street Address \_\_\_\_\_

Village or City \_\_\_\_\_

Town \_\_\_\_\_

County \_\_\_\_\_

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding?

YES ☐ NO ☐

10. Name and Title of Requester

Signature









NEW YORK STATE DEPARTMENT OF LABOR  
Bureau of Public Work - Debarment List

**LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE  
AWARDED ANY PUBLIC WORK CONTRACT**

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

**Debarment Database:** To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: <https://applications.labor.ny.gov/EDList/searchPage.do>

**For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322**







**NYSDOL Bureau of Public Work Debarment List    11/15/2022**

**Article 8**

| AGENCY | Fiscal Officer | FEIN      | EMPLOYER NAME                                 | EMPLOYER DBA NAME | ADDRESS                                                      | DEBARMENT START DATE | DEBARMENT END DATE |
|--------|----------------|-----------|-----------------------------------------------|-------------------|--------------------------------------------------------------|----------------------|--------------------|
| DOL    | DOL            | *****5754 | 0369 CONTRACTORS, LLC                         |                   | 515 WEST AVE<br>UNIT PH 13NORWALK CT<br>06850                | 05/12/2021           | 05/12/2026         |
| DOL    | DOL            | *****4018 | ADIRONDACK BUILDING<br>RESTORATION INC.       |                   | 4156 WILSON ROAD EAST<br>TABERG NY 13471                     | 03/26/2019           | 03/26/2024         |
| DOL    | AG             | *****1812 | ADVANCED BUILDERS & LAND<br>DEVELOPMENT, INC. |                   | 400 OSER AVE<br>#2300HAUPPAUGE NY 11788                      | 09/11/2019           | 09/11/2024         |
| DOL    | DOL            | *****1687 | ADVANCED SAFETY<br>SPRINKLER INC              |                   | 261 MILL ROAD<br>P.O BOX 296EAST AURORA<br>NY 14052          | 05/29/2019           | 05/29/2024         |
| DOL    | NYC            | *****6775 | ADVENTURE MASONRY<br>CORP.                    |                   | 1535 RICHMOND AVENUE<br>STATEN ISLAND NY 10314               | 12/13/2017           | 12/13/2022         |
| DOL    | NYC            |           | AGOSTINHO TOME                                |                   | 405 BARRETTO ST<br>BRONX NY 10474                            | 05/31/2018           | 05/31/2023         |
| DOL    | NYC            |           | AMJED PARVEZ                                  |                   | 401 HANOVER AVENUE<br>STATEN ISLAND NY 10304                 | 01/11/2021           | 01/11/2026         |
| DOL    | DOL            |           | ANGELO F COKER                                |                   | 2610 SOUTH SALINA STREET<br>SUITE 14SYRACUSE NY 13205        | 09/17/2020           | 09/17/2025         |
| DOL    | DOL            |           | ANGELO F COKER                                |                   | 2610 SOUTH SALINA STREET<br>SUITE 14SYRACUSE NY 13205        | 12/04/2018           | 12/04/2023         |
| DOL    | DOL            |           | ANGELO GARCIA                                 |                   | 515 WEST AVE<br>UNIT PH 13NORWALK CT<br>06850                | 05/12/2021           | 05/12/2026         |
| DOL    | DOL            |           | ANGELO TONDO                                  |                   | 449 WEST MOMBSHA ROAD<br>MONROE NY 10950                     | 06/06/2022           | 06/06/2027         |
| DOL    | DOL            |           | ANITA SALERNO                                 |                   | 158 SOLAR ST<br>SYRACUSE NY 13204                            | 01/07/2019           | 01/07/2024         |
| DOL    | DOL            |           | ANTONIO ESTIVEZ                               |                   | 442 ARMONK RD<br>MOUNT KISCO NY 10549                        | 06/12/2018           | 06/12/2023         |
| DOL    | NYC            |           | ARADCO CONSTRUCTION<br>CORP                   |                   | 115-46 132RD ST<br>SOUTH OZONE PARK NY<br>11420              | 09/17/2020           | 09/17/2025         |
| DOL    | DOL            |           | ARNOLD A. PAOLINI                             |                   | 1250 BROADWAY ST<br>BUFFALO NY 14212                         | 02/03/2020           | 02/03/2025         |
| DOL    | NYC            |           | ARSHAD MEHMOOD                                |                   | 168-42 88TH AVENUE<br>JAMAICA NY 11432                       | 11/20/2019           | 11/20/2024         |
| DOL    | NYC            | *****2591 | AVI 212 INC.                                  |                   | 260 CROPEY AVENUE<br>APT 11GBROOKLYN NY 11214                | 10/30/2018           | 10/30/2023         |
| DOL    | NYC            |           | AVM CONSTRUCTION CORP                         |                   | 117-72 123RD ST<br>SOUTH OZONE PARK NY<br>11420              | 09/17/2020           | 09/17/2025         |
| DOL    | NYC            |           | AZIDABEGUM                                    |                   | 524 MCDONALD AVENUE<br>BROOKLYN NY 11218                     | 09/17/2020           | 09/17/2025         |
| DOL    | DOL            | *****8421 | B & B DRYWALL, INC                            |                   | 206 WARREN AVE<br>APT 1WHITE PLAINS NY 10603                 | 12/14/2021           | 12/14/2026         |
| DOL    | NYC            |           | BALWINDER SINGH                               |                   | 421 HUDSON ST<br>SUITE C5NEW YORK NY 10014                   | 02/20/2019           | 02/20/2024         |
| DOL    | NYC            | *****8416 | BEAM CONSTRUCTION, INC.                       |                   | 50 MAIN ST<br>WHITE PLAINS NY 10606                          | 01/04/2019           | 01/04/2024         |
| DOL    | DOL            |           | BERNARD BEGLEY                                |                   | 38 LONG RIDGE ROAD<br>BEDFORD NY 10506                       | 12/18/2019           | 12/18/2024         |
| DOL    | NYC            | *****2113 | BHW CONTRACTING, INC.                         |                   | 401 HANOVER AVENUE<br>STATEN ISLAND NY 10304                 | 01/11/2021           | 01/11/2026         |
| DOL    | DOL            |           | BIAGIO CANTISANI                              |                   |                                                              | 06/12/2018           | 06/12/2023         |
| DOL    | DOL            | *****3627 | BJB CONSTRUCTION CORP.                        |                   | 38 LONG RIDGE ROAD<br>BEDFORD NY 10506                       | 12/18/2019           | 12/18/2024         |
| DOL    | DOL            | *****4512 | BOB BRUNO EXCAVATING,<br>INC                  |                   | 5 MORNINGSIDE DR<br>AUBURN NY 13021                          | 05/28/2019           | 05/28/2024         |
| DOL    | DOL            |           | BOGDAN MARKOVSKI                              |                   | 370 W. PLEASANTVIEW AVE<br>SUITE 2.329HACKENSACK NJ<br>07601 | 02/11/2019           | 02/11/2024         |
| DOL    | DOL            |           | BRADLEY J SCHUKA                              |                   | 4 BROTHERS ROAD<br>WAPPINGERS FALLS NY 12590                 | 10/20/2020           | 10/20/2025         |
| DOL    | DOL            |           | BRUCE P. NASH JR.                             |                   | 5841 BUTTERNUT ROAD<br>EAST SYRACUSE NY 13057                | 09/12/2018           | 09/12/2023         |
| DOL    | DOL            | *****0225 | C&D LAFACE<br>CONSTRUCTION, INC.              |                   | 8531 OSWEGO RD<br>BALDWINVILLE NY 13027                      | 02/03/2020           | 01/09/2023         |
| DOL    | DOL            | *****9383 | C.C. PAVING AND<br>EXCAVATING, INC.           |                   | 2610 SOUTH SALINA ST<br>SUITE 12SYRACUSE NY 13205            | 09/17/2020           | 09/17/2025         |
| DOL    | DOL            | *****9383 | C.C. PAVING AND<br>EXCAVATING, INC.           |                   | 2610 SOUTH SALINA ST<br>SUITE 12SYRACUSE NY 13205            | 12/04/2018           | 12/04/2023         |
| DOL    | DOL            | *****4083 | C.P.D. ENTERPRISES, INC                       |                   | P.O BOX 281<br>WALDEN NY 12586                               | 03/03/2020           | 03/03/2025         |



**NYSDOL Bureau of Public Work Debarment List    11/15/2022**

**Article 8**

|     |     |           |                                                 |                                                   |                                                      |            |            |
|-----|-----|-----------|-------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------|------------|
| DOL | DOL | *****5161 | CALADRI DEVELOPMENT CORP.                       |                                                   | 1223 PARK ST.<br>PEEKSKILL NY 10566                  | 05/17/2021 | 05/17/2026 |
| DOL | DOL | *****3391 | CALI ENTERPRISES, INC.                          |                                                   | 1223 PARK STREET<br>PEEKSKILL NY 10566               | 05/17/2021 | 05/17/2026 |
| DOL | NYC |           | CALVIN WALTERS                                  |                                                   | 465 EAST THIRD ST<br>MT. VERNON NY 10550             | 09/09/2019 | 09/09/2024 |
| DOL | DOL |           | CANTISANI & ASSOCIATES LTD                      |                                                   | 442 ARMONK RD<br>MOUNT KISCO NY 10549                | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CANTISANI HOLDING LLC                           |                                                   |                                                      | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CARMEN RACHETTA                                 |                                                   | 8531 OSWEGO RD<br>BALDWINVILLE NY 13027              | 02/03/2020 | 02/03/2025 |
| DOL | DOL |           | CARMENA RACHETTA                                |                                                   | 8531 OSWEGO ROAD<br>BALDWINVILLE NY 13027            | 02/03/2020 | 01/09/2023 |
| DOL | DOL | *****3812 | CARMODY "2" INC                                 |                                                   |                                                      | 06/12/2018 | 06/12/2023 |
| DOL | DOL | *****1143 | CARMODY BUILDING CORP                           | CARMODY CONTRACTING AND CARMODY CONTRACTING CORP. | 442 ARMONK RD<br>MOUNT KISCO NY 10549                | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CARMODY CONCRETE CORPORATION                    |                                                   |                                                      | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CARMODY ENTERPRISES, LTD.                       |                                                   | 442 ARMONK RD<br>MOUNT KISCO NY 10549                | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CARMODY INC                                     |                                                   | 442 ARMONK RD<br>MOUNT KISCO NY 10549                | 06/12/2018 | 06/12/2023 |
| DOL | DOL | *****3812 | CARMODY INDUSTRIES INC                          |                                                   |                                                      | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CARMODY MAINTENANCE CORPORATION                 |                                                   | 442 ARMONK RD<br>MOUNT KISCO NY 10549                | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | CARMODY MASONRY CORP                            |                                                   | 442 ARMONK RD<br>MOUNT KISCO NY 10549                | 06/12/2018 | 06/12/2023 |
| DOL | AG  | *****7247 | CENTURY CONCRETE CORP                           |                                                   | 2375 RAYNOR ST<br>RONKONKOMA NY 11779                | 08/04/2021 | 08/04/2026 |
| DOL | AG  |           | CESAR J. AGUDELO                                |                                                   | 81-06 34TH AVENUE<br>APT. 6EJACKSON HEIGHTS NY 11372 | 02/07/2018 | 02/07/2023 |
| DOL | DOL | *****0026 | CHANTICLEER CONSTRUCTION LLC                    |                                                   | 4 BROTHERS ROAD<br>WAPPINGERS FALLS NY 12590         | 10/20/2020 | 10/20/2025 |
| DOL | NYC |           | CHARLES ZAHRADKA                                |                                                   | 863 WASHINGTON STREET<br>FRANKLIN SQUARE NY 11010    | 03/10/2020 | 03/10/2025 |
| DOL | DOL |           | CHRISTOPHER GRECO                               |                                                   | 26 NORTH MYRTLE AVENUE<br>SPRING VALLEY NY 10956     | 02/18/2021 | 02/18/2026 |
| DOL | DOL |           | CHRISTOPHER J MAINI                             |                                                   | 19 CAITLIN AVE<br>JAMESTOWN NY 14701                 | 09/17/2018 | 09/17/2023 |
| DOL | DOL |           | CHRISTOPHER PAPASTEFANO A/K/A CHRIS PAPASTEFANO |                                                   | 1445 COMMERCE AVE<br>BRONX NY 10461                  | 05/30/2019 | 05/30/2024 |
| DOL | DOL | *****1927 | CONSTRUCTION PARTS WAREHOUSE, INC.              | CPW                                               | 5841 BUTTERNUT ROAD<br>EAST SYRACUSE NY 13057        | 09/12/2018 | 09/12/2023 |
| DOL | DOL | *****3228 | CROSS-COUNTY LANDSCAPING AND TREE SERVICE, INC. | ROCKLAND TREE SERVICE                             | 26 NORTH MYRTLE AVENUE<br>SPRING VALLEY NY 10956     | 02/18/2021 | 02/18/2026 |
| DOL | DOL | *****2524 | CSI ELECTRICAL & MECHANICAL INC                 |                                                   | 42-32 235TH ST<br>DOUGLSTON NY 11363                 | 01/14/2019 | 01/14/2024 |
| DOL | DOL | *****7619 | DANCO CONSTRUCTION UNLIMITED INC.               |                                                   | 485 RAFT AVENUE<br>HOLBROOK NY 11741                 | 10/19/2021 | 10/19/2026 |
| DOL | DOL |           | DARIAN L COKER                                  |                                                   | 2610 SOUTH SALINA ST<br>SUITE 2CSYRACUSE NY 13205    | 09/17/2020 | 09/17/2025 |
| DOL | DOL |           | DARIAN L COKER                                  |                                                   | 2610 SOUTH SALINA ST<br>SUITE 2CSYRACUSE NY 13205    | 12/04/2018 | 12/04/2023 |
| DOL | NYC |           | DAVID WEINER                                    |                                                   | 14 NEW DROP LANE<br>2ND FLOORSTATEN ISLAND NY 10306  | 11/14/2019 | 11/14/2024 |
| DOL | AG  |           | DEBRA MARTINEZ                                  |                                                   | 31 BAY ST<br>BROOKLYN NY 11231                       | 03/28/2018 | 03/28/2023 |
| DOL | DOL |           | DELPHI PAINTING & DECORATING CO INC             |                                                   | 1445 COMMERCE AVE<br>BRONX NY 10461                  | 05/30/2019 | 05/30/2024 |
| DOL | DOL |           | DOMENICO LAFACE                                 |                                                   | 8531 OSWEGO RD<br>BALDWINVILLE NY 13027              | 02/03/2020 | 01/09/2023 |
| DOL | DOL | *****5175 | EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC   |                                                   | 11371 RIDGE RD<br>WOLCOTT NY 14590                   | 02/03/2020 | 02/03/2025 |



**NYSDOL Bureau of Public Work Debarment List    11/15/2022**

**Article 8**

|     |     |           |                                            |                             |                                                           |            |            |
|-----|-----|-----------|--------------------------------------------|-----------------------------|-----------------------------------------------------------|------------|------------|
| DOL | DOL |           | EAST COAST PAVING                          |                             | 2238 BAKER RD<br>GILLET PA 16923                          | 03/12/2018 | 03/12/2023 |
| DOL | AG  |           | EDWIN HUTZLER                              |                             | 23 NORTH HOWELLS RD<br>BELLPORT NY 11713                  | 08/04/2021 | 08/04/2026 |
| DOL | DA  |           | EDWIN HUTZLER                              |                             | 2375 RAYNOR STREET<br>RONKONKOMA NY 11779                 | 08/04/2021 | 08/04/2026 |
| DOL | DOL | *****0780 | EMES HEATING & PLUMBING<br>CONTR           |                             | 5 EMES LANE<br>MONSEY NY 10952                            | 01/20/2002 | 01/20/3002 |
| DOL | NYC | *****5917 | EPOCH ELECTRICAL, INC                      |                             | 97-18 50TH AVE<br>CORONA NY 11368                         | 04/19/2018 | 04/19/2024 |
| DOL | DOL |           | FAIGY LOWINGER                             |                             | 11 MOUNTAIN RD<br>28 VAN BUREN DRMONROE<br>NY 10950       | 03/20/2019 | 03/20/2024 |
| DOL | DOL |           | FRANK BENEDETTO                            |                             | 19 CATLIN AVE<br>JAMESTOWN NY 14701                       | 09/17/2018 | 09/17/2023 |
| DOL | DOL | *****4722 | FRANK BENEDETTO AND<br>CHRISTOPHER J MAINI | B & M<br>CONCRETE           | 19 CAITLIN AVE<br>JAMESTOWN NY 14701                      | 09/17/2018 | 09/17/2023 |
| DOL | NYC |           | FRANK MAINI                                |                             | 1766 FRONT ST<br>YORKTOWN HEIGHTS NY<br>10598             | 01/17/2018 | 01/17/2023 |
| DOL | DA  |           | FREDERICK HUTZLER                          |                             | 2375 RAYNOR STREET<br>RONKONKOMA NY 11779                 | 08/04/2021 | 08/04/2026 |
| DOL | NYC | *****6616 | G & G MECHANICAL<br>ENTERPRISES, LLC.      |                             | 1936 HEMPSTEAD TURNPIKE<br>EAST MEDOW NY 11554            | 11/29/2019 | 11/29/2024 |
| DOL | DOL |           | GABRIEL FRASSETTI                          |                             |                                                           | 04/10/2019 | 04/10/2024 |
| DOL | NYC |           | GAYATRI MANGRU                             |                             | 21 DAREWOOD LANE<br>VALLEY STREAM NY 11581                | 09/17/2020 | 09/17/2025 |
| DOL | DOL |           | GEOFF CORLETT                              |                             | 415 FLAGGER AVE<br>#302STUART FL 34994                    | 10/31/2018 | 10/31/2023 |
| DOL | DA  |           | GEORGE LUCEY                               |                             | 150 KINGS STREET<br>BROOKLYN NY 11231                     | 01/19/1998 | 01/19/2998 |
| DOL | DOL |           | GIGI SCHNECKENBURGER                       |                             | 261 MILL RD<br>EAST AURORA NY 14052                       | 05/29/2019 | 05/29/2024 |
| DOL | DOL |           | GIOVANNI LAFACE                            |                             | 8531 OSWEGO RD<br>BALDWINVILLE NY 13027                   | 02/03/2020 | 01/09/2023 |
| DOL | NYC | *****3164 | GLOBE GATES INC                            | GLOBAL<br>OVERHEAD<br>DOORS | 405 BARRETTO ST<br>BRONX NY 10474                         | 05/31/2018 | 05/31/2023 |
| DOL | DOL |           | GREGORY S. OLSON                           |                             | P.O BOX 100<br>200 LATTA BROOK<br>PARKHORSEHEADS NY 14845 | 03/08/2018 | 03/08/2023 |
| DOL | DOL |           | HANS RATH                                  |                             | 24 ELDOR AVENUE<br>NEW CITY NY 10956                      | 02/03/2020 | 02/03/2025 |
| DOL | NYC | *****3228 | HEIGHTS ELEVATOR CORP.                     |                             | 1766 FRONT ST<br>YORKTOWN HEIGHTS NY<br>10598             | 01/17/2018 | 01/17/2023 |
| DOL | DOL | *****5131 | INTEGRITY MASONRY, INC.                    | M&R<br>CONCRETE             | 722 8TH AVE<br>WATERVLIET NY 12189                        | 06/05/2018 | 06/05/2023 |
| DOL | DOL |           | IRENE KASELIS                              |                             | 32 PENNINGTON AVE<br>WALDWICK NJ 07463                    | 05/30/2019 | 05/30/2024 |
| DOL | DOL | *****9211 | J. WASE CONSTRUCTION<br>CORP.              |                             | 8545 RT 9W<br>ATHENS NY 12015                             | 03/09/2021 | 03/09/2026 |
| DOL | DOL |           | J.A. HIRES CADWALLADER                     |                             | P.O BOX 100<br>200 LATTA BROOK<br>PARKHORSEHEADS NY 14845 | 03/08/2018 | 03/08/2023 |
| DOL | DOL |           | JAMES C. DELGIACCO                         |                             | 722 8TH AVE<br>WATERVLIET NY 12189                        | 06/05/2018 | 06/05/2023 |
| DOL | DOL |           | JAMES J. BAKER                             |                             | 7901 GEE ROAD<br>CANASTOTA NY 13032                       | 08/17/2021 | 08/17/2026 |
| DOL | DOL |           | JAMES LIACONE                              |                             | 9365 WASHINGTON ST<br>LOCKPORT IL 60441                   | 07/23/2018 | 07/23/2023 |
| DOL | DOL |           | JAMES RACHEL                               |                             | 9365 WASHINGTON ST<br>LOCKPORT IL 60441                   | 07/23/2018 | 07/23/2023 |
| DOL | DOL |           | JASON P. RACE                              |                             | 3469 STATE RT. 69<br>PERISH NY 13131                      | 09/29/2021 | 09/29/2026 |
| DOL | DOL |           | JASON P. RACE                              |                             | 3469 STATE RT. 69<br>PERISH NY 13131                      | 02/09/2022 | 02/09/2027 |
| DOL | DOL |           | JASON P. RACE                              |                             | 3469 STATE RT. 69<br>PERISH NY 13131                      | 03/01/2022 | 03/01/2027 |
| DOL | DOL | *****7993 | JBS DIRT, INC.                             |                             | 7901 GEE ROAD<br>CANASTOTA NY 13032                       | 08/17/2021 | 08/17/2026 |
| DOL | DOL | *****5368 | JCH MASONRY &<br>LANDSCAPING INC.          |                             | 35 CLINTON AVE<br>OSSINING NY 10562                       | 09/12/2018 | 09/12/2023 |
| DOL | NYC |           | JENNIFER GUERRERO                          |                             | 1936 HEMPSTEAD TURNPIKE<br>EAST MEADOW NY 11554           | 11/29/2019 | 11/29/2024 |



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| DOL | DOL |           | JIM PLAUGHER                                        |                      | 17613 SANTE FE LINE ROAD<br>WAYNEFIELD OH 45896           | 07/16/2021 | 07/16/2026 |
| DOL | AG  |           | JOHN ANTHONY MASSINO                                |                      | 36-49 204TH STREET<br>BAYSIDE NY 11372                    | 02/07/2018 | 02/07/2023 |
| DOL | DOL |           | JOHN F. CADWALLADER                                 |                      | 200 LATTA BROOK PARK<br>HORSEHEADS NY 14845               | 03/08/2018 | 03/08/2023 |
| DOL | DOL | *****4612 | JOHN F. CADWALLADER, INC.                           | THE GLASS<br>COMPANY | P.O BOX 100<br>200 LATTA BROOK<br>PARKHORSEHEADS NY 14845 | 03/08/2018 | 03/08/2023 |
| DOL | DOL |           | JOHN GOCEK                                          |                      | 14B COMMERCIAL AVE<br>ALBANY NY 12065                     | 11/14/2019 | 11/14/2024 |
| DOL | DOL |           | JOHN LUCIANO                                        |                      |                                                           | 05/14/2018 | 05/14/2023 |
| DOL | DOL |           | JOHN MARKOVIC                                       |                      | 47 MANDON TERRACE<br>HAWTHORN NJ 07506                    | 03/29/2021 | 03/29/2026 |
| DOL | DOL |           | JOHN WASE                                           |                      | 8545 RT 9W<br>ATHENS NY 12015                             | 03/09/2021 | 03/09/2026 |
| DOL | AG  | *****0600 | JOHNCO CONTRACTING, INC.                            |                      | 36-49 204TH STREET<br>BAYSIDE NY 11372                    | 02/07/2018 | 02/07/2023 |
| DOL | DOL |           | JON E DEYOUNG                                       |                      | 261 MILL RD<br>P.O BOX 296EAST AURORA<br>NY 14052         | 05/29/2019 | 05/29/2024 |
| DOL | DOL |           | JORGE RAMOS                                         |                      | 8970 MIKE GARCIA DR<br>MANASSAS VA 20109                  | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | JORI PEDERSEN                                       |                      | 415 FLAGER AVE<br>#302STUART FL 34994                     | 10/31/2018 | 10/31/2023 |
| DOL | DOL |           | JOSE CHUCHUCA                                       |                      | 35 CLINTON AVE<br>OSSINING NY 10562                       | 09/12/2018 | 09/12/2023 |
| DOL | NYC |           | JOSEPH MARTINO                                      |                      | 1535 RICHMOND AVENUE<br>STATEN ISLAND NY 10314            | 12/13/2017 | 12/13/2022 |
| DOL | DOL |           | JOY MARTIN                                          |                      | 2404 DELAWARE AVE<br>NIGARA FALLS NY 14305                | 09/12/2018 | 09/12/2023 |
| DOL | DOL | *****5116 | JP RACE PAINTING, INC. T/A<br>RACE PAINTING         |                      | 3469 STATE RT. 69<br>PERISH NY 13131                      | 02/09/2022 | 02/09/2027 |
| DOL | DOL | *****5116 | JP RACE PAINTING, INC. T/A<br>RACE PAINTING         |                      | 3469 STATE RT. 69<br>PERISH NY 13131                      | 09/29/2021 | 09/29/2026 |
| DOL | DOL | *****5116 | JP RACE PAINTING, INC. T/A<br>RACE PAINTING         |                      | 3469 STATE RT. 69<br>PERISH NY 13131                      | 03/01/2022 | 03/01/2027 |
| DOL | DOL | *****5116 | JP RACE PAINTING, INC. T/A<br>RACE PAINTING         |                      | 3469 STATE RT. 69<br>PERISH NY 13131                      | 03/01/2022 | 03/01/2027 |
| DOL | DOL |           | JULIUS AND GITA BEHREND                             |                      | 5 EMES LANE<br>MONSEY NY 10952                            | 11/20/2002 | 11/20/3002 |
| DOL | DOL |           | KARIN MANGIN                                        |                      | 796 PHELPS ROAD<br>FRANKLIN LAKES NJ 07417                | 12/01/2020 | 12/01/2025 |
| DOL | DOL |           | KATE E. CONNOR                                      |                      | 7088 INTERSTATE ISLAND RD<br>SYRACUSE NY 13209            | 03/31/2021 | 03/31/2026 |
| DOL | DOL |           | KATIE BURDICK                                       |                      | 2238 BAKER RD<br>GILLET PA 16923                          | 03/12/2018 | 03/12/2023 |
| DOL | DOL | *****2959 | KELC DEVELOPMENT, INC                               |                      | 7088 INTERSTATE ISLAND RD<br>SYRACUSE NY 13209            | 03/31/2021 | 03/31/2026 |
| DOL | DOL |           | KIMBERLY F. BAKER                                   |                      | 7901 GEE ROAD<br>CANASTOTA NY 13032                       | 08/17/2021 | 08/17/2026 |
| DOL | DOL | *****3490 | L & M<br>CONSTRUCTION/DRYWALL<br>INC.               |                      | 1079 YONKERS AVE<br>YONKERS NY 10704                      | 08/07/2018 | 08/07/2023 |
| DOL | DA  | *****8816 | LAKE CONSTRUCTION AND<br>DEVELOPMENT<br>CORPORATION |                      | 150 KINGS STREET<br>BROOKLYN NY 11231                     | 08/19/1998 | 08/19/2998 |
| DOL | DOL |           | LAVERN GLAVE                                        |                      | 161 ROBYN RD<br>MONROE NY 10950                           | 01/30/2018 | 01/30/2023 |
| DOL | AG  | *****3291 | LINTECH ELECTRIC, INC.                              |                      | 3006 TILDEN AVE<br>BROOKLYN NY 11226                      | 02/16/2022 | 02/16/2027 |
| DOL | DA  | *****4460 | LONG ISLAND GLASS &<br>STOREFRONTS, LLC             |                      | 4 MANHASSET TRL<br>RIDGE NY 11961                         | 09/06/2018 | 09/06/2023 |
| DOL | AG  | *****4216 | LOTUS-C CORP.                                       |                      | 81-06 34TH AVENUE<br>APT. 6EJACKSON HEIGHTS NY<br>11372   | 02/07/2018 | 02/07/2023 |
| DOL | DOL |           | LOUIS A. CALICCHIA                                  |                      | 1223 PARK ST.<br>PEEKSKILL NY 10566                       | 05/17/2021 | 05/17/2026 |
| DOL | NYC |           | LUBOMIR PETER SVOBODA                               |                      | 27 HOUSMAN AVE<br>STATEN ISLAND NY 10303                  | 12/26/2019 | 12/26/2024 |
| DOL | NYC |           | M & L STEEL & ORNAMENTAL<br>IRON CORP.              |                      | 27 HOUSMAN AVE<br>STATEN ISLAND NY 10303                  | 12/26/2019 | 12/26/2024 |
| DOL | DOL | *****2196 | MAINSTREAM SPECIALTIES,<br>INC.                     |                      | 11 OLD TOWN RD<br>SELKIRK NY 12158                        | 02/02/2021 | 02/02/2026 |



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| DOL | DA  |           | MANUEL P TOBIO                                   |                                    | 150 KINGS STREET<br>BROOKLYN NY 14444                 | 08/19/1998 | 08/19/2998 |
| DOL | DA  |           | MANUEL TOBIO                                     |                                    | 150 KINGS STREET<br>BROOKLYN NY 11231                 | 08/19/1998 | 08/19/2998 |
| DOL | NYC |           | MAREK FABIJANOWSKI                               |                                    | 50 MAIN ST<br>WHITE PLAINS NY 10606                   | 01/04/2019 | 01/04/2024 |
| DOL | NYC |           | MARIA NUBILE                                     |                                    | 84-22 GRAND AVENUE<br>ELMHURST NY 11373               | 03/10/2020 | 03/10/2025 |
| DOL | DOL |           | MASONRY CONSTRUCTION,<br>INC.                    |                                    | 442 ARMONK RD<br>MOUNT KISCO NY 10549                 | 06/12/2018 | 06/12/2023 |
| DOL | DOL | *****3333 | MASONRY INDUSTRIES, INC.                         |                                    | 442 ARMONK RD<br>MOUNT KISCO NY 10549                 | 06/12/2018 | 06/12/2023 |
| DOL | NYC |           | MATINA KARAGIANNIS                               |                                    | 97-18 50TH AVE<br>CORONA NY 11368                     | 04/19/2018 | 04/19/2023 |
| DOL | DOL |           | MATTHEW P. KILGORE                               |                                    | 4156 WILSON ROAD EAST<br>TABERG NY 13471              | 03/26/2019 | 03/26/2024 |
| DOL | DOL |           | MAURICE GAWENO                                   |                                    | 442 ARMONK RD<br>MOUNT KISCO NY 10549                 | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | MICHAEL LENIHAN                                  |                                    | 1079 YONKERS AVE<br>UNIT 4YONKERS NY 10704            | 08/07/2018 | 08/07/2023 |
| DOL | AG  |           | MICHAEL RIGLIETTI                                |                                    | 31 BAY ST<br>BROOKLYN NY 11231                        | 03/28/2018 | 03/28/2023 |
| DOL | DOL | *****4829 | MILESTONE ENVIRONMENTAL<br>CORPORATION           |                                    | 704 GINESI DRIVE<br>SUITE 29MORGANVILLE NJ<br>07751   | 04/10/2019 | 04/10/2024 |
| DOL | NYC | *****9926 | MILLENNIUM FIRE<br>PROTECTION, LLC               |                                    | 325 W. 38TH STREET<br>SUITE 204NEW YORK NY<br>10018   | 11/14/2019 | 11/14/2024 |
| DOL | NYC | *****0627 | MILLENNIUM FIRE SERVICES,<br>LLC                 |                                    | 14 NEW DROP LNE<br>2ND FLOORSTATEN ISLAND<br>NY 10306 | 11/14/2019 | 11/14/2024 |
| DOL | AG  |           | MSR ELECTRICAL<br>CONSTRUCTION CORP.             |                                    | 31 BAY ST<br>BROOKLYN NY 11231                        | 03/28/2018 | 03/28/2023 |
| DOL | NYC |           | MUHAMMED A. HASHEM                               |                                    | 524 MCDONALD AVENUE<br>BROOKLYN NY 11218              | 09/17/2020 | 09/17/2025 |
| DOL | NYC |           | NAMOW, INC.                                      |                                    | 84-22 GRAND AVENUE<br>ELMHURST NY 11373               | 03/10/2020 | 03/10/2025 |
| DOL | DA  | *****9786 | NATIONAL INSULATION & GC<br>CORP                 |                                    | 180 MILLER PLACE<br>HICKSVILLE NY 11801               | 12/12/2018 | 12/12/2023 |
| DOL | DOL | *****3684 | NATIONAL LAWN<br>SPRINKLERS, INC.                |                                    | 645 N BROADWAY<br>WHITE PLAINS NY 10603               | 05/14/2018 | 05/14/2023 |
| DOL | NYC |           | NAVIT SINGH                                      |                                    | 402 JERICHO TURNPIKE<br>NEW HYDE PARK NY 11040        | 08/10/2022 | 08/10/2027 |
| DOL | DOL |           | NICHOLE E. FRASER A/K/A<br>NICHOLE RACE          |                                    | 3469 STATE RT. 69<br>PERISH NY 13131                  | 03/01/2022 | 03/01/2027 |
| DOL | DOL |           | NICHOLE E. FRASER A/K/A<br>NICHOLE RACE          |                                    | 3469 STATE RT. 69<br>PERISH NY 13131                  | 09/29/2021 | 09/29/2026 |
| DOL | DOL |           | NICHOLE E. FRASER A/K/A<br>NICHOLE RACE          |                                    | 3469 STATE RT. 69<br>PERISH NY 13131                  | 02/09/2022 | 02/09/2027 |
| DOL | DOL | *****7429 | NICOLAE I. BARBIR                                | BESTUCCO<br>CONSTRUCTI<br>ON, INC. | 444 SCHANTZ ROAD<br>ALLENTOWN PA 18104                | 09/17/2020 | 09/17/2025 |
| DOL | NYC | *****5643 | NYC LINE CONTRACTORS,<br>INC.                    |                                    | 402 JERICHO TURNPIKE<br>NEW HYDE PARK NY 11040        | 08/10/2022 | 08/10/2027 |
| DOL | DOL | *****1845 | OC ERECTERS, LLC A/K/A OC<br>ERECTERS OF NY INC. |                                    | 1207 SW 48TH TERRACE<br>DEERFIELD BEACH FL 33442      | 01/16/2018 | 01/16/2023 |
| DOL | DOL |           | PAULINE CHAHALES                                 |                                    | 935 S LAKE BLVD<br>MAHOPAC NY 10541                   | 03/02/2021 | 03/02/2026 |
| DOL | DOL |           | PETER STEVENS                                    |                                    | 11 OLD TOWN ROAD<br>SELKIRK NY 12158                  | 02/02/2021 | 02/02/2026 |
| DOL | DOL | *****0466 | PRECISION BUILT FENCES,<br>INC.                  |                                    | 1617 MAIN ST<br>PEEKSKILL NY 10566                    | 03/03/2020 | 03/03/2025 |
| DOL | NYC |           | RASHEL CONSTRUCTION<br>CORP                      |                                    | 524 MCDONALD AVENUE<br>BROOKLYN NY 11218              | 09/17/2020 | 09/17/2025 |
| DOL | DOL | *****1068 | RATH MECHANICAL<br>CONTRACTORS, INC.             |                                    | 24 ELDOR AVENUE<br>NEW CITY NY 10956                  | 02/03/2020 | 02/03/2025 |
| DOL | DOL | *****2633 | RAW POWER ELECTRIC<br>CORP.                      |                                    | 3 PARK CIRCLE<br>MIDDLETOWN NY 10940                  | 01/30/2018 | 01/30/2023 |
| DOL | DOL | *****2633 | RAW POWER ELECTRIC<br>CORP.                      |                                    | 3 PARK CIRCLE<br>MIDDLETOWN NY 10940                  | 07/11/2022 | 07/11/2027 |
| DOL | AG  | *****7015 | RCM PAINTING INC.                                |                                    | 69-06 GRAND AVENUE<br>2ND FLOORMASPETH NY<br>11378    | 02/07/2018 | 02/07/2023 |
| DOL | DA  | *****7559 | REGAL CONTRACTING INC.                           |                                    | 24 WOODBINE AVE<br>NORTHPORT NY 11768                 | 10/01/2020 | 10/01/2025 |



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| DOL | DOL |           | REGINALD WARREN                          |                                        | 161 ROBYN RD<br>MONROE NY 10950                       | 01/30/2018 | 01/30/2023 |
| DOL | DOL | *****9148 | RICH T CONSTRUCTION                      |                                        | 107 WILLOW WOOD LANE<br>CAMILLUS NY 13031             | 11/13/2018 | 11/13/2023 |
| DOL | DOL |           | RICHARD MACONE                           |                                        | 8617 THIRD AVE<br>BROOKLYN NY 11209                   | 09/17/2018 | 09/17/2023 |
| DOL | DOL |           | RICHARD REGGIO                           |                                        | 1617 MAIN ST<br>PEEKSKILL NY 10566                    | 03/03/2020 | 03/03/2025 |
| DOL | DOL | *****9148 | RICHARD TIMIAN                           | RICH T<br>CONSTRUCTI<br>ON             | 108 LAMONT AVE<br>SYRACUSE NY 13209                   | 10/16/2018 | 10/16/2023 |
| DOL | DOL |           | RICHARD TIMIAN JR.                       |                                        | 108 LAMONT AVE<br>SYRACUSE NY 13209                   | 10/16/2018 | 10/16/2023 |
| DOL | DOL |           | RICHARD TIMIAN JR.                       |                                        | 108 LAMONT AVE<br>SYRACUSE NY 13209                   | 11/13/2018 | 11/13/2023 |
| DOL | DOL |           | ROBBYE BISSEsar                          |                                        | 89-51 SPRINGFIELD BLVD<br>QUEENS VILLAGE NY 11427     | 01/11/2003 | 01/11/3003 |
| DOL | DOL |           | ROBERT A. VALERINO                       |                                        | 3841 LANYARD COURT<br>NEW PORT RICHEY FL 34652        | 07/09/2019 | 07/09/2024 |
| DOL | DOL |           | ROBERT BRUNO                             |                                        | 5 MORNINGSIDE DRIVE<br>AUBURN NY 13021                | 05/28/2019 | 05/28/2024 |
| DOL | DOL |           | RODERICK PUGH                            |                                        | 404 OAK ST<br>SUITE 101SYRACUSE NY<br>13203           | 07/23/2018 | 07/23/2023 |
| DOL | DOL | *****4880 | RODERICK PUGH<br>CONSTRUCTION INC.       |                                        | 404 OAK ST<br>SUITE 101SYRACUSE NY<br>13203           | 07/23/2018 | 07/23/2023 |
| DOL | DOL |           | ROMEO WARREN                             |                                        | 161 ROBYN RD<br>MONROE NY 10950                       | 01/30/2018 | 01/30/2023 |
| DOL | DOL |           | ROMEO WARREN                             |                                        | 161 ROBYN RD<br>MONROE NY 10950                       | 07/11/2022 | 07/11/2027 |
| DOL | DOL |           | RONALD MESSEN                            |                                        | 14B COMMERCIAL AVE<br>ALBANY NY 12065                 | 11/14/2019 | 11/14/2024 |
| DOL | DOL |           | ROSEANNE CANTISANI                       |                                        |                                                       | 06/12/2018 | 06/12/2023 |
| DOL | DOL | *****7172 | RZ & AL INC.                             |                                        | 198 RIDGE AVENUE<br>VALLEY STREAM NY 11581            | 06/06/2022 | 06/06/2027 |
| DOL | DOL | *****1365 | S & L PAINTING, INC.                     |                                        | 11 MOUNTAIN ROAD<br>P.O BOX 408MONROE NY<br>10950     | 03/20/2019 | 03/20/2024 |
| DOL | DOL | *****7730 | S C MARTIN GROUP INC.                    |                                        | 2404 DELAWARE AVE<br>NIAGARA FALLS NY 14305           | 09/12/2018 | 09/12/2023 |
| DOL | DOL |           | SAL FRESINA MASONRY<br>CONTRACTORS, INC. |                                        | 1935 TEALL AVENUE<br>SYRACUSE NY 13206                | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | SAL MASONRY<br>CONTRACTORS, INC.         |                                        | (SEE COMMENTS)<br>SYRACUSE NY 13202                   | 07/16/2021 | 07/16/2026 |
| DOL | DOL | *****9874 | SALFREE ENTERPRISES INC                  |                                        | P.O BOX 14<br>2821 GARDNER RD POMPEI NY<br>13138      | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | SALVATORE A FRESINA A/K/A<br>SAM FRESINA |                                        | 107 FACTORY AVE<br>P.O BOX 11070SYRACUSE NY<br>13218  | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | SAM FRESINA                              |                                        | 107 FACTORY AVE<br>P.O BOX 11070SYRACUSE NY<br>13218  | 07/16/2021 | 07/16/2026 |
| DOL | NYC | *****0349 | SAM WATERPROOFING INC                    |                                        | 168-42 88TH AVENUE<br>APT.1 AJAMAICA NY 11432         | 11/20/2019 | 11/20/2024 |
| DOL | NYC | *****1130 | SCANA CONSTRUCTION<br>CORP.              |                                        | 863 WASHINGTON STREET<br>FRANKLIN SQUARE NY 11010     | 03/10/2020 | 03/10/2025 |
| DOL | DOL | *****2045 | SCOTT DUFFIE                             | DUFFIE'S<br>ELECTRIC,<br>INC.          | P.O BOX 111<br>CORNWALL NY 12518                      | 03/03/2020 | 03/03/2025 |
| DOL | DOL |           | SCOTT DUFFIE                             |                                        | P.O BOX 111<br>CORNWALL NY 12518                      | 03/03/2020 | 03/03/2025 |
| DOL | NYC | *****6597 | SHAIRA CONSTRUCTION<br>CORP.             |                                        | 421 HUDSON STREET<br>SUITE C5NEW YORK NY 10014        | 02/20/2019 | 02/20/2024 |
| DOL | DOL | *****1961 | SHANE BURDICK                            | CENTRAL<br>TRAFFIC<br>CONTROL,<br>LLC. | 2238 BAKER ROAD<br>GILLET PA 16923                    | 03/12/2018 | 03/12/2023 |
| DOL | DOL |           | SHANE BURDICK                            |                                        | 2238 BAKER ROAD<br>GILLET PA 16923                    | 03/12/2018 | 03/12/2023 |
| DOL | DOL |           | SHANE NOLAN                              |                                        | 9365 WASHINGTON ST<br>LOCKPORT IL 60441               | 07/23/2018 | 07/23/2023 |
| DOL | DOL |           | SHULEM LOWINGER                          |                                        | 11 MOUNTAIN ROAD<br>28 VAN BUREN DRMONROE<br>NY 10950 | 03/20/2019 | 03/20/2024 |



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| DOL | DOL | *****0816 | SOLAR ARRAY SOLUTIONS, LLC                               |                   | 9365 WASHINGTON ST<br>LOCKPORT IL 60441                   | 07/23/2018 | 07/23/2023 |
| DOL | DOL | *****0440 | SOLAR GUYS INC.                                          |                   | 8970 MIKE GARCIA DR<br>MANASSAS VA 20109                  | 07/16/2021 | 07/16/2026 |
| DOL | NYC |           | SOMATIE RAMSUNAHAI                                       |                   | 115-46 132ND ST<br>SOUTH OZONE PARK NY 11420              | 09/17/2020 | 09/17/2025 |
| DOL | DOL | *****2221 | SOUTH BUFFALO ELECTRIC, INC.                             |                   | 1250 BROADWAY ST<br>BUFFALO NY 14212                      | 02/03/2020 | 02/03/2025 |
| DOL | NYC | *****3661 | SPANIER BUILDING MAINTENANCE CORP                        |                   | 200 OAK DRIVE<br>SYOSSET NY 11791                         | 03/14/2022 | 03/14/2027 |
| DOL | DOL |           | STANADOS KALOGELAS                                       |                   | 485 RAFT AVENUE<br>HOLBROOK NY 11741                      | 10/19/2021 | 10/19/2026 |
| DOL | DOL | *****3496 | STAR INTERNATIONAL INC                                   |                   | 89-51 SPRINGFIELD BLVD<br>QUEENS VILLAGE NY 11427         | 08/11/2003 | 08/11/3003 |
| DOL | DOL | *****6844 | STEAM PLANT AND CHX SYSTEMS INC.                         |                   | 14B COMMERCIAL AVENUE<br>ALBANY NY 12065                  | 11/14/2019 | 11/14/2024 |
| DOL | DOL | *****9933 | STEED GENERAL CONTRACTORS, INC.                          |                   | 1445 COMMERCE AVE<br>BRONX NY 10461                       | 05/30/2019 | 05/30/2024 |
| DOL | DOL | *****9528 | STEEL-IT, LLC.                                           |                   | 17613 SANTE FE LINE ROAD<br>WAYNESFIELD OH 45896          | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | STEFANOS PAPASTEFANOU, JR. A/K/A STEVE PAPASTEFANOU, JR. |                   | 256 WEST SADDLE RIVER RD<br>UPPER SADDLE RIVER NJ 07458   | 05/30/2019 | 05/30/2024 |
| DOL | DOL |           | STEVE TATE                                               |                   | 415 FLAGER AVE<br>#302STUART FL 34994                     | 10/31/2018 | 10/31/2023 |
| DOL | DOL |           | STEVEN MARTIN                                            |                   | 2404 DELWARE AVE<br>NIAGARA FALLS NY 14305                | 09/12/2018 | 09/12/2023 |
| DOL | DOL | *****3800 | SUBURBAN RESTORATION CO. INC.                            |                   | 5-10 BANTA PLACE<br>FAIR LAWN PLACE NJ 07410              | 03/29/2021 | 03/29/2026 |
| DOL | DOL | *****1060 | SUNN ENTERPRISES GROUP, LLC                              |                   | 370 W. PLEASANTVIEW AVE<br>SUITE 2.329HACKENSACK NJ 07601 | 02/11/2019 | 02/11/2024 |
| DOL | DOL |           | SYED RAZA                                                |                   | 198 RIDGE AVENUE<br>NY 11581                              | 06/06/2022 | 06/06/2027 |
| DOL | DOL | *****8209 | SYRACUSE SCALES, INC.                                    |                   | 158 SOLAR ST<br>SYRACUSE NY 13204                         | 01/07/2019 | 01/07/2024 |
| DOL | DOL |           | TALAILA OCAMPA                                           |                   | 1207 SW 48TH TERRACE<br>DEERFIELD BEACH FL 33442          | 01/16/2018 | 01/16/2023 |
| DOL | DOL |           | TERRY THOMPSON                                           |                   | 11371 RIDGE RD<br>WOLCOTT NY 14590                        | 02/03/2020 | 02/03/2025 |
| DOL | DOL | *****9733 | TERSAL CONSTRUCTION SERVICES INC                         |                   | 107 FACTORY AVE<br>P.O BOX 11070SYRACUSE NY 13208         | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | TERSAL CONTRACTORS, INC.                                 |                   | 221 GARDNER RD<br>P.O BOX 14POMPEI NY 13138               | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | TERSAL DEVELOPMENT CORP.                                 |                   | 1935 TEALL AVENUE<br>SYRACUSE NY 13206                    | 07/16/2021 | 07/16/2026 |
| DOL | DOL |           | TEST                                                     |                   | P.O BOX 123<br>ALBANY NY 12204                            | 05/20/2020 | 05/20/2025 |
| DOL | DOL | *****6789 | TEST1000                                                 |                   | P.O BOX 123<br>ALBANY NY 12044                            | 03/01/2021 | 03/01/2026 |
| DOL | DOL | *****5766 | THE COKER CORPORATION                                    | COKER CORPORATION | 2610 SOUTH SALINA ST<br>SUITE 14SYRACUSE NY 13205         | 12/04/2018 | 12/04/2023 |
| DOL | DOL | *****5766 | THE COKER CORPORATION                                    | COKER CORPORATION | 2610 SOUTH SALINA ST<br>SUITE 14SYRACUSE NY 13205         | 09/17/2020 | 09/17/2025 |
| DOL | DA  | *****4106 | TRIPLE H CONCRETE CORP                                   |                   | 2375 RAYNOR STREET<br>RONKONKOMA NY 11779                 | 08/04/2021 | 08/04/2026 |
| DOL | DOL | *****8210 | UPSTATE CONCRETE & MASONRY CONTRACTING CO INC            |                   | 449 WEST MOMBSHA ROAD<br>MONROE NY 10950                  | 06/06/2022 | 06/06/2027 |
| DOL | DOL | *****6392 | V.M.K CORP.                                              |                   | 8617 THIRD AVE<br>BROOKLYN NY 11209                       | 09/17/2018 | 09/17/2023 |
| DOL | DOL | *****6418 | VALHALLA CONSTRUCTION, LLC.                              |                   | 796 PHLEPS ROAD<br>FRANKLIN LAKES NJ 07417                | 12/01/2020 | 12/01/2025 |
| DOL | NYC | *****2426 | VICKRAM MANGRU                                           | VICK CONSTRUCTION | 21 DAREWOOD LANE<br>VALLEY STREAM NY 11581                | 09/17/2020 | 09/17/2025 |
| DOL | NYC |           | VICKRAM MANGRU                                           |                   | 21 DAREWOOD LANE<br>VALLEY STREAM NY 11581                | 09/17/2020 | 09/17/2025 |
| DOL | DOL |           | VICTOR ALICANTI                                          |                   | 42-32 235TH ST<br>DOUGLSTON NY 11363                      | 01/14/2019 | 01/14/2024 |
| DOL | NYC |           | VIKTAR PATONICH                                          |                   | 2630 CROSEY AVE<br>BROOKLYN NY 11214                      | 10/30/2018 | 10/30/2023 |



**NYSDOL Bureau of Public Work Debarment List    11/15/2022**

**Article 8**

|     |     |           |                                          |                              |                                                |            |            |
|-----|-----|-----------|------------------------------------------|------------------------------|------------------------------------------------|------------|------------|
| DOL | DOL |           | VIKTORIA RATH                            |                              | 24 ELDOR AVENUE<br>NEW CITY NY 10956           | 02/03/2020 | 02/03/2025 |
| DOL | NYC |           | VITO GARGANO                             |                              | 1535 RICHMOND AVE<br>STATEN ISLAND NY 10314    | 12/13/2017 | 12/13/2022 |
| DOL | NYC | *****3673 | WALTERS AND WALTERS,<br>INC.             |                              | 465 EAST AND THIRD ST<br>MT. VERNON NY 10550   | 09/09/2019 | 09/09/2024 |
| DOL | DOL | *****3296 | WESTERN NEW YORK<br>CONTRACTORS, INC.    |                              | 3841 LAYNARD COURT<br>NEW PORT RICHEY FL 34652 | 07/09/2019 | 07/09/2024 |
| DOL | DOL |           | WHITE PLAINS CARPENTRY<br>CORP           |                              | 442 ARMONK RD                                  | 06/12/2018 | 06/12/2023 |
| DOL | DOL |           | WILLIAM G. PROERFRIEDT                   |                              | 85 SPRUCEWOOD ROAD<br>WEST BABYLON NY 11704    | 01/19/2021 | 01/19/2026 |
| DOL | DOL | *****5924 | WILLIAM G. PROPHY, LLC                   | WGP<br>CONTRACTIN<br>G, INC. | 54 PENTAQUIT AVE<br>BAYSHORE NY 11706          | 01/19/2021 | 01/19/2026 |
| DOL | DOL | *****4043 | WINDSHIELD INSTALLATION<br>NETWORK, INC. |                              | 200 LATTA BROOK PARK<br>HORSEHEADS NY 14845    | 03/08/2018 | 03/08/2023 |
| DOL | DOL | *****4730 | XGD SYSTEMS, LLC                         | TDI GOLF                     | 415 GLAGE AVE<br>#302STUART FL 34994           | 10/31/2018 | 10/31/2023 |



"General Decision Number: NY20220008 09/16/2022

Superseded General Decision Number: NY20210008

State: New York

Construction Types: Heavy and Highway

Counties: Cattaraugus, Chautauqua and Erie Counties in New York.

HEAVY CONSTRUCTION PROJECTS: CHAUTAUQUA AND ERIE COUNTIES; AND  
HIGHWAY CONSTRUCTION PROJECTS: CATTARAUGUS, CHAUTAUQUA AND  
ERIE COUNTIES

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

|                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: | <ul style="list-style-type: none"><li>. Executive Order 14026 generally applies to the contract.</li><li>. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.</li></ul>  |
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:         | <ul style="list-style-type: none"><li>. Executive Order 13658 generally applies to the contract.</li><li>. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.</li></ul> |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.



| Modification Number | Publication Date |
|---------------------|------------------|
| 0                   | 01/07/2022       |
| 1                   | 02/18/2022       |
| 2                   | 02/25/2022       |
| 3                   | 05/13/2022       |
| 4                   | 05/20/2022       |
| 5                   | 07/08/2022       |
| 6                   | 07/22/2022       |
| 7                   | 08/05/2022       |
| 8                   | 08/12/2022       |
| 9                   | 09/16/2022       |

ASBE0004-001 05/01/2022

|                                                                                                                                                                                         | Rates    | Fringes |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|
| ASBESTOS WORKER/HEAT & FROST<br>INSULATOR (include<br>application of all materials,<br>protective coverings,<br>coatings, and finishings to<br>all types of mechanical<br>systems)..... | \$ 35.50 | 26.74   |
| HAZARDOUS MATERIAL HANDLER.....                                                                                                                                                         | \$ 34.15 | 26.09   |

BOIL0007-001 01/01/2021

|                  | Rates    | Fringes |
|------------------|----------|---------|
| BOILERMAKER..... | \$ 35.10 | 30.75   |

BRNY0008-004 07/01/2021

CHATAUQUA COUNTY AND CATTARAUGUS COUNTY (EXCLUDING TOWN OF PERRYSBURG)

|                                   | Rates    | Fringes |
|-----------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER... | \$ 32.53 | 22.10   |

BRNY0045-001 07/01/2020

ERIE, CATTARAUGUS (Towns of Perrysburg & Gowanda)

|                                   | Rates    | Fringes |
|-----------------------------------|----------|---------|
| Bricklayer, Stonemason.....       | \$ 31.72 | 29.18   |
| Cement mason.....                 | \$ 31.72 | 29.18   |
| MARBLE SETTER.....                | \$ 31.72 | 29.18   |
| TERRAZZO FINISHER.....            | \$ 29.31 | 15.44   |
| TILE FINISHER.....                | \$ 29.31 | 15.44   |
| Tilesetter & Terrazzo Worker..... | \$ 31.21 | 20.54   |

CARP0276-002 07/01/2022

CHAUTAUQUA; CATTARAUGUS (Remainder of County).

|                  | Rates    | Fringes |
|------------------|----------|---------|
| Carpenters:..... | \$ 34.18 | 25.10   |

FOOTNOTES:

- a. Paid Holidays: Independence Day and Labor Day, provided



the employee works his scheduled day before and after the holiday and is on the payroll week in which the holiday falls.

-----  
CARP0276-013 07/01/2022

ERIE (Grand Island)

|                      | Rates    | Fringes |
|----------------------|----------|---------|
| CARPENTER            |          |         |
| Heavy & Highway..... | \$ 37.44 | 30.79   |

FOOTNOTES:

a. PAID HOLIDAYS: Independence Day, Labor Day, provided the employee works his scheduled day before and after the holiday and is on the payroll in the payroll week in which the holiday falls.

-----  
CARP0276-021 07/01/2022

CATTARAUGUS (Townships of Persia and Perrysburg)

|                      | Rates    | Fringes |
|----------------------|----------|---------|
| CARPENTER            |          |         |
| Heavy & Highway..... | \$ 34.18 | 25.10   |

FOOTNOTES:

a. PAID HOLIDAYS: Independence Day, Labor Day, provided the employee works his scheduled day before and after the holiday and is on the payroll in the payroll week in which the holiday falls.

-----  
ELEC0041-007 05/31/2022

ERIE, CATTARAUGUS (Ashford, East Otto, Ellicottville, Farmersville, Freedom, Franklinville, Lyndon, Machias, Mansfield, New Albion, Otto, Perrysburg, Persia and Yorkshire Townships)

|                    | Rates    | Fringes  |
|--------------------|----------|----------|
| CABLE SPLICER..... | \$ 36.73 | 3%+22.29 |
| ELECTRICIAN.....   | \$ 38.99 | 31.79    |

-----  
\* ELEC0041-008 05/30/2022

ERIE, CATTARAUGUS (Ashford, East Otto, Ellicottville, Farmersville, Freedom, Franklinville, Lyndon, Machias, Masnfield, New Albion, Otto, Perrsburg, Persia and Yorkshire Townships)

|                       | Rates       | Fringes |
|-----------------------|-------------|---------|
| Communications System |             |         |
| CABLER.....           | \$ 12.50 ** | 12.97+a |
| INSTALLER.....        | \$ 22.10    | 20.02+a |



|                        |          |         |
|------------------------|----------|---------|
| MASTER TECHNICIAN..... | \$ 30.36 | 20.26+a |
| SOUND WIREMAN.....     | \$ 27.60 | 20.18+a |

Work covers low voltage construction, installation, maintenance, and removal of teledata facilities (voice, data and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX fiber optic cable and equipment, railroad communications, micro waves, V-Sat, bypass, CATV, WAN (wide area networks); LAN (local area networks) and ISDN (integrated systems digital network). Also, installation of sound systems, nurses call systems, intercom systems, staff registry/locating/signaling systems, antenna systems and associated devices; installation of security systems and apparatus, and cabling from VDT's to computers. This work does not apply to new construction, or to the installation of raceway systems and boxes for the above work.

FOOTNOTE:

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving Day, Christmas Day.

-----  
ELEC0106-002 01/01/2022

CHAUTAUQUA, CATTARAUGUS (Remainder of County)

|                    | Rates    | Fringes |
|--------------------|----------|---------|
| CABLE SPLICER..... | \$ 35.75 | 20.68   |
| ELECTRICIAN.....   | \$ 40.00 | 25.72   |

-----  
ELEC1249-003 05/04/2020

|                                                                                                                                                                                                            | Rates    | Fringes     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------|
| ELECTRICIAN (LINE CONSTRUCTION: LIGHTING AND TRAFFIC SIGNAL Including any and all Fiber Optic Cable necessary for Traffic Signal Systems, Traffic Monitoring systems and Road Weather information systems) |          |             |
| Flagman.....                                                                                                                                                                                               | \$ 27.72 | 6.75%+33.90 |
| Groundman (Truck Driver)....                                                                                                                                                                               | \$ 36.96 | 6.75%+33.90 |
| Groundman Truck Driver (tractor trailer unit).....                                                                                                                                                         | \$ 39.27 | 6.75%+33.90 |
| Lineman & Technician.....                                                                                                                                                                                  | \$ 46.20 | 6.75%+33.90 |
| Mechanic.....                                                                                                                                                                                              | \$ 36.96 | 6.75%+33.90 |

FOOTNOTE:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

-----  
ELEC1249-004 05/03/2021



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rates    | Fringes  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| ELECTRICIAN (Line Construction)                                                                                                                                                                                                                                                                                                                                                                                                                                |          |          |
| Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire, fiber optic shield wire or any other like product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities :                                                                                                                              |          |          |
| Flagman.....                                                                                                                                                                                                                                                                                                                                                                                                                                                   | \$ 32.82 | 7%+34.40 |
| Groundman digging machine operator.....                                                                                                                                                                                                                                                                                                                                                                                                                        | \$ 49.23 | 7%+34.40 |
| Groundman truck driver (tractor trailer unit).....                                                                                                                                                                                                                                                                                                                                                                                                             | \$ 46.50 | 7%+34.40 |
| Groundman Truck driver.....                                                                                                                                                                                                                                                                                                                                                                                                                                    | \$ 43.76 | 7%+34.40 |
| Lineman and Technician.....                                                                                                                                                                                                                                                                                                                                                                                                                                    | \$ 54.70 | 7%+35.40 |
| Mechanic.....                                                                                                                                                                                                                                                                                                                                                                                                                                                  | \$ 43.76 | 7%+34.40 |
| Substation:                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |          |
| Cable Splicer.....                                                                                                                                                                                                                                                                                                                                                                                                                                             | \$ 60.17 | 7%+35.40 |
| Flagman.....                                                                                                                                                                                                                                                                                                                                                                                                                                                   | \$ 32.82 | 7%+34.40 |
| Ground man truck driver....                                                                                                                                                                                                                                                                                                                                                                                                                                    | \$ 43.76 | 7%+34.40 |
| Groundman digging machine operator.....                                                                                                                                                                                                                                                                                                                                                                                                                        | \$ 49.23 | 7%+34.40 |
| Groundman truck driver (tractor trailer unit).....                                                                                                                                                                                                                                                                                                                                                                                                             | \$ 46.50 | 7%+34.40 |
| Lineman & Technician.....                                                                                                                                                                                                                                                                                                                                                                                                                                      | \$ 54.70 | 7%+35.40 |
| Mechanic.....                                                                                                                                                                                                                                                                                                                                                                                                                                                  | \$ 43.76 | 7%+34.40 |
| Switching structures; railroad catenary installation and maintenance, third rail type underground fluid or gas filled transmission conduit and cable installations (including any and all fiber optic ground product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities), pipetype cable installation and maintenance jobs or projects, and maintenance bonding of rails; Pipetype cable installation |          |          |
| Cable Splicer.....                                                                                                                                                                                                                                                                                                                                                                                                                                             | \$ 61.62 | 7%+35.40 |
| Flagman.....                                                                                                                                                                                                                                                                                                                                                                                                                                                   | \$ 33.61 | 7%+34.40 |
| Groundman Digging Machine Operator.....                                                                                                                                                                                                                                                                                                                                                                                                                        | \$ 50.42 | 7%+34.40 |
| Groundman Truck Driver (tractor-trailer unit).....                                                                                                                                                                                                                                                                                                                                                                                                             | \$ 47.62 | 7%+34.40 |
| Groundman Truck Driver.....                                                                                                                                                                                                                                                                                                                                                                                                                                    | \$ 44.82 | 7%+34.40 |
| Lineman & Technician.....                                                                                                                                                                                                                                                                                                                                                                                                                                      | \$ 56.02 | 7%+35.40 |



Mechanic.....\$ 44.82                      7%+34.40

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

-----  
ELEC1249-008 01/01/2022

|                                                                         | Rates    | Fringes  |
|-------------------------------------------------------------------------|----------|----------|
| ELECTRICIAN (Line Construction)                                         |          |          |
| TELEPHONE, CATV FIBEROPTICS CABLE AND EQUIPMENT                         |          |          |
| Cable splicer.....                                                      | \$ 36.28 | 3%+5.14  |
| Groundman.....                                                          | \$ 18.25 | 3%+5.14  |
| Installer Repairman-Teledata Lineman/Technician-Equipment Operator..... | \$ 34.43 | 3%+5.14  |
| Tree Trimmer.....                                                       | \$ 28.25 | 3%+10.23 |

a. New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day.

-----  
ELEV0014-001 01/01/2022

|                        | Rates    | Fringes    |
|------------------------|----------|------------|
| ELEVATOR MECHANIC..... | \$ 54.98 | 36.885+a+b |

FOOTNOTE:

a. Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.  
b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

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ENGI0017-012 07/01/2018

|                            | Rates    | Fringes |
|----------------------------|----------|---------|
| Power equipment operators: |          |         |
| GROUP 1.....               | \$ 38.73 | 29.84+a |
| GROUP 2.....               | \$ 34.23 | 29.84+a |
| GROUP 3.....               | \$ 39.48 | 29.84+a |
| GROUP 4.....               | \$ 39.73 | 29.84+a |
| GROUP 5.....               | \$ 40.23 | 29.84+a |
| GROUP 6.....               | \$ 39.80 | 29.84+a |

NOTE: HAZARDOUS WASTE PREMIUM                      \$2.50  
TUNNEL WORK                                              \$1.00

FOOTNOTES:



a. PAID HOLIDAYS: A-New Year's Day; B-Memorial Day; C-Independence Day; D-Labor Day; Thanksgiving Day; F-Christmas Day, provided the employee has worked the day before and the day after the holiday.

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Air hoist, all boom type equipment (100 ft. or less), all pan and carry-alls, archer hoist, asphalt roller asphalt spreader or paver, automatic fine grade machine (CMI and similar type), archer hoist, backhoe and pull hoe (tractor mounted and rubber mounted), back filling machine, belt place (CMI and similar), bending machine (pipe), bituminous spreader and mixer, black top plant (automated), black top plant (non-automated), blast or rotary drill (truck or track mounted), blower for burning brush, boiler (when used for power), boom trucks, boring machine, bulldozer, cableway cage hoist, caisson auger, central mix plant (and all concrete batching plants), cherry picker (over 5 tons), cherry picker (under 5 tons), chipping machine and chip spreader, concrete curb and gutter machines, concrete curing machine, concrete mixer (over 1/2 cu. yd.) concrete pavement spreaders and finishers, concrete paver, concrete pump, concrete saw (self-propelled), conveyor, core drill, crane, crusher, derrick operator, dragline, dredge, drill rig (tractor mounted), dual drum paver, electric pump used in conjunction with well point systems, elevating grader self-propelled or towed), elevator excavator (all purpose, hydraulically operated) farm tractor with accessories, fine grade machine, forklift, front end loader, generator (10 outlets or more), gradall, grader, grout or gunite machine, head tower, hoist-one drum, hoisting engine, hydraulic boom, hydraulic hammer, (self propelled), hydraulic pipe jack machine (or similar type machine), hydraulic system pumps, hydro crane, hydro hammer (or similar type), industrial tractor, jersey spreader, kolman plant loader (and similar type loaders), locomotive, lubrication truck, maintenance engineer, maintenance lubrication unit or truck, mine hoist, mixer for stabilized base (self-propelled), monorail, motorized hydraulic pin puller, motorized hydraulic seeder mucking machine, mulching machine, multiple drum hoist (more than 1 drum in use), overhead crane, peine crane (or similar type), pile driver, plant engineer, pneumatic mixer, post hole digger, power boom, pumpcrete, push or snatch cat, quarry master or equivalent road widener, rock bit sharpener (all types), roller (all), rolling machine (pipe), rotomill, scoopmobile, shovel, side boom, skimmer, slip form paver (CMI and similar type, first and second operator), snorkel, strato-tower, stump chipping machine, tire truck and repair, towed roller, tractor drawn belt type grader/loader, tractor shovel, tractor with towed accessories, tractors (when using winch power), tractors, trencher, truck crane, tunnel shovel, tube finisher (CMI and similar type), vibratory compactor, vibro tamp, well drilling machine, well point, winch, winch truck with "A" frame.

GROUP 2: Aggregate bin, CMI and similar type concrete spreads, cement bin, chipping machine and chip spreader, compressors (4 or less), compressors: (any size, but subject to other provisions for compressors, dust collectors, generators, mechanical heaters, pumps, welding



machines (four of any type or combination), concrete mixer (1/2 cu. yd. and under), fireman, form tamper, fuel truck, heating boiler (used for temporary heat), jeep trencher, power heaterman, power plant in excess of 10 K.W., pump (4" or over), reviniis widener, stem cleaner, stump chipping machine, welding machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

GROUP 3: Crane with boom over 100 feet

GROUP 4: Crane with boom over 200 feet

GROUP 5: Crane with boom over 300 feet

GROUP 6: Master mechanic

-----  
IRON0006-003 07/01/2022

|                                               | Rates    | Fringes |
|-----------------------------------------------|----------|---------|
| Ironworker                                    |          |         |
| Fence Erectors.....                           | \$ 30.93 | 29.85   |
| Structural, Ornamental,<br>Reinforcing Steel, |          |         |
| Welders, Riggers and Rodman.                  | \$ 32.36 | 31.35   |
| Window Erectors.....                          | \$ 30.01 | 31.35   |

-----  
IRON0006-015 07/01/2022

|                 | Rates    | Fringes |
|-----------------|----------|---------|
| IRONWORKER      |          |         |
| Ironworker..... | \$ 32.36 | 31.35   |
| Sheeter.....    | \$ 31.45 | 28.16   |

-----  
LAB00210-003 07/01/2022

|                             | Rates    | Fringes |
|-----------------------------|----------|---------|
| LABORER                     |          |         |
| ERIE COUNTY HEAVY & HIGHWAY |          |         |
| GROUP 1.....                | \$ 33.66 | 27.65   |
| GROUP 2.....                | \$ 33.86 | 27.65   |
| GROUP 3.....                | \$ 34.06 | 27.65   |
| GROUP 4.....                | \$ 34.26 | 27.65   |
| ERIE COUNTY SEWER/WATER     |          |         |
| GROUP 1.....                | \$ 33.66 | 27.65   |
| GROUP 2.....                | \$ 33.76 | 27.65   |
| GROUP 3.....                | \$ 33.81 | 27.65   |
| GROUP 4.....                | \$ 33.91 | 27.65   |
| GROUP 5.....                | \$ 34.26 | 27.65   |
| GROUP 6.....                | \$ 34.66 | 27.65   |
| ERIE COUNTY TUNNEL          |          |         |
| GROUP 1.....                | \$ 35.16 | 27.65   |
| GROUP 2.....                | \$ 35.31 | 27.65   |
| GROUP 3.....                | \$ 35.41 | 27.65   |
| GROUP 4.....                | \$ 35.91 | 27.65   |
| GROUP 5.....                | \$ 36.01 | 27.65   |
| GROUP 6.....                | \$ 36.41 | 27.65   |
| GROUP 7.....                | \$ 36.66 | 27.65   |

HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Laborers; flagmen; outboard and hand boats;



demolition worker; IBC barriers (except on structures);  
guard rails; road markers

GROUP 2: Bull float; chain saw; concrete aggregate bin;  
concrete bootman; gin buggy; hand or machine vibrator;  
jackhammer; mason tender mortar mixer; pavement breaker;  
handlers of all steel mesh; small generators for laborers'  
tools; installation of bridge drainage pipe; pipelayers;  
vibrator type rollers; tamper; drill doctor; tail or screw  
operator on asphalt paver; water pump (2" and single  
diaphragm); nozzle (asphalt, gunnite, seeding and  
sandblasting); laborers on chain link fence erection; rock  
splitter and power unit; pusher type concrete saw and all  
other gas, electric, oil and air tool operators; wrecking  
laborers; laser man

GROUP 3: All rock or drilling machine operators (except  
quarry master and similar type); acetylene torch operator;  
asphalt raker; powderman; welder

GROUP 4: Blasters; curb & flat work form setters (except on  
structures); stone or granite curb setters

#### SEWER/WATER CLASSIFICATIONS

GROUP 1: General; flagman; top man; wreckers

GROUP 2: Foundation; rod carriers; plaster tender; scaffold  
bootman; pneumatic, gas, electric tool operator;  
jackhammer; chipping guns

GROUP 3: Mortar mixer over 8 feet in depth

GROUP 4: Pavement formsetter; steelburner; caisson; wagon  
drill operator; pipelayer; swing scaffold

GROUP 5: Utility pave driver; laser operator

GROUP 6: Blaster

#### TUNNEL CLASSIFICATIONS

GROUP 1: Mole nipper; powder handler; top laborer

GROUP 2: Air spade; jackhammer; pavement breaker

GROUP 3: Top bell

GROUP 4: Bottom bell; side or roofbelt driller; burners;  
trackmen; nippers; derailmen; hosemen; groutmen; gravelmen;  
form workers; movers & shaftmen; conveyormen

GROUP 5: Powder monkey

GROUP 6: Blasters; ironmen; welder; heading driller

GROUP 7: Piledriver; rigger

FOR HEAVY/HIGHWAY & TUNNEL: Additional \$1.00 added to base  
rate for all deleader & asbestos work. Additional \$2.00  
added to base rate for all hazardous waste work.



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LAB00621-001 07/01/2022

CATTARAUGUS COUNTY and Townships of French Creek, Clymer, Harmony, Busti, Kiantone, Carroll, Mina, Sherman, Ellicott, Poland, Jamestown, North Harmony, Gerry, Chautauqua, Ellington, Ellery, and Stockton in CHAUTAUQUA COUNTY

|  | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

Laborers:

HEAVY AND HIGHWAY  
(ZONE I)

|              |          |       |
|--------------|----------|-------|
| GROUP 1..... | \$ 30.24 | 25.03 |
| GROUP 2..... | \$ 30.64 | 25.03 |

LABORER CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Flagman; outboard and hand boats; Bull float; Chain Saw; Concrete aggregate bin; Concrete boot; Gin Buggy; Hand or machine vibrator jack hammer; Mason tender; Mortar mixer; pavement breaker; Handler of all steel mesh; Small generator for laborer tools, installation of bridge drainage pipe; Pipe layers; Vibrator type rollers; Tamper drill doctor; Water pump operator (1-1/2" and single diaphragm); Nozzle (asphalt, gunite, seeding and sandblasting); Laborers on chain link fence erection; rock splitter and power unit; Pusher type concrete saw and all other gas, electric, oil and air tool operators; wrecking laborers.

GROUP 2: Blasters; Form setter; stone or granite curb setters; Designated asphalt rakers (not to include cold patch); tail or screw operator on asphalt paver. All rock or drilling machine operators (except quarry master and similar type); acetylene torch operators; powdermen.

-----  
LAB00621-002 07/01/2022

CHAUTAUQUA COUNTY (Townships of Ripley, Westfield, Portland, Pomfret, Dunkirk, Sheridan, Hanover, Villenova, Arkwright, Cherry Creek and Charlotte)

|  | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

Laborers:

CATTARAUGUS COUNTY AND  
CHAUTAUQUA COUNTY  
(Remaining Townships)

HEAVY AND HIGHWAY

|              |          |       |
|--------------|----------|-------|
| GROUP 1..... | \$ 30.24 | 25.03 |
| GROUP 2..... | \$ 30.64 | 25.03 |

CHAUTAUQUA COUNTY  
(Townships of Ripley,  
Westfield, Portland,  
Pomfret, Dunkirk,  
Sheridan, Hanover,  
Villanova, Arkwright,  
Cherry Creek and  
Charlotte) HEAVY AND  
HIGHWAY CONSTRUCTION

|              |          |       |
|--------------|----------|-------|
| GROUP 1..... | \$ 31.19 | 25.03 |
|--------------|----------|-------|



GROUP 2.....\$ 31.59

25.03

For HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1: Flagmen, Outboard and Hand Boats, Demolition Worker, Nurseryman, IBC Barriers except on Structures, Guard Rail and Road Markers, Bull Float, Chain Saw, Concrete Aggregate Bin, Concrete Bootman, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of All Steel Mesh, Small Generators for Laborers' tools, Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Waterpump Operators (1 1/2" and single diaphragm), Nozzle (asphalt gunite, seeding and sand blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other gas, electric, oil and air tool operators, Wrecking Laborer, Laser Man.

GROUP 2: All Rock or Drilling Machine Operators (except quarry master and similar type), Acetylene Torch Operators and Asphalt Raker, Powderman, Blaster, Curb and Flat Work Form Setter not on structures, Stone or Granite curb setters, Stone Cutter.

For HEAVY & HIGHWAY CLASSIFICATIONS in CHAUTAUQUA COUNTY  
(Remaining Townships)

GROUP 1: Flagman, Outboard and hand boats, Bull float, Chain Saw, Concrete aggregate bin, Concrete boot, Gin buggy, Hand or machine vibrator jack hammer, Mason tender, Mortar mixer, pavement breaker, handler of all steel mesh, Small generator for laborers' tools, installation of bridge drainage pipe; Pipe layers, Vibrator type rollers, Tamper drill doctor, Water pump operator (1 1/2" and single diaphragm), Nozzle (asphalt, gunite, seeding and sandblasting) Laborers on chain link fence erection, rock splitter and power unit, Pusher type concrete saw and all other gas, electric, oil and air tool operators, wrecking laborers.

GROUP 2: Blasters, Form setters, stone or granite curb setters; Designated asphalt rakers (not to include cold patch), tail or screw operator on asphalt paver. All rock or drilling machine operators (except quarry master and similar type), acetylene torch operators, powderman.

-----  
PAIN0004-001 05/01/2021

CHAUTAUQUA COUNTY (Townships of Awkwright, Dunkirk, Hanover, Pomfret, Portland, Sheridan, Villanova); CATTARAUGUS COUNTY (Townships of Ashford, Dayton, East Otto, Machias, Otto, Perrysburg, Persia, Yorkshire); ERIE COUNTY (Entire county, excluding area North of Whitehaven Road, Grand Island)

|  | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

Painters: (BUILDING  
CONSTRUCTION)

ERIE COUNTY

|                       |          |       |
|-----------------------|----------|-------|
| BRUSH AND ROLLER..... | \$ 28.00 | 25.49 |
| DRYWALL/TAPING.....   | \$ 28.50 | 25.49 |



|                                                 |          |       |
|-------------------------------------------------|----------|-------|
| WALLCOVERING.....                               | \$ 26.45 | 24.94 |
| Painters: (HEAVY & HIGHWAY<br>CONSTRUCTION)     |          |       |
| CATTARAUGUS, CHAUTAUQUA &<br>ERIE COUNTIES..... | \$ 38.50 | 28.40 |

-----  
PAIN0004-004 05/01/2019

ERIE COUNTY, (AREA NORTH OF WHITEHAVEN ROAD, GRAND ISLAND, NEW YORK)

|  |       |         |
|--|-------|---------|
|  | Rates | Fringes |
|--|-------|---------|

Painters:

|                                                                     |          |       |
|---------------------------------------------------------------------|----------|-------|
| BUILDING CONSTRUCTION                                               |          |       |
| Lead Abatement.....                                                 | \$ 25.43 | 19.51 |
| Painters.....                                                       | \$ 24.68 | 19.51 |
| Spraying, Paperhangers,<br>Sand-Blasting, Swinging<br>scaffold..... | \$ 24.93 | 19.51 |
| Tapers.....                                                         | \$ 25.18 | 19.51 |
| HEAVY & HIGHWAY<br>CONSTRUCTION                                     |          |       |
| Bridge Painter.....                                                 | \$ 38.50 | 28.40 |

-----  
PAIN0004-007 05/01/2021

|  |       |         |
|--|-------|---------|
|  | Rates | Fringes |
|--|-------|---------|

|              |          |       |
|--------------|----------|-------|
| GLAZIER..... | \$ 27.88 | 23.84 |
|--------------|----------|-------|

-----  
PAIN0004-008 05/01/2019

CATTARAUGUS COUNTY - Townships of Leon, Conewango, Randolph, South Valley, Napoli and New Albion;

CHAUTAUQUA COUNTY - Townships of French Creek, Mina, Ripley, Westfield, Sherman, Clymer, Chautauqua, North Harmony, Harmony, Busti, Ellery, Stockton, Charlotte, Gerry, Ellicott, Jamestown, Kiantone, Carroll, Poland, Ellington and Cherry Creek.

|  |       |         |
|--|-------|---------|
|  | Rates | Fringes |
|--|-------|---------|

Painters: (HEAVY & HIGHWAY  
CONSTRUCTION)

|              |          |       |
|--------------|----------|-------|
| Bridges..... | \$ 38.50 | 28.40 |
|--------------|----------|-------|

-----  
PAIN0004-017 05/01/2019

CATTARAUGUS COUNTY (Townships of Cold Spring, Elko, Mansfield, Little Valley, Salamanca Indian Reservation, Red House, Ellicottville, Great Valley, Carrolton, Franklinville, Humphrey, Allegany, Freedom, Farmersville, Lyndon, Ishua, Hinsdale, Olean and Portville)

|  |       |         |
|--|-------|---------|
|  | Rates | Fringes |
|--|-------|---------|

Painters: (HEAVY & HIGHWAY  
CONSTRUCTION)

|              |          |       |
|--------------|----------|-------|
| Bridges..... | \$ 38.50 | 28.40 |
|--------------|----------|-------|

-----  
PLAS0009-001 04/01/2019



|                         | Rates    | Fringes |
|-------------------------|----------|---------|
| PLASTERER.....          | \$ 30.15 | 20.49   |
| -----                   |          |         |
| PLAS0111-001 07/01/2018 |          |         |

|                         | Rates    | Fringes |
|-------------------------|----------|---------|
| CEMENT FINISHER.....    | \$ 30.00 | 30.62   |
| -----                   |          |         |
| PLUM0022-001 05/02/2022 |          |         |

CATTARAUGUS- Townships of Perryburg, Dayton, Persia, Otto, Leon, and New Albion;

CHATAUQUA- Townships of Hanover, Sheridan, Dunkirk, Pomfret, Arkwright, Villanova, Portland, Stockton, Charlotte, Ripley and Westfield;

ERIE- All Townships in the County.

|                         | Rates    | Fringes |
|-------------------------|----------|---------|
| PLUMBER/PIPEFITTER      |          |         |
| ZONE 1.....             | \$ 38.91 | 28.09   |
| Steamfitter             |          |         |
| ZONE 1.....             | \$ 38.91 | 28.09   |
| -----                   |          |         |
| PLUM0022-004 05/03/2021 |          |         |

#### ZONE 2

CATTARAUGUS- Townships of Conewango, Napoli, East Otto, Mansfield, Little Valley, Randolph, South Valley, Colesprings, Salemanca, Ashford, Ellicottville, Great Valley, Carrollton, Yorkshire, Freedom, Farmersville Station, Machias, Lyndon, Franklinville, Humphrey, Ischua, Allegany, Hinsdale, Olean, Portville;

#### ZONE 1

CHAUTAUQUA - Townships of Cherry Creek, Ellington, Polland, Carroll, Gerry, Ellicott, Kiantone, Ellery, Busti, Harmony, North Harmony, Chautauqua, Sherman, Mina, French Creek, Clymer.

|                           | Rates    | Fringes |
|---------------------------|----------|---------|
| PLUMBER/PIPEFITTER        |          |         |
| ZONE 1.....               | \$ 37.48 | 26.32   |
| ZONE 2.....               | \$ 37.47 | 27.40   |
| -----                     |          |         |
| * ROOF0074-001 06/01/2022 |          |         |

#### ERIE COUNTY

|                         | Rates    | Fringes |
|-------------------------|----------|---------|
| Roofers:                |          |         |
| Composition.....        | \$ 31.96 | 23.93   |
| Slate & Tile.....       | \$ 32.11 | 23.93   |
| -----                   |          |         |
| ROOF0210-005 06/01/2010 |          |         |

|  | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|



|             |          |       |
|-------------|----------|-------|
| ROOFER..... | \$ 23.65 | 11.99 |
|-------------|----------|-------|

-----

SFNY0669-001 04/01/2022

|                       |          |         |
|-----------------------|----------|---------|
|                       | Rates    | Fringes |
| SPRINKLER FITTER..... | \$ 40.81 | 25.91   |

-----

\* SHEE0071-001 05/30/2022

ERIE COUNTY:

|                         |          |         |
|-------------------------|----------|---------|
|                         | Rates    | Fringes |
| Sheet metal worker..... | \$ 37.44 | 27.63   |

-----

SHEE0112-001 05/01/2022

CATTARAUGUS AND CHAUTAUQUA COUNTIES:

|                         |          |         |
|-------------------------|----------|---------|
|                         | Rates    | Fringes |
| SHEET METAL WORKER..... | \$ 34.44 | 20.98   |

-----

TEAM0264-001 04/01/2020

CATTARAUGUS AND CHAUTAUQUA COUNTIES

|                |          |         |
|----------------|----------|---------|
|                | Rates    | Fringes |
| Truck drivers: |          |         |
| GROUP 1.....   | \$ 39.60 | 15.08+a |
| GROUP 2.....   | \$ 39.60 | 15.08+a |

FOOTNOTE:

a. PAID HOLIDAYS: Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided employee has worked the day before and the day after the holiday.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Pickups, panel trucks, flatboy material trucks (straight jobs), single-axle dump trucks, dumpsters, Tandems, batch trucks, mechanics semi trailers, low-boy trucks, asphalt distributor trucks, agitator, mixer trucks and dumpcrete type vehicles, truck mechanics, fuel trucks.

GROUP 2: Specialized earth moving equipment-euclid type or similar off-highway equipment, where not self-loaded, straddle (ross) carrier, self-contained concrete unit, off-highway tandem back-dump, twin engine equipent and double-hitched equipment where not self-loaded.

-----

TEAM0449-002 07/01/2018

ERIE COUNTY

|                                                                             |          |          |
|-----------------------------------------------------------------------------|----------|----------|
|                                                                             | Rates    | Fringes  |
| Truck drivers: (Includes Single Axle Dump and Off-Highway Dump Trucks)..... | \$ 38.15 | 5.00+a+b |



Work on a hazardous waste site then additional \$2.00 per hour.

FOOTNOTE: a. Pension \$56.20 per day

b. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day provided the employee has worked the working day before and after the holiday

-----  
TEAM0449-005 06/01/2020

ERIE COUNTY

|                                                                                              | Rates    | Fringes |
|----------------------------------------------------------------------------------------------|----------|---------|
| Truck drivers: (Dump Truck Only, Excludes Single Axle Dump and Off-Highway Dump Trucks)..... | \$ 23.25 | 3.75+a  |

FOOTNOTE: a. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day provided the employee has worked the working day before and after the holiday

-----  
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

\*\*\*\*\*  
\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----



The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current



negotiated/CBA rate of the union locals from which the rate is based.

-----

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"



LD036092

|                            |
|----------------------------|
| <b>PROJECT TITLE SHEET</b> |
|----------------------------|

**City of Buffalo  
Department of Public Works  
New York**

**PIN: 5762.90**

LD036092

Sponsor Contract No.: D036092

**COUNTY: Erie**

**FEDERAL AID PROJECT**

**Niagara Street  
Highway Rehabilitation & Reconfiguration Project, Phase 4b  
Hertel Avenue to Ontario Street  
Erie County, City of Buffalo**

**Deposit Required: Bid bond, certified check, or cashier's check in the minimum amount of 5% of the total bid**

**Completion Date: 294 working days from Notice To Proceed**

Questions During Bidding: No interpretation of the meaning of the plans, specifications or other contract documents will be made to any bidder orally. Every request for such interpretation shall be in writing addressed to: **pgalbo@watts-ae.com**

Addenda to Bid Documents: Addenda to the Bid Documents will be published....

**FEDERAL REQUIREMENTS**

1. This is a federal-aid contract subject to the approval of the Federal Highway Administration (FHWA) and the New York State Department of Transportation (NYSDOT).
2. Federal Contract Requirements are contained in **Appendix 12-1, 12-1A, AAP-14LL, .**
3. The BUY AMERICA provisions in Section 106-11 of the NYSDOT Standard Specifications apply to this contract.
4. Whenever local and/or New York State requirements differ from Federal requirements, the Federal requirements will prevail.
5. There are no residence, geographical restrictions, or preferences contained in this contract.
6. There are no M/WBE/SDVOB requirements or preferences contained in this contract.

**NEW YORK STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS**

1. The NYSDOT Standard Specifications **January 1, 2023**, as amended, govern work performed under this contract. This shall include Sections 100 through 799, inclusive.
2. The low bidder must have an approved New York State Uniform Contracting Questionnaire (CCA-2 Form) on file with NYSDOT prior to an award being made. The CCA-2 form is available online at <https://www.dot.ny.gov/bids-and-lettings/construction-contractors/general-info> or by calling the NYSDOT Office of Contract Management at (518) 457-1564.



### **DBE/MBE/WBE/SDVOB PARTICIPATION GOALS**

The following participation goal(s) have been established for this contract, expressed as a percentage of the total contract bid amount.

The DBE program applies to Federal Aid Contracts; the MBE, WBE, and SDVOB programs apply to Non-Federal-Aid Contracts. For more information see NYS Standard Specifications §102-12.

**Disadvantaged Business Enterprise (DBE) Goal**   5  % (Federal-Aid Only)

**Minority Business Enterprise (MBE) Goal**           % (Non-Federal-Aid Only)

**Women's Business Enterprise (WBE) Goal**           % (Non-Federal-Aid Only)

**Service-Disabled Veteran-Owned Business (SDVOB) Goal**       % (Non-Federal-Aid Only)

The NYSUCP DBE Directory is located at: <https://nysucp.newnycontracts.com/>

The NYS M/WBE Directory is located at: <https://ny.newnycontracts.com/>

The NYS SDVOB Directory is located at: <https://online.ogs.ny.gov/SDVOB/search>



## **APPENDIX 12-1**

# **CONSTRUCTION CONTRACT REQUIREMENTS**



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ALL FORMS MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN EACH BID PROPOSAL.



**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION (FHWA Section 1273 X)**

A. The prospective bidder certifies to the best of its knowledge and belief that they and their Principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for a commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with the commission of any of the offenses enumerated in paragraph (A)(2) of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the Bidder is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING (FHWA 1273 Section XI)**

A. The prospective bidder certifies, by signing and submitting this bid or proposal, to the best of his/her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.

B. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

C. The prospective bidder also agrees by submitting his/her bid or proposal that he/she shall require that the language of this certification be included in all lower tier subcontracts which exceed \$100,000 and that such subrecipients shall certify and disclose accordingly.

**THESE MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN EACH BID PROPOSAL.**



**FALSE CLAIMS CERTIFICATION (31 USC §3729, NYS Finance Law Article 13)**

Under the Federal False Claims Act, 31 U.S. Code §3729, any person or entity who knowingly presents, or causes to be presented to the Federal Government, a false or fraudulent claim for payment or approval is liable to the United States Government for a civil penalty of not less than \$5,000 and not more than \$10,000, plus three times the amount of damages the Government sustains.

Under the New York State False Claims Act, NYS Finance Law Article 13, any person or entity who knowingly presents or causes to be presented to the State of New York or Local Governments within the State of New York, a false or fraudulent claim for payment or approval is liable to the Government for a civil penalty of not less than \$6,000 and not more than \$12,000, plus three times the amount of damages the Government sustains.

“Knowingly” is defined as (1) actual knowledge; (2) acting in deliberate ignorance of the truth or falsity of information; or (3) acting in reckless disregard of the truth or falsity of information. No proof of specific intent to defraud is required.

The Contractor to whom the above-identified contract is to be awarded does hereby certify to the New York State Department of Transportation that it understands the prohibitions under the Federal and New York State False Claims acts and that it has not and will not submit or cause to be submitted any fraudulent claims in the submission of this bid or in connection with the above-identified contract. The Contractor further certifies that it understands retaliatory actions against employees and officers who initiate a *qui tam* (public) action on behalf of the government or cooperate in the investigation of a false claim are prohibited and are subject to an assessment of damages and penalties under the provisions of the Federal and New York State False Claims Acts.

**THIS MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN EACH BID PROPOSAL.**



**NON-COLLUSIVE BIDDING CERTIFICATION**

**(NYS Finance Law §139-d and General Municipal Law §103-d)**

1. By submission of this bid:

(a) Each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

- (1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.
- (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
- (3) No attempt has been made or will be made by the bidder to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition.

(b) A bid shall not be considered for award, nor shall any award be made where (a)(1)(2) and (3) above have not been complied with; provided, however, that if in any case, the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons, therefore. Where (a)(1)(2) and (3) above have not been complied with, the bid shall not be considered for award, nor shall any award be made unless the head of the purchasing unit of the state, public department, or agency to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that the bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised pricelists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

2. Any bid hereafter made to the state or any public department, agency, or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, or regulation, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder and such authorization shall be deemed to have included the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation."

**STATE NON-COLLUSIVE BIDDING CERTIFICATIONS MUST BE INCLUDED IN EVERY BID PROPOSAL REGARDLESS OF WHETHER NYSDOT SPECIFICATIONS OR LOCAL SPECIFICATIONS ARE USED.**



**NON-COLLUSIVE BIDDING CERTIFICATION (2 CFR 1200)**

"By submission of this bid, the Bidder does hereby tender to the Owner this sworn statement pursuant to Section 1128 of Title 23, U. S. Code-Highways and does hereby certify, in conformance with said Section 112 of Title 23, U. S. Code-Highways that the said Contractor has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the above contract."

The signatory to the proposal, being duly sworn, certifies that, EXCEPT AS NOTED BELOW, his/her company and any person associated therewith in the capacity of owner, partner, director, officer, or major stockholder (of five percent or more ownership):

1. Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency,
2. Has not been suspended, debarred, voluntarily excluded, or determined ineligible by any Federal agency within the past three years,
3. Does not have a proposed debarment pending; and
4. Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

EXCEPTIONS: The Contractor should list any relevant information, attaching additional sheets to the proposal if necessary. (Exceptions will not necessarily result in disapproval but will be considered in determining responsibility. For any exception noted, the Contractor should indicate to whom it applies, the initiating agency, and the dates of actions. Providing false information may result in criminal prosecution or administrative sanctions).

**FEDERAL NON-COLLUSIVE BIDDING CERTIFICATION MUST BE INCLUDED IN EVERY BID PROPOSAL REGARDLESS OF WHETHER NYSDOT SPECIFICATIONS OR LOCAL SPECIFICATIONS ARE USED.**



**REPORTING VIOLATIONS OF NON-COLLUSIVE BIDDING PROCEDURES,  
MISCONDUCT OR OTHER PROHIBITED CONTRACT ACTIVITIES**

**US DEPARTMENT OF TRANSPORTATION  
OFFICE OF INSPECTOR GENERAL - FRAUD, WASTE & ABUSE HOTLINE**

The U.S. Department of Transportation (USDOT) Office of Inspector General (OIG) maintains a Hotline for receiving allegations of fraud, waste, abuse, or mismanagement in USDOT programs or operations. Persons with knowledge of bid collusion (i.e., contractors, suppliers, work persons, etc.), or other questionable contract-related practices (inadequate materials, poor workmanship, theft of materials, etc.), are encouraged to report such activities by calling the Hotline at 1-800-424-9071, emailing [hotline@oig.dot.gov](mailto:hotline@oig.dot.gov), or writing to the USDOT Inspector General, 1200 New Jersey Ave SE, West Bldg. 7th Floor, Washington, DC 20590. Allegations may be reported 24 hours a day, seven days a week by DOT employees, contractors, or the general public.

**NEW YORK STATE OFFICE OF THE INSPECTOR GENERAL HOTLINE**

The New York State Office of the Inspector General maintains a Hotline for receiving allegations of governmental misconduct. Reports of New York State governmental misconduct may be made in strict confidence to the Toll-Free 24-hour Statewide HOTLINE at 1-800-DO RIGHT (1-800-367-4448), the online complaint form at [www.ig.ny.gov](http://www.ig.ny.gov) or in writing to the New York State Office of the Inspector General, Empire State Plaza, Agency Building 2 - 16th Floor, Albany, New York 12223.

**THIS PAGE MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED  
IN EACH BID PROPOSAL.**



## GOALS FOR EQUAL EMPLOYMENT OPPORTUNITY (EEO) PARTICIPATION

The Contractor shall follow the requirements of NYSDOT Standard Specification §102-11 *Equal Employment Opportunity Requirements*. The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, which is the county or counties in which the work is located, are as follows:

| GOALS FOR PARTICIPATION OF MINORITIES |       |            |       |              |       |
|---------------------------------------|-------|------------|-------|--------------|-------|
| COUNTY                                | %     | COUNTY     | %     | COUNTY       | %     |
| Albany                                | 3.2   | Herkimer   | 2.1   | Richmond     | Table |
| Allegany                              | 6.3   | Jefferson  | 2.5   | Rockland     | 22.6  |
| Broome                                | 1.1   | Kings      | Table | St. Lawrence | 2.5   |
| Bronx                                 | Table | Lewis      | 2.5   | Saratoga     | 3.2   |
| Cattaraugus                           | 6.3   | Livingston | 5.3   | Schenectady  | 3.2   |
| Cayuga                                | 2.5   | Madison    | 3.8   | Schoharie    | 2.6   |
| Chautauqua                            | 6.3   | Monroe     | 5.3   | Schuyler     | 1.2   |
| Chemung                               | 2.2   | Montgomery | 3.2   | Seneca       | 5.9   |
| Chenango                              | 1.2   | Nassau     | 5.8   | Steuben      | 1.2   |
| Clinton                               | 2.6   | New York   | Table | Suffolk      | 5.8   |
| Columbia                              | 2.6   | Niagara    | 7.7   | Sullivan     | 17.0  |
| Cortland                              | 2.5   | Oneida     | 2.1   | Tioga        | 1.1   |
| Delaware                              | 1.2   | Onondaga   | 3.8   | Tompkins     | 1.2   |
| Dutchess                              | 6.4   | Ontario    | 5.3   | Ulster       | 17.0  |
| Erie                                  | 7.7   | Orange     | 17.0  | Warren       | 2.6   |
| Essex                                 | 2.6   | Orleans    | 5.3   | Washington   | 2.6   |
| Franklin                              | 2.5   | Oswego     | 3.8   | Wayne        | 5.3   |
| Fulton                                | 2.6   | Otsego     | 1.2   | Westchester  | 22.6  |
| Genesee                               | 5.9   | Putnam     | 22.6  | Wyoming      | 6.3   |
| Greene                                | 2.6   | Queens     | Table | Yates        | 5.9   |
| Hamilton                              | 2.6   | Rensselaer | 3.2   |              |       |

(45 FR 65976 – 10/3/1980)

| GOALS FOR PARTICIPATION OF MINORITIES<br>BRONX, KINGS, NEW YORK, QUEENS, AND RICHMOND COUNTIES |              |                           |              |
|------------------------------------------------------------------------------------------------|--------------|---------------------------|--------------|
| Electricians                                                                                   | 9.0 to 10.2  | Bricklayers               | 13.4 to 15.5 |
| Carpenters                                                                                     | 27.6 to 32.0 | Asbestos workers          | 22.8 to 28.0 |
| Steam fitters                                                                                  | 12.2 to 13.5 | Roofers                   | 6.3 to 7.5   |
| Metal lathers                                                                                  | 24.6 to 25.6 | Iron workers (ornamental) | 22.4 to 23.0 |
| Painters                                                                                       | 26.0 to 28.6 | Cement masons             | 23.0 to 27.0 |
| Operating engineers                                                                            | 25.6 to 26.0 | Glaziers                  | 16.0 to 20.0 |
| Plumbers                                                                                       | 12.0 to 14.5 | Plasterers                | 15.8 to 18.0 |
| Iron workers (structural)                                                                      | 25.9 to 32.0 | Teamsters                 | 22.0 to 22.5 |
| Elevator constructors                                                                          | 5.5 to 6.5   | Boilermakers              | 13.0 to 15.5 |
|                                                                                                |              | All others                | 16.4 to 17.5 |

(43 FR 14888 – 4/7/1978)

### GOAL FOR PARTICIPATION OF WOMEN

The goal for the participation of women is 6.9%.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted). If the Contractor performs construction work outside of New York State, it shall apply the goals established for the covered area where the work is actually performed.



## REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I General
- II Nondiscrimination
- III Non-segregated Facilities
- IV Davis-Bacon and Related Act Provisions
- V Contract Work Hours and Safety Standards Act Provisions
- VI Subletting or Assigning the Contract
- VII Safety: Accident Prevention
- VIII False Statements Concerning Highway Projects
- IX Implementation of Clean Air Act and Federal Water Pollution Control Act
- X Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI Certification Regarding Use of Contract Funds for Lobbying
- XII Use of United States-Flag Vessels:

ATTACHMENTS A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

### I. GENERAL

1 Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).



## **II. NONDISCRIMINATION** (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60- 1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

**Note:** The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action

to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees,



or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this

requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected



persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action 3 within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

## **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either

directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.



**8. Reasonable Accommodation for Applicants / Employees with Disabilities:**

The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:**

The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurances Required:**

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

**III. NONSEGREGATED FACILITIES**

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than



\$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

#### **IV. DAVIS-BACON AND RELATED ACT PROVISIONS**

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5

"Contract provisions and related matters" with minor revisions to conform to the FHWA\_1273 format and FHWA program requirements.

#### **1. Minimum wages (29 CFR 5.5)**

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place



where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and 5

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative,

will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## **2. Withholding (29 CFR 5.5)**

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay



any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

### **3. Payrolls and basic records (29 CFR 5.5)**

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the

information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or a subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3;



(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### **4. Apprentices and trainees (29 CFR 5.5)**

##### **a. Apprentices (programs of the USDOL).**

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship

program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work



performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the 7 corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act**

**requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.



**9. Disputes concerning labor standards.** As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility (29 CFR 5.5)**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of

forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)\* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 of this section. 29 CFR 5.5.

\* \$27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor; pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.



**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased

employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long standing interpretation of 23 CFR 635.116).



5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

## **VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

## **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as



amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)**

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

**1. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant 10 who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has



entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

\* \* \* \* \*

## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).



(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

### **3. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is 11 submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification



is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

\* \* \* \* \*

#### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

\* \* \* \* \*

#### **XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report



Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier 12 subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

## **XII. USE OF UNITED STATES-FLAG VESSELS:**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the

United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.



**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS** (23 CFR 633, Subpart B, Appendix B)

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent

information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region. 6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work



**NYS STANDARD SPECIFICATIONS - SECTION 106-11 BUY AMERICA**

The following revision to NYS Standards Specifications Section 106-11 Buy America will supersede Section 106-11 Buy America within the NYS Standards Specifications dated September 1, 2022. The inclusion of this revision will be incorporated into Contract Proposals until the NYS Standards Specifications are amended effective May 1, 2023.

**106-11 BUY AMERICA.**

In accordance with 23 USC 313, 23 CFR 635.410, the Build America Buy America (BABA) Act in Title IX of the Bipartisan Infrastructure Law's (BIL), and Section 146 of the State Finance Law, permanently incorporated predominantly steel and/or iron materials/products, manufactured products, and construction materials shall be domestically produced.

***A. Control of Materials.***

To qualify as domestic, all manufacturing processes, including melting, manufacturing, fabricating, grinding, drilling, welding, finishing, and coating of any product containing steel and/or iron materials, must have been performed in the United States. A domestic product is a manufactured steel and/or iron material/product and/or construction material that was produced in one of the 50 States, the District of Columbia, or in the territories and possessions of the United States. Raw materials used in the steel and/or iron materials may be imported. Raw materials are materials such as raw iron ore and waste products which are used in the manufacturing process to produce the steel and/or iron material/product. The FHWA has granted a nationwide waiver for pig iron and processed, pelletized and reduced iron ore. Waste products include scrap (i.e., steel no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, steel trimmings from mills or product manufacturing). Extracting, crushing, and handling the raw materials which are customary to prepare them for transporting are exempt from Buy America. The use of foreign source steel billets or iron ingots are not acceptable under Buy America. All items, regardless of origin, shall comply with their individual specification requirements and with the requirements stated elsewhere in this subsection. The Contractor shall ensure the domestic steel and/or iron materials are supplied in conformance with the above referenced laws.

The Buy America provisions only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies brought to the construction site and removed at or before the completion of the infrastructure project, such as temporary scaffolding. In addition, it does not apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of or permanently affixed to the structure.

***1. Federal-Aid Contracts.***

For Federal-Aid contracts, all iron and steel, manufactured products, and construction materials shall be produced/manufactured in the United States as follows:

- a. All iron and steel used in the project shall be produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- b. All manufactured products used in the project shall be produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of



the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product.

- c. All construction materials shall be manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

Construction materials includes an article, material, or supply that is or consists primarily of:

- Non-ferrous metals,
- Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables),
- Glass (including optic glass),
- Lumber, or
- Drywall.

Items that consist of two or more of the listed materials that have been combined together through a manufacturing process, and items that include at least one of the listed materials combined with a material that is not listed through a manufacturing process, should be treated as manufactured products, rather than construction materials.

Construction materials do not include an item of primary iron or steel; a manufactured product; cement or cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives.

An article, material, or supply should be classified into only one of the following categories: (1) iron or steel; (2) a manufactured product; or (3) a construction material. An article, material, or supply should not be considered to fall into multiple categories.

For Federal-Aid Contracts, the Contractor may permanently incorporate in the construction of this contract a minimal amount of foreign steel and/or iron materials, if the combined cost of such materials does not exceed one-tenth of one percent (0.1 %) of the total contract cost or \$2,500, whichever is greater. The combined cost of foreign steel and/or iron materials will be the value of the materials as they are delivered to the contract, documented by invoice or bill of sale to the Contractor.

## **2. Non-Federal-Aid Contracts.**

For Non-Federal-Aid contracts, the Contractor shall provide structural steel, structural iron, reinforcing steel and/or other major steel items to be permanently incorporated in the work produced or made in whole or substantial part in the United States, its territories, or possessions. In the case of a structural iron or structural steel product, all manufacturing must take place in the United States, its territories, or possessions, from the initial melting stage through the application of coatings, except metallurgical processes involving the refinement of steel additives.

## **B. Waivers.**

### **1. Federal-Aid Contracts.**

The Contractor may request a waiver if it can be demonstrated that:

- a. the use of domestic steel and/or iron materials would be inconsistent with the public interest (a “public interest waiver”);



- b. types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality (a “nonavailability waiver”); or
- c. the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent (an “unreasonable cost waiver”).

The Contractor shall submit a waiver request to the Engineer which includes a detailed justification for the use of goods, products, or materials mined, produced, or manufactured outside the United States and including copies of all documentation verifying the unavailability of the material or product.

The Department will submit approved waiver requests to the FHWA for review. The Contractor shall investigate and respond to any public comments made to the FHWA Office of Program Administration, indicating that a domestic supplier can provide the material for which a waiver has been requested. Final approval of the Buy America Waiver request will be made by the Administrator, Federal Highway Administration. The waiver will be effective when it is posted in the Federal Register.

## **2. Non-Federal-Aid Contracts.**

The Contractor may request a waiver if it can be demonstrated that the use of domestic steel and/or iron materials would not be in the public interest, would result in unreasonable costs, or that such iron or steel, including without limitation structural iron and structural steel, cannot be produced, or made in the United States in sufficient and reasonably available quantities and of satisfactory quality.

The Contractor shall submit a waiver request to the Engineer which includes copies of all documentation verifying the unavailability of the material or product, and/or justification.

Waiver requests will be reviewed by the affected Department program areas and approved by the Deputy Chief Engineer, Construction (DCEC).

## **C. Certifications.**

A Manufacturer’s Certification is required to certify that the material / product is of domestic origin. Acceptable statements are: “Conforms (or Does not conform) to the requirements of NYSDOT Standard Specifications §106-11 *Buy America*” (acceptable for steel/iron, manufactured products, and construction materials) or “Conforms (or Does not conform) to the requirements of 23 CFR 635.410 *Buy America Requirements*” (acceptable for steel/iron and manufactured products only) or “Conforms (or Does not conform) to the requirements of the Build America, Buy America Act” (acceptable for construction materials only). Certifications shall comply with §106-04 *Material Acceptance Records*.



## NYS STANDARD SPECIFICATIONS - SECTION 106-04A.4 STATEMENT OF CONFORMANCE

The following revision to NYS Standards Specifications Section 106-04A.4 *Statement of Conformance* will supersede Section 106-04A.4 *Statement of Conformance* within the NYS Standards Specifications dated September 1, 2022. The inclusion of this revision will be incorporated into Contract Proposals until the NYS Standards Specifications are amended effective May 1, 2023.

**4. *Statement of Conformance.*** The certification shall definitively state that the material contained in the shipment meets the requirements of a specific Department specification or a specific specification or standard of another agency (i.e., ASTM, AASHTO, AWWA, etc.).

If the material in the shipment contains steel and/or iron, manufactured products, or construction materials, the certification shall definitively state that the material is or is not of domestic origin. Acceptable statement is: "Conforms (or Does not conform) to the requirements of 23 CFR 635.410 Buy America Requirements" (acceptable for steel/iron, manufactured products, and construction materials), "conforms (or Does not conform) to the requirements of 23 CFR 635.410 Buy America Requirements (acceptable for steel/iron and manufactured products only) or "conforms (or Does not conform) to the requirements of the Build America, Buy America Act" (acceptable for construction materials only)".

If the product supplied has been altered subsequent to the certification by the manufacturer, the Material Certification shall definitively state that the material or product contained in the shipment meets the requirements of an identified contract specification.



## **APPENDIX 12-1A**

# **CONSTRUCTION CONTRACT REQUIREMENTS FILLABLE FORMS**



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**ALL FORMS MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED  
IN EACH BID PROPOSAL.**



**NON-COLLUSIVE BIDDING CERTIFICATION  
BIDDER INFORMATION**

Bidder to provide information listed below:

Bidder Address:

Street or P. O. Box No.

City

State

ZIP

Federal Identification No.:

Name of Contact Person:

Phone # of Contact Person:

**If Bidder is a Corporation:**

President's Name & Address:

Secretary's Name & Address:

Treasurer's Name & Address:

**If Bidder is a Partnership:**

Partner's Name & Address:

Partner's Name & Address:

**If Bidder is a Sole Proprietorship:**

Owner's Name & Address:

**THIS PAGE MUST BE INCLUDED IN ALL FEDERAL AID CONTRACTS AND MUST BE INCLUDED IN  
EACH BID PROPOSAL.**



## Offerer Disclosure of Prior Non-Responsibility Determinations

Name of Individual of Entity Seeking to Enter into the Procurement Contract:

Address:

Name and Title of Person Submitting this Form:

Contract Procurement Number:

Date:

1. Has any Governmental Entity made a finding of non-responsibility regarding the individual or entity seeking to enter into the Procurement Contract in the previous four years?

NO ☐ YES ☐

If yes, please answer the next questions:

2. Was the basis for the finding of non-responsibility due to a violation of State Finance Law § 139-j?

NO ☐ YES ☐

3. Was the basis for the finding of non-responsibility due to the intentional provision of false or incomplete information to a Governmental Entity?

NO ☐ YES ☐

4. If you answered yes to any of the above questions, please provide details regarding the finding of non-responsibility below.

Governmental Entity:

Date of Finding of Non-Responsibility:

Basis of Finding of Non-Responsibility:

*(Add additional pages as necessary.)*

5. Has any Governmental Entity or other governmental agency terminated or withheld a Procurement Contract with the above-named individual or entity due to the intentional provision of false or incomplete information?

NO ☐ YES ☐

6. If yes, please provide details below.

Governmental Entity:

Date of Termination or Withholding of Contract:

Basis of Termination or Withholding:

*(Add additional pages as necessary.)*

Offerer certifies that all information provided to the Governmental Entity with respect to State Finance Law §139-k is complete, true and accurate.

By: \_\_\_\_\_ Date:

Signature

Name:

Title:



## COMBINED CERTIFICATION FORM

### BY EXECUTING THIS DOCUMENT, THE CONTRACTOR AGREES TO:

1. Perform all work listed in accordance with the Contract Documents including all amendments, at the prices bid; subject to the Changed Conditions provisions if applicable,
2. Accompany this proposal with a bid bond, certified check or bank cashier's check for the specified amount of deposit required,
3. All the terms and conditions of the non-collusive bidding certifications required by §139-d of the State Finance Law and 2 CFR Part 1200,
4. Certify, under penalty of perjury, as to the current history regarding suspensions, debarments, voluntary exclusions, determinations of ineligibility, indictments, convictions or civil judgments required by FHWA Form 1273 Required Contract Provisions Federal-Aid Construction Contracts-Section X "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion",
5. Certify that no Federal appropriated funds have been paid or will be paid, to any person for lobbying a Federal official or employee, or disclosure was made in accordance with 31 USC 1352 required by FHWA Form 1273 Required Contract Provisions Federal-Aid Construction Contracts-Section XI "Certification Regarding Use of Contract Funds for Lobbying",
6. Attest that its performance of the services outlined in this proposal does not and will not create a conflict of interest with nor position the firm to breach any other contract currently in force with the State of New York,
7. Certify that it understands the prohibitions under the Federal False Claims Act (31 USC §3729) and the New York State False Claims Act (NYS Finance Law Article 13),
8. Certify that all information provided to the Department with respect to the requirements contained in the Procurement Lobbying Law (State Finance Laws §139-j and §139-k) is complete, true and accurate,
9. Affirm, under penalty of perjury, that all the responses provided to the Department with respect to its submitted Form CCA-2 New York State Vendor Responsibility Questionnaire For-Profit Construction, are complete, true, and accurate, and further affirms and acknowledges that it must remain a responsible Contractor throughout the duration of the contract, in accordance with §105-05 Vendor Responsibility,
10. Provide commitments to meet the established DBE goal(s) prior to award or demonstrate good faith efforts to do so,
11. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of Section 201-g of the New York State Labor Law.



12. Certify to all other clauses required by this proposal and contained herein.

Dated \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Legal Name of person, firm or corporation

By \_\_\_\_\_  
Signature (Title)

(Acknowledgment by **Individual Contractor**)

STATE OF NEW YORK \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) SS:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came \_\_\_\_\_, to me known and known to me to be described in and who executed the foregoing instrument, and that he/she acknowledged that he/she executed the same.

\_\_\_\_\_  
Notary Public

(Acknowledgment by **Individual Contractor, If a Corporation**)

STATE OF NEW YORK \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) SS:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came \_\_\_\_\_, to me known and known to me to be the person who executed the above instrument, who being duly sworn by me, did depose and say that he/she resides at \_\_\_\_\_, and that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ the corporation described in and which executed the above instrument, and that he/she signed his/her name thereto on behalf of said Corporation by order of the Board of Directors of said Corporation.

\_\_\_\_\_  
Notary Public

(Acknowledgment of **Co-Partnership Contractor**)

STATE OF NEW YORK \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) SS:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came \_\_\_\_\_, to me known and known to me to be the person described in and who executed the above instrument, who, being duly sworn by me, did for himself/herself depose and say that he/she is a member of the firm of \_\_\_\_\_, consisting of himself/herself and \_\_\_\_\_, and that he/she executed the foregoing instrument in the firm name of \_\_\_\_\_ and that he/she had authority to sign same, and did duly acknowledge to me that he/she executed same as the act and deed of said firm of \_\_\_\_\_ for the uses and purposes mentioned herein.

\_\_\_\_\_  
Notary Public



## **APPENDIX A-1: SUPPLEMENTAL TITLE VI PROVISIONS (CIVIL RIGHTS ACT)**

### *To be included in all contracts*

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

- (1) **Compliance with Regulations:** The contractor shall comply with the Regulation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation of the United States, Title 49, Code of Federal Regulations, Part 21, and the Federal Highway Administration (hereinafter "FHWA") Title 23, Code of Federal Regulations, Part 200 as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- (2) **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin, sex, age, and disability/handicap in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by 49 CFR, section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- (3) **Solicitations for Subcontractors, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin, sex, age, and disability/handicap.
- (4) **Information and Reports:** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by NYSDOT or the FHWA to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to NYSDOT's Office of Civil Rights or FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.
- (5) **Sanctions for Noncompliance:** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, NYSDOT shall impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
  - (a.) withholding of payments to the contractor under the contract until the contractor complies, and/or
  - (b.) cancellation, termination or suspension of the contract, in whole or in part.
- (6) **Incorporation of Provisions:** The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontract or procurement as NYSDOT or the FHWA may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request NYSDOT to enter into such litigation to protect the interests of NYSDOT, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.



## Federal DBE Commitment and GFE Bid Requirements

Letting Date:

Proposer Name

Address:

PIN   
 Contract #   
 DBE Goal  % as Stated in the Advertisement

We hereby submit a DBE commitment of  % for the above-referenced project.

Identified below are the commitment(s) to certified\* DBE's for this contract:

| DBE Name:                                                                        | Work Category*       | Description of Work          | DBE Credit % (A)     | Commitment (B)       | DBE Credit (AxB)     |
|----------------------------------------------------------------------------------|----------------------|------------------------------|----------------------|----------------------|----------------------|
| Example Company: Drainage R Us<br>Address: 2543 Lexington Street, Troy, NY 12180 | Construction         | Closed Drainage Installation | 100                  | \$1,120,000          | \$1,120,000          |
| <input type="text"/>                                                             | <input type="text"/> | <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Address: <input type="text"/>                                                    | <input type="text"/> | <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/>                                                             | <input type="text"/> | <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Address: <input type="text"/>                                                    | <input type="text"/> | <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/>                                                             | <input type="text"/> | <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Address: <input type="text"/>                                                    | <input type="text"/> | <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
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\*Only submit DBE(s) that you have verified are certified to perform/supply the identified commitments.

**Total Commitment:**

You are required to have firm commitments at the time of Letting. Within 5 calendar days of notification as apparent Low Bidder, you shall enter exactly (as shown) all of the DBE commitments identified here, into Equitable Business Opportunity Solution (EBO), NYSDOT's civil rights reporting software. No substitutions or reductions in commitments will be allowed without prior approval by the Sponsor, in accordance with NYSDOT Standard Specification §105-21.D.3.

*NOTE: Bids may be submitted below the DBE Goal. If you do not meet the DBE Goal and are identified as apparent Low Bidder, you will be required to submit a Good Faith Effort package to the Sponsor, within 5 calendar days of notification.*

| *Key: | Work Categories:     | DBE Credit % |
|-------|----------------------|--------------|
|       | Construction         | 100          |
|       | Fabricator           | 100          |
|       | Manufacturer         | 100          |
|       | Material Supplier    | 60           |
|       | Professional Service | 100          |
|       | Trucking Firm        | 100          |

Submitted By:

Enter Proposers Contact Information

Name:

Title:

Company Federal Tax ID XX-XXXXXXX





Department of  
Environmental  
Conservation

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT  
FOR STORMWATER DISCHARGES

From

**CONSTRUCTION ACTIVITY**

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70  
of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

A handwritten signature in black ink, appearing to be "John J. Ferguson", written over a horizontal line. The signature is stylized and cursive.

Authorized Signature

1-23-20

Date

Address: NYS DEC  
Division of Environmental Permits  
625 Broadway, 4th Floor  
Albany, N.Y. 12233-1750



## PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System (“NPDES”)* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of “*construction activity*”, as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

**\*Note: The italicized words/phrases within this permit are defined in Appendix A.**



**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM  
CONSTRUCTION ACTIVITIES**

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## Part 1. PERMIT COVERAGE AND LIMITATIONS

### A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

### B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharges* authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the



deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

- a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:
- (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*;
  - (ii) Control stormwater *discharges*, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;
  - (iii) *Minimize* the amount of soil exposed during *construction activity*;
  - (iv) *Minimize* the disturbance of *steep slopes*;
  - (v) *Minimize* sediment *discharges* from the site;
  - (vi) Provide and maintain *natural buffers* around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, unless *infeasible*;
  - (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;
  - (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and
  - (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.
- b. **Soil Stabilization.** In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments



listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

- c. **Dewatering.** *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.
- d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:
  - (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;
  - (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and
  - (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.
- e. **Prohibited Discharges.** The following *discharges* are prohibited:
  - (i) Wastewater from washout of concrete;
  - (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;



- (iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;
  - (iv) Soaps or solvents used in vehicle and equipment washing; and
  - (v) Toxic or hazardous substances from a spill or other release.
- f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

### **C. Post-construction Stormwater Management Practice Requirements**

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices (“SMPs”) are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

#### **a. Sizing Criteria for New Development**

- (i) Runoff Reduction Volume (“RRv”): Reduce the total Water Quality Volume (“WQv”) by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.



For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

**In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual.** The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (“Cpv”): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site discharges directly to tidal waters, or fifth order or larger streams.
- (iv) *Overbank* Flood Control Criteria (“Qp”): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site discharges directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.
- (v) Extreme Flood Control Criteria (“Qf”): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site discharges directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.

**b. Sizing Criteria for New Development in Enhanced Phosphorus Removal Watershed**

- (i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be



calculated in accordance with the criteria in Section 10.3 of the Design Manual.

- (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual.** The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.
- (v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.



### c. Sizing Criteria for Redevelopment Activity

- (i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.
  - (1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
  - (2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
  - (3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
  - (4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

- (ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site



**d. Sizing Criteria for Combination of Redevelopment Activity and New Development**

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

**D. Maintaining Water Quality**

The Department expects that compliance with the conditions of this permit will control *discharges* necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;
2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.



## **E. Eligibility Under This General Permit**

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges*; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.
3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharges* from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.
4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

## **F. Activities Which Are Ineligible for Coverage Under This General Permit**

All of the following are **not** authorized by this permit:

1. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;
4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*



*operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;
6. *Construction activities* for residential, commercial and institutional projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which are undertaken on land with no existing *impervious cover*; and
  - c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.
7. *Construction activities* for linear transportation projects and linear utility projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which are undertaken on land with no existing *impervious cover*; and
  - c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.



8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:
- a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.
    - 1-5 acres of disturbance - 20 feet
    - 5-20 acres of disturbance - 50 feet
    - 20+ acres of disturbance - 100 feet, or
  - b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
    - (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
    - (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
    - (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
    - (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or
  - c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:



- (i) No Affect
- (ii) No Adverse Affect
- (iii) Executed Memorandum of Agreement, or

d. Documentation that:

- (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharges from construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

## Part II. PERMIT COVERAGE

### A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.
2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.
3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of Owner or Operator) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*. This exemption does not apply to *construction activities* subject to the New York City Administrative Code.



## **B. Notice of Intent (NOI) Submittal**

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (<http://www.dec.ny.gov/>). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

**NOTICE OF INTENT  
NYS DEC, Bureau of Water Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, New York 12233-3505**

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.
3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

## **C. Permit Authorization**

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
  - a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (<http://www.dec.ny.gov/>) for more information,
  - b. where required, all necessary Department permits subject to the *Uniform Procedures Act* ("UPA") (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators of construction activities* that are required to obtain UPA permits



must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

- c. the final SWPPP has been prepared, and
  - d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:
- a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:
    - (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or
    - (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;
    - (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.



- b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:
  - (i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed “MS4 SWPPP Acceptance” form, or
  - (ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed “MS4 SWPPP Acceptance” form.
- 4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

#### **D. General Requirements For Owners or Operators With Permit Coverage**

- 1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (“NOT”) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.
- 2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor’s or subcontractor’s certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.
- 3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*



*use control MS4, the regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

- a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
  - b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
  - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
  - d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.
  - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..
  5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
  6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the



*regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

#### **E. Permit Coverage for Discharges Authorized Under GP-0-15-002**

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of a *construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

#### **F. Change of Owner or Operator**

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4*, the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.
2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.
3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*



*operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

### Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

#### A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.
2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:
  - a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;



- b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;
  - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority; and
  - d. to document the final construction conditions.
5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.
6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with



the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

## **B. Required SWPPP Contents**

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:
  - a. Background information about the scope of the project, including the location, type and size of project



- b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge(s)*;
- c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);
- d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;
- e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;
- f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;
- g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;
- h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;
- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection



schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

- j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;
  - k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and
  - l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

The post-construction stormwater management practice component of the SWPPP shall include the following:

- a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;



- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
- c. A Stormwater Modeling and Analysis Report that includes:
  - (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;
  - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;
  - (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;
  - (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;
  - (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and
  - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;
- d. Soil testing results and locations (test pits, borings);
- e. Infiltration test results, when required; and
- f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.



3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria*, Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

### **C. Required SWPPP Components by Project Type**

Unless otherwise notified by the Department, *owners or operators of construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators of the construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

## **Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS**

### **A. General Construction Site Inspection and Maintenance Requirements**

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

### **B. Contractor Maintenance Inspection Requirements**

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall



begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

### C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
  - Certified Professional in Erosion and Sediment Control (CPESC),
  - New York State Erosion and Sediment Control Certificate Program holder
  - Registered Landscape Architect, or
  - someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].
1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:
    - a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located



in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

- b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
  - c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
  - d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:
- a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.
  - b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
  - c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.



- d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice*” certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.
  - e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.
  4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:



- a. Date and time of inspection;
- b. Name and title of person(s) performing inspection;
- c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
- d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
- e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
- f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;
- g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
- h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;
- i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
- j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
- k. Identification and status of all corrective actions that were required by previous inspection; and



- I. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

## **Part V. TERMINATION OF PERMIT COVERAGE**

### **A. Termination of Permit Coverage**

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.
2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:
  - a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;



- b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;
  - c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.
  - d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.
3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the “*Final Stabilization*” and “Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.
4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the “MS4 Acceptance” statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) required in Part V.A.3. of this permit.
5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:
- a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,



- b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),
- c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,
- d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

## **Part VI. REPORTING AND RETENTION RECORDS**

### **A. Record Retention**

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

### **B. Addresses**

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

## **Part VII. STANDARD PERMIT CONDITIONS**

### **A. Duty to Comply**

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water



Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

## **B. Continuation of the Expired General Permit**

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

## **C. Enforcement**

Failure of the *owner or operator*, its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to \$37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

## **D. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.



### **E. Duty to Mitigate**

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### **F. Duty to Provide Information**

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

### **G. Other Information**

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

### **H. Signatory Requirements**

1. All NOIs and NOTs shall be signed as follows:
  - a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:



- (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
    - (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or
  - c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
    - (i) the chief executive officer of the agency, or
    - (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,



superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

- c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.
3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.
4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

## **I. Property Rights**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

## **J. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

## **K. Requirement to Obtain Coverage Under an Alternative Permit**

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall



include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge(s)*, the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

#### **L. Proper Operation and Maintenance**

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

#### **M. Inspection and Entry**

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner's or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and



3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.
4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

## **N. Permit Actions**

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

## **O. Definitions**

Definitions of key terms are included in Appendix A of this permit.

## **P. Re-Opener Clause**

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

## **Q. Penalties for Falsification of Forms and Reports**

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.



## **R. Other Permits**

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.



## **APPENDIX A – Acronyms and Definitions**

### **Acronyms**

APO – Agency Preservation Officer  
BMP – Best Management Practice  
CPESC – Certified Professional in Erosion and Sediment Control  
Cpv – Channel Protection Volume  
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)  
DOW – Division of Water  
EAF – Environmental Assessment Form  
ECL - Environmental Conservation Law  
EPA – U. S. Environmental Protection Agency  
HSG – Hydrologic Soil Group  
MS4 – Municipal Separate Storm Sewer System  
NOI – Notice of Intent  
NOT – Notice of Termination  
NPDES – National Pollutant Discharge Elimination System  
OPRHP – Office of Parks, Recreation and Historic Places  
Qf – Extreme Flood  
Qp – Overbank Flood  
RRv – Runoff Reduction Volume  
RWE – Regional Water Engineer  
SEQR – State Environmental Quality Review  
SEQRA - State Environmental Quality Review Act  
SHPA – State Historic Preservation Act  
SPDES – State Pollutant Discharge Elimination System  
SWPPP – Stormwater Pollution Prevention Plan  
TMDL – Total Maximum Daily Load  
UPA – Uniform Procedures Act  
USDA – United States Department of Agriculture  
WQv – Water Quality Volume



## Definitions

All definitions in this section are solely for the purposes of this permit.

**Agricultural Building** – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

**Agricultural Property** – means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State” prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

**Alter Hydrology from Pre to Post-Development Conditions** - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

**Combined Sewer** - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

**Commence (Commencement of) Construction Activities** - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

**Construction Activity(ies)** - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

**Construction Site** – means the land area where *construction activity(ies)* will occur. See definition for “*Commence (Commencement of) Construction Activities*” and “*Larger Common Plan of Development or Sale*” also.

**Dewatering** – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

**Direct Discharge (to a specific surface waterbody)** - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system



and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

**Discharge(s)** - means any addition of any pollutant to waters of the State through an outlet or *point source*.

**Embankment** – means an earthen or rock slope that supports a road/highway.

**Endangered or Threatened Species** – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

**Environmental Conservation Law (ECL)** - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

**Equivalent (Equivalence)** – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

**Final Stabilization** - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

**General SPDES permit** - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

**Groundwater(s)** - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

**Historic Property** – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

**Impervious Area (Cover)** - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

**Infeasible** – means not technologically possible, or not economically practicable and achievable in light of best industry practices.



**Larger Common Plan of Development or Sale** - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

**Minimize** – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer (MS4)** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a *combined sewer*; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**National Pollutant Discharge Elimination System (NPDES)** - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

**Natural Buffer** – means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

**New Development** – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.



**New York State Erosion and Sediment Control Certificate Program** – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

**NOI Acknowledgment Letter** - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

**Nonpoint Source** - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

**Overbank** –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

**Owner or Operator** - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

**Performance Criteria** – means the design criteria listed under the “Required Elements” sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf ) in Part I.C.2. of the permit.

**Point Source** - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

**Pollutant** - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .



**Qualified Inspector** - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

**Redevelopment Activity(ies)** – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

**Regulated, Traditional Land Use Control MS4** - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's



SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

**Routine Maintenance Activity** - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

**Site limitations** – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

**Sizing Criteria** – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank Flood* (Qp), and *Extreme Flood* (Qf).

**State Pollutant Discharge Elimination System (SPDES)** - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.



**Steep Slope** – means land area designated on the current United States Department of Agriculture (“USDA”) Soil Survey as Soil Slope Phase “D”, (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

**Streambank** – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

**Stormwater Pollution Prevention Plan (SWPPP)** – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

**Surface Waters of the State** - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

**Temporarily Ceased** – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

**Temporary Stabilization** - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

**Total Maximum Daily Loads (TMDLs)** - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint sources*. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint sources*, and a margin of safety (MOS).

**Trained Contractor** - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed



training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

**Uniform Procedures Act (UPA) Permit** - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

**Water Quality Standard** - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.



## APPENDIX B – Required SWPPP Components by Project Type

**Table 1**  
**Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</b></p> <ul style="list-style-type: none"><li>• Single family home <u>not</u> located in one of the watersheds listed in Appendix C or <u>not directly discharging</u> to one of the 303(d) segments listed in Appendix E</li><li>• Single family residential subdivisions with 25% or less impervious cover at total site build-out and <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E</li><li>• Construction of a barn or other <i>agricultural building</i>, silo, stock yard or pen.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</b></p> <p>All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>The following construction activities that involve soil disturbances of one (1) or more acres of land:</b></p> <ul style="list-style-type: none"><li>• Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains</li><li>• Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects</li><li>• Pond construction</li><li>• Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover</li><li>• Cross-country ski trails and walking/hiking trails</li><li>• Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;</li><li>• Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.</li><li>• Slope stabilization projects</li><li>• Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics</li></ul> |



**Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP  
THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete



**Table 2**  
**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES**  
**POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development conditions*
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1



Table 2 (Continued)

**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES  
POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover*, and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

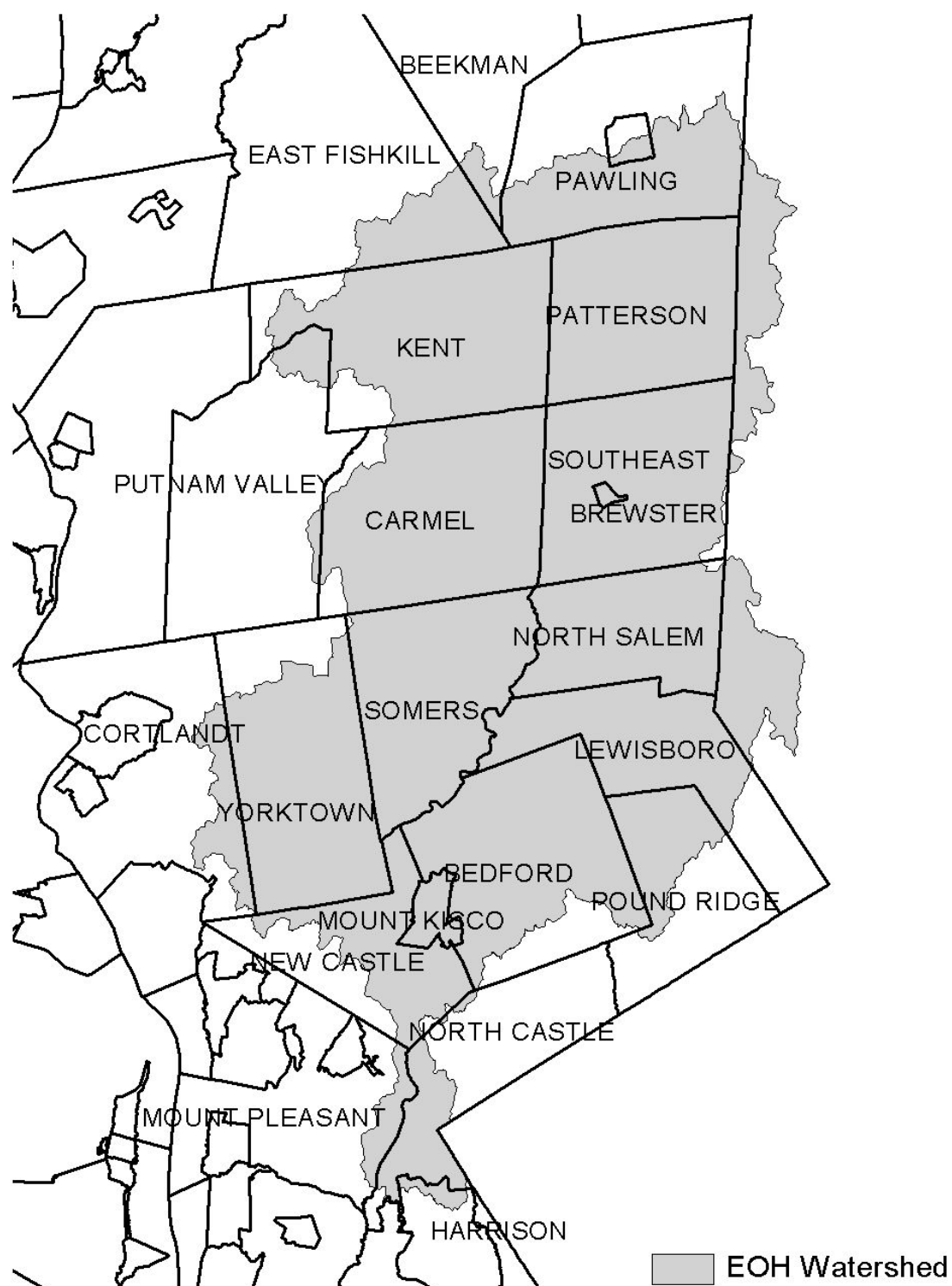


## APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

**Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).**

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5



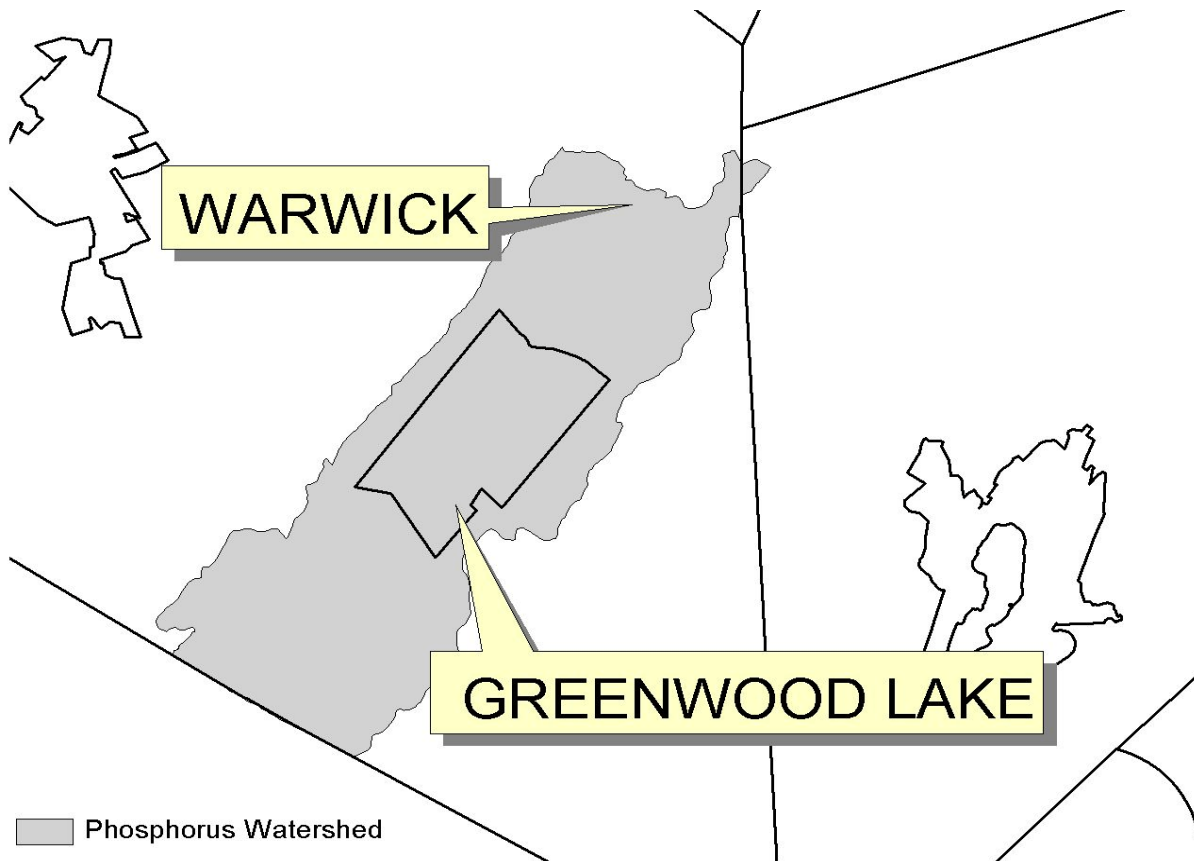
**Figure 1 - New York City Watershed East of the Hudson**



**Figure 2 - Onondaga Lake Watershed**

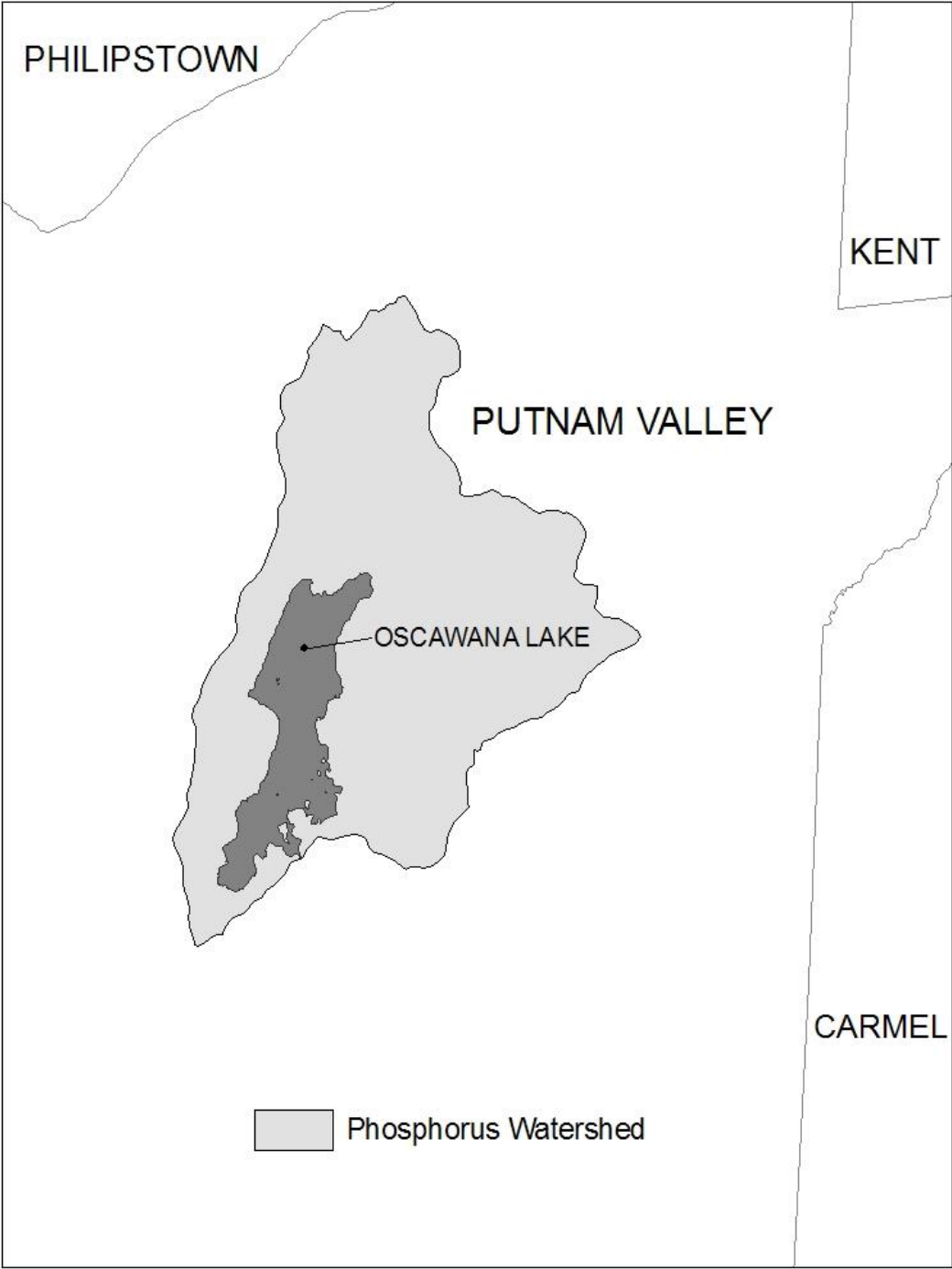


**Figure 3 - Greenwood Lake Watershed**



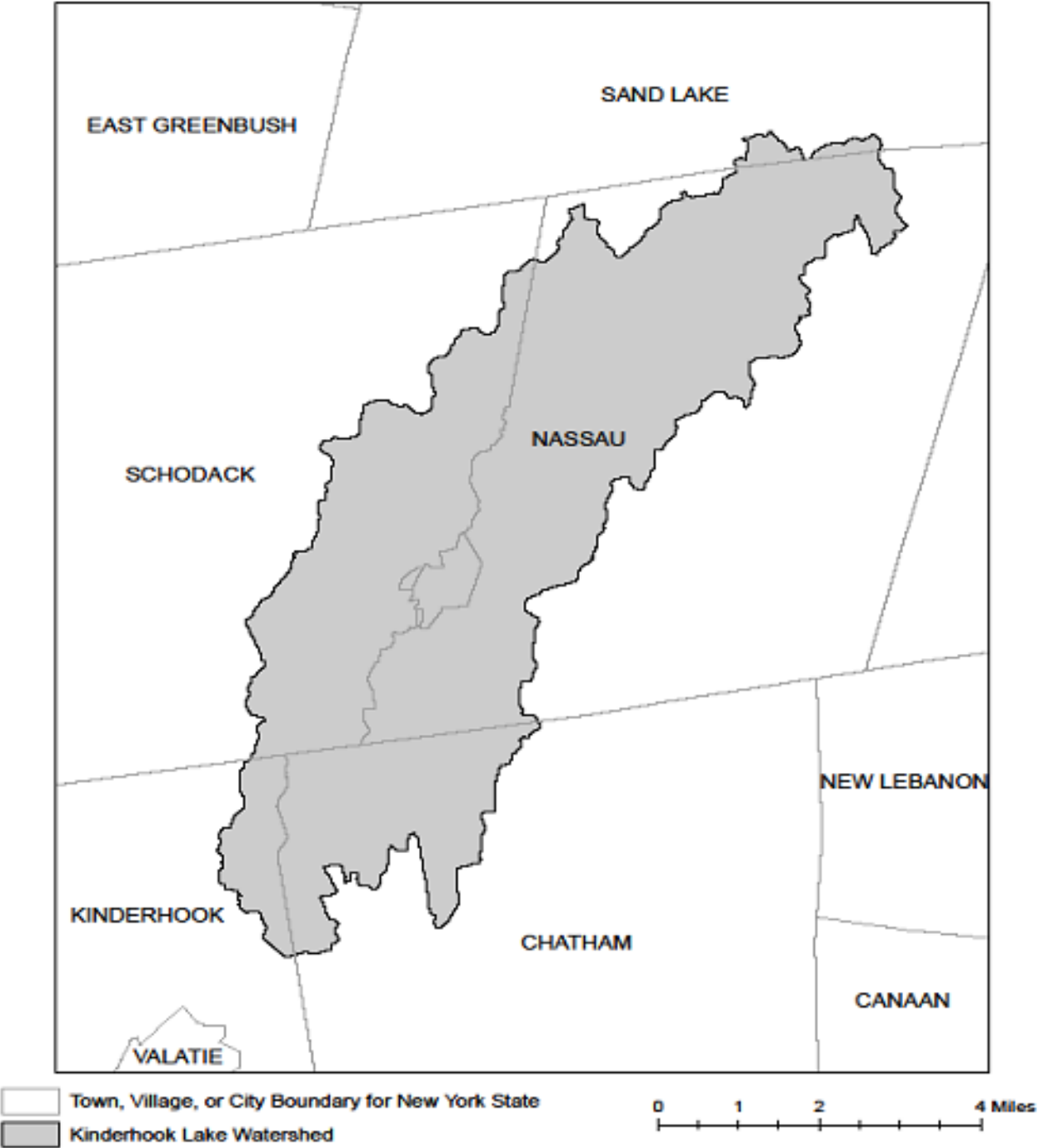


**Figure 4 - Oscawana Lake Watershed**





**Figure 5 - Kinderhook Lake Watershed**





## **APPENDIX D – Watersheds with Lower Disturbance Threshold**

**Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.**

|                                                                                                      |
|------------------------------------------------------------------------------------------------------|
| Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C |
|------------------------------------------------------------------------------------------------------|



## APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

| COUNTY      | WATERBODY                                | POLLUTANT     |
|-------------|------------------------------------------|---------------|
| Albany      | Ann Lee (Shakers) Pond, Stump Pond       | Nutrients     |
| Albany      | Basic Creek Reservoir                    | Nutrients     |
| Allegany    | Amity Lake, Saunders Pond                | Nutrients     |
| Bronx       | Long Island Sound, Bronx                 | Nutrients     |
| Bronx       | Van Cortlandt Lake                       | Nutrients     |
| Broome      | Fly Pond, Deer Lake, Sky Lake            | Nutrients     |
| Broome      | Minor Tribs to Lower Susquehanna (north) | Nutrients     |
| Broome      | Whitney Point Lake/Reservoir             | Nutrients     |
| Cattaraugus | Allegheny River/Reservoir                | Nutrients     |
| Cattaraugus | Beaver (Alma) Lake                       | Nutrients     |
| Cattaraugus | Case Lake                                | Nutrients     |
| Cattaraugus | Linlyco/Club Pond                        | Nutrients     |
| Cayuga      | Duck Lake                                | Nutrients     |
| Cayuga      | Little Sodus Bay                         | Nutrients     |
| Chautauqua  | Bear Lake                                | Nutrients     |
| Chautauqua  | Chadakoin River and tribs                | Nutrients     |
| Chautauqua  | Chautauqua Lake, North                   | Nutrients     |
| Chautauqua  | Chautauqua Lake, South                   | Nutrients     |
| Chautauqua  | Findley Lake                             | Nutrients     |
| Chautauqua  | Hulburt/Clymer Pond                      | Nutrients     |
| Clinton     | Great Chazy River, Lower, Main Stem      | Silt/Sediment |
| Clinton     | Lake Champlain, Main Lake, Middle        | Nutrients     |
| Clinton     | Lake Champlain, Main Lake, North         | Nutrients     |
| Columbia    | Kinderhook Lake                          | Nutrients     |
| Columbia    | Robinson Pond                            | Nutrients     |
| Cortland    | Dean Pond                                | Nutrients     |



### 303(d) Segments Impaired by Construction Related Pollutant(s)

|            |                                         |               |
|------------|-----------------------------------------|---------------|
| Dutchess   | Fall Kill and tribs                     | Nutrients     |
| Dutchess   | Hillside Lake                           | Nutrients     |
| Dutchess   | Wappingers Lake                         | Nutrients     |
| Dutchess   | Wappingers Lake                         | Silt/Sediment |
| Erie       | Beeman Creek and tribs                  | Nutrients     |
| Erie       | Ellicott Creek, Lower, and tribs        | Silt/Sediment |
| Erie       | Ellicott Creek, Lower, and tribs        | Nutrients     |
| Erie       | Green Lake                              | Nutrients     |
| Erie       | Little Sister Creek, Lower, and tribs   | Nutrients     |
| Erie       | Murder Creek, Lower, and tribs          | Nutrients     |
| Erie       | Rush Creek and tribs                    | Nutrients     |
| Erie       | Scajaquada Creek, Lower, and tribs      | Nutrients     |
| Erie       | Scajaquada Creek, Middle, and tribs     | Nutrients     |
| Erie       | Scajaquada Creek, Upper, and tribs      | Nutrients     |
| Erie       | South Branch Smoke Cr, Lower, and tribs | Silt/Sediment |
| Erie       | South Branch Smoke Cr, Lower, and tribs | Nutrients     |
| Essex      | Lake Champlain, Main Lake, South        | Nutrients     |
| Essex      | Lake Champlain, South Lake              | Nutrients     |
| Essex      | Willsboro Bay                           | Nutrients     |
| Genesee    | Bigelow Creek and tribs                 | Nutrients     |
| Genesee    | Black Creek, Middle, and minor tribs    | Nutrients     |
| Genesee    | Black Creek, Upper, and minor tribs     | Nutrients     |
| Genesee    | Bowen Brook and tribs                   | Nutrients     |
| Genesee    | LeRoy Reservoir                         | Nutrients     |
| Genesee    | Oak Orchard Cr, Upper, and tribs        | Nutrients     |
| Genesee    | Tonawanda Creek, Middle, Main Stem      | Nutrients     |
| Greene     | Schoharie Reservoir                     | Silt/Sediment |
| Greene     | Sleepy Hollow Lake                      | Silt/Sediment |
| Herkimer   | Steele Creek tribs                      | Silt/Sediment |
| Herkimer   | Steele Creek tribs                      | Nutrients     |
| Jefferson  | Moon Lake                               | Nutrients     |
| Kings      | Hendrix Creek                           | Nutrients     |
| Kings      | Prospect Park Lake                      | Nutrients     |
| Lewis      | Mill Creek/South Branch, and tribs      | Nutrients     |
| Livingston | Christie Creek and tribs                | Nutrients     |
| Livingston | Conesus Lake                            | Nutrients     |
| Livingston | Mill Creek and minor tribs              | Silt/Sediment |
| Monroe     | Black Creek, Lower, and minor tribs     | Nutrients     |
| Monroe     | Buck Pond                               | Nutrients     |
| Monroe     | Cranberry Pond                          | Nutrients     |



### 303(d) Segments Impaired by Construction Related Pollutant(s)

|          |                                          |               |
|----------|------------------------------------------|---------------|
| Monroe   | Lake Ontario Shoreline, Western          | Nutrients     |
| Monroe   | Long Pond                                | Nutrients     |
| Monroe   | Mill Creek and tribs                     | Nutrients     |
| Monroe   | Mill Creek/Blue Pond Outlet and tribs    | Nutrients     |
| Monroe   | Minor Tribs to Irondequoit Bay           | Nutrients     |
| Monroe   | Rochester Embayment - East               | Nutrients     |
| Monroe   | Rochester Embayment - West               | Nutrients     |
| Monroe   | Shipbuilders Creek and tribs             | Nutrients     |
| Monroe   | Thomas Creek/White Brook and tribs       | Nutrients     |
| Nassau   | Beaver Lake                              | Nutrients     |
| Nassau   | Camaans Pond                             | Nutrients     |
| Nassau   | East Meadow Brook, Upper, and tribs      | Silt/Sediment |
| Nassau   | East Rockaway Channel                    | Nutrients     |
| Nassau   | Grant Park Pond                          | Nutrients     |
| Nassau   | Hempstead Bay                            | Nutrients     |
| Nassau   | Hempstead Lake                           | Nutrients     |
| Nassau   | Hewlett Bay                              | Nutrients     |
| Nassau   | Hog Island Channel                       | Nutrients     |
| Nassau   | Long Island Sound, Nassau County Waters  | Nutrients     |
| Nassau   | Massapequa Creek and tribs               | Nutrients     |
| Nassau   | Milburn/Parsonage Creeks, Upp, and tribs | Nutrients     |
| Nassau   | Reynolds Channel, west                   | Nutrients     |
| Nassau   | Tidal Tribs to Hempstead Bay             | Nutrients     |
| Nassau   | Tribs (fresh) to East Bay                | Nutrients     |
| Nassau   | Tribs (fresh) to East Bay                | Silt/Sediment |
| Nassau   | Tribs to Smith/Halls Ponds               | Nutrients     |
| Nassau   | Woodmere Channel                         | Nutrients     |
| New York | Harlem Meer                              | Nutrients     |
| New York | The Lake in Central Park                 | Nutrients     |
| Niagara  | Bergholtz Creek and tribs                | Nutrients     |
| Niagara  | Hyde Park Lake                           | Nutrients     |
| Niagara  | Lake Ontario Shoreline, Western          | Nutrients     |
| Niagara  | Lake Ontario Shoreline, Western          | Nutrients     |
| Oneida   | Ballou, Nail Creeks and tribs            | Nutrients     |
| Onondaga | Harbor Brook, Lower, and tribs           | Nutrients     |
| Onondaga | Ley Creek and tribs                      | Nutrients     |
| Onondaga | Minor Tribs to Onondaga Lake             | Nutrients     |
| Onondaga | Ninemile Creek, Lower, and tribs         | Nutrients     |
| Onondaga | Onondaga Creek, Lower, and tribs         | Nutrients     |
| Onondaga | Onondaga Creek, Middle, and tribs        | Nutrients     |



### 303(d) Segments Impaired by Construction Related Pollutant(s)

|            |                                          |               |
|------------|------------------------------------------|---------------|
| Onondaga   | Onondaga Lake, northern end              | Nutrients     |
| Onondaga   | Onondaga Lake, southern end              | Nutrients     |
| Ontario    | Great Brook and minor tribs              | Silt/Sediment |
| Ontario    | Great Brook and minor tribs              | Nutrients     |
| Ontario    | Hemlock Lake Outlet and minor tribs      | Nutrients     |
| Ontario    | Honeoye Lake                             | Nutrients     |
| Orange     | Greenwood Lake                           | Nutrients     |
| Orange     | Monhagen Brook and tribs                 | Nutrients     |
| Orange     | Orange Lake                              | Nutrients     |
| Orleans    | Lake Ontario Shoreline, Western          | Nutrients     |
| Orleans    | Lake Ontario Shoreline, Western          | Nutrients     |
| Oswego     | Lake Neatahwanta                         | Nutrients     |
| Oswego     | Pleasant Lake                            | Nutrients     |
| Putnam     | Bog Brook Reservoir                      | Nutrients     |
| Putnam     | Boyd Corners Reservoir                   | Nutrients     |
| Putnam     | Croton Falls Reservoir                   | Nutrients     |
| Putnam     | Diverting Reservoir                      | Nutrients     |
| Putnam     | East Branch Reservoir                    | Nutrients     |
| Putnam     | Lake Carmel                              | Nutrients     |
| Putnam     | Middle Branch Reservoir                  | Nutrients     |
| Putnam     | Oscawana Lake                            | Nutrients     |
| Putnam     | Palmer Lake                              | Nutrients     |
| Putnam     | West Branch Reservoir                    | Nutrients     |
| Queens     | Bergen Basin                             | Nutrients     |
| Queens     | Flushing Creek/Bay                       | Nutrients     |
| Queens     | Jamaica Bay, Eastern, and tribs (Queens) | Nutrients     |
| Queens     | Kissena Lake                             | Nutrients     |
| Queens     | Meadow Lake                              | Nutrients     |
| Queens     | Willow Lake                              | Nutrients     |
| Rensselaer | Nassau Lake                              | Nutrients     |
| Rensselaer | Snyders Lake                             | Nutrients     |
| Richmond   | Grasmere Lake/Bradys Pond                | Nutrients     |
| Rockland   | Congers Lake, Swartout Lake              | Nutrients     |
| Rockland   | Rockland Lake                            | Nutrients     |
| Saratoga   | Ballston Lake                            | Nutrients     |
| Saratoga   | Dwaas Kill and tribs                     | Silt/Sediment |
| Saratoga   | Dwaas Kill and tribs                     | Nutrients     |
| Saratoga   | Lake Lonely                              | Nutrients     |
| Saratoga   | Round Lake                               | Nutrients     |
| Saratoga   | Tribs to Lake Lonely                     | Nutrients     |



### 303(d) Segments Impaired by Construction Related Pollutant(s)

|             |                                         |               |
|-------------|-----------------------------------------|---------------|
| Schenectady | Collins Lake                            | Nutrients     |
| Schenectady | Duane Lake                              | Nutrients     |
| Schenectady | Mariaville Lake                         | Nutrients     |
| Schoharie   | Engleville Pond                         | Nutrients     |
| Schoharie   | Summit Lake                             | Nutrients     |
| Seneca      | Reeder Creek and tribs                  | Nutrients     |
| St.Lawrence | Black Lake Outlet/Black Lake            | Nutrients     |
| St.Lawrence | Fish Creek and minor tribs              | Nutrients     |
| Steuben     | Smith Pond                              | Nutrients     |
| Suffolk     | Agawam Lake                             | Nutrients     |
| Suffolk     | Big/Little Fresh Ponds                  | Nutrients     |
| Suffolk     | Canaan Lake                             | Silt/Sediment |
| Suffolk     | Canaan Lake                             | Nutrients     |
| Suffolk     | Flanders Bay, West/Lower Sawmill Creek  | Nutrients     |
| Suffolk     | Fresh Pond                              | Nutrients     |
| Suffolk     | Great South Bay, East                   | Nutrients     |
| Suffolk     | Great South Bay, Middle                 | Nutrients     |
| Suffolk     | Great South Bay, West                   | Nutrients     |
| Suffolk     | Lake Ronkonkoma                         | Nutrients     |
| Suffolk     | Long Island Sound, Suffolk County, West | Nutrients     |
| Suffolk     | Mattituck (Marratooka) Pond             | Nutrients     |
| Suffolk     | Meetinghouse/Terrys Creeks and tribs    | Nutrients     |
| Suffolk     | Mill and Seven Ponds                    | Nutrients     |
| Suffolk     | Millers Pond                            | Nutrients     |
| Suffolk     | Moriches Bay, East                      | Nutrients     |
| Suffolk     | Moriches Bay, West                      | Nutrients     |
| Suffolk     | Peconic River, Lower, and tidal tribs   | Nutrients     |
| Suffolk     | Quantuck Bay                            | Nutrients     |
| Suffolk     | Shinnecock Bay and Inlet                | Nutrients     |
| Suffolk     | Tidal tribs to West Moriches Bay        | Nutrients     |
| Sullivan    | Bodine, Montgomery Lakes                | Nutrients     |
| Sullivan    | Davies Lake                             | Nutrients     |
| Sullivan    | Evens Lake                              | Nutrients     |
| Sullivan    | Pleasure Lake                           | Nutrients     |
| Tompkins    | Cayuga Lake, Southern End               | Nutrients     |
| Tompkins    | Cayuga Lake, Southern End               | Silt/Sediment |
| Tompkins    | Owasco Inlet, Upper, and tribs          | Nutrients     |
| Ulster      | Ashokan Reservoir                       | Silt/Sediment |
| Ulster      | Esopus Creek, Upper, and minor tribs    | Silt/Sediment |
| Warren      | Hague Brook and tribs                   | Silt/Sediment |



### 303(d) Segments Impaired by Construction Related Pollutant(s)

|             |                                          |               |
|-------------|------------------------------------------|---------------|
| Warren      | Huddle/Finkle Brooks and tribs           | Silt/Sediment |
| Warren      | Indian Brook and tribs                   | Silt/Sediment |
| Warren      | Lake George                              | Silt/Sediment |
| Warren      | Tribs to L.George, Village of L George   | Silt/Sediment |
| Washington  | Cossayuna Lake                           | Nutrients     |
| Washington  | Lake Champlain, South Bay                | Nutrients     |
| Washington  | Tribs to L.George, East Shore            | Silt/Sediment |
| Washington  | Wood Cr/Champlain Canal and minor tribs  | Nutrients     |
| Wayne       | Port Bay                                 | Nutrients     |
| Westchester | Amawalk Reservoir                        | Nutrients     |
| Westchester | Blind Brook, Upper, and tribs            | Silt/Sediment |
| Westchester | Cross River Reservoir                    | Nutrients     |
| Westchester | Lake Katonah                             | Nutrients     |
| Westchester | Lake Lincolndale                         | Nutrients     |
| Westchester | Lake Meahagh                             | Nutrients     |
| Westchester | Lake Mohegan                             | Nutrients     |
| Westchester | Lake Shenorock                           | Nutrients     |
| Westchester | Long Island Sound, Westchester (East)    | Nutrients     |
| Westchester | Mamaroneck River, Lower                  | Silt/Sediment |
| Westchester | Mamaroneck River, Upper, and minor tribs | Silt/Sediment |
| Westchester | Muscoot/Upper New Croton Reservoir       | Nutrients     |
| Westchester | New Croton Reservoir                     | Nutrients     |
| Westchester | Peach Lake                               | Nutrients     |
| Westchester | Reservoir No.1 (Lake Isle)               | Nutrients     |
| Westchester | Saw Mill River, Lower, and tribs         | Nutrients     |
| Westchester | Saw Mill River, Middle, and tribs        | Nutrients     |
| Westchester | Sheldrake River and tribs                | Silt/Sediment |
| Westchester | Sheldrake River and tribs                | Nutrients     |
| Westchester | Silver Lake                              | Nutrients     |
| Westchester | Teatown Lake                             | Nutrients     |
| Westchester | Titicus Reservoir                        | Nutrients     |
| Westchester | Truesdale Lake                           | Nutrients     |
| Westchester | Wallace Pond                             | Nutrients     |
| Wyoming     | Java Lake                                | Nutrients     |
| Wyoming     | Silver Lake                              | Nutrients     |



## APPENDIX F – List of NYS DEC Regional Offices

| <u>Region</u> | <u>COVERING THE<br/>FOLLOWING COUNTIES:</u>                                                                       | <u>DIVISION OF<br/>ENVIRONMENTAL<br/>PERMITS (DEP)<br/>PERMIT ADMINISTRATORS</u>                   | <u>DIVISION OF WATER<br/>(DOW)<br/>WATER (SPDES) PROGRAM</u>                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1             | NASSAU AND SUFFOLK                                                                                                | 50 CIRCLE ROAD<br>STONY BROOK, NY 11790<br>TEL. (631) 444-0365                                     | 50 CIRCLE ROAD<br>STONY BROOK, NY 11790-3409<br>TEL. (631) 444-0405                                |
| 2             | BRONX, KINGS, NEW YORK,<br>QUEENS AND RICHMOND                                                                    | 1 HUNTERS POINT PLAZA,<br>47-40 21ST ST.<br>LONG ISLAND CITY, NY 11101-5407<br>TEL. (718) 482-4997 | 1 HUNTERS POINT PLAZA,<br>47-40 21ST ST.<br>LONG ISLAND CITY, NY 11101-5407<br>TEL. (718) 482-4933 |
| 3             | DUTCHESS, ORANGE, PUTNAM,<br>ROCKLAND, SULLIVAN, ULSTER<br>AND WESTCHESTER                                        | 21 SOUTH PUTT CORNERS ROAD<br>NEW PALTZ, NY 12561-1696<br>TEL. (845) 256-3059                      | 100 HILLSIDE AVENUE, SUITE 1W<br>WHITE PLAINS, NY 10603<br>TEL. (914) 428 - 2505                   |
| 4             | ALBANY, COLUMBIA,<br>DELAWARE, GREENE,<br>MONTGOMERY, OTSEGO,<br>RENSSELAER, SCHENECTADY<br>AND SCHOHARIE         | 1150 NORTH WESTCOTT ROAD<br>SCHENECTADY, NY 12306-2014<br>TEL. (518) 357-2069                      | 1130 NORTH WESTCOTT ROAD<br>SCHENECTADY, NY 12306-2014<br>TEL. (518) 357-2045                      |
| 5             | CLINTON, ESSEX, FRANKLIN,<br>FULTON, HAMILTON,<br>SARATOGA, WARREN AND<br>WASHINGTON                              | 1115 STATE ROUTE 86, Po Box 296<br>RAY BROOK, NY 12977-0296<br>TEL. (518) 897-1234                 | 232 GOLF COURSE ROAD<br>WARRENSBURG, NY 12885-1172 TEL.<br>(518) 623-1200                          |
| 6             | HERKIMER, JEFFERSON,<br>LEWIS, ONEIDA AND<br>ST. LAWRENCE                                                         | STATE OFFICE BUILDING<br>317 WASHINGTON STREET<br>WATERTOWN, NY 13601-3787<br>TEL. (315) 785-2245  | STATE OFFICE BUILDING<br>207 GENESEE STREET<br>UTICA, NY 13501-2885 TEL. (315)<br>793-2554         |
| 7             | BROOME, CAYUGA,<br>CHENANGO, CORTLAND,<br>MADISON, ONONDAGA,<br>OSWEGO, TIOGA AND<br>TOMPKINS                     | 615 ERIE BLVD. WEST<br>SYRACUSE, NY 13204-2400<br>TEL. (315) 426-7438                              | 615 ERIE BLVD. WEST<br>SYRACUSE, NY 13204-2400<br>TEL. (315) 426-7500                              |
| 8             | CHEMUNG, GENESEE,<br>LIVINGSTON, MONROE,<br>ONTARIO, ORLEANS,<br>SCHUYLER, SENECA,<br>STEUBEN, WAYNE AND<br>YATES | 6274 EAST AVON-LIMA<br>ROADAVON, NY 14414-9519<br>TEL. (585) 226-2466                              | 6274 EAST AVON-LIMA RD.<br>AVON, NY 14414-9519<br>TEL. (585) 226-2466                              |
| 9             | ALLEGANY,<br>CATTARAUGUS,<br>CHAUTAUQUA, ERIE,<br>NIAGARA AND WYOMING                                             | 270 MICHIGAN AVENUE<br>BUFFALO, NY 14203-2999<br>TEL. (716) 851-7165                               | 270 MICHIGAN AVENUE<br>BUFFALO, NY 14203-2999<br>TEL. (716) 851-7070                               |



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PROJECT MANAGER P. GALBO

CHECK P. GALBO

DRAFTING V. CONERS

CHECK P. GALBO

DESIGN J. ROSS

JOB MANAGER T. DUK

# CITY OF BUFFALO

## NIAGARA STREET CORRIDOR PROJECT PHASE 4B HERTEL AVENUE TO ONTARIO STREET P.I.N. 5762.90

BYRON W. BROWN  
MAYOR

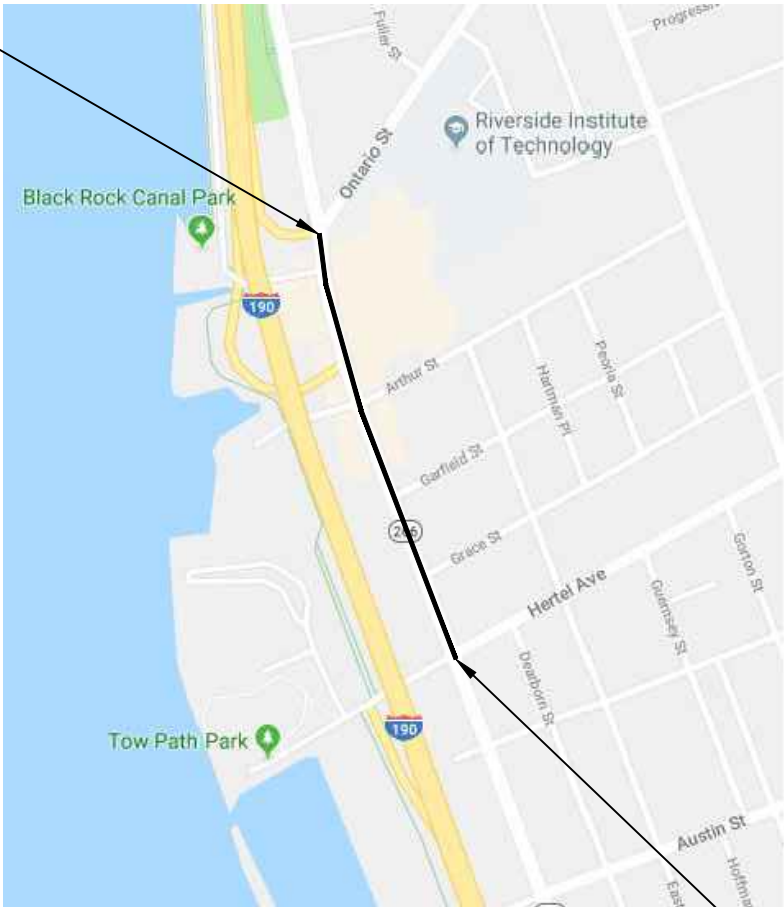
NATHAN MARTON  
COMMISSIONER OF PUBLIC WORKS, PARKS AND STREETS

NOLAN R. SKIPPER, P.E.  
CITY ENGINEER

OLUWOLE A. McFOY, P.E.  
GENERAL MANAGER OF THE BUFFALO SEWER AUTHORITY

ROSALEEN B. NOGLE, P.E.  
PRINCIPAL SANITARY ENGINEER OF THE BUFFALO SEWER AUTHORITY

| INDEX OF CONTRACT DRAWINGS |                                                                  |                  |
|----------------------------|------------------------------------------------------------------|------------------|
| SHEET NO.                  | DESCRIPTION                                                      | DRAWING NO.      |
| 1                          | COVER SHEET AND INDEX                                            | -                |
| 2                          | SYMBOLS AND ABBREVIATIONS                                        | SA-01            |
| 3                          | SURVEY CONTROL                                                   | SC-01            |
| 4-6                        | TYPICAL SECTIONS                                                 | TS-01 TO TS-03   |
| 7-8                        | GENERAL NOTES                                                    | GN-01 TO GN-02   |
| 9-14                       | WORK ZONE TRAFFIC CONTROL                                        | TTC-01 TO TTC-06 |
| 15-17                      | MISCELLANEOUS TABLES                                             | MT-01 TO MT-03   |
| 18-23                      | MISCELLANEOUS DETAILS                                            | MD-01 TO MD-06   |
| 24-28                      | GENERAL PLAN                                                     | PL-01 TO PL-05   |
| 29-32                      | INTERSECTION GRADING PLAN                                        | IG-01 TO IG-04   |
| 33-37                      | SIGN AND PAVEMENT MARKING PLAN                                   | SPM-01 TO SPM-05 |
| 38-39                      | SIGN TEXT DATA SHEETS                                            | SDS-01 TO SDS-02 |
| 40                         | TRAFFIC SIGNAL NOTES                                             | TSN-01           |
| 41-45                      | TRAFFIC SIGNAL PLANS                                             | TSP-01 TO TSP-05 |
| 46                         | TRAFFIC SIGNAL DETAILS                                           | TSD-01           |
| 47-50                      | LIGHTING PLANS                                                   | ELP-01 TO ELP-04 |
| 51-54                      | LIGHTING NOTES AND DETAILS                                       | ELD-01 TO ELD-04 |
| 55                         | LIGHTING TABLES                                                  | ELT-01           |
| 56                         | DRAINAGE & UTILITY NOTES                                         | DUN-01           |
| 57-61                      | DRAINAGE & UTILITY PLANS                                         | DUP-01 TO DUP-05 |
| 62                         | SEWER PLAN & PROFILE                                             | SP-01            |
| 63-73                      | DRAINAGE & UTILITY DETAILS                                       | DUD-01 TO DUD-11 |
| 74-78                      | DRAINAGE & UTILITY TABLES                                        | DUT-01 TO DUT-05 |
| -                          | MAST ARM STREET NAME INSTALLATION DETAIL                         | DPW-MAMSN        |
| -                          | GROUND MOUNT STREET NAME INSTALLATION DETAIL                     | DPW-GMSN         |
| -                          | STANDARD SIGN POST INSTALLATION DETAIL                           | DPW-SSP          |
| -                          | TYPICAL SIGN POST ATTACHMENT DETAILS                             | DPW-TSPA         |
| -                          | MISCELLANEOUS SIGN DETAILS                                       | DPW-MSCS         |
| -                          | PAVEMENT MARKING DETAILS                                         | DPW-PM           |
| -                          | STANDARD STEEL RECEIVER TOP SECTION, GRATES AND CURB BOX DETAILS | 20557-RS-1       |
| -                          | STANDARD STEEL RECEIVER BOTTOM SECTION, SLIDES AND GRATE DETAILS | 20557-RS-2       |
| -                          | STANDARD PRECAST CONCRETE MANHOLES AND VARIOUS STANDARD DETAILS  | 20092 C          |



PROJECT LOCATION MAP

**DRAFT  
NOT FOR  
CONSTRUCTION**

ALL WORK CONTEMPLATED UNDER THIS CONTRACT IS TO BE GOVERNED BY AND IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS DATED JANUARY 1, 2023. ALL UPDATES THERETO, AND THE PROPOSAL.

THE FOLLOWING NYSDOT STANDARD SHEETS ARE INCLUDED IN THIS CONTRACT BY REFERENCE.

209-01, 209-03, 209-05, 402-01, 608-01, 608-03, 609-01, 609-03, 619-XXX SERIES SEE DRAWING TTC-02, 625-01, 645-01, 645-03, 645-14, 680-01, 680-03, 680-04, 680-05, 680-06, 680-08, 680-10, 680-11, 680-15, 680-17, 685-01

NOLAN R. SKIPPER, P.E. DATE  
LICENSE #: 097828  
CITY ENGINEER

PHILLIP M. GALBO, P.E. DATE  
LICENSE #: 067468-1  
WATTS ARCHITECTS & ENGINEERS

ROSALEEN B. NOGLE, P.E. DATE  
LICENSE #: 089551  
PRINCIPAL SANITARY ENGINEER  
BUFFALO SEWER AUTHORITY

**WARNING:** IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM ON THESE PLANS IN ANY WAY. IF ALTERATIONS TO THESE PLANS ARE REQUIRED, THE ALTERATIONS SHALL BE MADE IN ACCORDANCE WITH ARTICLE 145 - SUBSECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

CONTRACTOR'S NAME: \_\_\_\_\_  
AWARD DATE: \_\_\_\_\_  
COMPLETION DATE: \_\_\_\_\_  
FINAL ACCEPTANCE DATE: \_\_\_\_\_  
ENGINEER IN CHARGE: \_\_\_\_\_  
FINAL COST TOTAL: \_\_\_\_\_  
FISCAL SHARE COST(S)



**BUFFALO**  
SEWER AUTHORITY





| TOPOGRAPHY (DRAINAGE) |                               |
|-----------------------|-------------------------------|
| ABBR.                 | DESCRIPTION                   |
| BB                    | BOTTOM OF BANK (STREAM)       |
| BC                    | BOTTOM OF CURB                |
| BO                    | BOTTOM OF OPENING             |
| CAP                   | CORRUGATED ALUMINUM PIPE      |
| CB                    | CATCH BASIN                   |
| CIP                   | CAST IRON PIPE                |
| c STRM                | CENTERLINE OF STREAM          |
| CMP                   | CORRUGATED METAL PIPE         |
| CP                    | CONCRETE PIPE                 |
| CSP                   | CORRUGATED STEEL PIPE         |
| CULV                  | CULVERT                       |
| DIA                   | DIAMETER                      |
| DMH                   | DRAINAGE MANHOLE              |
| DS                    | DRAINAGE STRUCTURE PIPE       |
| D'XING                | DITCH CROSSING                |
| EHW                   | EXTREME HIGH WATER            |
| EL                    | ELEVATION                     |
| ELW                   | EXTREME LOW WATER             |
| ES                    | END SECTION                   |
| HW                    | HEADWALL                      |
| INV                   | INVERT                        |
| MH                    | MANHOLE                       |
| MHW                   | MEAN HIGH WATER               |
| RCP                   | REINFORCED CONCRETE PIPE      |
| TB                    | TOP OF BANK (STREAM)          |
| TC                    | TOP OF CURB                   |
| TG                    | TOP OF GRATE                  |
| VCP                   | VITRIFIED CLAY PIPE           |
| SICPP                 | SMOOTH INTERIOR CORRUGATED PE |

| UTILITIES |                              |
|-----------|------------------------------|
| ABBR.     | DESCRIPTION                  |
| E         | ELECTRIC                     |
| EMH       | ELECTRIC MANHOLE             |
| -G-       | GAS LINE                     |
| GP        | GUY POLE                     |
| GSB       | GAS SERVICE BOX (HOUSE LINE) |
| GV        | GAS VALVE (MAIN LINE)        |
| HYD       | HYDRANT                      |
| LIGHT     | LIGHT STANDARD               |
| LPG       | LOW PRESSURE GAS             |
| PP        | POWER POLE                   |
| -SA-      | SANITARY SEWER               |
| SAMH      | SANITARY MANHOLE             |
| -ST-      | STORM SEWER                  |
| T         | TELEPHONE                    |
| TC        | TRAFFIC CONTROL BOX          |
| TEL BOX   | TELEPHONE BOX                |
| TEL P     | TELEPHONE POLE               |
| TMH       | TELEPHONE MANHOLE            |
| CTV       | CABLE TELEVISION             |
| -W-       | WATER                        |
| WS        | WATER SERVICE                |
| WV        | WATER VALVE (MAIN LINE)      |

| ALIGNMENT |                                     |
|-----------|-------------------------------------|
| ABBR.     | DESCRIPTION                         |
| AH        | AHEAD                               |
| AZ        | AZIMUTH                             |
| BK        | BACK                                |
| b         | BASELINE                            |
| BRG       | BEARING                             |
| CL        | CENTERLINE                          |
| CS        | CURVE TO SPIRAL                     |
| e         | SUPERELEVATION RATE (CROSS SLOPE)   |
| EQ        | EQUALITY                            |
| EXT       | EXTERNAL                            |
| HCL       | HORIZONTAL CONTROL LINE             |
| HSD       | HEADLIGHT SIGHT DISTANCE            |
| L         | LENGTH OF CIRCULAR CURVE            |
| LS        | LENGTH OF SPIRAL                    |
| LVC       | LENGTH OF VERTICAL CURVE            |
| E         | CENTER CORRECTION OF VERTICAL CURVE |
| f         | MAIN LINE                           |
| PC        | POINT OF CURVATURE                  |
| PI        | POINT OF INTERSECTION               |
| POL       | POINT ON LINE                       |
| PSD       | PASSING SIGHT DISTANCE              |
| PT        | POINT OF TANGENT                    |
| PVC       | POINT OF VERTICAL CURVE             |
| PVI       | POINT OF VERTICAL INTERSECTION      |
| PVT       | POINT OF VERTICAL TANGENT           |
| R         | RADIUS                              |
| SC        | SPIRAL TO CURVE                     |
| SSD       | STOPPING SIGHT DISTANCE             |
| ST        | SPIRAL TO TANGENT                   |
| STA       | STATION                             |
| T         | TANGENT LENGTH                      |
| TGL       | THEORETICAL GRADE LINE              |
| TS        | TANGENT TO SPIRAL                   |
| VC        | VERTICAL CURVE                      |

| TOPOGRAPHY (MISCELLANEOUS) |                                |
|----------------------------|--------------------------------|
| ABBR.                      | DESCRIPTION                    |
| ABUT                       | ABUTMENT                       |
| AOBE                       | AS ORDERED BY ENGINEER         |
| ASPH                       | ASPHALT                        |
| BDY                        | BOUNDARY                       |
| BLDG                       | BUILDING                       |
| BM                         | BENCH MARK                     |
| CC                         | CENTER TO CENTER               |
| CONC                       | CONCRETE                       |
| CONST                      | CONSTRUCTION                   |
| CR                         | COUNTY ROAD                    |
| D                          | DEED DISTANCE                  |
| DM                         | DIRECT MEASUREMENT             |
| DWY                        | DRIVEWAY                       |
| EP                         | EDGE OF PAVEMENT               |
| EPS                        | EDGE OF PAVED SHOULDER         |
| FEE                        | FEE ACQUISITION                |
| FEE WO/A                   | FEE ACQUISITION WITHOUT ACCESS |
| FP                         | FENCE POST                     |
| FD                         | FOUNDATION                     |
| FL                         | FENCE LINE                     |
| GAR                        | GARAGE                         |
| GR                         | GRAVEL                         |
| HO                         | HOUSE                          |
| HWY                        | HIGHWAY                        |
| IP                         | IRON PIN OR IRON PIPE          |
| MB                         | MAILBOX                        |
| MON                        | MONUMENT                       |
| N&W                        | NAIL AND WASHER                |
| OG                         | ORIGINAL GROUND                |
| O/H                        | OVERHEAD                       |
| P                          | PARCEL                         |
| PAV'T                      | PAVEMENT                       |
| PE                         | PERMANENT EASEMENT             |
| PED POLE                   | PEDESTRIAN POLE                |
| p                          | PROPERTY LINE                  |
| POR                        | PORCH                          |
| RR                         | RAILROAD                       |
| RTE                        | ROUTE                          |
| ROW                        | RIGHT OF WAY                   |
| RW                         | RETAINING WALL                 |
| SH                         | STATE HIGHWAY                  |
| SHLDR                      | SHOULDER                       |
| SPK                        | SPIKE                          |
| ST                         | STREET                         |
| STK                        | STAKE                          |
| STY                        | STORY                          |
| SW                         | SIDEWALK                       |
| TE                         | TEMPORARY EASEMENT             |
| TO                         | TEMPORARY OCCUPANCY            |
| U/G                        | UNDERGROUND                    |
| WW                         | WING WALL                      |

| STANDARD SYMBOL (PLANS) | ITEM PAYMENT UNIT: ESTIMATE OF QUANTITIES SHEET | EQUIVALENT NOMENCLATURE: (SPECS/PROPOSAL) |
|-------------------------|-------------------------------------------------|-------------------------------------------|
| '                       | ft                                              | LINEAR FEET                               |
| ft²                     | SF                                              | SQUARE FEET                               |
| YD³                     | CY                                              | CUBIC YARD                                |
| mi                      | MI                                              | MILES                                     |
| AC                      | AC                                              | ACRES                                     |
| lb                      | LB                                              | POUND                                     |
| TON                     | TON                                             | TON                                       |
| GAL                     | GAL                                             | GALLON                                    |

| LEGEND  |       |                          |
|---------|-------|--------------------------|
| CLF     | —/—/— | CHAIN LINK FENCE         |
| SFL     | —/—/— | STOCKADE FENCE           |
| MB      | □     | MAIL BOX                 |
|         | ⌘     | DOUBLE SIGN              |
|         | ⌘     | SIGN                     |
| GP      | ▲     | GUARD POSTS              |
| FP      | ⌘     | FLAG POLE                |
|         | ⌘     | TREE DECIDUOUS           |
|         | ✱     | TREE CONIFEROUS          |
| -G-     |       | GAS LINE                 |
| GAS     | ⌘     | GAS METER                |
| GV      | ⌘     | GAS VALVE                |
| GS      | ⌘     | GAS SERVICE              |
| GLM     | ⌘     | GAS LINE MARKER          |
| DI      | □     | DRAINAGE INLET           |
| DMH     | ⊕     | STORM DRAINAGE MANHOLE   |
| -ST-    |       | STORM SEWER LINE         |
| SAMH    | ⌘     | SANITARY MANHOLE         |
| SCO     | ⌘     | SEWER CLEANOUT           |
| SV      | ○     | SEWER VENT               |
| -SA-    |       | SANITARY SEWER LINE      |
| INV     | ⌘     | INVERT ELEVATION         |
| SP      | ⌘     | SIGNAL SUPPORT POLE      |
|         | ⌘     | SIGNAL HEAD              |
| TC      | ⌘     | TRAFFIC CONTROL BOX      |
| TCSP    | ⌘     | TRAFFIC SIGNAL POLE      |
| TCPP    | ⌘     | TRAFFIC PEDESTRIAN POLE  |
| -S-     |       | UNDERGROUND SIGNAL CABLE |
| LIGHT   | ✱     | LIGHT STANDARD           |
| EHH     | ⌘     | ELECTRIC VAULT/HANDHOLE  |
| EM      | ⌘     | ELECTRIC METER           |
| EMH     | ⌘     | ELECTRIC MANHOLE         |
| UP      | ∅     | UTILITY POLE             |
| UPL     | ⌘     | UTILITY POLE W/ LIGHT    |
| -OHW-   |       | OVERHEAD WIRES           |
| -UE-    |       | UNDERGROUND ELECTRIC     |
| -FA-    |       | UNDERGROUND FIRE ALARM   |
| FAHH    | □     | FIRE ALARM HANDHOLE      |
| FLT     | ⌘     | FLOOD LIGHT              |
| -UT-    |       | UNDERGROUND TELEPHONE    |
| TEL BOX | ⌘     | TELEPHONE JUNCTION BOX   |
| TLM     | ⌘     | TELEPHONE LINE MARKER    |
| TMH     | ⌘     | TELEPHONE MANHOLE        |
| -CATV-  |       | BURIED CABLE TV LINE     |
| -W-     |       | WATER LINE               |
| WV      | ⌘     | WATER VALVE              |
| HYD     | ⌘     | HYDRANT                  |
| WS      | ⌘     | WATER SERVICE            |
| WCR     |       | WHEEL CHAIR RAMP         |
| CONC    |       | CONCRETE                 |
| BC      |       | BOTTOM OF CURB           |
| TC      |       | TOP OF CURB              |
| SW      |       | SIDEWALK                 |
| EP      |       | EDGE OF PAVEMENT         |
| FF      |       | FINISHED FLOOR           |
| EPS     |       | EDGE OF PAVED SHOULDER   |
| FA      |       | FIRE ALARM               |
| CC      |       | CURB ENTRANCE CUT        |
| D&M     |       | DEED AND MEASURED        |
| CP      | △     | PRIMARY CONTROL POINT    |
| BLP     | △     | SECONDARY CONTROL POINT  |
| BH#     | ⌘     | TEST BORE W/ ELEVATION   |
|         | ⌘     | FLEXIBLE DELINEATOR      |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90

HERTEL AVENUE TO ONTARIO STREET  
SYMBOLS AND ABBREVIATIONS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. SA-01  
SHEET NO. 2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

JOB MANAGER T. DIK

DESIGN J. ROSS

CHECK P. GALBO

DRAFTING V. CONERS

CHECK J. ROSS

PROJECT MANAGER P. GALBO

DRAFT  
NOT FOR  
CONSTRUCTION

|                    |                    |
|--------------------|--------------------|
| AFFIX SEAL:<br>ON: | ALTERED BY:<br>ON: |
|                    |                    |

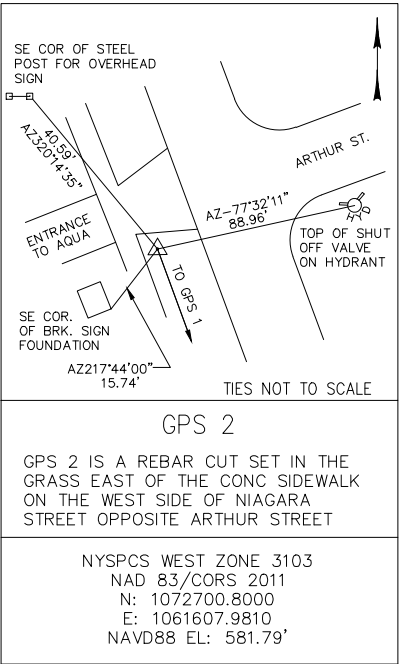
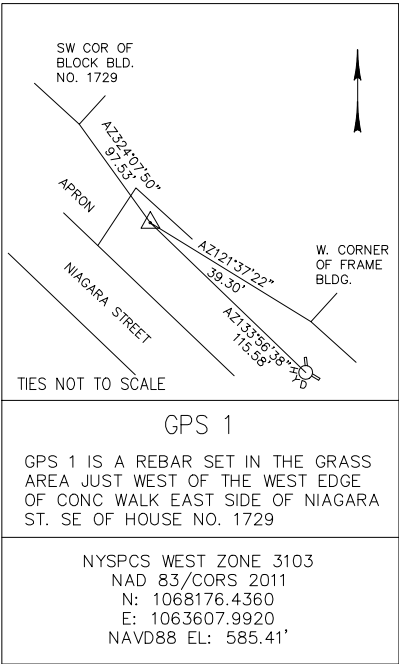
NOTE:

THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, PRESERVING OR OTHERWISE RE-ESTABLISHING ANY CONTROL POINT IF THE ASSOCIATED REFERENCE POINTS ARE TO BE DISTURBED BY CONSTRUCTION. THE MEANS TO PRESERVE THE CONTROL POINTS SHALL BE MADE BY THE CONTRACTOR PRIOR TO ANY DISTURBANCE OF THE REFERENCE POINTS. THE COSTS ASSOCIATED WITH PRESERVING AND/OR REESTABLISHING ALL CONTROL POINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 625.01, SURVEY OPERATIONS.

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
SURVEY CONTROL

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. SC-01  
SHEET NO. 3



NOTES

- PLACE TACK COAT (ITEM 407.0102) ON ALL MILLED SURFACES AND BETWEEN ALL HMA PAVEMENT LAYERS.
- SEE SIGN AND PAVEMENT MARKING PLAN DRAWINGS FOR ADDITIONAL DETAILS.
- CONCRETE SIDEWALKS AND SNOW STORAGE AREAS SHALL BE 4" THICK EXCEPT AT DRIVEWAYS AND CURB RAMPS WHERE THEY SHALL BE 6" THICK AND CONTAIN REINFORCEMENT. SEE DWG. NO. MT-01 FOR DETAIL AND TABLE OF DRIVEWAY REPLACEMENTS.
- SEE GENERAL PLAN DWG. NOS. PL-01 THRU PL-02 FOR TYPE OF SURFACE TREATMENT FOR SNOW STORAGE AREA.
- THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY OTHERS.
- WHERE SIDEWALK REPLACEMENT IS REQUIRED ADJACENT TO AN EXISTING ENCROACHMENT (TO REMAIN) OR BUILDING FACE, THE REMOVAL LIMIT SHALL BE OFFSET 6 INCHES. REFER TO SIDEWALK PLAN DETAIL ON DWG. NO. MD-01.
- THE EXISTING SIDEWALK SHALL BE REMOVED AND REPLACED IN SPOT LOCATIONS ONLY. SEE GENERAL PLANS DRAWINGS FOR REPLACEMENT LOCATIONS.
- SNOW STORAGE AREAS SHALL BE CONCRETE AND HAVE A 1.5% CROSS SLOPE AT BUS STOP LOCATIONS. IN ALL OTHER SNOW STORAGE AREAS WHERE HARDSCAPE REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-5%. IN SNOW STORAGE AREAS WHERE LANDSCAPING REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-25%.
- IN AREAS BEHIND THE MAIN SIDEWALK WHERE HARDSCAPE REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-5%. IN AREAS BEHIND THE MAIN SIDEWALK WHERE LANDSCAPING REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-25%.
- FOLLOWING CONDUCTOR REMOVAL, THE EXISTING CONDUIT SHALL BE REMOVED AND REPLACED TO HOUSE THE PROPOSED CONDUCTORS FOR THE PROPOSED CITY-OWNED LED LIGHTING SYSTEM. SEE LIGHTING PLAN DWG. NOS. ELP-01 THRU ELP-02 AND DETAIL DRAWINGS.
- RESTORE WITH ASPHALT CONCRETE (ITEM 608.020102) OR 6 INCHES OF TOPSOIL AND TURF (ITEM 610.1403 AND ITEM 610.1602) AS DIRECTED BY ENGINEER.
- THIS LATERAL DISTANCE VARIES FROM STA. 168+00 TO STA. 171+82. REFER TO DWG. NO. PL-01 FOR STATION LAYOUT INFORMATION AND DWG. NO. SPM-01 FOR PAVEMENT MARKING LAYOUT INFORMATION. THIS DISTANCE IS 5' FROM STA. 171+82 TO 176+32.
- LANE WIDTHS VARY BETWEEN HERTEL AVENUE AND STA. 170+34.7. SEE SPM-01 FOR LANE LINE STRIPING LAYOUT AND STATIONING.
- THE OFFSET FROM THE CENTER OF THE TURNING LANE (C) TO THE HCL & TGL VARIES BETWEEN STA. 168+00 & STA. 171+82. OFFSET IS 0'-0" BETWEEN STA. 171+82 & STA. 176+32. SEE DWG. NO. PL-01 FOR STATION LAYOUT INFORMATION AND DWG. NO. SPM-01 FOR PAVEMENT MARKING STATIONING AND OFFSETS.
- A CURB EXTENSION SHALL BE CONSTRUCTED IN THE PARKING LANE AT THE NORTHEAST CORNER OF NIAGARA STREET AND HERTEL AVENUE. SEE IG-01, DUP-01, PL-01, AND MD-02 FOR CURB EXTENSION LAYOUT. SEE IG-01 FOR GRADING INFORMATION.
- SIDEWALK MATERIAL IN CURB EXTENSION VARIES. SEE PL-01 AND MD-02 FOR LAYOUT DETAILS AND DIMENSIONS.
- MILL DEPTH VARIES TO ACHIEVE SPECIFIED CROSS SLOPES. SEE PAVEMENT CROSS SLOPE TABLE AND THE T.G.L. ELEVATION TABLE ON DWG. NO MT-02.
- TOP COURSE DEPTH SHALL BE 1 1/2" UNLESS A GREATER DEPTH IS NEEDED TO ACHIEVE SPECIFIED CROSS SLOPES. TOP COURSE DEPTH SHALL NOT EXCEED 2". SEE PAVEMENT CROSS SLOPE TABLE AND THE T.G.L. ELEVATION TABLE ON DWG. NO. MT-02.

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

1

CURB AND UNDERDRAIN AT CURB EXTENSION

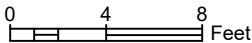
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ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TYPICAL SECTIONS

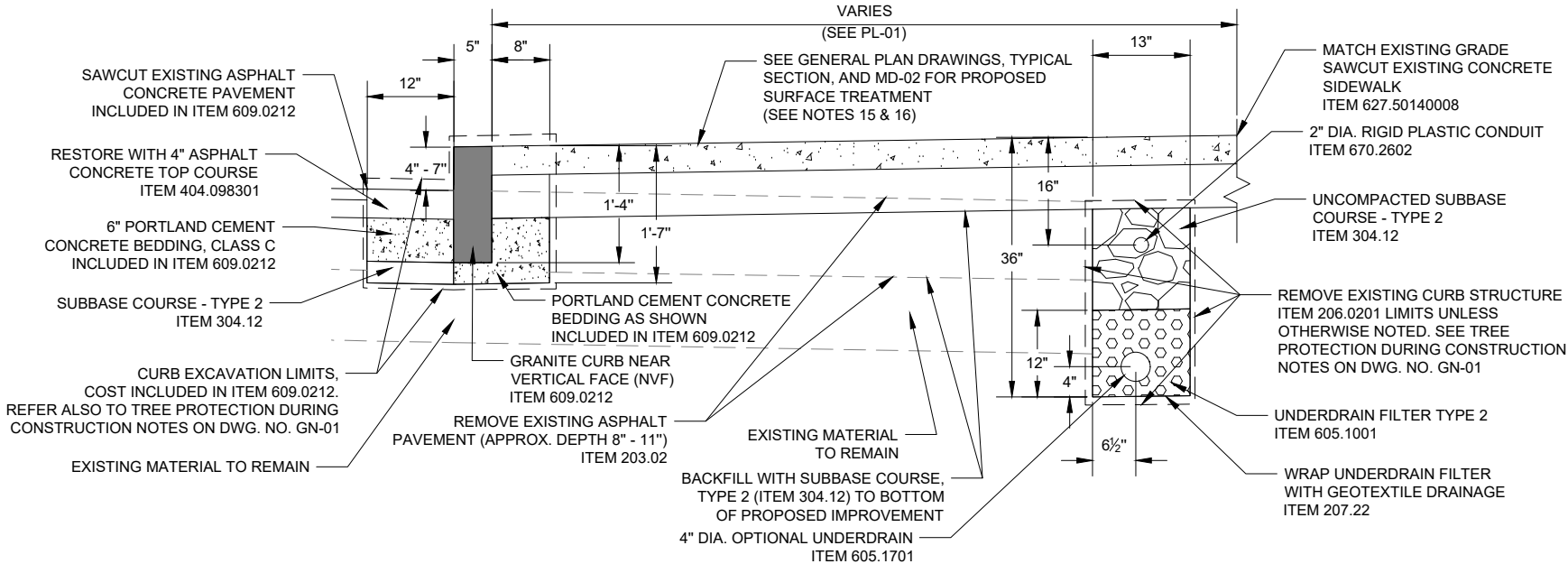
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. TS-01  
SHEET NO. 4



TYPICAL SECTION  
NIAGARA STREET FROM HERTEL AVENUE TO MIDBLOCK NORTH OF GARFIELD STREET  
STA. 168+00 TO STA. 176+43



| REF. | ITEM NO.     | DESCRIPTION                                                                             | UNIT |
|------|--------------|-----------------------------------------------------------------------------------------|------|
| 1    | 203.02       | UNCLASSIFIED EXCAVATION AND DISPOSAL                                                    | CY   |
| 2    | 304.12       | SUBBASE COURSE, TYPE 2                                                                  | CY   |
| 3    | 404.018901   | TRUING & LEVELING F9, ASPHALT, 80 SERIES COMPACTION                                     | TON  |
| 4    | 404.098301   | 9.5 F3 TOP COURSE ASPHALT, 80 SERIES COMPACTION                                         | TON  |
| 5    | 407.0102     | DILUTED TACK COAT                                                                       | GAL  |
| 6    | 490.30110011 | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 1 (0 TO 2 INCH DEEP)  | SY   |
| 7    | 490.30120011 | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 2 (>2 TO 4 INCH DEEP) | SY   |
| 8    | 608.0101     | CONCRETE SIDEWALKS AND DRIVEWAYS                                                        | CY   |
| 9    | 627.50140008 | CUTTING PAVEMENT                                                                        | LF   |
| 10   | 685.01       | WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS                                    | LF   |
| 11   | 685.02       | YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS                                   | LF   |





| REF. | ITEM NO.     | DESCRIPTION                                                                             | UNIT |
|------|--------------|-----------------------------------------------------------------------------------------|------|
| 1    | 203.02       | UNCLASSIFIED EXCAVATION AND DISPOSAL                                                    | CY   |
| 2    | 304.12       | SUBBASE COURSE, TYPE 2                                                                  | CY   |
| 3    | 404.018901   | TRUING & LEVELING F9, ASPHALT, 80 SERIES COMPACTION                                     | TON  |
| 4    | 404.098301   | 9.5 F3 TOP COURSE ASPHALT, 80 SERIES COMPACTION                                         | TON  |
| 5    | 407.0102     | DILUTED TACK COAT                                                                       | GAL  |
| 6    | 490.30110011 | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 1 (0 TO 2 INCH DEEP)  | SY   |
| 7    | 490.30120011 | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 2 (>2 TO 4 INCH DEEP) | SY   |
| 8    | 608.0101     | CONCRETE SIDEWALKS AND DRIVEWAYS                                                        | CY   |
| 9    | 627.50140008 | CUTTING PAVEMENT                                                                        | LF   |
| 10   | 685.01       | WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS                                    | LF   |
| 11   | 685.02       | YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS                                   | LF   |

NOTES

- PLACE TACK COAT (ITEM 407.0102) ON ALL MILLED SURFACES AND BETWEEN ALL HMA PAVEMENT LAYERS.
- SEE SIGN AND PAVEMENT MARKING PLAN DRAWINGS FOR ADDITIONAL DETAILS.
- CONCRETE SIDEWALKS AND SNOW STORAGE AREAS SHALL BE 4" THICK EXCEPT AT DRIVEWAYS AND CURB RAMPS WHERE THEY SHALL BE 6" THICK AND CONTAIN REINFORCEMENT. SEE DWG. NO. MT-01 FOR DETAIL AND TABLE OF DRIVEWAY REPLACEMENTS.
- THE EXISTING SIDEWALK SHALL BE REMOVED AND REPLACED IN SPOT LOCATIONS ONLY. SEE GENERAL PLAN DRAWINGS FOR REPLACEMENT LOCATIONS.
- THE EXISTING CURB ON THE WEST SIDE OF NIAGARA STREET SHALL BE REMOVED AND THE PROPOSED REPLACEMENT CURB SHALL FOLLOW A NEW ALIGNMENT. SEE DWG. NOS. PL-02 THRU PL-03 AND DETAIL 1.
- SEE GENERAL PLAN DWG. NOS. PL-02 THRU PL-03 FOR TYPE OF SURFACE TREATMENT FOR SNOW STORAGE AREA.
- THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY OTHERS.
- WHERE SIDEWALK REPLACEMENT IS REQUIRED ADJACENT TO AN EXISTING ENCROACHMENT (TO REMAIN) OR BUILDING FACE, THE REMOVAL LIMIT SHALL BE OFFSET 6 INCHES. REFER TO SIDEWALK PLAN DETAIL ON DWG. NO. MD-01.
- SNOW STORAGE AREAS SHALL BE CONCRETE AND HAVE A 1.5% CROSS SLOPE AT BUS STOP LOCATIONS. IN ALL OTHER SNOW STORAGE AREAS WHERE HARDSCAPE REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-5%. IN SNOW STORAGE AREAS WHERE LANDSCAPING REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-25%.
- IN AREAS BEHIND THE MAIN SIDEWALK WHERE HARDSCAPE REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-5%. IN AREAS BEHIND THE MAIN SIDEWALK WHERE LANDSCAPING REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-25%.
- FOLLOWING CONDUIT REMOVAL, THE EXISTING CONDUIT SHALL BE REMOVED AND REPLACED TO HOUSE THE PROPOSED CONDUCTORS FOR THE PROPOSED CITY-OWNED LED LIGHTING SYSTEM. SEE LIGHTING PLAN DWG. NOS. ELP-02 THRU ELP-03 AND DETAIL DRAWINGS.
- RESTORE WITH ASPHALT CONCRETE (ITEM 608.020102) OR 6 INCHES OF TOPSOIL AND TURF (ITEM 610.1403 AND ITEM 610.1602) AS DIRECTED BY ENGINEER.
- IN CURB REALIGNMENT AREAS WITH CONCRETE SIDEWALK OR DRIVEWAY, THE CONTRACTOR SHALL BACKFILL THIS AREA WITH SUBBASE COURSE, TYPE 2 (ITEM 304.12). IN CURB REALIGNMENT AREAS WITH TURF RESTORATION, THE CONTRACTOR SHALL BACKFILL THIS AREA WITH SUITABLE EXCAVATED MATERIAL (ITEM 203.03) TO THE BOTTOM OF THE 6-INCH TOPSOIL LAYER.
- MILL DEPTH VARIES TO ACHIEVE SPECIFIED CROSS SLOPES. SEE PAVEMENT CROSS SLOPE TABLE AND THE T.G.L. ELEVATION TABLE ON DWG. NO MT-02.
- TOP COURSE DEPTH SHALL BE 1 1/2" UNLESS A GREATER DEPTH IS NEEDED TO ACHIEVE SPECIFIED CROSS SLOPES. TOP COURSE DEPTH SHALL NOT EXCEED 2". SEE PAVEMENT CROSS SLOPE TABLE AND THE T.G.L. ELEVATION TABLE ON DWG. NO. MT-02.

|                                               |                    |
|-----------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                            | ALTERED BY:<br>ON: |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div> |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

CURB REALIGNMENT DETAIL

NOTE: SEE PL DWGS. FOR SURFACE TREATMENT TYPE. FOR SECTIONS AT PLANTERS AND STORMWATER CATCHMENT AREAS, REFER TO DWG. NOS. DUD-05 AND DUD-06. FOR SIDEWALK AND DRIVEWAY SECTIONS, REFER TO TYPICAL SECTIONS. IN AREAS BEHIND NEW CURB REQUIRING TURF RESTORATION, CONTRACTOR SHALL INSTALL 6" TOPSOIL (ITEM 610.1403) AND ESTABLISH TURF (ITEM 610.1602), A.O.B.E.

NOT TO SCALE

ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TYPICAL SECTIONS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. TS-02  
SHEET NO. 5





1. PLACE TACK COAT (ITEM 407.0102) ON ALL MILLED SURFACES AND BETWEEN ALL HMA PAVEMENT LAYERS.
2. SEE SIGN AND PAVEMENT MARKING PLAN DRAWINGS FOR ADDITIONAL DETAILS.
3. CONCRETE SIDEWALKS AND SNOW STORAGE AREAS SHALL BE 4" THICK EXCEPT AT DRIVEWAYS AND CURB RAMPS WHERE THEY SHALL BE 6" THICK AND CONTAIN REINFORCEMENT. SEE DWG. NO. MT-01 FOR DETAIL AND TABLE OF DRIVEWAY REPLACEMENTS.
4. RESTORE WITH ASPHALT CONCRETE (ITEM 608.020102) OR 6 INCHES OF TOPSOIL AND TURF (ITEM 610.1403) AND ITEM 610.1602) AS DIRECTED BY ENGINEER.
5. THE EXISTING CURB ON BOTH SIDES OF THE STREET SHALL BE REMOVED AND THE PROPOSED REPLACEMENT CURB SHALL FOLLOW A NEW ALIGNMENT. SEE GENERAL PLAN DWG. NOS. PL-03 THRU PL-05 AND DETAIL 1 ON DWG. NO. TS-02.
6. SEE GENERAL PLAN DWGS. NOS. PL-03 THRU PL-05 FOR TYPE OF SURFACE TREATMENT FOR SNOW STORAGE AREA.
7. THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY OTHERS.
8. WHERE SIDEWALK REPLACEMENT IS REQUIRED ADJACENT TO AN EXISTING ENCROACHMENT (TO REMAIN) OR BUILDING FACE, THE REMOVAL LIMIT SHALL BE OFFSET 6 INCHES. REFER TO SIDEWALK PLAN DETAIL ON DWG. NO. MD-01.
9. THE EXISTING SIDEWALK SHALL BE REMOVED AND REPLACED IN SPOT LOCATIONS ONLY. SEE GENERAL PLAN DRAWINGS FOR REPLACEMENT LOCATIONS.
10. SNOW STORAGE AREAS SHALL BE CONCRETE AND HAVE A 1.5% CROSS SLOPE AT BUS STOP LOCATIONS. IN ALL OTHER SNOW STORAGE AREAS WHERE HARDSCAPE REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-5%. IN SNOW STORAGE AREAS WHERE LANDSCAPING REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-25%.
11. IN AREAS BEHIND THE MAIN SIDEWALK WHERE HARDSCAPE REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-5%. IN AREAS BEHIND THE MAIN SIDEWALK WHERE LANDSCAPING REPLACES THE EXISTING SURFACE, CROSS SLOPE SHALL BE 1.5%-25%.
12. FOLLOWING CONDUIT REMOVAL, THE EXISTING CONDUIT SHALL BE REMOVED AND REPLACED TO HOUSE THE PROPOSED CONDUCTORS FOR THE PROPOSED CITY-OWNED LED LIGHTING SYSTEM. SEE LIGHTING PLAN DWG. NOS. ELP-03 THRU ELP-05 AND DETAIL DRAWINGS.
13. MILL DEPTH VARIES TO ACHIEVE SPECIFIED CROSS SLOPES. SEE PAVEMENT CROSS SLOPE TABLE AND THE T.G.L. ELEVATION TABLE ON DWG. NO MT-02.
14. TOP COURSE DEPTH SHALL BE 1 1/2" UNLESS A GREATER DEPTH IS NEEDED TO ACHIEVE SPECIFIED CROSS SLOPES. TOP COURSE DEPTH SHALL NOT EXCEED 2". SEE PAVEMENT CROSS SLOPE TABLE AND THE T.G.L. ELEVATION TABLE ON DWG. NO. MT-02.

| REF. | ITEM NO.     | DESCRIPTION                                                                             | UNIT |
|------|--------------|-----------------------------------------------------------------------------------------|------|
| 1    | 203.02       | UNCLASSIFIED EXCAVATION AND DISPOSAL                                                    | CY   |
| 2    | 304.12       | SUBBASE COURSE, TYPE 2                                                                  | CY   |
| 3    | 404.018901   | TRUING & LEVELING F9, ASPHALT, 80 SERIES COMPACTION                                     | TON  |
| 4    | 404.098301   | 9.5 F3 TOP COURSE ASPHALT, 80 SERIES COMPACTION                                         | TON  |
| 5    | 407.0102     | DILUTED TACK COAT                                                                       | GAL  |
| 6    | 490.30110011 | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 1 (0 TO 2 INCH DEEP)  | SY   |
| 7    | 490.30120011 | MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE, QUANTITY RANGE 2 (>2 TO 4 INCH DEEP) | SY   |
| 8    | 608.0101     | CONCRETE SIDEWALKS AND DRIVEWAYS                                                        | CY   |
| 9    | 627.50140008 | CUTTING PAVEMENT                                                                        | LF   |
| 10   | 685.02       | YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS                                   | LF   |

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

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NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TYPICAL SECTIONS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

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DRAWING NO. TS-03  
SHEET NO. 6

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R\18\_CADD\Trans\05 General Notes.dwg  
DATE/TIME = 12/12/2022 9:28:42 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK P. GALBO  
DRAFTING V. CONERS  
CHECK P. GALBO  
PROJECT MANAGER P. GALBO

GENERAL NOTES

1. THE CONTRACTOR SHALL DIRECT HIS ATTENTION TO NATIONAL GRID'S 230KV OIL FILLED PIPE CABLE NOTED ON THE PLAN SHEETS (LABELED AS 8 INCH PIPE CABLE) FROM SOUTH OF HERTEL AVENUE TO NORTH OF ONTARIO STREET AT APPROXIMATELY STA. 188+00. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING NEAR THIS PIPE. THE COATING ON THIS PIPE CANNOT BE DAMAGED IN ANY WAY. IF THE COATING IS NICKED OR OTHERWISE DAMAGED IN ANY WAY, THE INCIDENT SHALL BE IMMEDIATELY REPORTED BY THE CONTRACTOR TO NATIONAL GRID SO REPAIRS CAN BE MADE. IF LEFT UNTREATED, THE PIPE WILL RAPIDLY CORRODE WHICH WILL RESULT IN A MAJOR OIL LEAK. NATIONAL GRID RECORDS INDICATE THAT THE 230KV OIL FILLED PIPE CABLE IS LOCATED APPROXIMATELY 3-FEET BELOW GRADE FOR THE ENTIRE LENGTH OF THIS PROJECT. PRIOR TO WORKING NEAR OR AROUND THIS CABLE, OR ANY VIBRATION-INDUCING ACTIVITIES, THE CONTRACTOR SHALL CONTACT NATIONAL GRID'S MANAGER, TRANSMISSION UNDERGROUND ENGINEERING (PHYLLIS WALL: 1-781-907-2456, PHYLLIS.WALL@NATIONALGRID.COM) FOR COORDINATION PURPOSES. THE CONTRACTOR SHALL OBSERVE NATIONAL GRID'S ELECTRICAL OPERATING PROCEDURE (EOP). THIS INCLUDES, BUT NOT LIMITED TO, HAVING A NATIONAL GRID APPOINTED INSPECTOR ON-SITE DURING EXCAVATION ACTIVITIES. NON-MECHANICAL DIGGING OR VACUUM EXCAVATION IS REQUIRED WHEN WORKING NEAR OR AROUND THIS CABLE. IF THE EXISTING BACKFILL MATERIAL IS DISTURBED, A SUITABLE/COMPARABLE REPLACEMENT MATERIAL OF "THERMAL SAND" SHALL BE INSTALLED AROUND THIS CABLE. THERE WILL BE NO SEPARATE PAYMENT FOR THIS WORK.
2. THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE. THEY ARE NOT GUARANTEED TO BE ACCURATE OR COMPLETE. ALL UTILITIES WERE PLOTTED FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES LOCATED WITHIN THE WORK AREA TO THE CONTRACTOR'S SATISFACTION AT NO COST TO THE CITY UNLESS NOTED OTHERWISE. THE CONTRACTOR IS TO REQUEST A UTILITY STAKEOUT A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF COMMENCING ANY WORK BY CALLING THE UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION (UFPPO) AT 1-800-962-7962.
3. ALL SURPLUS MATERIALS FROM EXCAVATION AND OTHER CONSTRUCTION OPERATIONS SHALL BE REMOVED FROM THE PROJECT SITE AND OFF OF THE CITY'S RIGHT OF WAY. THERE ARE NO AVAILABLE WASTE OR SPOIL AREAS OR STORAGE/MARSHALLING AREAS WITHIN THE CITY RIGHT OF WAY FOR THIS PROJECT. ALL COSTS ASSOCIATED WITH THE USE OF OFF-SITE SPOIL AREAS AND THE REMOVAL OF SPOIL/SURPLUS MATERIALS AND OFF SITE STORAGE/MARSHALLING YARDS SHALL BE INCLUDED IN VARIOUS ITEMS IN THE CONTRACT.
4. ALL FRAMES, GRATES, COVERS AND HOODS FOR CATCH BASINS AND SEWER MANHOLES WILL BE FURNISHED BY BUFFALO SEWER AUTHORITY (BSA). THE CONTRACTOR IS TO MAKE ARRANGEMENTS TO OBTAIN THE FRAMES, GRATES AND COVERS FROM BSA BY CONTACTING ROSALEEN NOGLE AT 716-851-4664. THE SEWER AUTHORITY REQUIRES A MINIMUM OF 2 WORKING DAYS ADVANCE NOTICE TO MAKE ARRANGEMENTS TO OBTAIN THESE MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR PICK-UP AND DELIVERY AND THERE WILL BE NO SEPARATE PAYMENT.
5. CONSTRUCT ALL SEWERS, LATERALS, CATCH BASINS, MANHOLES, AND ASSOCIATED APPURTENANCES IN CONFORMANCE WITH THE REQUIREMENTS OF THE BUFFALO SEWER AUTHORITY.
6. ALL OLD/REMOVED FRAMES AND GRATES ARE THE PROPERTY OF THE BUFFALO SEWER AUTHORITY. STOCKPILE THEM AT A SECURE LOCATION AND NOTIFY THE BSA OF THEIR AVAILABILITY TO ARRANGE FOR PICK UP.
7. UNLESS OTHERWISE SPECIFIED, ALL TELEPHONE, ELECTRIC AND GAS VALVES, SERVICE BOXES AND COVERS SHALL BE ADJUSTED TO THE FINISHED SURFACES BY THE UTILITY COMPANIES THAT OWN THESE FACILITIES. WATER SERVICE BOXES AND WATER LINE VALVES, SANITARY SEWER MANHOLE COVERS, AND FRESH AIR INLETS SHALL BE ADJUSTED TO THE FINISHED SURFACES UNDER THE APPROPRIATE PAY ITEMS (SEE TABLES ON DWG. NO. DUT-01). ALL OTHER COVERS (INCLUDING THOSE FOR TRAFFIC SIGNALS) SHALL BE ADJUSTED TO THE FINISHED GRADE OF THE PAVEMENT AND PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CORRESPONDING PAVING ITEM.
8. TEST PITS, ITEM 206.05, SHALL ONLY BE PAID FOR IN LOCATIONS SHOWN ON THE PLANS, INCLUDED IN THIS NOTE, AND WHERE APPROVED BY THE ENGINEER PRIOR TO EXCAVATION. AN ALLOWANCE OF 5 TEST PITS, A.O.B.E., IS INCLUDED IN ADDITION TO THOSE DESCRIBED IN PLAN DRAWINGS. FOR ESTIMATING PURPOSES,THE AREA OF EACH TEST PIT WILL BE 8' X 8'. ALL OTHER EXPLORATORY EXCAVATIONS MADE BY THE CONTRACTOR SHALL BE INCLUDED IN THE OTHER CONTRACT BID PRICES; NO SEPARATE PAYMENT.
9. HORIZONTAL CONTROL IS BASED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD83 ADJUSTMENT; ELEVATIONS ARE BASED UPON NORTH AMERICAN VERTICAL DATUM, 1988.
10. PROPOSED SAWCUTS (ITEM 627.50140008) IN PAVEMENT SHALL BE A MINIMUM OF 2 INCHES UNLESS OTHERWISE INDICATED OR ORDERED BY THE ENGINEER. SAWCUTS IN CEMENT CONCRETE SHALL BE THE FULL THICKNESS OF THE MATERIAL (GENERALLY 4-6 INCHES) UNLESS OTHERWISE INDICATED.
11. CONCRETE SIDEWALKS AND SNOW STORAGE AREAS SHALL BE 4 INCHES THICK EXCEPT AT DRIVEWAYS AND CURB RAMPS WHERE THEY SHALL BE 6 INCHES THICK AND CONTAIN REINFORCEMENT. SEE DWG. NO. MT-01 FOR DETAIL AND TABLE OF DRIVEWAY REPLACEMENTS.
12. THE CONTRACTOR IS RESPONSIBLE FOR ALL SURVEY OPERATIONS, CONTROL AND LAYOUT (INCLUDING, BUT NOT LIMITED TO, THE CENTERLINE OF IMPROVEMENT AND PROPOSED GRADING) UNDER ITEM 625.01. THE CITY WILL NOT PROVIDE CAD FILES FOR ANY OF THE CONTENT IN THE CONTRACT DRAWINGS.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

MAINTENANCE JURISDICTION

FOLLOWING COMPLETION AND ACCEPTANCE OF THIS CONTRACT, THE CITY OF BUFFALO AT ITS OWN COST AND EXPENSE, WILL RESUME MAINTENANCE OF NIAGARA STREET AND ALL INTERSECTING CITY OWNED STREETS WITHIN THE PROJECT LIMITS.

NATIONAL GRID CURRENTLY OWNS AND MAINTAINS THE STREET LIGHTING WIRING AND LUMINAIRES WITHIN THE PROJECT LIMITS, BUT UPON COMPLETION OF THIS PROJECT THE CITY OF BUFFALO WILL OWN, OPERATE AND MAINTAIN THE ENTIRE STREET LIGHTING SYSTEM (I.E., CONDUIT, WIRING, LUMINAIRES, FOUNDATIONS, POLES, AND ARMS) WITHIN THE PROJECT LIMITS.

CITY WATER COORDINATION

ALL WORK RELATED TO THE WATER DISTRIBUTION SYSTEM SHALL BE COORDINATED WITH THE CITY OF BUFFALO DEPARTMENT OF PUBLIC WORKS, PARKS, AND STREETS-DIVISION OF WATER, KEN HAPKE, (716) 851-4767. ALL VALVES AND APPURTENANCES ARE TO BE OPERATED ONLY BY AUTHORIZED REPRESENTATIVES OF THE CITY OF BUFFALO. THE CITY OF BUFFALO DPWP&S-DIVISION OF WATER SHALL BE NOTIFIED A MINIMUM OF TEN WORKING DAYS IN ADVANCE OF INTENT TO DO ANY WORK REQUIRING OPERATION OF VALVES AND APPURTENANCES; AND A MINIMUM OF TWO WORKING DAYS ADVANCE NOTICE WHEN OPERATION OF VALVES AND APPURTENANCES IS REQUIRED FOR THE ACTUAL WORK.

CITY WATER USE

THE CONTRACTOR MUST OBTAIN A PERMIT FROM VEOLIA WATER, 2 PORTER AVENUE, BUFFALO NEW YORK, 14201, PRIOR TO ANY USE OF CITY OF BUFFALO HYDRANTS TO OBTAIN WATER FOR CONTRACT WORK.

RESTORATION OF DISTURBED AREAS WITHIN THE RIGHT-OF-WAY

THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 107-08 OF THE NYSDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS. ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED IN THE SPECIFICATIONS AND TO CONDITIONS AT LEAST EQUIVALENT TO THAT EXISTING AT THE BEGINNING OF THEIR OCCUPATION BY THE CONTRACTOR, AS DETERMINED BY THE ENGINEER.

EXCAVATION

1. IN ALL INSTANCES WHERE THE CONTRACTOR EXCAVATES BEYOND THE PAY LIMITS SHOWN FOR TRENCHES, THE CONTRACTOR SHALL FURNISH AND PLACE SELECT BACKFILL AT HIS OWN EXPENSE. IN ALL INSTANCES WHERE THE CONTRACTOR CUTS OR DAMAGES ROADS, SIDEWALKS OR DRIVEWAYS BEYOND THE PAY LIMITS SHOWN, RESTORATION SHALL BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH THE APPLICABLE DETAILS, AT HIS OWN EXPENSE.
2. THE CONTRACTOR SHALL BE ALERT FOR EVIDENCE OF CONTAMINATION, UNUSUAL ODORS, DISCOLORED/STAINED SOILS, OILY SHEENS, SLUDGE, UNUSUAL FILL MATERIAL AND TANKS/PIPING, ETC. DURING EXCAVATION OPERATIONS. IF SIGNS OF CONTAMINATION ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK AND NOTIFY THE ENGINEER SO THAT THE APPROPRIATE EVALUATIONS CAN BE MADE FOR WHATEVER CONDITIONS ARE ENCOUNTERED.

TREE PROTECTION DURING CONSTRUCTION

- A. DEFINITION OF CRITICAL ROOT ZONE

TREE PRESERVATION AREAS WILL BE IDENTIFIED IN THE FIELD BY THE CITY'S DESIGNATED ARBORIST IN COOPERATION WITH CONTRACTOR. THE CRITICAL ROOT ZONE (CRZ) WILL BE CLEARLY MARKED BY THE ARBORIST. THE CONTRACTOR SHALL INSTALL ALL PROPER TREE PROTECTION MEASURES (I.E., TEMPORARY BARRIER FENCE AND TRUNK PROTECTION, SEE GENERAL REQUIREMENTS BELOW) AS DIRECTED BY THE ARBORIST PRIOR TO ANY LAND DISTURBANCE ACTIVITIES NEAR THE TREE. PRESERVATION AREAS. THE CITY'S ARBORIST WILL USE THE FOLLOWING CRITERION TO DETERMINE THE TREE PROTECTION AREAS:

1. FOR INDIVIDUAL TREE, CRZ SHALL BE REPRESENTED BY A CONCENTRIC CIRCLE CENTERED ON THE TRUNK THAT REPRESENTS THE CANOPY DRIPLINE.

2. FOR GROUPS OF TREES, CRZ SHALL FOLLOW THE CONTINUOUS DRIPLINE AROUND THE ENTIRE MASS WITHOUT INTERRUPTION.
- B. GENERAL REQUIREMENTS

1. NO TREES SHALL BE REMOVED WITHOUT SPECIFIC PERMISSION FROM THE COMMISSIONER OF PUBLIC WORKS, PARKS AND STREETS, OR DESIGNEE.

2. PRIOR TO ANY LAND DISTURBANCE, THE CONTRACTOR SHALL INSTALL TEMPORARY PLASTIC BARRIER FENCE (ITEM 607.41010010) OUTSIDE OF THE CRZ OF ANY TREE OR STAND OF TREES TO BE PRESERVED AS IDENTIFIED AND MARKED BY THE ARBORIST. THE ARBORIST MAY REQUIRE TRUNK PROTECTION IN LOCATIONS WHERE PROTECTIVE FENCING MAY NOT BE PRACTICAL (SUCH AS ADJACENT TO TREES INSIDE TREE-PITS OR SMALLER SNOW STORAGE AREAS). IF DIRECTED BY THE ARBORIST, THE CONTRACTOR SHALL INSTALL TRUNK PROTECTION CONSISTING OF 2"x4" OR LARGER PIECES OF LUMBER WRAPPED SECURELY AROUND THE TREE AND TIED TIGHT WITH WIRE. TRUNK PROTECTION OF THE TYPE WILL BE PAID FOR UNDER THE UNIT PRICE BID FOR ITEM 607.41010010. TREE PRESERVATION MEASURES (I.E. BARRIER FENCING AND TRUNK PROTECTION) SHALL REMAIN IN PLACE THROUGHOUT ALL PHASES OF CONSTRUCTION NEAR THE IDENTIFIED TREE PRESERVATION AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IN-KIND REPLACEMENT OR RESTORATION OF TREES DAMAGED BY CONSTRUCTION OPERATIONS.
3. NO GRADE CHANGES, STORAGE OF EQUIPMENT, MATERIALS, DEBRIS, FILL OR DISPOSAL OF LIQUIDS SHALL BE ALLOWED WITHIN THE CRZ.

4. CONSTRUCTION TRAFFIC AND PARKING OF VEHICLES SHALL BE PROHIBITED WITHIN THE CRZ, UNLESS ON PRE-EXISTING SURFACES SUCH AS A ROADWAY, PATH, DRIVEWAY APRON, OR SIDEWALK AS SPECIFIED IN PLAN.

5. NO ROOTS SHALL BE CUT WITHIN THE CRZ WITHOUT 'SPECIAL PROTECTION MEASURES' AS DESCRIBED BELOW.

6. ROOTS CUT OUTSIDE OF THE CRZ MUST BE SEVERED CLEANLY WITH NO JAGGED EDGES, BY A TRENCHER OR SIMILAR EQUIPMENT, ALIGNED RADIAL TO THE TREE. THIS METHOD REDUCES THE LATERAL MOVEMENT OF ROOTS AND SUBSTANTIALLY REDUCES SEVERING OF ROOTS BY OTHER MEANS DURING EXCAVATION. THIS IS PARTICULARLY EFFECTIVE WHERE MULTIPLE TREES HAVE INTERTWINING ROOTS. THIS EFFORT SHALL TAKE PLACE PRIOR TO ANY LAND DISTURBANCE ACTIVITY. NO ROOTS OVER 2 INCHES IN DIAMETER MAY BE CUT WITHOUT SPECIFIC PERMISSION FROM COMMISSIONER OF PUBLIC WORKS, PARKS AND STREETS OR DESIGNEE. THIS WORK SHALL BE PAID FOR UNDER ITEM 614.09 - TREE ROOT PRUNING.

7. WITHIN FOUR HOURS OF SEVERANCE, ALL TREE ROOTS THAT HAVE BEEN EXPOSED AND/OR DAMAGED SHALL BE TRIMMED CLEANLY AND COVERED TEMPORARILY WITH MOIST PEAT MOSS, BURLAP, OR OTHER BIO-DEGRADABLE MATERIAL TO PREVENT DESICCATION BEFORE PERMANENT COVER CAN BE INSTALLED. THIS WORK SHALL BE PAID FOR UNDER ITEM 614.09 - TREE ROOT PRUNING.

8. NO TOXIC MATERIALS, INCLUDING PETROLEUM PRODUCTS, HERBICIDES, ETC. SHALL BE STORED WITHIN 100' OF THE CRZ.

9. SEDIMENT, RETENTION, AND DETENTION BASINS SHALL NOT BE LOCATED WITHIN THE CRZ. THESE BASINS SHALL NOT DISCHARGE DIRECTLY INTO CRZ, UNLESS TRANSITIONED BACK INTO SHEET FLOW PRIOR TO ENTERING SAID ZONES OR ADEQUATE NATURAL CHANNEL.

10. PRUNING OF LOW BRANCHES OVER ROADWAYS, PATHS, DRIVEWAY APRONS, OR SIDEWALKS SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION WORK AS DIRECTED BY THE CITY'S FORESTER AND PROJECT ARBORIST. ALL FINAL CUTS SHALL BE MADE SUFFICIENTLY CLOSE TO THE TRUNK OR PARENT LIMB BUT WITHOUT CUTTING INTO THE BRANCH COLLAR OR LEAVING A PROTRUDING STUB. ALL NECESSARY PRUNING CUTS MUST BE MADE TO PREVENT BARK FROM BEING TORN FROM THE TREE AND TO FACILITATE RAPID HEALING. FLUSH CUTS ARE UNACCEPTABLE. THIS WORK SHALL BE PAID FOR UNDER ITEM 614.0411 OR ITEM 614.0421, DEPENDING ON A TREE'S DIAMETER AT BREAST HEIGHT (DBH).

C. SPECIAL PROTECTION MEASURES

1. EXCAVATION WITHIN THE CRZ MUST BE DONE BY HAND OR WITH PNEUMATIC TOOLS, UNLESS OTHERWISE SPECIFIED, IN ORDER TO EXPOSE ROOTS INTACT. THIS WORK SHALL BE PAID FOR UNDER ITEM 206.04010011 - PNEUMATIC EXCAVATION AND BACKFILL OF TRENCHES.

2. ONCE EXPOSED, ROOTS MUST BE INSPECTED BY ARBORIST, TO DETERMINE WHICH, IF ANY, REQUIRE REMOVAL. ROOT PRUNING (ITEM 614.09) PROCEDURE TO FOLLOW DESCRIPTION INCLUDED WITHIN 'GENERAL REQUIREMENTS'.

3. WHEN PERMITTED OPERATION OF VEHICLES OR EQUIPMENT MUST OCCUR WITHIN THE CRZ, A 6" LAYER OF WOOD BARK MULCH SHALL BE LAID DIRECTLY ON FINISHED GRADE. A 1/2" THICK TREE PROTECTION MAT SHALL BE PLACED ON TOP OF THE MULCH TO PREVENT RUTTING AND SUBSEQUENT COMPACTION. THIS WORK SHALL BE PAID FOR UNDER ITEM 614.11040011 - MULCH FOR TEMPORARY TREE PROTECTION.

D. GREEN INFRASTRUCTURE REQUIREMENTS

1. CRZ MUST BE CONSIDERED DURING CONSTRUCTION.

2. NO PERFORATED PIPE UNDERDRAINAGE SHALL BE INSTALLED WITHIN THE CRZ OF EXISTING TREES OR IMMEDIATELY ADJACENT TO NEW PLANTER AREAS WHERE TREES ARE PROPOSED TO BE PLANTED TO AVOID ROOT/INFRASTRUCTURE CONFLICTS AS THE TREES GROW.

3. IF UNDERDRAINAGE IS REQUIRED BY CITY ENGINEER AND MUST BE INSTALLED INSIDE PROPOSED PLANTER AREAS, NATIVE SHRUBS OR GRASSES SHALL BE PLANTED ONLY (NO TREES).

4. NO PERMEABLE COURSE AGGREGATE SHALL BE INSTALLED WITHIN CRZ OF EXISTING TREES, EXISTING SUB SOIL BASE WITH CRITICAL ROOTS SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.

5. NO UTILITIES SUCH AS ELECTRICAL CONDUIT, OUTLETS OR IRRIGATION LINES ARE TO BE INSTALLED IN TREE PLANTERS.
- | ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED                                                               |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |       |
|-----------------------------------------------------------------------------------------------------------|--|------------------------------------------|-------|
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>GENERAL NOTES |  | DRAWING NO.                              | GN-01 |
|                                                                                                           |  | SHEET NO.                                | 7     |



SIGN AND PAVEMENT MARKING NOTES:

1. SIGN POST FOUNDATIONS SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT IN AREAS OF NEW SIDEWALK.
2. ALL SIGN LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER.
3. SIGNS INADVERTENTLY REMOVED BY THE CONTRACTOR AND NOT SPECIFIED ON THESE PLANS ARE TO BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY OF BUFFALO.
4. PAVEMENT LETTERS AND ARROWS SHOULD BE LOCATED TO AVOID VEHICULAR TURNING AREAS AND DRIVEWAYS IF PRACTICAL.

EROSION AND SEDIMENT CONTROL:

1. IN ACCORDANCE WITH SECTIONS 107-12 AND 209-3.01 OF THE NYSDOT STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL REVIEW THE EROSION AND SEDIMENT CONTROL INCLUDED IN THE CONTRACT DOCUMENTS, AND IF NECESSARY, MODIFY THE PLAN WITH THE CONTRACTOR'S INTENDED SEQUENCE AND TYPES OF OPERATIONS. THE CONTRACTOR'S MODIFIED EROSION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL, ALONG WITH A PROGRESS SCHEDULE THAT ADDRESSES THIS WORK.
2. IN ACCORDANCE WITH SECTIONS 107-12 AND 209-3.01 OF THE NYSDOT STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL DESIGNATE AN "EROSION AND SEDIMENT CONTROL SUPERVISOR" FOR THE PROJECT. THE SUPERVISOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE EROSION AND SEDIMENT CONTROL PLAN AND FOR INSPECTING AND MAINTAINING THE CONTROL MEASURES. THE NAME AND QUALIFICATIONS (TRAINING AND EXPERIENCE) OF THIS INDIVIDUAL SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING EARTHWORK.
3. THE DESIGNATED "EROSION AND SEDIMENT CONTROL SUPERVISOR" SHALL NOTIFY THE ENGINEER IN ADVANCE OF ANY FIELD CHANGES TO THE EROSION AND SEDIMENT CONTROL MEASURES INDICATED IN THE CONTRACT DOCUMENTS. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO SUBMIT A MODIFIED EROSION AND SEDIMENT CONTROL PLAN FOR APPROVAL PRIOR TO IMPLEMENTING ANY FIELD CHANGES.
4. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE FOR WHICH THEY ARE INTENDED AND SHALL REMAIN IN PLACE UNTIL SOILS ARE PERMANENTLY STABILIZED.
5. OTHER EROSION CONTROL MEASURES MAY BE REQUIRED A.O.B.E. IN ADDITION TO SCHEMES SHOWN. PAYMENT FOR ADDITIONAL WORK SHALL BE MADE UNDER THE APPROPRIATE ITEMS IN THE CONTRACT.
6. ITEM 209.11010024, TEMPORARY CATCH BASIN INSERT TRASH, SEDIMENT, AND DEBRIS REMOVAL, SHALL BE USED TO PROTECT ALL DRAINAGE STRUCTURES WITHIN THE PROPOSED PROJECT LIMITS AND AT ALL DRAINAGE STRUCTURES WITHIN CITY RIGHT OF WAY AT ALL OFF-SITE STORAGE YARDS AND MARSHALLING AREAS.

STREET FURNITURE:

1. TRASH RECEPTACLES, ITEM 615.01010110: MANUFACTURER: CUSTOM FABRICATION, INC. HARPURSVILLE, NY (607) 693-3223, MODEL NUMBER: CFTR-016, STYLE: SQUARE RECEPTACLE (OR AN APPROVED EQUAL). ALL STEEL PIECES SHALL BE PHOSPHATE WASHED, PRIMED WITH ZINC RICH PRIMER AND PAINTED WITH AN EXTERIOR GRADE POLYESTER POWDER COAT. THE COLOR SHALL BE BLACK. THE STEEL LINER SHALL BE 20 GAUGE GALVANIZED STEEL. ALL ASSEMBLY HARDWARE SHALL BE STAINLESS STEEL. FINAL DISPOSITION OF EXISTING TRASH RECEPTACLES SHALL BE COORDINATED WITH THE ENGINEER. THE RECEPTACLES SHALL BE EITHER REMOVED AND DISPOSED OF OR COLLECTED AND STOCKPILED FOR PICK-UP BY THE CITY. ALL ASSOCIATED COST INCLUDED IN UNIT PRICE BID FOR ITEM 615.01010110.
2. BENCHES, ITEM 615.08010005: MANUFACTURER: DUMOR, INC. 6-FOOT LONG, 58-SERIES (OR AN APPROVED EQUAL) WITH CENTER AND END ARM RESTS. THE COLOR SHALL BE BLACK. FASTEN BENCHES TO CONCRETE PAD PER MANUFACTURER'S SPECIFICATIONS.
3. SEE DWG. NO. MD-04 FOR BICYCLE RACKS.
4. CONTRACTOR SHALL CONFIRM ALL LOCATIONS OF TRASH RECEPTACLES, BENCHES, AND BICYCLE RACKS WITH THE ENGINEER PRIOR TO INSTALLATION.

RIGHT-OF-WAY NOTES:

1. ALL WORK TO BE PERFORMED UNDER THIS CONTRACT WILL BE WITHIN THE PUBLIC RIGHT-OF-WAY (ROW) IN ACCORDANCE WITH SECTION 105-15 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR IS TO ASSURE HIMSELF THAT ALL WORK IS BEING PERFORMED WITHIN THE ROW, INCLUDING BUT NOT LIMITED TO VEHICLE ACCESS; STORAGE OF EQUIPMENT, MATERIALS, DEBRIS AND WASTE; LANDSCAPING; VEGETATION REMOVAL AND MANAGEMENT; GRADING, SEEDING AND THE INSTALLATION OF TURF; AND THE INSTALLATION OF ANY FENCES OR PROTECTIVE BARRIER.
2. IF CONTRACTOR IS UNABLE TO IDENTIFY THE LIMITS OF THE RIGHTS-OF-WAY WHEN THE CONTRACT CALLS FOR WORK IN THOSE VICINITIES, THE CONTRACTOR MUST CONTACT THE ENGINEER FOR DEFINITIVE BOUNDARY DETERMINATIONS BEFORE ANY WORK MAY BE INITIATED AT THOSE LOCATIONS (STANDARD SPECIFICATIONS SECTIONS 105-10 AND 625).
3. IN ACCORDANCE WITH SECTION 105-15 OF THE STANDARD SPECIFICATIONS, RELEASES FOR ANY NON-ESSENTIAL CONTRACT WORK OUTSIDE OF THE EXISTING RIGHTS-OF-WAY, INCLUDING PLANTINGS, LANDSCAPING OR DRIVEWAY ENHANCEMENT, WILL BE PROVIDED BY THE ENGINEER AND IN NO INSTANCE ARE TO BE SECURED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT INVADE UPON PRIVATE PROPERTIES, LANDS OR BUILDINGS OUTSIDE OF THE RIGHTS-OF-WAY FOR ANY REASON WITHOUT WRITTEN PERMISSION FROM THE PROPERTY OWNER (STANDARD SPECIFICATIONS SECTION 105-15).
4. THE CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGES DONE. ANY SUCH INJURIES OR DAMAGES SHALL BE SATISFACTORILY REPAIRED OR ITEMS REPLACED AT THE CONTRACTOR'S EXPENSE (STANDARD SPECIFICATIONS SECTION 107-08).
5. THE CONTRACTOR SHALL PERFORM ALL WORK REQUIRED FOR CONCRETE SIDEWALK AND ASPHALT RESTORATION INCLUDING BUT NOT LIMITED TO EXCAVATION, SETTING FORMS, AND SURFACE RESTORATION ENTIRELY WITHIN THE EXISTING HIGHWAY BOUNDARY.

CURB:

1. DURING THE COURSE OF CONSTRUCTION, THE ENGINEER MAY DETERMINE THAT ADDITIONAL SECTIONS OF EXISTING CURB NEED TO BE REMOVED AND REPLACED WITHIN THE PROJECT LIMITS (SUCH AS AT SEPARATE AND DISTINCT LOCATIONS OF VARYING LENGTHS, ETC.). IN SUCH CASES, THE CONTRACTOR SHALL PERFORM THIS WORK UNDER THE UNIT PRICE BID FOR ITEM 609.0212, STONE CURB NEAR VERTICAL FACE (NVF).

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
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GENERAL NOTES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. GN-02  
SHEET NO. 8

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



GENERAL NOTES:

1.

ALL WORK SHALL BE COMPLETED BY USING TRAFFIC CONTROL DETAILS ON DWGS. NO. TTC-02 AND PER ITEM 619.01 BASIC WORK ZONE TRAFFIC CONTROL - NYSDOT STANDARD SHEET REFERENCE TABLE ON DWG TTC-02.
2.

WORK ZONE TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE NEW YORK STATE STANDARD SPECIFICATIONS, JANUARY 1, 2023 EDITION, SECTION 619 - WORK ZONE TRAFFIC CONTROL WITH UPDATES, THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE NEW YORK STATE SUPPLEMENT.
3.

THE TYPICAL DETAILS ON THE STANDARD SHEETS, IN THE MUTCD AND HEREIN ON THE PLANS, REFLECT THE MINIMUM REQUIREMENTS. THE ENGINEER SHALL APPROVE ALL MODIFICATIONS TO THESE DETAILS, PRIOR TO IMPLEMENTATION, THAT MAY BE NECESSARY TO ACCOMMODATE SITE SPECIFIC CONDITIONS.
4.

UNLESS OTHERWISE NOTED, ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO MAINTAIN PEDESTRIAN AND VEHICULAR TRAFFIC AS PRESCRIBED HEREIN SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 619.01.
5.

DURING NON-WORK HOURS, CONSTRUCTION EQUIPMENT AND MATERIALS SHALL NOT BE STORED WITHIN 30 FT. OF THE EDGE OF PAVEMENT.
6.

DURING WORK HOURS, NO CONSTRUCTION MATERIAL MAY BE STORED OR PLACED IN THE STREET.
7.

VEHICLES BELONGING TO THE CONTRACTOR OR HIS WORKERS SHALL NOT BE PARKED WITHIN 30 FT. OF THE EDGE OF PAVEMENT ALONG A STREET BEING USED BY THE GENERAL PUBLIC.
8.

IF EXISTING TRAFFIC SIGNALS HAVE TRAFFIC ACTUATED PHASES, DETECTION MUST BE MAINTAINED THROUGHOUT THE CONTRACT. THIS MAY REQUIRE TEMPORARY VEHICLE DETECTION. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 619.1611.
9.

EXISTING TRAFFIC SIGNALS SHALL REMAIN OPERATIONAL AND BE MAINTAINED BY THE CONTRACTOR UNTIL THE PROPOSED TRAFFIC SIGNALS ARE IN PLACE AND OPERATIONAL. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE 619 TRAFFIC SIGNAL MAINTENANCE ITEMS, AS SPECIFIED IN THE TRAFFIC SIGNAL PLAN DRAWINGS.
10.

TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES. THE WIDTH OF THE WORK ZONE SHALL NOT EXCEED 10 FEET, UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.
11.

UNLESS AUTHORIZED BY THE ENGINEER, THE MINIMUM LANE WIDTHS FOR WORK ZONE TRAVEL LANES SHALL BE 10 FT.
12.

BARRIER AND SHADOW VEHICLES SHALL BE REQUIRED AS SHOWN NYSDOT STANDARD SHEETS REFERENCED ON TABLE ON DWG TTC-02.
13.

NO WORK ACTIVITY, EQUIPMENT, VEHICLES AND/OR MATERIALS SHALL BE LOCATED BETWEEN THE BARRIER OR SHADOW VEHICLES AND THE ACTIVE WORK AREA (ROLL AHEAD DISTANCE).
14.

PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER, THE CITY OF BUFFALO POLICE AND FIRE DEPARTMENTS, THE NFTA AND EMERGENCY SERVICES THE NAMES, ADDRESSES AND TELEPHONE NUMBERS OF THE CONTRACTOR'S PRINCIPALS OR REPRESENTATIVES WHO ARE AUTHORIZED TO SECURE LABOR, MATERIALS AND EQUIPMENT FOR EMERGENCY REPAIRS OUTSIDE OF NORMAL WORKING HOURS.

PEDESTRIAN ACCESS NOTES:

1.

THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS WITHIN EACH PHASE OF WORK SUCH THAT INTERRUPTION TO PEDESTRIAN TRAFFIC IS MINIMIZED.
2.

A CONTINUOUS PEDESTRIAN ACCESS ROUTE THAT CONFORMS TO THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) SHALL BE MAINTAINED AT ALL TIMES ON AT LEAST ONE SIDE OF THE STREET. THE CONTRACTOR IS ADVISED THAT HE MAY NEED TO CONSTRUCT PORTIONS OF THE PROPOSED SIDEWALK OR PROVIDE A TEMPORARY PEDESTRIAN FACILITY DURING WORK PERIODS, IN ORDER TO ENSURE COMPLIANCE WITH THE REQUIREMENT FOR A CONTINUOUS PEDESTRIAN ACCESS ROUTE.
3.

SIDEWALK REPLACEMENT OR NEW SIDEWALK CONSTRUCTION IS TO BE SCHEDULED AND COMPLETED BETWEEN LOGICAL TERMINI (I.E., BETWEEN INTERSECTING STREETS) TO ENSURE SAFE PEDESTRIAN CROSSING AND ACCESSIBILITY.
4.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PEDESTRIAN DETOUR PLAN FOR REVIEW BEFORE CLOSING ANY TRAVEL WAYS.
5.

SIDEWALK REMOVAL AND CONSTRUCTION SHALL BE SCHEDULED SO THAT WORK FROM REMOVAL TO REPLACEMENT IS CONTINUOUS AND COMPLETED IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS TO RESIDENTIAL AND COMMERCIAL ESTABLISHMENTS AT ALL TIMES. ALL ASSOCIATED COSTS INCLUDED IN ITEM 619.01.
6.

THE CONTRACTOR SHALL MAINTAIN THE SIDEWALK AND ADJACENT LAND AREAS. IF ANY DISRUPTION OCCURS THAT RESULTS IN BREAKAGE OF THE SIDEWALK OR RUTTING OF THE ADJACENT LAND IN THESE AREAS THEY SHALL BE REPAIRED IMMEDIATELY IN CONFORMANCE WITH ADAAG AT THE CONTRACTOR'S EXPENSE.
7.

TEMPORARY SAFETY FENCING SHALL BE PLACED ALONG ANY TEMPORARY OR PERMANENT SIDEWALK ADJACENT TO ANY EXCAVATION WHICH RESULTS IN A VERTICAL DROP OFF. SAFETY FENCING SHALL BE CONTINUOUS PLASTIC FLUORESCENT ORANGE SUPPORTED BY METAL OR WOOD POSTS. THE FENCING SHOULD BE A MINIMUM OF 4 FT. HIGH AND MAY INCLUDE A TOP AND BOTTOM RAIL TO PROVIDE ADEQUATE SUPPORT, A.O.B.E.
8.

THE PEDESTRIAN DETOUR PLAN SHALL INCLUDE A TEMPORARY FULLY ADA COMPLIANT CURB RAMP WHERE NECESSARY TO BE PLACED WELL IN ADVANCE OF ANY CLOSED CURB RAMPS OR SIDEWALKS. MID BLOCK CROSSINGS ARE NOT RECOMMENDED.

INGRESS/EGRESS NOTES:

1.

THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS WITH ACCESS TO THEIR DRIVEWAYS AS SHOWN IN TEMPORARY TRAFFIC CONTROL DETAILS AND SHALL MAINTAIN THEM THROUGH ALL PHASES OF WORK AND SHALL DELINEATE THEM BY MEANS OF VERTICAL PANELS, TUBULAR MARKERS, CONES OR DRUMS, A.O.B.E.
2.

A MINIMUM OF ONE DRIVEWAY SHALL REMAIN OPEN TO THE TRAVEL LANES FOR ALL COMMERCIAL ESTABLISHMENTS AND FOR ALL MULTIPLE ACCESS PROPERTIES AT ALL TIMES.
3.

WHERE DIRECT ACCESS TO DRIVEWAYS IS NOT POSSIBLE DUE TO CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL PLAN ALTERNATE MEANS OF ACCESS AND SHALL SUBMIT SUCH PLANS TO THE ENGINEER FOR APPROVAL AT LEAST 48 HOURS BEFORE ENACTMENT. OCCUPANTS SHALL HAVE 24 HOURS NOTICE OF ANY PLANS TO ALTER THEIR DRIVEWAY ACCESS. ACCESS SHALL BE RESTORED TO ALL DRIVEWAYS IMMEDIATELY FOLLOWING COMPLETION OF THIS WORK.
4.

THE CONTRACTOR SHALL KEEP TO A MINIMUM MOVEMENTS OF CONSTRUCTION VEHICLES AND EQUIPMENT IN AND OUT OF DESIGNATED TRAVEL LANES. ONLY NECESSARY OR AUTHORIZED VEHICLES AS ORDERED BY THE ENGINEER SHALL BE ALLOWED TO ENTER ANY WORK AREA.
5.

SUITABLE RAMPS SHALL BE INSTALLED TO MAINTAIN SMOOTH TRANSITIONS FROM RESIDENTIAL AND COMMERCIAL DRIVEWAYS THROUGH THE WORK AREA.
6.

WHEN TYPE III BARRICADES ARE USED NEAR DRIVEWAYS OR INTERSECTIONS THEY SHALL BE PLACED IN SUCH A WAY AS TO NOT OBSCURE SIGHT DISTANCE.

TIME RESTRICTIONS

1.

THE CONTRACTOR SHALL CONTACT THE CITY OF BUFFALO PARKS DEPARTMENT IN ROOM 502, BUFFALO CITY HALL, 65 NIAGARA SQUARE, BUFFALO, NEW YORK, (716) 884-9660 TO DETERMINE THE DATES AND TIMES OF SPECIAL EVENTS FOR WHICH PERMITS HAVE BEEN ISSUED AND SHALL SCHEDULE HIS OPERATIONS SO AS TO AVOID CONFLICTS WITH THESE EVENTS.
2.

ALL BIDS SHALL BE BASED ON A WORK-WEEK CONSISTING OF 5 DAYS, 8-HOURS PER DAY, MONDAY THROUGH FRIDAY.

UTILITIES AND TRENCHING WORK ZONE NOTES:

1.

THE CONTRACTOR SHALL COORDINATE UTILITY WORK, SUBCONTRACTOR WORK, PUBLIC MAINTENANCE, OR OTHER CONSTRUCTION OPERATIONS IN THE AREA, AND IS RESPONSIBLE TO ENSURE THAT PROPER MAINTENANCE AND PROTECTION OF TRAFFIC IS ACHIEVED FOR ALL CONDITIONS.
2.

ALL ROADWAY AREAS TEMPORARILY CLOSED FOR TRENCH, CULVERT OR CONDUIT EXCAVATION SHALL BE REOPENED AT THE END OF THE WORKDAY. AT ALL TIMES WHEN WORK IS NOT IN PROGRESS, ALL OPENINGS IN THE ROADWAY SHALL BE COVERED OR BACKFILLED AS FOLLOWS, WITH THE RESTORATION COST INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE EXCAVATION ITEMS:

2.1.

COVER WITH ANCHORED (IF ORDERED BY ENGINEER) STEEL PLATES. IF ANCHORED STEEL PLATES ARE USED, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR HIS APPROVAL THE PROPOSED METHOD OF ANCHORING THE STEEL PLATES PRIOR TO STARTING ANY ROADWAY EXCAVATION. THE STEEL PLATES SHALL BE RAMPED WITH A BITUMINOUS MATERIAL PRIOR TO OPENING THE LANE.

2.2.

BACKFILL IN ACCORDANCE WITH SECTION 203 OF THE NYSDOT STANDARD SPECIFICATIONS TO A DEPTH OF 3 INCHES BELOW THE ADJACENT UNEXCAVATED AREA OR TO A DEPTH AS ORDERED BY THE ENGINEER. CONTRACTOR SHALL COMPLETE THE RESTORATION WITH A LAYER OF PLANT MIX BITUMINOUS MATERIAL (IN ACCORDANCE WITH SECTION 402 OF THE NYSDOT STANDARD SPECIFICATIONS) UP TO THE LEVEL OF THE ADJACENT UNEXCAVATED AREA TO THE SATISFACTION OF THE ENGINEER. ANY RE-EXCAVATION (AND RE-RESTORATION) OF ANY TEMPORARY RESTORATION AREAS SHALL BE INCLUDED IN THE PRICE BID FOR THE RESPECTIVE EXCAVATION ITEM WITH NO EXTRA PAYMENT.

CONSTRUCTION SIGN NOTES:

1.

ALL EXISTING SIGNS, INCLUDING OVERHEAD SIGNS, WHICH CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL SIGN LAYOUT SHALL BE COVERED, REMOVED, STORED OR RESET, AS APPROVED BY THE ENGINEER. ALL APPROPRIATE EXISTING SIGNS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND/OR LOCATION UNLESS OTHERWISE REMOVED, RELOCATED OR REPLACED IN THIS CONTRACT.
2.

SIGNS AT OR NEAR INTERSECTIONS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT A MOTORIST'S OR PEDESTRIAN'S LINE OF SIGHT.
3.

IN CASES WHERE LANE RESTRICTIONS REDUCE THE TRAVEL LANE TO ONE LANE, SIGNS SHALL BE POSTED ON THE RIGHT SIDE OF THE ACTIVE TRAVEL LANE, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
4.

ALL WORK ZONE CONSTRUCTION SIGNS SHALL BE LETTER SIZE C EXCEPT AS NOTED ON SPECIFIC DETAILS OR A.O.B.E.
5.

CONSTRUCTION SIGNS SHALL BE FABRICATED WITH BLACK CHARACTERS ON AN ORANGE BACKGROUND UNLESS OTHERWISE SHOWN ON THE PLANS.
6.

EXISTING SIGNS SHALL BE MAINTAINED IN PLACE AS NECESSARY UNTIL PERMANENT REPLACEMENT SIGNS ARE INSTALLED.
7.

SIGN LOCATIONS ARE APPROXIMATE. THE EXACT LOCATIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
8.

SIGN HEIGHT SHALL BE 7 FT.
9.

ACTUAL FIELD CONDITIONS MAY REQUIRE OTHER SIGNS AND/OR OTHER ARRANGEMENTS OF SIGNS AS DETERMINED BY THE ENGINEER.
10.

W4-2L OR W4-2R SIGNS MAY BE MOVED IF EITHER OBSCURES THE W1-6L OR W1-6R SIGN.
11.

THE CONTRACTOR WILL BE REQUIRED TO COVER AND UNCOVER EXISTING AND CONSTRUCTION SIGNS DURING THE PROJECT. THIS PROCESS WILL BE DIRECTED BY THE ENGINEER.
12.

ALL FLAG TREES SHALL HAVE A MINIMUM OF THREE (3) ORANGE FLAGS. THE BOTTOM OF THE LOWEST FLAG SHALL BE 8 FT. ABOVE PAVEMENT.
13.

IF OVERLAYS ARE TO BE USED TO CHANGE THE SIGN FACE LAYOUT, THE OVERLAYS SHALL BE SECURELY ATTACHED IN SUCH A MANNER AS NOT TO OBSCURE ANY PORTION OF THE SIGN FACE. THE OVERLAY SHALL BE MADE OF THE SAME REFLECTIVE SHEETING AS THE CONSTRUCTION SIGN AND SHALL BE LEGIBLE, BOTH IN DAYLIGHT AND AT NIGHT.

14.

THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN PORTABLE VARIABLE-MESSAGE SIGN(S) AT LOCATION(S) SPECIFIED BY THE ENGINEER AS CONDITIONS MAY DICTATE. PAYMENT WILL BE MADE UNDER ITEM 619.110511 (PVMS) STANDARD SIZE - FULL MATRIX (LED) NO OPTIONAL EQUIPMENT SPECIFIED, NO CELLULAR COMMUNICATIONS REQUIRED.

TEMPORARY MARKINGS AND CHANNELIZATION NOTES:

1.

CHANNELIZATION DEVICES SHALL BE INSTALLED AT INTERVALS INDICATED ON THE TEMPORARY TRAFFIC CONTROL DETAILS.
2.

WHERE POSSIBLE ALL CHANNELIZATION DEVICES ARE TO BE PLACED SO AS TO PROVIDE A MINIMUM 1 FT. CLEARANCE TO THE TRAVELED WAY UNLESS OTHERWISE SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAKE CERTAIN THAT PLACEMENT OF SUCH DEVICES SHALL NOT INTERFERE WITH SIGHT DISTANCE.
3.

REMOVABLE TEMPORARY TAPE MARKINGS (ITEM 619.0903) SHALL BE USED ON EXISTING PAVEMENT WHICH IS TO REMAIN.
4.

ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND STANDARD SHEETS AND MUTCD, AND SHALL CONFORM TO THE TEMPORARY TRAFFIC CONTROL DETAILS. INTERIM PAVEMENT MARKINGS ITEMS 619.100X01 ARE TO ESTABLISH CONSTRUCTION TRAFFIC PATTERNS DURING EACH PHASE/STAGE. TEMPORARY PAVEMENT MARKINGS ITEM 619.0901 IS INTENDED FOR USE ON ANY NEW PAVEMENT OR MILLED SURFACE UNTIL THE SUBSEQUENT COURSE IS PLACED.
5.

PAYMENT FOR BARRICADES AND BARRICADE LIGHTING SHALL BE UNDER ITEM 619.04 TYPE III CONSTRUCTION BARRICADES.
6.

THE CONTRACTOR SHALL NOT MIX DELINEATION DEVICES IN A LINEAR CLOSURE OR TAPER. (IE: CONES, VERTICAL PANELS, TUBULAR MARKERS OR DRUMS SHALL BE USED IN THE SAME TAPER OR CLOSURE) HOWEVER, DIFFERENT DELINEATION DEVICES MAY BE USED IN DIFFERENT AREAS OF THE PROJECT.
7.

ALL CONFLICTING PAVEMENT MARKINGS IN THE TAPER FOR LANE CLOSURES, SHALL BE COMPLETELY REMOVED AS NECESSARY. PAINT AND LIQUID ASPHALT ARE NOT ACCEPTABLE ITEMS FOR COVERING PAVEMENT MARKINGS.

FLAGGING NOTES:

1.

FLAGGER STATIONS SHALL BE ADJACENT TO THE TRAFFIC LANES BEING CONTROLLED AND SHALL BE POSITIONED SO THAT FLAGGER VISIBILITY TO APPROACHING TRAFFIC IS OPTIMIZED. THE FLAGGER SHALL BE READILY VISIBLE TO APPROACHING TRAFFIC WELL IN EXCESS OF THE REQUIRED STOPPING SIGHT DISTANCE FOR THE PREVAILING APPROACH SPEEDS. ACCORDINGLY, THE TANGENT DIMENSIONS ON EACH END OF THE WORK AREA SHALL BE ESTABLISHED TO ACHIEVE THE APPROPRIATE FLAGGER STATION LOCATION, A.O.B.E.
2.

FLAGGERS SHALL BE REQUIRED TO USE TWO-WAY RADIOS, WALKIE- TALKIE OR OTHER FORMS OF ENHANCED COMMUNICATION WHEN ONE FLAGGER IS NOT VISIBLE TO THE OTHER, OR IF THE ENGINEER DEEMS IT NECESSARY.
3.

STOP/SLOW PADDLES SHALL BE USED BY ALL FLAGGERS AND SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE MUTCD. FLAGGER SHALL USE HAND SIGNALS IN CONJUNCTION WITH THE PADDLES AS SHOWN IN THE MUTCD.
4.

ALL LABOR, MATERIALS AND EQUIPMENT ASSOCIATED WITH FLAGGING OPERATIONS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 619.01.
5.

W20-7a "FLAGGER" SIGNS SHALL BE USED WHENEVER FLAGGING OCCURS FOR MORE THAN A BRIEF PERIOD OF TIME (15 MINUTE MAX.). THE SIGN SHALL BE PROMPTLY REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC WHEN THE FLAGGING OPERATION CEASES.
6.

LANE CLOSURES SHALL BE LOCATED TO ENSURE MAXIMUM VISIBILITY.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED                       |  |
|--------------------------------------------------------------------|--|
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90              |  |
| HERTEL AVENUE TO ONTARIO STREET<br>WORK ZONE TRAFFIC CONTROL NOTES |  |

|                                          |        |
|------------------------------------------|--------|
| CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |        |
| DRAWING NO.                              | TTC-01 |
| SHEET NO.                                | 9      |



SEQUENCE OF CONSTRUCTION

1.

PRIOR TO THE START OF EACH CONSTRUCTION STAGE, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A SEQUENCE OF CONSTRUCTION PLAN AND MAINTENANCE AND PROTECTION OF TRAFFIC PLAN. THE CONTRACTOR SHALL ALLOW 10 DAYS FOR REVIEW TIME IN HIS SCHEDULE
2.

WORK ZONE TRAFFIC CONTROL SHALL CONFORM TO THE DETAILS SHOWN ON THE NYSDOT WORK ZONE TRAFFIC CONTROL SHEETS AS IDENTIFIED ON TABLE CONTAINED HEREIN THIS DRAWING. ANY OTHER TRAFFIC CONTROL ARRANGEMENT NOT SHOWN BUT NEEDED FOR THE PROJECT SHALL CONFORM TO THE NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND THE NEW YORK STATE SUPPLEMENT THERETO.
3.

THE PROPOSED SEQUENCE OF CONSTRUCTION PLAN SUBMITTED BY THE CONTRACTOR SHALL CONFORM TO THE FOLLOWING PHASING, STAGING AND OTHER REQUIREMENTS AS FOLLOWS:

PHASE 1 LIMITS: NIAGARA STREET FROM HERTEL AVENUE TO ONTARIO STREET

STAGE 1 - EASTERN HALF OF NIAGARA STREET FROM HERTEL AVENUE TO ARTHUR STREET STA. 168+00 TO STA. 179+00.

STAGE 2 - EASTERN HALF OF NIAGARA STREET FROM ARTHUR STREET TO ONTARIO STREET STA. 179+00 TO 188+00.

GENERAL SCOPE OF PROPOSED WORK ON NIAGARA STREET: STREET NARROWING; REPLACEMENT OF THE DRAINAGE STRUCTURES AND RELATED GREEN INFRASTRUCTURE WORK; SANITARY SEWER REPLACEMENT, SPOT CURB AND UNDERDRAIN REPLACEMENTS; TRAFFIC SIGNALS; NEW STREET LIGHTS, CONDUIT AND WIRING AND RELATED POWER SOURCES; SPOT SIDEWALK AND DRIVEWAY REPLACEMENTS; WATER LINE WORK; MILL AND INLAY THE PAVEMENT; LANDSCAPING; SIGNS AND PAVEMENT MARKINGS AND OTHER INCIDENTAL IMPROVEMENTS.

PHASE 2 LIMITS: NIAGARA STREET FROM HERTEL AVENUE TO ONTARIO STREET

STAGE 1 - WESTERN HALF OF NIAGARA STREET FROM HERTEL AVENUE TO ARTHUR STREET STA. 168+00 TO STA. 179+00.

STAGE 2 - WESTERN HALF OF NIAGARA STREET FROM ARTHUR STREET TO ONTARIO STREET STA. 179+00 TO 188+00.

GENERAL SCOPE OF PROPOSED WORK ON NIAGARA STREET: STREET NARROWING; REPLACEMENT OF THE DRAINAGE STRUCTURES AND RELATED GREEN INFRASTRUCTURE WORK; SPOT CURB AND UNDERDRAIN REPLACEMENTS; TRAFFIC SIGNALS; NEW STREET LIGHTS, CONDUIT AND WIRING AND RELATED POWER SOURCES; SPOT SIDEWALK AND DRIVEWAY REPLACEMENTS; WATER LINE WORK; MILL AND INLAY THE PAVEMENT; LANDSCAPING; SIGNS AND PAVEMENT MARKINGS AND OTHER INCIDENTAL IMPROVEMENTS.

4.

STAGE 1 AND STAGE 2 CANNOT BE CONCURRENT.
5.

WORK ZONE TRAFFIC CONTROL FOR UTILITY INSTALLATIONS (I.E. WATER LINE, SEWER PIPE, TRAFFIC SIGNAL CONDUIT, AND STREET LIGHTING CONDUIT) REQUIRING THE CROSSING OF NIAGARA STREET SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER ON A CASE-BY-CASE BASIS A MINIMUM OF 10 DAYS PRIOR TO THE START OF ANY RELATED WORK.
6.

AFTER SUBSTANTIAL COMPLETION OF THE PROPOSED WORK IN BOTH PHASES, PROCEED WITH THE MILLING AND PAVING OPERATIONS FOR THE ENTIRE JOB. REFER TO THE MILLING & PAVING NOTES BELOW..
7.

UPON COMPLETION OF THE PAVING, FINISH ALL REMAINING WORK AND CLEAN UP.
8.

TREE PLANTING: ALL TREE PLANTINGS MUST BE COORDINATED WITH THE CITY FORESTER PRIOR TO BEGINNING WORK. PLANTING SHALL OCCUR WHILE MATERIAL IS DORMANT DURING THE SPRING (MARCH 15<sup>TH</sup> - MAY 31<sup>ST</sup>) AND FALL (OCTOBER 15<sup>TH</sup> - DECEMBER 31<sup>ST</sup>) SEASONS.
9.

PERENNIALS AND GRASSES PLANTING: MAY 15<sup>TH</sup> TO JULY 1<sup>ST</sup> OR SEPTEMBER 15<sup>TH</sup> TO OCTOBER 15<sup>TH</sup>.
10.

SHRUBS PLANTING: MAY 1<sup>ST</sup> TO JULY 1<sup>ST</sup> OR SEPTEMBER 15TH TO NOVEMBER 1<sup>ST</sup>
11.

WINTER SHUTDOWN: ALL WORK REQUIRED TO PREPARE FOR AND MAINTAIN THE STREET THROUGH A WINTER SHUTDOWN SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 619.01. THE TIME REQUIRED FOR AN APPROVED WINTER SHUTDOWN WILL NOT COUNT TOWARD THE NUMBER OF WORK DAYS SPECIFIED FOR COMPLETION OF THIS CONSTRUCTION CONTRACT.

MILLING & PAVING NOTES

1.

MILLING AND PAVING WORK SHALL BE PERFORMED USING SHORT-TERM TRAFFIC CONTROLS.
2.

ALL TRAFFIC LANES SHALL BE RETURNED TO THEIR NORMAL CONFIGURATION AT THE END OF EACH WORK DAY.
3.

DURING EACH WORK DAY, ASPHALT MILLING AND PAVING OPERATIONS SHALL BE PERFORMED FROM CURB-TO-CURB SO THAT THERE IS NO LONGITUDINAL DROP-OFF.
4.

THE CONTRACTOR SHALL PROVIDE A SMOOTH AND PROPER TRANSITION BETWEEN MILLED AND UNMILLED PAVEMENT SURFACES.
5.

ALL MILLED SURFACES SHALL RECEIVE A FULL-WIDTH TOP COURSE BY THE END OF EACH WORK WEEK.

TEMPORARY STREET LIGHTING NOTES

1.

THE CONTRACTOR SHALL MAINTAIN STREET LIGHTING AT ALL TIMES ON ONE SIDE OF THE STREET. TO ACHIEVE THIS, THE CONTRACTOR MAY BE REQUIRED TO USE TEMPORARY STREET LIGHTING. THERE SHALL BE NO SEPARATE PAYMENT FOR TEMPORARY STREET LIGHTING.
2.

THE CONTRACTOR SHALL COORDINATE THE TEMPORARY LIGHTING SYSTEM AND ALL ASSOCIATED MODIFICATIONS TO THE EXISTING STREET LIGHTING SYSTEM WITH THE OWNER(S) AND MAINTAINING AGENCY(IES) OF THE SYSTEM.
3.

IF REQUIRED, TEMPORARY STREET LIGHTING SYSTEMS SHALL BE OPERATIONAL BEFORE ANY PORTION OF THE EXISTING STREET LIGHTING SYSTEM IS REMOVED FROM OPERATION.
4.

IN ALL AREAS WITH A TEMPORARY STREET LIGHTING SYSTEM THE LIGHTING LEVELS SHALL MEET THE FOLLOWING CRITERIA:

4.1.

AVERAGE ILLUMINATION LEVEL OF 0.9 FTC TO 10 FTC.

4.2.

AVERAGE LEVEL TO MINIMUM POINT UNIFORMITY RATIO OF 3:1 TO 4:1.
5.

THE ENGINEER WILL DETERMINE WHETHER THE LIGHTING LEVELS FOR TEMPORARY STREET LIGHTING SYSTEMS ARE ACCEPTABLE.

NEW YORK STATE THRUWAY AUTHORITY

1.

I-190 OFF/ON RAMP TRAFFIC CONTROL SHALL CONFORM TO NEW YORK STATE THRUWAY AUTHORITY STANDARD SHEET TA 619-16 WORK ZONE TRAFFIC CONTROL AT INTERCHANGES, SERVICE AREAS AND PARKING AREAS, CURRENT VERSION.

<https://www.thruway.ny.gov/business/contractors/standard-sheets/index.shtml>

| ITEM 619.01 BASIC WORK ZONE TRAFFIC CONTROL - NYSDOT STANDARD SHEET REFERENCE |                                                          |                             |                                      |
|-------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------|--------------------------------------|
| PROPOSED SHEET #                                                              | PROPOSED STANDARD SHEET TITLE                            | ROAD TYPE                   | WORK DURATION CATEGORY (SEE 619-010) |
| 619- 002                                                                      | TYPE III CONSTRUCTION BARRICADES (2 SHEETS)              |                             | GENERAL INFORMATION                  |
| 619- 004                                                                      | PORTABLE TEMPORARY WOODEN SIGN SUPPORT                   |                             | GENERAL INFORMATION                  |
| 619- 010                                                                      | WORK ZONE TRAFFIC CONTROL GENERAL NOTES                  |                             | GENERAL INFORMATION                  |
| 619- 011                                                                      | WORK ZONE TRAFFIC CONTROL GENERAL TABLES AND LEGEND      |                             | GENERAL INFORMATION                  |
| 619- 012                                                                      | SIGN TABLE (2 SHEETS)                                    |                             | GENERAL INFORMATION                  |
| 619- 042                                                                      | LANE CLOSURE                                             | NON-FREEWAY                 | STOP AND GO OPERATION                |
| 619-060                                                                       | WZTC PAVEMENT MARKING OPERATIONS                         | NON-FREEWAY                 | PAVEMENT MARKING OPERATIONS          |
| 619- 090                                                                      | TEMPORARY ROAD CLOSURE                                   | TWO-LANE TWO-WAY ROADWAY    | GENERAL/SPECIAL OPERATION            |
| 619- 091                                                                      | TEMPORARY INTERSECTION CLOSURE                           | TWO-LANE TWO-WAY ROADWAY    | GENERAL/SPECIAL OPERATION            |
| 619- 201                                                                      | RIGHT SHOULDER CLOSURE / LANE ENCROACHMENT               | NON-FREEWAY                 | SHORT DURATION                       |
| 619- 202                                                                      | LEFT LANE CLOSURE                                        | MULTILANE UNDIVIDED ROADWAY | SHORT DURATION                       |
| 619- 203                                                                      | RIGHT LANE CLOSURE                                       | MULTILANE UNDIVIDED ROADWAY | SHORT DURATION                       |
| 619- 307                                                                      | LANE CLOSURE WITH FLAGGERS (2 SHEETS)                    | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 308                                                                      | LANE CLOSURE WITH FLAGGER PRIOR TO AN INTERSECTION       | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 309                                                                      | LANE CLOSURE WITH AFAD AND FLAGGER (2 SHEETS)            | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 310                                                                      | SHOULDER CLOSURE                                         | NON-FREEWAY                 | SHORT TERM OPERATION                 |
| 619- 311                                                                      | RIGHT LANE CLOSURE                                       | MULTILANE UNDIVIDED ROADWAY | SHORT TERM OPERATION                 |
| 619- 312                                                                      | TWO WAY LEFT TURN LANE CLOSURE (2 SHEETS)                | MULTILANE UNDIVIDED ROADWAY | SHORT TERM OPERATION                 |
| 619- 314                                                                      | LANE CLOSURE WITH MOVING FLAGGERS                        | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 317                                                                      | SINGLE LANE CLOSURE (2 SHEETS)                           | MULTILANE UNDIVIDED ROADWAY | SHORT TERM OPERATION                 |
| 619- 321                                                                      | SIDEWALK DETOUR / DIVERSION                              | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 322                                                                      | CROSSWALK CLOSURE AND PEDESTRIAN DETOUR                  | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 323                                                                      | FLAGGING OPERATION AT INTERSECTION (2 SHEETS)            | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 324                                                                      | SINGLE LANE SHIFT WITH TWO WAY LEFT TURN LANE (2 SHEETS) | TWO-LANE TWO-WAY ROADWAY    | SHORT TERM OPERATION                 |
| 619- 325                                                                      | DOUBLE INTERIOR LANE CLOSURE (2 SHEETS)                  | MULTILANE TWO-WAY ROADWAY   | SHORT TERM OPERATION                 |
| 619- 407                                                                      | LANE CLOSURE WITH FLAGGERS (2 SHEETS)                    | TWO-LANE TWO-WAY ROADWAY    | INTERMEDIATE OPERATIONS              |
| 619- 410                                                                      | SHOULDER CLOSURE (2 SHEETS)                              | TWO-LANE TWO-WAY ROADWAY    | INTERMEDIATE OPERATIONS              |
| 619- 412                                                                      | TWO WAY LEFT TURN LANE CLOSURE (2 SHEETS)                | MULTILANE UNDIVIDED ROADWAY | INTERMEDIATE OPERATIONS              |
| 619- 414                                                                      | SINGLE LANE CLOSURE (2 SHEETS)                           | MULTILANE UNDIVIDED ROADWAY | INTERMEDIATE OPERATIONS              |
| 619- 421                                                                      | FLAGGING OPERATION AT INTERSECTION (2 SHEETS)            | TWO-LANE TWO-WAY ROADWAY    | INTERMEDIATE OPERATIONS              |
| 619- 422                                                                      | SINGLE LANE SHIFT WITH TWO WAY LEFT TURN LANE (2 SHEETS) | TWO-LANE TWO-WAY ROADWAY    | INTERMEDIATE OPERATIONS              |
| 619- 423                                                                      | DOUBLE INTERIOR LANE CLOSURE (2 SHEETS)                  | MULTILANE TWO-WAY ROADWAY   | INTERMEDIATE OPERATIONS              |
| 619- 503                                                                      | OFFSITE DETOUR (3 SHEETS)                                | NON-FREEWAY                 | LONG TERM OPERATIONS                 |
| 619- 519                                                                      | SIDEWALK DETOUR OR DIVERSION (2 SHEETS)                  | TWO-LANE TWO-WAY ROADWAY    | LONG TERM OPERATIONS                 |
| 619- 520                                                                      | CROSSWALK CLOSURE AND PEDESTRIAN DETOUR (2 SHEETS)       | TWO-LANE TWO-WAY ROADWAY    | LONG TERM OPERATIONS                 |
| 619- 523                                                                      | DOUBLE INTERIOR LANE CLOSURE (2 SHEETS)                  | MULTILANE TWO-WAY ROADWAY   | LONG TERM OPERATIONS                 |
| 619- 524                                                                      | TEMPORARY TRAFFIC SIGNAL (2 SHEETS)                      | TWO-LANE TWO-WAY ROADWAY    | LONG TERM OPERATIONS                 |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
WORK ZONE TRAFFIC CONTROL NOTES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO.   TTC-02  
SHEET NO.       10

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



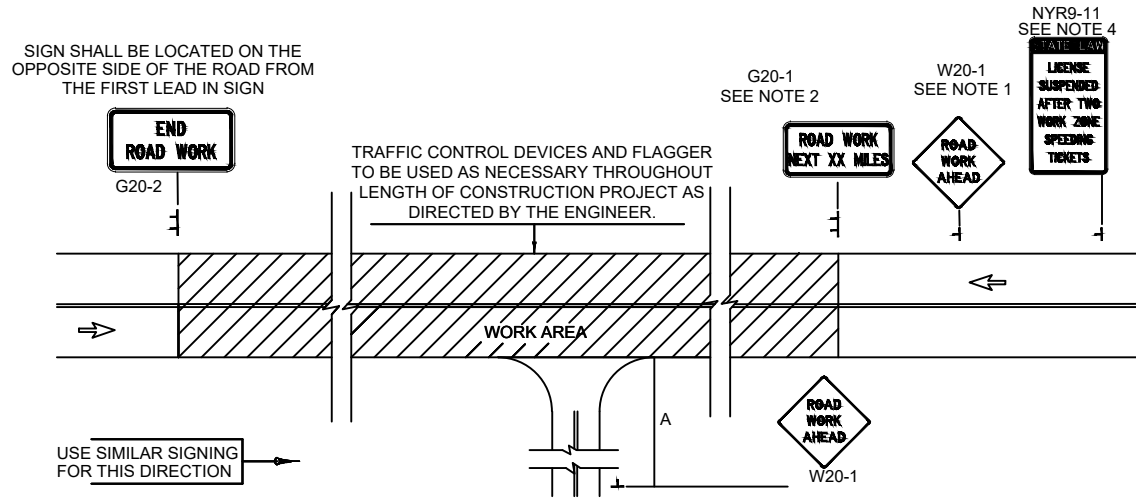
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DATE/TIME = 12/12/2022 9:31:37 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN P. GALBO  
CHECK K. PETERS  
DRAFTING N. KRAMER  
CHECK K. PETERS  
PROJECT MANAGER P. GALBO

DETAIL  
1

### TYPICAL SIGNING

(TRAFFIC MAINTAINED THROUGH PROJECT)

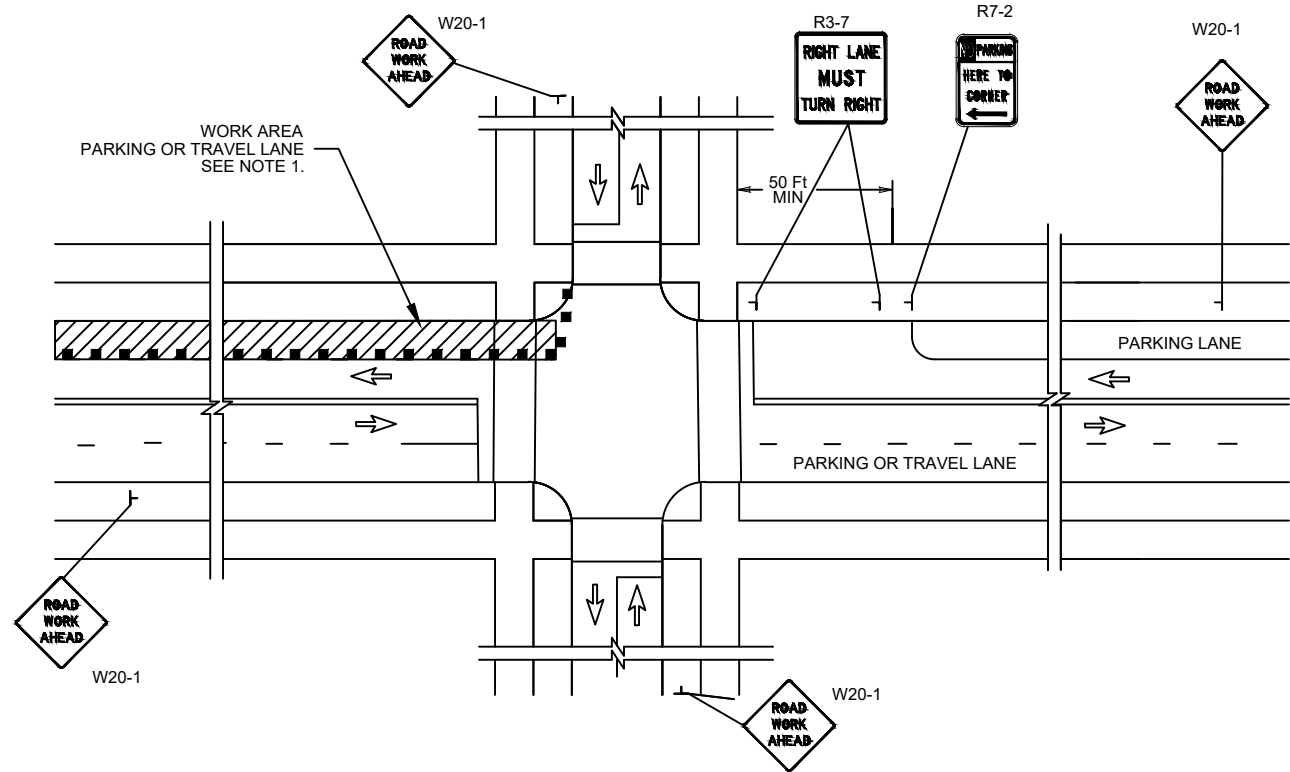


#### NOTES:

1. THE W20-1 SIGN SHALL ONLY BE DISPLAYED WHEN THERE ARE NO OTHER COUNTDOWN SIGNS NEEDED. THEREFORE, IT MAY BE NECESSARY TO TEMPORARILY COVER THE W20-1 SIGN TO AVOID CONFUSION WITH THE COUNTDOWN SIGNS. THE W20-1 SIGN SHALL BE LOCATED FAR ENOUGH UPSTREAM, SO IT DOES NOT INTERFERE WITH THE SEQUENCE OF THE COUNTDOWN SIGNS. LOCATION OF W20-1: SEE TABLE 011-06 ADVANCE WARNING SIGN SPACING ON 619-011 OF THE NYSDOT STANDARD SHEETS.
2. G20-1 SIGN SHALL BE OMITTED FOR PROJECTS LESS THAN 2 MILES. THE SIGN SHALL BE PLACED AFTER THE ROAD WORK XX SIGN, BUT BEFORE ANY OTHER ROAD WORK OR COUNTDOWN SIGNS. DISTANCES SHOWN SHALL BE IN HALF MILE OR WHOLE MILE INCREMENTS. (NO DECIMALS)
3. SIGNING ADVISING MOTORISTS OF LICENSE SUSPENDED SHALL BE INSTALLED ON THE MAINLINE OF ANY HIGHWAY WORK AREA, WHEN THE WORK ENCROACHES ON A TRAVEL LANE. IT SHOULD ALSO BE USED WHERE WORK ENCROACHES ON THE SHOULDER FOR MORE THAN ONE DAY, OR WHERE WORKERS ON THE SHOULDER ARE EXPOSED TO TRAFFIC. LICENSE SUSPENDED SIGN TO BE LOCATED UPSTREAM FROM THE FIRST WARNING SIGN AS FOLLOWS:  
300 FT - 500 FT FOR SPEEDS LESS THAN 45 MPH, 1,000 FT FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH.
4. SIGN NYR9-11 SHALL ONLY BE USED ON PROJECTS THAT DO NOT HAVE A WORK ZONE SPEED LIMIT

DETAIL  
2

### TRAFFIC CONTROL FOR WORK AREA WITH RIGHT LANE CLOSED FOLLOWING PARKING LANE



#### NOTES:

1. W 20-1 SIGNS ARE NOT REQUIRED ON NIAGARA STREET IF THE WORK AREA IS WITHIN THE PREVIOUSLY POSTED ROAD WORK AHEAD PROJECT LIMITS.
2. THE CONTRACTOR SHALL DELINEATE THE PARKING LANES IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT PARKING SIGNS ARE IN PLACE AT ALL LOCATIONS AS NEEDED AND AS DIRECTED BY THE ENGINEER.
4. WHERE PARKING SIGNS ARE MISSING OR ILLEGIBLE, THE CONTRACTOR SHALL PLACE TEMPORARY SIGNS AS NECESSARY.
5. ALL TEMPORARY SIGNS SHALL BE INCLUDED UNDER ITEM 619.01, BASIC WORK ZONE TRAFFIC CONTROL.

|                                           |                    |
|-------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                        | ALTERED BY:<br>ON: |
| <b>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</b> |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90

HERTEL AVENUE TO ONTARIO STREET  
WORK ZONE TRAFFIC CONTROL DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. TTC-03  
SHEET NO. 11

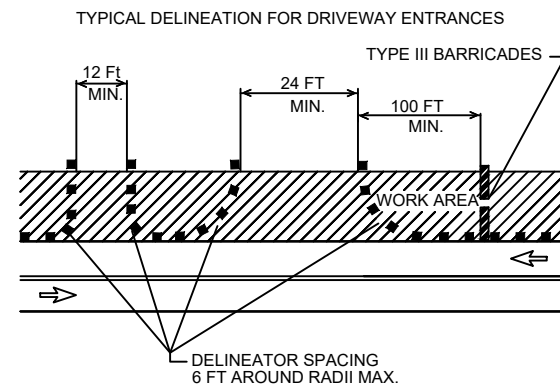
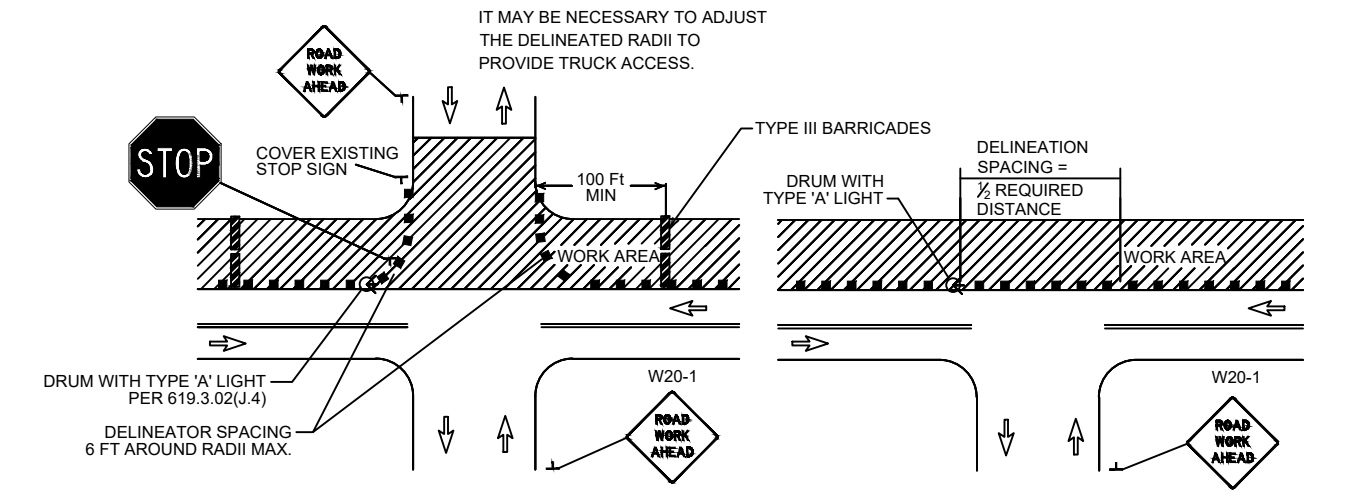
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



(DETAIL  
3)

## INTERSECTION TREATMENT

## TYPICAL DELINEATION AND SIGNING FOR UNSIGNALIZED INTERSECTION RECONSTRUCTION



## DRIVEWAY TREATMENTS

THE CONTRACTOR MUST MAINTAIN AT LEAST ONE DRIVEWAY ENTRANCE TO ALL COMMERCIAL PROPERTIES.

WHEN IT IS NECESSARY TO CLOSE A COMMERCIAL DRIVEWAY DUE TO CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST PROVIDE A TEMPORARY DRIVEWAY TO THE PROPERTY UNLESS THE WORK IS COMPLETED DURING THE ESTABLISHMENTS NON-WORKING HOURS.

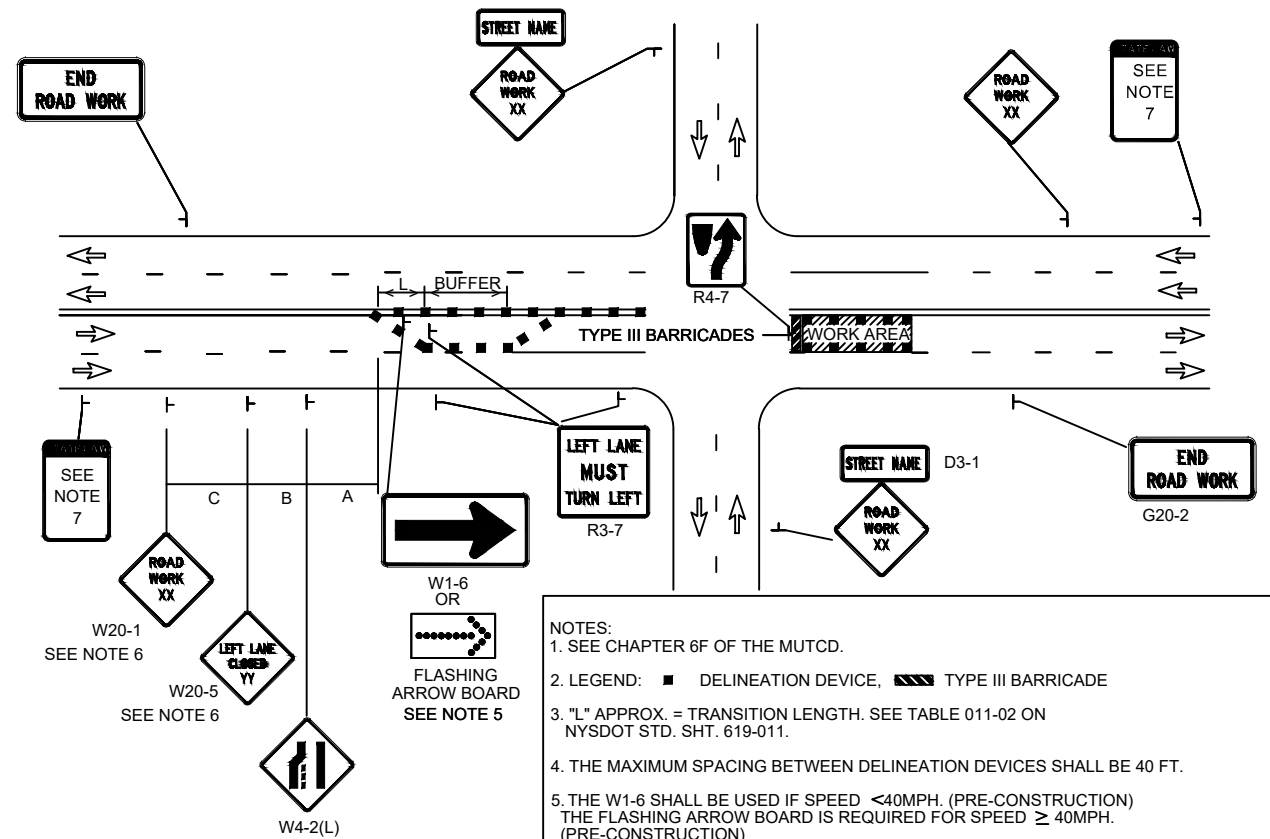
THE CONTRACTOR MUST NOTIFY THE PROPERTY OWNER AT LEAST 24 HOURS IN ADVANCE OF CLOSING THE DRIVEWAY.

A MINIMUM OF 6 DELINEATION DEVICES SHOULD BE USED AROUND THE RADIUS FOR EITHER DRIVEWAYS AND/OR INTERSECTIONS

\* SEE CONST. SPECIFICATION 619-3.02(J) FOR MORE DETAILS,

(DETAIL  
4)

### LEFT LANE CLOSURE ON FAR SIDE OF INTERSECTION



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90

HERTEL AVENUE TO ONTARIO STREET  
WORK ZONE TRAFFIC CONTROL DETAILS

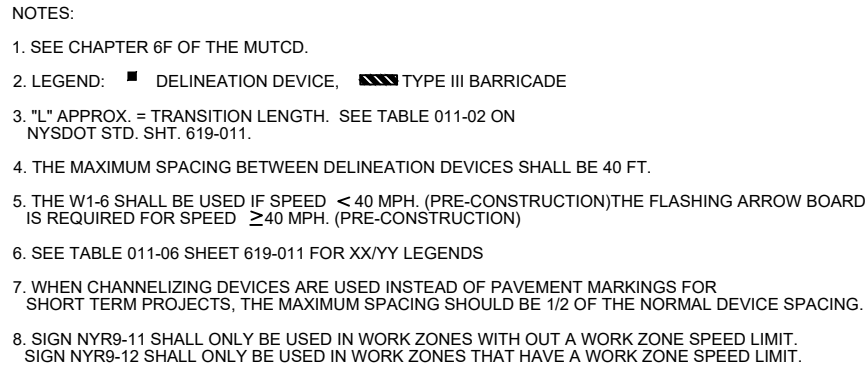
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. TTC-04  
SHEET NO. 12

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



### HALF ROAD CLOSURE ON FAR SIDE OF INTERSECTION



DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

**Watts  
Architects  
&Engineers**

|                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED                                                                                                                                |
| <p><b>NIAGARA STREET CORRIDOR PROJECT</b><br/> <b>PHASE 4B - 5762.90</b></p> <p><b>HERTEL AVENUE TO ONTARIO STREET</b></p> <p><b>WORK ZONE TRAFFIC CONTROL DETAILS</b></p> |

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. TTC-05  
SHEET NO. 13

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

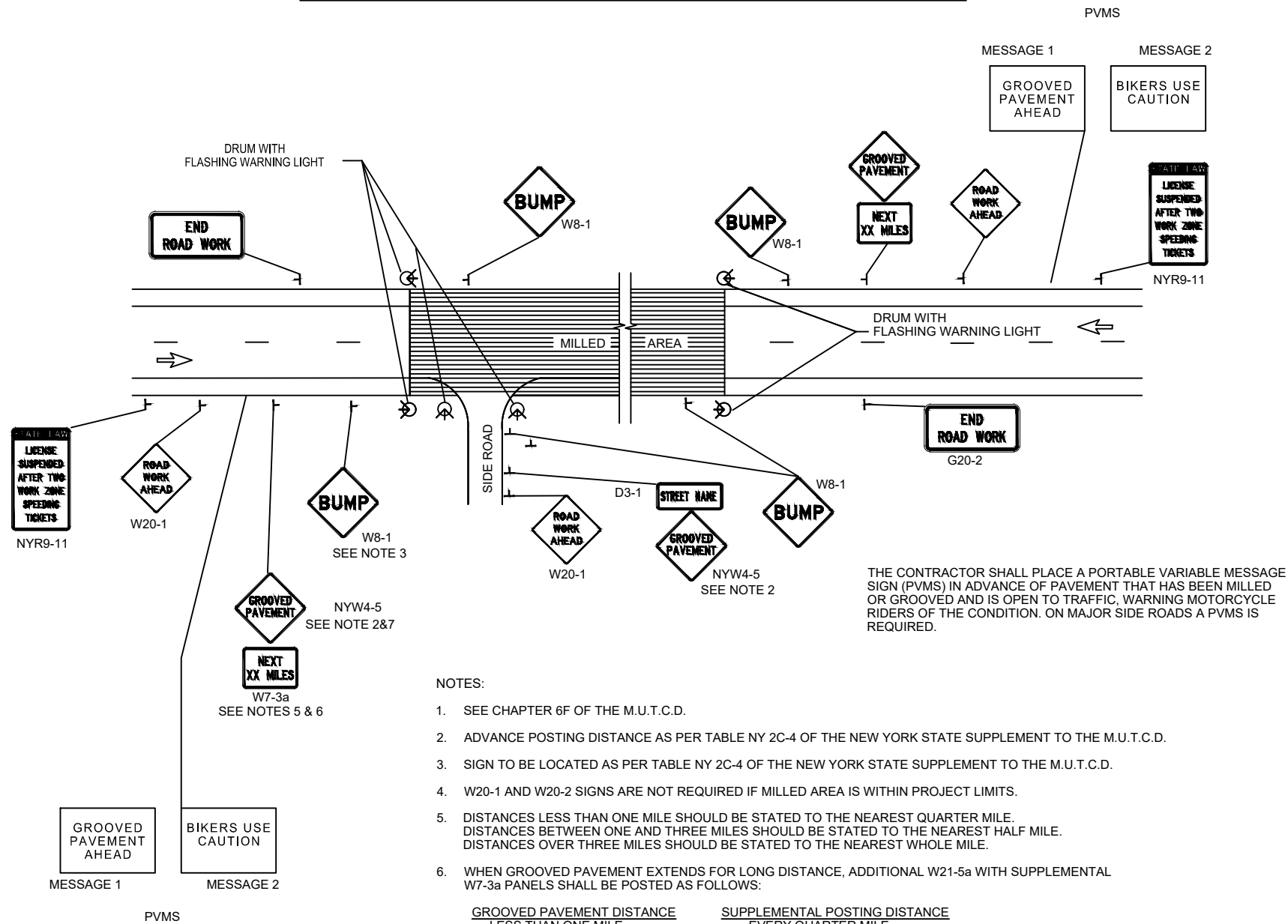


FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R\18\_CADD\Trans\06b Traffic Control Details.dwg  
DATE/TIME = 12/12/2022 9:32:05 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN P. GALBO  
CHECK K. PETERS  
DRAFTING N. KRAMER  
CHECK K. PETERS  
PROJECT MANAGER P. GALBO

DETAIL  
6

TRAFFIC SIGNING FOR MILLED ROADWAY WITH SIDE ROAD



NOTES:

- SEE CHAPTER 6F OF THE M.U.T.C.D.
- ADVANCE POSTING DISTANCE AS PER TABLE NY 2C-4 OF THE NEW YORK STATE SUPPLEMENT TO THE M.U.T.C.D.
- SIGN TO BE LOCATED AS PER TABLE NY 2C-4 OF THE NEW YORK STATE SUPPLEMENT TO THE M.U.T.C.D.
- W20-1 AND W20-2 SIGNS ARE NOT REQUIRED IF MILLED AREA IS WITHIN PROJECT LIMITS.
- DISTANCES LESS THAN ONE MILE SHOULD BE STATED TO THE NEAREST QUARTER MILE. DISTANCES BETWEEN ONE AND THREE MILES SHOULD BE STATED TO THE NEAREST HALF MILE. DISTANCES OVER THREE MILES SHOULD BE STATED TO THE NEAREST WHOLE MILE.
- WHEN GROOVED PAVEMENT EXTENDS FOR LONG DISTANCE, ADDITIONAL W21-5a WITH SUPPLEMENTAL W7-3a PANELS SHALL BE POSTED AS FOLLOWS:

| GROOVED PAVEMENT DISTANCE   | SUPPLEMENTAL POSTING DISTANCE |
|-----------------------------|-------------------------------|
| LESS THAN ONE MILE          | EVERY QUARTER MILE            |
| BETWEEN ONE AND THREE MILES | EVERY HALF MILE               |
| GREATER THAN THREE MILES    | EVERY WHOLE MILE              |

WHEN THE NYW4-5 IS LOCATED WITHIN 1,000 Ft OF MILLED AREA, THE W7-3a PANEL SHALL BE OMITTED.
- ADDITIONAL SIGNING, SUPPLEMENTED WITH AUXILIARY MILEAGE SUBPANELS MAY BE REQUIRED AT APPROPRIATE INTERVALS.
- WHEN SIDE STREET IS MILLED AS WELL. THE STREET NAME SIGN IS NOT REQUIRED.

|                                           |                    |
|-------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                        | ALTERED BY:<br>ON: |
| <b>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</b> |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

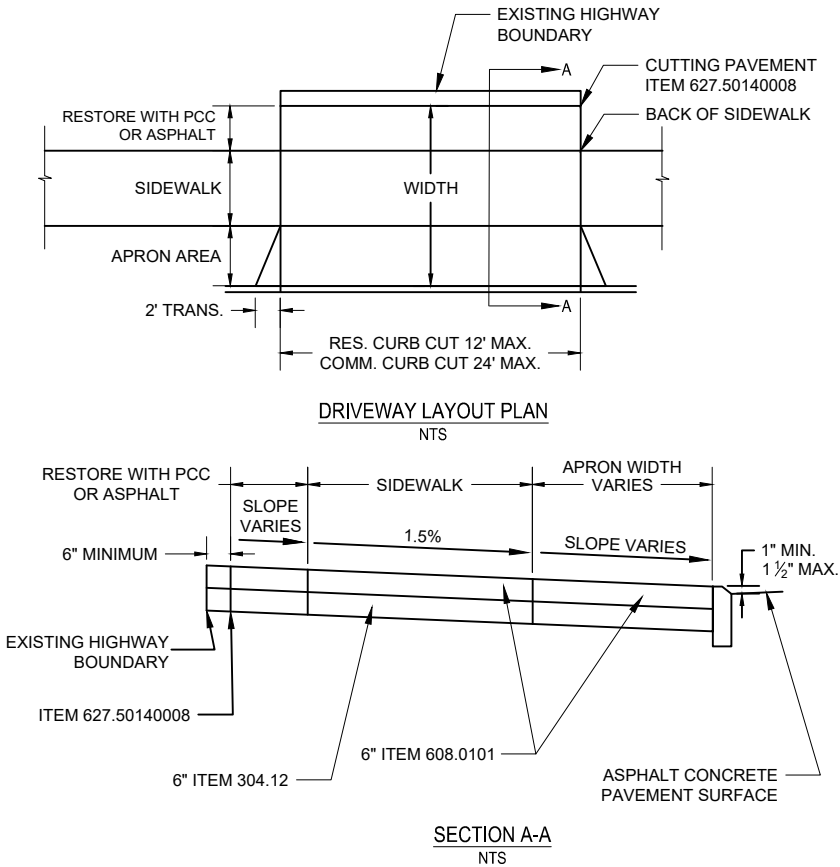
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
WORK ZONE TRAFFIC CONTROL DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. TTC-06  
SHEET NO. 14

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





- NOTES:
- DRIVEWAY CONCRETE SHALL BE 6" THICK AND SHALL INCLUDE WIRE MESH. COST INCLUDED IN THE UNIT PRICE BID FOR ITEM 608.0101.
  - STATION VALUE ALONG NIAGARA STREET REPRESENTS THE SOUTHERN LIMIT OF THE PROPOSED CURB CUT AT A GIVEN DRIVEWAY.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRIVEWAY PLACEMENT TABLE

ITEM 608.0101 CONCRETE SIDEWALKS AND DRIVEWAYS (SEE NOTE 1)  
ITEM 608.020102 HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS

|                      |      |                                                                    | DRIVEWAY DIMENSIONS |       |        | APRON  |       |           | SIDEWALK |       |           | ADDITIONAL RESTORATION |       |           | ITEM 608.0101<br>(CY) | ITEM 608.020102<br>(TON) |
|----------------------|------|--------------------------------------------------------------------|---------------------|-------|--------|--------|-------|-----------|----------|-------|-----------|------------------------|-------|-----------|-----------------------|--------------------------|
| STATION (SEE NOTE 2) | SIDE | TREATMENT                                                          | LENGTH              | WIDTH | TRANS. | LENGTH | WIDTH | AREA (SF) | LENGTH   | WIDTH | AREA (SF) | LENGTH                 | WIDTH | AREA (SF) |                       |                          |
| 169+93               | LT   | APRON REPLACEMENT                                                  | 11.9                | 13.7  | 2.0    | 11.9   | 8.7   | 120.6     | 11.8     | 5.0   | 59.0      | -                      | -     | 0         | 3.33                  | 0                        |
| 170+38               | LT   | FULL REPLACEMENT                                                   | 14.4                | 20.8  | 2.0    | 14.4   | 8.7   | 144.0     | 14.4     | 12.0  | 172.5     | 14.0                   | 3.2   | 44.8      | 5.86                  | 1.13                     |
| 171+47               | LT   | FULL REPLACEMENT                                                   | 7.5                 | 23.9  | 2.0    | 7.5    | 8.7   | 82.1      | 7.5      | 15.2  | 114.0     | -                      | -     | 0         | 3.63                  | 0                        |
| 172+18               | LT   | FULL REPLACEMENT                                                   | 19.1                | 21.1  | 2.0    | 19.1   | 8.9   | 187.2     | 19.1     | 12.2  | 235.1     | 13.7                   | 3.0   | 41.4      | 7.82                  | 1.04                     |
| 172+75               | LT   | FULL REPLACEMENT                                                   | 11.4                | 24.1  | 2.0    | 11.3   | 8.7   | 116.2     | 11.5     | 15.3  | 176.2     | -                      | -     | 0         | 5.41                  | 0                        |
| 173+25               | LT   | FULL REPLACEMENT                                                   | 14.7                | 13.8  | 2.0    | 14.7   | 8.5   | 146.3     | 14.7     | 5.0   | 73.6      | 13.5                   | 1.5   | 20.3      | 4.07                  | 0.51                     |
| 173+73               | LT   | FULL REPLACEMENT                                                   | 9.1                 | 24.1  | 2.0    | 9.8    | 8.8   | 103.5     | 9.1      | 15.3  | 130.9     | -                      | -     | 0         | 4.34                  | 0                        |
| 174+04               | LT   | FULL REPLACEMENT                                                   | 9.1                 | 24.1  | 2.0    | 9.1    | 9.1   | 96.7      | 9.1      | 15.2  | 139.5     | -                      | -     | 0         | 4.37                  | 0                        |
| 174+98               | LT   | FULL REPLACEMENT                                                   | 10.5                | 24.0  | 2.0    | 11.9   | 8.6   | 120.3     | 12.1     | 15.3  | 160.6     | -                      | -     | 0         | 5.20                  | 0                        |
| 175+33               | LT   | FULL REPLACEMENT                                                   | 24.0                | 24.1  | 2.0    | 24.0   | 8.8   | 225.5     | 24.0     | 15.3  | 279.9     | 8.5                    | 10.3  | 88.0      | 9.36                  | 2.21                     |
| 176+06               | LT   | FULL REPLACEMENT                                                   | 24.0                | 13.7  | 2.0    | 24.0   | 8.7   | 226.9     | 24.0     | 5.0   | 119.0     | 24.0                   | 10.4  | 247.0     | 6.41                  | 6.22                     |
| 177+98               | LT   | FULL REPLACEMENT                                                   | 35.8                | 31.0  | 2.0    | 35.8   | 15.6  | 589.7     | 35.8     | 5.0   | 179.3     | 36.5                   | 10.5  | 384.7     | 14.24                 | 9.68                     |
| 179+13               | LT   | FULL REPLACEMENT                                                   | 37.1                | 31.1  | 2.0    | 37.1   | 16.0  | 639.2     | 37.1     | 5.0   | 185.5     | 33.0                   | 10.1  | 345.2     | 15.27                 | 8.69                     |
| 182+71               | LT   | FULL REPLACEMENT                                                   | 30.5                | 23.2  | 2.0    | 30.5   | 14.6  | 475.7     | 30.5     | 8.4   | 266.9     | 35.8                   | 1.5   | 53.7      | 13.75                 | 1.35                     |
| 184+15               | LT   | FULL REPLACEMENT/<br>NARROWING: 0.8' FROM SOUTH<br>2.5' FROM NORTH | 26.0                | 19.6  | 2.0    | 26.0   | 14.7  | 411.7     | 26.2     | 5.0   | 129.2     | 26.4                   | 1.5   | 39.7      | 10.02                 | 1.00                     |
| 185+37               | LT   | FULL REPLACEMENT                                                   | 27.1                | 19.6  | 2.0    | 27.1   | 14.7  | 427.8     | 27.1     | 5.0   | 135.5     | 27.1                   | 1.5   | 40.6      | 10.43                 | 1.02                     |
| 169+09               | RT   | FULL REPLACEMENT                                                   | 8.7                 | 17.4  | 2.0    | 8.3    | 8.1   | 83.0      | 8.7      | 9.3   | 81.9      | -                      | -     | 0         | 3.05                  | 0                        |
| 169+39               | RT   | FULL REPLACEMENT                                                   | 8.4                 | 19.0  | 2.0    | 8.4    | 9.4   | 97.8      | 8.4      | 9.6   | 80.2      | -                      | -     | 0         | 3.30                  | 0                        |
| 169+69               | RT   | FULL REPLACEMENT                                                   | 8.0                 | 20.4  | 2.0    | 8.1    | 10.7  | 107.4     | 8.0      | 9.7   | 78.0      | -                      | -     | 0         | 3.43                  | 0                        |
| 169+98               | RT   | FULL REPLACEMENT                                                   | 11.4                | 22.0  | 2.0    | 11.4   | 12.3  | 164.9     | 11.4     | 5.0   | 56.7      | 12.3                   | 4.8   | 59        | 4.10                  | 1.48                     |
| 172+31               | RT   | FULL REPLACEMENT                                                   | 8.3                 | 24.1  | 2.0    | 8.3    | 14.2  | 146.1     | 8.3      | 5.0   | 40.2      | 8.3                    | 5.0   | 43.1      | 3.45                  | 1.08                     |
| 172+63               | RT   | FULL REPLACEMENT                                                   | 9.0                 | 24.0  | 2.0    | 8.5    | 14.2  | 149.8     | 9.0      | 5.0   | 43.8      | 8.5                    | 5.0   | 41.7      | 3.59                  | 1.05                     |
| 172+93               | RT   | FULL REPLACEMENT                                                   | 8.1                 | 24.2  | 2.0    | 8.1    | 14.3  | 144.0     | 8.1      | 5.0   | 40.0      | 9.7                    | 4.9   | 47.8      | 3.41                  | 1.20                     |
| 173+24               | RT   | FULL REPLACEMENT                                                   | 8.4                 | 24.2  | 2.0    | 8.4    | 14.5  | 150.8     | 8.4      | 9.7   | 76.3      | -                      | -     | 0         | 4.21                  | 0                        |
| 173+55               | RT   | FULL REPLACEMENT                                                   | 8.2                 | 24.2  | 2.0    | 8.2    | 14.7  | 149.5     | 8.2      | 9.5   | 75.6      | -                      | -     | 0         | 4.17                  | 0                        |
| 173+87               | RT   | FULL REPLACEMENT                                                   | 9.1                 | 24.2  | 2.0    | 9.1    | 14.6  | 162.5     | 9.1      | 9.5   | 85.8      | -                      | -     | 0         | 4.60                  | 0                        |
| 174+18               | RT   | FULL REPLACEMENT                                                   | 8.7                 | 24.3  | 2.0    | 8.7    | 14.8  | 158.3     | 8.7      | 9.6   | 84.9      | -                      | -     | 0         | 4.50                  | 0                        |
| 175+50               | RT   | APRON REPLACEMENT                                                  | -                   | -     | 2.0    | 20.0   | 15.0  | 330.0     | -        | -     | 0         | -                      | -     | 0         | 6.11                  | 0                        |
| 176+14               | RT   | APRON REPLACEMENT                                                  | -                   | -     | 2.0    | 9.0    | 15.0  | 165.0     | -        | -     | 0         | -                      | -     | 0         | 3.06                  | 0                        |
| 176+44               | RT   | FULL REPLACEMENT                                                   | 7.8                 | 24.2  | 2.0    | 7.8    | 14.8  | 145.0     | 7.8      | 5.0   | 39.4      | 7.8                    | 4.4   | 34.7      | 3.42                  | 0.87                     |
| 176+72               | RT   | FULL REPLACEMENT                                                   | 9.3                 | 24.2  | 2.0    | 9.3    | 14.8  | 168.4     | 9.3      | 9.3   | 86.6      | -                      | -     | 0         | 4.72                  | 0                        |
| 177+04               | RT   | FULL REPLACEMENT                                                   | 7.8                 | 24.2  | 2.0    | 7.8    | 14.8  | 146.7     | 7.8      | 9.3   | 70.4      | -                      | -     | 0         | 4.02                  | 0                        |
| 177+64               | RT   | FULL REPLACEMENT                                                   | 10.7                | 24.1  | 2.0    | 10.7   | 14.9  | 188.6     | 10.7     | 5.0   | 51.4      | 10.3                   | 4.5   | 45.7      | 4.44                  | 1.15                     |
| 180+78               | RT   | FULL REPLACEMENT/<br>NARROWING: 30.4' FROM SOUTH                   | 25.6                | 31.1  | 2.0    | 25.0   | 15.5  | 417.9     | 25.6     | 5.0   | 128.1     | 26.0                   | 10.5  | 274.9     | 10.11                 | 6.92                     |
| 182+99               | RT   | FULL REPLACEMENT                                                   | 33.3                | 30.9  | 2.0    | 33.3   | 15.4  | 544.2     | 33.3     | 5.0   | 174.3     | 28.9                   | 10.2  | 294.3     | 13.31                 | 7.41                     |
| 184+56               | RT   | FULL REPLACEMENT                                                   | 29.2                | 27.4  | 2.0    | 29.2   | 15.6  | 484.6     | 29.2     | 5.0   | 148.8     | 25.8                   | 6.9   | 174.3     | 11.73                 | 4.39                     |
| 185+00               | RT   | APRON REPLACEMENT/<br>NARROWING: 2.8' FROM SOUTH                   | -                   | -     | 2.0    | 45.0   | 15.2  | 711.2     | -        | -     | 0         | -                      | -     | 0         | 13.17                 | 0                        |
| 185+96               | RT   | APRON REPLACEMENT/<br>NARROWING: 4' FROM SOUTH                     | -                   | -     | 2.0    | 43.9   | 15.1  | 692.6     | -        | -     | 0         | -                      | -     | 0         | 12.83                 | 0                        |
| TOTAL ITEM:          |      |                                                                    |                     |       |        |        |       |           |          |       |           |                        |       |           | 252.24                | 58.40                    |

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
MISCELLANEOUS TABLES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. MT-01  
SHEET NO. 15





| TREE REMOVAL TABLE                                                                     |               |      |                 |                 |                 |
|----------------------------------------------------------------------------------------|---------------|------|-----------------|-----------------|-----------------|
| ITEM 614.060104 TREE REMOVAL OVER 4" TO 6" DIAMETER AT BREAST HEIGHT, STUMPS GRUBBED   |               |      |                 |                 |                 |
| ITEM 614.060204 TREE REMOVAL OVER 6" TO 12" DIAMETER AT BREAST HEIGHT, STUMPS GRUBBED  |               |      |                 |                 |                 |
| ITEM 614.060304 TREE REMOVAL OVER 12" TO 18" DIAMETER AT BREAST HEIGHT, STUMPS GRUBBED |               |      |                 |                 |                 |
| STATION                                                                                | OFFSET (FEET) | SIDE | 614.060104 (EA) | 614.060204 (EA) | 614.060304 (EA) |
| 173+47                                                                                 | 31.2          | LT   |                 |                 | 1               |
| 174+22                                                                                 | 30.4          | LT   |                 | 1               |                 |
| 174+40                                                                                 | 30.9          | LT   |                 | 1               |                 |
| 175+92                                                                                 | 29.3          | LT   | 1               |                 |                 |
| 176+69                                                                                 | 29.0          | LT   | 1               |                 |                 |
| 177+61                                                                                 | 29.6          | LT   | 1               |                 |                 |
| 178+53                                                                                 | 29.0          | LT   | 1               |                 |                 |
| 179+69                                                                                 | 30.0          | LT   | 1               |                 |                 |
| 179+96                                                                                 | 29.9          | LT   | 1               |                 |                 |
| 181+18                                                                                 | 30.9          | LT   |                 | 1               |                 |
| 181+34                                                                                 | 43.6          | LT   |                 | 1               |                 |
| 181+49                                                                                 | 30.9          | LT   |                 | 1               |                 |
| 181+63                                                                                 | 43.7          | LT   |                 | 1               |                 |
| 182+04                                                                                 | 32.5          | LT   |                 | 1               |                 |
| 174+06                                                                                 | 32.1          | RT   | 1               |                 |                 |
| 179+49                                                                                 | 28.8          | RT   |                 | 1               |                 |
| TOTAL ITEM:                                                                            |               |      | 7               | 8               | 1               |

| EXISTING GAS VALVE ADJUSTMENTS   |             |      |                |
|----------------------------------|-------------|------|----------------|
| WORK TO BE DONE BY NATIONAL FUEL |             |      |                |
| STATION                          | OFFSET (FT) | SIDE | QUANTITY (EA.) |
| 169+40                           | 46.5        | RT   | 1              |
| 169+68                           | 46.7        | RT   | 1              |
| 170+81                           | 46.6        | RT   | 1              |
| 171+28                           | 47.9        | RT   | 1              |
| 171+78                           | 45.2        | RT   | 1              |
| 172+94                           | 44.9        | RT   | 1              |
| 173+52                           | 41.6        | RT   | 1              |
| 173+89                           | 44.3        | RT   | 1              |
| 174+15                           | 42.1        | RT   | 1              |
| 174+34                           | 42.2        | RT   | 1              |
| 177+06                           | 45.8        | RT   | 1              |
| 178+25                           | 45.8        | RT   | 1              |
| 183+41                           | 39.2        | RT   | 1              |
| 184+60                           | 42.4        | RT   | 1              |
| 171+21                           | 36.4        | LT   | 1              |
| 171+75                           | 35.0        | LT   | 1              |
| 172+66                           | 34.7        | LT   | 1              |
| 172+85                           | 34.8        | LT   | 1              |
| 173+80                           | 34.7        | LT   | 1              |
| 174+49                           | 34.8        | LT   | 1              |
| 175+36                           | 35.0        | LT   | 1              |
| 175+70                           | 34.5        | LT   | 1              |
| TOTAL ITEM:                      |             |      | 22             |

| CURB RAMP TABLE                                   |          |                   |              |                         |
|---------------------------------------------------|----------|-------------------|--------------|-------------------------|
| ITEM 608.21 DETECTABLE WARNING UNITS              |          |                   |              |                         |
| LOCATION                                          | QUADRANT | CROSSING          | NYS DOT TYPE | DETECTABLE WARNING (SY) |
| HERTEL STREET AND NIAGARA STREET                  | NE       | HERTEL            | 7            | 1.11                    |
| HERTEL STREET AND NIAGARA STREET                  | NE       | NIAGARA           | 7            | 1.11                    |
| GRACE STREET AND NIAGARA STREET                   | SE       | GRACE             | 1 *          | 1.11                    |
| GRACE STREET AND NIAGARA STREET                   | NE       | GRACE             | 1 *          | 1.11                    |
| GARFIELD STREET AND NIAGARA STREET                | SE       | GARFIELD          | 1 *          | 1.11                    |
| GARFIELD STREET AND NIAGARA STREET                | NE       | GARFIELD          | 1 *          | 1.11                    |
| ARTHUR STREET AND NIAGARA STREET                  | SE       | ARTHUR            | 1 *          | 1.11                    |
| ARTHUR STREET AND NIAGARA STREET                  | NE       | ARTHUR            | 1 *          | 1.11                    |
| 190 OFF RAMP AND NIAGARA STREET (NORTH OF ARTHUR) | SW       | 190 OFF RAMP      | 1 *          | 1.11                    |
| 190 OFF RAMP AND NIAGARA STREET (NORTH OF ARTHUR) | NE       | NIAGARA           | 11           | 1.11                    |
| 190 OFF RAMP AND NIAGARA STREET (NORTH OF ARTHUR) | NW       | 190 OFF RAMP      | 1 *          | 1.11                    |
| 190 OFF RAMP AND NIAGARA STREET (NORTH OF ARTHUR) | NW       | NIAGARA           | 1 *          | 1.11                    |
| BLACK ROCK HARBOR ROAD AND NIAGARA STREET         | SW       | BLACK ROCK HARBOR | 1 *          | 1.11                    |
| BLACK ROCK HARBOR ROAD AND NIAGARA STREET         | NW       | BLACK ROCK HARBOR | 3            | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | SE       | NIAGARA           | 1 *          | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | SE       | ONTRARIO          | 1 *          | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | SW       | NIAGARA           | 1*           | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | SW       | 190 ON RAMP       | 1*           | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | NW       | 190 ON RAMP       | 1*           | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | NW       | NIAGARA           | 11           | 1.11                    |
| ONTARIO STREET / I-190 ON RAMP AND NIAGARA STREET | NE       | ONTARIO           | 9            | 1.11                    |
| TOTAL ITEM:                                       |          |                   |              | 23.31                   |

\* SEE NOTE 23 ON STANDARD SHEET 608-01 (SHEET 1) FOR SIDE FLARE SLOPE RESTRICTIONS.

| TREE PLANTING TABLE                                                                                               |      |             |                               |                        |     |
|-------------------------------------------------------------------------------------------------------------------|------|-------------|-------------------------------|------------------------|-----|
| ITEM 611.0171 PLANTING-MAJOR DECIDUOUS TREES-3 INCH CALIPER BALL & BURLAP, FIELD POTTED OR FIELD BOXED (SEE NOTE) |      |             |                               |                        |     |
| STATION                                                                                                           | SIDE | OFFSET (FT) | GENUS SPECIES                 | COMMON NAME            | QTY |
| 170+61                                                                                                            | LT   | 30.9        | GLEDITSIA TRIACANTHOS INERMIS | THORNLESS HONEY LOCUST | 1   |
| 173+47                                                                                                            | LT   | 29.8        | GLEDITSIA TRIACANTHOS INERMIS | THORNLESS HONEY LOCUST | 1   |
| 174+22                                                                                                            | LT   | 30.0        | KOELREUTERIA PANICULATA       | GOLDEN RAIN TREE       | 1   |
| 174+61                                                                                                            | LT   | 30.1        | GLEDITSIA TRIACANTHOS INERMIS | THORNLESS HONEY LOCUST | 1   |
| 174+88                                                                                                            | LT   | 29.9        | KOELREUTERIA PANICULATA       | GOLDEN RAIN TREE       | 1   |
| 175+92                                                                                                            | LT   | 31.3        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 176+69                                                                                                            | LT   | 31.1        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 177+64                                                                                                            | LT   | 31.2        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 178+60                                                                                                            | LT   | 31.1        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 178+90                                                                                                            | LT   | 31.3        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 179+91                                                                                                            | LT   | 28.6        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 181+49                                                                                                            | LT   | 28.7        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 181+96                                                                                                            | LT   | 29.4        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 182+35                                                                                                            | LT   | 29.9        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 171+06                                                                                                            | RT   | 28.6        | KOELREUTERIA PANICULATA       | GOLDEN RAIN TREE       | 1   |
| 172+51                                                                                                            | RT   | 33.0        | GLEDITSIA TRIACANTHOS INERMIS | THORNLESS HONEY LOCUST | 1   |
| 174+06                                                                                                            | RT   | 32.2        | KOELREUTERIA PANICULATA       | GOLDEN RAIN TREE       | 1   |
| 177+90                                                                                                            | RT   | 32.8        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 180+01                                                                                                            | RT   | 30.2        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 180+44                                                                                                            | RT   | 31.0        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 182+23                                                                                                            | RT   | 33.7        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| 184+33                                                                                                            | RT   | 35.0        | CELTIS OCCIDENTALIS           | HACKBERRY              | 1   |
| 185+68                                                                                                            | RT   | 30.0        | GINKGO BILOBA                 | MAIDENHAIR TREE        | 1   |
| ITEM TOTAL:                                                                                                       |      |             |                               |                        | 23  |

NOTES:

1. ALL TREES SHALL BE BALLED AND BURLAPPED. THIS REQUIREMENT SHALL SUPERSEDE THE SPECIFICATION LANGUAGE FOR ITEM 611.0171.
2. ALL TREES SHALL BE INSTALLED WITH A PORTABLE DRIP IRRIGATION SYSTEM, ITEM 611.17 AND REQUIRE WATERING, ITEM 610.19.
3. ALL TREES SHALL RECEIVE POST-PLANTING CARE WITH REPLACEMENT, ITEM 611.19010024

| PAVEMENT CROSS SLOPES |             |      |                                |                    |
|-----------------------|-------------|------|--------------------------------|--------------------|
| START STATION         | END STATION | SIDE | TRAVEL LANES SLOPE             | PARKING LANE SLOPE |
| 169+23                | 170+00      | RT   | -2.0%                          | -1.5%              |
| 170+00                | 171+00      | RT   | -2.0%                          | -1.5% TO -2.5%     |
| 171+00                | 171+26      | RT   | -2.0%                          | -2.5% TO -5.0%     |
| 171+82                | 174+83      | RT   | -2.0%                          | -4.0%              |
| 175+33                | 178+87      | RT   | -2.0%                          | -4.0%              |
| 179+40                | 179+75      | RT   | -1.0%                          | -1.5%              |
| 179+75                | 180+33      | RT   | -1.0% TO -1.5%                 | -1.5%              |
| 180+33                | 180+50      | RT   | -1.5%                          | --                 |
| 180+50                | 181+12      | RT   | -1.5% TO -2.0%                 | --                 |
| 181+12                | 185+00      | RT   | -2.0%                          | --                 |
| 185+00                | 185+50      | RT   | -2.0% TO -1.5%                 | --                 |
| 185+50                | 186+08      | RT   | MATCH EXISTING SUPER ELEVATION |                    |
| 169+23                | 170+00      | LT   | -2.0%                          | -2.0%              |
| 170+00                | 170+50      | LT   | -2.0%                          | -2.0% TO -4.0%     |
| 170+50                | 176+54      | LT   | -2.0%                          | -4.0%              |
| 176+54                | 180+28      | LT   | -2.0%                          | --                 |
| 181+10                | 184+51      | LT   | -1.5%                          | --                 |
| 185+24                | 186+09      | LT   | -2.0%                          | --                 |

| T.G.L. ELEVATION TABLE |           |
|------------------------|-----------|
| STATION                | ELEVATION |
| 169+25                 | 584.87    |
| 169+50                 | 584.90    |
| 170+00                 | 584.86    |
| 170+50                 | 584.73    |
| 171+00                 | 584.67    |
| 171+50                 | 584.53    |
| 172+00                 | 584.36    |
| 172+50                 | 584.24    |
| 173+00                 | 584.03    |
| 173+50                 | 583.88    |
| 174+00                 | 583.67    |
| 174+50                 | 583.46    |
| 175+00                 | 583.37    |
| 175+50                 | 583.16    |
| 176+00                 | 583.04    |
| 176+50                 | 582.86    |
| 177+00                 | 582.64    |
| 177+50                 | 582.42    |
| 178+00                 | 582.16    |
| 178+50                 | 582.01    |
| 179+00                 | 581.79    |
| 179+50                 | 581.20    |
| 180+00                 | 580.67    |
| 180+50                 | 580.09    |
| 181+00                 | 579.31    |
| 181+50                 | 578.37    |
| 182+00                 | 577.50    |
| 182+50                 | 576.76    |
| 183+00                 | 576.06    |
| 183+50                 | 575.47    |
| 184+00                 | 575.10    |
| 184+50                 | 574.68    |
| 185+00                 | 574.63    |
| 185+50                 | 574.44    |
| 186+00                 | 574.38    |
| 186+30                 | 574.50    |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED                                                                       |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |       |
|------------------------------------------------------------------------------------------------------------------|--|------------------------------------------|-------|
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>MISCELLANEOUS TABLES |  | DRAWING NO.                              | MT-02 |
|                                                                                                                  |  | SHEET NO.                                | 16    |



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USER = Victoria Coners

JOB MANAGER T. DUK      DESIGN P. PFLEUGER      CHECK V. CONERS/A. SIGETI      DRAFTING T. BUCKLEY      CHECK V. CONERS/A. SIGETI      PROJECT MANAGER P. GALBO

| SIGN REMOVAL TABLE                                                                                                                  |      |                  |                  |                  |                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------|------|------------------|------------------|------------------|-------------------------------------------------------|
| ITEM 647.31 - RELOCATE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET)                                                |      |                  |                  |                  |                                                       |
| ITEM 647.51 - REMOVE AND DISPOSE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET)                                      |      |                  |                  |                  |                                                       |
| ITEM 647.61 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET) |      |                  |                  |                  |                                                       |
| LOCATION                                                                                                                            |      | ITEM 647.31 (EA) | ITEM 647.51 (EA) | ITEM 647.61 (EA) | DESCRIPTION                                           |
| STATION                                                                                                                             | SIDE |                  |                  |                  |                                                       |
| 169+37                                                                                                                              | LT   |                  | 1**              |                  | NO PARKING / NO STANDING / RIGHT LANE MUST TURN RIGHT |
| 170+27                                                                                                                              | RT   |                  | 1                |                  | NO PARKING                                            |
| 171+27                                                                                                                              | LT   |                  | 1                |                  | ROUTE SIGNS / NO PARKING                              |
| 171+76                                                                                                                              | RT   |                  |                  | 1                | STOP                                                  |
| 171+86                                                                                                                              | RT   |                  | 1                |                  | STREET NAME SIGNS / NO PARKING                        |
| 172+96                                                                                                                              | LT   |                  | 1                |                  | NO PARKING                                            |
| 174+31                                                                                                                              | RT   |                  |                  | 1                | NO STANDING / NO PARKING                              |
| 174+81                                                                                                                              | RT   |                  |                  | 1*               | NFTA BUS STOP                                         |
| 175+28                                                                                                                              | RT   |                  |                  | 1                | STOP                                                  |
| 175+37                                                                                                                              | RT   |                  | 1                |                  | STREET NAME SIGNS / NO PARKING                        |
| 176+43                                                                                                                              | LT   |                  | 1                |                  | NO PARKING                                            |
| 177+59                                                                                                                              | RT   |                  | 1                |                  | ROUTE SIGNS / NO PARKING                              |
| 177+60                                                                                                                              | RT   | 1                |                  |                  | SHORELINE TRAIL SIGN                                  |
| 179+32                                                                                                                              | RT   |                  |                  | 1                | STOP                                                  |
| 179+39                                                                                                                              | RT   |                  |                  | 1                | STREET NAME SIGNS                                     |
| 179+75                                                                                                                              | LT   |                  |                  | 1                | NO STANDING                                           |
| 180+26                                                                                                                              | RT   |                  |                  | 1*               | NFTA BUS STOP                                         |
| 182+87                                                                                                                              | RT   | 1                |                  |                  | PEACE BRIDGE SIGN/ARROW                               |
| 180+46                                                                                                                              | LT   |                  |                  | 1                | DO NOT ENTER / WRONG WAY                              |
| 180+52                                                                                                                              | LT   |                  |                  | 1                | ONE WAY                                               |
| 180+98                                                                                                                              | LT   |                  |                  | 1                | DO NOT ENTER / WRONG WAY                              |
| 181+05                                                                                                                              | LT   |                  | 1                |                  | NO STANDING                                           |
| 183+43                                                                                                                              | RT   |                  | 1                |                  | CITY SPEED LIMIT / NO STANDING                        |
| 184+00                                                                                                                              | LT   | 1                |                  |                  | SHORELINE TRAIL SIGN                                  |
| 183+97                                                                                                                              | RT   |                  |                  | 1                | PED CROSSING                                          |
| 184+44                                                                                                                              | LT   |                  | 1                |                  | PEACE BRIDGE / ARROW / NO STANDING                    |
| 184+48                                                                                                                              | RT   |                  |                  | 1                | RIGHT LANE MUST TURN RIGHT                            |
| 184+59                                                                                                                              | LT   |                  | 1                |                  | NO STANDING                                           |
| 184+72                                                                                                                              | LT   |                  |                  | 1                | STOP / STREET NAME SIGNS                              |
| 185+50                                                                                                                              | RT   |                  |                  | 1                | RIGHT TURN ONLY EXCEPT FOR BUSES                      |
| 185+72                                                                                                                              | LT   |                  |                  | 1*               | NFTA BUS STOP                                         |
| 185+78                                                                                                                              | RT   |                  | 1                |                  | ROUTE SIGNS                                           |
| 186+51                                                                                                                              | RT   |                  |                  | 1*               | NFTA BUS STOP                                         |
| TOTAL ITEM:                                                                                                                         |      | 3                | 13               | 17               |                                                       |

\* ALL EXISTING BUS STOP SIGN PANELS WILL BE REMOVED AND REPLACED BY THE N.F.T.A. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THE REMAINING SIGN POSTS AND FOUNDATIONS UNDER ITEM 647.61 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET), THE CONTRACTOR SHALL CONFIRM THE NEW BUS STOP SIGN LOCATIONS WITH THE N.F.T.A. PRIOR TO INSTALLING THE NEW SIGN POSTS AND FOUNDATIONS, ITEM 645.81 AND ITEM 645.8107, RESPECTIVELY. THE CONTRACTOR SHALL INSTALL THE NEW FOUNDATIONS PRIOR TO PLACING ANY NEW SIDEWALK THAT WILL SURROUND THE FOUNDATIONS AS APPLICABLE.

\*\* SIGNS SHALL REMAIN OR BE RESET TEMPORARILY UNTIL CONTRACTOR CONSTRUCTING PHASE 4A HAS INSTALLED THE PROPOSED CURB EXTENSION.

| CURB PLACEMENT TABLE                               |                   |             |                 |      |                    |
|----------------------------------------------------|-------------------|-------------|-----------------|------|--------------------|
| TEM 609.0212 - STONE CURB NEAR VERTICAL FACE (NVF) |                   |             |                 |      |                    |
| STATION BEGIN                                      | OFFSET BEGIN (FT) | STATION END | OFFSET END (FT) | SIDE | ITEM 609.0212 (LF) |
| 168+23.5                                           | 66.0              | 168+22.5    | 58.4            | RT   | 5.7                |
| 168+22.5                                           | 58.4              | 168+51.1    | 24.3            | RT   | 50.2               |
| 168+51.1                                           | 24.3              | 168+74.5    | 23.5            | RT   | 23.4               |
| 168+74.5                                           | 23.5              | 168+86      | 30.0            | RT   | 13.6               |
| 168+88.0                                           | 30.0              | 170+34.4    | 23.8            | RT   | 146.6              |
| 170+34.4                                           | 23.8              | 171+24.1    | 24.4            | RT   | 89.6               |
| 171+26.1                                           | 24.4              | 171+41.8    | 37.9            | RT   | 22.6               |
| 171+41.8                                           | 37.9              | 171+43.7    | 51.5            | RT   | 13.8               |
| 171+74.5                                           | 50.6              | 171+72.4    | 35.4            | RT   | 15.4               |
| 171+72.4                                           | 35.4              | 171+82.4    | 24.7            | RT   | 16.6               |
| 171+82.4                                           | 24.7              | 174+83.4    | 24.5            | RT   | 298.8              |
| 174+83.4                                           | 24.7              | 174+94.3    | 34.6            | RT   | 16.3               |
| 174+94.3                                           | 34.6              | 174+97.9    | 59.5            | RT   | 23.2               |
| 175+25.6                                           | 55.6              | 175+22.8    | 35.2            | RT   | 18.5               |
| 175+22.8                                           | 35.2              | 175+32.8    | 24.4            | RT   | 16.7               |
| 175+32.8                                           | 24.4              | 178+86.5    | 25.0            | RT   | 353.8              |
| 178+86.5                                           | 25.0              | 178+97.1    | 34.1            | RT   | 15.2               |
| 178+97.1                                           | 34.1              | 179+00.1    | 52.1            | RT   | 16.2               |
| 179+29.2                                           | 45.9              | 179+28.1    | 39.3            | RT   | 6.7                |
| 179+28.1                                           | 39.3              | 179+39.9    | 25.3            | RT   | 20.8               |
| 179+39.9                                           | 25.3              | 179+99.2    | 25.4            | RT   | 59.0               |
| 179+99.2                                           | 25.4              | 180+21.6    | 26.1            | RT   | 20.2               |
| 180+21.6                                           | 26.1              | 180+33.4    | 19.0            | RT   | 14.1               |
| 180+33.4                                           | 19.0              | 186+32.8    | 21.9            | RT   | 590.3              |
| 186+32.8                                           | 21.9              | 186+73.6    | 38.2            | RT   | 45.7               |
| 186+73.6                                           | 38.2              | 186+85.1    | 48.5            | RT   | 15.4               |
| 187+67.3                                           | 42.3              | 187+80.9    | 28.6            | RT   | 19.7               |
| 169+34.6                                           | 27.5              | 176+43.1    | 25.1            | LT   | 704.8              |
| 176+43.1                                           | 25.1              | 176+54.3    | 18.0            | LT   | 13.6               |
| 176+54.3                                           | 18.0              | 180+28.5    | 18.5            | LT   | 368.6              |
| 180+28.5                                           | 18.5              | 180+58.6    | 58.9            | LT   | 57.8               |
| 180+58.6                                           | 58.9              | 180+57.3    | 64.2            | LT   | 3.5                |
| 180+97.2                                           | 41.3              | 181+03.4    | 22.4            | LT   | 19.9               |
| 181+03.4                                           | 22.4              | 181+08.1    | 19.1            | LT   | 6.1                |
| 181+08.1                                           | 19.1              | 184+51.1    | 22.2            | LT   | 342.6              |
| 184+51.1                                           | 22.2              | 184+75.1    | 48.4            | LT   | 40.0               |
| 184+75.1                                           | 48.4              | 184+74.7    | 56.7            | LT   | 8.3                |
| 184+97.9                                           | 55.3              | 184+99.2    | 44.1            | LT   | 11.3               |
| 184+99.2                                           | 44.1              | 185+23.8    | 22.1            | LT   | 36.1               |
| 185+23.8                                           | 22.1              | 186+08.7    | 21.6            | LT   | 82.9               |
| 186+08.7                                           | 21.6              | 186+34.0    | 46.0            | LT   | 39.0               |
| 186+34.0                                           | 46.0              | 186+34.2    | 54.2            | LT   | 8.2                |
| 186+75.3                                           | 41.3              | 186+85.9    | 31.9            | LT   | 15.0               |
| 187+15.0                                           | 26.3              | 187+30.0    | 25.7            | LT   | 15.0               |
| ITEM TOTAL:                                        |                   |             |                 |      | 3720.8             |

NOTE:

DURING THE COURSE OF CONSTRUCTION, THE ENGINEER MAY DETERMINE THAT ADDITIONAL SECTIONS OF EXISTING CURB NEED TO BE REMOVED AND REPLACED WITHIN THE PROJECT LIMITS (SUCH AS AT SEPARATE AND DISTINCT LOCATIONS OF VARYING LENGTHS, ETC.). IN SUCH CASES, THE CONTRACTOR SHALL PERFORM THIS WORK UNDER THE UNIT PRICE BID FOR ITEM 609.0212, STONE CURB NEAR VERTICAL FACE (NVF).

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



| ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED                                                                      |  |
|------------------------------------------------------------------------------------------------------------------|--|
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>MISCELLANEOUS TABLES |  |

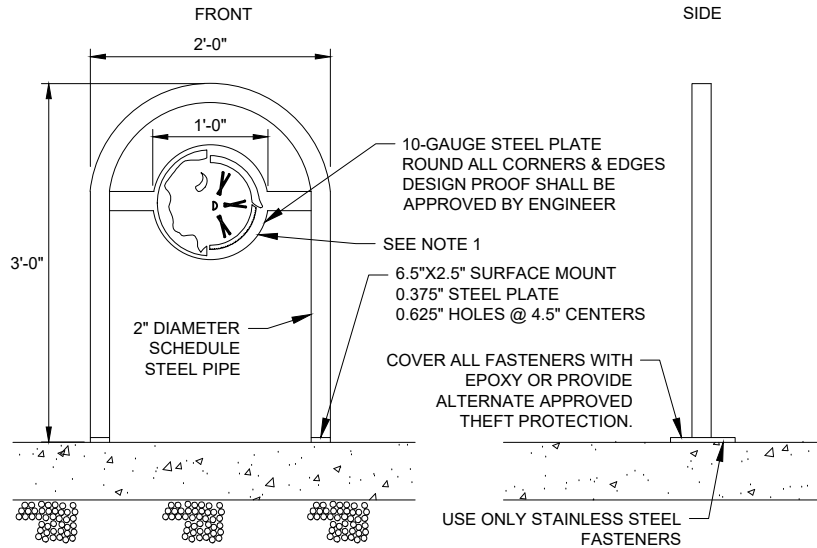
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|------------------------------------------|-------|
| CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |       |
| DRAWING NO.                              | MT-03 |
| SHEET NO.                                | 17    |

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

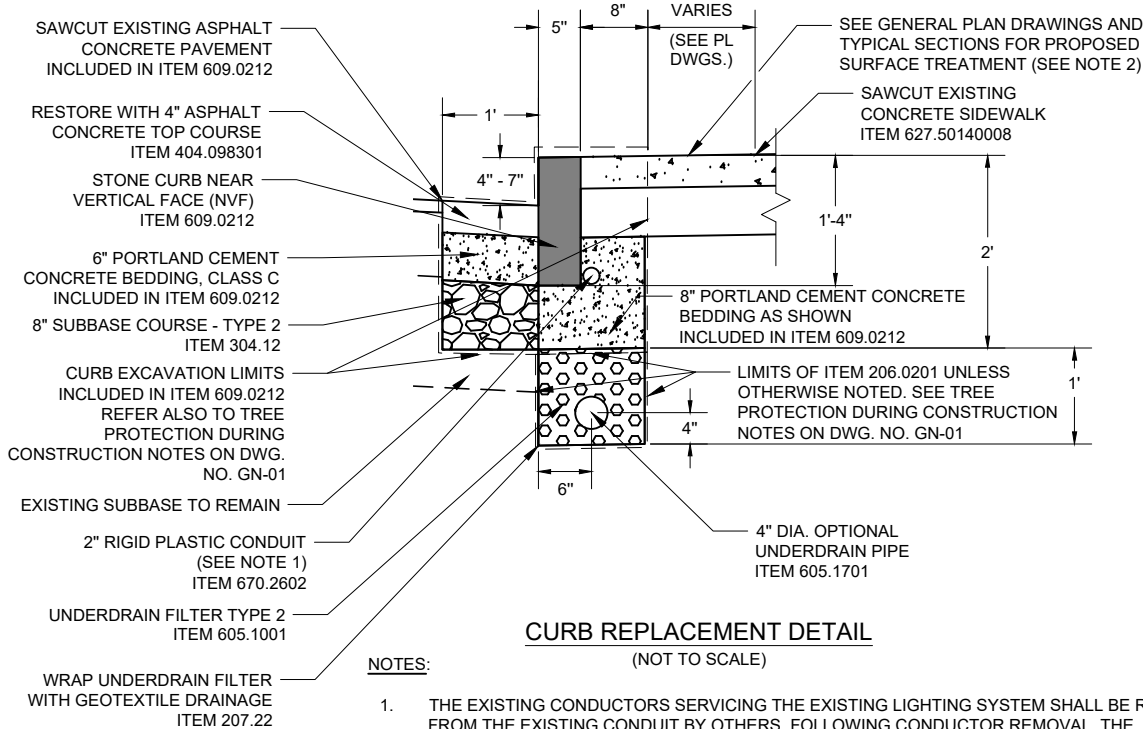
JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK P. GALBO  
DRAFTING V. CONERS  
CHECK P. GALBO  
PROJECT MANAGER P. GALBO



**BICYCLE RACK DETAIL**  
(ITEM 615.27020010)

**NOTES:**

1. DIGITAL FILE OF IMAGE TO BE PROVIDED BY THE CITY OF BUFFALO AT TIME OF CONSTRUCTION.
2. ALL SURFACES SHALL BE POWDER COAT FINISHED WITH ADDITIONAL ZINC COATING FOR PROTECTION. COLOR SHALL BE DARK BLUE UNLESS SPECIFIED BY OWNER.
3. A QUANTITY OF 4 BICYCLE RACKS IS INCLUDED IN THIS CONTRACT FOR BICYCLE RACKS TO BE PLACED WITHIN THE CORRIDOR, A.O.B.E..



**CURB REPLACEMENT DETAIL**  
(NOT TO SCALE)

**NOTES:**

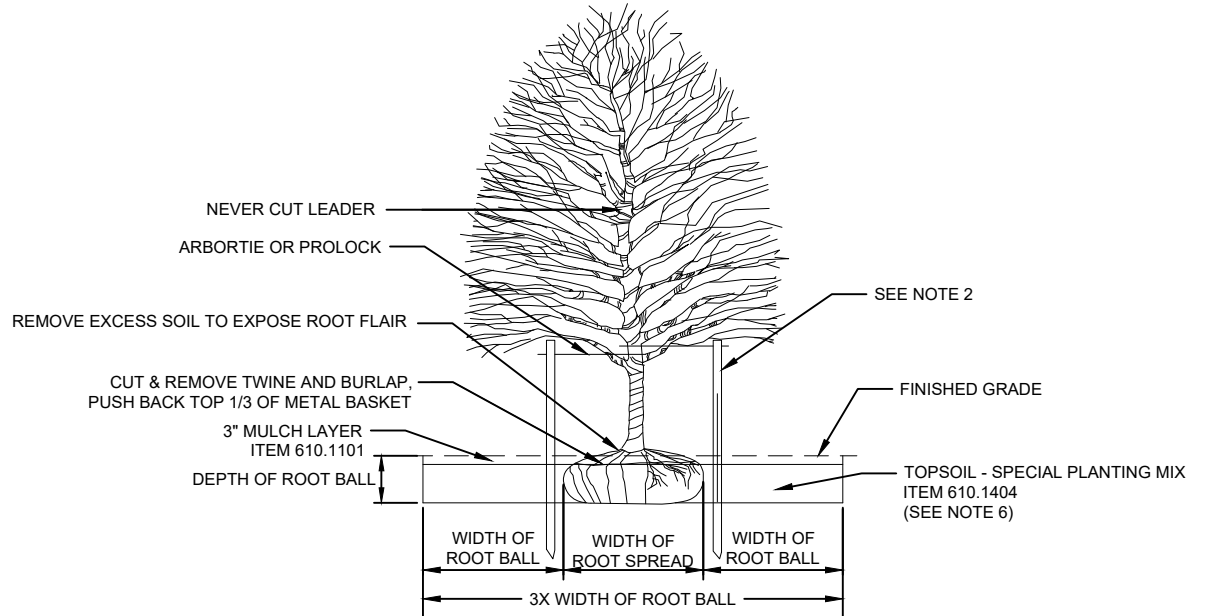
1. THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY OTHERS. FOLLOWING CONDUCTOR REMOVAL, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING CONDUIT.
2. IN AREAS BEHIND NEW CURB REQUIRING TURF RESTORATION, CONTRACTOR SHALL INSTALL 6" TOPSOIL (ITEM 610.1403) AND ESTABLISH TURF (ITEM 610.1602), A.O.B.E..

**FLEXIBLE DELINEATOR, SINGLE UNIT, ONE WAY ON FLEXIBLE POST**

ALL DELINEATORS SHALL BE PAID UNDER ITEM 646.40  
(NOT TO SCALE)

**NOTES:**

1. SURFACE-MOUNTED DELINEATORS SHALL BE 48" YELLOW POST WITH ONE 3" BY 9" HIGH INTENSITY AMBER REFLECTIVE STRIP WITH SURFACE MOUNT PIN-LOCK BASE. MODEL: SAFE-HIT TYPE 2 GUIDE POST WITH SURFACE MOUNT BASE OR APPROVED EQUAL.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. UNIT BID PRICE FOR ITEM 646.40 SHALL INCLUDE THE COST OF ALL ASSOCIATED HARDWARE AS NEEDED.
4. SEE GENERAL PLAN DRAWINGS FOR LOCATIONS OF DELINEATORS. A QUANTITY OF 2 DELINEATORS SHALL BE SURFACE MOUNTED. A QUANTITY OF 2 DELINEATORS SHALL BE INSTALLED IN PLANTED AREAS.

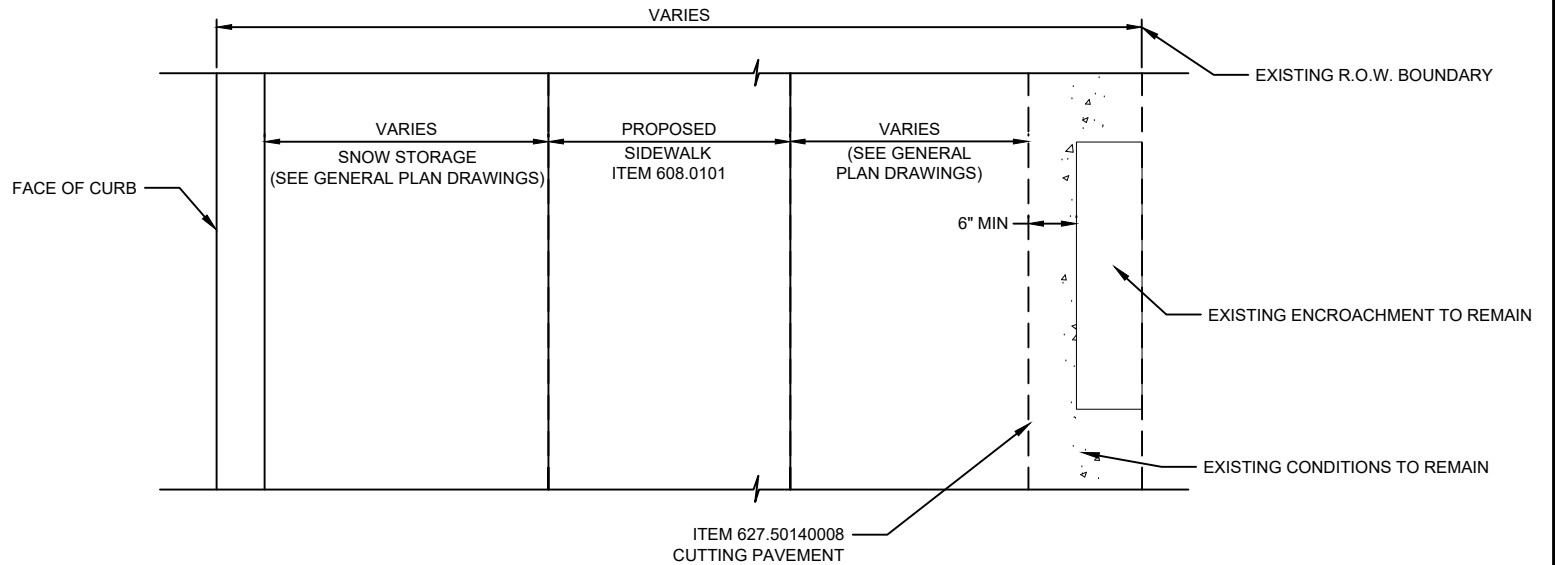


**DECIDUOUS TREE PLANTING WITH STAKES**

ITEM 611.0171 UNLESS OTHERWISE NOTED ABOVE  
(NOT TO SCALE)

**NOTES:**

1. ROOT FLARE OF TREE SHALL BE SET AT 2 INCHES ABOVE FINISHED GRADE
2. ALL TREES TO BE STAKED WITH A MINIMUM OF 2 STAKES
3. WHERE TREES OCCUR IN EXISTING GRAVEL AREAS, EXCAVATE TREE PIT THROUGH GRAVEL. BACKFILL AND COMPACT PLANTING SOIL.
4. TREES SHALL BE CENTERED IN THE TREE PIT AREA OR ADJUSTED AS NECESSARY, A.O.B.E..
5. NEW TREE PITS IN SNOW STORAGE AREAS SHALL BE RECTANGULAR, 8 FEET IN LENGTH PARALLEL TO THE CURB LINE AND 8 FEET IN WIDTH PERPENDICULAR TO THE CURB LINE. IF ADJUSTMENTS TO TREE PIT DIMENSIONS ARE REQUIRED, A.O.B.E., SURFACE AREA SHALL BE 35 SQUARE FEET. SEE GENERAL PLAN DRAWINGS FOR TREE PIT LOCATIONS.
6. EXCAVATION VOLUME AND SOIL REQUIREMENTS VARY FOR TREES WITHIN STORMWATER PLANTER AREAS. SEE DRAINAGE DETAILS.
7. ALL TREES SHALL BE INSTALLED WITH A PORTABLE DRIP IRRIGATION SYSTEM, ITEM 611.17, AND REQUIRE WATERING VEGETATION ITEM 610.19.
8. ALL TREES SHALL RECEIVE POST-PLANTING CARE WITH REPLACEMENT - MAJOR DECIDUOUS TREES, ITEM 611.19010024.



**SIDEWALK PLAN**  
(NOT TO SCALE)

**DRAFT  
NOT FOR  
CONSTRUCTION**

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED  
**NIAGARA STREET CORRIDOR PROJECT**  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
MISCELLANEOUS DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. MD-01  
SHEET NO. 18

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK P. GALBO  
DRAFTING V. CONERS  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO

EXPOSED STONE AGGREGATE AND GLASS CONCRETE SURFACE NOTES

EXPOSED GLASS AND STONE AGGREGATE CONCRETE  
ITEM 601.01110001 AND ITEM 608.0101

1. SUMMARY

ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH EXPOSED STONE AGGREGATE AND GLASS CONCRETE SURFACES SHALL CONFORM TO THE SPECIFICATION FOR ITEM 601.01110001 EXCEPT AS MODIFIED BY THE FOLLOWING NOTES. IN CASES WHERE THESE NOTES CONTRADICT THE SPECIFICATION FOR THIS ITEM, THESE NOTES SHALL SUPERSEDE THE SPECIFICATION.

2. LOCATION

THE GENERAL PLAN DRAWINGS SHOW THE PROPOSED LOCATIONS FOR THE INSTALLATION AND THE PROPOSED PATTERNS FOR THE EXPOSED STONE AGGREGATE AND GLASS CONCRETE SURFACES.

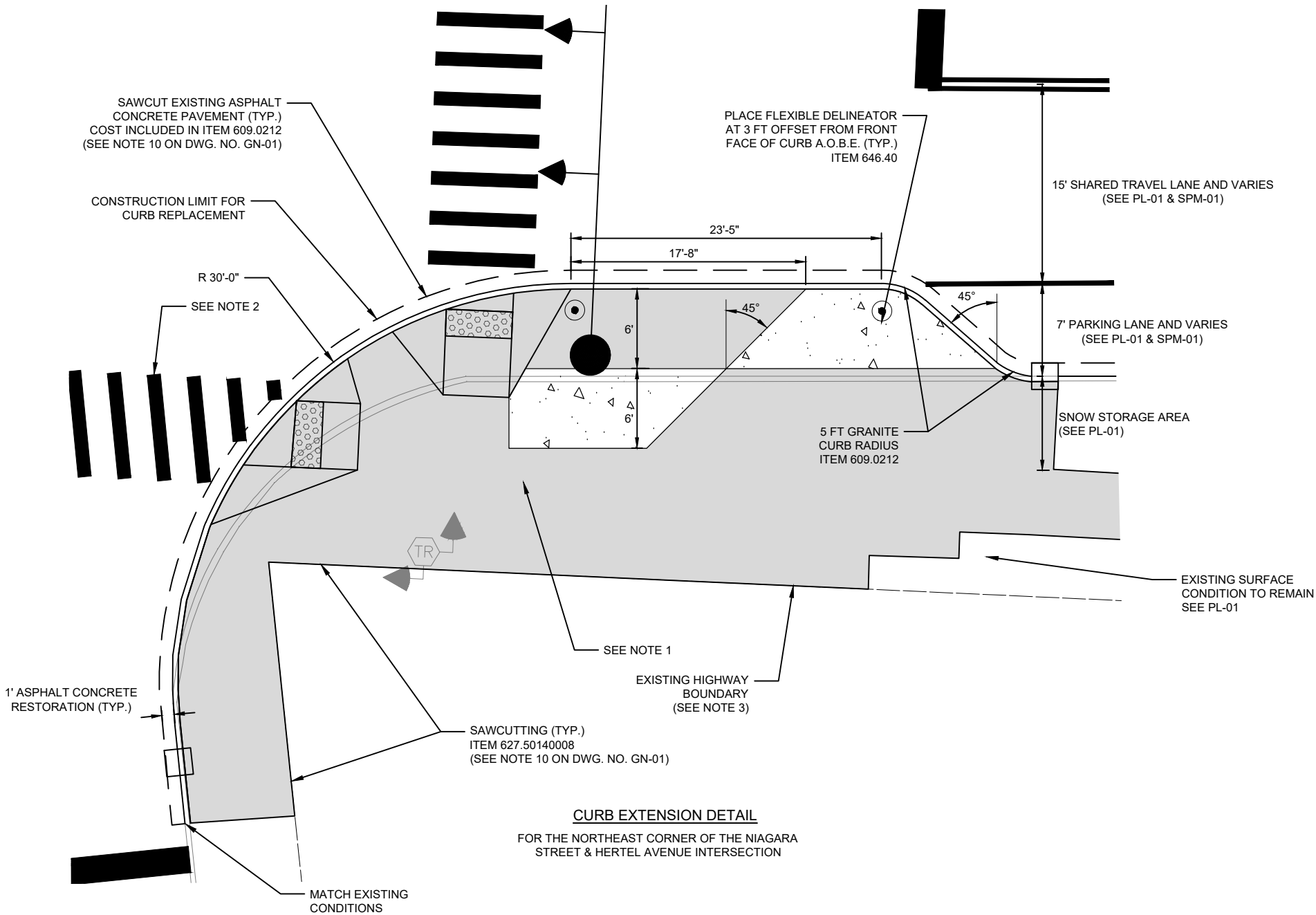
3. MATERIALS

THE MATERIALS FOR THE GLASS AGGREGATE SHALL BE AS FOLLOWS:

- A. TUMBLED GLASS - EITHER NEW GLASS, OR RECYCLED GLASS THAT HAS BEEN RE-MELTED AND RE-PROCESSED TO ENSURE CONSISTENT COLOR AND A CONSISTENT SIZE END PRODUCT
- B. SUITABLE SUPPLIERS INCLUDE:
- ARIM INC. | USA  
P.O. BOX 25  
PALISADES PARK, NJ 07659  
PHONE: 201.645.1814
- AMERICAN SPECIALTY GLASS  
829 N 400 W  
NORTH SALT LAKE, UT 84054  
PHONE: (801) 294-4222
- C. NO MIRROR GLASS
- D. GLASS COLOR SHALL BE: BLUEBERRY AND GREEN APPLE
- E. GLASS SHAPE SHALL BE: TERRAZZO GLASS. NO "JELLY BEAN" SHAPES OR ROUNDED EDGES.
- F. SIZE SHALL BE: #2
- G. THE DIFFERENT COLOR GLASS PIECES SHALL BE INTER-MIXED BEFORE BROADCAST. EQUAL AMOUNTS OF EACH COLOR SHALL BE USED.
- H. ONE POUND SAMPLES OF THE PROPOSED GLASS MATERIALS (SIZE AND COLORS) SHALL BE PROVIDED AND APPROVED BY THE ENGINEER PRIOR TO ORDERING AND PRIOR TO CONSTRUCTION OF JOB SITE SAMPLE PANELS. NO SEPARATE PAYMENT FOR SAMPLE.
- I. GLASS SUPPLIER SHALL CERTIFY THAT THEY HAVE SUPPLIED GLASS AGGREGATE IN THE PAST FOR SIMILAR OUTDOOR SIDEWALK APPLICATIONS AND PROVIDE A LIST OF A MAXIMUM OF THREE (3) REFERENCES, WITH CONTACT INFORMATION, FOR SUCH CUSTOMERS.

4. EXECUTION

- A. BUILD JOB SITE SAMPLE(S) FOR EXPOSED AGGREGATE AND GLASS CONCRETE SURFACE AS DIRECTED BY THE ENGINEER TO VERIFY THE DESIRED COLOR AND AESTHETIC TREATMENTS. NO SEPARATE PAYMENT WILL BE MADE FOR JOB SITE SAMPLE(S).
- B. THE GLASS SHALL BE METICULOUSLY BROADCASTED BY HAND ONTO THE SURFACE OF THE CONCRETE. THE GLASS SHALL BE BROADCASTED TO OBTAIN A GENERALLY EVEN DISTRIBUTION OF GLASS ACROSS THE SURFACE. USE 3.0 POUNDS OF GLASS PER SQUARE YARD.
- C. BULL FLOAT TO PRODUCE A LEVEL SURFACE.
- D. IMMEDIATELY AFTER BULL FLOATING, APPLY THE RETARDING ADMIXTURE TO THE SURFACE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- E. POWER WASH THE SURFACE WITHIN 24 HOURS USING 3000 - 3500 PSI TO EXPOSE THE STONE AGGREGATES AND GLASS SURFACE.
- F. VARIATIONS FROM THE TOP OF THE EXPOSED STONE AGGREGATE AND GLASS TO THE SURROUNDING CONCRETE AFTER PRESSURING WASHING SHALL BE NO GREATER THAN 3/16".



CURB EXTENSION DETAIL NOTES:

1. SEE DWG. NOS. DUP-01 AND IG-01 FOR GRADING ELEVATIONS AND DRAINAGE PATTERNS.
2. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE SPM-01 FOR LOCATIONS AND LAYOUT OF PAVEMENT MARKINGS.
3. SEE DWG. NO. GN-02 FOR RIGHT OF WAY NOTES.

|                                               |                    |
|-----------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                            | ALTERED BY:<br>ON: |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div> |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
MISCELLANEOUS DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. MD-02  
SHEET NO. 19

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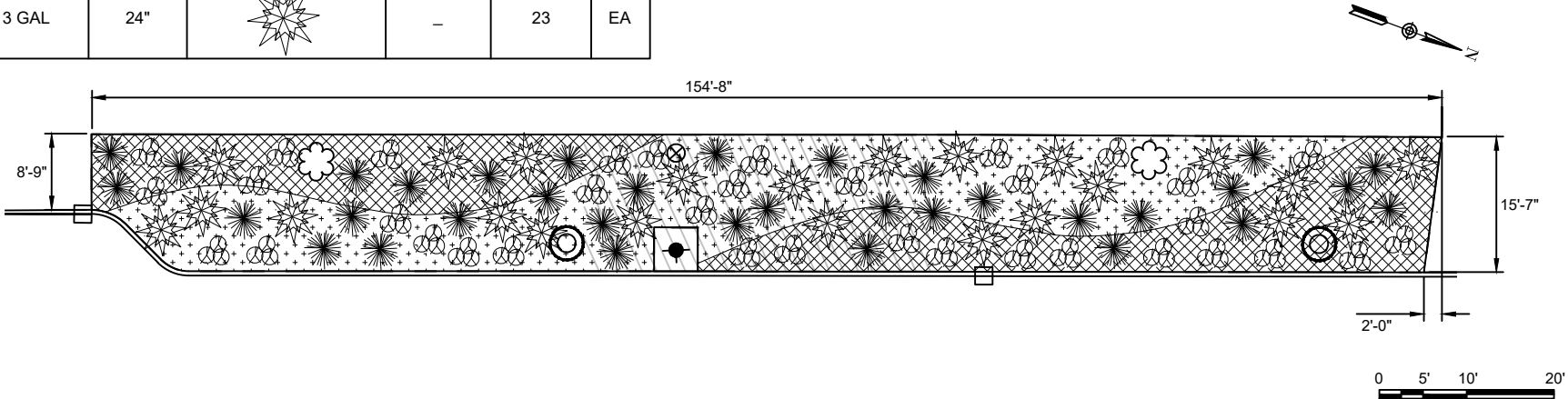


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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN T. BUCKLEY  
CHECK J. ROSS/R. FRAZER  
DRAFTING T. BUCKLEY  
PROJECT MANAGER P. GALBO  
CHECK J. ROSS/R. FRAZER

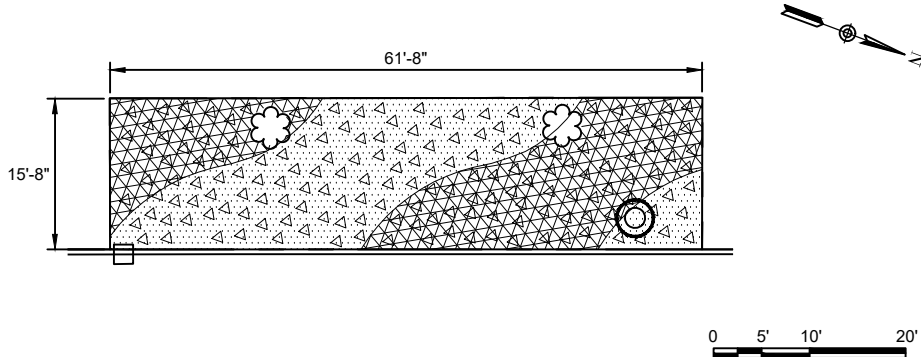
| PLANTING BED 2-1                |                       |             |                                                                       |           |         |               |           |          |      |
|---------------------------------|-----------------------|-------------|-----------------------------------------------------------------------|-----------|---------|---------------|-----------|----------|------|
| PLANTINGS - HIGH GROWTH         |                       |             |                                                                       |           |         |               |           |          |      |
| GENUS SPECIES                   | COMMON NAME           | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                               | CONTAINER | SPACING | SPACE DIAGRAM | AREA (SF) | QUANTITY | UNIT |
| PANICUM VIRGATUM<br>SHENANDOAH  | SWITCH GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 34       | EA   |
| HERMOCALLIS<br>'STELLA D'ORO'   | DWARF DAYLILY         | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 105      | EA   |
| CAREX PRAEGRACILS               | CLUSTERED FIELD SEDGE | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 814       | 3256     | EA   |
| FESTUCA GLAUCA<br>'ELIJAH BLUE' | NO MOW GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 719       | 2876     | EA   |
| ITEA VIRGINICA                  | SWEET SPIRE           | 611.0452    | PLANTING - DECIDUOUS SHRUBS - 3<br>FOOT HEIGHT/SPREAD                 | 3 GAL     | 24"     |               | —         | 23       | EA   |

| PLANTING BED 2-1 |                                                                     |           |          |      |
|------------------|---------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                     |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                             | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD<br>CHIPS AND SHREDDED BARK | 2333.6    | 21.6     | CY   |
| 613.010000OD     | RAIN GARDEN FACILITY TOPSOIL                                        | 1737.4    | 85.4     | CY   |
| 610.01100210     | PLANTER BACKFILL MIX - AS SPECIFIED                                 | 498.9     | 30.8     | CY   |
| 610.1404         | TOPSOIL - SPECIAL PLANTING MIX                                      | 596.2     | 33.1     | CY   |



| PLANTING BED 3-1          |                         |             |                                                                       |           |         |               |           |          |      |
|---------------------------|-------------------------|-------------|-----------------------------------------------------------------------|-----------|---------|---------------|-----------|----------|------|
| PLANTINGS - LOW GROWTH    |                         |             |                                                                       |           |         |               |           |          |      |
| GENUS SPECIES             | COMMON NAME             | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                               | CONTAINER | SPACING | SPACE DIAGRAM | AREA (SF) | QUANTITY | UNIT |
| SALIX REPENS              | CREEPING WILLOW         | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 12"     |               | 203       | 203      | EA   |
| HYPERICUM CALYGINUM       | ST. JOHNS WORT          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 12"     |               | —         | 169      | EA   |
| LIRIOPE SPICATA 'GIN-RYU' | LILY TURF SILVER DRAGON | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 10"     |               | 213       | 307      | EA   |

| PLANTING BED 3-1 |                                                                     |           |          |      |
|------------------|---------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                     |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                             | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD<br>CHIPS AND SHREDDED BARK | 970.5     | 9.0      | CY   |
| 613.010000OD     | RAIN GARDEN FACILITY TOPSOIL                                        | 970.5     | 56.4     | CY   |
| 610.01100210     | PLANTER BACKFILL MIX - AS SPECIFIED                                 | 237.2     | 14.6     | CY   |



NOTES:

- NO PLANTS SHALL BE PLANTED WITHIN 2 FEET OF ANY EXISTING OR NEWLY PLANTED TREE.
- THE QUANTITIES FOR PLANTING MATERIALS HAVE BEEN ESTIMATED AND MAY NEED TO BE ADJUSTED TO SUIT ACTUAL SITE CONDITIONS. THE CONTRACTOR SHALL CONFIRM THE PLANTING QUANTITIES, LAYOUT, SPACING AND GENERAL FIT OF MATERIALS IN EACH STORM WATER PLANTER PRIOR TO ORDERING ALL PLANTS AND TREES. NO PAYMENT WILL BE MADE FOR ANY SURPLUS PLANTINGS THAT MAY RESULT FROM ORDERING BASED ON THE ESTIMATED QUANTITIES.
- FOR SYMBOLS THAT ARE NOT DEFINED ON THIS DRAWING, SEE GENERAL PLAN AND DRAINAGE PLAN DRAWINGS.
- PLANT SPACING IS CENTER-TO-CENTER.

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
PLANTER LAYOUT PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. MD-03  
SHEET NO. 20

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JOB MANAGER T. DUK  
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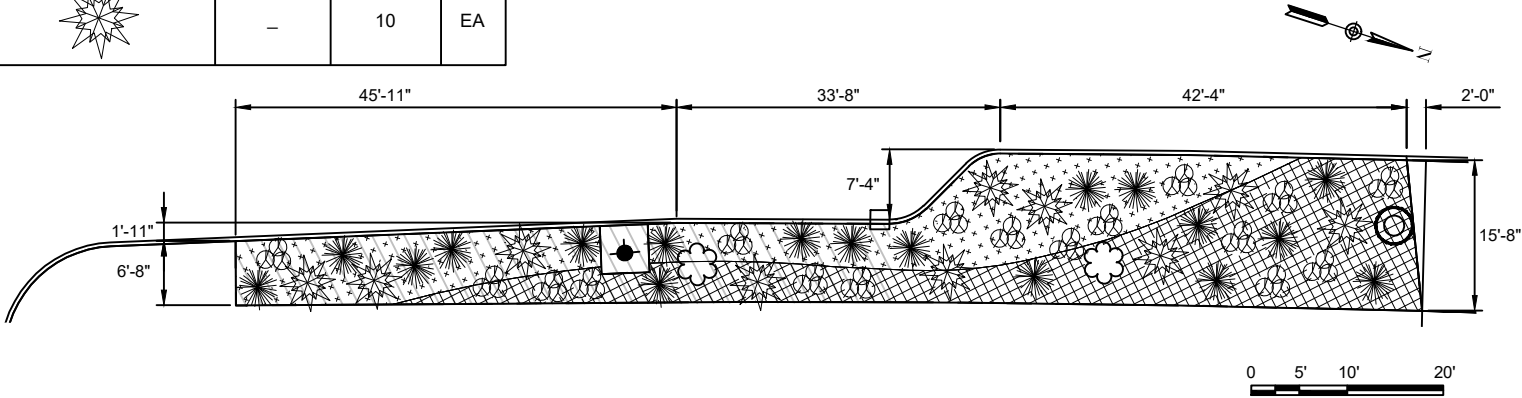
| PLANTING BED 3-2                |                       |             |                                                                       |           |         |               |           |          |      |
|---------------------------------|-----------------------|-------------|-----------------------------------------------------------------------|-----------|---------|---------------|-----------|----------|------|
| PLANTINGS - HIGH GROWTH         |                       |             |                                                                       |           |         |               |           |          |      |
| GENUS SPECIES                   | COMMON NAME           | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                               | CONTAINER | SPACING | SPACE DIAGRAM | AREA (SF) | QUANTITY | UNIT |
| PANICUM VIRGATUM<br>SHENANDOAH  | SWITCH GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 18       | EA   |
| HERMOCALLIS<br>'STELLA D'ORO'   | DWARF DAYLILY         | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 51       | EA   |
| CAREX PRAEGRACILS               | CLUSTERED FIELD SEDGE | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 437       | 1748     | EA   |
| FESTUCA GLAUCA<br>'ELIJAH BLUE' | NO MOW GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 477       | 1908     | EA   |
| ITEA VIRGINICA                  | SWEET SPIRE           | 611.0452    | PLANTING - DECIDUOUS SHRUBS - 3<br>FOOT HEIGHT/SPREAD                 | 3 GAL     | 24"     |               | —         | 10       | EA   |

NOTES:

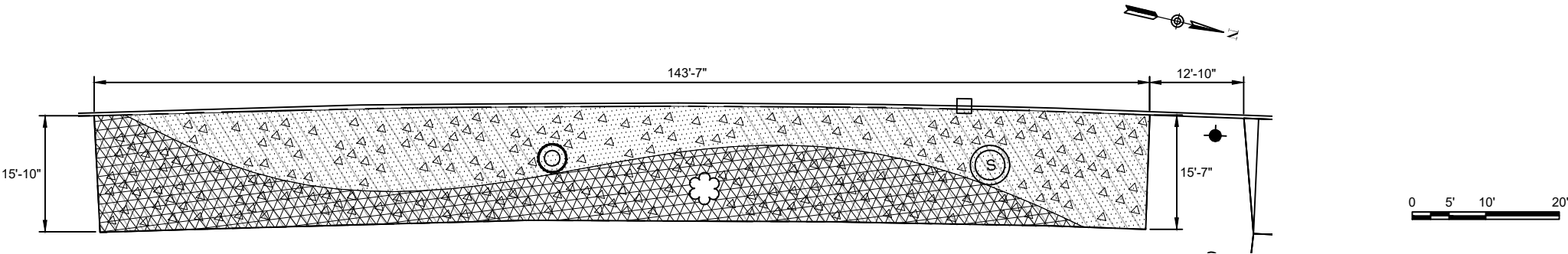
- NO PLANTS SHALL BE PLANTED WITHIN 2 FEET OF ANY EXISTING OR NEWLY PLANTED TREE.
- THE QUANTITIES FOR PLANTING MATERIALS HAVE BEEN ESTIMATED AND MAY NEED TO BE ADJUSTED TO SUIT ACTUAL SITE CONDITIONS. THE CONTRACTOR SHALL CONFIRM THE PLANTING QUANTITIES, LAYOUT, SPACING AND GENERAL FIT OF MATERIALS IN EACH STORM WATER PLANTER PRIOR TO ORDERING ALL PLANTS AND TREES. NO PAYMENT WILL BE MADE FOR ANY SURPLUS PLANTINGS THAT MAY RESULT FROM ORDERING BASED ON THE ESTIMATED QUANTITIES.
- FOR SYMBOLS THAT ARE NOT DEFINED ON THIS DRAWING, SEE GENERAL PLAN AND DRAINAGE PLAN DRAWINGS.
- PLANT SPACING IS CENTER-TO-CENTER.

| PLANTING BED 3-3          |                         |             |                                                                       |           |         |               |           |          |      |
|---------------------------|-------------------------|-------------|-----------------------------------------------------------------------|-----------|---------|---------------|-----------|----------|------|
| PLANTINGS - LOW GROWTH    |                         |             |                                                                       |           |         |               |           |          |      |
| GENUS SPECIES             | COMMON NAME             | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                               | CONTAINER | SPACING | SPACE DIAGRAM | AREA (SF) | QUANTITY | UNIT |
| SALIX REPENS              | CREEPING WILLOW         | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 12"     |               | 800       | 800      | EA   |
| HYPERICUM CALYGINUM       | ST. JOHNS WORT          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 12"     |               | —         | 249      | EA   |
| LIRIOPE SPICATA 'GIN-RYU' | LILY TURF SILVER DRAGON | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 10"     |               | 656       | 945      | EA   |

| PLANTING BED 3-2 |                                                                     |           |          |      |
|------------------|---------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                     |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                             | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD<br>CHIPS AND SHREDDED BARK | 1312.0    | 12.1     | CY   |
| 613.010000OD     | RAIN GARDEN FACILITY TOPSOIL                                        | 810.3     | 40.5     | CY   |
| 610.01100210     | PLANTER BACKFILL MIX - AS SPECIFIED                                 | 566.1     | 34.9     | CY   |
| 610.1404         | TOPSOIL - SPECIAL PLANTING MIX                                      | 501.7     | 27.9     | CY   |



| PLANTING BED 3-3 |                                                                     |           |          |      |
|------------------|---------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                     |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                             | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD<br>CHIPS AND SHREDDED BARK | 2237.4    | 20.7     | CY   |
| 613.010000OD     | RAIN GARDEN FACILITY TOPSOIL                                        | 430.7     | 26.1     | CY   |
| 610.01100210     | PLANTER BACKFILL MIX - AS SPECIFIED                                 | 243.6     | 15.0     | CY   |
| 610.1404         | TOPSOIL -SPECIAL PLANTING MIX                                       | 1806.5    | 100.4    | CY   |



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

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NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
PLANTER LAYOUT PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. MD-04  
SHEET NO. 21

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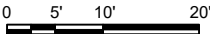
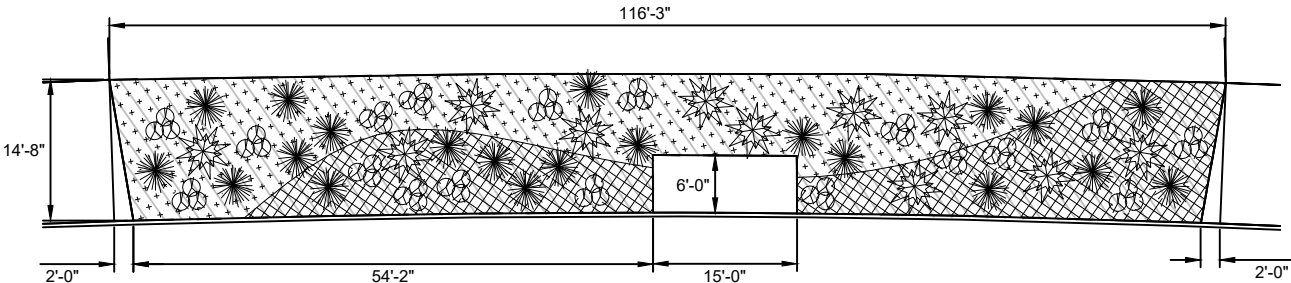
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JOB MANAGER T. DUK  
DESIGN T. BUCKLEY  
CHECK J. ROSS/R. FRAZER  
DRAFTING T. BUCKLEY  
PROJECT MANAGER P. GALBO  
CHECK J. ROSS/R. FRAZER

| PLANTING BED 4-1             |                       |             |                                                                    |           |         |               |           |          |      |
|------------------------------|-----------------------|-------------|--------------------------------------------------------------------|-----------|---------|---------------|-----------|----------|------|
| PLANTINGS - HIGH GROWTH      |                       |             |                                                                    |           |         |               |           |          |      |
| GENUS SPECIES                | COMMON NAME           | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                            | CONTAINER | SPACING | SPACE DIAGRAM | AREA (SF) | QUANTITY | UNIT |
| PANICUM VIRGATUM SHENANDOAH  | SWITCH GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 21       | EA   |
| HERMOCALLIS 'STELLA D'ORO'   | DWARF DAYLILY         | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 54       | EA   |
| CAREX PRAEGRACILS            | CLUSTERED FIELD SEDGE | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 666       | 2664     | EA   |
| FESTUCA GLAUCA 'ELIJAH BLUE' | NO MOW GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 489       | 1956     | EA   |
| ITEA VIRGINICA               | SWEET SPIRE           | 611.0452    | PLANTING - DECIDUOUS SHRUBS - 3 FOOT HEIGHT/SPREAD                 | 3 GAL     | 24"     |               | —         | 11       | EA   |

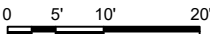
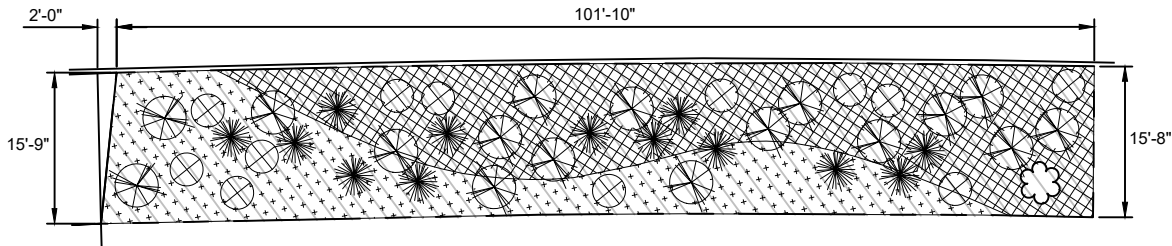
NOTES:

- NO PLANTS SHALL BE PLANTED WITHIN 2 FEET OF ANY EXISTING OR NEWLY PLANTED TREE.
- THE QUANTITIES FOR PLANTING MATERIALS HAVE BEEN ESTIMATED AND MAY NEED TO BE ADJUSTED TO SUIT ACTUAL SITE CONDITIONS. THE CONTRACTOR SHALL CONFIRM THE PLANTING QUANTITIES, LAYOUT, SPACING AND GENERAL FIT OF MATERIALS IN EACH STORM WATER PLANTER PRIOR TO ORDERING ALL PLANTS AND TREES. NO PAYMENT WILL BE MADE FOR ANY SURPLUS PLANTINGS THAT MAY RESULT FROM ORDERING BASED ON THE ESTIMATED QUANTITIES.
- FOR SYMBOLS THAT ARE NOT DEFINED ON THIS DRAWING, SEE GENERAL PLAN AND DRAINAGE PLAN DRAWINGS.
- PLANT SPACING IS CENTER-TO-CENTER.



| PLANTING BED 4-2                            |                       |             |                                                                    |           |         |               |           |          |      |
|---------------------------------------------|-----------------------|-------------|--------------------------------------------------------------------|-----------|---------|---------------|-----------|----------|------|
| PLANTINGS - HIGH GROWTH                     |                       |             |                                                                    |           |         |               |           |          |      |
| GENUS SPECIES                               | COMMON NAME           | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                            | CONTAINER | SPACING | SPACE DIAGRAM | AREA (SF) | QUANTITY | UNIT |
| PANICUM VIRGATUM SHENANDOAH                 | SWITCH GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 13       | EA   |
| CALAMAGROSTIS* ACUTIFLORA 'OVERDAM'         | FEATHER REED GRASS    | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 18"     |               | —         | 12       | EA   |
| CAREX PRAEGRACILS                           | CLUSTERED FIELD SEDGE | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 552       | 2208     | EA   |
| FESTUCA GLAUCA 'ELIJAH BLUE'                | NO MOW GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1 CONTAINER, CONTAINER GROWN | 1         | 6"      |               | 658       | 2632     | EA   |
| ARONIA MELANOCARPA 'MORTON IROQUOIS BEAUTY' | CHOKEBERRY            | 611.0452    | PLANTING - DECIDUOUS SHRUBS - 3 FOOT HEIGHT/SPREAD                 | 3 GAL     | 24"     |               | —         | 17       | EA   |

| PLANTING BED 4-2 |                                                                  |           |          |      |
|------------------|------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                  |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                          | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD CHIPS AND SHREDDED BARK | 1611.5    | 14.9     | CY   |
| 610.1404         | TOPSOIL - SPECIAL PLANTING MIX                                   | 1611.5    | 89.5     | CY   |



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

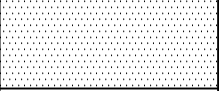

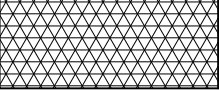
ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
PLANTER LAYOUT PLAN

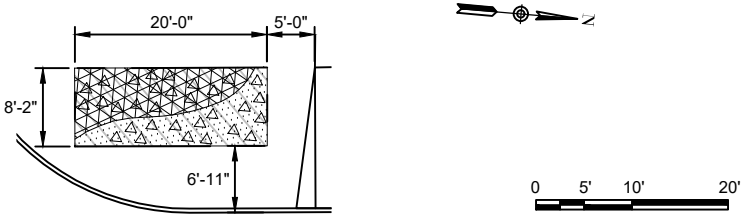
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK



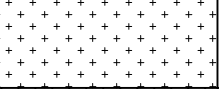
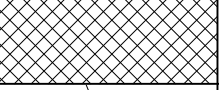

DRAWING NO. MD-05  
SHEET NO. 22



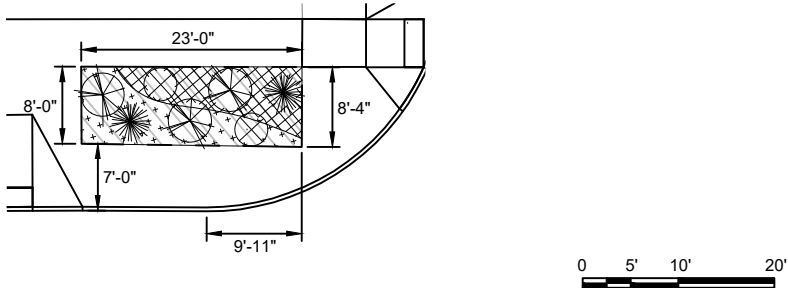
| PLANTING BED 4-3          |                         |             |                                                                       |           |         |                                                                                     |           |          |      |
|---------------------------|-------------------------|-------------|-----------------------------------------------------------------------|-----------|---------|-------------------------------------------------------------------------------------|-----------|----------|------|
| PLANTINGS - LOW GROWTH    |                         |             |                                                                       |           |         |                                                                                     |           |          |      |
| GENUS SPECIES             | COMMON NAME             | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                               | CONTAINER | SPACING | SPACE DIAGRAM                                                                       | AREA (SF) | QUANTITY | UNIT |
| SALIX REPENS              | CREeping WILLOW         | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 12"     |  | 30        | 30       | EA   |
| HYPERICUM CALYGINUM       | ST. JOHNS WORT          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 12"     |  | —         | 31       | EA   |
| LIRIOPE SPICATA 'GIN-RYU' | LILY TURF SILVER DRAGON | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 10"     |  | 37        | 53       | EA   |

| PLANTING BED 4-3 |                                                                     |           |          |      |
|------------------|---------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                     |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                             | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD<br>CHIPS AND SHREDDED BARK | 163.2     | 1.5      | CY   |
| 610.1404         | TOPSOIL - SPECIAL PLANTING MIX                                      | 163.2     | 9.1      | CY   |



| PLANTING BED 4-4                               |                       |             |                                                                       |           |         |                                                                                       |           |          |      |
|------------------------------------------------|-----------------------|-------------|-----------------------------------------------------------------------|-----------|---------|---------------------------------------------------------------------------------------|-----------|----------|------|
| PLANTINGS - HIGH GROWTH                        |                       |             |                                                                       |           |         |                                                                                       |           |          |      |
| GENUS SPECIES                                  | COMMON NAME           | ITEM NUMBER | ITEM NUMBER DESCRIPTION                                               | CONTAINER | SPACING | SPACE DIAGRAM                                                                         | AREA (SF) | QUANTITY | UNIT |
| PANICUM VIRGATUM<br>SHENANDOAH                 | SWITCH GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 18"     |   | —         | 2        | EA   |
| CALAMAGROSTIS*<br>ACUTIFLORA 'OVERDAM'         | FEATHER REED GRASS    | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 18"     |  | —         | 2        | EA   |
| CAREX PRAEGRACILS                              | CLUSTERED FIELD SEDGE | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 6"      |  | 63        | 252      | EA   |
| FESTUCA GLAUCA<br>'ELIJAH BLUE'                | NO MOW GRASS          | 611.0651    | PLANTING VINES, GROUNDCOVERS - NUMBER 1<br>CONTAINER, CONTAINER GROWN | 1         | 6"      |  | 59        | 236      | EA   |
| ARONIA MELANOCARPA<br>'MORTON IROQUOIS BEAUTY' | CHOKEBERRY            | 611.0452    | PLANTING - DECIDUOUS SHRUBS - 3<br>FOOT HEIGHT/SPREAD                 | 3 GAL     | 24"     |  | —         | 3        | EA   |

| PLANTING BED 4-4 |                                                                     |           |          |      |
|------------------|---------------------------------------------------------------------|-----------|----------|------|
| MATERIALS        |                                                                     |           |          |      |
| ITEM NUMBER      | ITEM NUMBER DESCRIPTION                                             | AREA (SF) | QUANTITY | UNIT |
| 610.1101         | MULCH FOR PLANTING TYPE A, B, & D - WOOD<br>CHIPS AND SHREDDED BARK | 187.4     | 1.7      | CY   |
| 610.1404         | TOPSOIL - SPECIAL PLANTING MIX                                      | 187.4     | 10.4     | CY   |



NOTES:

- NO PLANTS SHALL BE PLANTED WITHIN 2 FEET OF ANY EXISTING OR NEWLY PLANTED TREE.
- THE QUANTITIES FOR PLANTING MATERIALS HAVE BEEN ESTIMATED AND MAY NEED TO BE ADJUSTED TO SUIT ACTUAL SITE CONDITIONS. THE CONTRACTOR SHALL CONFIRM THE PLANTING QUANTITIES, LAYOUT, SPACING AND GENERAL FIT OF MATERIALS IN EACH STORM WATER PLANTER PRIOR TO ORDERING ALL PLANTS AND TREES. NO PAYMENT WILL BE MADE FOR ANY SURPLUS PLANTINGS THAT MAY RESULT FROM ORDERING BASED ON THE ESTIMATED QUANTITIES.
- FOR SYMBOLS THAT ARE NOT DEFINED ON THIS DRAWING, SEE GENERAL PLAN AND DRAINAGE PLAN DRAWINGS.
- PLANT SPACING IS CENTER-TO-CENTER.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED                                                                     |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |       |
|-----------------------------------------------------------------------------------------------------------------|--|------------------------------------------|-------|
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>PLANTER LAYOUT PLAN |  | DRAWING NO.                              | MD-06 |
|                                                                                                                 |  | SHEET NO.                                | 23    |





**Watts  
Architects  
& Engineers**

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

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**NIAGARA STREET CORRIDOR PROJECT**  
**PHASE 4B - 5762.90**

**HERTEL AVENUE TO ONTARIO STREET**  
**GENERAL PLAN**

|                       |       |
|-----------------------|-------|
| CITY OF BUFFALO       |       |
| ERIE COUNTY, NEW YORK |       |
| DRAWING NO.           | PL-01 |
| SHEET NO.             | 24    |


AS-BUILT REVISIONS


DESCRIPTION OF ALTERATIONS:


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY:" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.


1. REFER TO DWG. NO. ELP-01 FOR STREET LIGHTING PLAN AND ELD-01 FOR LIGHTING DETAILS.
2. REFER TO DWG. NO. DUP-01 FOR DRAINAGE AND GREEN INFRASTRUCTURE PLANS.
3. REFER TO DWG. NO. SPM-01 FOR PAVEMENT MARKING STATIONS AND OFFSETS.
4. THIS PROJECT WILL HAVE A CERTIFIED ARBORIST AS A MEMBER OF THE CONSTRUCTION-MONITORING TEAM. THE ARBORIST AND THE CITY'S FORESTER WILL ADVISE THE CONTRACTOR WHERE TREE PROTECTION MEASURES ARE NEEDED WHEN THERE IS EXCAVATION NEAR EXISTING TREES TO REMAIN. THE CONTRACTOR SHALL COORDINATE WITH THE ARBORIST AND THE CITY'S FORESTER PRIOR TO ALL EXCAVATION WORK IN THESE AREAS AND SHALL ACCOUNT FOR TIME IN THE CONSTRUCTION SCHEDULE TO ACCOMMODATE THIS COORDINATION.
5. INSTALL TEMPORARY PLASTIC FENCING, ITEM 607.41010010, FOR PROTECTION AROUND ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY THAT HAVE BEEN DESIGNATED TO REMAIN. INSTALL TRUNK PROTECTION AS ORDERED BY THE CITY'S FORESTER AND PROJECT ARBORIST ALSO UNDER ITEM 607.41010010.
6. THE CITY'S FORESTER AND PROJECT ARBORIST SHALL DETERMINE THE AREAS WITHIN THE CRITICAL ROOT ZONES THAT REQUIRE TREE ROOT PRUNING, ITEM 614.09, AND PNEUMATIC EXCAVATION AND BACKFILL, ITEM 206.04010011.
7. EXISTING TREE STUMPS ONLY SHALL BE REMOVED UNDER ITEM 203.02.
8. REFER ALSO TO 'TREE PROTECTION DURING CONSTRUCTION' NOTES' ON DWG. NO. GN-01.
9. REFER TO DWG. NOS. TSP-01 THRU TSP-03 FOR TRAFFIC SIGNAL PLANS.
10. SEE DWG. NO. GN-02 FOR RIGHT OF WAY NOTES.


## KEY

 ITEM 608.0101 SIDEWALK/DRIVEWAY  
CONCRETE AREA

 GREEN SPACE  
6" TOPSOIL AND TURF (LAWNS)  
(ITEM 610.1403 AND ITEM 610.1602)

 ITEM 608.020102 HOT MIX ASPHALT RESTORATION AREA

 TREE  
(SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02)

 EXISTING TREE TO REMAIN



|                                                                                       |                                                                                                                                     |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|  | TREE REMOVAL<br>AND REPLACEMENT (SEE DETAIL ON<br>DWG. NO. MD-01 AND TREE REMOVAL<br>AND TREE PLANTING TABLES ON DWG.<br>NO. MT-02) |
|  | TREE REMOVAL<br>(SEE TREE REMOVAL TABLE ON<br>DWG. NO. MT-02)                                                                       |

Diagram illustrating a signalized intersection. The diagram shows a horizontal road with a dashed line labeled "RIGHT OF WAY LINE" and a solid line labeled "NFTA BUS STOP". A blue bus icon is positioned at the bus stop. A traffic light icon is shown at the intersection, with the text "SIGNALIZED INTERSECTION (SEE TRAFFIC SIGNAL PLAN FOR IMPROVEMENT DETAILS)" below it.

|                                                                                       |                                                                                           |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|  | PLANTER OUTLINE<br>(SEE DETAILS ON DWG. NOS. MD-03 THRU MD-06)                            |
|  | TREE PIT<br>(SEE DETAIL ON DWG. NO. MD-02)<br>AND TREE PLANTING TABLE<br>(DWG. NO. MT-02) |

0      10'    20'                      40

|                                               |                    |
|-----------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                            | ALTERED BY:<br>ON: |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div> |                    |



FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R18. CADD\Trans09 General Plan and Profile.dwg  
DATE/TIME = 12/12/2022 9:44:44 AM  
USER = Victoria Coners

JOB MANAGER T. DUK

DESIGN J. ROSS

CHECK P. GALBO

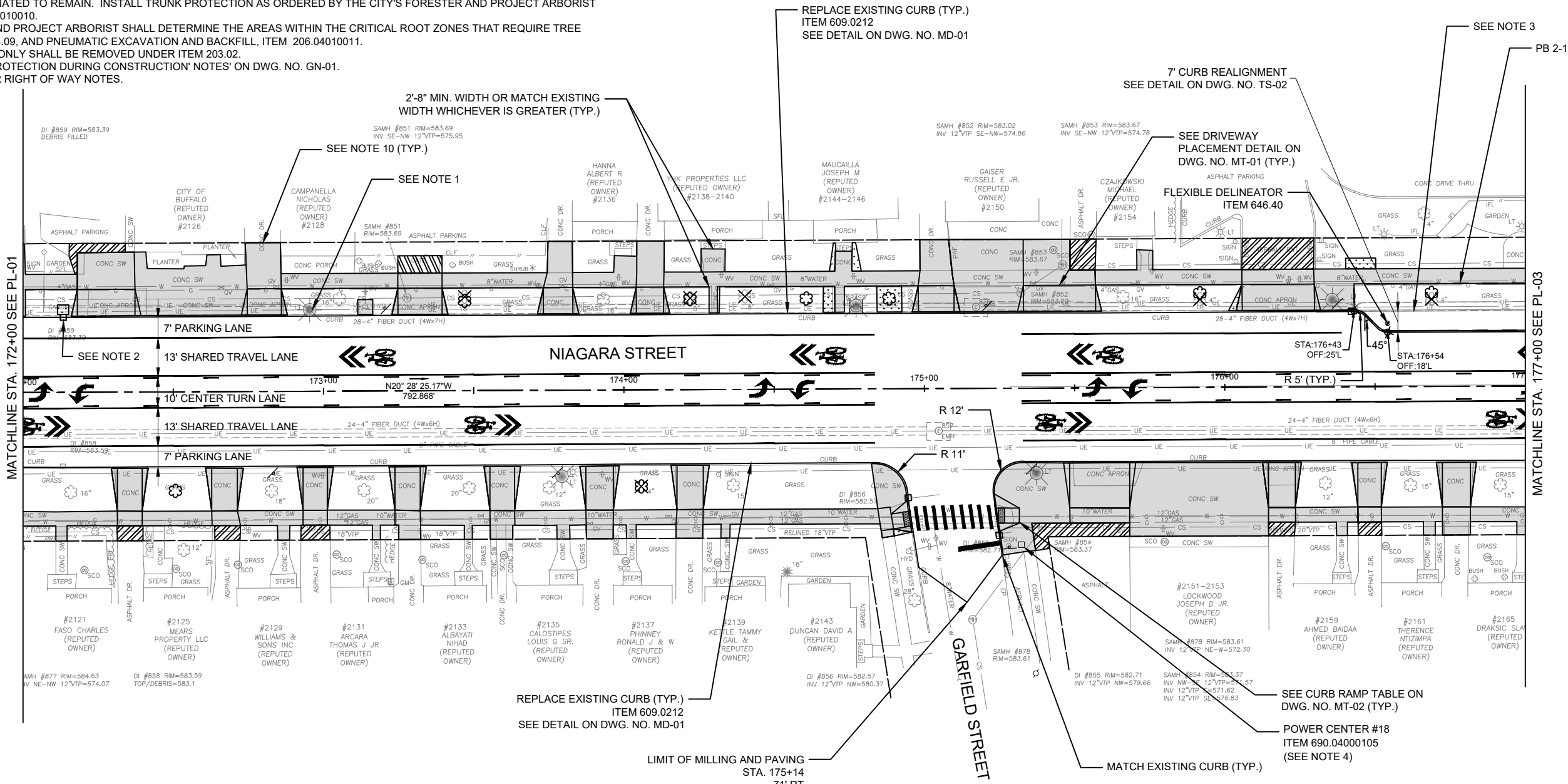
DRAFTING V. CONERS

CHECK P. GALBO

PROJECT MANAGER P. GALBO

NOTES:

1. REFER TO DWG. NO. ELP-02 FOR STREET LIGHTING PLAN AND ELD-01 FOR LIGHTING DETAILS.
2. REFER TO DWG. NO. DUP-02 FOR DRAINAGE AND GREEN INFRASTRUCTURE PLANS.
3. REFER TO DWG. NOS. DUD 05 & DUD 06. PAYMENT FOR REMOVAL OF EXISTING CURB WITHIN A PROPOSED PLANTER SHALL BE PAID FOR UNDER ITEM 206.0201, TRENCH AND CULVERT EXCAVATION, AS PART OF THE EXCAVATION REQUIRED FOR THE PLANTER.
4. REFER TO DWG. NO. ELD-02 FOR POWER CENTER DETAILS.
5. THIS PROJECT WILL HAVE A CERTIFIED ARBORIST AS A MEMBER OF THE CONSTRUCTION-MONITORING TEAM. THE ARBORIST AND THE CITY'S FORESTER WILL ADVISE THE CONTRACTOR WHERE TREE PROTECTION MEASURES ARE NEEDED WHEN THERE IS EXCAVATION NEAR EXISTING TREES TO REMAIN. THE CONTRACTOR SHALL COORDINATE WITH THE ARBORIST AND THE CITY'S FORESTER PRIOR TO ALL EXCAVATION WORK IN THESE AREAS AND SHALL ACCOUNT FOR TIME IN THE CONSTRUCTION SCHEDULE TO ACCOMMODATE THIS COORDINATION.
6. INSTALL TEMPORARY PLASTIC FENCING, ITEM 607.41010010, FOR PROTECTION AROUND ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY THAT HAVE BEEN DESIGNATED TO REMAIN. INSTALL TRUNK PROTECTION AS ORDERED BY THE CITY'S FORESTER AND PROJECT ARBORIST ALSO UNDER ITEM 607.41010010.
7. THE CITY'S FORESTER AND PROJECT ARBORIST SHALL DETERMINE THE AREAS WITHIN THE CRITICAL ROOT ZONES THAT REQUIRE TREE ROOT PRUNING, ITEM 614.09, AND PNEUMATIC EXCAVATION AND BACKFILL, ITEM 206.04010011.
8. EXISTING TREE STUMPS ONLY SHALL BE REMOVED UNDER ITEM 203.02.
9. REFER ALSO TO 'TREE PROTECTION DURING CONSTRUCTION' NOTES' ON DWG. NO. GN-01.
10. SEE DWG. NO. GN-02 FOR RIGHT OF WAY NOTES.



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

ITEM 608.0101 SIDEWALK/DRIVEWAY CONCRETE AREA

GREEN SPACE 6" TOPSOIL AND TURF (LAWNS) (ITEM 610.1403 AND ITEM 610.1602)

ITEM 608.020102 HOT MIX ASPHALT RESTORATION AREA

TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02)

EXISTING TREE TO REMAIN

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

SEAL OF THE CITY OF BUFFALO

Watts Architects & Engineers

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KEY

TREE REMOVAL AND REPLACEMENT (SEE DETAIL ON DWG. NO. MD-01 AND TREE REMOVAL AND TREE PLANTING TABLES ON DWG. NO. MT-02)

TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)

RIGHT OF WAY LINE

NFTA BUS STOP

SIGNALIZED INTERSECTION (SEE TRAFFIC SIGNAL PLAN DWGS FOR IMPROVEMENT DETAILS)

PLANTER OUTLINE (SEE DETAILS ON DWG. NOS. MD-03 THRU MD-06)

TREE PIT (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02)

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
GENERAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

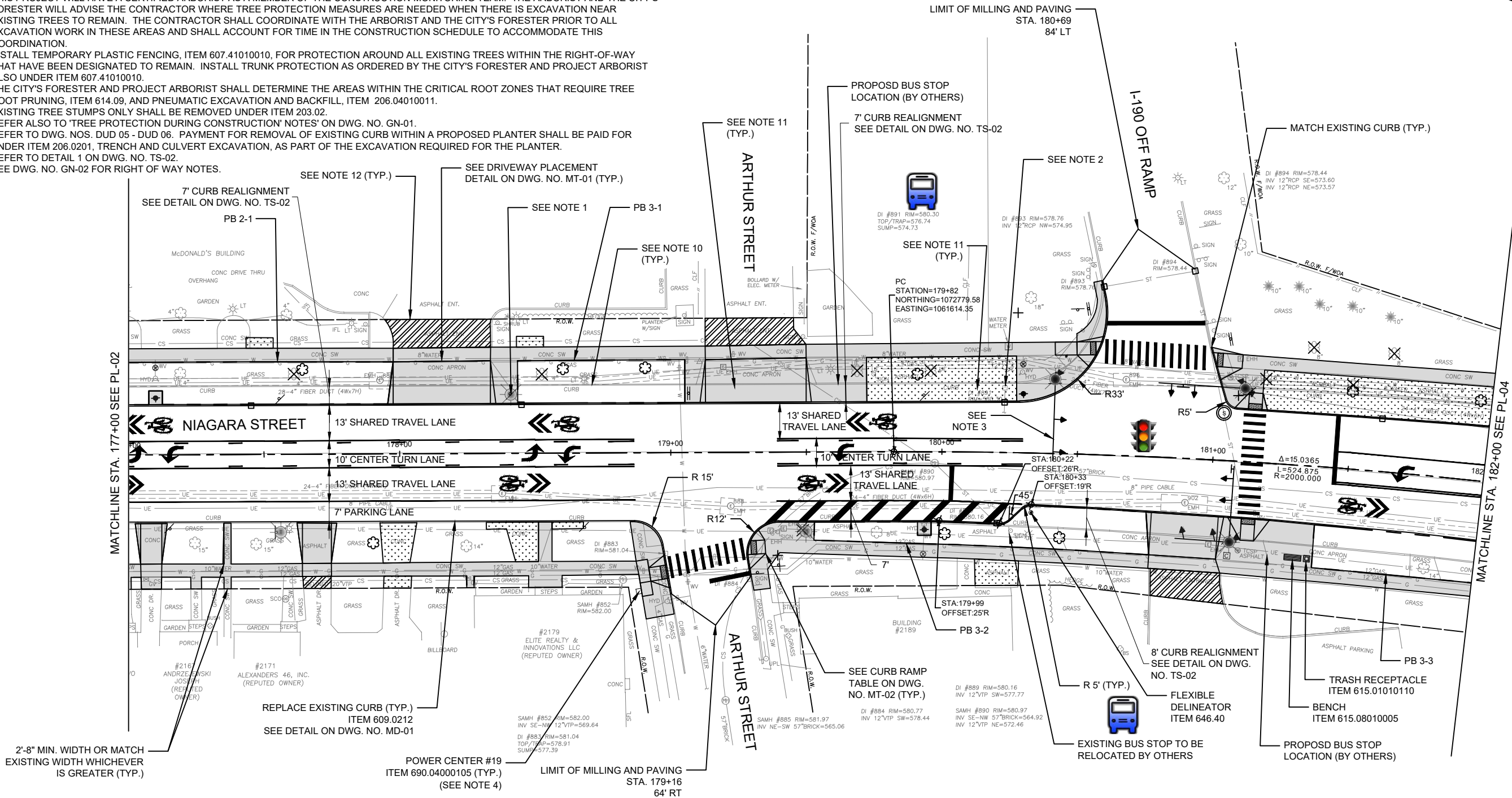
DRAWING NO. PL-02  
SHEET NO. 25

0 10' 20' 40'



NOTES:

1. REFER TO DWG. NO. ELP-03 FOR STREET LIGHTING PLAN AND ELD-01 FOR LIGHTING DETAILS.
2. REFER TO DWG. NO. DUP-03 FOR DRAINAGE AND GREEN INFRASTRUCTURE PLANS.
3. REFER TO DWG. NOS. TSP-04 AND TSP-05 FOR TRAFFIC SIGNAL PLANS.
4. REFER TO DWG. NO. ELD-03 FOR POWER CENTER DETAILS.
5. THIS PROJECT WILL HAVE A CERTIFIED ARBORIST AS A MEMBER OF THE CONSTRUCTION-MONITORING TEAM. THE ARBORIST AND THE CITY'S FORESTER WILL ADVISE THE CONTRACTOR WHERE TREE PROTECTION MEASURES ARE NEEDED WHEN THERE IS EXCAVATION NEAR EXISTING TREES TO REMAIN. THE CONTRACTOR SHALL COORDINATE WITH THE ARBORIST AND THE CITY'S FORESTER PRIOR TO ALL EXCAVATION WORK IN THESE AREAS AND SHALL ACCOUNT FOR TIME IN THE CONSTRUCTION SCHEDULE TO ACCOMMODATE THIS COORDINATION.
6. INSTALL TEMPORARY PLASTIC FENCING, ITEM 607.41010010, FOR PROTECTION AROUND ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY THAT HAVE BEEN DESIGNATED TO REMAIN. INSTALL TRUNK PROTECTION AS ORDERED BY THE CITY'S FORESTER AND PROJECT ARBORIST ALSO UNDER ITEM 607.41010010.
7. THE CITY'S FORESTER AND PROJECT ARBORIST SHALL DETERMINE THE AREAS WITHIN THE CRITICAL ROOT ZONES THAT REQUIRE TREE ROOT PRUNING, ITEM 614.09, AND PNEUMATIC EXCAVATION AND BACKFILL, ITEM 206.04010011.
8. EXISTING TREE STUMPS ONLY SHALL BE REMOVED UNDER ITEM 203.02.
9. REFER ALSO TO 'TREE PROTECTION DURING CONSTRUCTION' NOTES' ON DWG. NO. GN-01.
10. REFER TO DWG. NOS. DUD 05 - DUD 06. PAYMENT FOR REMOVAL OF EXISTING CURB WITHIN A PROPOSED PLANTER SHALL BE PAID FOR UNDER ITEM 206.0201, TRENCH AND CULVERT EXCAVATION, AS PART OF THE EXCAVATION REQUIRED FOR THE PLANTER.
11. REFER TO DETAIL 1 ON DWG. NO. TS-02.
12. SEE DWG. NO. GN-02 FOR RIGHT OF WAY NOTES.



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

**DRAFT  
NOT FOR  
CONSTRUCTION**

| KEY |                                               |  |                                                                               |
|-----|-----------------------------------------------|--|-------------------------------------------------------------------------------|
|     | ITEM 608.0101 SIDEWALK/DRIVEWAY CONCRETE AREA |  | ITEM 608.020102 HOT MIX ASPHALT RESTORATION AREA                              |
|     | GREEN SPACE 6\"/>                             |  | TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02) |
|     | ITEM 610.1403 AND ITEM 610.1602               |  | EXISTING TREE TO REMAIN                                                       |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
GENERAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

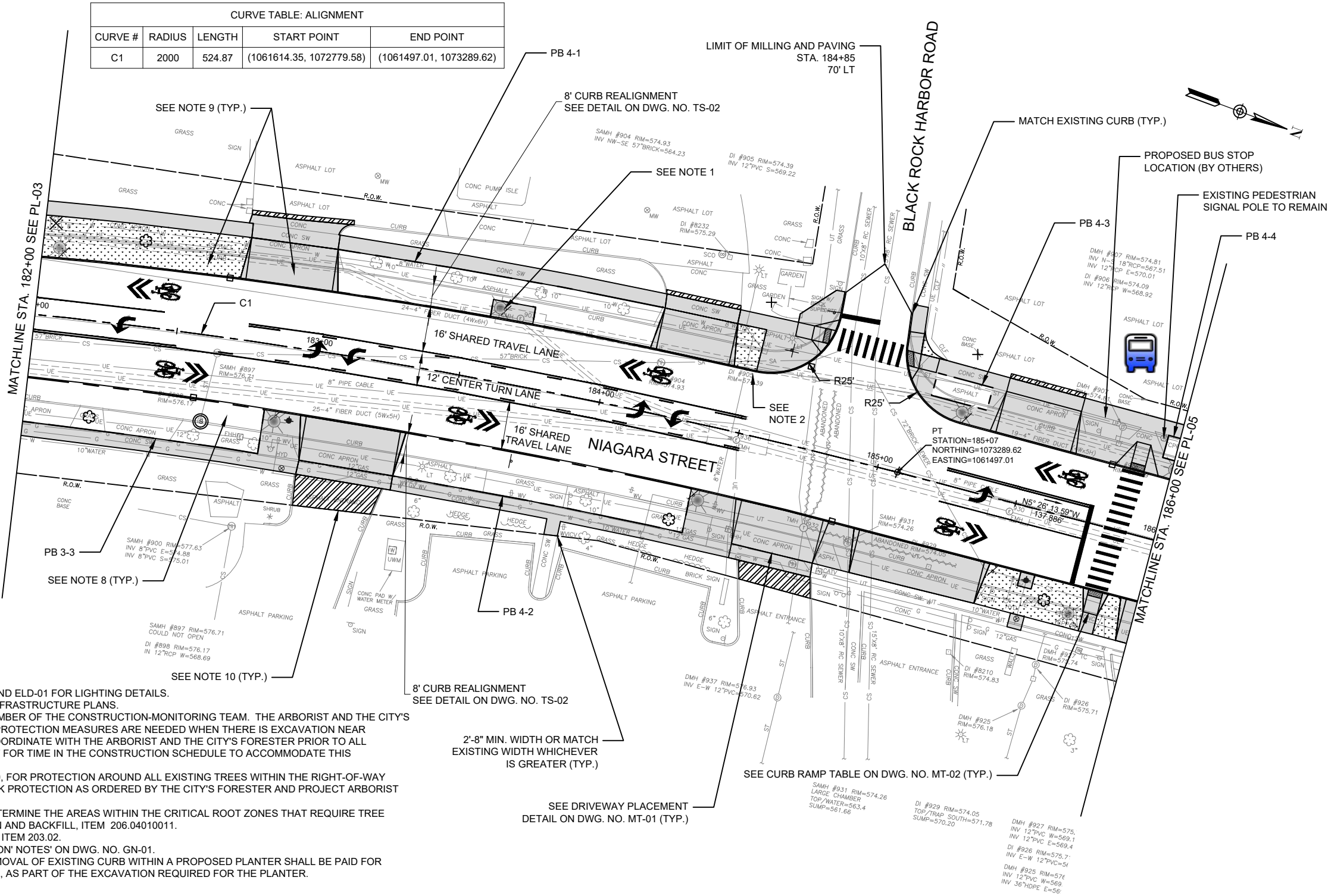
DRAWING NO. PL-03  
SHEET NO. 26



- NOTES:
1. REFER TO DWG. NO. ELP-04 FOR STREET LIGHTING PLAN AND ELD-01 FOR LIGHTING DETAILS.
  2. REFER TO DWG. NO. DUP-04 FOR DRAINAGE AND GREEN INFRASTRUCTURE PLANS.
  3. THIS PROJECT WILL HAVE A CERTIFIED ARBORIST AS A MEMBER OF THE CONSTRUCTION-MONITORING TEAM. THE ARBORIST AND THE CITY'S FORESTER WILL ADVISE THE CONTRACTOR WHERE TREE PROTECTION MEASURES ARE NEEDED WHEN THERE IS EXCAVATION NEAR EXISTING TREES TO REMAIN. THE CONTRACTOR SHALL COORDINATE WITH THE ARBORIST AND THE CITY'S FORESTER PRIOR TO ALL EXCAVATION WORK IN THESE AREAS AND SHALL ACCOUNT FOR TIME IN THE CONSTRUCTION SCHEDULE TO ACCOMMODATE THIS COORDINATION.
  4. INSTALL TEMPORARY PLASTIC FENCING, ITEM 607.41010010, FOR PROTECTION AROUND ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY THAT HAVE BEEN DESIGNATED TO REMAIN. INSTALL TRUNK PROTECTION AS ORDERED BY THE CITY'S FORESTER AND PROJECT ARBORIST ALSO UNDER ITEM 607.41010010.
  5. THE CITY'S FORESTER AND PROJECT ARBORIST SHALL DETERMINE THE AREAS WITHIN THE CRITICAL ROOT ZONES THAT REQUIRE TREE ROOT PRUNING, ITEM 614.09, AND PNEUMATIC EXCAVATION AND BACKFILL, ITEM 206.04010011.
  6. EXISTING TREE STUMPS ONLY SHALL BE REMOVED UNDER ITEM 203.02.
  7. REFER ALSO TO 'TREE PROTECTION DURING CONSTRUCTION' NOTES' ON DWG. NO. GN-01.
  8. REFER TO DWG. NOS. DUD 05 - DUD 06. PAYMENT FOR REMOVAL OF EXISTING CURB WITHIN A PROPOSED PLANTER SHALL BE PAID FOR UNDER ITEM 206.0201, TRENCH AND CULVERT EXCAVATION, AS PART OF THE EXCAVATION REQUIRED FOR THE PLANTER.
  9. REFER TO DETAIL 1 ON DWG. NO. TS-02.
  10. SEE DWG. NO. GN-02 FOR RIGHT OF WAY NOTES.

DRAFT  
NOT FOR  
CONSTRUCTION

| CURVE TABLE: ALIGNMENT |        |        |                          |                          |
|------------------------|--------|--------|--------------------------|--------------------------|
| CURVE #                | RADIUS | LENGTH | START POINT              | END POINT                |
| C1                     | 2000   | 524.87 | (1061614.35, 1072779.58) | (1061497.01, 1073289.62) |



| KEY |                                               |  |                                                                               |
|-----|-----------------------------------------------|--|-------------------------------------------------------------------------------|
|     | ITEM 608.0101 SIDEWALK/DRIVEWAY CONCRETE AREA |  | ITEM 608.020102 HOT MIX ASPHALT RESTORATION AREA                              |
|     | GREEN SPACE 6\"/>                             |  | TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02) |
|     | EXISTING TREE TO REMAIN                       |  | TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)                       |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
GENERAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. PL-04  
SHEET NO. 27

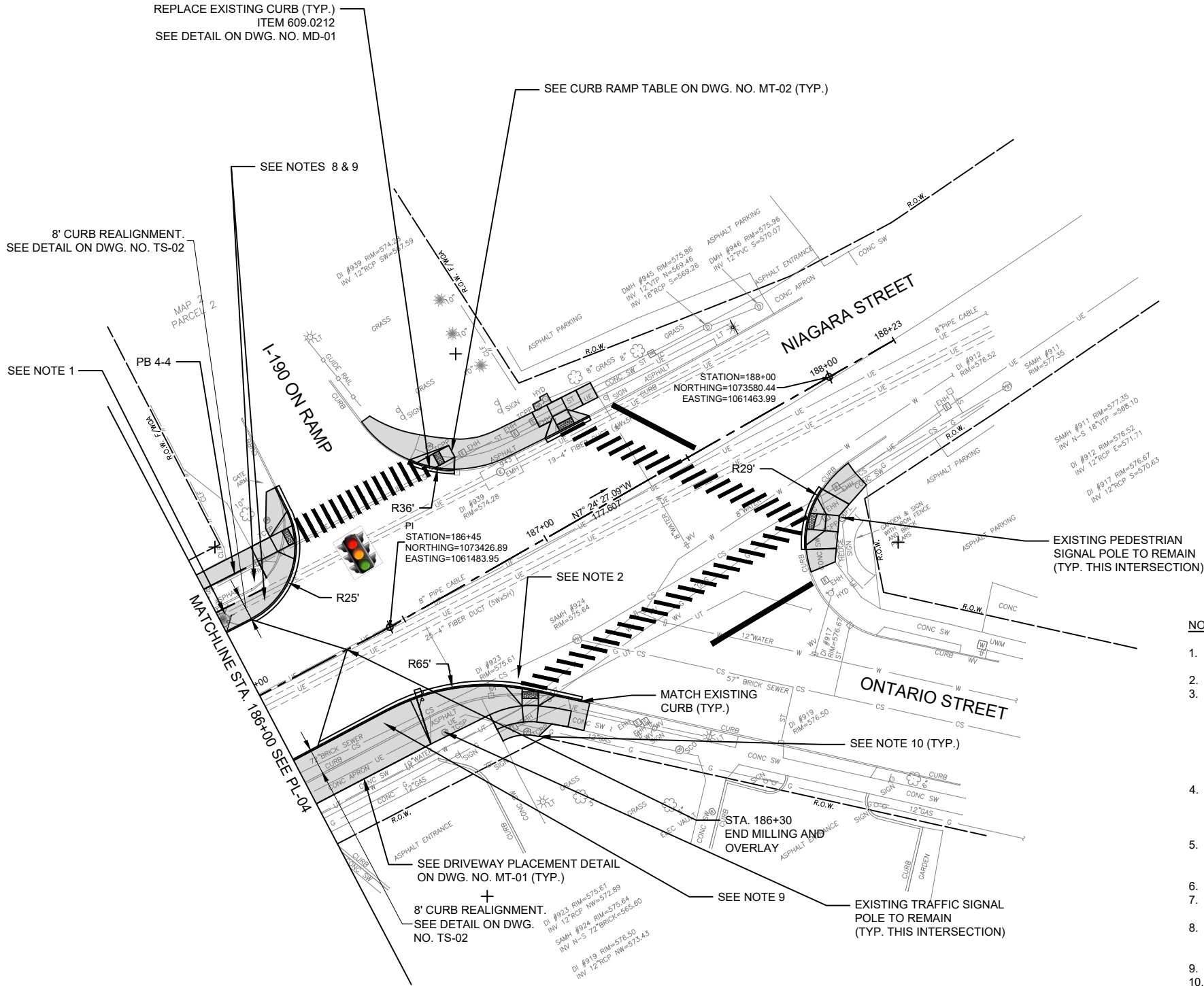
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK P. GALBO  
DRAFTING V. CONERS  
CHECK P. GALBO  
PROJECT MANAGER P. GALBO

DRAFT  
NOT FOR  
CONSTRUCTION



NOTES:

1. REFER TO DWG. NO. ELP-05 FOR STREET LIGHTING PLAN AND ELD-01 FOR LIGHTING DETAILS.
2. REFER TO DWG. NO. DUP-05 FOR DRAINAGE AND GREEN INFRASTRUCTURE PLANS.
3. THIS PROJECT WILL HAVE A CERTIFIED ARBORIST AS A MEMBER OF THE CONSTRUCTION-MONITORING TEAM. THE ARBORIST AND THE CITY'S FORESTER WILL ADVISE THE CONTRACTOR WHERE TREE PROTECTION MEASURES ARE NEEDED WHEN THERE IS EXCAVATION NEAR EXISTING TREES TO REMAIN. THE CONTRACTOR SHALL COORDINATE WITH THE ARBORIST AND THE CITY'S FORESTER PRIOR TO ALL EXCAVATION WORK IN THESE AREAS AND SHALL ACCOUNT FOR TIME IN THE CONSTRUCTION SCHEDULE TO ACCOMMODATE THIS COORDINATION.
4. INSTALL TEMPORARY PLASTIC FENCING, ITEM 607.41010010, FOR PROTECTION AROUND ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY THAT HAVE BEEN DESIGNATED TO REMAIN. INSTALL TRUNK PROTECTION AS ORDERED BY THE CITY'S FORESTER AND PROJECT ARBORIST ALSO UNDER ITEM 607.41010010.
5. THE CITY'S FORESTER AND PROJECT ARBORIST SHALL DETERMINE THE AREAS WITHIN THE CRITICAL ROOT ZONES THAT REQUIRE TREE ROOT PRUNING, ITEM 614.09, AND PNEUMATIC EXCAVATION AND BACKFILL, ITEM 206.04010011.
6. EXISTING TREE STUMPS ONLY SHALL BE REMOVED UNDER ITEM 203.02.
7. REFER ALSO TO 'TREE PROTECTION DURING CONSTRUCTION' NOTES' ON DWG. NO. GN-01.
8. REFER TO DWG. NOS. DUD 05 - DUD 06. PAYMENT FOR REMOVAL OF EXISTING CURB WITHIN A PROPOSED PLANTER SHALL BE PAID FOR UNDER ITEM 206.0201, TRENCH AND CULVERT EXCAVATION, AS PART OF THE EXCAVATION REQUIRED FOR THE PLANTER.
9. REFER TO DETAIL 1 ON DWG. NO. TS-02.
10. SEE DWG. NO. GN-02 FOR RIGHT OF WAY NOTES.

KEY

|                                               |                                                                               |                                                                                                                         |                   |                                                                                   |
|-----------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|
| ITEM 608.0101 SIDEWALK/DRIVEWAY CONCRETE AREA | ITEM 608.020102 HOT MIX ASPHALT RESTORATION AREA                              | TREE REMOVAL AND REPLACEMENT (SEE DETAIL ON DWG. NO. MD-01 AND TREE REMOVAL AND TREE PLANTING TABLES ON DWG. NO. MT-02) | RIGHT OF WAY LINE | PLANTER OUTLINE (SEE DETAILS ON DWG. NOS. MD-03 THRU MD-06)                       |
| GREEN SPACE 6\"/>                             | TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02) | TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)                                                                 | NFTA BUS STOP     | TREE PIT (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02) |
| EXISTING TREE TO REMAIN                       |                                                                               | SIGNALIZED INTERSECTION (SEE TRAFFIC SIGNAL PLAN DWGS FOR IMPROVEMENT DETAILS)                                          |                   |                                                                                   |

0 10' 20' 40'

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
GENERAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. PL-05  
SHEET NO. 28

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN T. BUCKLEY  
CHECK J. ROSS  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO  
CHECK J. ROSS/V. CONERS

- NOTES:
1. THE SYMBOL  $\rightarrow$  DENOTES THE DIRECTION OF RUNOFF FROM THE PROPOSED ROADWAY SLOPE.
  2. SOME OF THE EXISTING UTILITIES AND LINE WORK HAVE BEEN OMITTED FOR CLARITY. SEE DWG. NOS. PL-01 THRU PL-05 FOR MORE DETAIL.
  3. PAVEMENT MARKINGS HAVE BEEN OMITTED FOR CLARITY. SEE DWG. NOS. SPM-01 THRU SPM-05 FOR PAVEMENT MARKINGS AND LANE CONFIGURATIONS.

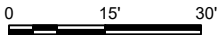
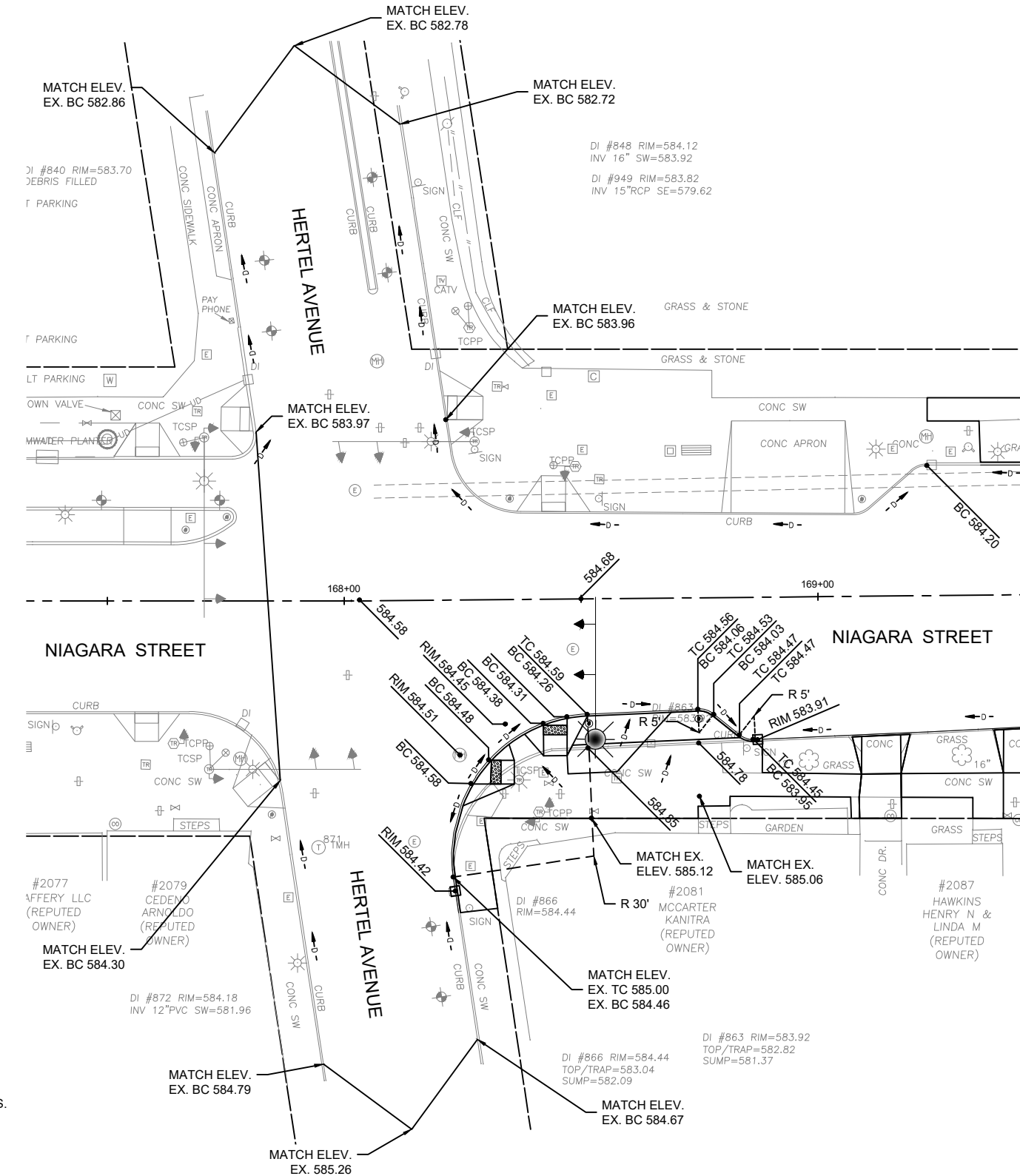
DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
INTERSECTION GRADING PLAN

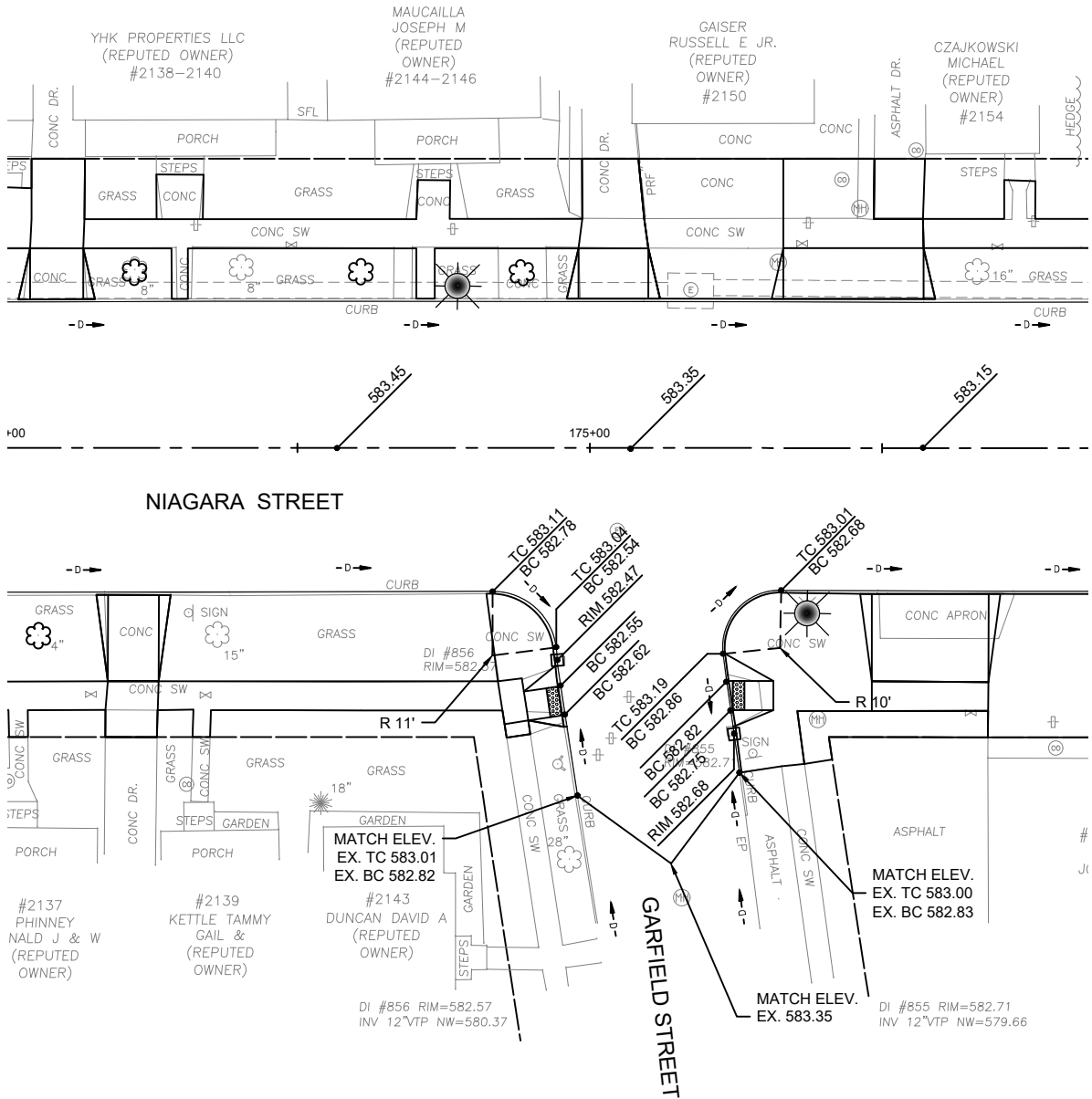
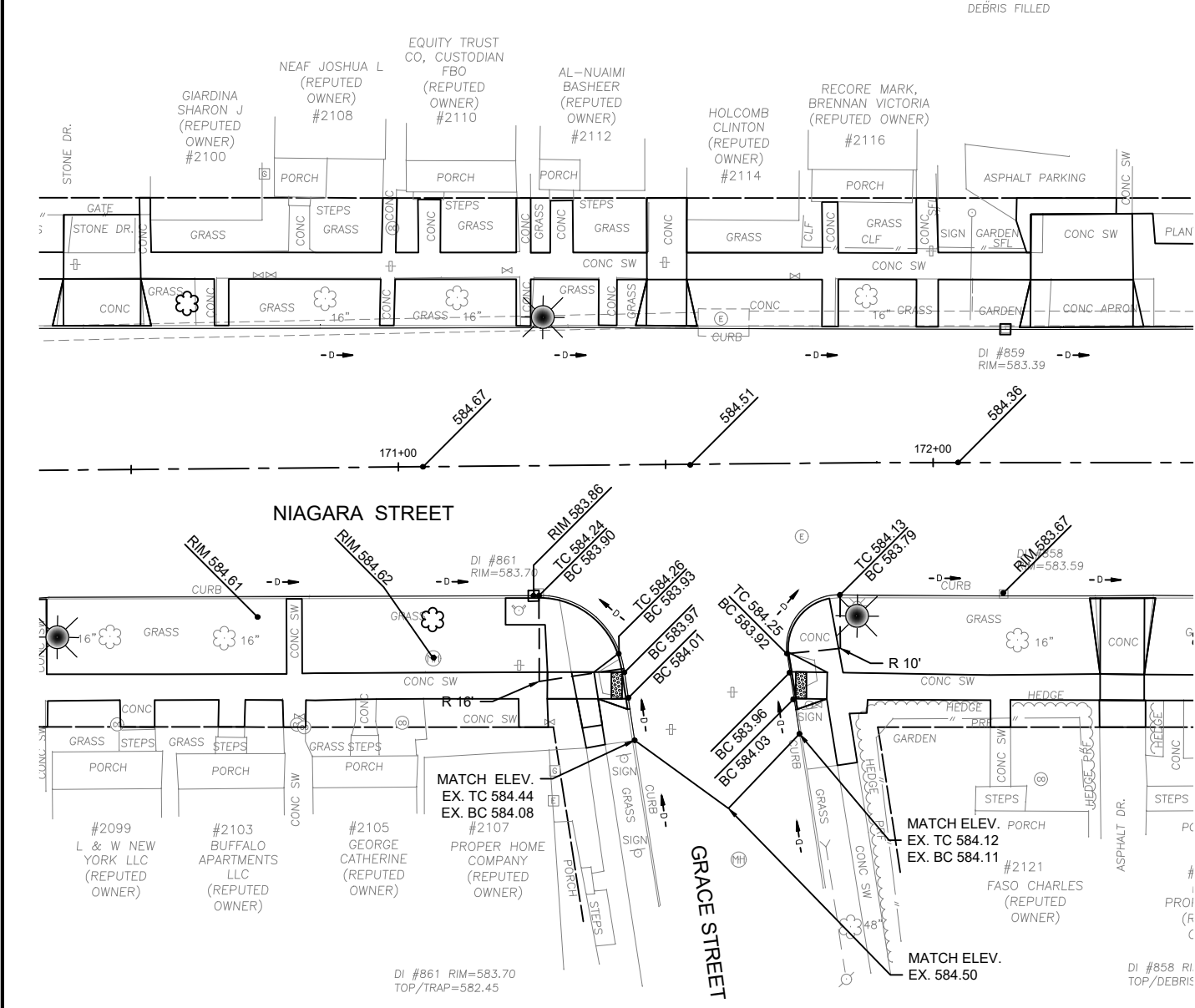
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. IG-01  
SHEET NO. 29





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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN T. BUCKLEY  
CHECK J. ROSS  
DRAFTING T. BUCKLEY  
CHECK J. ROSS/V. CONERS  
PROJECT MANAGER P. GALBO



- NOTES:
1. THE SYMBOL  $\rightarrow$  DENOTES THE DIRECTION OF RUNOFF FROM THE PROPOSED ROADWAY SLOPE.
  2. SOME OF THE EXISTING UTILITIES AND LINE WORK HAVE BEEN OMITTED FOR CLARITY. SEE DWG. NOS. PL-01 THRU PL-05 FOR MORE DETAIL.
  3. PAVEMENT MARKINGS HAVE BEEN OMITTED FOR CLARITY. SEE DWG. NOS. SPM-01 THRU SPM-05 FOR PAVEMENT MARKINGS AND LANE CONFIGURATIONS.

|                                             |                    |
|---------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                          | ALTERED BY:<br>ON: |
| <h1>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</h1> |                    |

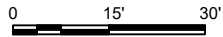
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DESCRIPTION OF ALTERATIONS:



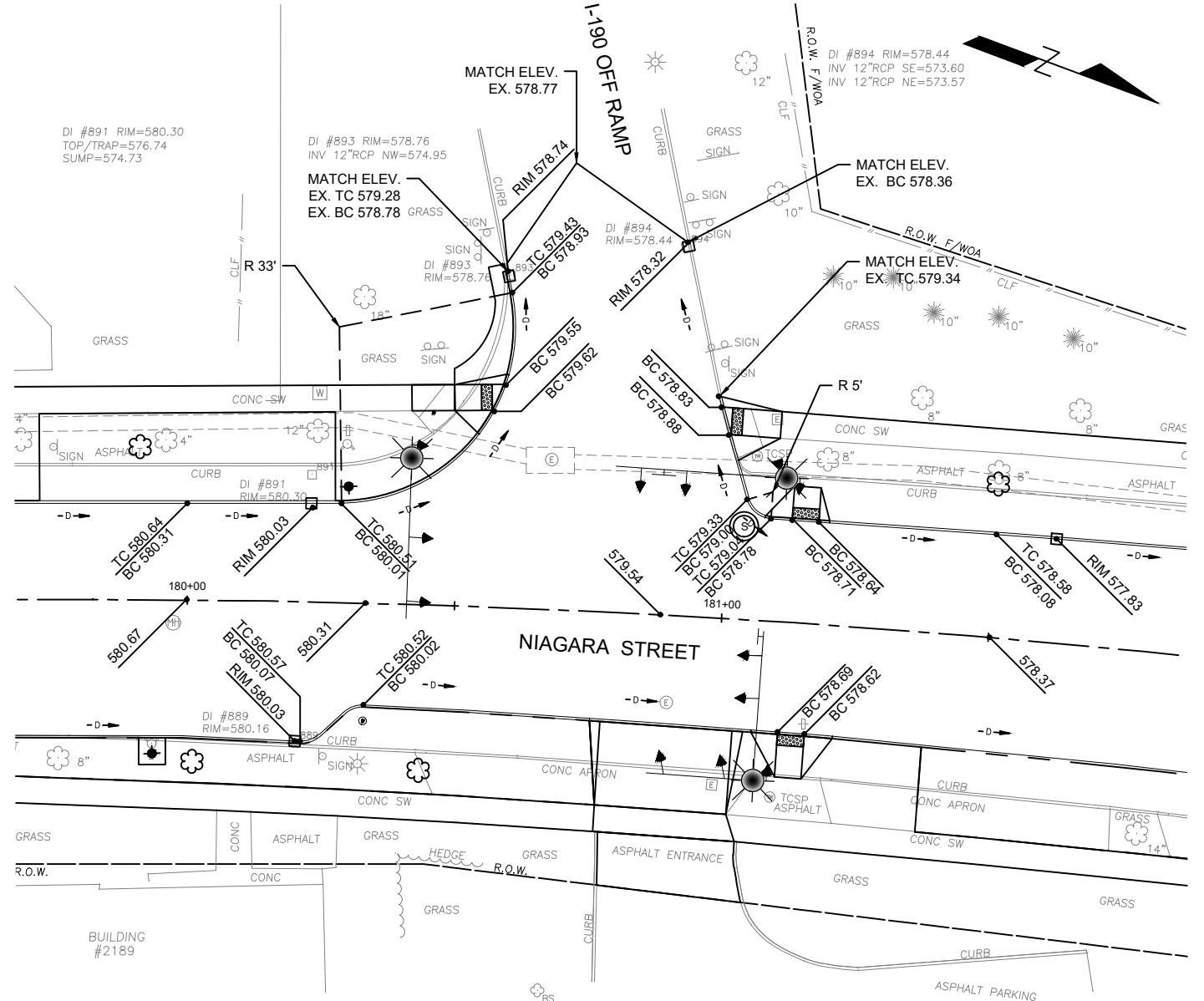
ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
**NIAGARA STREET CORRIDOR PROJECT**  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
INTERSECTION GRADING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. IG-02  
SHEET NO. 30

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





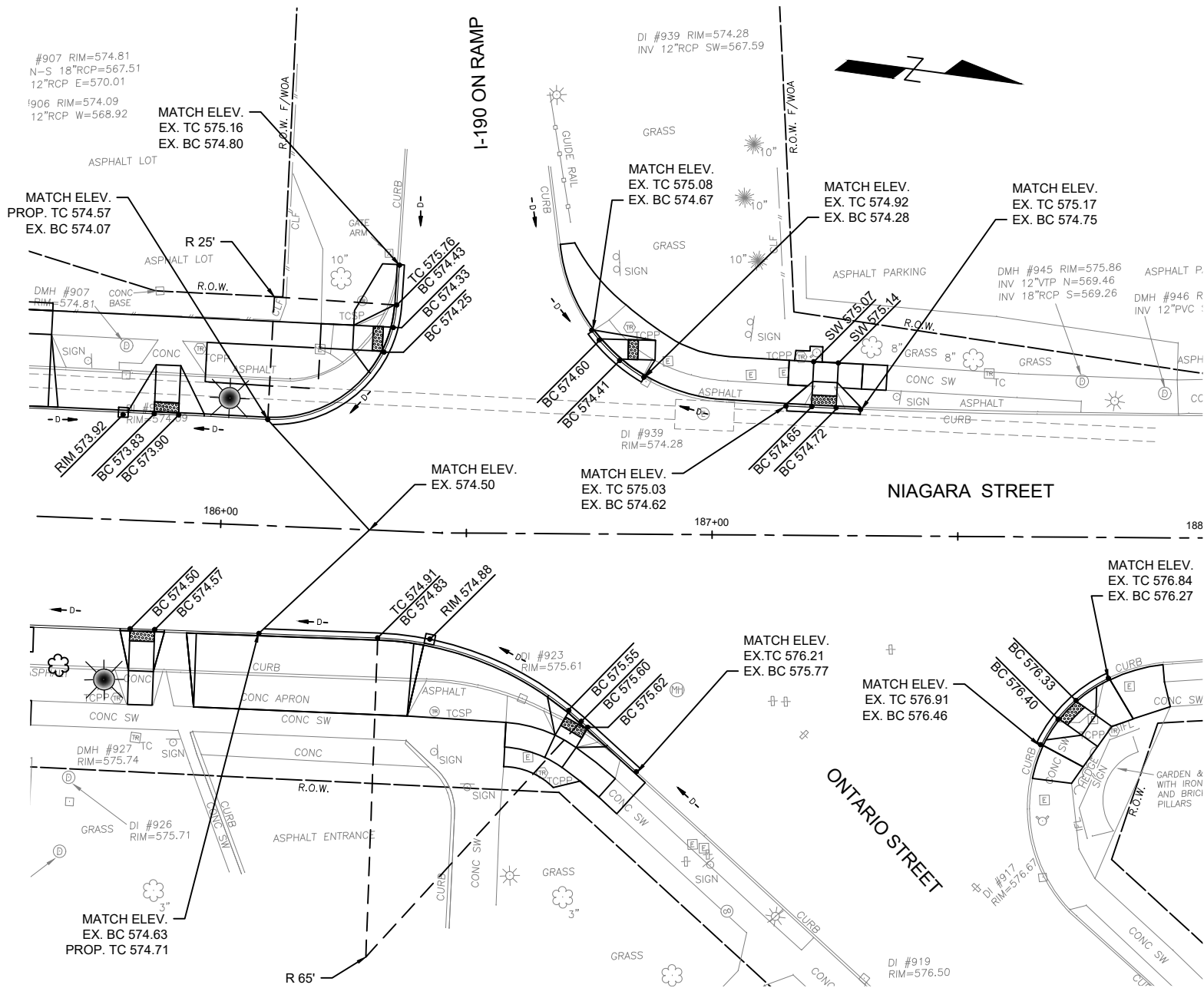
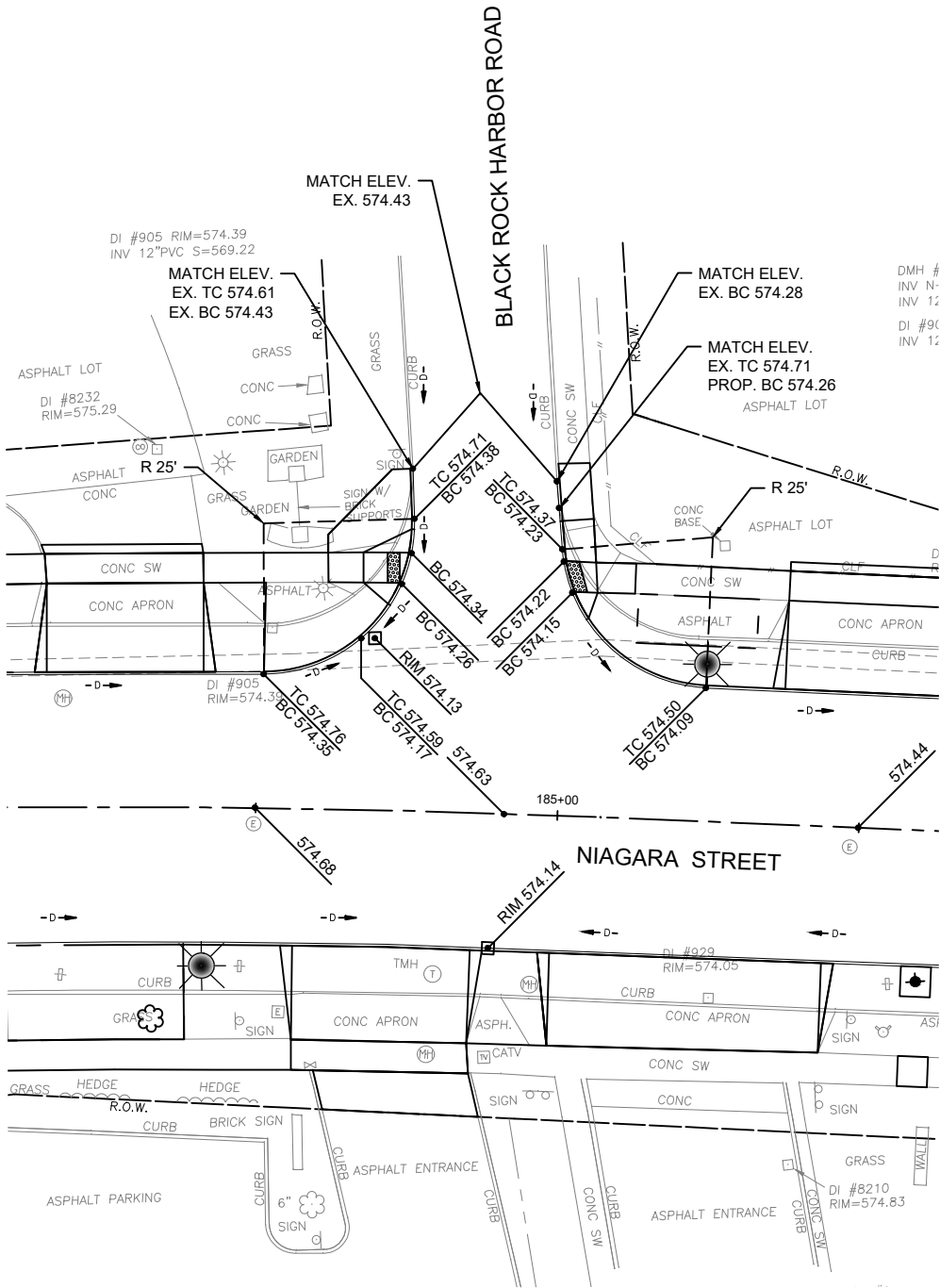


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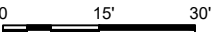
|                       |       |
|-----------------------|-------|
| CITY OF BUFFALO       |       |
| ERIE COUNTY, NEW YORK |       |
| DRAWING NO.           | IG-03 |
| SHEET NO.             | 31    |

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





- NOTES:
1. THE SYMBOL  $\rightarrow$  DENOTES THE DIRECTION OF RUNOFF FROM THE PROPOSED ROADWAY SLOPE.
  2. SOME OF THE EXISTING UTILITIES AND LINE HAVE BEEN OMITTED FOR CLARITY. SEE DWG. NOS. PL-01 THRU PL-05 FOR MORE DETAIL.
  3. PAVEMENT MARKINGS HAVE BEEN OMITTED FOR CLARITY. SEE DWG. NOS. SPM-01 THRU SPM-05 FOR PAVEMENT MARKINGS AND LANE CONFIGURATIONS.



**DRAFT  
NOT FOR  
CONSTRUCTION**

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED  
**NIAGARA STREET CORRIDOR PROJECT**  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
INTERSECTION GRADING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. IG-04  
SHEET NO. 32

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN P. PFLEUGER  
CHECK J. KOCH  
DRAFTING P. PFLEUGER  
CHECK J. KOCH  
PROJECT MANAGER P. GALBO

DRAFT  
NOT FOR  
CONSTRUCTION

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



**Watts**  
**Architects**  
**& Engineers**

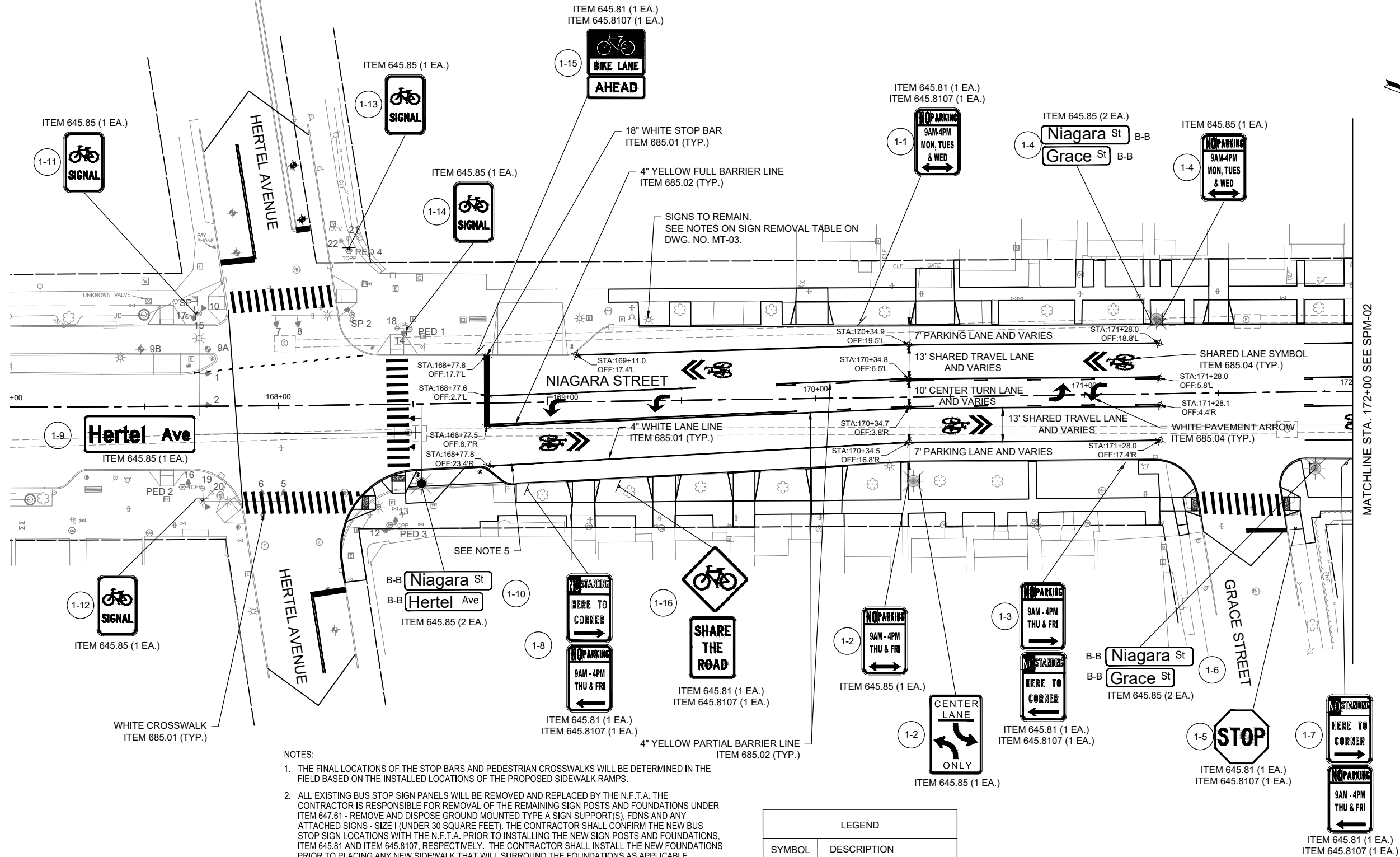
ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
SIGN AND PAVEMENT MARKING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. SPM-01  
SHEET NO. 33

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



- NOTES:
1. THE FINAL LOCATIONS OF THE STOP BARS AND PEDESTRIAN CROSSWALKS WILL BE DETERMINED IN THE FIELD BASED ON THE INSTALLED LOCATIONS OF THE PROPOSED SIDEWALK RAMPS.
  2. ALL EXISTING BUS STOP SIGN PANELS WILL BE REMOVED AND REPLACED BY THE N.F.T.A. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THE REMAINING SIGN POSTS AND FOUNDATIONS UNDER ITEM 647.61 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET). THE CONTRACTOR SHALL CONFIRM THE NEW BUS STOP SIGN LOCATIONS WITH THE N.F.T.A. PRIOR TO INSTALLING THE NEW SIGN POSTS AND FOUNDATIONS, ITEM 645.81 AND ITEM 645.8107, RESPECTIVELY. THE CONTRACTOR SHALL INSTALL THE NEW FOUNDATIONS PRIOR TO PLACING ANY NEW SIDEWALK THAT WILL SURROUND THE FOUNDATIONS AS APPLICABLE.
  3. ALL SHARROWS SYMBOLS SHALL BE CENTERED IN THE TRAVEL LANE.
  4. ITEM 645.85 SHALL INCLUDE ALL HARDWARE NECESSARY TO MOUNT THE SIGN TO THE MAST ARM OR THE POLE AS SPECIFIED. QUANTITIES OF ITEM 645.85 SHALL BE AS STATED ON THE PLANS. A QUANTITY OF 1 PER BACK TO BACK SIGN.
  5. REMOVE EXISTING PAVEMENT MARKINGS ON NIAGARA STREET BETWEEN STA. 168+00 AND STA. 169+23 WHICH CONFLICT WITH THE PROPOSED PAVEMENT MARKING LAYOUT (ITEM 619.080102)

| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
| X-X    | LOCATION NUMBER |
| B-B    | BACK TO BACK    |



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USER = Victoria Coners

JOB MANAGER T. DUK

DESIGN P. PFLEUGER

CHECK J. KOCH

DRAFTING P. PFLEUGER

CHECK J. KOCH

PROJECT MANAGER P. GALBO

DRAFT  
NOT FOR  
CONSTRUCTION

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

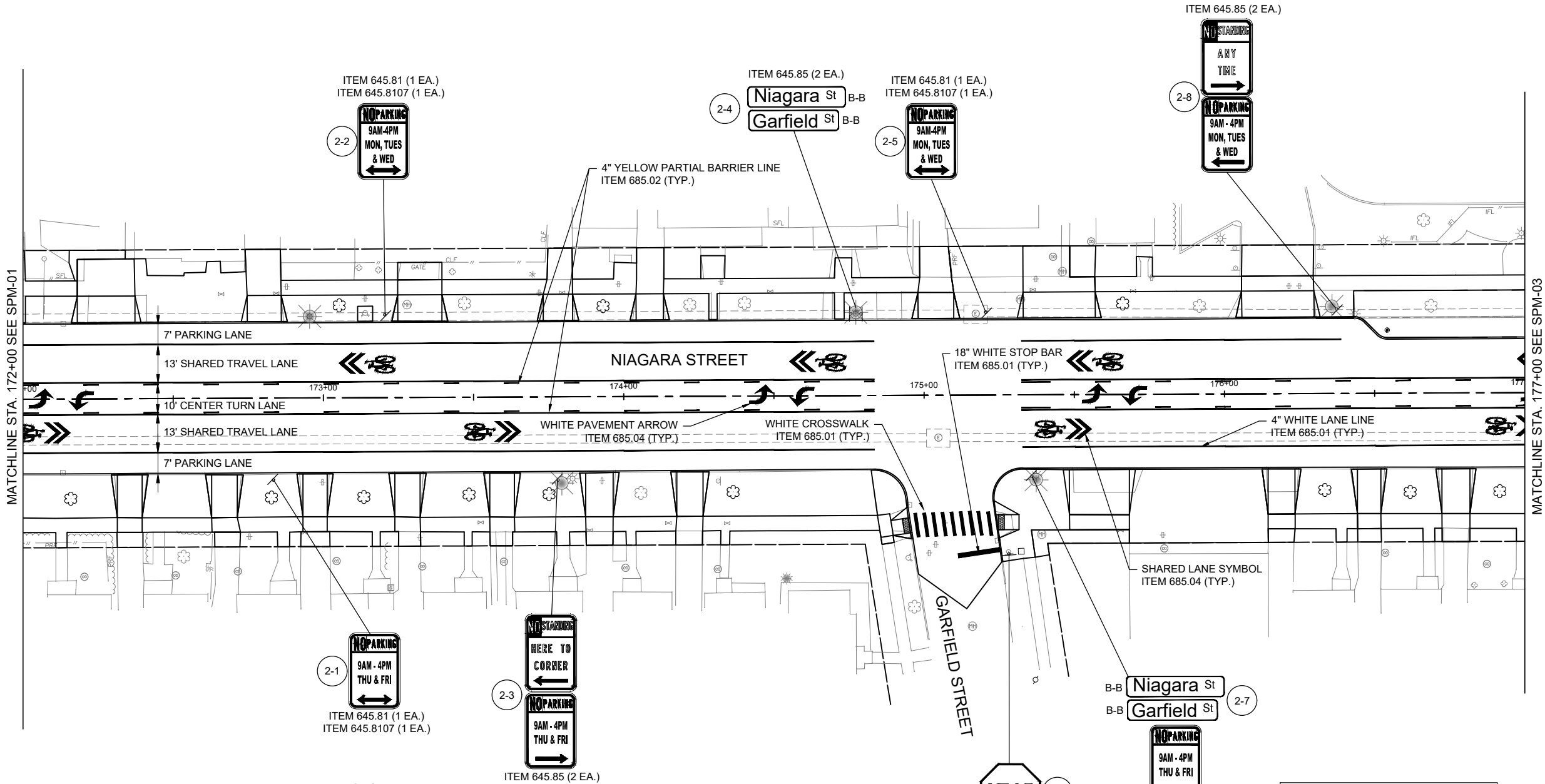


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

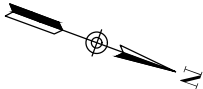
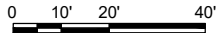
| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
| X-X    | LOCATION NUMBER |
| B-B    | BACK TO BACK    |

|                                                                   |  |
|-------------------------------------------------------------------|--|
| ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED                      |  |
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90             |  |
| HERTEL AVENUE TO ONTARIO STREET<br>SIGN AND PAVEMENT MARKING PLAN |  |

|                                          |        |
|------------------------------------------|--------|
| CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |        |
| DRAWING NO.                              | SPM-02 |
| SHEET NO.                                | 34     |



- NOTES:
- THE FINAL LOCATIONS OF THE STOP BARS AND PEDESTRIAN CROSSWALKS WILL BE DETERMINED IN THE FIELD BASED ON THE INSTALLED LOCATIONS OF THE PROPOSED SIDEWALK RAMPS.
  - ALL EXISTING BUS STOP SIGN PANELS WILL BE REMOVED AND REPLACED BY THE N.F.T.A. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THE REMAINING SIGN POSTS AND FOUNDATIONS UNDER ITEM 647.61 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET). THE CONTRACTOR SHALL CONFIRM THE NEW BUS STOP SIGN LOCATIONS WITH THE N.F.T.A. PRIOR TO INSTALLING THE NEW SIGN POSTS AND FOUNDATIONS, ITEM 645.81 AND ITEM 645.8107, RESPECTIVELY. THE CONTRACTOR SHALL INSTALL THE NEW FOUNDATIONS PRIOR TO PLACING ANY NEW SIDEWALK THAT WILL SURROUND THE FOUNDATIONS AS APPLICABLE.
  - ALL SHARROWS SYMBOLS SHALL BE CENTERED IN THE TRAVEL LANE.
  - ITEM 645.85 SHALL INCLUDE ALL HARDWARE NECESSARY TO MOUNT THE SIGN TO THE MAST ARM OR THE POLE AS SPECIFIED. QUANTITIES OF ITEM 645.85 SHALL BE AS STATED ON THE PLANS. A QUANTITY OF 1 PER BACK TO BACK SIGN.

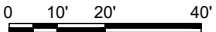
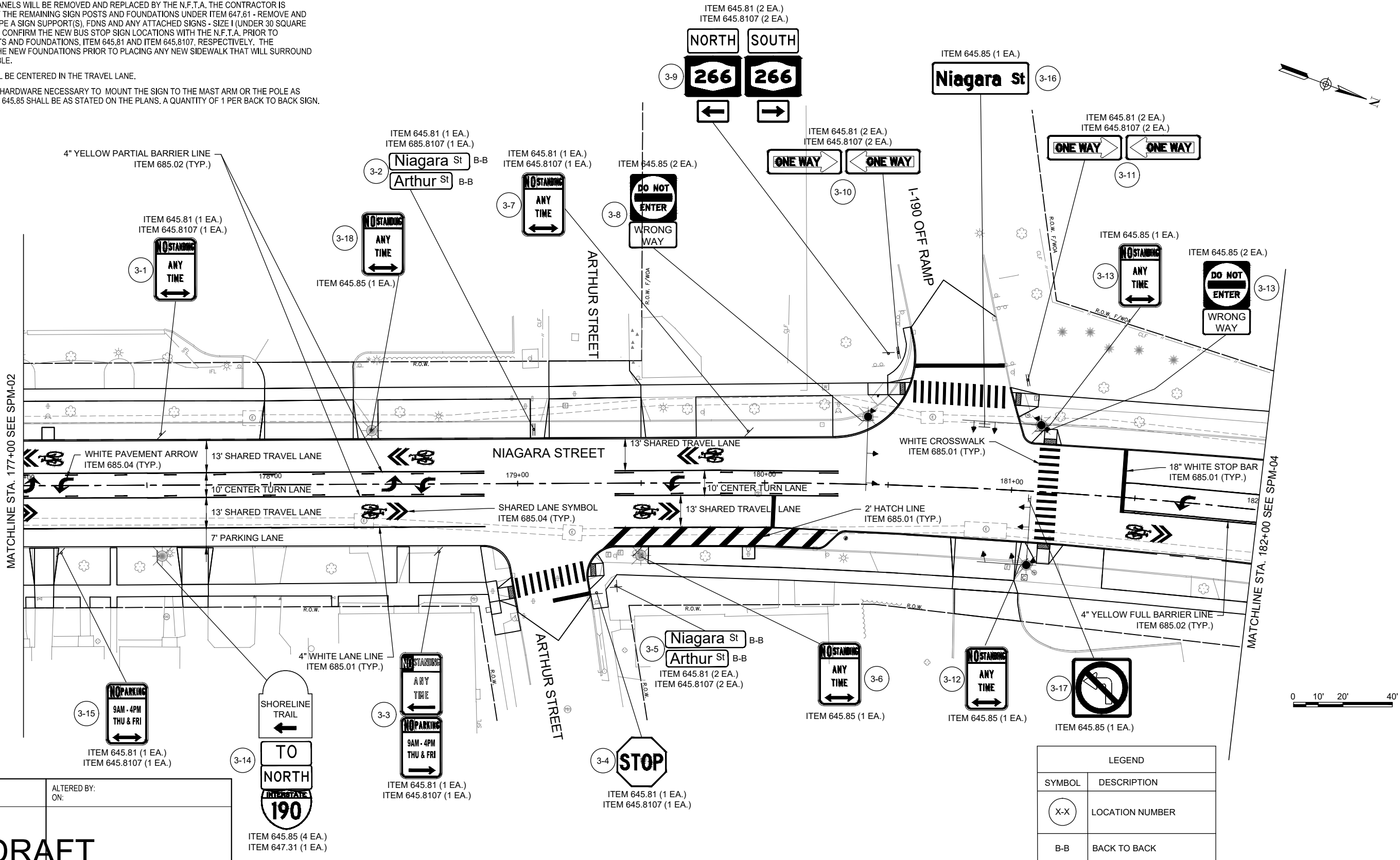




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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN P. PFLEUGER  
CHECK J. KOCH  
DRAFTING P. PFLEUGER  
CHECK J. KOCH  
PROJECT MANAGER P. GALBO

- NOTES:
1. THE FINAL LOCATIONS OF THE STOP BARS AND PEDESTRIAN CROSSWALKS WILL BE DETERMINED IN THE FIELD BASED ON THE INSTALLED LOCATIONS OF THE PROPOSED SIDEWALK RAMPS.
  2. ALL EXISTING BUS STOP SIGN PANELS WILL BE REMOVED AND REPLACED BY THE N.F.T.A. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THE REMAINING SIGN POSTS AND FOUNDATIONS UNDER ITEM 647.61 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE 1 (UNDER 30 SQUARE FEET). THE CONTRACTOR SHALL CONFIRM THE NEW BUS STOP SIGN LOCATIONS WITH THE N.F.T.A. PRIOR TO INSTALLING THE NEW SIGN POSTS AND FOUNDATIONS, ITEM 645.81 AND ITEM 645.8107, RESPECTIVELY. THE CONTRACTOR SHALL INSTALL THE NEW FOUNDATIONS PRIOR TO PLACING ANY NEW SIDEWALK THAT WILL SURROUND THE FOUNDATIONS AS APPLICABLE.
  3. ALL SHARROWS SYMBOLS SHALL BE CENTERED IN THE TRAVEL LANE.
  4. ITEM 645.85 SHALL INCLUDE ALL HARDWARE NECESSARY TO MOUNT THE SIGN TO THE MAST ARM OR THE POLE AS SPECIFIED. QUANTITIES OF ITEM 645.85 SHALL BE AS STATED ON THE PLANS. A QUANTITY OF 1 PER BACK TO BACK SIGN.



| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
| X-X    | LOCATION NUMBER |
| B-B    | BACK TO BACK    |

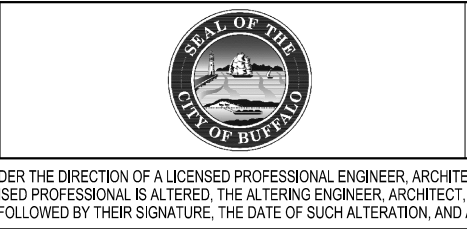
AFFIX SEAL:  
ON:

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DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



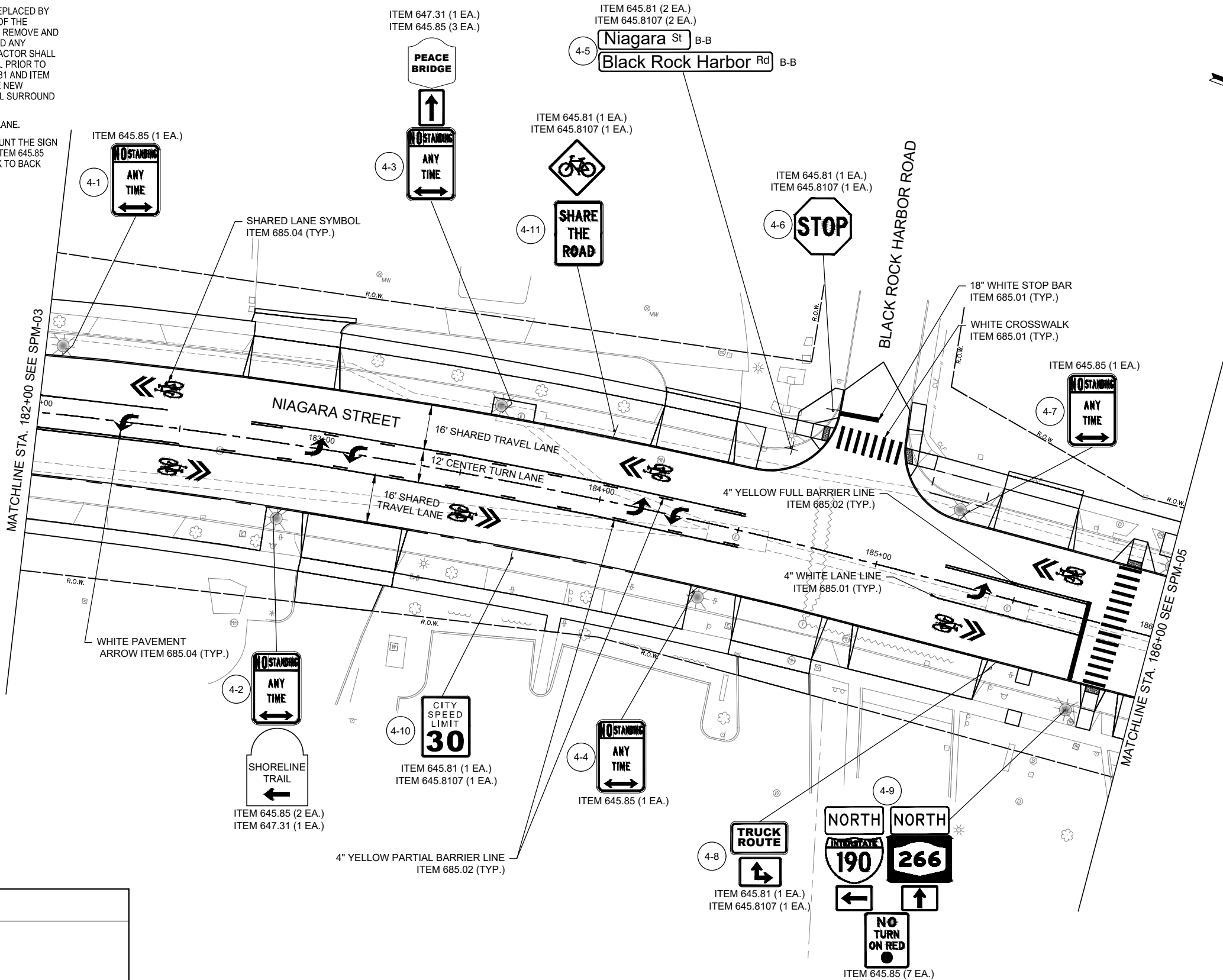
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|-------------------------------------------------------------------|--|------------------------------------------|--------|
| ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED                       |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |        |
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90             |  | DRAWING NO.                              | SPM-03 |
| HERTEL AVENUE TO ONTARIO STREET<br>SIGN AND PAVEMENT MARKING PLAN |  | SHEET NO.                                | 35     |



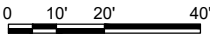
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DATE/TIME = 12/12/2022 10:02:21 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN P. PFLEUGER  
CHECK J. KOCH  
DRAFTING P. PFLEUGER  
CHECK J. KOCH  
PROJECT MANAGER P. GALBO  
J. KOCH

- NOTES:
1. THE FINAL LOCATIONS OF THE STOP BARS AND PEDESTRIAN CROSSWALKS WILL BE DETERMINED IN THE FIELD BASED ON THE INSTALLED LOCATIONS OF THE PROPOSED SIDEWALK RAMPS.
  2. ALL EXISTING BUS STOP SIGN PANELS WILL BE REMOVED AND REPLACED BY THE N.F.T.A. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THE REMAINING SIGN POSTS AND FOUNDATIONS UNDER ITEM 647.61 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET). THE CONTRACTOR SHALL CONFIRM THE NEW BUS STOP SIGN LOCATIONS WITH THE N.F.T.A. PRIOR TO INSTALLING THE NEW SIGN POSTS AND FOUNDATIONS. ITEM 645.81 AND ITEM 645.8107, RESPECTIVELY. THE CONTRACTOR SHALL INSTALL THE NEW FOUNDATIONS PRIOR TO PLACING ANY NEW SIDEWALK THAT WILL SURROUND THE FOUNDATIONS AS APPLICABLE.
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| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
| X-X    | LOCATION NUMBER |
| B-B    | BACK TO BACK    |



DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
SIGN AND PAVEMENT MARKING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. SPM-04  
SHEET NO. 36

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

JOB MANAGER T. DUK

DESIGN P. PFLEUGER

CHECK J. KOCH

DRAFTING P. PFLEUGER

CHECK J. KOCH

PROJECT MANAGER P. GALBO

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

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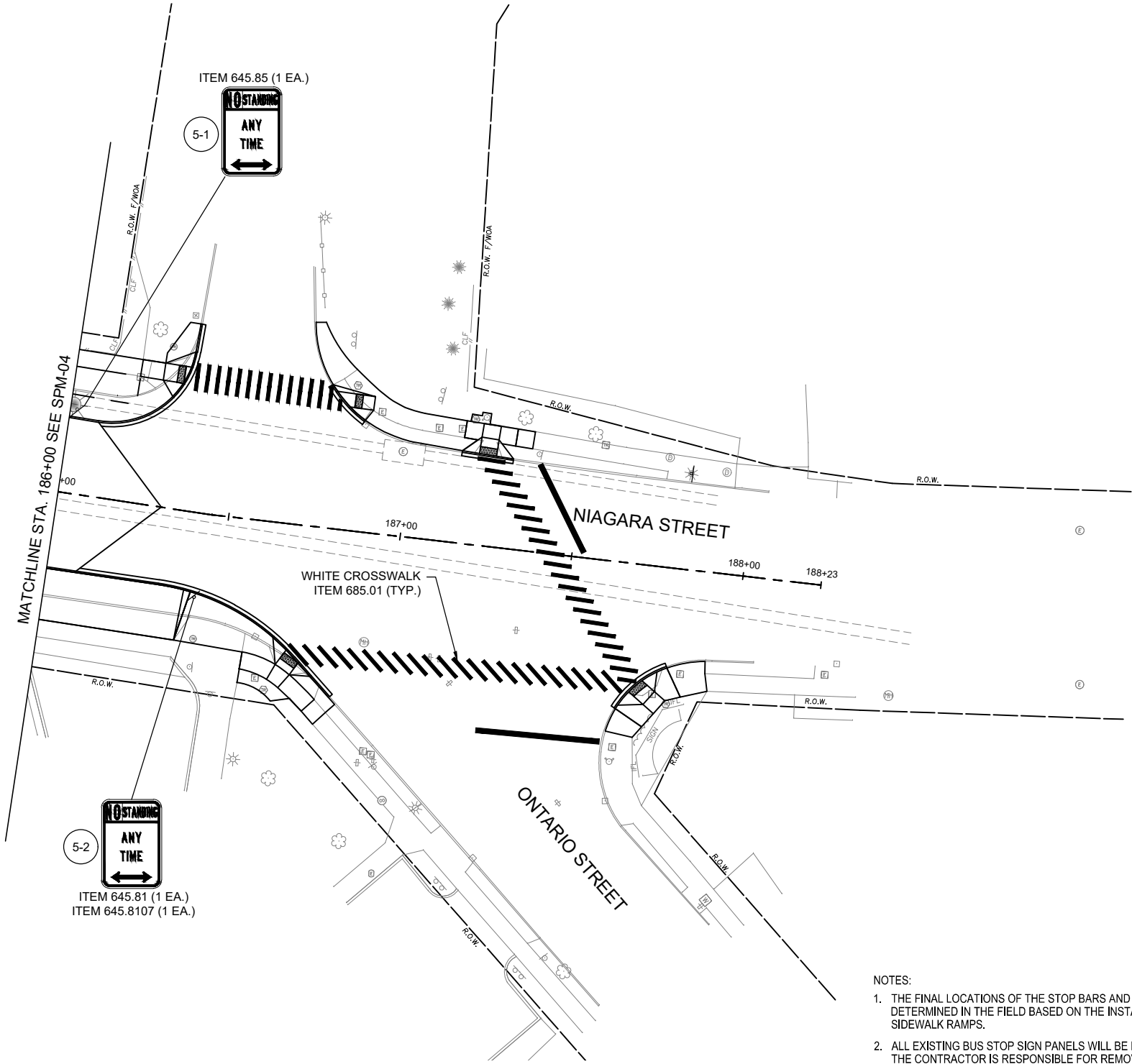


ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

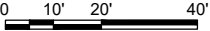
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
SIGN AND PAVEMENT MARKING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. SPM-05  
SHEET NO. 37



- NOTES:
- THE FINAL LOCATIONS OF THE STOP BARS AND PEDESTRIAN CROSSWALKS WILL BE DETERMINED IN THE FIELD BASED ON THE INSTALLED LOCATIONS OF THE PROPOSED SIDEWALK RAMPS.
  - ALL EXISTING BUS STOP SIGN PANELS WILL BE REMOVED AND REPLACED BY THE N.F.T.A. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THE REMAINING SIGN POSTS AND FOUNDATIONS UNDER ITEM 647.81 - REMOVE AND DISPOSE GROUND MOUNTED TYPE A SIGN SUPPORT(S), FDNS AND ANY ATTACHED SIGNS - SIZE I (UNDER 30 SQUARE FEET). THE CONTRACTOR SHALL CONFIRM THE NEW BUS STOP SIGN LOCATIONS WITH THE N.F.T.A. PRIOR TO INSTALLING THE NEW SIGN POSTS AND FOUNDATIONS, ITEM 645.81 AND ITEM 645.8107, RESPECTIVELY. THE CONTRACTOR SHALL INSTALL THE NEW FOUNDATIONS PRIOR TO PLACING ANY NEW SIDEWALK THAT WILL SURROUND THE FOUNDATIONS AS APPLICABLE.
  - ALL SHARROWS SYMBOLS SHALL BE CENTERED IN THE TRAVEL LANE.
  - ITEM 645.85 SHALL INCLUDE ALL HARDWARE NECESSARY TO MOUNT THE SIGN TO THE MAST ARM OR THE POLE AS SPECIFIED. QUANTITIES OF ITEM 645.85 SHALL BE AS STATED ON THE PLANS. A QUANTITY OF 1 PER BACK TO BACK SIGN.



| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
| X-X    | LOCATION NUMBER |
| B-B    | BACK TO BACK    |





| DESIGNATION & COLOR<br>(SEE NOTE 2) | LOCATION           | TEXT | ITEM     | SIZE                 | PAYMENT AREA<br>(SEE NOTE 3) |
|-------------------------------------|--------------------|------|----------|----------------------|------------------------------|
|                                     |                    |      |          | AREA<br>(SEE NOTE 3) | TOTAL<br>PAYMENT AREA        |
| R1-1                                | 1-5, 2-6, 3-4, 4-6 |      | 645.5102 | 30" X 30"            | 6.3 SF                       |
|                                     |                    |      |          | 6.3 SF               | 25.2 SF                      |
| NYR2-4                              | 4-10               |      | 645.5102 | 18" X 24"            | 3.0 SF                       |
|                                     |                    |      |          | 3.0 SF               | 3.0 SF                       |
| R3-2                                | 3-17               |      | 645.61   | 24" X 24"            | 4.0 SF                       |
|                                     |                    |      |          | 4.0 SF               | 4.0 SF                       |
| R3-9b                               | 1-2                |      | 645.5102 | 24" X 36"            | 6.0 SF                       |
|                                     |                    |      |          | 6.0 SF               | 6.0 SF                       |
| R14-1                               | 4-8                |      | 645.5102 | 24" X 18"            | 3.0 SF                       |
|                                     |                    |      |          | 3.0 SF               | 3.0 SF                       |
| R5-1                                | 3-8, 3-13          |      | 645.5102 | 36" X 36"            | 9.0 SF                       |
|                                     |                    |      |          | 9.0 SF               | 18.0 SF                      |
| R5-1a                               | 3-8, 3-13          |      | 645.5102 | 36" X 24"            | 6.0 SF                       |
|                                     |                    |      |          | 6.0 SF               | 12.0 SF                      |
| R10-11                              | 4-9                |      | 645.5102 | 24" X 30"            | 5.0 SF                       |
|                                     |                    |      |          | 5.0 SF               | 5.0 SF                       |

SIGNING NOTES:

- SIGN LOCATIONS AS SHOWN ON PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL INSTALL NEW SIGNS AND RELOCATE EXISTING SIGNS IN ACCORDANCE WITH THE MUTCD AND NYS SUPPLEMENT.
- THE COLOR IS ONLY SHOWN WHEN THERE IS AN OPTION THAT MUST SPECIFIED.
- THE AREA AND PAYMENT AREA FOR SIGNS ARE FROM THE APPLICABLE STANDARD SHEETS OR SIGN FACE LAYOUTS.
- REMOVE EXISTING SIGNS WITHIN CONTRACT LIMITS. THE OLD PANEL(S) AND POST(S) ARE TO BE REMOVED WITHIN 48 HOURS AFER NEW SIGN IS IN PLACE. SEE "SIGN REMOVAL TABLE".

| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
|        | DWG. NO-LOC. NO |
|        | BACK TO BACK    |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| DESIGNATION & COLOR<br>(SEE NOTE 2) | LOCATION                                                         | TEXT | ITEM     | SIZE                 | PAYMENT AREA<br>(SEE NOTE 3) |
|-------------------------------------|------------------------------------------------------------------|------|----------|----------------------|------------------------------|
|                                     |                                                                  |      |          | AREA<br>(SEE NOTE 3) | TOTAL<br>PAYMENT AREA        |
| R6-1L                               | 3-10, 3-11                                                       |      | 645.5102 | 36" X 12"            | 3.0 SF                       |
|                                     |                                                                  |      |          | 3.0 SF               | 6.0 SF                       |
| R6-1R                               | 3-10, 3-11                                                       |      | 645.5102 | 36" X 12"            | 3.0 SF                       |
|                                     |                                                                  |      |          | 3.0 SF               | 6.0 SF                       |
| NYP1-5                              | 1-7, 1-8, 2-7                                                    |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 4.5 SF                       |
| NYP1-5                              | 1-3, 2-3                                                         |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 3.0 SF                       |
| NYP1-5                              | 2-8                                                              |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 1.5 SF                       |
| NYP1-5                              | 3-1, 3-18, 3-6, 3-7, 3-12, 3-13, 4-1, 4-2,4-3,4-4, 4-7, 5-1, 5-2 |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 19.5 SF                      |
| NYP1-5                              | 3-3                                                              |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 1.5 SF                       |
| NYP1-4                              | 1-3, 2-3, 3-3                                                    |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 4.5 SF                       |
| NYP1-4                              | 1-2, 2-1, 3-15                                                   |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                     |                                                                  |      |          | 1.5 SF               | 4.5 SF                       |

| DESIGNATION & COLOR<br>(SEE NOTE 2)  | LOCATION               | TEXT | ITEM     | SIZE                 | PAYMENT AREA<br>(SEE NOTE 3) |
|--------------------------------------|------------------------|------|----------|----------------------|------------------------------|
|                                      |                        |      |          | AREA<br>(SEE NOTE 3) | TOTAL<br>PAYMENT AREA        |
| NYP1-4                               | 1-7, 1-8, 2-7          |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                      |                        |      |          | 1.5 SF               | 4.5 SF                       |
| NYP1-4                               | 1-1, 1-4, 2-2, 2-5     |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                      |                        |      |          | 1.5 SF               | 6.0 SF                       |
| NYP1-4                               | 2-8                    |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                      |                        |      |          | 1.5 SF               | 1.5 SF                       |
| M1-1                                 | 3-14, 4-9              |      | 645.5102 | 30" X 24"            | 5.0 SF                       |
|                                      |                        |      |          | 5.0 SF               | 10.0 SF                      |
| NYM3-2                               | 3-9 (2), 4-9           |      | 645.5102 | 30" X 24"            | 5.0 SF                       |
|                                      |                        |      |          | 5.0 SF               | 15.0 SF                      |
| W16-1P                               | 1-16, 4-11             |      | 645.5102 | 24" X 30"            | 5.0 SF                       |
|                                      |                        |      |          | 5.0 SF               | 10.0 SF                      |
| W11-1<br>FLUORESCENT<br>YELLOW-GREEN | 1-16, 4-11             |      | 645.5102 | 36" X 36"            | 9.0 SF                       |
|                                      |                        |      |          | 9.0 SF               | 18.0 SF                      |
| R3-17                                | 1-15                   |      | 645.5102 | 24" X 18"            | 3.0 SF                       |
|                                      |                        |      |          | 3.0 SF               | 3.0 SF                       |
| R3-17aP                              | 1-15                   |      | 645.5101 | 24" X 8"             | 1.3 SF                       |
|                                      |                        |      |          | 1.3 SF               | 1.3 SF                       |
| R10-10b                              | 1-11, 1-12, 1-13, 1-14 |      | 645.5101 | 12" X 18"            | 1.5 SF                       |
|                                      |                        |      |          | 1.5 SF               | 6.0 SF                       |

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
SIGN DATA SHEET

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. SDS-01  
SHEET NO. 38



| DESIGNATION & COLOR<br>(SEE NOTE 2) | LOCATION  | TEXT  | ITEM     | SIZE                 | PAYMENT AREA<br>(SEE NOTE 3) |
|-------------------------------------|-----------|-------|----------|----------------------|------------------------------|
|                                     |           |       |          | AREA<br>(SEE NOTE 3) | TOTAL<br>PAYMENT AREA        |
| M3-1<br>BLACK ON WHITE              | 3-9, 4-9  | NORTH | 645.5102 | 24" X 12"            | 2.0 SF                       |
|                                     |           |       |          | 2.0 SF               | 4.0 SF                       |
| M3-1<br>WHITE ON BLUE               | 3-14, 4-9 | NORTH | 645.5102 | 24" X 12"            | 2.0 SF                       |
|                                     |           |       |          | 2.0 SF               | 4.0 SF                       |
| M3-3<br>BLACK ON WHITE              | 3-9       | SOUTH | 645.5102 | 24" X 12"            | 2.0 SF                       |
|                                     |           |       |          | 2.0 SF               | 2.0 SF                       |
| M4-5<br>WHITE ON BLUE               | 3-14      | TO    | 645.5102 | 24" X 12"            | 2.0 SF                       |
|                                     |           |       |          | 2.0 SF               | 2.0 SF                       |
| M6-1<br>BLACK ON WHITE              | 3-9, 4-9  | ←     | 645.5102 | 21" X 15"            | 2.2 SF                       |
|                                     |           |       |          | 2.2 SF               | 4.4 SF                       |
| M6-1<br>BLACK ON WHITE              | 3-9       | →     | 645.5102 | 21" X 15"            | 2.2 SF                       |
|                                     |           |       |          | 2.2 SF               | 2.2 SF                       |
| M6-3<br>BLACK ON WHITE              | 4-9       | ↑     | 645.5102 | 21" X 15"            | 2.2 SF                       |
|                                     |           |       |          | 2.2 SF               | 2.2 SF                       |

| DESIGNATION & COLOR<br>(SEE NOTE 2) | LOCATION                                      | TEXT                               | ITEM     | SIZE                 | PAYMENT AREA<br>(SEE NOTE 3) |
|-------------------------------------|-----------------------------------------------|------------------------------------|----------|----------------------|------------------------------|
|                                     |                                               |                                    |          | AREA<br>(SEE NOTE 3) | TOTAL<br>PAYMENT AREA        |
| M6-1<br>WHITE ON BLUE               | 4-9                                           | ←                                  | 645.5102 | 21" X 15"            | 2.2 SF                       |
|                                     |                                               |                                    |          | 2.2 SF               | 2.2 SF                       |
| M6-6<br>BLACK ON WHITE              | 4-8                                           | ↶                                  | 645.5102 | 21" X 15"            | 2.2 SF                       |
|                                     |                                               |                                    |          | 2.2 SF               | 2.2 SF                       |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 1-4, 1-6, 1-10,<br>2-4, 2-7, 3-2, 3-5,<br>4-5 | Niagara St<br>SEE NOTE 5           | 645.5102 | 42" X 12"            | 3.5 SF                       |
|                                     |                                               |                                    |          | 3.5 SF               | 56.0 SF                      |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 2-4, 2-7                                      | Garfield St<br>SEE NOTE 5          | 645.5102 | 42" X 12"            | 3.5 SF                       |
|                                     |                                               |                                    |          | 3.5 SF               | 14.0 SF                      |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 3-2, 3-5                                      | Arthur St<br>SEE NOTE 5            | 645.5102 | 36" X 12"            | 3.0 SF                       |
|                                     |                                               |                                    |          | 3.0 SF               | 12.0 SF                      |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 4-5                                           | Black Rock Harbor Rd<br>SEE NOTE 5 | 645.5102 | 72" X 12"            | 6.0 SF                       |
|                                     |                                               |                                    |          | 6.0 SF               | 12.0 SF                      |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 1-4, 1-6                                      | Grace St<br>SEE NOTE 5             | 645.5102 | 36" X 12"            | 3.0 SF                       |
|                                     |                                               |                                    |          | 3.0 SF               | 12.0 SF                      |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 3-16                                          | Niagara St<br>SEE NOTE 6           | 645.61   | 54" X 18"            | 6.75 SF                      |
|                                     |                                               |                                    |          | 6.75 SF              | 6.75 SF                      |
| D3-1 (MOD.)<br>WHITE ON BLUE        | 1-9                                           | Hertel Ave<br>SEE NOTE 6           | 645.61   | 54" X 18"            | 6.75 SF                      |
|                                     |                                               |                                    |          | 6.75 SF              | 6.75 SF                      |

| LEGEND |                 |
|--------|-----------------|
| SYMBOL | DESCRIPTION     |
|        | DWG. NO-LOC. NO |
| B-B    | BACK TO BACK    |



Panel Style: City Street Name (Overhead).ssi  
M.U.T.C.D.: 2009 Edition

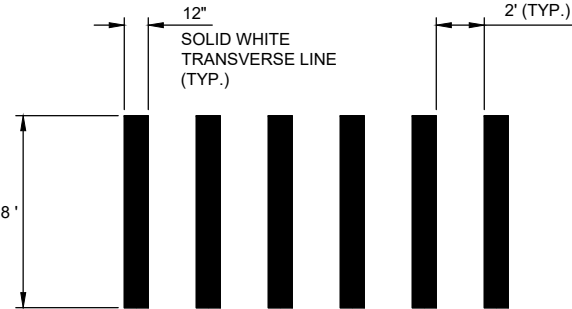


Panel Style: City Street Name (ground).ssi  
M.U.T.C.D.: 2009 Edition

Prefix and Suffix Vertically Centered  
Street Name Vertically Centered

SIGNING NOTES:

- SIGN LOCATIONS AS SHOWN ON PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL INSTALL NEW SIGNS AND RELOCATE EXISTING SIGNS IN ACCORDANCE WITH THE MUTCD AND NYS SUPPLEMENT.
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- REMOVE EXISTING SIGNS WITHIN CONTRACT LIMITS. THE OLD PANEL(S) AND POST(S) ARE TO BE REMOVED WITHIN 48 HOURS AFER NEW SIGN IS IN PLACE. SEE "SIGN REMOVAL TABLE".
- EACH STANDARD HEIGHT (12") STREET NAME CONSISTS OF TWO PANELS. THESE PANELS ARE TO BE MOUNTED BACK-TO-BACK.
- PROPOSED OVERHEAD STREET SIGNS BEING MOUNTED ON MAST ARMS SHALL BE ATTACHED PER THE DETAILS ON DWG. DPW-MAMSN. COST OF ALL INSTALLATION HARDWARE TO BE INCLUDED UNDER ITEM 645.85.



NOTE: SEE SIGN AND PAVEMENT MARKING PLANS  
FOR LOCATIONS AND MARKING ITEM NUMBERS.

TYPICAL CROSSWALK STRIPING DETAIL

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
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ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
SIGN DATA SHEET

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. SDS-02  
SHEET NO. 39



FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R18. CADD\Trans\13 Traffic Signal Notes.dwg  
DATE/TIME = 12/12/2022 11:25:51 AM  
USER = Victoria Coners

JOB MANAGER T. DUK

DESIGN J. KOCH

CHECK T. BUCKLEY

DRAFTING J. KOCH

CHECK T. BUCKLEY

PROJECT MANAGER

P. GALBO

TRAFFIC SIGNAL GENERAL NOTES:

- THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) WITH THE NEW YORK STATE SUPPLEMENT AND THE LATEST NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) SPECIFICATIONS AND STANDARD SHEETS SHALL APPLY EXCEPT AS MODIFIED BY THESE PLANS AND CONTRACT DOCUMENTS.
- PEDESTRIAN, VEHICULAR SIGNAL HEADS, BRACKETS AND RELATED HARDWARE SHALL BE PAINTED FEDERAL YELLOW.
- POLES, PEDESTALS AND CONTROLLERS SHALL NOT BE LOCATED IN THE MAIN STREAM OF PEDESTRIAN TRAFFIC OR ON CURB RADIUS SUBJECT TO TURNING VEHICLE CONFLICT. POLE SHALL BE AT LEAST 3' FROM THE CURB. A MINIMUM OF 4 FEET OF CLEAR SIDEWALK AREA MUST BE MAINTAINED, 5 FEET PREFERABLE.
- LOCATIONS OF POLES, PULLBOXES AND CONDUIT SHOWN ON THE PLANS IS ONLY APPROXIMATE. EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER.
- LOCATIONS OF PAVEMENT MARKINGS SHOWN ON THE TRAFFIC SIGNAL PLANS ARE ONLY APPROXIMATE AND ARE FOR REFERENCE ONLY. SEE SIGNS AND PAVEMENT MARKING DRAWINGS FOR LOCATIONS AND DETAILS. EXACT LOCATIONS OF STOP BARS SHALL BE DETERMINED BY THE ENGINEER.
- THE POSITION OF THE PEDESTRIAN SIGNAL HEADS MOUNTED ON THE TRAFFIC SIGNAL POLES SHALL BE DETERMINED BY THE ENGINEER. PEDESTRIAN SIGNALS HEADS ON VEHICLE SIGNAL POLES SHALL BE MOUNTED AS FAR TO THE BACK SIDE OF THE POLES AS CLEAR PEDESTRIAN VISIBILITY WILL PERMIT AND MAINTAIN MAXIMUM PROTECTION FROM TURNING VEHICLES.
- PUSH BUTTON SIGNS SHALL READ "PUSH BUTTON TO CROSS (APPROPRIATE STREET NAME, SUCH AS NIAGARA)".
- WHERE CONCRETE SIDEWALK OR DRIVEWAY IS ENCOUNTERED WITH THE CONDUIT TRENCH OPERATIONS, POLE FOUNDATION WORK, PULLBOX INSTALLATION OR OTHER EXCAVATION, A SUFFICIENT AMOUNT OF SIDEWALK OR DRIVEWAY SHALL BE REMOVED AND REPLACED TO EXISTING JOINTS TO PROVIDE A NEAT AND UNIFORM APPEARANCE. THE RESTORATION SHALL BE INCLUDED UNDER APPROPRIATE BID ITEMS IN THE CONTRACT.
- ALL CONNECTIONS OR DISCONNECTIONS OF ELECTRIC POWER SOURCES SHALL BE PREFORMED BY NATIONAL GRID. THE CONTRACTOR SHALL PROVIDE FOUR (4) WEEKS ADVANCE NOTICE WHEN WORK IS REQUIRED BY NATIONAL GRID.
- THE CONTRACTOR SHALL CALL DIG SAFELY NY (811) AT LEAST TWO(2) WORKING DAYS (48 HOURS) BEFORE ANY EXCAVATION BEGINS.
- MOUNTING LOCATION OF RAINIGHT DISCONNECT BOX (BREAKER) ON NEW WOOD POLES AND TRAFFIC SIGNAL POLES SHALL BE DETERMINED BY THE ENGINEER.
- LIGHTING CONDUIT AND PULLBOXES ARE NOT SHOWN FOR CLARITY. SEE LIGHTING PLAN DWG. NOS. ELP-01 THROUGH ELP-04 FOR EXACT LOCATIONS.

POLE FOUNDATION NOTES:

- ALL POLE FOUNDATIONS SHALL HAVE SUITABLE GROUND RODS INSTALLED AT EACH LOCATION. GROUND RODS SHALL BE DRIVEN TO A DEPTH SUCH THAT A MINIMUM RESISTANCE OF 10-15 OHMS MAY BE OBTAINED FROM SUFFICIENT GROUNDING. GROUND TEST SHALL BE MADE AT EACH LOCATION. THE COST OF GROUNDING SHALL BE INCLUDED IN THE RESPECTIVE TRAFFIC SIGNAL POLE ITEM.
- ROCK EXCAVATION MAY BE REQUIRED FOR SIGNAL POLE FOUNDATIONS OR AT OTHER LOCATIONS REVEALED DURING CONSTRUCTION. ALL EXCAVATION OF ROCK SHALL BE PAID FOR UNDER ITEM 680.5001008.
- THE METAL CONDUIT AND BEND SHALL BE GROUNDED BY BONDING TO A UTILITY APPROVED GROUND CLAMP 6" FROM THE TOP OF THE CONDUIT. THE CONDUCTOR SHALL BE OF SUFFICIENT LENGTH TO EXTEND 24 INCHES BEYOND THE UTILITY COMPANIES SECONDARY NEUTRAL. THE CONDUCTOR SHALL BE #8 OR LARGER AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. ALL ASSOCIATED COSTS TO BE INCLUDED IN THE PRICE BID FOR ITEM 680.95020815.
- ALL TRAFFIC SIGNAL POLES, MAST ARMS, AND ASSOCIATED HARDWARE CONNECTION DETAILS, HAND HOLE DETAILS, AND CONTROL CABINET COUPLING DETAILS SHALL BE DESIGNED PER SECTION 724-03 OF THE NYSDOT STANDARD SPECIFICATIONS.

WIRELESS DETECTION SYSTEM NOTES:

- ALL SIGNALIZED INTERSECTIONS USE WIRELESS VEHICLE DETECTION SYSTEM. CONTRACTOR SHALL INSTALL ALL THE WIRELESS VEHICLE DETECTION SYSTEM COMPONENTS INCLUDING INTERSECTION SENSORS AND SERIAL PORT PROTOCOL DIGITAL RADIOS PER THE MANUFACTURER'S RECOMMENDATIONS.
- ALL WIRELESS VEHICLE DETECTION SYSTEM COMPONENTS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THESE PLANS, OR AS DIRECTED BY THE ENGINEER.
- THE WIRELESS VEHICLE DETECTION SYSTEM ACCESS POINTS AND REPEATERS SHALL BE INSTALLED AS HIGH AS POSSIBLE ON THE PROPOSED SIGNAL POLES.
- THE CONTRACTOR SHALL INSURE THAT THERE IS ALWAYS A CLEAR LINE OF SIGHT BETWEEN THE SENSORS, ACCESS POINT, AND REPEATER AT EACH SIGNAL INSTALLATION.
- ORIENT THE FRONT FACE OF THE WIRELESS REPEATERS AND ACCESS POINTS SO THEY FACE SLIGHTLY DOWNWARD.
- WIRELESS INTERSECTION SENSORS SHALL BE INSTALLED AFTER FINAL PLACEMENT OF ASPHALT TOP COURSE AND PAVEMENT MARKINGS. THEY SHALL BE CENTERED IN THE LANE.
- ALL WIRELESS VEHICLE DETECTION SENSORS SHALL BE SENSYS NETWORKS VSN240-M-2 (OR APPROVED EQUAL). VEHICLE DETECTION SENSORS SHALL BE PAID FOR UNDER ITEM 680.58803008.

EXISTING TRAFFIC SIGNAL SYSTEM NOTES:

- ALL EXISTING TRAFFIC SIGNAL EQUIPMENT INCLUDING SIGNAL SECTIONS, WIRING, PULL BOXES, FOUNDATIONS, POLES, MAST ARMS, COMMUNICATION RADIO, YAGI ANTENNA, CONTROLLER AND CABINET SHALL BE REMOVED. THE TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BE RETURNED TO TRAFFIC ENGINEERING SIGNAL SHOP AT 1120 SENECA STREET, BUFFALO NY. CONTRACTOR TO COORDINATE WITH CITY OF BUFFALO TRAFFIC SIGNAL DIVISION, NICK PUGLIESE, AT 851-6596 FOR REMOVAL AND DELIVERY. PAYMENT TO BE MADE UNDER ITEMS 680.50500005 AND 680.79000105.

SIGNAL POLE NOTES:



- ALL NEW TRAFFIC SIGNAL POLES SHALL BE GALVANIZED STEEL, WITH ANCHOR BOLTS COVERS, AND BLACK POLYESTER POWDER COATED, PER NYSDOT STANDARDS. COST OF BLACK POLYESTER POWDER COATING TO BE INCLUDED IN THE COST OF THE RESPECTIVE SIGNAL POLE ITEM.
- THE LENGTH OF THE ARM REQUIRED FOR MAST ARM POLES TO PROVIDE THE SIGNAL HEAD PLACEMENT SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR AFTER ALL UTILITIES AND UNDERGROUND FACILITIES ARE MARKED BY THE OWNER AND THE POLE FOUNDATION LOCATION CAN BE FULLY ESTABLISHED PER SECTION 680-3.05 AND 680-3.11 OF THE NYSDOT STANDARD SPECIFICATIONS. THE EXCESS ARM LENGTH MORE THAN TWO FEET BEYOND THE LAST SIGNAL HEAD SHALL BE REMOVED. EXPOSED AREA SHALL BE FIELD GALVANIZED , POWDER COATED BLACK AND A CAP PLACED ON THE END.
- THE MAXIMUM ANCHOR BOLT CIRCLE FOR MAST ARM POLES SHALL BE 14" FOR "J" TYPE FOUNDATIONS AND 20" FOR "K" TYPE FOUNDATIONS.
- POLE FOUNDATIONS SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT IN AREAS OF NEW SIDEWALKS. FOUNDATIONS SHALL BE INSTALLED PER NYSDOT STANDARD SHEET 680-01.
- PAYMENT FOR ITEM 680.50500005 - REMOVE POLE FOUNDATION - SHALL BE MADE FOR THE FULL DEPTH OF EACH FOUNDATION FOR EXISTING TRAFFIC SIGNAL POLES, AND PEDESTRIAN SIGNAL POLES AS SHOWN ON THE PLANS.
- ALL MAST ARMS SHALL BE DESIGNED TO PROVIDE THE MINIMUM OUTSIDE POLE AND ARM DIAMETER PRACTICAL BY INCREASING WALL THICKNESS, USING A STEP-DOWN DESIGN OR BOTH.
- SIGNAL POLE LENGTHS SHOWN ARE PER THE NYSDOT STANDARD SPECIFICATIONS AND DO NOT INCLUDE THE INCREASED LENGTH NECESSARY FOR THE LUMINARE ARM ATTACHMENTS WHERE REQUIRED.
- SEE LIGHTING PLAN DWG. NOS. ELP-01 THROUGH ELP-04 FOR LOCATIONS WHERE LUMINARES AND ARMS ARE TO BE MOUNTED TO TRAFFIC SIGNAL POLES. SEE DETAIL ON DWG. NO. TSD-01. PROPOSED LIGHTS SHALL BE INSTALLED SO THE LIGHTING ARM EXTENDS OVER NIAGARA STREET AT A 90 DEGREE ANGLE TO THE EXISTING CURB LINE UNLESS OTHERWISE SHOWN OR NOTED.

PULLBOXES, CONDUIT AND CABLE NOTES:

- ALL PULLBOXES, CONDUIT AND RELATED SIGNAL WORK SHALL BE COMPLETED PRIOR TO PLACING NEW SIDEWALK AND/OR PAVEMENT TO AVOID DISTURBING NEWLY CONSTRUCTED SIDEWALKS AND PAVEMENT.
- ALL CONDUITS UNDER STREET PAVEMENT AREAS SHALL HAVE A MINIMUM ENCASEMENT OF 4 INCHES OF CLASS "D" CONCRETE ON ALL SIDES. THERE SHALL BE A MINIMUM OF 2 INCHES BETWEEN CONDUITS WHERE MORE THAN ONE CONDUIT IS PLACED IN THE SAME TRENCH. COST OF CONCRETE ENCASEMENT SHALL BE INCLUDED IN THE PRICE BID FOR ITEM FOR CONDUIT ITEM 680.520506 (2 INCH) AND ITEM 680.520508 (3 INCH).
- RIGID PLASTIC CONDUIT SHALL BE SCHEDULE 40 AND SHALL BE PAID FOR UNDER ITEM 680.520506 (2 INCH) AND ITEM 680.520508 (3 INCH).
- ALL CONDUIT WITHIN POLE FOUNDATIONS AND FOR A MINIMUM DISTANCE OF 18 INCHES FROM THE FOUNDATION SHALL BE HEAVY WALL GALVANIZED STEEL OF THE SAME SIZE AS THE PVC CONDUIT RUN INTERCEPTED. ALL RELATED COSTS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 680.5001 POLE EXCAVATION AND CONCRETE FOUNDATIONS.
- THE CONTRACTOR IS ADVISED THAT ALL CONDUIT WORK OUTSIDE STREET PAVEMENT AREAS SHALL BE PERFORMED DURING THE APPROPRIATE STAGE OF CONSTRUCTION; AFTER SIDEWALK CONCRETE HAS BEEN EXCAVATED AND BEFORE NEW SIDEWALK CONCRETE HAS BEEN PLACED. ANY EXCAVATION FOR CONDUIT REQUIRED IN THESE AREAS SHALL BE PAID UNDER ITEM 206.03. SEE CONDUIT EXCAVATION AND BACKFILL DETAIL ON DWG. NO. ELD-04.
- SLAG SHALL NOT BE USED FOR BACKFILL OR AS AGGREGATE IN CONCRETE NEAR FOUNDATIONS OR WHERE METAL CONDUIT IS TO BE USED.
- ELECTRICAL CONDUCTORS SUPPLYING DIFFERENT CURRENT (AC OR DC) OR A DIFFERENCE OF OVER 50 VOLTS MUST BE IN SEPARATE CABLES (I.E. CONDUCTORS FOR PEDESTRIAN PUSH BUTTONS AND CONDUCTORS FOR PEDESTRIAN SIGNALS SHALL BE IN SEPARATE CABLE).
- TO FACILITATE PULLING WIRE, CONDUIT RUNS OVER 30 FEET LONG SHALL NOT HAVE A SUM TOTAL OF ALIGNMENT DEVIATION EXCEEDING 90 DEGREES. CONDUIT RUNS THIRTY FEET OR LESS IN LENGTH MAY HAVE A SUM TOTAL OF ALIGNMENT DEVIATION OF UP TO 180 DEGREES, SUCH AS BETWEEN A POLE AND NEAREST PULLBOX.
- THE FLANGE FOR A PULLBOX FRAME SHALL BE PLACED DOWN WHEN INSTALLED IN PAVEMENT OR SIDEWALK AREAS AND UP WHEN PLACED IN UNPAVED AREAS. PULLBOX CASTINGS SHALL BE JAMESTOWN IRON WORKS RING, 48E WITH SOLID COVER, NEENAH r-5900-E SYRACUSE CASTING #9590005 OR APPROVED EQUAL, COST INCLUDED IN ITEM 680.510201 OR ITEM 680.510301.
- "TRAFFIC SIGNAL" SHALL BE CAST ON THE NON-SKID TEXTURAL COVER FOR THE SIGNAL PULL BOX COVERS, COST INCLUDED IN ITEM 680.510201 OR ITEM 680.510301.
- ALL CABLE SHALL BE CONTINUOUS FROM CONTROLLER TO SIGNAL HEADS, PUSH BUTTONS, OTHER EQUIPMENT OR POWER SOURCE. THERE SHALL BE NO SPLICES .
- EACH SERVICE ENTRANCE CABLE SHALL BE IN A SEPARATE RISER AT THE POWER SOURCE AND IN SEPARATE CONDUIT RUNS, BUT MAY RUN WITH OTHER CABLE WITHOUT SPLICES, THROUGH PULLBOXES OR SIGNAL POLES.
- WIRE HANGERS SHALL BE INSTALLED IN ALL PULLBOXES PER NYSDOT STANDARD SHEET 680-03.
- TRAFFIC SIGNAL CONDUIT CROSSING ROADS SHALL BE 3" CONDUIT.

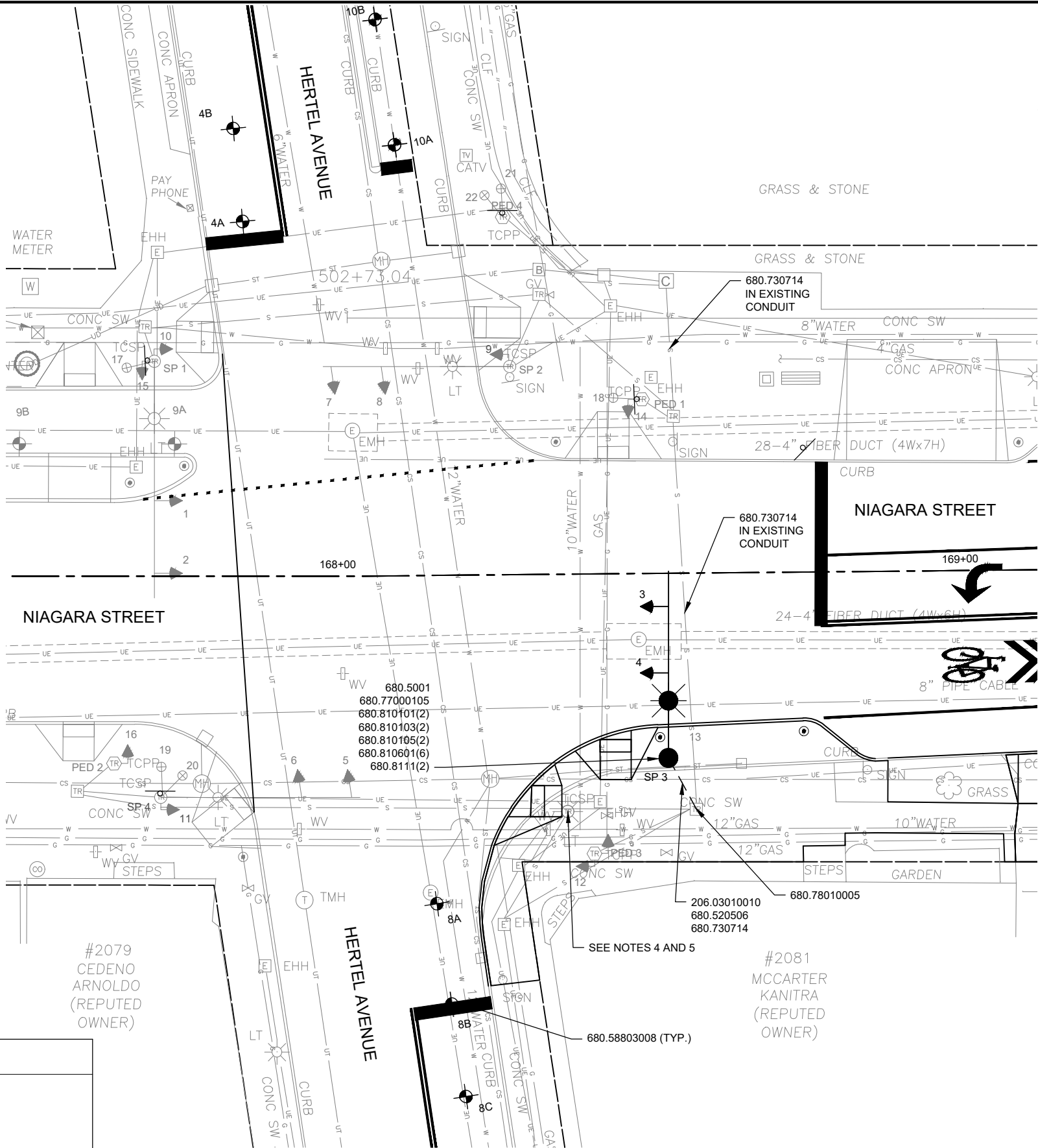
TEST PITS AND POLE LOCATION VERIFICATION

- TEST PITS SHALL BE PERFORMED AT THE LOCATIONS OF THE PROPOSED MAST ARM SIGNAL POLE LOCATIONS AS INDICATED ON DWG. TSP-04 WITHIN 2 WEEKS AFTER NOTICE TO PROCEED. SUBMITTALS FOR ALL POLES WILL NOT BE REVIEWED OR APPROVED UNTIL TEST PITS HAVE BEEN COMPLETED AND MAST ARM POLE LOCATIONS HAVE BEEN VERIFIED. THE LENGTH OF THE ARM REQUIRED FOR MAST ARM POLES TO PROVIDE THE SIGNAL HEAD PLACEMENT SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR AFTER ALL UTILITIES AND UNDERGROUND FACILITIES ARE MARKED BY THE OWNER AND THE POLE FOUNDATION LOCATION CAN BE FULLY ESTABLISHED PER SECTION 680-3.05 AND 680-3.11 OF THE NYSDOT STANDARD SPECIFICATIONS. TEST PITS SHALL BE BACKFILLED AND RESTORED WITH AN ADA ACCEPTABLE SURFACE UNTIL ALL MATERIALS ARE AVAILABLE FOR SIGNAL REPLACEMENT.

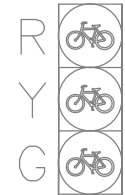
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------|--|------------------------------------------|--|
| AFFIX SEAL:<br>ON:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | ALTERED BY:<br>ON:                                                                                               |  |                                          |  |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | AS-BUILT REVISIONS<br>DESCRIPTION OF ALTERATIONS:                                                                |  |                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <div></div>                 |  |                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <div><div></div></div>      |  |                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED                                                                      |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>TRAFFIC SIGNAL NOTES |  | DRAWING NO. TSN-01<br>SHEET NO. 40       |  |
| IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION. |  |                                                                                                                  |  |                                          |  |



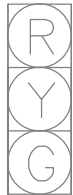
- NOTES:
1. THE PAVEMENT MARKINGS SHOWN ARE FOR REFERENCE ONLY. REFER TO SIGN AND PAVEMENT MARKING PLANS FOR ACTUAL LOCATION.
  2. SEE DWG. TSN-01 FOR SIGNAL NOTES.
  3. THE PROPOSED LIGHTING ARM SHALL BE INSTALLED AS SHOWN, OVER THE MAST ARM.
  4. ITEM 680.77000105 SHALL INCLUDE ALL WORK NECESSARY TO REPLACE THE SIGNAL POLE IN THE NE QUADRANT AND CONNECT IT TO THE SIGNAL SYSTEM THAT WAS REPLACED UNDER A PREVIOUS PHASE OF WORK. THIS INCLUDES BUT IS NOT LIMITED TO THE REMOVAL OF THE EXISTING POLE, REMOVAL OF THE EXISTING SIGNAL HEADS, REMOVAL OF THE EXISTING WIRING AND TRANSPORTATION AND INSTALLATION OF THE SIGNAL POLE AND MAST ARM STORED AT THE CITY OF BUFFALO SIGNAL SHOP AT 1120 SENECA STREET, BUFFALO NY. THE SIGNAL HEADS ON THE EXISTING MAST ARM SHALL BE SALVAGED AND RE-INSTALLED ON THE PROPOSED MAST ARM AT NIAGARA ST AND I-190 OFF RAMP, SEE TSP-04 FOR LOCATION.
  5. REMOVAL AND STORAGE OF EXISTING SIGNAL POLE-MOUNTED LIGHTING ARM IS INCLUDED IN THE UNIT COST BID FOR ITEM 680.77000105. SEE LIGHTING PLANS FOR LOCATIONS OF REMOVALS AND ASSOCIATED ROADWAY LIGHTING INFRASTRUCTURE.



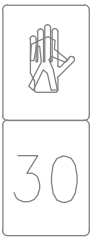
| LEGEND |                                        |
|--------|----------------------------------------|
|        | SIGNAL POLE W/MASTARM AND STREET LIGHT |
|        | STREET LIGHT                           |
|        | CONTROLLER                             |
|        | SIGNAL HEAD                            |
|        | PED. HEAD                              |
|        | BIKE HEAD                              |
|        | PED. POLE                              |
|        | WL VEH DET SYS INT SEN                 |
|        | PULL BOX                               |
|        | CONDUIT                                |



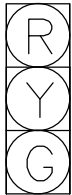
BICYCLE  
SIGNAL HEAD  
CONFIGURATION  
HEADS 17, 18, 19, 20, 21 AND 22



TRAFFIC  
SIGNAL HEAD  
CONFIGURATION  
HEADS 1, 2, 5,  
6, 7 AND 8



PEDESTRIAN  
SIGNAL HEAD  
CONFIGURATION  
HEADS 9, 10, 11, 12,  
13, 14, 15 AND 16



680.810101  
680.810601

680.810103  
680.810601

680.810105  
680.810601

TRAFFIC  
SIGNAL HEAD  
CONFIGURATION  
HEADS 3 AND 4

0 5' 10' 20'

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TRAFFIC SIGNAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. TSP-01  
SHEET NO. 41

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R\18. CADD\Trans\14 Traffic Signal Plan.dwg  
DATE/TIME = 12/12/2022 11:59:35 AM  
USER = Victoria Coners

JOB MANAGER T. DUK

DESIGN J. KOCH

CHECK

T. BUCKLEY

DRAFTING J. KOCH

CHECK

T. BUCKLEY

PROJECT MANAGER

P. GALBO

DRAFT  
NOT FOR  
CONSTRUCTION

|                    |                    |
|--------------------|--------------------|
| AFFIX SEAL:<br>ON: | ALTERED BY:<br>ON: |
|                    |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TRAFFIC SIGNAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. TSP-02  
SHEET NO. 42

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| DETECTOR DATA |               |                 |              |          |                         |
|---------------|---------------|-----------------|--------------|----------|-------------------------|
| DETECTOR NO.  | DETECTOR TYPE | DETECTOR I.D. * | PHASE CALLED | MODE     | REMARKS                 |
| 4A            | SENSOR        |                 | ϕ4           | PRESENCE | SET DELAY TIMER         |
| 4B            | SENSOR        |                 | ϕ4           | PRESENCE | SET DELAY TIMER         |
| 8A            | SENSOR        |                 | ϕ8           | PRESENCE | SET DELAY TIMER         |
| 8B            | SENSOR        |                 | ϕ8           | PRESENCE | SET DELAY TIMER         |
| 8C            | SENSOR        |                 | ϕ8           | PRESENCE | SET DELAY TIMER         |
| 9A            | SENSOR        |                 | ϕ9           | PRESENCE | SET DELAY TIMER         |
| 9B            | SENSOR        |                 | ϕ9           | PRESENCE | SET DELAY TIMER         |
| 10A           | SENSOR        |                 | ϕ10          | PRESENCE | SET DELAY TIMER         |
| 10B           | SENSOR        |                 | ϕ10          | PRESENCE | SET DELAY TIMER         |
| 9             | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS HERTEL AVENUE  |
| 10            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS HERTEL AVENUE  |
| 11            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS HERTEL AVENUE  |
| 12            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS HERTEL AVENUE  |
| 13            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS NIAGARA STREET |
| 14            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS NIAGARA STREET |
| 15            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS NIAGARA STREET |
| 16            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS NIAGARA STREET |

\* DETECTOR ID HEXIDECIMAL CODE AND HARDWARE ID CODE TO BE PROVIDED BY SUPPLIER. CONTRACTOR SHALL FILL IN THE FINAL CODES AND SUPPLY TO THE CITY OF BUFFALO.

| TRAFFIC SIGNAL QUANTITIES - NIAGARA AND HERTEL |                                                                         |          |          |
|------------------------------------------------|-------------------------------------------------------------------------|----------|----------|
| ITEM                                           | DESCRIPTION                                                             | UNIT     | QUANTITY |
| 206.03010010                                   | CONDUIT EXCAVATION AND BACKFILL - (RESTORING TOP SURFACES NOT INCLUDED) | LF       | 10       |
| 619.1611                                       | MAINTAIN TRAFFIC SIGNAL AND EQUIPMENT (REQ A)                           | INT. MTH | 14       |
| 680.5001                                       | POLE EXCAVATION AND CONCRETE FOUNDATION                                 | CY       | 2.1      |
| 680.50500005                                   | REMOVE POLE FOUNDATION                                                  | LF       | 8        |
| 680.520506                                     | CONDUIT - RIGID PLASTIC CLASS 1 - 2 INCH DIAMETER                       | LF       | 10       |
| 680.58803008                                   | WIRELESS VEHICLE DETECTION SYSTEM INTERSECTION SENSOR                   | EA       | 7        |
| 680.730714                                     | SIGNAL CABLE, 7 CONDUCTORS, 14 AWG                                      | LF       | 172      |
| 680.77000105                                   | MODIFY TRAFFIC SIGNAL INSTALLATION                                      | EA LOC   | 1        |
| 680.78010005                                   | ALTER PULLBOX FOR CONDUITS                                              | EA       | 1        |
| 680.810101                                     | TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED                           | EA       | 2        |
| 680.810103                                     | TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED                        | EA       | 2        |
| 680.810105                                     | TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED                         | EA       | 2        |
| 680.810601                                     | TRAFFIC SIGNAL SECTION - POLYCARBONATE, TYPE I, 12 INCH                 | EA       | 6        |
| 680.8111                                       | TRAFFIC SIGNAL BRACKET ASSEMBLY - ONE WAY                               | EA       | 2        |

| TRAFFIC SIGNAL AND SIGNAL POLE DATA |                |          |                                           |                      |       |                                             |                         |                |                           |                                       |                                                 |
|-------------------------------------|----------------|----------|-------------------------------------------|----------------------|-------|---------------------------------------------|-------------------------|----------------|---------------------------|---------------------------------------|-------------------------------------------------|
| ITEM NO.                            | POLE ID NUMBER | QUANTITY | POLE LENGTH (FT) OR HEIGHT MAST. ARM MTD. | MAST ARM LENGTH (FT) |       | TOTAL HEIGHT OF POLE FOR LUMINAIRE MOUNTING | ØN (SEE NOTE BELOW)     |                | LUMINAIRE ARM LENGTH (FT) | FOUNDATION CODE SEE STD. SHEET 680.01 | PAY QUANTITY, POLE EXCAVATION & FOUNDATION (CY) |
|                                     |                |          |                                           | NO. 1                | NO. 2 |                                             | MAST ARM NO. 1          | MAST ARM NO. 2 |                           |                                       |                                                 |
|                                     | SP 1           |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |
|                                     | SP 2           |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |
| 680.77000105                        | SP 3           | 1        | 18                                        | 30                   | -     | 30                                          | 90                      |                | 8                         | K-2                                   | 2.1                                             |
|                                     | SP 4           |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |
|                                     | PED 1          |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |
|                                     | PED 2          |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |
|                                     | PED 3          |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |
|                                     | PED 4          |          |                                           |                      |       |                                             | EXISTING POLE TO REMAIN |                |                           |                                       |                                                 |

NOTE: LIGHTING ARM ANGLE MEASURED FROM THE PROPOSED CENTERLINE OF ROADWAY, LUMINARE SHALL BE INLINE WITH THE TRAFFIC SIGNAL MAST ARMS. FOUNDATIONS SIZES TO BE VERIFIED BY THE EIC BASED ON THE POLE AND ARM SHOP DRAWING SUBMITTALS. SQUARE FOUNDATIONS HAVE BEEN ASSUMED FOR SP3.

NOTES:

- FOUNDATION CODES SHOWN ARE APPROXIMATE. FINAL DETERMINATION WILL BE MADE BY THE ENGINEER AFTER APPROVAL OF TRAFFIC SIGNAL POLE SHOP DRAWINGS.
- ANGLE BETWEEN MAST ARM AND LIGHT ARM TO BE FIELD VERIFIED BY CONTRACTOR.
- FINAL DETERMINATION OF PHASING AND OPERATION SCHEDULE WILL BE MADE BY THE ENGINEER DURING CONSTRUCTION.



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USER = Victoria Coners

JOB MANAGER T. DUK

DESIGN J. KOCH

CHECK T. BUCKLEY

DRAFTING J. KOCH

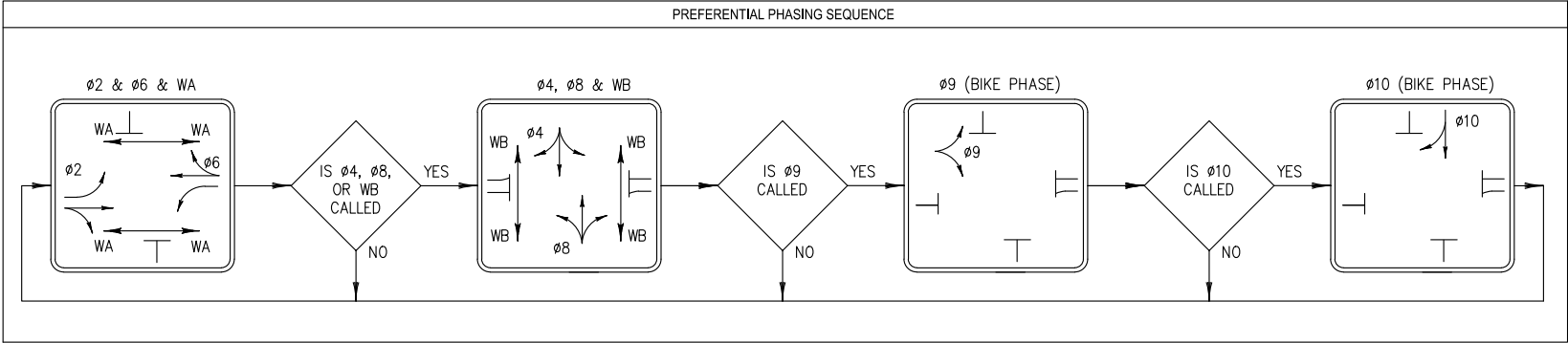
CHECK

T. BUCKLEY

PROJECT MANAGER

P. GALBO

| OPERATIONAL SCHEDULE         |    |    |    |    |    |    |    |    |            |            |            |            |            |            |            |            |    |    |    |    |    |    |
|------------------------------|----|----|----|----|----|----|----|----|------------|------------|------------|------------|------------|------------|------------|------------|----|----|----|----|----|----|
| FACE \ PHASE                 | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9          | 10         | 11         | 12         | 13         | 14         | 15         | 16         | 17 | 18 | 19 | 20 | 21 | 22 |
| φ2 & φ6                      | G  | G  | G  | G  | R  | R  | R  | R  | MAN        | MAN        | MAN        | MAN        | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| φ2 & φ6                      | G  | G  | G  | G  | R  | R  | R  | R  | FLASH HAND | FLASH HAND | FLASH HAND | FLASH HAND | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| φ2 & φ6 TO φ4 & φ8           | Y  | Y  | Y  | Y  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| ALL RED                      | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| φ4 & φ8                      | R  | R  | R  | R  | G  | G  | G  | G  | HAND       | HAND       | HAND       | HAND       | MAN        | MAN        | MAN        | MAN        | RB | RB | RB | RB | RB | RB |
| φ4 & φ8                      | R  | R  | R  | R  | G  | G  | G  | G  | HAND       | HAND       | HAND       | HAND       | FLASH HAND | FLASH HAND | FLASH HAND | FLASH HAND | RB | RB | RB | RB | RB | RB |
| φ4 & φ8 TO φ9                | R  | R  | R  | R  | Y  | Y  | Y  | Y  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| ALL RED                      | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| φ9                           | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | GB | GB | GB | GB | RB | RB |
| φ9 TO φ10                    | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | YB | YB | YB | YB | RB | RB |
| ALL RED                      | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| φ10                          | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | GB | GB | GB | GB |
| φ10 TO φ2 & φ6               | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | YB | YB | YB | YB |
| ALL RED                      | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | HAND       | RB | RB | RB | RB | RB | RB |
| EMERGENCY FLASHING OPERATION | FR | FR | FR | FR | FR | FR | FR | FR | DK         | DK         | DK         | DK         | DK         | DK         | DK         | DK         | DK | DK | DK | DK | DK | DK |
| SIGNAL DISPLAY               |    |    |    |    |    |    |    |    |            |            |            |            |            |            |            |            |    |    |    |    |    |    |



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

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CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

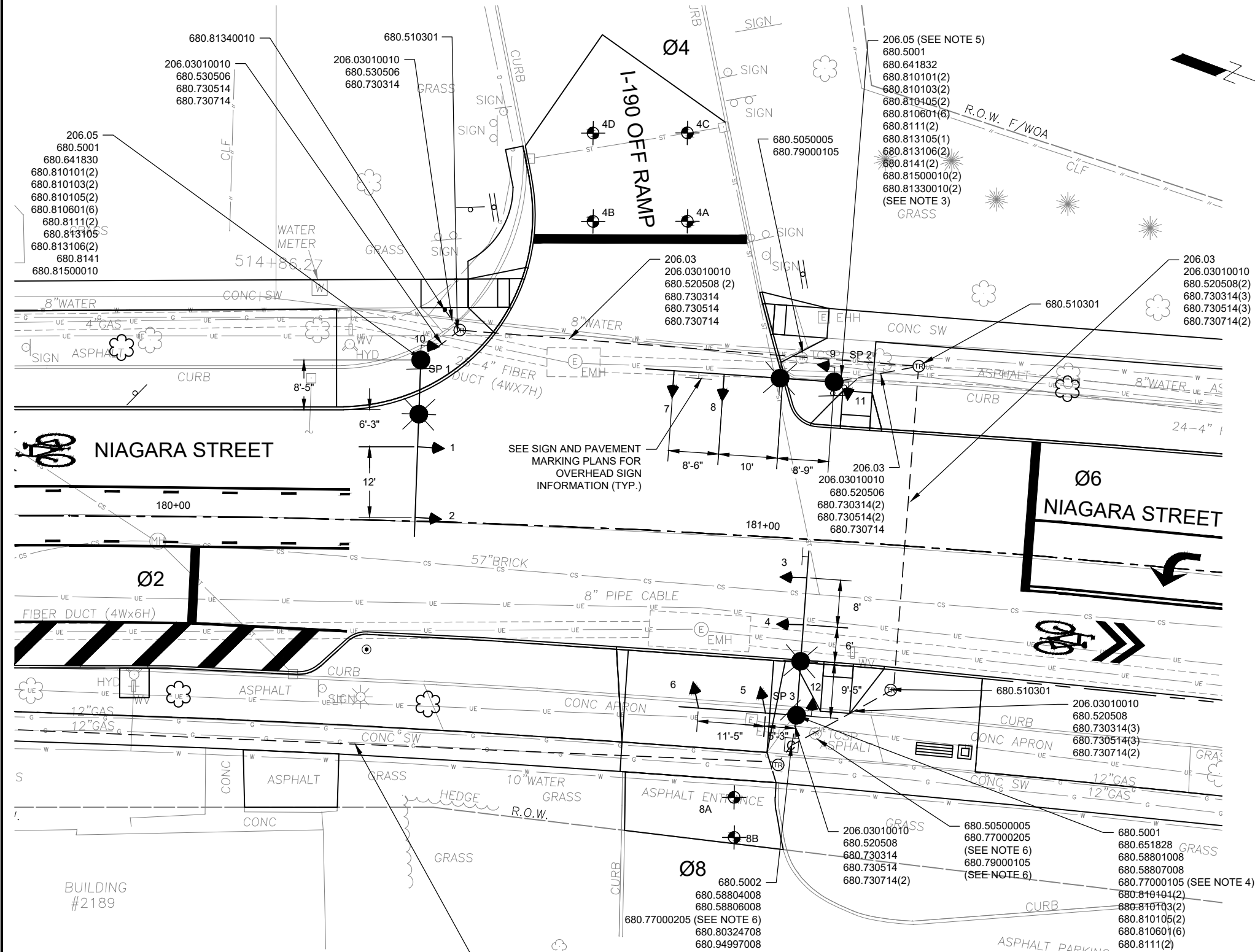
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TRAFFIC SIGNAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

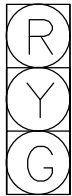
DRAWING NO. TSP-03  
SHEET NO. 43

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

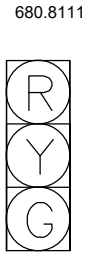




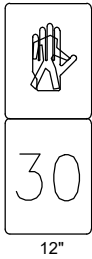
| LEGEND |                                        |
|--------|----------------------------------------|
|        | SIGNAL POLE W/MASTARM AND STREET LIGHT |
|        | STREET LIGHT                           |
|        | CONTROLLER                             |
|        | SIGNAL HEAD                            |
|        | PED. HEAD                              |
|        | BIKE HEAD                              |
|        | PED. POLE                              |
|        | WL VEH DET SYS INT SEN                 |
|        | PULL BOX                               |
|        | CONDUIT                                |



TRAFFIC SIGNAL HEAD CONFIGURATION  
HEADS 5 & 6



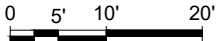
TRAFFIC SIGNAL HEAD CONFIGURATION  
HEADS 1, 2, 3, 4, 7, & 8



PEDESTRIAN SIGNAL HEAD CONFIGURATION  
HEADS 9, 10, 11, & 12

NOTES:

1. THE PAVEMENT MARKINGS SHOWN ARE FOR REFERENCE ONLY. REFER TO SIGN AND PAVEMENT MARKING PLANS FOR ACTUAL LOCATION.
2. SEE DWG. TSN-01 FOR SIGNAL NOTES.
3. THE PROPOSED LIGHTING ARM IS NOT PERPENDICULAR TO NIAGARA STREET. THE ARM SHALL BE INSTALLED AS SHOWN, OVER THE MAST ARM.
4. INSTALL SIGNAL HEAD ASSEMBLIES REMOVED AND SALVAGE FROM THE EXISTING SIGNAL POLE AND MAST ARM AT HERTEL AND NIAGARA STREET.
5. TEST PIT. SEE TEST PIT NOTES ON DWG. NO. TSN-01.
6. ITEM 680.77000205 SHALL INCLUDE ALL WORK NECESSARY TO DISCONNECT THE EXISTING TRAFFIC SIGNAL CONTROLLER AND CABINET FROM THE EXISTING SIGNAL POLE AT STA. 181+11, 32.9' RT; MODIFY, AND RELOCATE THE CABINET AND CONTROLLER TO ALUMINUM BASE (ITEM 680.80324708) AT STA. 181+07, 35.1' RT. ALL OTHER EXISTING TRAFFIC SIGNAL EQUIPMENT INCLUDING SIGNAL SECTIONS, WIRING, PULL BOXES, FOUNDATIONS, POLES, MAST ARMS, COMMUNICATION RADIO, AND YAGI ANTENNA SHALL BE REMOVED. THE TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BE RETURNED TO TRAFFIC ENGINEERING SIGNAL SHOP AT 1120 SENECA STREET, BUFFALO NY. CONTRACTOR TO COORDINATE WITH CITY OF BUFFALO TRAFFIC SIGNAL DIVISION, NICK PUGLIESE, AT 851-6596 FOR REMOVAL AND DELIVERY. PAYMENT TO BE MADE UNDER ITEMS 680.50500005 AND 680.79000105.



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POWER CENTER #19  
SEE DWG. NO. ELP-03 FOR POWER CENTER LOCATION  
SEE DWG. NO. ELD-03 FOR POWER CENTER DETAILS  
ITEM 206.03 (40 FT)  
ITEM 206.03010010 (201 FT)  
ITEM 680.520508 (241 FT),  
ITEM 680.95020615 (270 FT)  
ITEM 680.510301 (3)

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TRAFFIC SIGNAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. TSP-04  
SHEET NO. 44

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USER = Jessica Ross

JOB MANAGER T. DUK

DESIGN J. KOCH

CHECK T. BUCKLEY

DRAFTING J. KOCH

CHECK

T. BUCKLEY

PROJECT MANAGER

P. GALBO

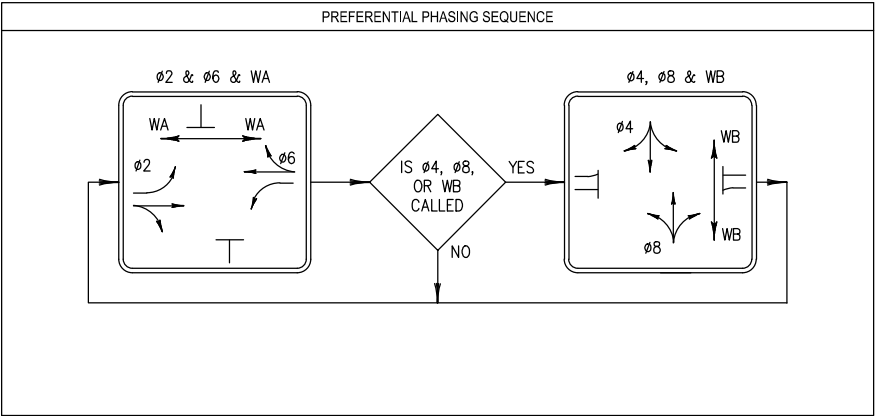
| TRAFFIC SIGNAL QUANTITIES - NIAGARA AND I-190 OFF RAMP SOUTH OF ONTARIO |                                                                                                   |          |          |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------|----------|
| ITEM                                                                    | DESCRIPTION                                                                                       | UNIT     | QUANTITY |
| 206.03                                                                  | CONDUIT EXCAVATION AND BACKFILL INCLUDING SURFACE RESTORATION                                     | LF       | 154      |
| 206.03010010                                                            | CONDUIT EXCAVATION AND BACKFILL - (RESTORING TOP SURFACES NOT INCLUDED)                           | LF       | 284      |
| 206.05                                                                  | TEST PITS                                                                                         | EA       | 0        |
| 619.1611                                                                | MAINTAIN TRAFFIC SIGNAL AND EQUIPMENT (REQ A)                                                     | INT. MTH | 15       |
| 680.5001                                                                | POLE EXCAVATION AND CONCRETE FOUNDATION                                                           | CY       | 6.3      |
| 680.5002                                                                | CONCRETE BASE FOR CONTROLLER CABINET                                                              | EA       | 1        |
| 680.50500005                                                            | REMOVE POLE FOUNDATION                                                                            | LF       | 16       |
| 680.510301                                                              | PULLBOX-CIRCULAR, 24 INCH DIAMETER REINFORCED CONCRETE                                            | EA       | 6        |
| 680.520506                                                              | CONDUIT - RIGID PLASTIC CLASS 1 - 2 INCH DIAMETER                                                 | LF       | 29       |
| 680.520508                                                              | CONDUIT - RIGID PLASTIC CLASS 1 - 3 INCH DIAMETER                                                 | LF       | 532      |
| 680.58801008                                                            | WIRELESS VEHICLE DETECTION SYSTEM REPEATER-(LONG LIFE)                                            | EA       | 1        |
| 680.58803008                                                            | WIRELESS VEHICLE DETECTION SYSTEM INTERSECTION SENSOR                                             | EA       | 6        |
| 680.58804008                                                            | WIRELESS VEHICLE DETECTION SYSTEM CONTACT CLOSURE INTERFACE (APCC)                                | EA       | 1        |
| 680.58806008                                                            | WIRELESS VEHICLE DETECTION SYSTEM ISOLATOR MODULE (ISO)                                           | EA       | 1        |
| 680.58807008                                                            | WIRELESS VEHICLE DETECTION SYSTEM SERIAL PORT PROTOCOL DIGITAL RADIO (SPP)                        | EA       | 1        |
| 680.641830                                                              | TRAFFIC SIGNAL POLE - MAST ARM WITH LIGHTING ARM (30')                                            | EA       | 1        |
| 680.641832                                                              | TRAFFIC SIGNAL POLE - MAST ARM WITH LIGHTING ARM (32')                                            | EA       | 1        |
| 680.651828                                                              | TRAFFIC SIGNAL POLE WITH DUAL MAST ARMS AND LIGHTING ARM, 18 FT MOUNTING HEIGHT, 28 FT ARM LENGTH | EA       | 1        |
| 680.730314                                                              | SIGNAL CABLE, 3 CONDUCTORS, 14 AWG                                                                | LF       | 453      |
| 680.730514                                                              | SIGNAL CABLE, 5 CONDUCTORS, 14 AWG                                                                | LF       | 487      |
| 680.730714                                                              | SIGNAL CABLE, 7 CONDUCTORS, 14 AWG                                                                | LF       | 527      |
| 680.77000205                                                            | MODIFY TRAFFIC SIGNAL INSTALLATION                                                                | EA LOC   | 1        |
| 680.79000105                                                            | REMOVE TRAFFIC SIGNAL INSTALLATION                                                                | EA LOC   | 1        |
| 680.80324708                                                            | MICROCOMPUTER CABINET BASE (ALUMINUM)                                                             | EA       | 1        |
| 680.810101                                                              | TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED                                                     | EA       | 6        |
| 680.810103                                                              | TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED                                                  | EA       | 6        |
| 680.810105                                                              | TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED                                                   | EA       | 6        |
| 680.810601                                                              | TRAFFIC SIGNAL SECTION - POLYCARBONATE, TYPE I, 12 INCH                                           | EA       | 18       |
| 680.8111                                                                | TRAFFIC SIGNAL BRACKET ASSEMBLY - ONE WAY                                                         | EA       | 6        |
| 680.813105                                                              | PEDESTRIAN SIGNAL MODULE, 12 INCH, LED, BI-MODAL HAND/MAM SYMBOL                                  | EA       | 4        |
| 680.813106                                                              | PEDESTRIAN SIGNAL SECTION - POLYCARBONATE, TYPE I, 12 INCH                                        | EA       | 8        |
| 680.81330010                                                            | AUDIBLE PEDESTRIAN SIGNAL                                                                         | EA       | 3        |
| 680.81340010                                                            | AUDIBLE PEDESTRIAN SIGNAL WITH POST                                                               | EA       | 1        |
| 680.8141                                                                | PEDESTRIAN SIGNAL BRACKET MOUNT ASSEMBLY                                                          | EA       | 4        |
| 680.81500010                                                            | PEDESTRIAN COUNTDOWN TIMER MODULE                                                                 | EA       | 4        |
| 680.94997008                                                            | FURNISH AND INSTALL ELECTRICAL DISCONNECT/GENERATOR OR TRANSFER SWITCH                            | EA       | 1        |
| 680.95020615                                                            | SERVICE CABLE, TWO CONDUCTORS, #6 AWG                                                             | LF       | 270      |
| 683.150100ER                                                            | 5.8 GHZ WIRELESS RADIO/ANTENNA SYSTEM                                                             | EA       | 1        |

| OPERATIONAL SCHEDULE         |    |    |    |    |    |    |    |    |            |            |            |            |
|------------------------------|----|----|----|----|----|----|----|----|------------|------------|------------|------------|
| FACE<br>PHASE                | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9          | 10         | 11         | 12         |
| φ2 & φ6                      | G  | G  | G  | G  | R  | R  | R  | R  | MAN        | MAN        | HAND       | HAND       |
| φ2 & φ6                      | G  | G  | G  | G  | R  | R  | R  | R  | FLASH HAND | FLASH HAND | HAND       | HAND       |
| φ2 & φ6 TO φ4 & φ8           | Y  | Y  | Y  | Y  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       |
| ALL RED                      | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       |
| φ4 & φ8                      | R  | R  | R  | R  | G  | G  | G  | G  | HAND       | HAND       | MAN        | MAN        |
| φ4 & φ8                      | R  | R  | R  | R  | G  | G  | G  | G  | HAND       | HAND       | FLASH HAND | FLASH HAND |
| φ4 & φ8 TO φ2 & φ6           | R  | R  | R  | R  | Y  | Y  | Y  | Y  | HAND       | HAND       | HAND       | HAND       |
| ALL RED                      | R  | R  | R  | R  | R  | R  | R  | R  | HAND       | HAND       | HAND       | HAND       |
| EMERGENCY FLASHING OPERATION | FR | FR | FR | FR | FR | FR | FR | FR | DK         | DK         | DK         | DK         |
| SIGNAL DISPLAY               |    |    |    |    |    |    |    |    |            |            |            |            |

| TRAFFIC SIGNAL AND SIGNAL POLE DATA |                |          |                                                 |                         |       |                                                   |                        |                      |                              |                                             |                                                       |
|-------------------------------------|----------------|----------|-------------------------------------------------|-------------------------|-------|---------------------------------------------------|------------------------|----------------------|------------------------------|---------------------------------------------|-------------------------------------------------------|
| ITEM NO.                            | POLE ID NUMBER | QUANTITY | POLE LENGTH (FT)<br>OR HEIGHT MAST.<br>ARM MTD. | MAST ARM LENGTH<br>(FT) |       | TOTAL HEIGHT OF<br>POLE FOR LUMINAIRE<br>MOUNTING | ØN<br>(SEE NOTE BELOW) |                      | LUMINAIRE ARM<br>LENGTH (FT) | FOUNDATION CODE<br>SEE STD. SHEET<br>680.01 | PAY QUANTITY.<br>POLE EXCAVATION &<br>FOUNDATION (CY) |
|                                     |                |          |                                                 | NO. 1                   | NO. 2 |                                                   | MAST<br>ARM<br>NO. 1   | MAST<br>ARM<br>NO. 2 |                              |                                             |                                                       |
| 680.641830                          | SP 1           | 1        | 18                                              | 30                      | -     | 30                                                | 90                     | -                    | 8                            | K-2                                         | 2.1                                                   |
| 680.641832                          | SP 2           | 1        | 18                                              | 32                      | -     | 30                                                | 0                      | -                    | 8                            | K-2                                         | 2.1                                                   |
| 680.651828                          | SP 3           | 1        | 18                                              | 28                      | 20    | 30                                                | 90                     | -                    | 8                            | K-2                                         | 2.1                                                   |

LIGHTING ARM ANGLE MEASURED FROM THE PROPOSED CENTERLINE OF ROADWAY, LUMINAIRE SHALL BE INLINE WITH THE TRAFFIC SIGNAL MAST ARMS. FOUNDATIONS SIZES TO BE VERIFIED BY THE EIC BASED ON THE POLE AND ARM SHOP DRAWING SUBMITTALS. SQUARE FOUNDATIONS HAVE BEEN ASSUMED FOR SP1, SP2, AND SP-3.

- NOTES:
- FOUNDATION CODES SHOWN ARE APPROXIMATE. FINAL DETERMINATION WILL BE MADE BY THE ENGINEER AFTER APPROVAL OF TRAFFIC SIGNAL POLE SHOP DRAWINGS.
  - ANGLE BETWEEN MAST ARM AND LIGHT ARM TO BE FIELD VERIFIED BY CONTRACTOR.
  - FINAL DETERMINATION OF PHASING AND OPERATION SCHEDULE WILL BE MADE BY THE ENGINEER DURING CONSTRUCTION.



| DETECTOR DATA |               |                 |              |          |                         |
|---------------|---------------|-----------------|--------------|----------|-------------------------|
| DETECTOR NO.  | DETECTOR TYPE | DETECTOR I.D. * | PHASE CALLED | MODE     | REMARKS                 |
| 4A            | SENSOR        |                 | φ4           | PRESENCE | SET DELAY TIMER         |
| 4B            | SENSOR        |                 | φ4           | PRESENCE | SET DELAY TIMER         |
| 4C            | SENSOR        |                 | φ4           | PRESENCE | SET DELAY TIMER         |
| 4D            | SENSOR        |                 | φ4           | PRESENCE | SET DELAY TIMER         |
| 8A            | SENSOR        |                 | φ8           | PRESENCE | SET DELAY TIMER         |
| 8B            | SENSOR        |                 | φ8           | PRESENCE | SET DELAY TIMER         |
| 9             | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS I-190 OFF RAMP |
| 10            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS I-190 OFF RAMP |
| 11            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS NIAGARA STREET |
| 12            | PUSH BUTTON   | N/A             |              | CALL     | TO CROSS NIAGARA STREET |

\* DETECTOR ID HEXIDEcimal CODE AND HARDWARE ID CODE TO BE PROVIDED BY SUPPLIER. CONTRACTOR SHALL FILL IN THE FINAL CODES AND SUPPLY TO THE CITY OF BUFFALO.

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CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

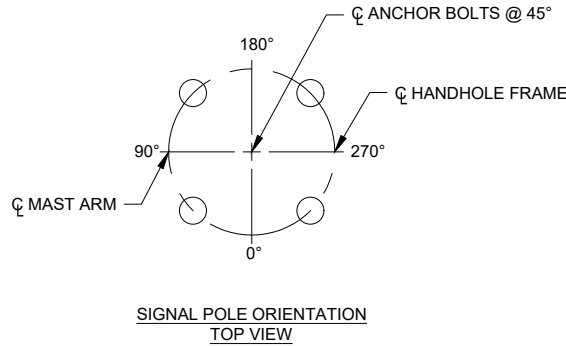


ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TRAFFIC SIGNAL PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. TSP-05  
SHEET NO. 45

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NOTES:

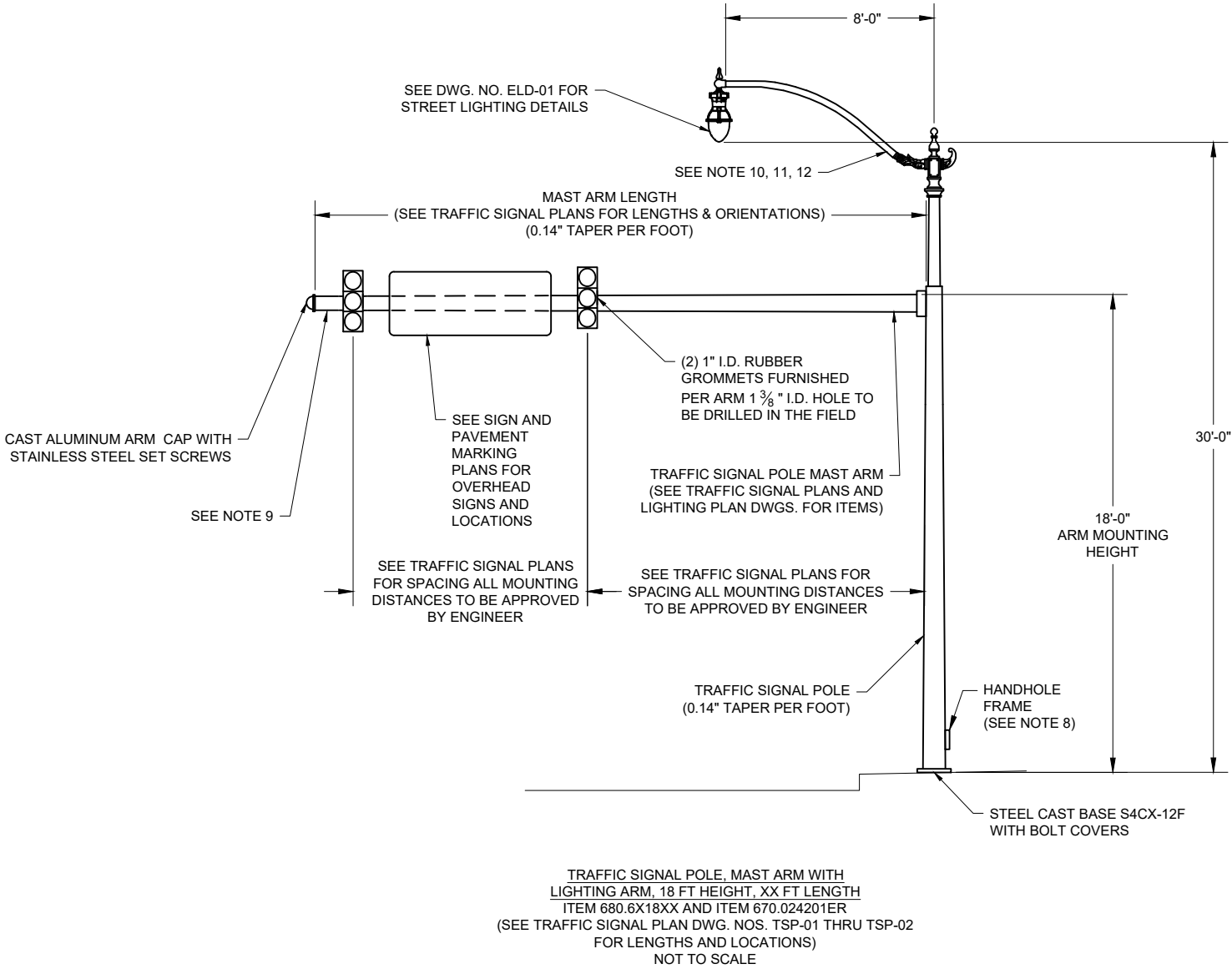
- ALL TRAFFIC SIGNAL POLES, MAST ARMS AND ASSOCIATED HARDWARE, CONNECTION DETAILS, AND HANDHOLE DETAILS SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT NYSDOT STANDARD SPECIFICATIONS, PER DETAILS ON TRAFFIC SIGNAL PLAN DRAWINGS, AND AS PRESCRIBED BY THE MANUFACTURER'S SPECIFICATIONS.
  - CONTRACTOR TO PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING THE MATERIALS.
  - POLE AND ARM SHALL BE A TWO PIECE CONSTRUCTION.
  - ALL POLES TO BE INSTALLED AS PART OF THIS CONTRACT SHALL BE GALVANIZED STEEL AND FACTORY BLACK POLYESTER POWDER-COATED WITH A BAKED ON FINISH. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR TRAFFIC SIGNAL POLE.
  - PAYMENT FOR SLIPFITTERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE TRAFFIC SIGNAL POLE.
  - 1/2" STEEL STENCIL ON BASE PLATE AND ARM PLATE MUST INCLUDE:

WALL THICKNESS

MINIMUM YIELD THICKNESS

MANUFACTURER LOGO

MONTH AND YEAR OF MANUFACTURING
- STAMPING MUST BE VISIBLE AFTER PAINTING.
- REFER TO THE TRAFFIC SIGNAL PLAN DRAWINGS FOR ADDITIONAL NOTES.
  - ALL SIGNAL POLE HANDHOLES FRAMES SHALL BE OPPOSITE (180°) FROM THE PROPOSED MAST ARMS, AND LIGHTING ARM.
  - ADDITIONAL SIGNAGE MAY BE REQUIRED IN THIS LOCATION. SEE SIGN AND PAVEMENT MARKING PLANS.
  - THE LIGHT CABLE WIRE WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR TO THE END OF THE LIGHT ARM. LUMINARIES WILL ALSO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. SEE LIGHTING PLAN AND DETAIL DRAWINGS FOR STREET LIGHTING WIRE REQUIREMENTS AND PAY ITEMS.
  - POLE AND ARM SHALL BE CAPABLE OF SUPPORTING A LUMINAIRE WITH BUILT-IN BALLAST HAVING A MAXIMUM WEIGHT OF 75 LBS. AND A MAXIMUM AREA OF 3.3 SF.
  - ALL LIGHTING ARMS SHALL BE INSTALLED PERPENDICULAR TO THE CURB LINE AT EACH LOCATION UNLESS OTHERWISE NOTED ON THE LIGHTING PLANS. PRIOR TO INSTALLATION, LIGHTING ARM ORIENTATION SHALL BE APPROVED BY THE ENGINEER.



AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
TRAFFIC SIGNAL DETAILS

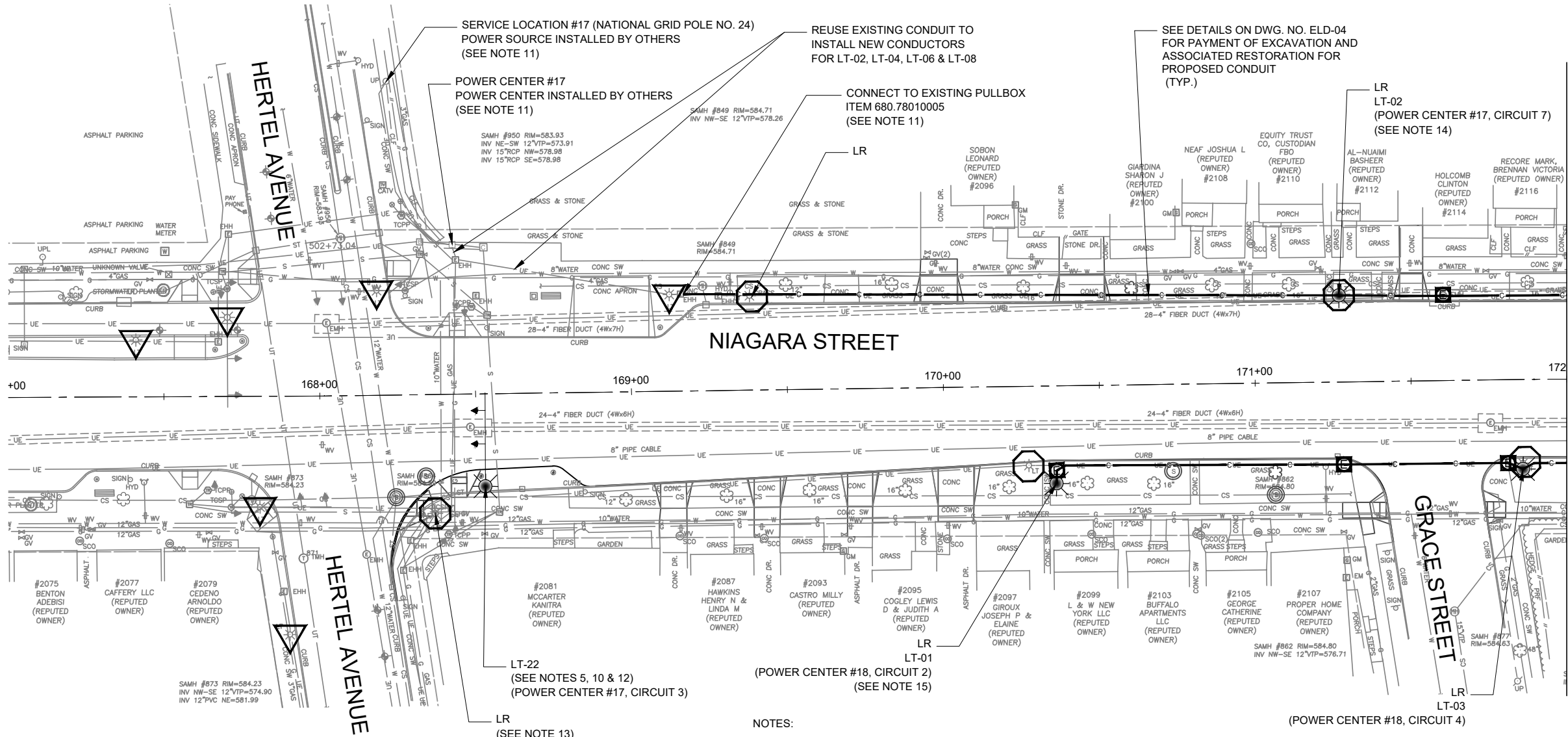
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. TSD-01  
SHEET NO. 46

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



DRAFT  
NOT FOR  
CONSTRUCTION



MATCHLINE STA. 172+00 SEE ELP-02

| STREET LIGHTING SYMBOLS |                                                                                                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL                  | DESCRIPTION                                                                                                                                                                              |
|                         | EXISTING LIGHT STANDARD TO REMAIN                                                                                                                                                        |
|                         | EXISTING LIGHT STANDARD AND FOUNDATION (ITEMS 670.80 AND 670.82) OR LIGHTING ARM (ITEM 680.77000105) TO BE REMOVED (SEE NOTES 1 & 13)                                                    |
|                         | EXISTING ELECTRIC HANDHOLE                                                                                                                                                               |
|                         | PROPOSED ELECTRIC PULLBOX ITEM 670.3006                                                                                                                                                  |
|                         | EXISTING ELECTRIC CONDUIT LOCATION                                                                                                                                                       |
|                         | PROPOSED ELECTRIC CONDUIT, PROPOSED SINGLE CONDUCTOR CABLES (6 GAGE) AND PROPOSED GROUND WIRE (6 GAGE) ITEM 670.2602, ITEM 670.7004 (SEE NOTE 2)                                         |
|                         | PROPOSED LIGHT STANDARD, LUMINAIRE, AND PHOTOELECTRIC CONTROL TO BE MOUNTED ON NEW FOUNDATION UNLESS OTHERWISE INDICATED (SEE NOTE 5), ITEM 670.10010005, 670.024201ER AND ITEM 670.0105 |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NOTES:

- EXISTING LAMPPOSTS REMOVED UNDER ITEM 670.80 SHALL BE DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 1120 SENECA STREET. ALL EXISTING STREET LIGHT LUMINAIRES AND ASSOCIATED CONDUCTORS WILL BE REMOVED BY NATIONAL GRID. CONTRACTOR TO REMOVE POLES AND ARMS AS SHOWN.
- PAYMENT FOR 10 GAGE GROUND WIRE IN THE PROPOSED LIGHT STANDARDS TO BE MADE UNDER ITEM 670.7006.
- ALL EXISTING CONDUIT, CURB, AND LIGHT STANDARD FOUNDATIONS THAT NEED TO BE REMOVED SHALL BE DONE SO WITH RESPECT TO THE GENERAL TREE PROTECTION DURING CONSTRUCTION NOTES ON DWG. NO. GN-01.
- PROPOSED LIGHT STANDARDS SHALL BE INSTALLED SO THE LIGHTING ARM EXTENDS OVER NIAGARA STREET AT A 90° ANGLE TO THE CURB LINE UNLESS OTHERWISE SHOWN OR NOTED.
- LUMINAIRE AND ASSOCIATED LIGHTING ARM TO BE MOUNTED TO THE NEW TRAFFIC SIGNAL POLE WHERE INDICATED ON THE PLAN. SEE DETAIL ON DWG. NO. TSD-01. THE COST FOR THE LUMINAIRE SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 670.024201ER. THE COST OF THE ARM SHALL BE INCLUDED IN THE ASSOCIATED SIGNAL POLE ITEM.
- IN LOCATIONS REQUIRING MULTIPLE CONDUITS, ALL CONDUITS SHALL BE INSTALLED IN THE SAME TRENCH WITH ONE PAYMENT FOR CONDUIT EXCAVATION.
- SEE DWG. NOS ELD-01 AND ELD-04 FOR LIGHT STANDARD, FOUNDATION AND CONDUIT EXCAVATION DETAILS AND ADDITIONAL NOTES. SEE DWG. NOS. TS-02 AND MD-04 FOR CURB INSTALLATION DETAILS WHICH DEPICT LOCATION OF CONDUIT INSTALLATION WHERE CURB IS BEING REPLACED AND/OR REALIGNED.
- SEE DWG. NO. ELT-01 FOR LIGHTING TABLES AND POWER CENTER SCHEDULES.
- THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY NATIONAL GRID. FOLLOWING CONDUCTOR REMOVAL, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING CONDUIT.
- SEE TRAFFIC SIGNAL PLANS FOR LOCATIONS OF POLES, FOUNDATIONS, SIGNAL CONDUCTORS AND CONDUITS, SIGNAL PULLBOXES AND OTHER REQUIRED TRAFFIC SIGNAL INFRASTRUCTURE.
- THE POWER CENTER AND CONDUIT NECESSARY TO ENERGIZE THE NEW STREET LIGHTING SYSTEM ON THE NORTH SIDE OF NIAGARA STREET (STA. 169+23 TO STA. 176+55) HAS BEEN INSTALLED BY OTHERS (NIAGARA PHASE 4A CONTRACTOR). CONTRACTOR SHALL USE EXISTING CONDUIT TO INSTALL NEW CONDUCTORS AND ENERGIZE LT-2, LT-4, LT-6 & LT-8.
- CONTRACTOR SHALL REUSE THE EXISTING CONDUCTORS TO ENERGIZE THE NEW STREET LIGHTING DAVIT ARM (LT-22) ATTACHED TO THE SIGNAL POLE AT STA. 168+53, 30' RT.
- REMOVAL OF EXISTING SIGNAL POLE-MOUNTED LIGHTING ARM IS INCLUDED IN THE UNIT PRICE BID FOR ITEM 680.77000105. SEE TRAFFIC SIGNAL PLANS FOR TRAFFIC SIGNAL REMOVAL LOCATIONS AND SERIALIZED PAY ITEMS.
- CONTRACTOR SHALL MAXIMIZE LIGHT STANDARD OFFSET FROM THE CURBLINE TO THE EXTENT POSSIBLE, A.O.B.E., WHILE ALLOWING A 2'-0" BUFFER BETWEEN THE EDGE OF LIGHT STANDARD FOUNDATION AND THE OUTSIDE EDGE OF THE COMBINED SEWER. SEE LIGHT STANDARD DETAIL ON DWG. NO. ELD-01 AND TABLE OF LUMINAIRES AND FOUNDATIONS ON DWG. NO. ELT-01.
- CONTRACTOR SHALL MINIMIZE LIGHT STANDARD OFFSET FROM THE CURBLINE TO THE EXTENT POSSIBLE, A.O.B.E., WHILE ALLOWING A 2'-0" BUFFER BETWEEN THE EDGE OF LIGHT STANDARD FOUNDATION AND THE OUTSIDE EDGE OF THE COMBINED SEWER. SEE LIGHT STANDARD DETAIL ON DWG. NO. ELD-01 AND TABLE OF LUMINAIRES AND FOUNDATIONS ON DWG. NO. ELT-01.

0 10' 20' 40'

ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
STREET LIGHTING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. ELP-01  
SHEET NO. 47



DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
STREET LIGHTING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. ELP-02  
SHEET NO. 48

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| STREET LIGHTING SYMBOLS |                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL                  | DESCRIPTION                                                                                                                                         |
|                         | EXISTING LIGHT STANDARD TO REMAIN                                                                                                                   |
|                         | EXISTING LIGHT STANDARD AND FOUNDATION TO BE REMOVED (SEE NOTE 1)<br>ITEMS 670.80 AND 670.82                                                        |
|                         | EXISTING ELECTRIC HANDHOLE                                                                                                                          |
|                         | PROPOSED ELECTRIC PULLBOX<br>ITEM 670.3006                                                                                                          |
|                         | EXISTING ELECTRIC CONDUIT LOCATION                                                                                                                  |
|                         | PROPOSED ELECTRIC CONDUIT, PROPOSED SINGLE CONDUCTOR CABLES (6 GAGE) AND PROPOSED GROUND WIRE (6 GAGE)<br>ITEM 670.2602, ITEM 670.7004 (SEE NOTE 2) |
|                         | PROPOSED LIGHT STANDARD, LUMINAIRE, AND PHOTOELECTRIC CONTROL TO BE MOUNTED ON NEW FOUNDATION<br>ITEM 670.10010005, 670.024201ER AND ITEM 670.0105  |

SERVICE LOCATION #18 (NATIONAL GRID POLE NO. 10)  
ITEM 690.04000105 SPECIALTY WORK (ELECTRICAL)  
SEE DETAILS ON DWG. NO. ELD-03  
(SEE NOTE 9)

NOTES:

- EXISTING LAMPPOSTS REMOVED UNDER ITEM 670.80 SHALL BE DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 1120 SENECA STREET. ALL EXISTING STREET LIGHT LUMINAIRES AND ASSOCIATED CONDUCTORS WILL BE REMOVED BY NATIONAL GRID. CONTRACTOR TO REMOVE POLES AND ARMS AS SHOWN.
- PAYMENT FOR 10 GAGE GROUND WIRE IN THE PROPOSED LIGHT STANDARDS TO BE MADE UNDER ITEM 670.7006.
- ALL EXISTING CONDUIT, CURB, AND LIGHT STANDARD FOUNDATIONS THAT NEED TO BE REMOVED SHALL BE DONE SO WITH RESPECT TO THE GENERAL TREE PROTECTION DURING CONSTRUCTION NOTES ON DWG. NO. GN-01.
- PROPOSED LIGHT STANDARDS SHALL BE INSTALLED SO THE LIGHTING ARM EXTENDS OVER NIAGARA STREET AT A 90° ANGLE TO THE CURB LINE UNLESS OTHERWISE SHOWN OR NOTED.
- IN LOCATIONS REQUIRING MULTIPLE CONDUITS, ALL CONDUITS SHALL BE INSTALLED IN THE SAME TRENCH WITH ONE PAYMENT FOR CONDUIT EXCAVATION.
- SEE DWG. NOS ELD-01 AND ELD-04 FOR LIGHT STANDARD, FOUNDATION AND CONDUIT EXCAVATION DETAILS AND ADDITIONAL NOTES. SEE DWG. NOS. TS-02 AND MD-04 FOR CURB INSTALLATION DETAILS WHICH DEPICT LOCATION OF CONDUIT INSTALLATION WHERE CURB IS BEING REPLACED AND/OR REALIGNED.
- SEE DWG. NO. ELT-01 FOR LIGHTING TABLES AND POWER CENTER SCHEDULES.
- THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY NATIONAL GRID. FOLLOWING CONDUCTOR REMOVAL, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING CONDUIT.
- POWER CENTER SHALL BE A TYPE A POWER CENTER WITH SINGLE METER AND SINGLE PANEL SECTION TO HOUSE THE EQUIPMENT TO POWER STREET LIGHTING. SEE DWG. NOS. ELT-01 FOR PANEL SCHEDULES AND ELD-02 FOR DETAILS.
- CONTRACTOR SHALL MAXIMIZE LIGHT STANDARD OFFSET FROM THE CURBLINE TO THE EXTENT POSSIBLE, A.O.B.E., WHILE ALLOWING A 2'-0" BUFFER BETWEEN THE EDGE OF LIGHT STANDARD FOUNDATION AND THE OUTSIDE EDGE OF THE COMBINED SEWER. SEE LIGHT STANDARD DETAIL ON DWG. NO. ELD-01 AND TABLE OF LUMINAIRES AND FOUNDATIONS ON DWG. NO. ELT-01.

CONDUIT, CONDUIT EXCAVATION AND RESTORATION FROM METER PEDESTAL TO NATIONAL GRID POWER SOURCE SHALL BE PAID FOR UNDER ITEM 690.04000105  
SEE DETAILS ON DWG. NO. ELD-04 (TYP.)

POWER CENTER #18  
ITEM 690.04000105 (TYP.)  
SEE DETAILS ON DWG. NO. ELD-02

LR  
LT-07  
(POWER CENTER #18, CIRCUIT 1)

SAMH #878 RIM=583.61  
INV NW-SE 12°VTP=571.57  
INV 12°VTP E=571.62  
INV 12°VTP SE=576.83

#2151-2153  
LOCKWOOD  
JOSEPH D JR.  
(REPUTED  
OWNER)

#2159  
AHMED BAIDAA  
(REPUTED  
OWNER)

#2161  
THERENCE  
NTZIMPA  
(REPUTED  
OWNER)

#2165  
DRAKSIK SLA  
(REPUTED  
OWNER)

GARFIELD STREET

NIAGARA STREET

SEE DETAILS ON DWG. NO. ELD-04  
FOR PAYMENT OF EXCAVATION AND  
ASSOCIATED RESTORATION FOR  
PROPOSED CONDUIT  
(TYP.)  
(POWER CENTER #17, CIRCUIT 11)

SAMH #852 RIM=583.02  
INV 12°VTP SE=574.86

SAMH #853 RIM=583.67  
INV SE=574.78

LR  
LT-06  
(POWER CENTER #17, CIRCUIT 9)  
(SEE NOTE 10)

HANNA  
ALBERT R  
(REPUTED  
OWNER)  
#2136

YHK PROPERTIES LLC  
(REPUTED OWNER)  
#2138-2140

MAUCAILLA  
JOSEPH M  
(REPUTED  
OWNER)  
#2144-2146

GAISER  
RUSSELL E JR.  
(REPUTED  
OWNER)  
#2150

CZAJKOWSKI  
MICHAEL  
(REPUTED  
OWNER)  
#2154

LR  
LT-04  
(POWER CENTER #17, CIRCUIT 5)  
(SEE NOTE 10)

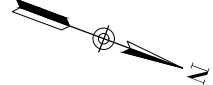
CAMPANELLA  
NICHOLAS  
(REPUTED  
OWNER)  
#2128

CITY OF  
BUFFALO  
(REPUTED  
OWNER)  
#2126

MATCHLINE STA. 172+00 SEE ELP-01

MATCHLINE STA. 177+00 SEE ELP-03

0 10' 20' 40'





AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

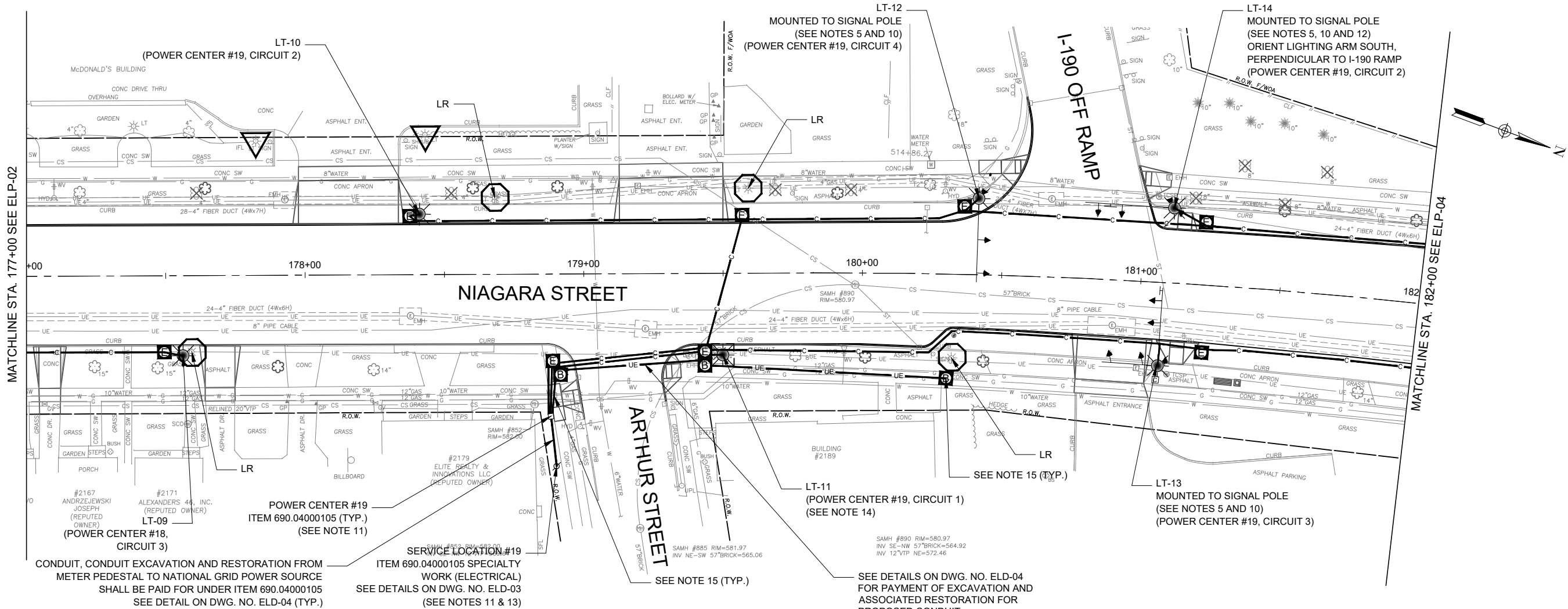
DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



|                                                         |  |                                          |  |
|---------------------------------------------------------|--|------------------------------------------|--|
| ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED              |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |  |
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90   |  | DRAWING NO. ELP-03                       |  |
| HERTEL AVENUE TO ONTARIO STREET<br>STREET LIGHTING PLAN |  | SHEET NO. 49                             |  |

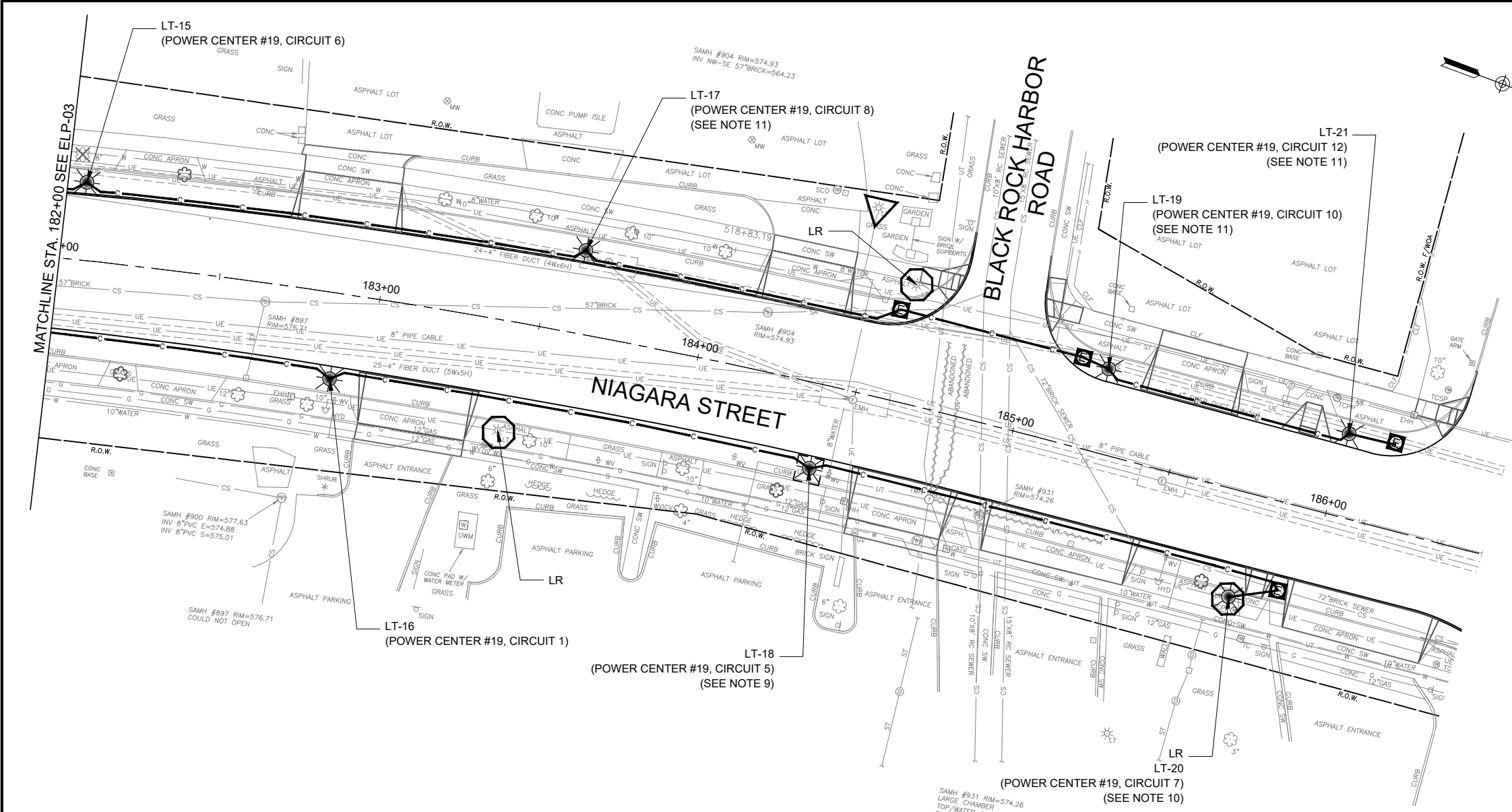


| STREET LIGHTING SYMBOLS |                                                                                                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL                  | DESCRIPTION                                                                                                                                                                              |
|                         | EXISTING LIGHT STANDARD TO REMAIN                                                                                                                                                        |
|                         | EXISTING LIGHT STANDARD AND FOUNDATION TO BE REMOVED (SEE NOTE 1)<br>ITEMS 670.80 AND 670.82                                                                                             |
|                         | EXISTING ELECTRIC HANDHOLE                                                                                                                                                               |
|                         | PROPOSED ELECTRIC PULLBOX<br>ITEM 670.3006                                                                                                                                               |
|                         | PROPOSED NFTA PULLBOX<br>ITEM 680.510201                                                                                                                                                 |
|                         | EXISTING ELECTRIC CONDUIT LOCATION                                                                                                                                                       |
|                         | PROPOSED ELECTRIC CONDUIT, PROPOSED SINGLE CONDUCTOR CABLES (6 GAGE) AND PROPOSED GROUND WIRE (6 GAGE)<br>ITEM 670.2602, ITEM 670.7004 (SEE NOTE 2)                                      |
|                         | PROPOSED EMPTY CONDUIT FOR NFTA USE<br>ITEM 680.520508 (SEE NOTE 15)                                                                                                                     |
|                         | PROPOSED LIGHT STANDARD, LUMINAIRE, AND PHOTOELECTRIC CONTROL TO BE MOUNTED ON NEW FOUNDATION UNLESS OTHERWISE INDICATED (SEE NOTE 5), ITEM 670.10010005, 670.024201ER AND ITEM 670.0105 |
|                         | TEST PIT LOCATION (SEE NOTE 16)<br>ITEM 206.05                                                                                                                                           |

NOTES:

- EXISTING LAMPPOSTS REMOVED UNDER ITEM 670.80 SHALL BE DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 1120 SENECA STREET. ALL EXISTING STREET LIGHT LUMINAIRES AND ASSOCIATED CONDUCTORS WILL BE REMOVED BY NATIONAL GRID. CONTRACTOR TO REMOVE POLES AND ARMS AS SHOWN.
- PAYMENT FOR 10 GAGE GROUND WIRE IN THE PROPOSED LIGHT STANDARDS TO BE MADE UNDER ITEM 670.7006.
- ALL EXISTING CONDUIT, CURB, AND LIGHT STANDARD FOUNDATIONS THAT NEED TO BE REMOVED SHALL BE DONE SO WITH RESPECT TO THE GENERAL TREE PROTECTION DURING CONSTRUCTION NOTES ON DWG. NO. GN-01.
- PROPOSED LIGHT STANDARDS SHALL BE INSTALLED SO THE LIGHTING ARM EXTENDS OVER NIAGARA STREET AT A 90° ANGLE TO THE CURB LINE UNLESS OTHERWISE SHOWN OR NOTED.
- LUMINAIRE AND ASSOCIATED LIGHTING ARM TO BE MOUNTED TO THE NEW TRAFFIC SIGNAL POLE WHERE INDICATED ON THE PLAN. SEE DETAIL ON DWG. NO. TSD-01. THE COST FOR THE LUMINAIRE SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 670.024201ER. THE COST OF THE ARM SHALL BE INCLUDED IN THE ASSOCIATED SIGNAL POLE ITEM.
- IN LOCATIONS REQUIRING MULTIPLE CONDUITS, ALL CONDUITS SHALL BE INSTALLED IN THE SAME TRENCH WITH ONE PAYMENT FOR CONDUIT EXCAVATION.
- SEE DWG. NOS ELD-01 AND ELD-04 FOR LIGHT STANDARD, FOUNDATION AND CONDUIT EXCAVATION DETAILS AND ADDITIONAL NOTES. SEE DWG. NOS. TS-02 AND MD-04 FOR CURB INSTALLATION DETAILS WHICH DEPICT LOCATION OF CONDUIT INSTALLATION WHERE CURB IS BEING REPLACED AND/OR REALIGNED.
- SEE DWG. NO. ELT-01 FOR LIGHTING TABLES AND POWER CENTER SCHEDULES.
- THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY NATIONAL GRID. FOLLOWING CONDUCTOR REMOVAL, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING CONDUIT.
- SEE TRAFFIC SIGNAL PLANS FOR LOCATIONS OF POLES, FOUNDATIONS, SIGNAL CONDUCTORS AND CONDUITS, SIGNAL PULLBOXES AND OTHER REQUIRED TRAFFIC SIGNAL INFRASTRUCTURE.
- POWER CENTER SHALL BE A TYPE B POWER CENTER WITH DUAL METERS AND TWO PANEL SECTIONS. POWER CENTER SHALL HOUSE THE EQUIPMENT TO POWER STREET LIGHTING AND EQUIPMENT REQUIRED FOR THE TRAFFIC SIGNAL AT ROUTE I-190 OFF RAMP INTERSECTION. SEE DWG. NOS. ELT-01 FOR PANEL SCHEDULES AND ELD-03 FOR DETAILS.
- THE PROPOSED LIGHTING ARM IS NOT PERPENDICULAR TO NIAGARA STREET. SEE THE TRAFFIC SIGNAL PLAN DRAWINGS FOR ARM ORIENTATION.
- INSTALL WOOD POLE (ITEM 670.91100010) EMBEDDED 8 FT BELOW GROUND AND EXTENDING 30 FT ABOVE GROUND. INSTALL GUY WIRE AND ANCHOR TO SIDEWALK PER NATIONAL GRID UTILITY REQUIREMENTS.
- CONTRACTOR SHALL ALLOW A 2'-0" BUFFER BETWEEN THE EDGE OF LIGHT STANDARD FOUNDATION AND THE OUTSIDE EDGE OF THE COMBINED SEWER, A.O.B.E. SEE TABLE OF LUMINAIRES AND FOUNDATIONS ON DWG. NO. ELT-01.
- INSTALL (3) PULLBOXES (ITEM 680.510201) AND 155 LF OF EMPTY 3-INCH CONDUIT (ITEM 680.520508) FROM STA. 180+31, 39 FT. RT., TO POWER CENTER #19 FOR FUTURE NFTA USE. PULLBOXES SHALL HAVE THE WORD "NFTA" ON THE COVER.
- 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (57" BRICK COMBINED SEWER) PRIOR TO LIGHT STANDARD INSTALLATION.





| STREET LIGHTING SYMBOLS |                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL                  | DESCRIPTION                                                                                                                                         |
|                         | EXISTING LIGHT STANDARD TO REMAIN                                                                                                                   |
|                         | EXISTING LIGHT STANDARD AND FOUNDATION TO BE REMOVED (SEE NOTE 1)<br>ITEMS 670.80 AND 670.82                                                        |
|                         | EXISTING ELECTRIC HANDHOLE                                                                                                                          |
|                         | PROPOSED ELECTRIC PULLBOX<br>ITEM 670.3006                                                                                                          |
|                         | EXISTING ELECTRIC CONDUIT LOCATION                                                                                                                  |
|                         | PROPOSED ELECTRIC CONDUIT, PROPOSED SINGLE CONDUCTOR CABLES (6 GAGE) AND PROPOSED GROUND WIRE (6 GAGE)<br>ITEM 670.2602, ITEM 670.7004 (SEE NOTE 2) |
|                         | PROPOSED LIGHT STANDARD, LUMINAIRE, AND PHOTOELECTRIC CONTROL TO BE MOUNTED ON NEW FOUNDATION<br>ITEM 670.10010005, 670.024201ER AND ITEM 670.0105  |
|                         | TEST PIT LOCATION (SEE NOTE 9)<br>ITEM 206.05                                                                                                       |

NOTES:

- EXISTING LAMPPOSTS REMOVED UNDER ITEM 670.80 SHALL BE DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 1120 SENECA STREET. ALL EXISTING STREET LIGHT LUMINAIRES AND ASSOCIATED CONDUCTORS WILL BE REMOVED BY NATIONAL GRID. CONTRACTOR TO REMOVE POLES AND ARMS AS SHOWN.
- PAYMENT FOR 10 GAGE GROUND WIRE IN THE PROPOSED LIGHT STANDARDS TO BE MADE UNDER ITEM 670.7006.
- ALL EXISTING CONDUIT, CURB, AND LIGHT STANDARD FOUNDATIONS THAT NEED TO BE REMOVED SHALL BE DONE SO WITH RESPECT TO THE GENERAL TREE PROTECTION DURING CONSTRUCTION NOTES ON DWG. NO. GN-01.
- PROPOSED LIGHT STANDARDS SHALL BE INSTALLED SO THE LIGHTING ARM EXTENDS OVER NIAGARA STREET AT A 90° ANGLE TO THE CURB LINE UNLESS OTHERWISE SHOWN OR NOTED.
- IN LOCATIONS REQUIRING MULTIPLE CONDUITS, ALL CONDUITS SHALL BE INSTALLED IN THE SAME TRENCH WITH ONE PAYMENT FOR CONDUIT EXCAVATION.
- SEE DWG. NOS ELD-01 AND ELD-04 FOR LIGHT STANDARD, FOUNDATION AND CONDUIT EXCAVATION DETAILS AND ADDITIONAL NOTES. SEE DWG. NOS. TS-02 AND MD-04 FOR CURB INSTALLATION DETAILS WHICH DEPICT LOCATION OF CONDUIT INSTALLATION WHERE CURB IS BEING REPLACED AND/OR REALIGNED.
- SEE DWG. NO. ELT-01 FOR LIGHTING TABLES AND POWER CENTER SCHEDULES.
- THE EXISTING CONDUCTORS SERVICING THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED FROM THE EXISTING CONDUIT BY NATIONAL GRID. FOLLOWING CONDUCTOR REMOVAL, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING CONDUIT.
- 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (4" VERIZON CONDUIT) PRIOR TO LIGHT STANDARD INSTALLATION.
- CONTRACTOR SHALL MINIMIZE LIGHT STANDARD OFFSET FROM THE CURBLINE TO THE EXTENT POSSIBLE, A.O.B.E., WHILE ALLOWING A 2'-0" BUFFER BETWEEN THE EDGE OF LIGHT STANDARD FOUNDATION AND THE OUTSIDE EDGE OF THE COMBINED SEWER. SEE LIGHT STANDARD DETAIL ON DWG. NO. ELD-01 AND TABLE OF LUMINAIRES AND FOUNDATIONS ON DWG. NO. ELT-01.
- CONTRACTOR SHALL INSTALL LIGHT STANDARD AS CLOSE TO THE 3'-11" OFFSET FROM THE CURBLINE AS POSSIBLE, A.O.B.E., WHILE ALLOWING A 2'-0" BUFFER BETWEEN THE EDGE OF LIGHT STANDARD FOUNDATION AND THE OUTSIDE EDGE OF THE ADJACENT UTILITY (NATIONAL GRID DUCT BANK). SEE LIGHT STANDARD DETAIL ON DWG. NO. ELD-01 AND TABLE OF LUMINAIRES AND FOUNDATIONS ON DWG. NO. ELT-01.

0 10' 20' 40'

|                                               |                    |
|-----------------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                            | ALTERED BY:<br>ON: |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div> |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

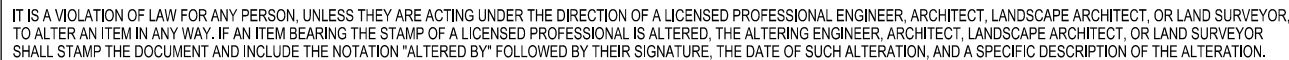


ALL DIMENSIONS IN R UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
STREET LIGHTING PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. ELP-04  
SHEET NO. 50

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.







FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R18. CADD\Trans17 Lighting Details.dwg  
DATE/TIME = 12/12/2022 12:12:56 PM  
USER = Victoria Coners

JOB MANAGER T. DUK

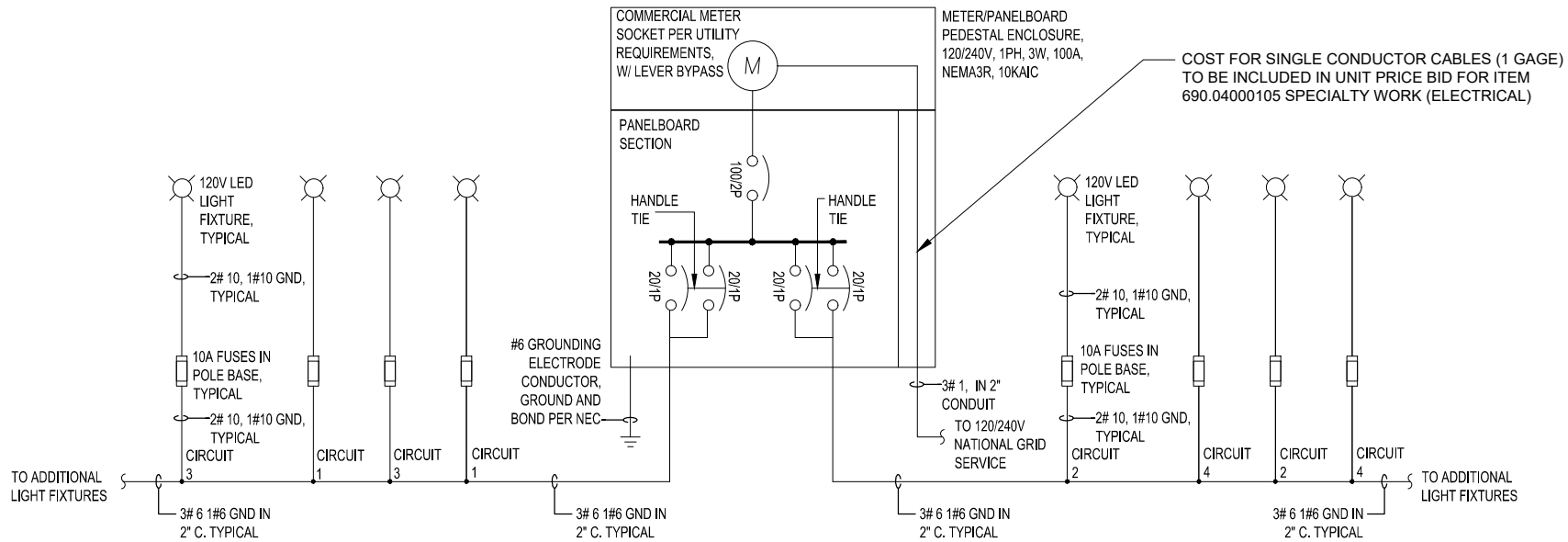
DESIGN J. ROSS/R. WAGNER

CHECK J. HALLMARK

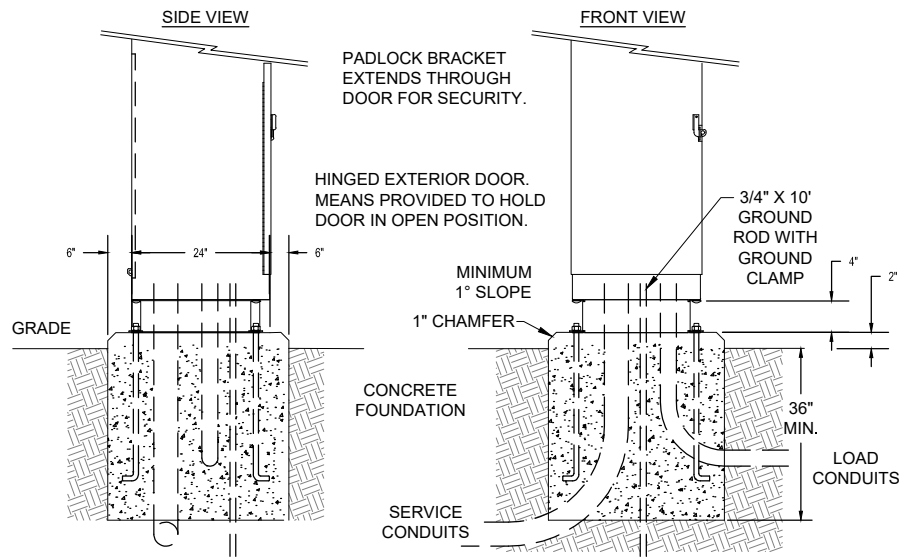
DRAFTING J. ROSS

CHECK J. HALLMARK

PROJECT MANAGER P. GALBO

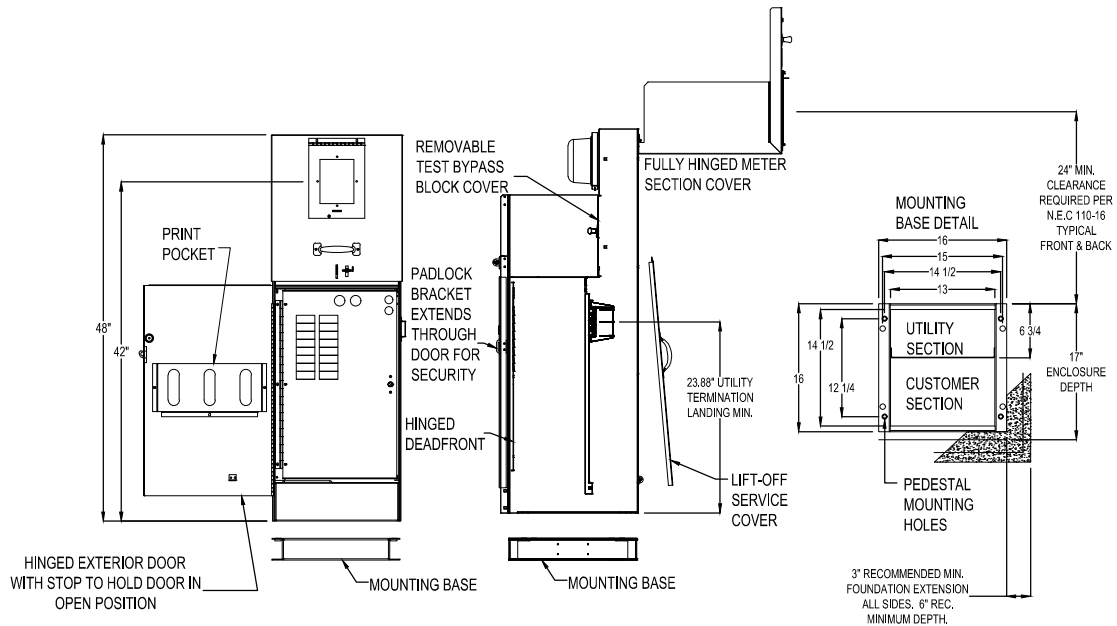


1 STREET LIGHTING SINGLE LINE DIAGRAM  
SCALE: NONE  
REFER TO SERVICE PANELBOARD SCHEDULES FOR LOAD CENTERS  
SECTION BRANCH CIRCUITS REQUIREMENTS  
SEE LIGHTING PLANS FOR ALL PAY ITEMS AND THEIR LOCATIONS



- FOUNDATION NOTES
- A. FOUNDATION SHALL EXTEND 6" BEYOND CABINET ON ALL SIDES.
  - B. COORDINATE ALL CONDUIT PENETRATIONS AND ANCHORS.
  - C. ALL FOUNDATION RELATED ITEMS SHOWN INCLUDING GROUNDING SHALL BE FURNISHED AND INSTALLED UNDER ITEM 690.04000105, UNLESS OTHERWISE NOTED.

2 TYPE A: SERVICE PEDESTAL INSTALLATION DETAILS  
SCALE: NONE  
PAYMENT TO BE MADE UNDER ITEM 690.04000105



3 TYPE A: SERVICE PEDESTAL DETAIL  
SCALE: NONE  
PAYMENT TO BE MADE UNDER ITEM 690.04000105

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
LIGHTING DETAILS

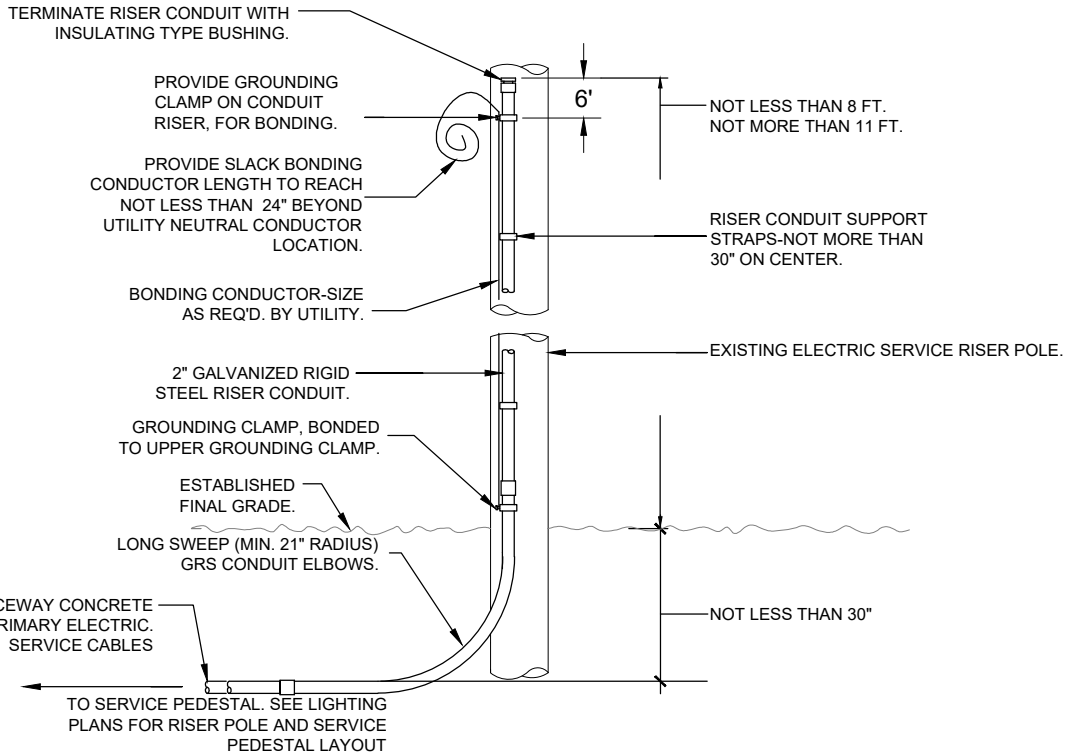
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. ELD-02  
SHEET NO. 52

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

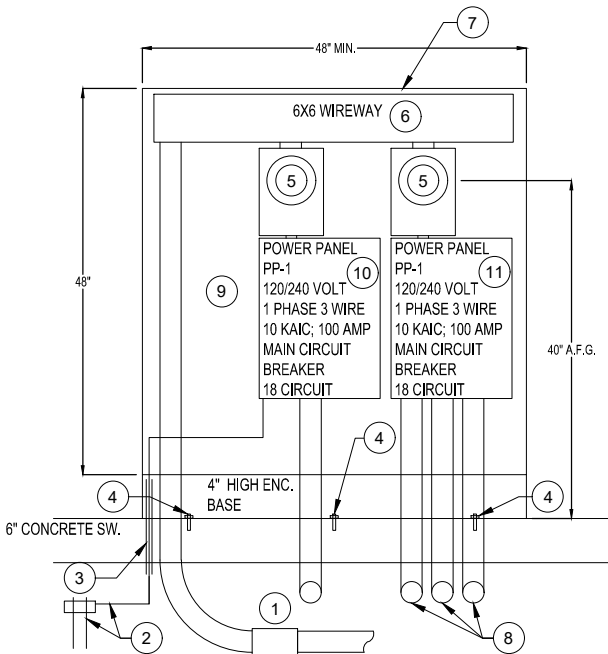


- ELECTRICAL SERVICE NOTES**
- 2" CONDUIT TO NATIONAL GRID POLE. THE FINAL SWEEP AND VERTICAL CONDUIT FROM THE TRENCH TO THE CABINET SHALL BE 2" RGS.
  - SERVICE GROUNDING & 3/4" x 10" GROUND ROD.
  - CONDUIT SLEEVE FOR GROUND WIRE.
  - ENCLOSURE ANCHOR.
  - NATIONAL GRID METER ENCLOSURE RATED 100 AMPS 120/240 VOLT SINGLE PHASE, 10 KAIC WITH BYPASS LEVER.
  - 6" x 6" WIREWAY WITH LOCKABLE TABS.
  - EACH STAINLESS STEEL ENCLOSURE SHALL BE A MINIMUM SIZE 48" WIDE X 48" HIGH AND 24" DEEP, NEMA 3R, DOUBLE DOORS WITH PIANO HINGES AND LOCKABLE. SUBMIT DIMENSIONED LAYOUT TO NATIONAL GRID PRIOR TO ASSEMBLY AND MAKE NECESSARY MODIFICATIONS REQUIRED BY NATIONAL GRID.
  - FOR BRANCH HOME RUN CONDUIT SIZE AND QUANTITY SEE ELP SERIES DRAWINGS.
  - AVAILABLE LOCATION FOR LIGHTING CONTACTOR.
  - PANEL FOR USE WITH TRAFFIC SIGNALS.
  - PANEL FOR USE WITH STREET LIGHTING.

- CABINET NOTES**
- CABINETS SHALL BE STAINLESS STEEL WITH DOUBLE DOORS.
  - CONDUIT ENTRANCE AND CONDUITS SHALL BE SEALED TO PREVENT ENTRANCE OF RODENTS, IN AN APPROVED MANNER.
  - ALL CABINET RELATED ITEMS SHOWN INCLUDING GROUNDING SHALL BE FURNISHED AND INSTALLED UNDER ITEM 690.04000105, UNLESS OTHERWISE NOTED.
  - ALL CONDUIT INTO ENCLOSURE SHALL BE RIGID GALVANIZED CONDUIT.
  - ALL CABINETS FINAL DIMENSIONS SHALL BE BASED ON APPROVED SHOP DRAWING SUBMITTALS FOR ALL ENCLOSED ELECTRICAL EQUIPMENT.



**4 TYPICAL ELECTRICAL REQUIREMENTS AT ELECTRIC SERVICE RISER POLES**  
SCALE: NONE  
CONTRACTOR FURNISHES AND INSTALLS UNDER ITEM 690.04000105

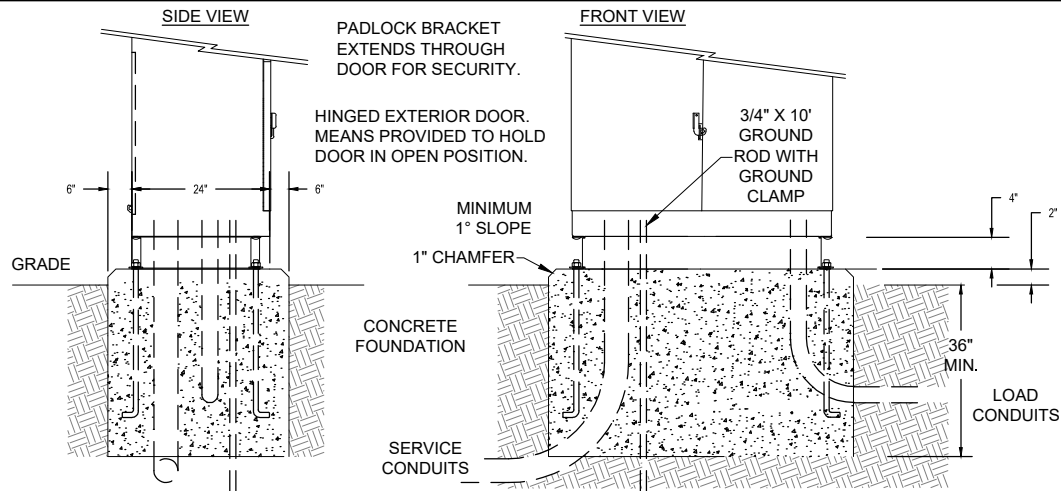


**5 TYPE B: POWER SOURCE CABINET DETAIL**  
SCALE: NONE  
PAYMENT TO BE MADE UNDER ITEM 690.04000105

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



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**6 TYPE B: POWER SOURCE CABINET INSTALLATION DETAILS**  
SCALE: NONE  
PAYMENT TO BE MADE UNDER ITEM 690.04000105

**ITEM 690.04000105 - ELECTRICAL SERVICE INSTALLATION**

**CONSTRUCTION DETAILS**  
THE CONTRACTOR SHALL CONSTRUCT THE ELECTRICAL SERVICE COMPONENTS AS SHOWN ON THE PLANS AND SPECIFIED HEREIN. THE CONTRACTOR SHALL PREPARE A SHOP DRAWING WHICH DETAILS THE COMPLETE CONNECTION TO NEW CABINET AND COMPONENTS TO BE SUPPLIED. TESTING OF THE INSTALLED COMPONENTS SHALL BE PERFORMED PRIOR TO MAKING THE FINAL CONNECTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING ELECTRICAL INSPECTION, COORDINATING WITH UTILITY, AND PAY ALL FEES FOR INSPECTION AND FINAL CONNECTION AS WELL AS FINAL APPROACH.

**DESCRIPTION**  
THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING NEW ELECTRICAL SERVICE COMPONENTS FOR THE FACILITIES INDICATED IN THE CONTRACT DOCUMENTS. COMPONENTS INCLUDE THE WEATHERTIGHT NEMA 3R ENCLOSURE HOUSING. EACH CABINET PROVIDED WITH 100A UTILITY SERVICE DISCONNECT, AND UTILITY REVENUE ELECTRIC METER, AND GROUNDING. PROVIDE REQUIRED CABLING AND ALL WORK NECESSARY TO WIRE THE FACILITIES BEING SERVED ASSOCIATED WITH THE CABINET.

ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NATIONAL ELECTRIC CODE (NEC), THE NATIONAL ELECTRIC SAFETY CODE, LOCAL MUNICIPAL PERMIT REQUIREMENTS, THE UTILITY PROVIDER AND OSHA. IF DIFFERENCES IN THE STANDARDS OR CODE REQUIREMENTS OCCUR, THEY SHALL BE RESOLVED BY THE ENGINEER IN DEFERENCE TOWARD THE MORE STRINGENT REQUIREMENT.

**MATERIALS**  
THE MATERIALS USED IN THIS WORK SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

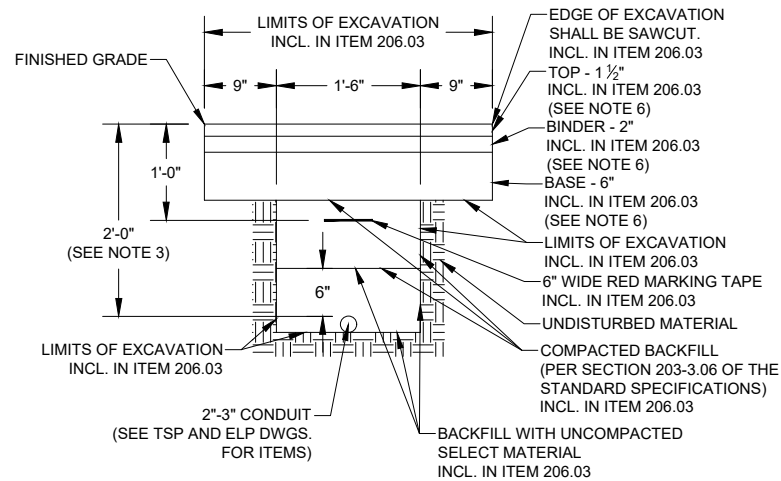
- CABINET: THE CABINET SIZE SHALL BE THE SIZE INDICATED ON THE CONTRACT DRAWINGS AND BE MANUFACTURED OF 12 GAUGE STAINLESS STEEL WITH WELDS USING THE HELIARC METHOD. THE DOOR OPENINGS SHALL BE DOUBLE FLANGED ON TWO SIDES. A DOOR RESTRAINT BAR SHALL BE PROVIDED TO HOLD THE DOORS STATIONARY. DOORS SHALL HAVE A CONTINUOUS PIANO HINGE AND HAVE A NEMA 3R RATING. PROVIDE A SUPPORT BASE A MINIMUM OF 4 INCHES ABOVE GROUND AND PROVIDE WITH A SLOPED ROOF. THE CABINET SHALL BE LABELED ON THE EXTERIOR WITH A WARNING SIGN: "DANGER HIGH VOLTAGE".
- FOUNDATION: CABINET FOUNDATION SHALL BE CONSTRUCTED OF SECTION 501 REINFORCED CLASS A CONCRETE, 4,000 PSI.
- BRANCH CIRCUIT PANELBOARDS (240/120 VOLT, 1 PHASE 3W):
  - PROVIDE BRANCH CIRCUIT PANELBOARD AS INDICATED ON THE DRAWINGS. PANELBOARD SHALL BE EQUIPPED WITH QUICK MAKE/QUICK BREAK THERMAL-MAGNETIC, MOLDED CASE CIRCUIT BREAKERS AS SCHEDULED. U.L. LISTED AS SUITABLE FOR USE AS SERVICE EQUIPMENT.
  - PANELBOARD BUSSING AND LUGS SHALL BE COPPER. PROVIDE GROUNDING BUS IN EACH PANELBOARD, SECURELY BONDED TO THE BOX. PANELBOARD BUS STRUCTURE AND MAIN CIRCUIT BREAKER SHALL HAVE CURRENT RATINGS AS INDICATED ON DRAWINGS. SUCH RATINGS SHALL BE ESTABLISHED BY HEAT RISE

- TESTS, CONDUCTED IN ACCORDANCE WITH UL STANDARD 67.
- CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, THERMAL-MAGNETIC AND TRIP INDICATING, AND MULTI-POLE BREAKERS SHALL HAVE COMMON TRIP. PROVISIONS FOR ADDITIONAL CIRCUIT BREAKERS SHALL BE SUCH THAT FIELD ADDITION OF CONNECTORS OR MOUNTING HARDWARE WILL NOT BE REQUIRED TO ADD CIRCUIT BREAKERS TO THE PANELBOARD. BUS CONNECTION SHALL BE BOLT-ON. SINGLE POLE 15 AMPS, 20 AMPS AND 30 AMPERE CIRCUIT BREAKERS SHALL BE UL LISTED AS "SWITCHING BREAKERS" AT 120V AC OR 277V AC AND CARRY THE SWD MARKING.
- EACH PANELBOARD, AS A COMPLETE UNIT, SHALL HAVE A SHORT CIRCUIT CURRENT RATING OF EQUAL TO OR GREATER THAN 10 KAIC THE RATING AS SHOWN ON DRAWING. ALL PANELBOARDS SHALL BE FULLY RATED. PANELBOARDS WITH "SERIES RATINGS" ARE NOT ACCEPTABLE. REDUCING BREAKER RATINGS ON THE BASIS OF SERIES RATING IS NOT ACCEPTABLE.
- THE PANELBOARD BUS ASSEMBLY SHALL BE ENCLOSED IN A STEEL CABINET. THE RIGIDITY AND GAUGE OF STEEL TO BE SPECIFIED IN UL STANDARD 50 CABINETS. WIRING GUTTER SPACE SHALL BE IN ACCORDANCE WITH UL STANDARD 67 FOR PANELBOARD. EACH FRONT SHALL INCLUDE A DOOR AND HAVE A FLUSH, STAINLESS STEEL, CYLINDER TYPE LOCK WITH CATCH AND SPRING-LOADED DOOR PULL. PANELBOARD LOCKS SHALL BE KEYED ALIKE. DOORS SHALL BE MOUNTED BY COMPLETELY CONCEALED STEEL HINGES. A CIRCUIT DIRECTORY FRAME AND CARD WITH A CLEAR PLASTIC COVERING SHALL BE PROVIDED ON THE INSIDE OF THE DOOR. FRONTS SHALL BE OF CODE GAUGE, FULL-FINISHED STEEL WITH RUST INHIBITING IRON PHOSPHATE SEALER AND BAKED ENAMEL FINISH. MINIMUM BOX WIDTH SHALL BE 20 IN. PROVIDE DOOR-IN-DOOR TRIM.
- RATING SHALL BE AS INDICATED ON THE PANELBOARD SCHEDULE.
- ACCEPTABLE MANUFACTURERS OR APPROVED EQUAL:
  - 240/120 VOLT:
    - SQUARE D "NQOD"
    - CUTLER HAMMER "PRL1"
- METER: METERING CHANNEL EQUIPMENT SHALL BE UL LISTED AND BE IN ACCORDANCE WITH SUPPLYING UTILITY COMPANY STANDARDS. METER SHALL BE A MINIMUM OF 100 AMPS 1 PHASE WITH A BYPASS LEVER AND BE RATED FOR 10 KAIC AND SHALL BE SELF CONTAINED.
- WIRE AND CABLE: WIRING AND CABLING SHALL BE OF THE SIZE AND TYPE INDICATED ON THE CONTRACT DRAWINGS.
- GROUND ROD: GROUNDING ROD SHALL BE A MINIMUM OF 10 FEET LONG AND 3/4" IN DIAMETER MADE OF COPPER BERING STEEL WITH CAST BRONZE MECHANICAL GROUND CLAMP FOR GROUND WIRE/CABLE CONNECTION.
- WIREWAY AND WIRE TROUGH: WIREWAY AND WIRE TROUGH SHALL BE HINGED COVER TYPE WITH PROVISIONS FOR FULL LAY-IN ALONG THE ENTIRE LENGTH OF THE RUN. WIREWAY SHALL BE STEEL, ENCLOSED WITH GRAY ENAMEL FINISH. WIREWAY SIZE SHALL MEET NEC FILL REQUIREMENTS OR LARGER AS NOTED ON CONTRACT DOCUMENTS. PROVIDE KNOCKOUTS ALONG RUNS. PROVIDE ALL ELBOWS, TEES, PULLBOXES, FITTINGS, HANGERS, REDUCERS, SUPPORTS, ETC., TO MEET INSTALLATION REQUIREMENTS.

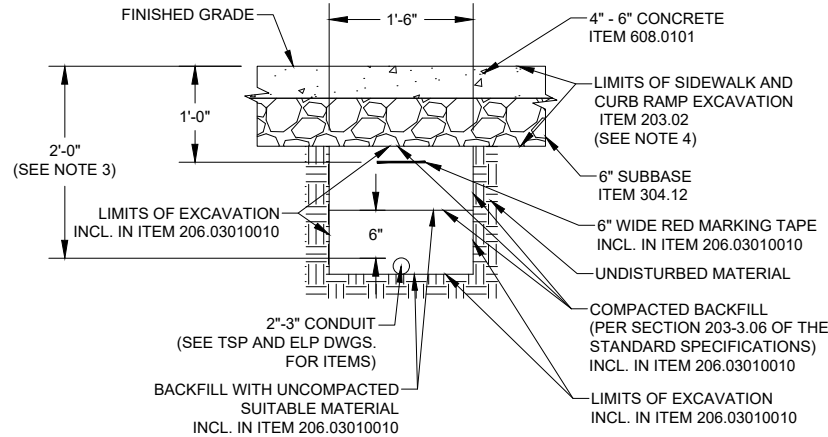
- FOUNDATION NOTES**
- FOUNDATION SHALL EXTEND 6" BEYOND CABINET ON ALL SIDES.
  - COORDINATE ALL CONDUIT PENETRATIONS AND ANCHORS.
  - ALL FOUNDATION RELATED ITEMS SHOWN INCLUDING GROUNDING SHALL BE FURNISHED AND INSTALLED UNDER ITEM 690.04000105, UNLESS OTHERWISE NOTED.

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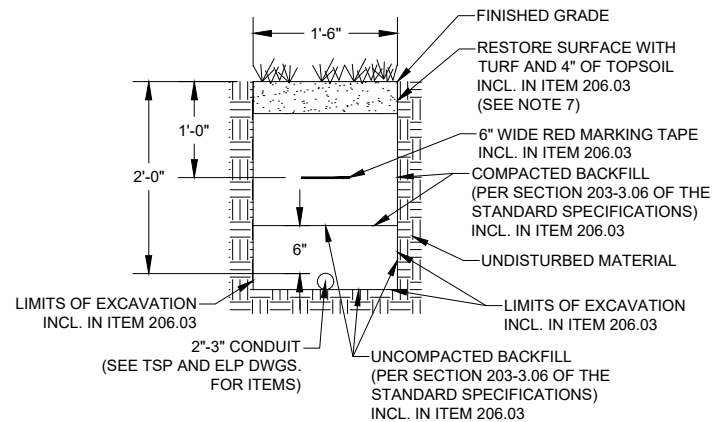




**CONDUIT EXCAVATION IN ROADWAY**  
NOT TO SCALE





CONDUIT EXCAVATION IN SIDEWALK AND CURB RAMPS



**CONDUIT EXCAVATION IN TURF**  
NOT TO SCALE

CONDUIT EXCAVATION AND RESTORATION NOTES:

1. ALL CONDUIT RUNS SHALL DRAIN TOWARD PULL BOX.
2. ALL CONDUIT EXCAVATION IN CONCRETE SIDEWALK AND/OR CURB RAMP LOCATIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 206.03010010 - CONDUIT EXCAVATION AND BACKFILL (RESTORING TOP SURFACES NOT INCLUDED), UNLESS OTHERWISE NOTED IN THE PLANS.
3. CONDUIT UNDER CONCRETE SIDEWALK AND ASPHALT PAVEMENT SURFACES WITH LESS THAN 2' OF COVER SHALL BE EMBEDDED IN CONCRETE UP TO THE BOTTOM OF THE SUBBASE OR BASE COURSE. THE CONCRETE SHALL BE AS SPECIFIED FOR CURB BACKING AND BEDDING, AND THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 206.03010010 - CONDUIT EXCAVATION AND BACKFILL (RESTORING TOP SURFACES NOT INCLUDED) OR ITEM 206.03 - CONDUIT EXCAVATION AND BACKFILL INCLUDING SURFACE RESTORATION.
4. EXCAVATION FOR AND INSTALLATION OF SUBBASE AND SIDEWALK CONCRETE LAYERS SHALL BE PAID UNDER ITEM 203.02 - UNCLASSIFIED EXCAVATION AND DISPOSAL, UNLESS OTHERWISE NOTED. SURFACE RESTORATION FOR CONDUIT INSTALLED BENEATH CONCRETE SIDEWALK SURFACES SHALL BE INCLUDED IN ITEMS 304.12 - SUBBASE COURSE, TYPE 2 AND 608.0101 - CONCRETE SIDEWALKS AND DRIVEWAYS. REFER TO DWG. NO. TS-01 FOR DETAILS. IN-KIND RESTORATION SHALL INCLUDE A SUFFICIENT AMOUNT OF SIDEWALK OR DRIVEWAY CONCRETE TO EXISTING JOINTS TO PROVIDE A NEAT AND UNIFORM APPEARANCE.
5. ALL CONDUIT EXCAVATION AND ASSOCIATED RESTORATION IN ASPHALT CONCRETE PAVEMENT AND TURF LOCATIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 206.03.
6. EXISTING ASPHALT CONCRETE SURFACES SHALL BE RESTORED WITH:
  - 1½" OF 9.5 F3 TOP COURSE HMA, 80 SERIES COMPACTION
  - 2" OF 19 F9 BINDER COURSE HMA, 80 SERIES COMPACTION
  - CONDUIT WITH LESS THAN 2' FEET OF COVER SHALL BE EMBEDDED IN CONCRETE UP TO THE BOTTOM OF THE BINDER COURSE. THIS SHALL BE ANY CLASS CONCRETE OR CONCRETE MIX PROPORTIONED TO MEET THE REQUIREMENTS OF CONCRETE FOR BACKING AND BEDDING PRECAST CURB, STONE CURB AND GRANITE CURB.ALL COSTS FOR THE FOREMENTIONED RESTORATION AND AS SHOWN IN THE DETAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 206.03, CONDUIT EXCAVATION AND BACKFILL INCLUDING SURFACE RESTORATION.
7. PRIOR TO CONTRACT ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ALL NEW TURF AS FOLLOWS: IN THE ABSENCE OF 1 INCH OF RAINFALL WITHIN FIVE CONSECUTIVE CALENDAR DAYS THE CONTRACTOR SHALL WATER ALL TURF ONCE A WEEK TO A DEPTH OF 1 INCH (ITEM 610.19 - WATERING VEGETATION).
8. SEE ELP DWGS. AND TSP DWGS. FOR CONDUIT LAYOUT AND STREET CROSSING LOCATIONS.
9. SEE DWG. NOS. TS-02 AND MD-01 FOR PAYMENT AND INSTALLATION DETAILS OF CONDUIT EXCAVATION AND SURFACE RESTORATION WITHIN PROPOSED CURB TRENCHES.

|                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                       |  |                                                                                       |  |                                                                                                              |  |                                          |  |
|-----------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------|--|------------------------------------------|--|
| AFFIX SEAL:<br>ON:                            |  | ALTERED BY:<br>ON:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                       |  |                                                                                       |  |                                                                                                              |  |                                          |  |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div> |  | AS-BUILT REVISIONS<br>DESCRIPTION OF ALTERATIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  | ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED                                                                  |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |  |
|                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                       |  |                                                                                       |  | NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>LIGHTING DETAILS |  | DRAWING NO. ELD-04<br>SHEET NO. 54       |  |
|                                               |  | <p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p> |  |                                                                                       |  |                                                                                       |  |                                                                                                              |  |                                          |  |



| POWER CENTER #18 (LIGHTING)              |               |                 |   |               |     |         |      |               |  |        |  |                 |  |               |     |    |
|------------------------------------------|---------------|-----------------|---|---------------|-----|---------|------|---------------|--|--------|--|-----------------|--|---------------|-----|----|
| VOLTAGE:                                 |               | 240/ 120        |   | MAINS RATING: |     | 100 AMP |      | A.I.C.RATING: |  | 10,000 |  | LOCATION:       |  | EXTERIOR      |     |    |
| PHASE:                                   |               | 1               |   | M.C.B.:       |     | 100 AMP |      | BKR SPACE:    |  | 12     |  | POWER SOURCE:   |  | POWER POLE 10 |     |    |
| WIRE:                                    |               | 3               |   | M.L.O.:       |     | N/A     |      | MOUNTING:     |  | PAD    |  | FEEDER CIRCUIT: |  |               |     |    |
| NO.                                      | USE, LOCATION |                 |   | AMPS          |     |         |      | AMPS          |  |        |  | USE, LOCATION   |  |               | NO. |    |
|                                          |               | A               | B | BKR           | BKR | A       | B    |               |  |        |  |                 |  |               |     |    |
| 1                                        | C             | STREET LIGHTING |   | 3.5           |     | 20/1    | 20/1 | 7.0           |  | 3.5    |  | STREET LIGHTING |  |               | C   | 2  |
| 3                                        | C             | STREET LIGHTING |   |               | 3.5 | 20/1    | 20/1 |               |  |        |  | STREET LIGHTING |  |               | C   | 4  |
| 5                                        |               | SPARE           |   |               |     | 20/1    | 20/1 |               |  |        |  | SPARE           |  |               |     | 6  |
| 7                                        |               | SPARE           |   |               |     | 20/1    | 20/1 |               |  |        |  | SPARE           |  |               |     | 8  |
| 9                                        |               | SPACE           |   |               |     |         |      |               |  |        |  | SPACE           |  |               |     | 10 |
| 11                                       |               | SPACE           |   |               |     |         |      |               |  |        |  | SPACE           |  |               |     | 12 |
|                                          |               |                 |   |               |     | A       | B    | NOTES:        |  |        |  |                 |  |               |     |    |
| TOTAL NON-CONTINUOUS LOADS AMPERES/PHASE |               |                 |   |               |     |         | 0    | 0             |  |        |  |                 |  |               |     |    |
| TOTAL CONTINUOUS LOADS AMPERES/PHASE     |               |                 |   |               |     |         | 8.8  | 13.1          |  |        |  |                 |  |               |     |    |
| TOTAL CONNECTED AMPERES/PHASE            |               |                 |   |               |     |         | 9    | 13            |  |        |  |                 |  |               |     |    |
| TOTAL CONNECTED KVA/PHASE                |               |                 |   |               |     |         | 1.1  | 1.6           |  |        |  |                 |  |               |     |    |
| TOTAL LOAD                               |               |                 |   |               |     |         | 2.6  | KVA           |  |        |  |                 |  |               |     |    |

| POWER CENTER #19 (LIGHTING)              |               |                 |  |               |     |         |      |               |        |               |     |                 |                 |               |    |
|------------------------------------------|---------------|-----------------|--|---------------|-----|---------|------|---------------|--------|---------------|-----|-----------------|-----------------|---------------|----|
| VOLTAGE:                                 |               | 240/ 120        |  | MAINS RATING: |     | 100 AMP |      | A.I.C.RATING: |        | 10,000        |     | LOCATION:       |                 | EXTERIOR      |    |
| PHASE:                                   |               | 1               |  | M.C.B.:       |     | 100 AMP |      | BKR SPACE:    |        | 12            |     | POWER SOURCE:   |                 | NEW WOOD POLE |    |
| WIRE:                                    |               | 3               |  | M.L.O.:       |     | N/A     |      | MOUNTING:     |        | PAD           |     | FEEDER CIRCUIT: |                 |               |    |
| NO.                                      | USE, LOCATION |                 |  | AMPS          |     | BKR     | BKR  | AMPS          |        | USE, LOCATION |     |                 | C               | NO.           |    |
|                                          |               |                 |  | A             | B   |         |      | A             | B      |               |     |                 |                 |               |    |
| 1                                        | C             | STREET LIGHTING |  |               | 7.0 |         | 20/1 | 20/1          | 7.0    |               |     |                 | STREET LIGHTING | C             | 2  |
| 3                                        | C             | STREET LIGHTING |  |               |     | 3.5     | 20/1 | 20/1          |        |               | 3.5 |                 | STREET LIGHTING | C             | 4  |
| 5                                        | C             | STREET LIGHTING |  |               | 3.5 |         | 20/1 | 20/1          | 3.5    |               |     |                 | STREET LIGHTING | C             | 6  |
| 7                                        | C             | STREET LIGHTING |  |               |     | 3.5     | 20/1 | 20/1          |        |               | 3.5 |                 | STREET LIGHTING | C             | 8  |
| 9                                        |               | SPARE           |  |               |     |         | 20/1 | 20/1          | 3.5    |               |     |                 | STREET LIGHTING | C             | 10 |
| 11                                       |               | SPARE           |  |               |     |         | 20/1 | 20/1          | 3.5    |               |     |                 | STREET LIGHTING | C             | 12 |
|                                          |               |                 |  |               |     |         | A    | B             | NOTES: |               |     |                 |                 |               |    |
| TOTAL NON-CONTINUOUS LOADS AMPERES/PHASE |               |                 |  |               |     |         | 0    | 0             |        |               |     |                 |                 |               |    |
| TOTAL CONTINUOUS LOADS AMPERES/PHASE     |               |                 |  |               |     |         | 21.9 | 26.3          |        |               |     |                 |                 |               |    |
| TOTAL CONNECTED AMPERES/PHASE            |               |                 |  |               |     |         | 22   | 26            |        |               |     |                 |                 |               |    |
| TOTAL CONNECTED KVA/PHASE                |               |                 |  |               |     |         | 2.6  | 3.2           |        |               |     |                 |                 |               |    |
| TOTAL LOAD                               |               |                 |  |               |     |         | 5.8  | KVA           |        |               |     |                 |                 |               |    |

| POWER CENTER #19 (TRAFFIC SIGNAL)        |               |                 |   |               |     |         |      |               |        |        |  |                 |  |               |     |
|------------------------------------------|---------------|-----------------|---|---------------|-----|---------|------|---------------|--------|--------|--|-----------------|--|---------------|-----|
| VOLTAGE:                                 |               | 240/ 120        |   | MAINS RATING: |     | 100 AMP |      | A.I.C.RATING: |        | 10,000 |  | LOCATION:       |  | EXTERIOR      |     |
| PHASE:                                   |               | 1               |   | M.C.B.:       |     | 100 AMP |      | BKR SPACE:    |        | 12     |  | POWER SOURCE:   |  | NEW WOOD POLE |     |
| WIRE:                                    |               | 3               |   | M.L.O.:       |     | N/A     |      | MOUNTING:     |        | PAD    |  | FEEDER CIRCUIT: |  |               |     |
| NO.                                      | USE, LOCATION |                 |   | AMPS          |     |         |      | AMPS          |        |        |  | USE, LOCATION   |  |               | NO. |
|                                          |               | A               | B | BKR           | BKR | A       | B    |               |        |        |  |                 |  |               |     |
| 1                                        | C             | STREET LIGHTING |   | 10.0          |     | 30/1    |      |               |        |        |  | SPACE           |  |               | 2   |
| 3                                        |               | SPACE           |   |               |     |         |      |               |        |        |  | SPACE           |  |               | 4   |
| 5                                        |               | SPACE           |   |               |     |         |      |               |        |        |  | SPACE           |  |               | 6   |
| 7                                        |               | SPACE           |   |               |     |         |      |               |        |        |  | SPACE           |  |               | 8   |
| 9                                        |               | SPACE           |   |               |     |         |      |               |        |        |  | SPACE           |  |               | 10  |
| 11                                       |               | SPACE           |   |               |     |         |      |               |        |        |  | SPACE           |  |               | 12  |
|                                          |               |                 |   |               |     |         | A    | B             | NOTES: |        |  |                 |  |               |     |
| TOTAL NON-CONTINUOUS LOADS AMPERES/PHASE |               |                 |   |               |     |         | 0    | 0             |        |        |  |                 |  |               |     |
| TOTAL CONTINUOUS LOADS AMPERES/PHASE     |               |                 |   |               |     |         | 12.5 | 0.0           |        |        |  |                 |  |               |     |
| TOTAL CONNECTED AMPERES/PHASE            |               |                 |   |               |     |         | 13   | 0             |        |        |  |                 |  |               |     |
| TOTAL CONNECTED KVA/PHASE                |               |                 |   |               |     |         | 1.5  | 0.0           |        |        |  |                 |  |               |     |
| TOTAL LOAD                               |               |                 |   |               |     |         | 1.5  | KVA           |        |        |  |                 |  |               |     |

| POWER CENTER #17 (LIGHTING)              |                   |          |     |               |      |         |      |                                                                                                                                                                                                                                       |  |        |                 |                 |   |          |  |
|------------------------------------------|-------------------|----------|-----|---------------|------|---------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|-----------------|-----------------|---|----------|--|
| VOLTAGE:                                 |                   | 240/ 120 |     | MAINS RATING: |      | 100 AMP |      | A.I.C.RATING:                                                                                                                                                                                                                         |  | 10,000 |                 | LOCATION:       |   | EXTERIOR |  |
| PHASE:                                   |                   | 1        |     | M.C.B.:       |      | 100 AMP |      | BKR SPACE:                                                                                                                                                                                                                            |  | 12     |                 | POWER SOURCE:   |   | -        |  |
| WIRE:                                    |                   | 3        |     | M.L.O.:       |      | N/A     |      | MOUNTING:                                                                                                                                                                                                                             |  | PAD    |                 | FEEDER CIRCUIT: |   |          |  |
| NO.                                      | USE, LOCATION     |          |     | AMPS          |      | BKR     | BKR  | AMPS                                                                                                                                                                                                                                  |  |        | USE, LOCATION   |                 | C | NO.      |  |
|                                          |                   | A        | B   | A             | B    |         |      |                                                                                                                                                                                                                                       |  |        |                 |                 |   |          |  |
| 1*                                       | C STREET LIGHTING |          | 7.0 |               | 20/1 | 20/1    | 4.3  |                                                                                                                                                                                                                                       |  |        | STREET LIGHTING |                 | C | 2*       |  |
| 3**                                      | C STREET LIGHTING |          |     | 7.0           | 20/1 | 20/1    |      | 4.3                                                                                                                                                                                                                                   |  |        | STREET LIGHTING |                 | C | 4*       |  |
| 5                                        | C STREET LIGHTING |          | 8.5 |               | 20/1 | 20/1    |      |                                                                                                                                                                                                                                       |  |        | SPARE           |                 |   | 6        |  |
| 7                                        | C STREET LIGHTING |          |     | 4.3           | 20/1 | 20/1    |      |                                                                                                                                                                                                                                       |  |        | SPARE           |                 |   | 8        |  |
| 9                                        | C STREET LIGHTING |          | 4.3 |               | 20/1 | 20/1    |      |                                                                                                                                                                                                                                       |  |        | SPARE           |                 |   | 10       |  |
| 11                                       | C STREET LIGHTING |          |     | 4.3           | 20/1 | 20/1    |      |                                                                                                                                                                                                                                       |  |        | SPARE           |                 |   | 12       |  |
|                                          |                   |          |     |               |      | A       | B    | NOTES:                                                                                                                                                                                                                                |  |        |                 |                 |   |          |  |
| TOTAL NON-CONTINUOUS LOADS AMPERES/PHASE |                   |          |     |               |      | 0       | 0    | * INSTALLED UNDER PREVIOUS CONTRACT NIAGARA PHASE 4A, PIN 5762.39<br><br>** NEW LUMINAIRE INSTALLED UNDER THIS CONTRACT. WIRING FOR THIS LUMINAIRE HAS ALREADY BEEN INSTALLED UNDER PREVIOUS CONTRACT (NIAGARA PHASE 4A, PIN 5762.39) |  |        |                 |                 |   |          |  |
| TOTAL CONTINUOUS LOADS AMPERES/PHASE     |                   |          |     |               |      | 38.8    | 10.6 |                                                                                                                                                                                                                                       |  |        |                 |                 |   |          |  |
| TOTAL CONNECTED AMPERES/PHASE            |                   |          |     |               |      | 39      | 11   |                                                                                                                                                                                                                                       |  |        |                 |                 |   |          |  |
| TOTAL CONNECTED KVA/PHASE                |                   |          |     |               |      | 4.7     | 1.3  |                                                                                                                                                                                                                                       |  |        |                 |                 |   |          |  |
| TOTAL LOAD                               |                   |          |     |               |      | 5.9     | KVA  |                                                                                                                                                                                                                                       |  |        |                 |                 |   |          |  |



DRAINAGE STRUCTURE NOTES:

1.

MANHOLES SHALL BE PAID UNDER ITEM 664.506140ER - 4' MANHOLE CONSTRUCTION. REFER TO ATTACHED BSA STANDARD SHEET NO. 20092C FOR DETAILS. IN CASES WHERE DETAILS ON THE DUD DRAWINGS CONTRADICT THE DETAILS ON 20092C, THE DUD DRAWINGS SHALL SUPERSEDE THE BSA DETAILS.
2.

PRIVATE LATERAL CONNECTIONS TO BSA DRAINAGE STRUCTURES AND MANHOLES ARE PROHIBITED. IN INSTANCES WHERE A LATERAL TO AN EXISTING STRUCTURE WITH UNKNOWN ORIGIN IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND BSA IMMEDIATELY FOR FURTHER INVESTIGATION.
3.

IT MAY BE NECESSARY TO ALTER THE LOCATION OR INVERT OF SOME PIPE AFTER THE NEW DRAINAGE STRUCTURE OR MANHOLE HAS BEEN FABRICATED IN ORDER TO ACCOMMODATE FIELD CONDITIONS OR OTHER REQUIRED CHANGES. UNDER ITEM 604.070503, ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES, THE CONTRACTOR SHALL PLUG TIGHT THE PREFABRICATED HOLE WITH BRICKS AND MORTAR AS DIRECTED BY THE ENGINEER AND THE BSA. A NEW HOLE SHALL BE NEATLY CORE-DRILLED AT THE REVISED UNDERDRAIN-PIPE LOCATION OR INVERT ELEVATION.
4.

ALL EXISTING FRESH AIR INLETS WITHIN THE WORK AREA SHALL BE LOCATED AND ADJUSTED PER THE TABLE ON DWG. NO. DUT-01 AND DETAIL ON DWG. NO DUD-01 UNDER ITEM 664.094000ER - FRESH AIR INLET - ADJUSTMENT. EXISTING FRESH AIR INLETS REQUIRING REPLACEMENT, A.O.B.E., SHALL BE REPLACED UNDER ITEM 664.092000ER - FRESH AIR INLET - REPLACE STANDPIPE AND CAP OR ITEM 664.093000ER - FRESH AIR INLET - REPLACE CAP ONLY.
5.

IN THE EVENT THAT ANY EXISTING SEWER-MAIN OF VITRIFIED TILE PIPE (VTP) NEEDS TO BE REPLACED DUE TO CONDITION OR LATERAL TIE-IN ISSUES A.O.B.E., PAYMENT FOR THE SEWER PIPE WILL BE PAID FOR UNDER ITEM 664.011201ER - PVC SEWER PIPE - 12 INCH, AS APPLICABLE.

PLANTER BACKFILL MIX - AS SPECIFIED (ITEM 610.0110210):

1.

DESCRIPTION: THIS WORK SHALL CONSIST OF FURNISHING, SCREENING, TESTING, STORING, STOCKPILING AND PLACING PLANTER BACKFILL MIX - AS SPECIFIED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER.
2.

MATERIALS: PLANTER BACKFILL MIX - AS SPECIFIED SHALL FULFILL THE REQUIREMENTS AS SPECIFIED. THE SUPPLIER SHALL CERTIFY IN WRITING THAT THE MATERIAL WAS TESTED TO CONFIRM THE SPECIFIED CHARACTERISTICS.

IF NECESSARY, TESTING BY THE CONTRACTOR OF THE PLANTER BACKFILL MIX - AS SPECIFIED MAY BE REQUESTED BY THE ENGINEER TO FACILITATE APPROVAL OF THE MATERIAL AT ANY TIME UNTIL COMPLETION.

THE ENGINEER SHALL BE NOTIFIED OF AND MUST APPROVE OF ALL SUBSTITUTIONS OR PROBLEMS WITH THE PLANTER BACKFILL MIX - AS SPECIFIED SUPPLY IN ORDER TO ASSIST WITH A SMOOTH DELIVERY AND INSTALLATION.

PLANTER BACKFILL MIX - AS SPECIFIED SHALL MEET THE FOLLOWING REQUIREMENTS:

- 2.1. A USDA TEXTURE OF A COARSE SAND
- 2.2. A PH RANGE OF 4.5 - 7.0
- 2.3. AN ESTIMATED SATURATED CONDUCTIVITY OF 4 - 10 INCHES/HOUR
- 2.4. NO VISIBLE ORGANIC MATERIAL PRESENT
- 2.5. MATERIAL SHALL BE ASTM C33 FINE AGGREGATE, NON-CALCAREOUS MASONRY SAND OR FINE GROUND RECYCLED GLASS MEETING THE FOLLOWING PARTICLE SIZE DISTRIBUTION:

| PARTICLE SIZE CLASS | PASSING SIEVE NO | RANGE IN PERCENT PASSING<br>ASTM F 1632-03 |
|---------------------|------------------|--------------------------------------------|
| FINE GRAVEL         | 10               | 95 - 100                                   |
| VERY COARSE SAND    | 18               | 80 - 95                                    |
| COARSE SAND         | 35               | 60- 80                                     |
| MEDIUM SAND         | 60               | 10-40                                      |
| FINE SAND           | 140              | 8-15                                       |
| VERY FINE SAND      | 270              | 1-10                                       |
| SILT*               |                  | 1-6                                        |
| CLAY*               |                  | 0-4                                        |
| CHEMICAL            |                  |                                            |
| ORGANIC MATTER %    | ASTM F 1647-02A  | <0.25                                      |
| PH                  | 1:1 WATER        | 4.5 - 7.0                                  |

\*DETERMINED BY HYDROMETER METHOD IN ASTM F L632-03.

3.
- CONSTRUCTION DETAILS: THE PLANTER BACKFILL MIX - AS SPECIFIED SHALL BE DEPOSITED IN HORIZONTAL LAYERS NOT EXCEEDING 4-INCHES IN THICKNESS PRIOR TO COMPACTION.

THE PLANTER BACKFILL MIX - AS SPECIFIED SHALL HAVE A PENETRATION RESISTANCE OF <250 POUNDS/IN2 AFTER INSTALLATION. THE STANDARD PENETRATION TEST (SPT), ASTM D1586, SHALL APPLY. THE LIFTS SHALL BE COMPACTED SUCH THAT THE PENETRATION RESISTANCE OF THE PLANTER BACKFILL MIX - AS SPECIFIED SHALL UNIFORMLY INCREASE WITH DEPTH. NO DENSE LAYERS (+50 LBS/IN2 FROM BACKGROUND RATE) ARE ALLOWED.

WATERLINE NOTES:

1.

UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN AS DESCRIBED IN THE CONTRACT DOCUMENTS.
2.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO KEEP THE EXISTING CURB INTACT THAT IS NOT NOTED TO BE REPLACED DURING CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3.

THE CONTRACTOR SHALL PERFORM ALL WORK CAREFULLY WHEN CROSSING EXISTING WATER SERVICES, SEWER LATERALS, AND SEWER RECEIVER LINES. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4.

THE COST OF ALL NECESSARY SAW CUTS FOR WATERLINE WORK SHALL BE INCLUDED IN THE VARIOUS PIPE ITEMS. NO SEPARATE PAYMENTS.
5.

ALL TRENCHES WITHIN THE STREET SHALL INCLUDE CUTBACKS. SEE DETAIL ON DWG. NO. DUD-08.
6.

SEPARATION BETWEEN PROPOSED WATERLINE AND SANITARY OR STORM SEWER SHALL BE A MINIMUM OF 10' HORIZONTALLY.
7.

THE COST OF ALL WORK ZONE TRAFFIC CONTROL DEVICES, LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR WATERLINE WORK TO MAINTAIN TRAFFIC PER THE NYSDOT SPECIFICATION ITEM 619.01 AND THE NYSDOT STANDARD SHEETS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 619.01 BASIC WORK ZONE TRAFFIC CONTROL.
8.

ALL HYDRANTS SHOWN TO BE REMOVED ON THE DRAWINGS SHALL BE CAREFULLY REMOVED BY THE CONTRACTOR AND DELIVERED TO THE CITY DIVISION OF WATER. THE CONTRACTOR WILL PROVIDE HYDRANTS FOR INSTALLATION. HYDRANTS DAMAGED WHILE IN THE CARE OF THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. NO MORE THAN ONE HYDRANT SHALL BE OUT OF SERVICE AT ANY ONE TIME.
11.

THE DIVISION OF WATER WILL OPERATE ALL VALVES AND APPURTENANCES IN THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL GIVE THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS NOTICE, EXCLUDING WEEKENDS AND HOLIDAYS, WHEN SUCH ACTIVITIES ARE REQUIRED. THE CITY WILL DO ALL DISCONNECTION, CUTTING, ADJUSTMENT, AND RECONNECTION WORK ON OR TO LIVE MAINS. ON THE PLANS, THIS WORK IS LABELED "OPERATION".
12.

ALL ABANDONED WATER VALVE BOXES AND WATER SERVICE BOXES SHALL BE REMOVED TO A DEPTH OF 2.5 FT BELOW GRADE AND FILLED IN WITH CONCRETE OF COMPACTED RUN OF CRUSHER STONE AND THE SURFACE RESTORED. SEE VALVE BOX ABANDONMENT DETAIL ON DWG. NO. DUD-08 FOR ASSOCIATED PAY ITEMS AND LIMITS.
13.

THE CONTRACTOR SHALL PROVIDE A LICENSED PLUMBER OF RECORD TO PERFORM ALL SERVICE CONNECTIONS AND FILL OUT TAP LOCATION CARDS. THIS PLUMBER SHALL BE LICENSED IN THE CITY OF BUFFALO AND BE ON SITE FOR ALL SERVICE CONNECTIONS. ALL WATER SERVICE WORK SHALL HAVE A 2 YEAR WARRANTY.
14.

ADJUST PROPOSED PIPE DEPTH TO CLEAR EXISTING UTILITIES. IF THE DEPTH OF THE EXISTING UTILITY IS SUCH THAT THE COVER OVER THE PROPOSED WATERLINE IS LESS THAN 5'-0", NOTIFY THE ENGINEER AND WAIT FOR DIRECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ADJUST THE GRADE LINE TO LESS THAN MINIMUM COVER UNLESS DIRECTED BY THE ENGINEER.
15.

THE CONTRACTOR SHALL PERFORM ALL WORK CAREFULLY WHEN CROSSING EXISTING WATER SERVICES, SEWER LATERALS, AND SEWER RECEIVER LINES. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
16.

THE CONTRACTOR SHALL ASSIST CITY PERSONNEL IN LOCATING AND EXPOSING ANY VALVES WHICH MUST BE OPERATED FOR SHUTDOWN.
17.

THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE FOR ALL WATERLINE WORK. THIS SCHEDULE SHALL STATE THE SEQUENCE IN WHICH ALL OPERATIONS SHALL BE PERFORMED INCLUDING THE LOCATIONS OF ADJACENT VALVES WHICH MUST BE OPERATED TO FACILITATE THE REQUIRED WORK. THIS SCHEDULE SHALL BE SUBMITTED FOR APPROVAL A MINIMUM OF 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WATERLINE WORK.
18.

WATERLINE DISINFECTION SHALL BE PERFORMED PER AWWA STANDARD C651. THE TABLET METHOD WILL NOT BE ALLOWED.
19.

WATERLINE FLUSHING, PRESSURE AND LEAKAGE TESTS SHALL BE PERFORMED PER AWWA STANDARD C600 FOR DUCTILE IRON PIPE.
20.

ALL EXISTING WATER SERVICE BOXES WITHIN THE WORK AREA SHALL BE LOCATED AND ADJUSTED TO PROPOSED GRADE UNDER ITEM 663.322000ER - WATER SERVICE BOX - ADJUST. EXISTING WATER SERVICE BOXES REQUIRING REPLACEMENT, A.O.B.E., SHALL BE REPLACED UNDER ITEM 663.321400ER - WATER SERVICE BOX - COMPLETE - INSTALL/REPLACE.
21.

ALL EXISTING WATER VALVE BOXES WITHIN THE WORK AREA SHALL BE LOCATED AND ADJUSTED PER THE TABLE ON DWG. NO. DUT-01 AND DETAIL ON DWG. NO. DUD-08 UNDER ITEM 663.302000ER - WATERLINE VALVE BOX - TOP SECTION - ADJUSTMENT.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY

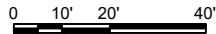
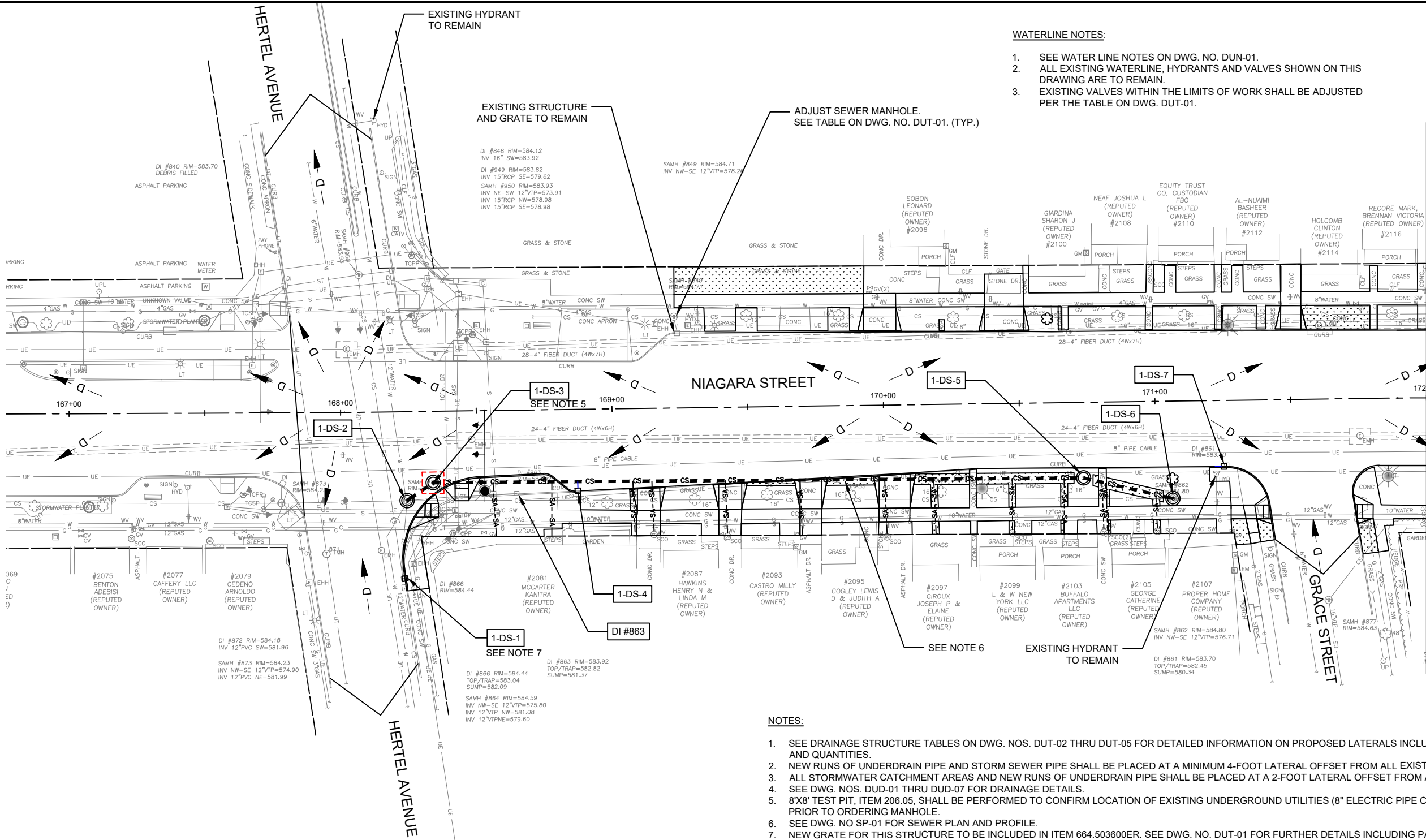


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED                                                                          |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |        |
|----------------------------------------------------------------------------------------------------------------------|--|------------------------------------------|--------|
| NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>DRAINAGE & UTILITY NOTES |  | DRAWING NO.                              | DUN-01 |
|                                                                                                                      |  | SHEET NO.                                | 56     |



DRAFT  
NOT FOR  
CONSTRUCTION



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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DATE/TIME = 12/12/2022 10:58:33 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN J. ROSS/J. KOCH  
CHECK T. BUCKLEY  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO

DRAFT  
NOT FOR  
CONSTRUCTION

WATERLINE NOTES:

- SEE WATER LINE NOTES ON DWG. NO. DUN-01.
- ALL EXISTING WATERLINE, HYDRANTS AND VALVES SHOWN ON THIS DRAWING ARE TO REMAIN.
- EXISTING VALVES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED PER THE TABLE ON DWG. DUT-01.

NOTES:

- UNDERDRAIN PIPE SHALL BE ITEM 605.1502, PERFORATED CORRUGATED POLYETHYLENE TUBING, WITHIN STORMWATER CATCHMENT AREAS (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-05). UNDERDRAIN PIPE SHALL BE ITEM 664.010601ER ELSEWHERE UNLESS OTHERWISE INDICATED ON THE PLANS.
- SEE DRAINAGE STRUCTURE TABLES ON DWG. NOS. DUT-02 THRU DUT-05 FOR DETAILED INFORMATION ON PROPOSED LATERALS INCLUDING PIPE SIZE, CONNECTION AND QUANTITIES.
- NEW RUNS OF UNDERDRAIN PIPE AND STORM SEWER PIPE SHALL BE PLACED AT A MINIMUM 4-FOOT LATERAL OFFSET FROM ALL EXISTING AND PROPOSED TREES.
- ALL STORMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERDRAIN PIPE SHALL BE PLACED AT A 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
- SEE DWG. NOS. DUD-01 THRU DUD-07 FOR DRAINAGE DETAILS.
- 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (8" WATER MAIN AND 4" GAS MAIN) PRIOR TO STORMWATER PLANTER INSTALLATION.
- INSTALL LB 12-2 TREE ROOT BARRIER AS MANUFACTURED BY DEEPROOT (OR APPROVED EQUAL) TO DELINEATE CRITICAL ROOT ZONES WHERE INDICATED IN PLAN. SEE DETAILS ON DWG. NO. DUD-07.
- GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT AREAS WITHIN A 10-FOOT LATERAL OFFSET FROM THE OUTSIDE EDGES OF THE EXISTING SEPARATED STORM SEWERS, COMBINED STORM AND SANITARY SEWERS, AND WATERLINES. INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER. SEE DETAILS ON DWG. NO. DUD-5 THRU DUD-07. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.
- 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (NATIONAL GRID DUCT BANK) PRIOR TO ORDERING DRAINAGE STRUCTURE.

KEY

|                                                                          |                                                                               |                                                                                             |                                                        |                                           |                                  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------|----------------------------------|
| SURFACE WATER FLOW DIRECTION ARROWS                                      | 6" DIAMETER UNDERDRAIN PIPE (SEE NOTE 1)                                      | TREE REMOVAL AND REPLACEMENT (SEE TREE REMOVAL AND TREE PLANTING TABLES ON DWG. NOS. MT-02) | RIGHT OF WAY LINE                                      | GREEN SPACE (SEE GENERAL PLAN DWGS.)      | HYDRANT ITEM 663.131000ER        |
| PLANTER OUTLINE (SEE DWG. NOS. MD-03 THRU MD-06, AND GENERAL PLAN DWGS.) | STORM SEWER PIPE (SEE NOTE 1)                                                 | TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)                                     | CLEAN-OUT (SEE DWG. NO. DUD-4)                         | TEST PIT ITEM 206.05                      | WATER VALVE ITEM 663.100600ER    |
| STORMWATER CATCHMENT AREA (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-07)  | TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02) | EXISTING TREE TO REMAIN                                                                     | GENERAL PLANTING AREA (SEE DETAILS ON DWG. NO. DUD-07) | TREE ROOT BARRIER (SEE DETAILS ON DUD-07) | 6-IN WATERLINE ITEM 663.010601ER |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY

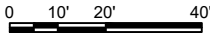
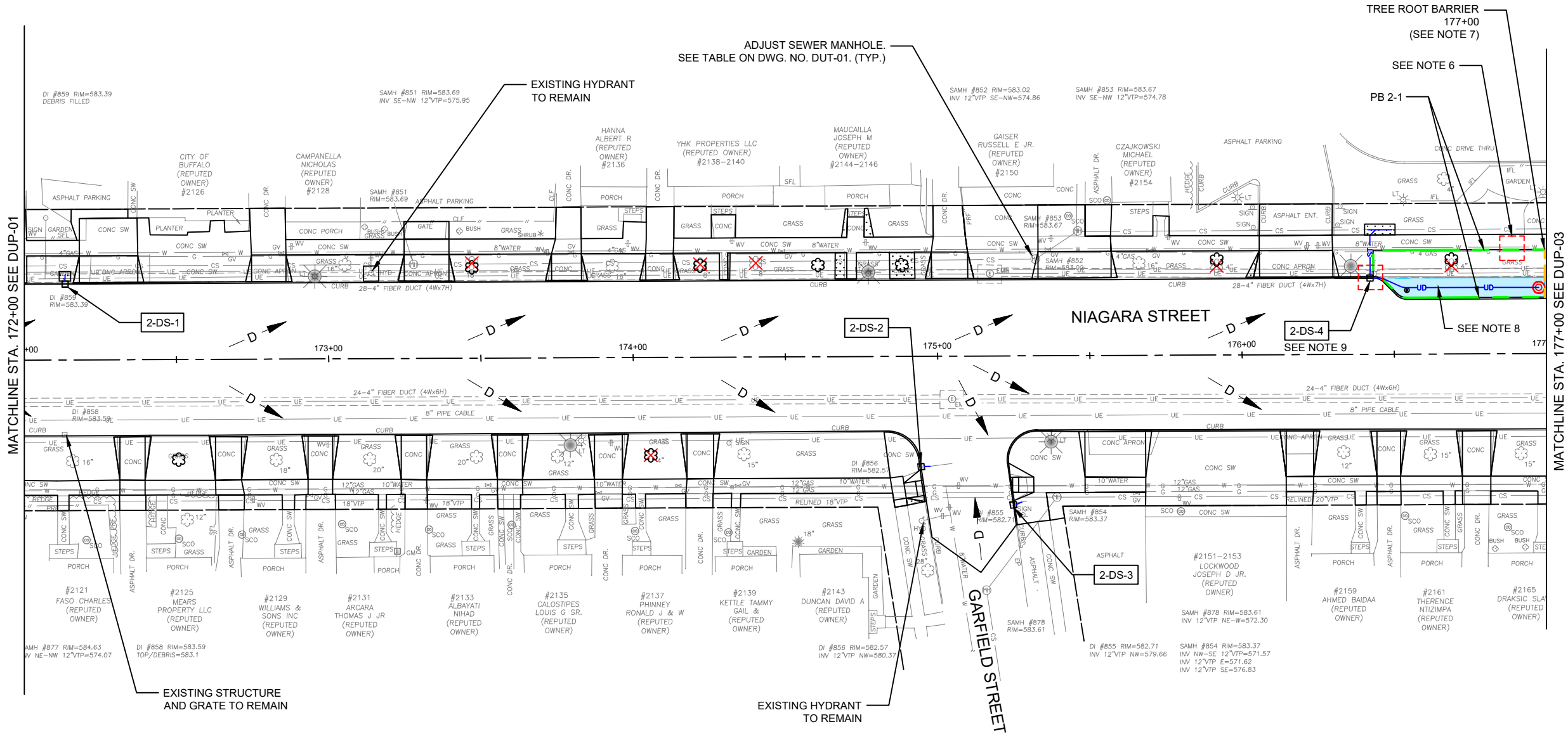


Watts  
Architects  
& Engineers

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUP-02  
SHEET NO. 58

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R18. CADD\Trans20 Drainage Plan.dwg  
DATE/TIME = 12/12/2022 11:03:45 AM  
USER = Victoria Coners

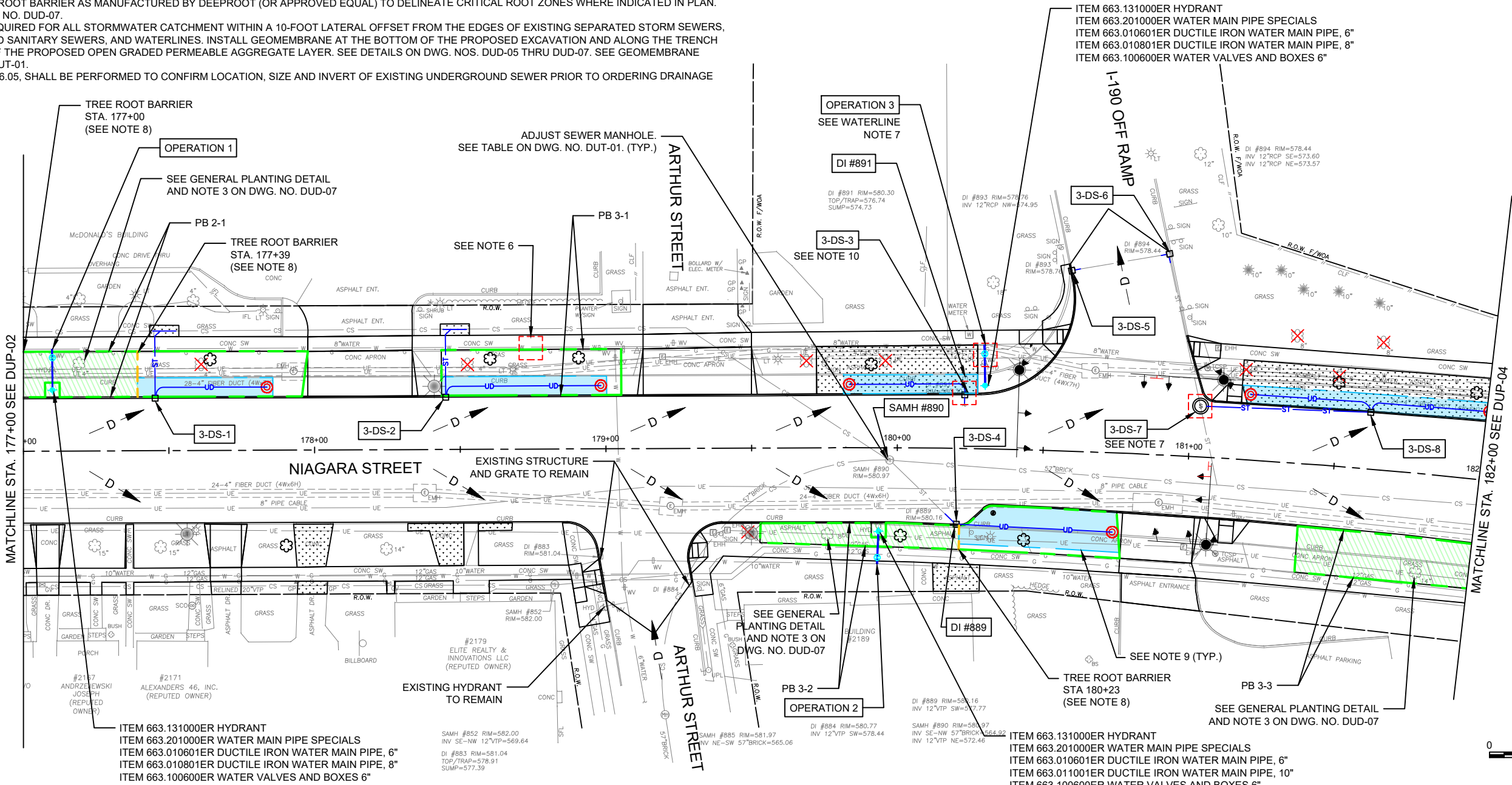
JOB MANAGER T. DUK  
DESIGN J. ROSS/J. KOCH  
CHECK T. BUCKLEY  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO

NOTES:

1. UNDERDRAIN PIPE SHALL BE ITEM 605.1502, PERFORATED CORRUGATED POLYETHYLENE TUBING, WITHIN STORMWATER CATCHMENT AREAS (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-05). UNDERDRAIN PIPE SHALL BE ITEM 664.010601ER ELSEWHERE UNLESS OTHERWISE INDICATED ON THE PLANS.
2. SEE DRAINAGE STRUCTURE TABLES ON DWG. NOS. DUT-02 THRU DUT-05 FOR DETAILED INFORMATION ON PROPOSED LATERALS INCLUDING PIPE SIZE, CONNECTION AND QUANTITIES.
3. NEW RUNS OF UNDERDRAIN PIPE AND STORM SEWER PIPE SHALL BE PLACED AT A MINIMUM 4-FOOT LATERAL OFFSET FROM ALL EXISTING AND PROPOSED TREES.
4. ALL STORMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERDRAIN PIPE SHALL BE PLACED AT A 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
5. SEE DWG. NOS. DUD-01 THRU DUD-07 FOR DRAINAGE DETAILS.
6. 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (8" WATER MAIN AND 4" GAS MAIN) PRIOR TO STORMWATER PLANTER INSTALLATION.
7. 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION AND INVERT OF EXISTING UNDERGROUND 12" STORM SEWER PRIOR TO ORDERING MANHOLE.
8. INSTALL LB 12-2 TREE ROOT BARRIER AS MANUFACTURED BY DEEPROOT (OR APPROVED EQUAL) TO DELINEATE CRITICAL ROOT ZONES WHERE INDICATED IN PLAN. SEE DETAILS ON DWG. NO. DUD-07.
9. GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT WITHIN A 10-FOOT LATERAL OFFSET FROM THE EDGES OF EXISTING SEPARATED STORM SEWERS, COMBINED STORM AND SANITARY SEWERS, AND WATERLINES. INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER. SEE DETAILS ON DWG. NOS. DUD-05 THRU DUD-07. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.
10. 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION, SIZE AND INVERT OF EXISTING UNDERGROUND SEWER PRIOR TO ORDERING DRAINAGE STRUCTURE.

WATERLINE NOTES:

1. OPERATION 1: CLOSE VALVES FOR SHUTDOWN. REMOVE EXISTING HYDRANT TEE. REPLACE WITH NEW 8"X6" TEE, SPOOL PIECES AND SOLID SLEEVES AND 6" VALVE AS REQUIRED.
2. OPERATION 2: CLOSE VALVES FOR SHUTDOWN. REMOVE EXISTING HYDRANT TEE. REPLACE WITH NEW 10"X6" TEE, SPOOL PIECES AND SOLID SLEEVES AND 6" VALVE AS REQUIRED.
3. OPERATION 3: CLOSE VALVES FOR SHUTDOWN. REMOVE EXISTING HYDRANT TEE. REPLACE WITH NEW 8"X6" TEE, SPOOL PIECES AND SOLID SLEEVES AND 6" VALVE AS REQUIRED.
4. SEE WATERLINE NOTES ON DWG. NO. DUN-01.
5. ALL OTHER WATERLINE, HYDRANTS AND VALVES ARE TO REMAIN.
6. EXISTING VALVES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED PER THE TABLE ON DUT-01.
7. 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED LOCATION AND SIZE OF UNDERGROUND UTILITY (NATIONAL GRID DUCT BANK) PRIOR TO OPERATION.



KEY

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|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------|----------------------------------|
| SURFACE WATER FLOW DIRECTION ARROWS                                      | 6" DIAMETER UNDERDRAIN PIPE (SEE NOTE 1)                                      | TREE REMOVAL AND REPLACEMENT (SEE TREE REMOVAL AND TREE PLANTING TABLES ON DWG. NOS. MT-02) | RIGHT OF WAY LINE                                      | GREEN SPACE (SEE GENERAL PLAN DWGS.)      | HYDRANT ITEM 663.131000ER        |
| PLANTER OUTLINE (SEE DWG. NOS. MD-03 THRU MD-06, AND GENERAL PLAN DWGS.) | STORM SEWER PIPE (SEE NOTE 1)                                                 | TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)                                     | CLEAN-OUT (SEE DWG. NO. DUD-4)                         | TEST PIT ITEM 206.05                      | WATER VALVE ITEM 663.100600ER    |
| STORMWATER CATCHMENT AREA (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-07)  | TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02) | TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)                                     | GENERAL PLANTING AREA (SEE DETAILS ON DWG. NO. DUD-07) | TREE ROOT BARRIER (SEE DETAILS ON DUD-07) | 6-IN WATERLINE ITEM 663.010601ER |
| EXISTING TREE TO REMAIN                                                  |                                                                               |                                                                                             |                                                        |                                           |                                  |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



**BUFFALO**  
SEWER AUTHORITY



**Watts**  
**Architects**  
**& Engineers**

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
**NIAGARA STREET CORRIDOR PROJECT**  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUP-03  
SHEET NO. 59

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**DRAFT**  
**NOT FOR**  
**CONSTRUCTION**



WATERLINE NOTES:

1. OPERATION 4: CLOSE VALVES FOR SHUTDOWN. REMOVE EXISTING HYDRANT TEE. REPLACE WITH NEW 10"x6" TEE, SPOOL PIECES AND SOLID SLEEVES AND 6" VALVE AS REQUIRED.
2. OPERATION 5: CLOSE VALVES FOR SHUTDOWN. REMOVE EXISTING HYDRANT TEE. REPLACE WITH NEW 10"x6" TEE, SPOOL PIECES AND SOLID SLEEVES AND 6" VALVE AS REQUIRED.
3. SEE WATERLINE NOTES ON DWG. NO. DUN-01.
4. ALL OTHER WATERLINE, HYDRANTS AND VALVES ARE TO REMAIN.
5. EXISTING VALVES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED PER TABLE ON DUT-01.

NOTES:

1. UNDERDRAIN PIPE SHALL BE ITEM 605.1502, PERFORATED CORRUGATED POLYETHYLENE TUBING, WITHIN STORMWATER CATCHMENT AREAS (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-05). UNDERDRAIN PIPE SHALL BE ITEM 664.010601ER ELSEWHERE UNLESS OTHERWISE INDICATED ON THE PLANS.
2. SEE DRAINAGE STRUCTURE TABLES ON DWG. NOS. DUT-02 THRU DUT-05 FOR DETAILED INFORMATION ON PROPOSED LATERALS INCLUDING PIPE SIZE, CONNECTION AND QUANTITIES.
3. NEW RUNS OF UNDERDRAIN PIPE AND STORM SEWER PIPE SHALL BE PLACED AT A MINIMUM 4-FOOT LATERAL OFFSET FROM ALL EXISTING AND PROPOSED TREES.
4. ALL STORMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERDRAIN PIPE SHALL BE PLACED AT A 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
5. SEE DWG. NOS. DUD-01 THRU DUD-07 FOR DRAINAGE DETAILS.
6. 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (57" COMBINED SEWER MAIN, COMMUNICATION LINE AND NATIONAL GRID DUCT BANK) PRIOR TO ORDERING DRAINAGE STRUCTURE.
7. 8'X8' TEST PIT, ITEM 206.05, SHALL BE PERFORMED TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (10'X8' COMBINED SEWER MAIN AND COMMUNICATION LINE) PRIOR TO ORDERING STRUCTURE.
8. INSTALL LB 12-2 TREE ROOT BARRIER AS MANUFACTURED BY DEEPROOT (OR APPROVED EQUAL) TO DELINEATE CRITICAL ROOT ZONES WHERE INDICATED IN PLAN. SEE DETAILS ON DWG. NO. DUD-07.
9. GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT WITHIN A 10-FOOT LATERAL OFFSET FROM THE EDGES OF EXISTING SEPARATED STORM SEWERS, COMBINED STORM AND SANITARY SEWERS, AND WATERLINES. INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER. SEE DETAILS ON DWG. NOS. DUD-05 THRU DUD-07. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

— D — SURFACE WATER FLOW DIRECTION  
ARROWS  
PLANter OUTLINE  
(SEE DWG. NOS. MD-03 THRU MD-06,  
AND GENERAL PLAN DWGS.)  
STORMWATER CATCHMENT AREA  
(SEE DETAILS ON DWG. NOS. DUD-04  
THRU DUD-07)

— UD — 6" DIAMETER UNDERDRAIN PIPE (SEE NOTE 1)  
— ST — STORM SEWER PIPE (SEE NOTE 1)  
TREE  
(SEE DETAIL ON DWG. NO. MD-01 AND TREE  
PLANTING TABLE ON DWG. NO. MT-02)  
EXISTING TREE TO REMAIN

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



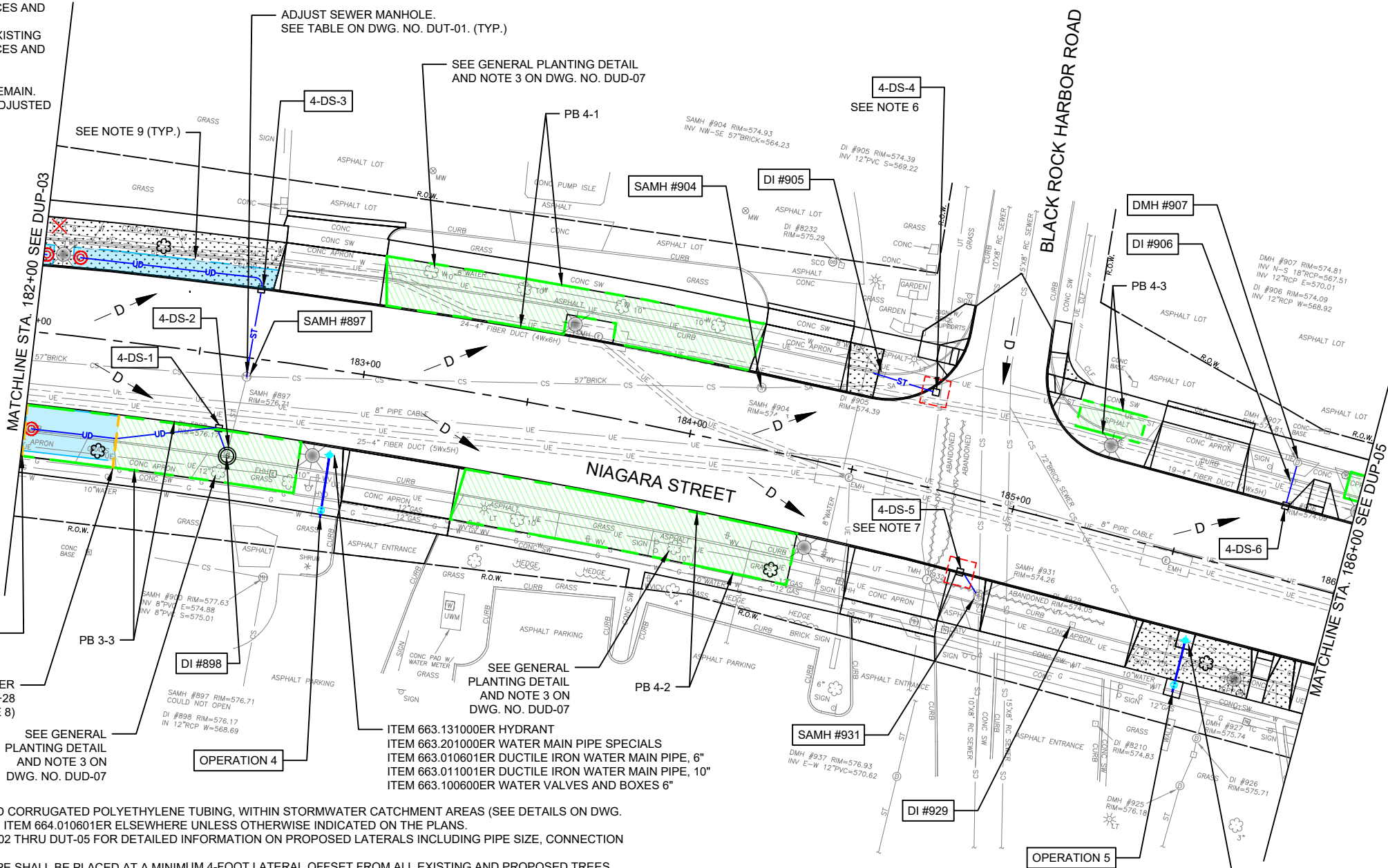
BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY PLAN

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUP-04  
SHEET NO. 60

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

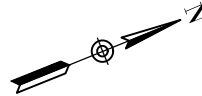





















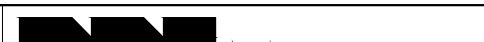
0 10' 20' 40'



1. UNDERDRAIN PIPE SHALL BE ITEM 605.1502, PERFORATED CORRUGATED POLYETHYLENE TUBING, WITHIN STORMWATER CATCHMENT AREAS (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-05). UNDERDRAIN PIPE SHALL BE ITEM 664.010601ER ELSEWHERE UNLESS OTHERWISE INDICATED ON THE PLANS.
2. SEE DRAINAGE STRUCTURE TABLES ON DWG. NOS. DUT-02 THRU DUT-05 FOR DETAILED INFORMATION ON PROPOSED LATERALS INCLUDING PIPE SIZE, CONNECTION AND QUANTITIES.
3. NEW RUNS OF UNDERDRAIN PIPE AND STORM SEWER PIPE SHALL BE PLACED AT A MINIMUM 4-FOOT LATERAL OFFSET FROM ALL EXISTING AND PROPOSED TREES.
4. ALL STORMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERDRAIN PIPE SHALL BE PLACED AT A 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
5. SEE DWG. NOS. DUD-01 THRU DUD-07 FOR DRAINAGE DETAILS.
6. NEW DRAINAGE STRUCTURE SHALL BE OFFSET FROM THE PROPOSED CURB LINE AND INCLUDE A BSA STANDARD FULL GRATE. STRUCTURE SHALL BE INSTALLED AT AN ORIENTATION WHICH PROVIDES A LATERAL CONNECTION PERPENDICULAR TO THE STRUCTURE AND THE EXISTING STORM SEWER OR MANHOLE AS INDICATED ON PLANS. GRADE SURROUNDING PAVEMENT TO PROVIDE A LOW POINT AT THE SURFACE OF THE STRUCTURE.

1. SEE WATER LINE NOTES ON DWG. NO. DUN-01.
2. ALL EXISTING WATERLINE, HYDRANTS AND VALVES SHOWN ON THIS DRAWING ARE TO REMAIN.
3. EXISTING VALVES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED PER THE TABLE ON DWG. DUT-01.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                     |  |                                          |  |
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| AFFIX SEAL:<br>ON:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | ALTERED BY:<br>ON:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                     |  |                                          |  |
| <div>DRAFT<br/>NOT FOR<br/>CONSTRUCTION</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <div><div><div> SURFACE WATER FLOW DIRECTION ARROWS</div><div> PLANTER OUTLINE (SEE DWG. NOS. MD-03 THRU MD-06, AND GENERAL PLAN DWGS.)</div><div> STORMWATER CATCHMENT AREA (SEE DETAILS ON DWG. NOS. DUD-04 THRU DUD-07)</div></div><div><div> 6" DIAMETER UNDERDRAIN PIPE (SEE NOTE 1)</div><div> STORM SEWER PIPE (SEE NOTE 1)</div><div> TREE (SEE DETAIL ON DWG. NO. MD-01 AND TREE PLANTING TABLE ON DWG. NO. MT-02)</div><div> EXISTING TREE TO REMAIN</div></div><div><div> TREE REMOVAL AND REPLACEMENT (SEE TREE REMOVAL AND TREE PLANTING TABLES ON DWG. NOS. MT-02)</div><div> TREE REMOVAL (SEE TREE REMOVAL TABLE ON DWG. NO. MT-02)</div></div><div><div> RIGHT OF WAY LINE</div><div> CLEAN-OUT (SEE DWG. NO. DUD-4)</div><div> GENERAL PLANTING AREA (SEE DETAILS ON DWG. NO. DUD-07)</div></div><div><div> GREEN SPACE (SEE GENERAL PLAN DWGS.)</div><div> TEST PIT ITEM 206.05</div><div> TREE ROOT BARRIER (SEE DETAILS ON DUD-07)</div></div><div><div> HYDRANT ITEM 663.131000ER</div><div> WATER VALVE ITEM 663.100600ER</div><div> 6-IN WATERLINE ITEM 663.010601ER</div></div></div> |  |                                                                                                                     |  |                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <div>AS-BUILT REVISIONS<br/>DESCRIPTION OF ALTERATIONS:</div> <div> <b>BUFFALO</b><br/>SEWER AUTHORITY</div> <div> <b>Watts</b><br/><b>Architects</b><br/><b>&amp;Engineers</b></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED                                                                         |  | CITY OF BUFFALO<br>ERIE COUNTY, NEW YORK |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | NIAGARA STREET CORRIDOR PROJECT<br>PHASE 4B - 5762.90<br>HERTEL AVENUE TO ONTARIO STREET<br>DRAINAGE & UTILITY PLAN |  | DRAWING NO. DUP-05<br>SHEET NO. 61       |  |
| IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION. |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                     |  |                                          |  |





AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



**BUFFALO**  
SEWER AUTHORITY



ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

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**NIAGARA STREET CORRIDOR PROJ**  
**PHASE 4B - 5762.90**  
**HERTEL AVENUE TO ONTARIO STREET**  
**SEWER PLAN & PROFILE**

|                       |       |
|-----------------------|-------|
| CITY OF BUFFALO       |       |
| ERIE COUNTY, NEW YORK |       |
| DRAWING NO.           | SP-01 |
| SHEET NO.             | 62    |

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

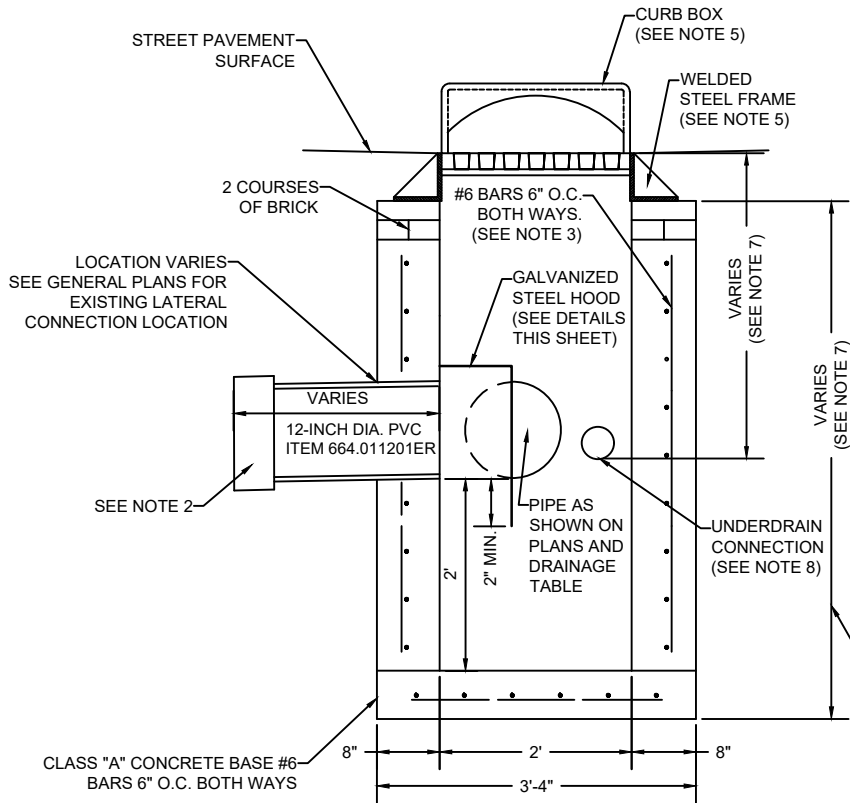


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USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK T. BUCKLEY  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO

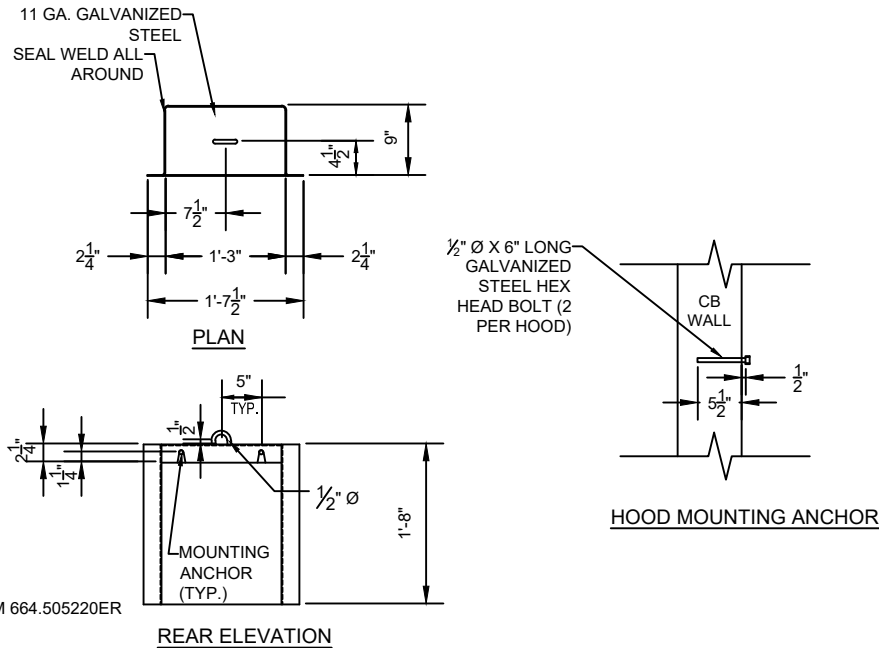
NOTES:

- ALL WORK SHALL BE COMPLETED UNDER THE SUPERVISION OF A MASTER PLUMBER LICENSED IN THE CITY OF BUFFALO.
- WHERE DRAINAGE TABLES INDICATE AN EXISTING LATERAL TO REMAIN AND BE CONNECTED TO A NEW DRAINAGE STRUCTURE, CONNECT PROPOSED PVC STUB SECTION TO EXISTING RCP OR VTP LATERAL. USE CONCRETE COLLAR, COUPLING OR OTHER METHOD ACCEPTABLE TO THE BUFFALO SEWER AUTHORITY. COST INCLUDED IN THE UNIT PRICE BID FOR ITEM 664.011201ER. REFER TO DETAILS ON DWG. NO. DUD-02 WHEN DRAINAGE TABLES INDICATE REMOVAL AND REPLACEMENT OF AN EXISTING LATERAL.
- PRECAST REINFORCED CONCRETE DRAINAGE UNITS IN LIEU OF THE CAST-IN-PLACE CONCRETE UNIT SHOWN REQUIRE APPROVAL BY BSA PRIOR TO FABRICATION.
- THE CONTRACTOR SHALL INSTALL STORM DRAIN MARKERS AT ALL NEW LOCATIONS OF STORM DRAIN INLETS WITH MARKERS SUPPLIED BY THE BUFFALO SEWER AUTHORITY AT NO COST TO THE CONTRACTOR. THE MARKERS SHALL BE APPLIED TO THE TOP OF THE STEEL CURB BOXES OR AS DIRECTED BY THE ENGINEER. THE SURFACE MUST BE DRY, FREE OF OIL AND FREE OF ANY LOOSE DEBRIS. APPLY AN ADHESIVE MATERIAL BY USE OF A CAULK GUN ON THE BACK OF THE MARKER AND PUSH MARKER DOWN ON APPLICATION SURFACE FORCING A BEAD OF ADHESIVE OUT AROUND THE ENTIRE EDGE. THE ENTIRE EDGE OF THE STORM DRAIN MARKER MUST BE SEALED TO THE SURFACE. THE CONTRACTOR SHALL PROVIDE ADHESIVE FOR APPROVAL TO THE ENGINEER THAT IS APPLICABLE TO THE SURFACE IT IS BEING APPLIED TO. THE APPLICATION TEMPERATURE OF THE STORM DRAIN MARKER MUST BE BETWEEN 50 AND 90 DEGREES FERENHHEIGHT. THE COST TO INSTALL THESE MARKERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE DRAINAGE STRUCTURE ITEM.
- FRAMES, GRATES AND COVERS FOR THIS STRUCTURE WILL BE FURNISHED BY BUFFALO SEWER AUTHORITY (BSA). THE CONTRACTOR SHALL LOAD, TRANSPORT AND PLACE THE CASTINGS AS DIRECTED BY THE AUTHORITY. ALL COSTS ASSOCIATED WITH THIS WORK TO BE INCLUDED IN THE UNIT PRICE BID FOR THE ASSOCIATED DRAINAGE STRUCTURE ITEM.
- RESTORATION OF THE STREET INCLUDED IN THE UNIT PRICE BID FOR THE ASSOCIATED DRAINAGE STRUCTURE ITEM.
- SEE DRAINAGE TABLES ON DWG. NOS. DUT-01 THRU DUT-05.
- CONTRACTOR SHALL CONNECT PROPOSED DRAINAGE STRUCTURE TO RUNS OF UNDERDRAIN AT THE EXISTING CURB LINE WHERE NECESSARY. COST INCLUDED IN THE UNIT PRICE BID FOR ITEM 664.505220ER.

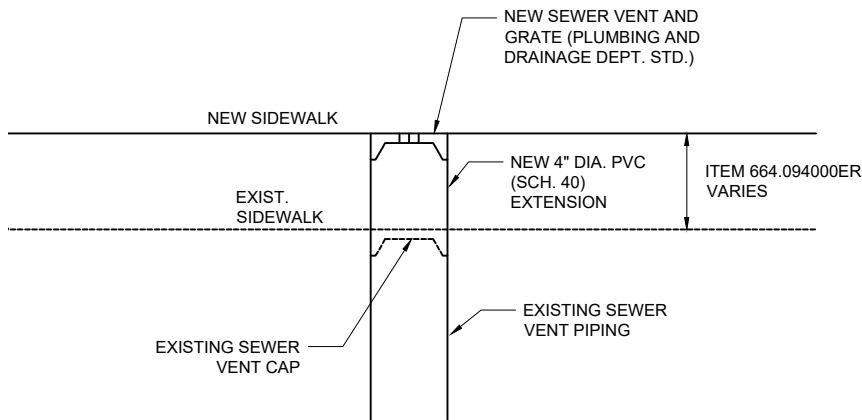


CATCH BASIN AT ROADWAY LOW POINT DETAIL

ITEM 664.505220ER



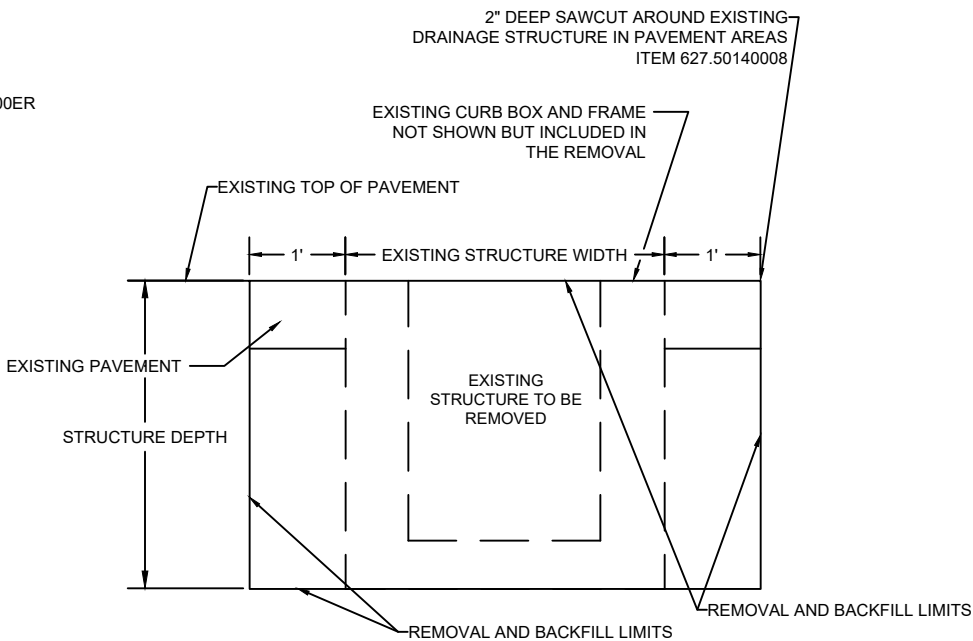
WELDED GALVANIZED STEEL HOOD  
(INCLUDED IN UNIT PRICE BID FOR ITEM 664.505220ER)



FRESH AIR ADJUSTMENT DETAIL- ITEM 664.094000ER

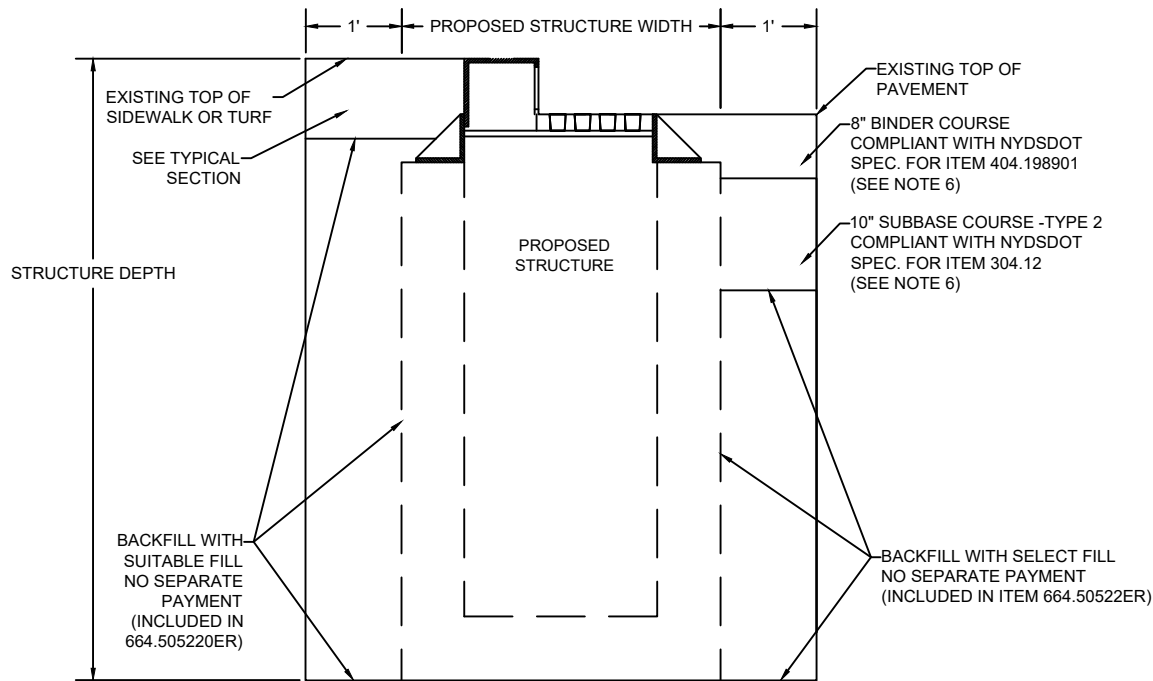
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NOTE: SEE TABLE ON DWG. NO. DUT-01 FOR ADJUSTMENT LOCATIONS.



DRAINAGE STRUCTURE REMOVAL DETAIL

ITEM 664.503300ER



DRAINAGE STRUCTURE BACKFILL DETAIL  
SIDE ELEVATION

ITEM 664.505220ER

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUD-01  
SHEET NO. 63

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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USER = Victoria Coners

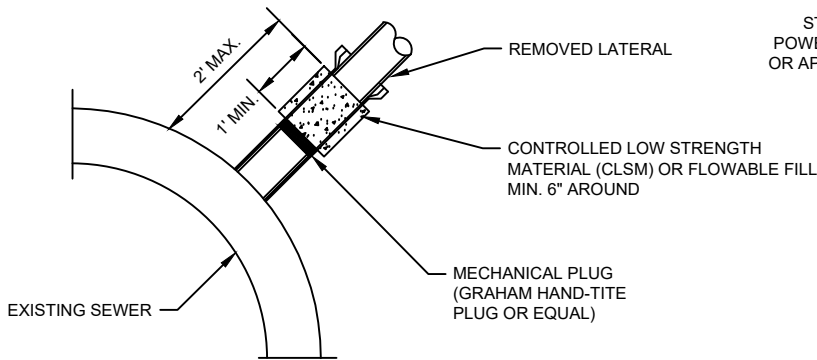
JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK T. BUCKLEY  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO

NOTES:

- THE COSTS FOR EXCAVATION, ALL FITTINGS, ADAPTERS, CORING, CUTTING, EPOXY MORTAR, HUBS AND GASKETS AND BACKFILL SHALL BE INCLUDED UNDER THE PROPOSED PIPE ITEM.
- IN CASES WHERE THE DIAMETER OF THE NEW LATERAL MEETS OR EXCEEDS HALF THE DIAMETER OF THE EXISTING MAIN, CORING WILL NOT BE ACCEPTED. CONTRACTOR SHALL REMOVE A SECTION OF THE EXISTING MAIN AND REPLACE WITH AN RCP OR A PVC WYE. COST INCLUDED IN PIPE ITEM. SEE DRAINAGE TABLES FOR LOCATIONS AND SIZING INFORMATION.

TYPICAL CONNECTION TO EXISTING SEWER DETAIL

NOT TO SCALE



NOTES:

- WHEN ABANDONING SEWER LATERAL CONNECTION(S) TO THE PUBLIC SEWER, CONTRACTOR SHALL CUT AND REMOVE THE DRAINAGE PIPE TO WITHIN TWO FEET OF THE MAIN SEWER, WHERE PRACTICABLE, A.O.B.E.
- THE PIPE FROM THE CUT TO THE MAIN SEWER SHALL NOT BE DAMAGED IN ANY MANNER BY THE CONTRACTOR. IF THE EXISTING LATERAL IS DAMAGED BY THE CONTRACTOR, THE LATERAL MAIN SHALL BE FIXED IN A MANNER ACCEPTABLE TO THE BUFFALO SEWER AUTHORITY (BSA) AND THE ENGINEER AT NO COST TO THE BSA.
- ONCE THE LATERAL HAS BEEN CUT, THE LATERAL SHALL BE PLUGGED WITH A MECHANICAL PLUG (GRAHAM HAND - TITE PLUG OR EQUAL) THAT IS ACCEPTABLE TO THE BSA AND THE ENGINEER. THE PLUG IS TO BE INSTALLED A MINIMUM OF ONE (1) FOOT DEEP INTO THE LATERAL AND CONTROLLED LOW STRENGTH MATERIAL (CLSM) SHALL BE PLACED WITHIN THE ENTIRE DIAMETER OF THE PIPE FOR ONE (1) LINEAR FOOT.
- THE REMAINING PIPE SHALL BE REMOVED AND PROPERLY DISPOSED OF OR ABANDONED IN PLACE AND FILLED WITH CLSM (OR FLOWABLE FILL).

SEWER LATERAL ABANDONMENT DETAIL

(ITEM 664.503300ER)

NOT TO SCALE

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



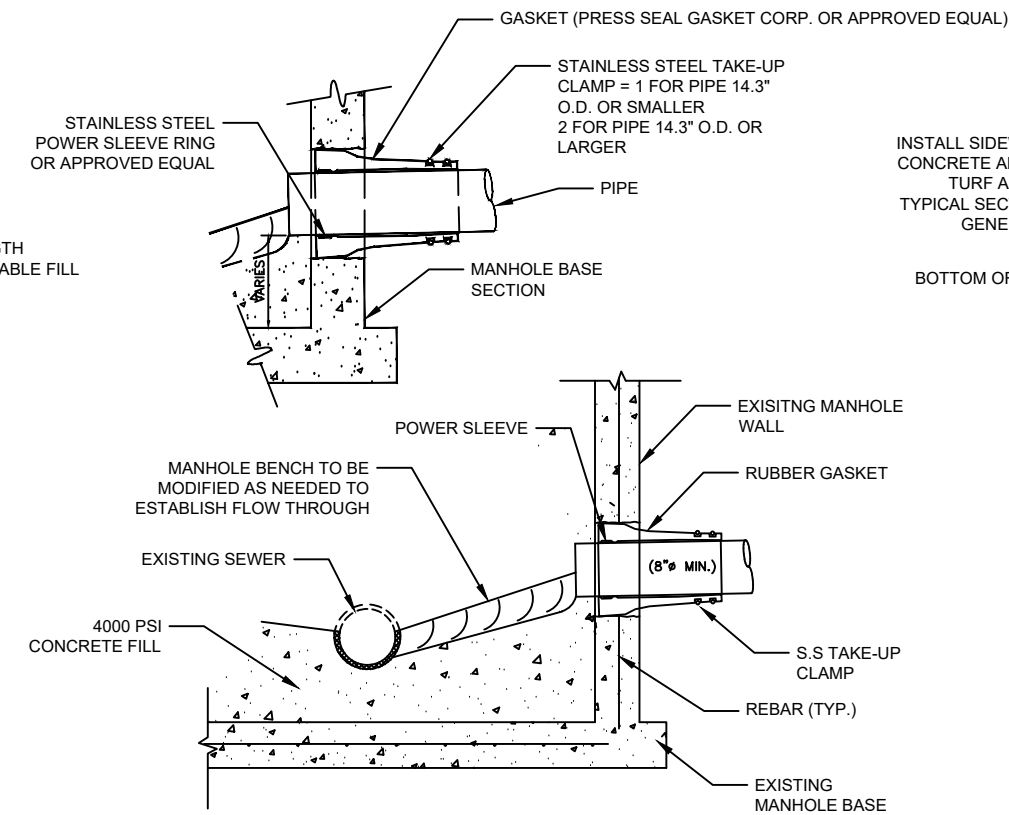
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NOTES:

- CONTRACTOR MAY GO OVER OR UNDER THE CONFLICTING UTILITY PROVIDED THAT THE MINIMUM 0.5% SLOPE IS ACHIEVED.
- THIS DETAIL APPLIES TO BLIND LATERAL CONNECTIONS AS WELL AS LATERAL CONNECTIONS TO MANHOLES. REFER TO APPLICABLE DETAIL FOR CONNECTION REQUIREMENTS.
- WHEN CROSSING A WATER MAIN, PROVIDE 18 INCHES OF CLEARANCE. LESS CLEARANCE MAY BE PROVIDED FOR OTHER UTILITIES A.O.B.E.

UTILITY CROSSING/DROP-IN CONNECTION DETAIL

NOT TO SCALE



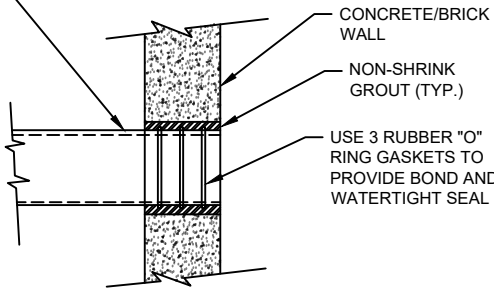
NOTES:

- CORE DRILL ENTRANCE HOLE IN EXISTING MANHOLE BARREL, BASE, AND/OR BENCH FOR REQUIRED PIPE CLEARANCE AND AS PER MANUFACTURER'S RECOMMENDATIONS.
- WATERTIGHT PIPE TO MANHOLE BOOT SEAL REQUIRED FOR ALL CORE DRILLED ENTRANCE HOLES CONSISTING OF RUBBER GASKET, S.S POWER SLEEVE AND TAKE-UP CLAMP, PRESS-SEAL GASKET OR APPROVED EQUAL.
- ALL WORK INCLUDED FOR CONNECTION TO EXISTING MANHOLE AND ASSOCIATED MANHOLE MODIFICATIONS SHALL BE INCLUDED IN THE PIPE ITEM 664.01XX01ER.

CONNECTION TO EXISTING MANHOLE

NOT TO SCALE

PROPOSED PIPE  
(REFER TO DRAINAGE  
STRUCTURE TABLE)

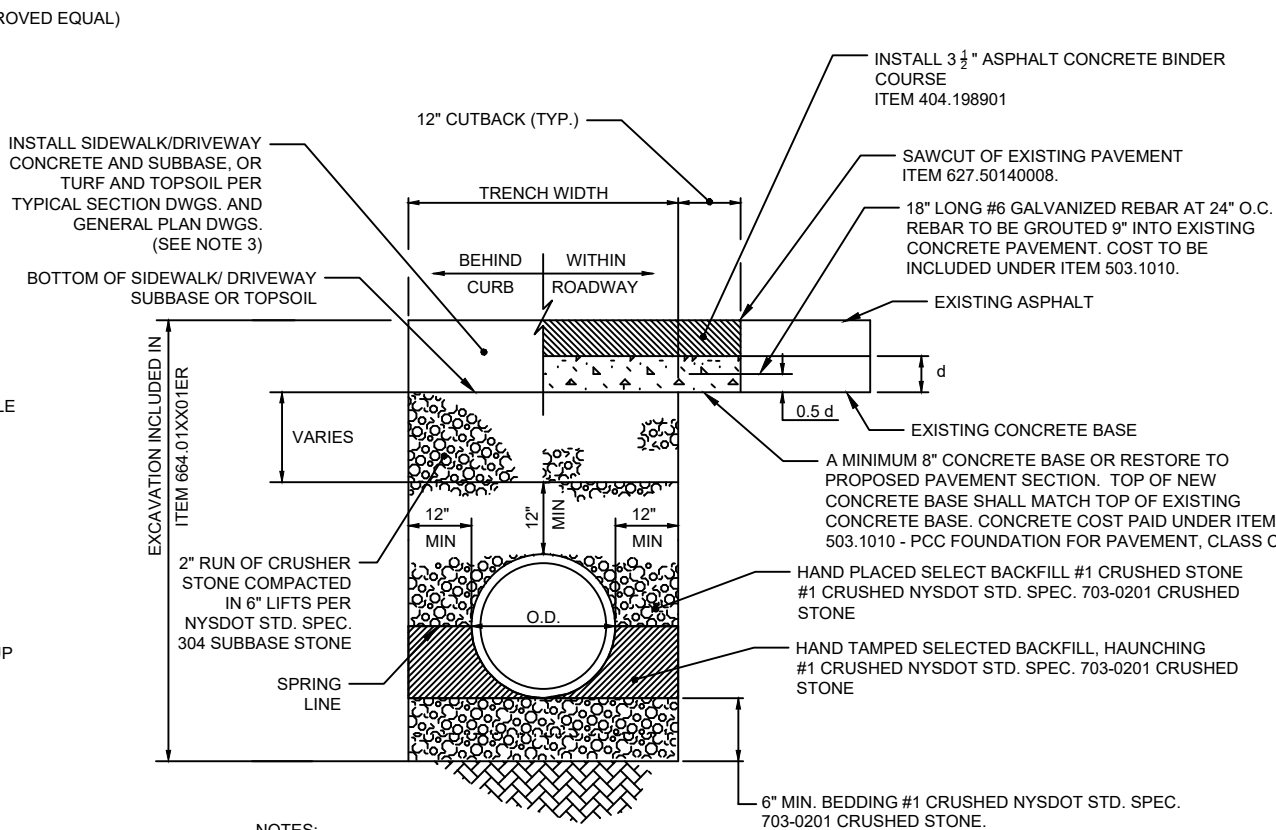


NOTE:

- THE COSTS FOR EXCAVATION, ALL FITTINGS, ADAPTERS, CORING, CUTTING, EPOXY MORTAR, HUBS, AND GASKETS SHALL BE INCLUDED UNDER THE ASSOCIATED PIPE ITEM.

TYPICAL CONNECTION TO EXISTING STRUCTURE DETAIL

NOT TO SCALE



NOTES:

- EXISTING PIPE EDGE MUST BE SQUARELY CUT, NO BROKEN EDGES.
- THE COST OF ALL ITEMS AS DETAILED ABOVE TO BE INCLUDED IN ITEM 664.01XX01ER UNLESS OTHERWISE NOTED.
- RESTORATION SHALL INCLUDE A SUFFICIENT AMOUNT OF TURF, SIDEWALK CONCRETE OR DRIVEWAY CONCRETE TO EXISTING JOINTS TO PROVIDE NEAT AND UNIFORM APPEARANCE. COST INCLUDED UNDER SURFACE RESTORATION ITEMS AS SPECIFIED ON TYPICAL SECTION DWGS. AND GENERAL PLAN DWGS.

P.V.C. PIPE TRENCH DETAIL

ITEMS 664.01XX01ER

NOT TO SCALE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT

PHASE 4B - 5762.90

HERTEL AVENUE TO ONTARIO STREET

DRAINAGE DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

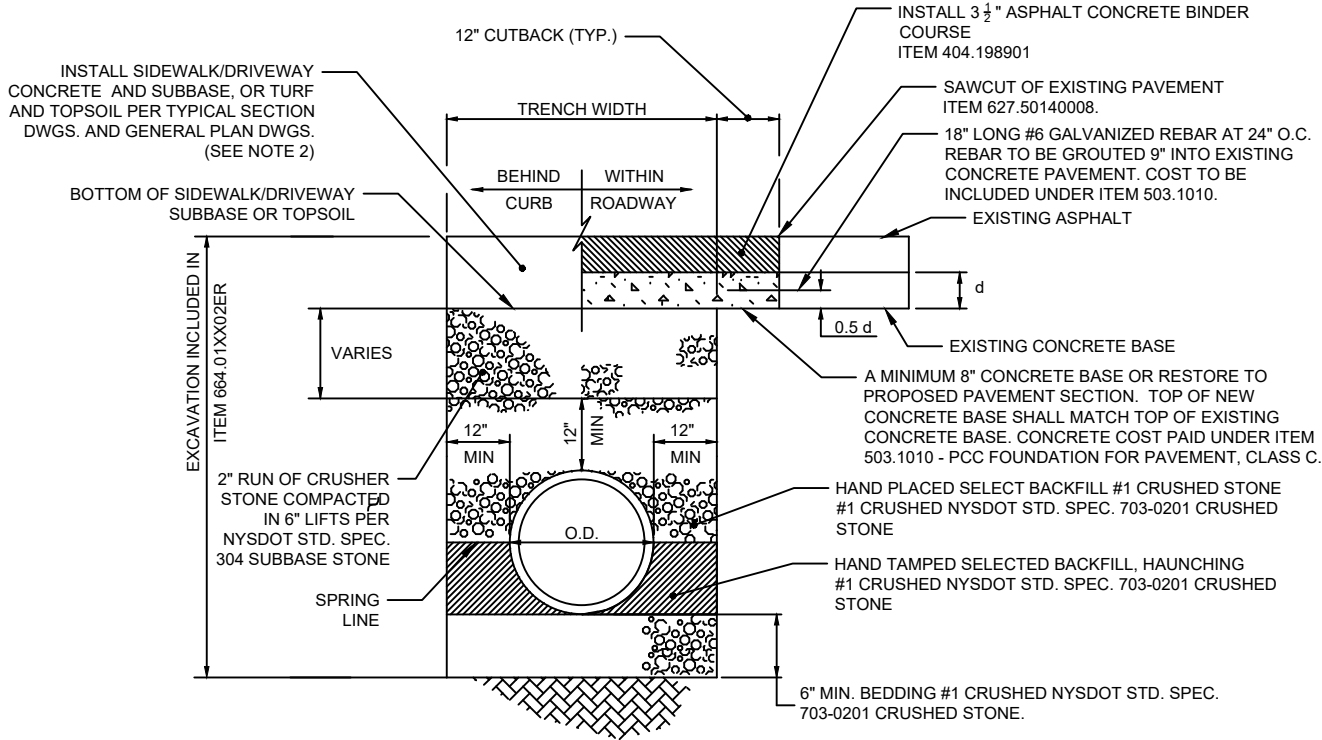
DRAWING NO. DUD-02

SHEET NO. 64



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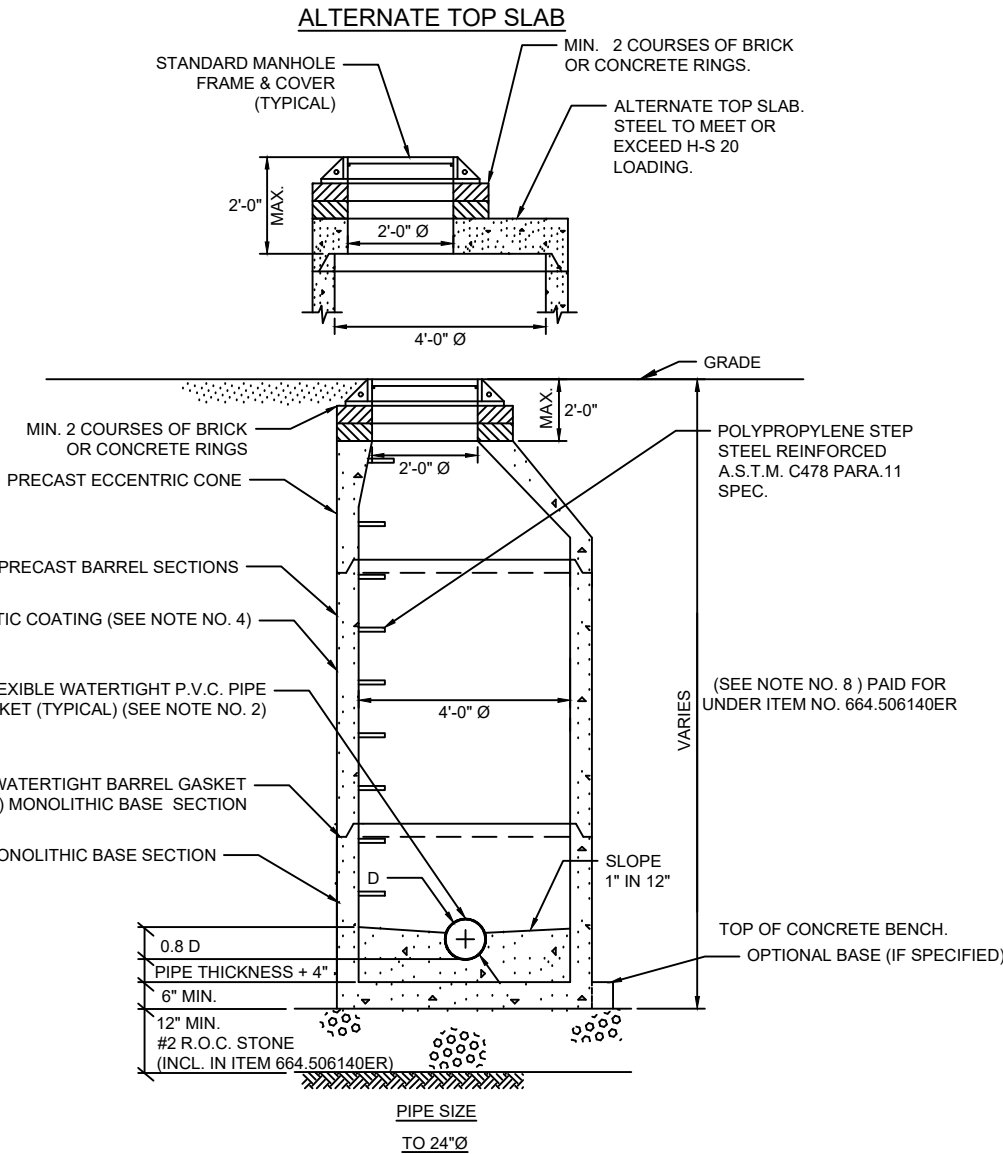
JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK T. BUCKLEY  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO



NOTES:

- THE COST OF ALL ITEMS AS DETAILED ABOVE TO BE INCLUDED IN ITEM 664.01XX02ER UNLESS OTHERWISE NOTED.
- RESTORATION SHALL INCLUDE A SUFFICIENT AMOUNT OF TURF, SIDEWALK CONCRETE OR DRIVEWAY CONCRETE TO EXISTING JOINTS TO PROVIDE A NEAT AND UNIFORM APPEARANCE. COST INCLUDED UNDER SURFACE RESTORATION ITEMS AS SPECIFIED ON TYPICAL SECTION DWGS. AND GENERAL PLAN DWGS.

R.C.P. PIPE TRENCH DETAIL  
ITEMS 664.01XX02ER  
NOT TO SCALE



ITEM 664.506140ER - STANDARD PRECAST MANHOLE  
NTS

ITEM 664.506140ER - MANHOLE NOTES:

- THE COST OF ALL ITEMS AS DETAILED ABOVE TO BE INCLUDED IN ITEM 664.506140ER UNLESS OTHERWISE NOTED.
- WHEN P.V.C. PIPE IS USED, THE MANHOLE WILL BE SUPPLIED WITH A WATERTIGHT BOOT SEAL(S). MATERIALS MUST MEET OR EXCEED A.S.T.M. C-923.
- THIS DRAWING REPRESENTS, IN GENERAL, A STANDARD MANHOLE IN WHICH THE INLET/OUTLET CONNECTION IS SHOWN IN A POSITION TO FIT THE PARTICULAR CONDITION. THIS DRAWING WILL ACCOMPANY THE LOCATION PLAN FOR EACH MANHOLE AND MUST BE ADJUSTED TO FIT THAT LOCATION. THE GENERAL IDEA AS TO SIZES, CONSTRUCTION AND MINOR DETAILS REMAINS THE SAME.
- ALL SANITARY AND COMBINED SEWER MANHOLES TO BE COATED ON THE OUTSIDE WITH A BITUMASTIC COATING.
- TRENCH BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE CITY OF BUFFALO DEPT. OF PUBLIC WORKS LATEST SPECIFICATIONS WITH REGARD TO PAVEMENT SUBGRADE, PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AND LAWN AREAS EXCEPT WHERE OTHERWISE NOTED IN THE PLANS.
- THE COST OF PAVEMENT SAWCUTTING, EXCAVATION, DISPOSAL OF SURPLUS EXCAVATED MATERIAL, REMOVAL OF EXISTING STRUCTURES, FRAMES AND COVERS, NEW STRUCTURES, FORMWORK, INSTALLATION, BACKFILL AND COMPACTION, PIPE CONNECTIONS AND SURFACE RESTORATION ARE INCLUDED IN THE COST OF ITEM 664.506140ER MANHOLES.
- WHEN PIPE IS INSTALLED WITH CONCRETE CRADLE MANHOLE SHALL BE PLACED ON A MINIMUM OF FOUR (4) SOLID CONCRETE BLOCKS AND A MINIMUM OF 8" CONCRETE BEDDING SHALL BE PLACED BENEATH MANHOLE.
- PAYMENT FOR MANHOLES IS MEASURED IN LINEAR FEET FROM THE RIM ELEVATION TO THE BOTTOM OF THE STRUCTURE. PAYMENT FOR ALL PIPE REQUIRED TO CONNECT A MANHOLE TO AN EXISTING SEWER SHALL BE INCLUDED IN THE MANHOLE ITEM, 664.506140ER.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

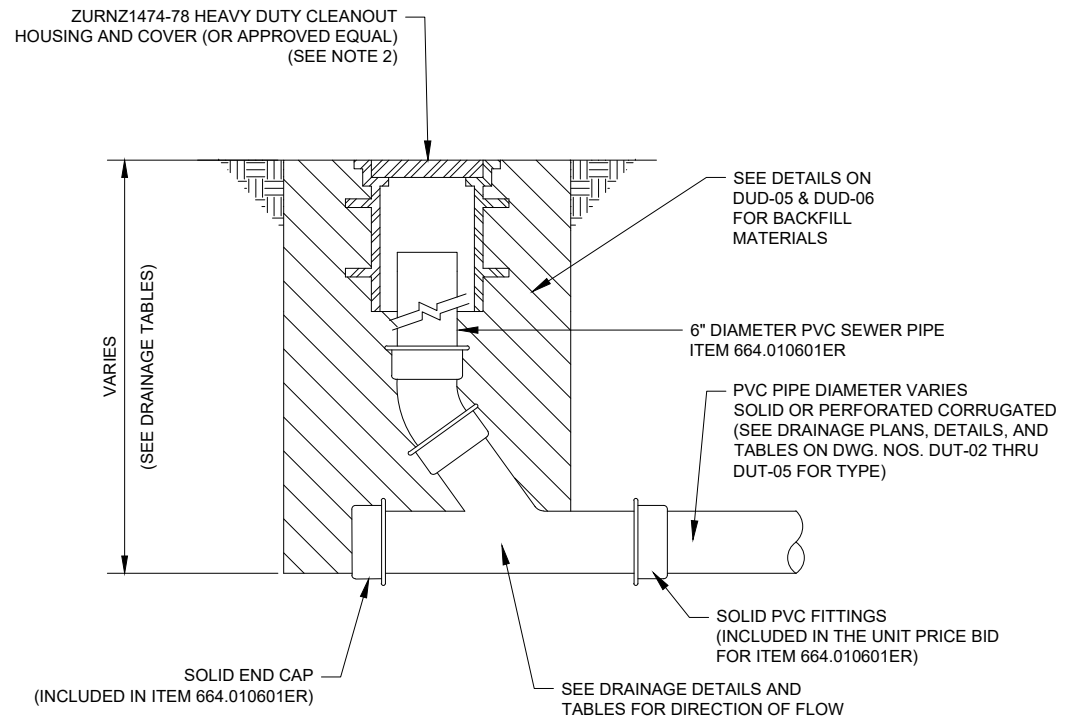
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAIANGE DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. DUD-03  
SHEET NO. 65

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NOTES:

1. COST FOR CLEANOUTS WITH CONCRETE COLLAR TO BE PAID UNDER ITEM 656.01 UNLESS OTHERWISE NOTED ABOVE.
2. BODY MATERIAL SHALL BE DURA-COATED CAST IRON WITH INTEGRAL ANCHOR FLANGE. COVER SHALL BE SECURED AND SCORIATED, INCLUDE A LIFTING DEVICE AND A BRASS SPECIAL MARKING TAB LABELED "CLEANOUT".

## TYPICAL UNDERDRAIN POSITIONING IN LANDSCAPED STORMWATER CATCHMENT AREA

NOTES:

1. GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT AREAS WITHIN A 10-FOOT LATERAL OFFSET FROM THE OUTSIDE EDGES OF EXISTING STORM SEWERS, COMBINED AND SANITARY SEWERS, AND WATER LINES. INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER AS INDICATED IN SECTION A-A AND SECTION B-B ON DWG. NOS. DUD-05 AND DUD-06. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.
2. SEE DWG. NOS. MD-03 THRU MD-06 FOR PLANTER DIMENSIONS AND PLANTING LAYOUT.
3. SEE DRAINAGE STRUCTURE TABLES ON DUT-02 THRU DUT-05 FOR DETAILED INFORMATION ON PROPOSED LATERALS INCLUDING PIPE SIZE, CONNECTION AND QUANTITIES.
4. ALL RUNS OF UNDERDRAIN SHALL BE PLACED AT A 4-FOOT MINIMUM LATERAL OFFSET FROM EXISTING AND PROPOSED TREES.
5. SEE DETAILS ON DWG. NO. DUD-05 FOR SECTION A-A AND SECTION B-B FOR STORMWATER CATCHMENT AREAS BENEATH PLANTERS.
6. SEE DETAILS ON DWG. NO. DUD-06 FOR SECTION A-A AND SECTION B-B FOR STORMWATER CATCHMENT AREAS BENEATH GRASS.
7. SEE GENERAL PLAN DRAWINGS FOR SURFACE TREATMENT TYPE.
8. UNDERDRAIN PIPE SHALL BE PERFORATED (ITEM 605.1502) IN STORMWATER CATCHMENT AREAS. UNDERDRAIN PIPE SHALL BE SOLID (ITEM 664.010601ER) ELSEWHERE.
9. SOTRMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERRAIN PIPE AND STORM SEWER PIPE SHALL BE PLACED AT A 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
10. SEE DWG. NO. MT-02 FOR TREE PLANTING TABLE WITH OFFSETS.
11. PRIOR TO ORDERING THE STRUCTURE, A TEST PIT MAY BE NECESSARY TO CONFIRM SPACE AVAILABLE FOR INSTALLATION. SEE DRAINAGE PLAN DRAWINGS FOR TEST PIT LOCATIONS AND NOTES.
12. STORMWATER CATHCMENT AREAS VARY IN DIMENSION. SEE DRAINAGE PLAN DRAWINGS FOR LOCATIONS AND LAYOUT.
13. SEE DWG. NO. MT-03 FOR CURB PLACEMENT TABLE.
14. THERE SHALL BE NO STORMWATER CATCHMENT AREAS WITHIN CRITICAL ROOT ZONES (CRZ) OF EXISTING TREES TO REMAIN. SEE DETAILS ON DWG. NO. DUD-07 FOR PLANTINGS WITHIN A CRZ AND STORMWATER CATCHMENT AREAS ADJACENT TO CRZ'S.

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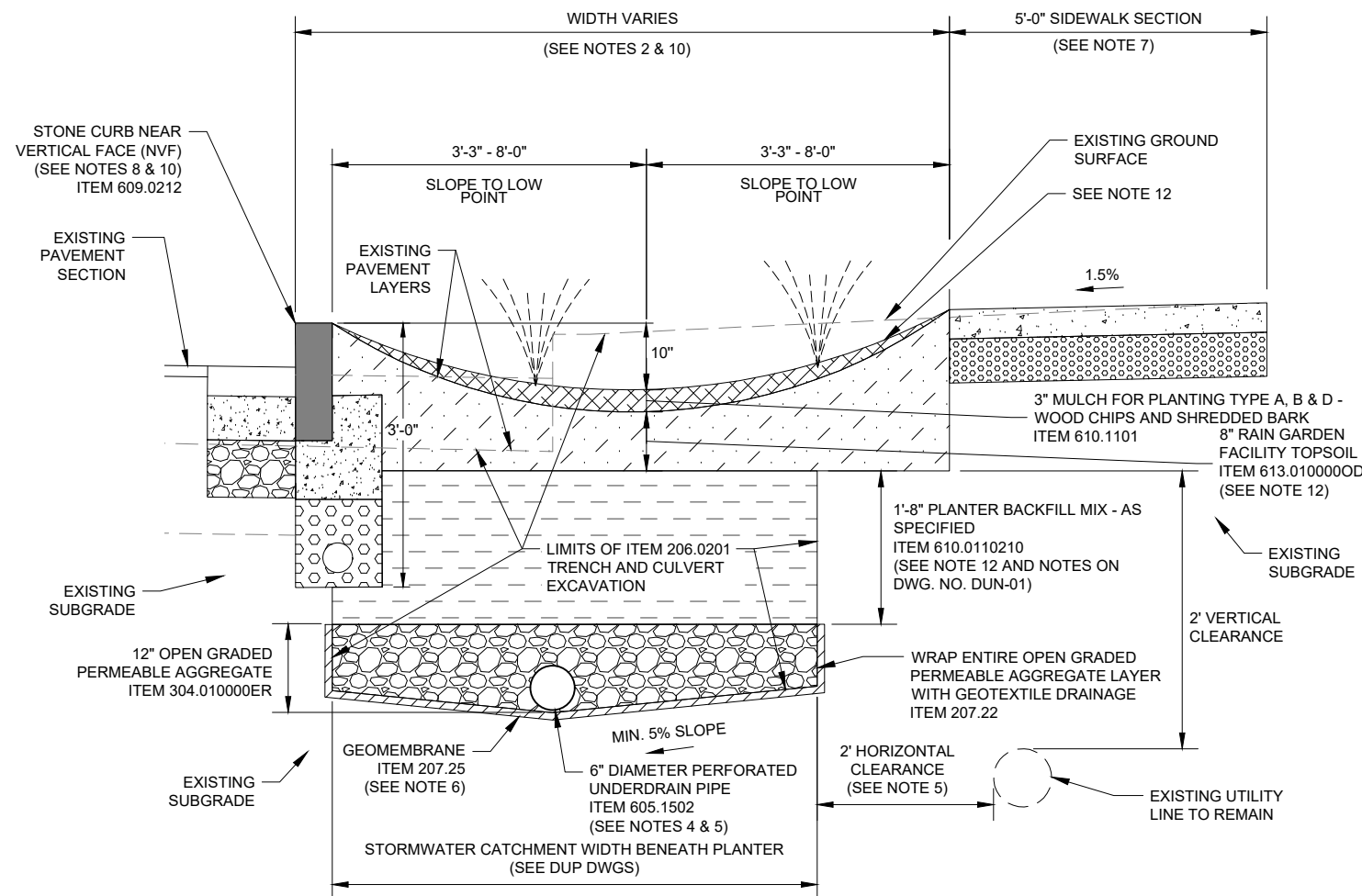


**Watts  
Architects  
& Engineers**

SHEET NO. 66

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**PLANTER AREA WITH STORMWATER  
CATCHMENT SECTION**  
(SECTION B-B ON DWG. NO. DUD-04)  
NTS

1. SEE DWG. NO. DUD-04 FOR PLAN VIEW AND SECTION LOCATIONS.
2. SEE DWG. NOS. MD-03 THRU MD-06 FOR PLANTER DIMENSIONS AND PLANTING LAYOUT.
3. SEE DWG. NOS. DUT-02 THRU DUT-05 FOR DRAINAGE STRUCTURE TABLES.
4. ALL RUNS OF UNDERDRAIN SHALL BE PLACED AT A MINIMUM 4-FOOT LATERAL OFFSET FROM EXISTING AND PROPOSED TREES.
5. ALL STORMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERDRAIN PIPE SHALL BE PLACED AT A 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
6. GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT AREAS WITHIN A 10-FOOT LATERAL OFFSET FROM THE OUTSIDE EDGES OF EXISTING SEPARATED STORM SEWERS, COMBINED AND SANITARY SEWERS, AND WATERLINES . INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER AS INDICATED ABOVE. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.
7. THE EXISTING SIDEWALK SHALL BE REMOVED AND REPLACED IN SPOT LOCATIONS ONLY. SEE GENERAL PLANS FOR REPLACEMENT LOCATIONS.
8. SEE CURB INSTALLATION DETAIL ON DWG. NO. MD-01.
9. SEE DWG. NO. MT-02 FOR TREE PLANTING TABLE WITH OFFSETS.
10. CURB REALIGNMENT IS REQUIRED IN SOME LOCATIONS WHERE STORMWATER CATCHMENT IS PROPOSED. SEE CURB REALIGNMENT DETAIL ON DWG. NO. TS-02 FOR PAY ITEMS.
11. DISHED PLANTER SURFACE AND 2'-4" RAIN GARDEN FACILITY TOPSOIL LAYER (ITEM 613.010000OD) SHALL EXTEND THROUGH THE ENTIRE FOOTPRINT OF THE PLANTER, EXCLUSIVE OF CRITICAL ROOT ZONES. SEE DWG. NO. DUD-07 FOR DETAILS ON PLANTING IN CRITICAL ROOT ZONES.
12. DISHED PLANTER SURFACE AND 8" RAIN GARDEN FACILITY TOPSOIL LAYER (ITEM 613.010000OD) SHALL EXTEND THROUGH THE ENTIRE FOOTPRINT OF THE PLANTER, EXCLUSIVE OF CRITICAL ROOT ZONES. SEE DWG. NO. DUD-07 FOR DETAILS ON PLANTING IN CRITICAL ROOT ZONES.



**Watts  
Architects  
&Engineers**

|                       |        |
|-----------------------|--------|
| CITY OF BUFFALO       |        |
| ERIE COUNTY, NEW YORK |        |
| DRAWING NO.           | DUD-05 |
| SHEET NO.             | 67     |

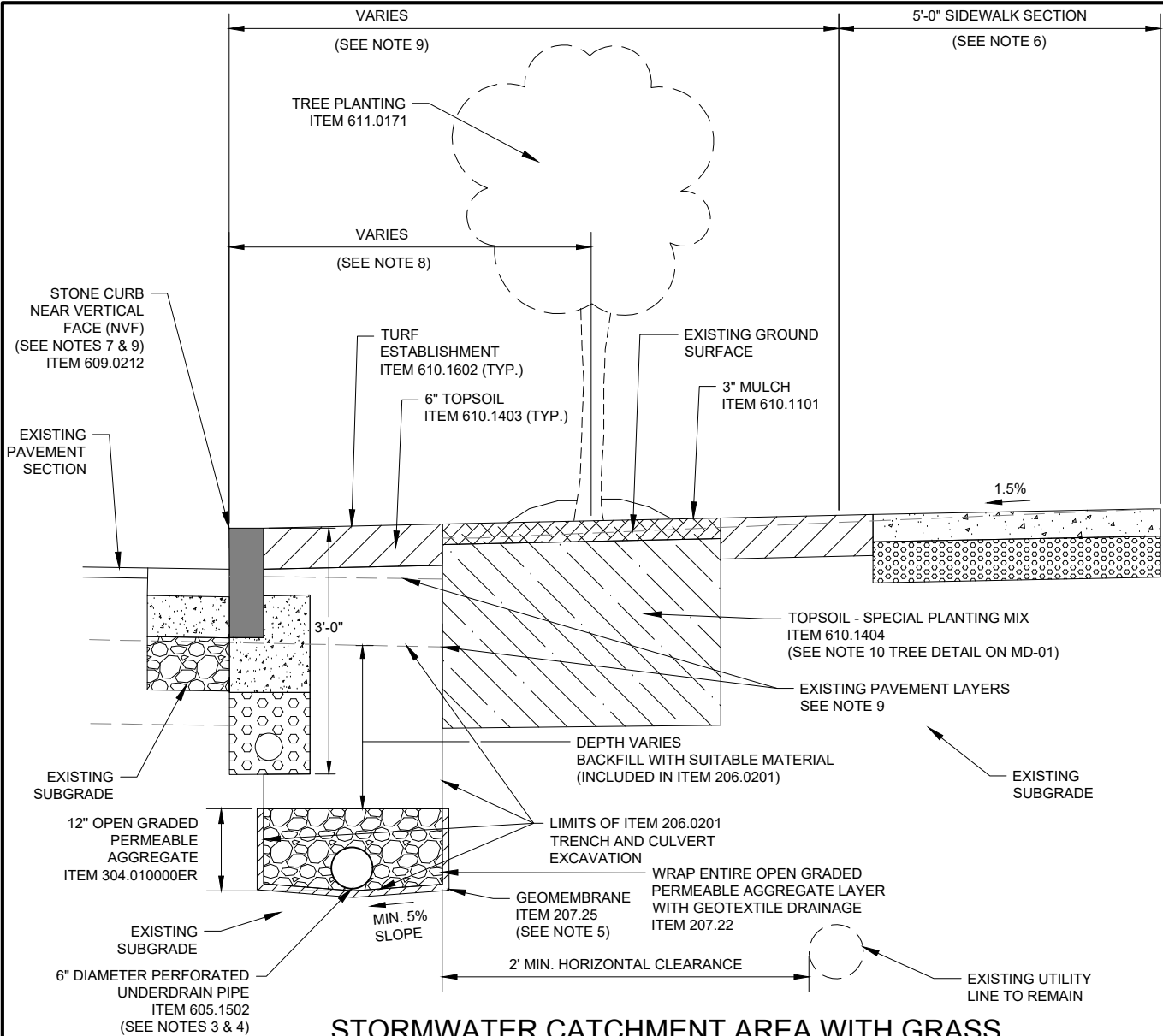
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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CONSTRUCTION

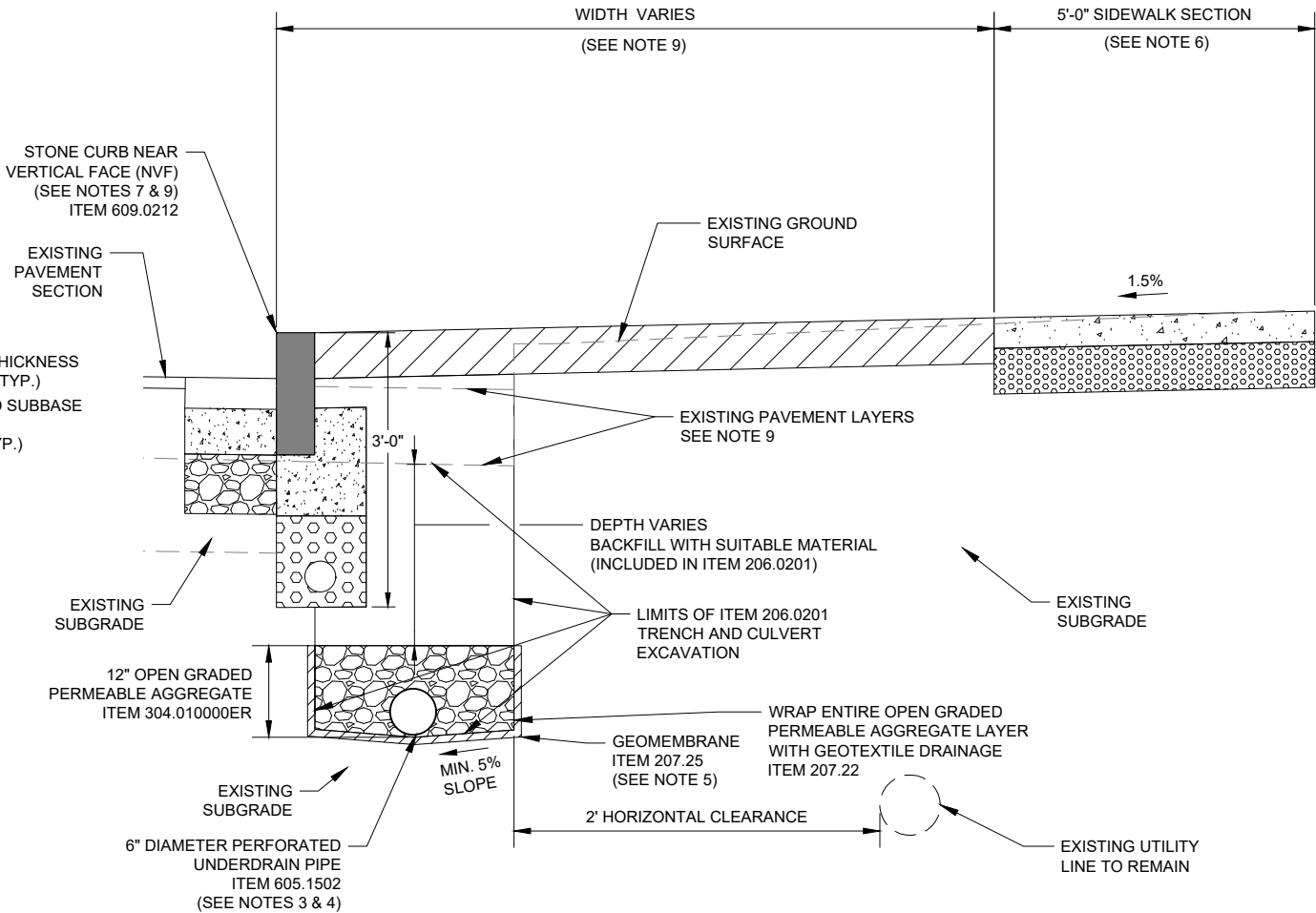


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JOB MANAGER T. DUK  
DESIGN J. ROSS  
CHECK T. BUCKLEY  
DRAFTING T. BUCKLEY  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO



**STORMWATER CATCHMENT AREA WITH GRASS**  
**SECTION AT PROPOSED TREE LOCATIONS**  
(SECTION A-A ON DWG. NO. DUD-04)  
NTS



**STORMWATER CATCHMENT AREA**  
**WITH GRASS SECTION**  
(SECTION B-B ON DWG. NO. DUD-04)  
NTS

**NOTES:**

1. SEE DWG. NO. DUD-04 FOR PLAN VIEW AND SECTION LOCATIONS.
2. SEE DWG. NOS. DUT-02 THRU DUT-05 FOR DRAINAGE STRUCTURE TABLES.
3. ALL RUNS OF UNDERDRAIN SHALL BE PLACED AT A MINIMUM 4-FOOT LATERAL OFFSET FROM EXISTING AND PROPOSED TREES.
4. ALL STORMWATER CATCHMENT AREAS AND NEW RUNS OF UNDERDRAIN PIPE SHALL BE PLACED AT A MINIMUM 2-FOOT LATERAL OFFSET FROM ALL EXISTING UTILITIES.
5. GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT AREAS WITHIN A 10-FOOT LATERAL OFFSET FROM THE OUTSIDE EDGES OF EXISTING SEPARATED STORM SEWERS, COMBINED AND SANITARY SEWERS, AND WATERLINES. INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER AS INDICATED ABOVE. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.
6. THE EXISTING SIDEWALK SHALL BE REMOVED AND REPLACED IN SPOT LOCATIONS ONLY. SEE GENERAL PLANS FOR REPLACEMENT LOCATIONS.
7. SEE CURB INSTALLATION DETAIL ON DWG. NO. MD-01.
8. SEE DWG. NO. MT-02 FOR TREE PLANTING TABLE AND OFFSETS.
9. CURB REALIGNMENT IS REQUIRED IN SOME LOCATIONS WHERE STORMWATER CATCHMENT IS PROPOSED. SEE CURB REALIGNMENT DETAIL ON DWG. NO. TS-02 FOR PAY ITEMS.
10. NEW TREE PITS AT STATION 181+49 LT., 181+96 LT. & 182+35 LT. SHALL BE RECTANGULAR, 10 FEET PARALLEL TO THE CURB LINE AND 6 FEET IN WIDTH PERPENDICULAR TO THE CURB LINE.

|                                           |                    |
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AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



**BUFFALO**  
SEWER AUTHORITY

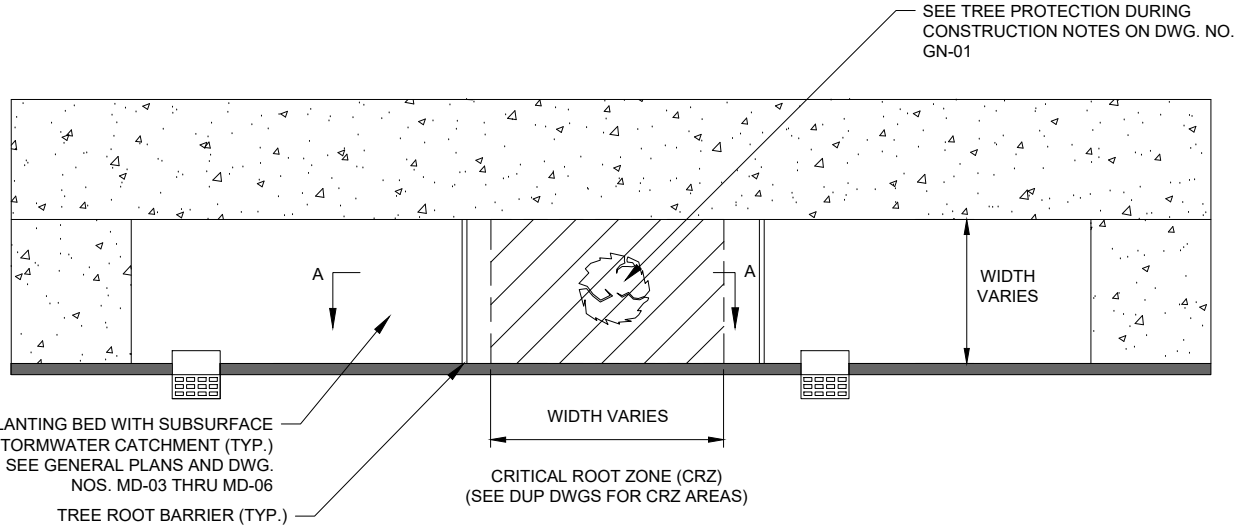


ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED  
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PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE DETAILS

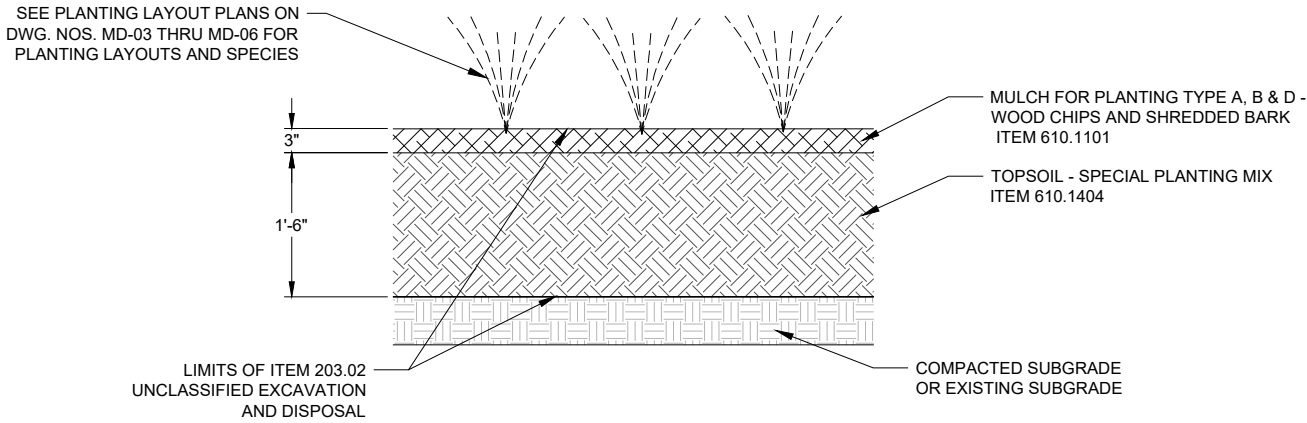
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ERIE COUNTY, NEW YORK  
DRAWING NO. **DUD-06**  
SHEET NO. **68**

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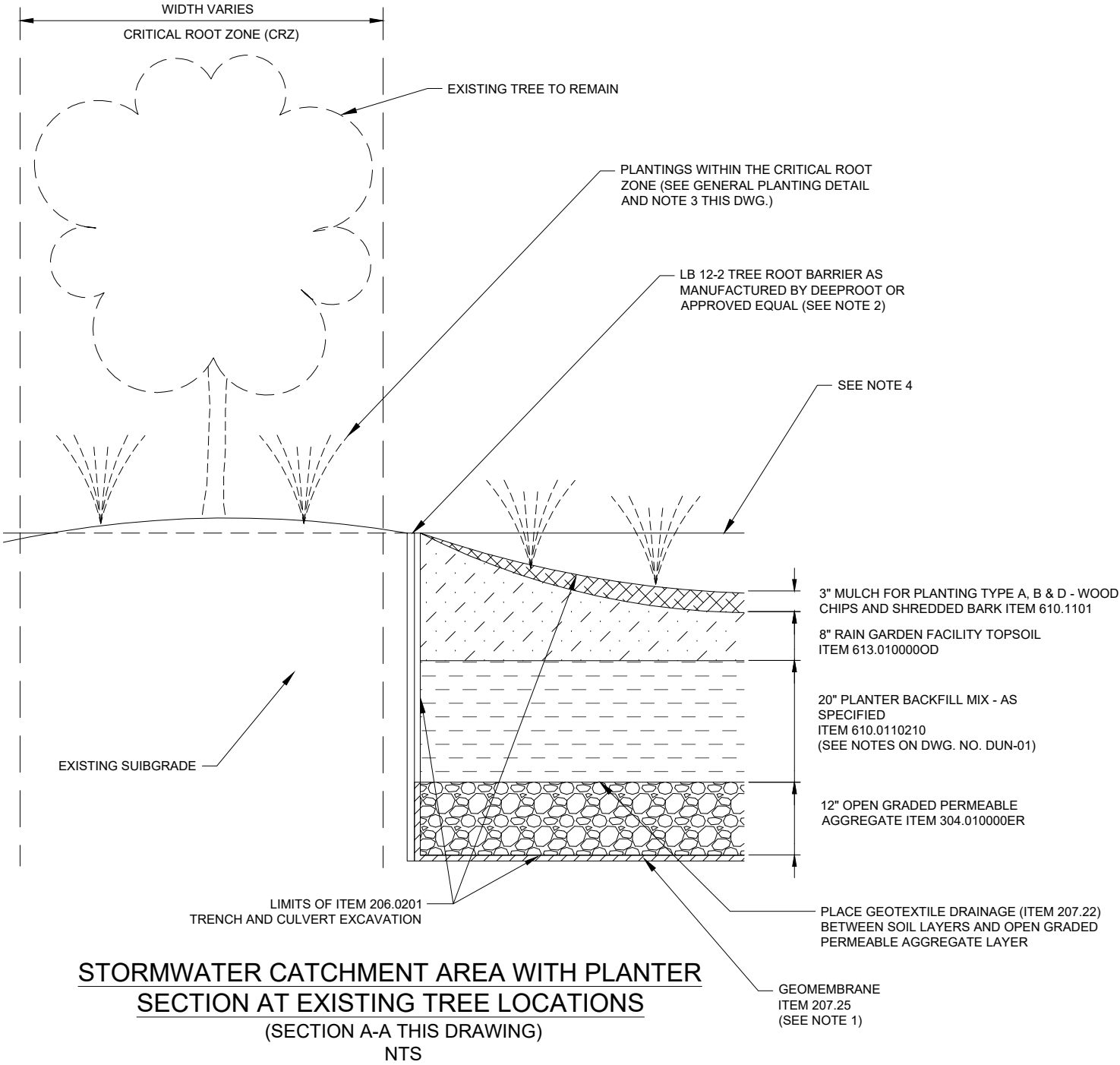




PLAN VIEW  
STORMWATER PLANTER WITH EXISTING TREE TO REMAIN  
NTS



GENERAL PLANTING DETAIL  
(FOR PLANTERS WITHOUT A STORMWATER CATCHMENT AREA)  
NTS



STORMWATER CATCHMENT AREA WITH PLANTER  
SECTION AT EXISTING TREE LOCATIONS  
(SECTION A-A THIS DRAWING)  
NTS

- NOTES:
- GEOMEMBRANE IS REQUIRED FOR ALL STORMWATER CATCHMENT AREAS WITHIN A 10-FOOT LATERAL OFFSET FROM THE OUTSIDE EDGES OF EXISTING SEPARATED STORM SEWERS, COMBINED AND SANITARY SEWERS, AND WATERLINES. INSTALL GEOMEMBRANE AT THE BOTTOM OF THE PROPOSED EXCAVATION AND ALONG THE TRENCH WALLS TO THE TOP OF THE PROPOSED OPEN GRADED PERMEABLE AGGREGATE LAYER AS INDICATED IN THE SECTION ABOVE. SEE GEOMEMBRANE TABLE ON DWG. NO. DUT-01.
  - TREE ROOT BARRIER SHALL BE OFFSET BY A MINIMUM OF 6" FROM THE CRITICAL ROOT ZONE (CRZ). TOP ELEVATION OF TREE ROOT BARRIER TO BE SET 2" BELOW TOP OF CURB AND ABOVE HIGHEST STORM WATER PLANTER SOIL ELEVATION. PAYMENT TO BE MADE UNDER THE UNIT PRICE BID FOR ITEM 613.010000D RAIN GARDEN FACILITY TOP SOIL.
  - PLANT BETWEEN TREE ROOTS WHERE SPACE ALLOWS WITHOUT DAMAGING ROOTS. WHEN PLANTING WITHIN THE CRITICAL ROOT ZONE: CLEAR AND EXCAVATE BY HAND OR WITH AIR SPADE TO THE DEPTH OF THE REQUIRED EXCAVATION TO MINIMIZE DAMAGE TO THE TREE ROOT SYSTEMS. IF EXCAVATING BY HAND, USE NARROW-TINE SPADE FORKS TO COMB SOIL TO EXPOSE ROOTS. DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PLACING PERMANENT BACKFILL. PROVIDE TEMPORARY EARTH COVER OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP. WATER AND MAINTAIN IN MOIST CONDITION. TEMPORARILY SUPPORT AND PROTECT ROOTS FROM DAMAGE UNTIL THEY ARE PERMANENTLY COVERED WITH SOIL. THERE WILL BE NO SEPARATE PAYMENT MADE FOR ANY REQUIRED HAND-DIGGING OR AIR-SPADE EXCAVATION ASSOCIATED WITH PLANTING IN AREAS WITH EXISTING TREE ROOTS.
  - SEE DWG. NOS. DUD-05 AND DUD-06 FOR COMPLETE SECTIONS OF STORMWATER CATCHMENT AREAS.

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE DETAILS

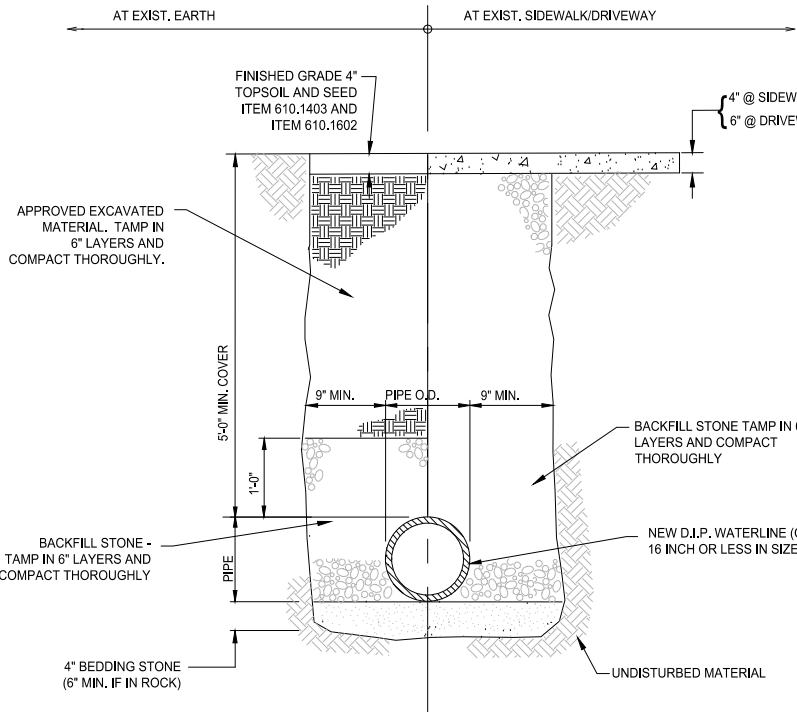
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUD-07  
SHEET NO. 69

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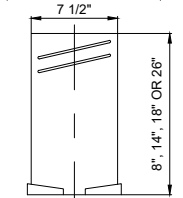
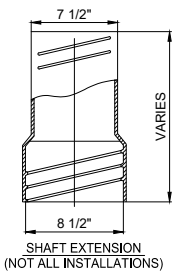
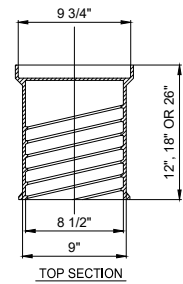
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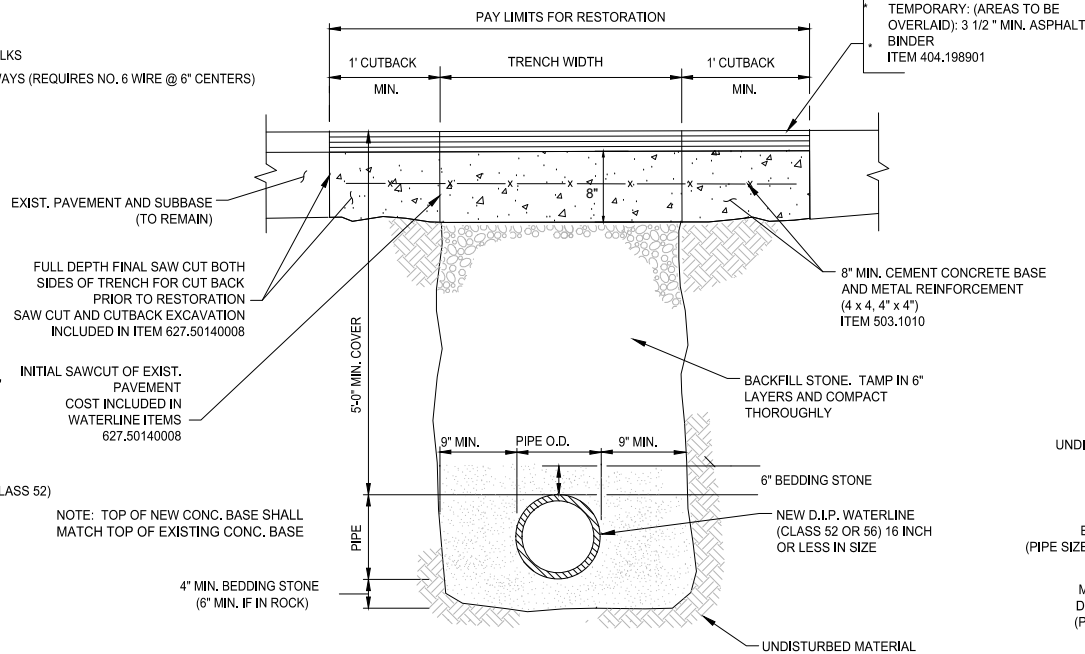
#### TRENCH DETAIL

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



#### 6" WATER VALVE BOX

ALL WORK INCLUDED IN ITEM 663.100600ER UNLESS OTHERWISE NOTED ABOVE

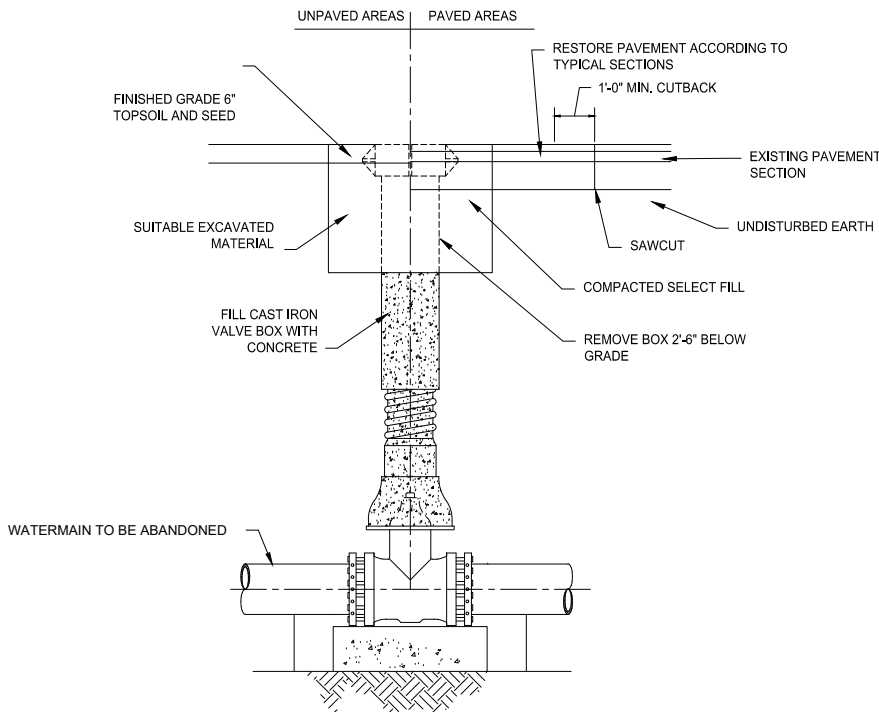


NOTE: TOP OF NEW CONC. BASE SHALL MATCH TOP OF EXISTING CONC. BASE

NOTE: FOR FINAL RESTORATION IN MILL AND OVERLAY AREAS: MILL 1 1/2", CURB TO CURB WITHIN LIMITS SHOWN ON PLANS AND OVERLAY WITH 1 1/2" ASPHALT TOP COURSE.

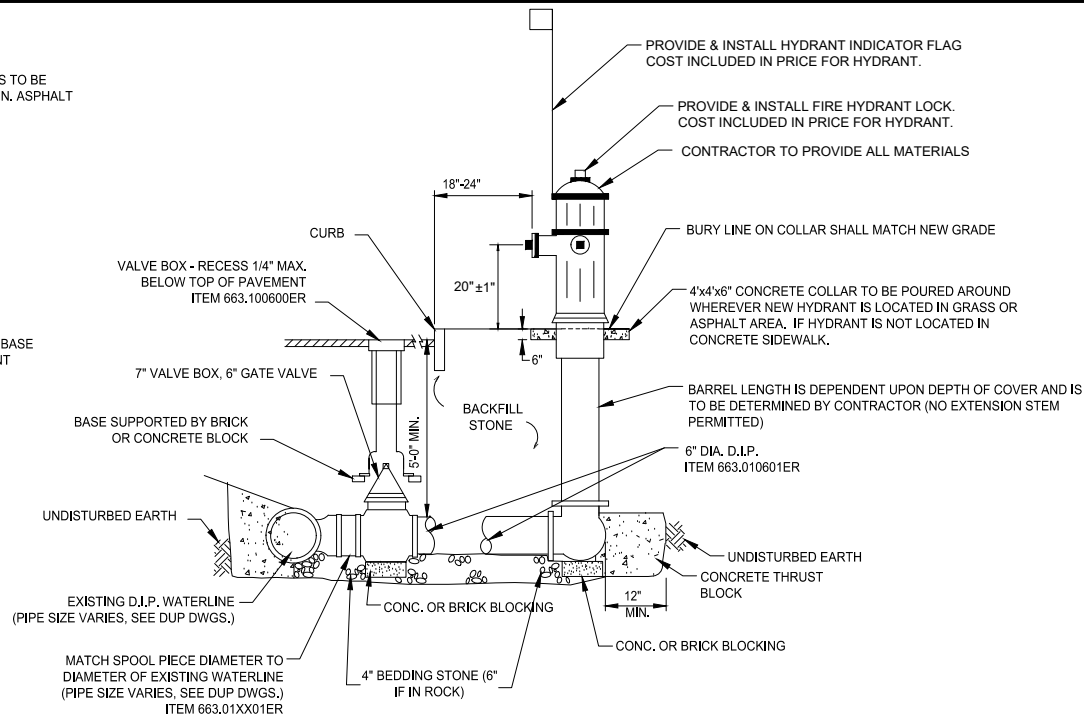
#### TRENCH DETAIL IN STREET

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



#### EXISTING VALVE BOX ABANDONMENT

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE

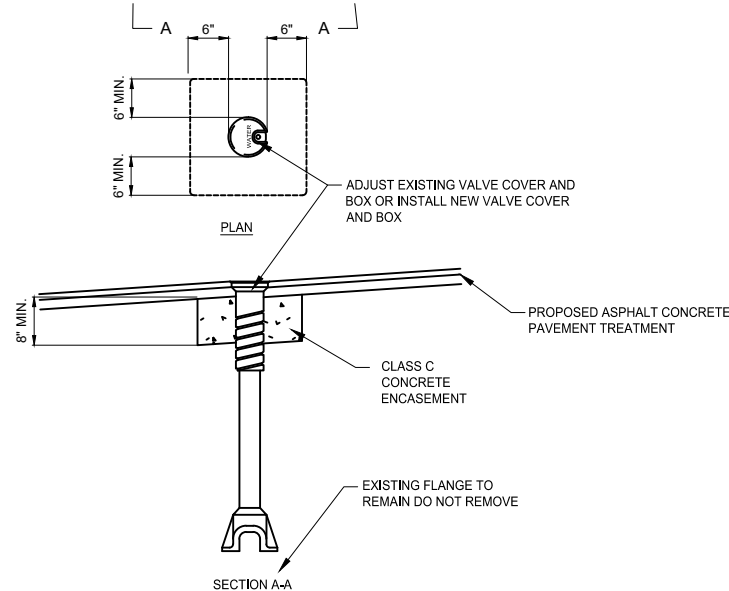


#### NOTES:

- BEFORE SETTING HYDRANT, THE CONTRACTOR SHALL UNPLUG THE WASTE OPENING IN THE BOWL OF HYDRANT AS DIRECTED BY THE ENGINEER IF NOT ALREADY UNPLUGGED BY THE MANUFACTURER.
- ALL 6" PIPING SHALL BE RESTRAINED FROM THE HYDRANT TO THE BRANCH OF TEE INCLUDING HYDRANT, VALVE, BRANCH AND TEE OR THRUST BLOCKS PLACED AT TEE AND HYDRANT AS SHOWN ON DETAIL.
- BACKFILL WITH #2 CRUSHED STONE TO BOTTOM OF PAVEMENT SUBBASE ELEVATION, TAMP IN 6" LAYERS, PLACE 4" (6" IF IN ROCK) OF #1 WASHED STONE FOR BEDDING OF BRANCH PIPING.
- HYDRANT SHALL NOT BE LOCATED IN ANY CURB RADIUS. HYDRANT LOCATIONS SHALL BE DETERMINED BY THE DIVISION OF WATER'S ENGINEER GIVEN 24 HOUR NOTICE.
- HYDRANTS SHALL BE INSTALLED ABOVE THE SEASONAL GROUNDWATER TABLE. WHEN INSTALLATION BELOW THE SEASONAL GROUNDWATER TABLE IS NECESSITATED, HYDRANT DRAINS SHALL BE PLUGGED.

#### HYDRANT INSTALLATION

ALL WORK INCLUDED IN ITEM 663.131000ER, OR ITEM 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



#### WATERLINE VALVE BOX TOP SECTION

ADJUSTMENT/INSTALLATION IN ROADWAY DETAIL- ITEM 663.302000ER

NOT TO SCALE

ALL WORK INCLUDED IN ITEM 663.302000ER UNLESS OTHERWISE NOTED ABOVE

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

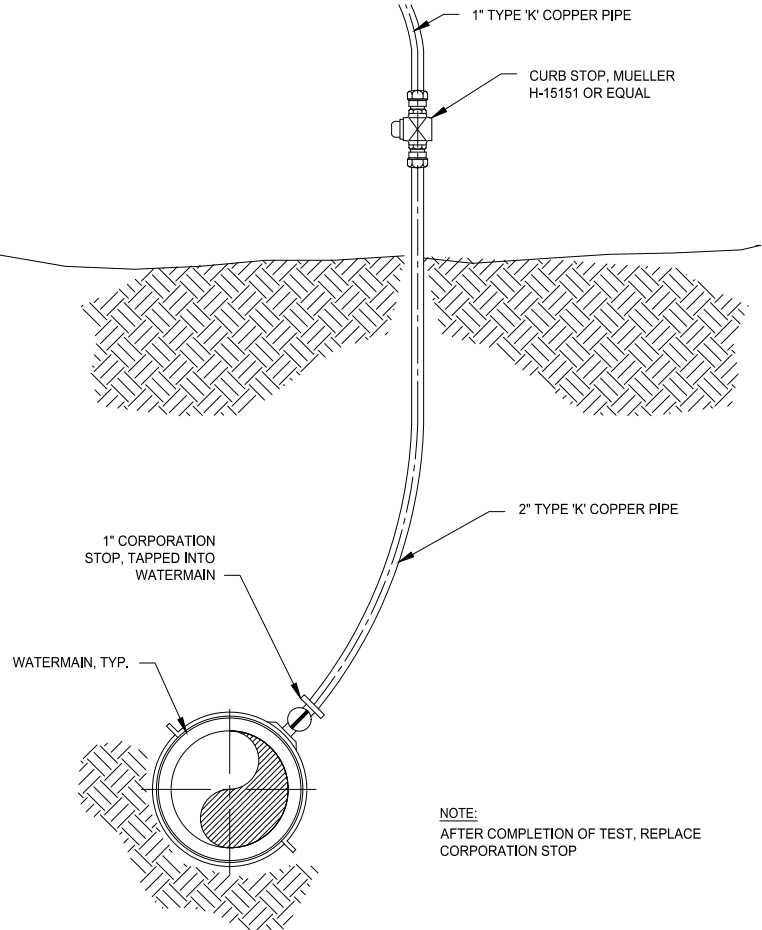
DRAWING NO. DUD-08  
SHEET NO. 70

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DATE/TIME = 12/12/2022 11:24:25 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN J. KOCH  
CHECK J. ROSS  
DRAFTING J. KOCH  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO

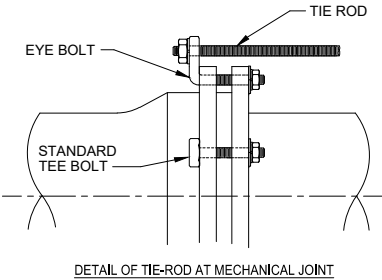


TEMPORARY BLOW-OFF/SAMPLING POINT

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE

NOTES:

1. RESTRAINED MECHANICAL JOINTS SHOWN EXCEPT AS NOTED.
2. TIE TOP BENDS BACK TO FULL LENGTHS IN UNEXCAVATED TRENCH
3. VALVES, TEES AND HYDRANTS MAY BE HARNESSSED SIMILARLY.
4. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURES-PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
5. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
6. TIE RODS SHALL BE PLACED ON SIDES OF PIPE

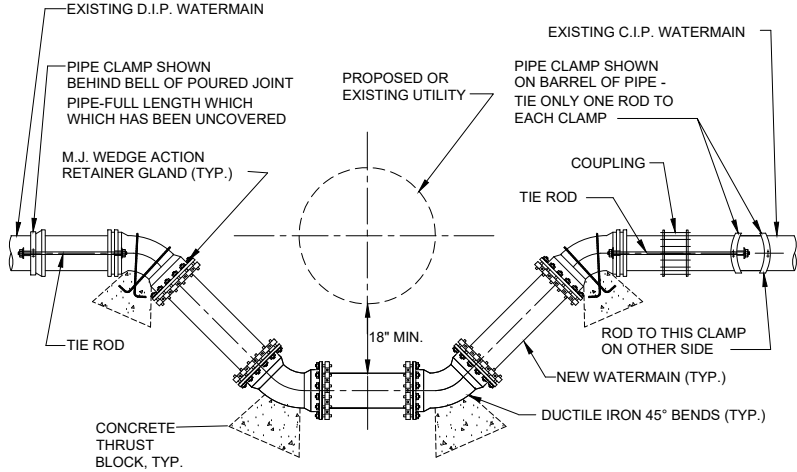


DETAIL OF TIE-ROD AT MECHANICAL JOINT

| TIE ROD SCHEDULE |           |        |                |
|------------------|-----------|--------|----------------|
| PIPE SIZE        | PIPE TYPE | ROD Ø  | NUMBER OF RODS |
| 6"               | DIP       | 13/16" | 2              |
| 8"               | DIP       | 1"     | 2              |
| 10" OR 12"       | DIP       | 1-3/8" | 2              |
| 16"              | DIP       | 1-3/8" | 4              |

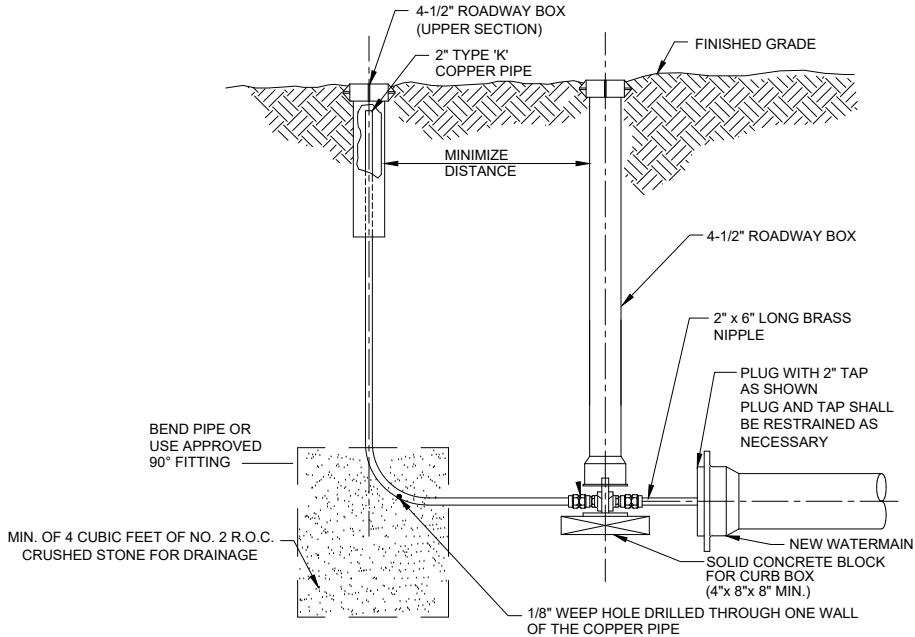
TYPICAL CAST IRON PIPE HARNESSING DETAILS-USED FOR CHANGES IN VERTICAL PIPE ALIGNMENT

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



PROFILE OF VERTICAL DEFLECTION

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



PLUG/BLOCK/BLOW-OFF

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY

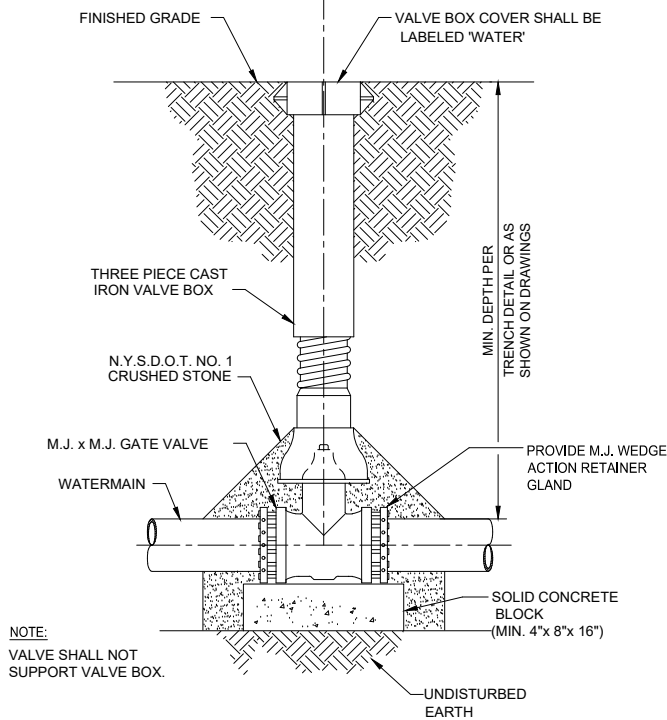


ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY DETAILS

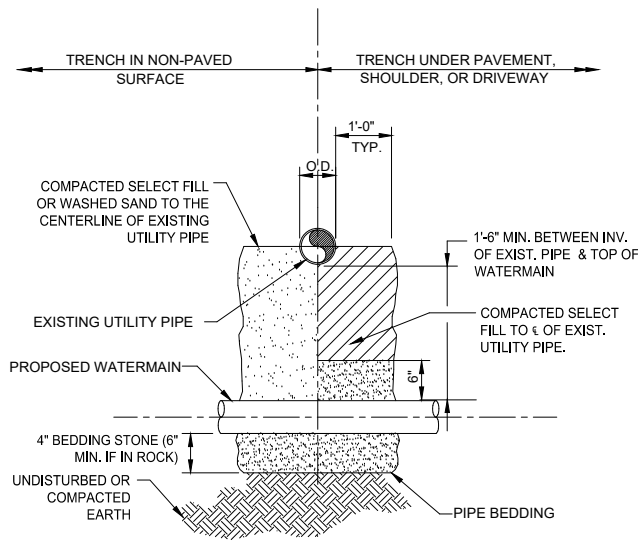
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUD-09  
SHEET NO. 71

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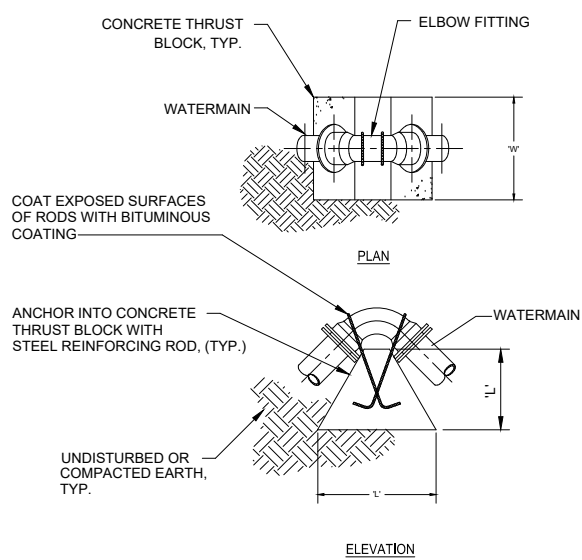


**GATE VALVE SETTING**  
ALL WORK INCLUDED IN ITEM 663.10XX001ER UNLESS OTHERWISE NOTED ABOVE



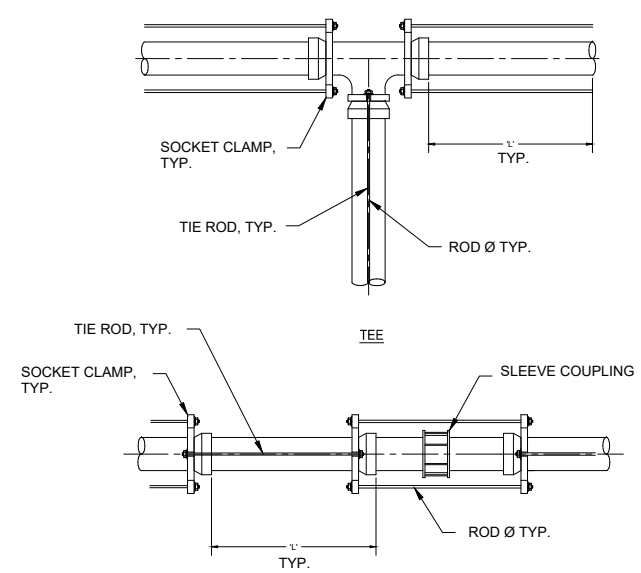
- NOTES:**
1. ALL EXISTING UTILITIES MUST BE SUPPORTED DURING CONSTRUCTION OF THE NEW WATERMAIN. COST SHALL BE INCLUDED IN PIPE PRICE.
  2. WHEN CROSSING A SEWERLINE WITH A NEW WATERMAIN, ONE FULL PIPE LENGTH (18 FT. MIN.) SHALL BE USED AT THE POINT OF CROSSING. THE WATERMAIN SHALL BE PLACED SO THAT BOTH JOINT ENDS ARE AS FAR AS POSSIBLE FROM THE EXISTING SEWERLINE.

**TYPICAL PIPE CROSSING**  
ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



| DIMENSION SCHEDULE |           |           |       |              |                |
|--------------------|-----------|-----------|-------|--------------|----------------|
| PIPE SIZE          | PIPE TYPE | 45° ELBOW |       |              |                |
|                    |           | "W"       | "L"   | # RODS-BAR # | MIN. EMBEDMENT |
| 6"                 | DIP       | 1'-6"     | 1'-6" | 1-#10        | 6"             |
| 8"                 | DIP       | 2'        | 1'-8" | 2-#13        | 6"             |
| 10" OR 12"         | DIP       | 3'        | 2'    | 2-#16        | 7"             |
| 16"                | DIP       | 3.5'      | 2'-6" | 2-#19        | 8"             |

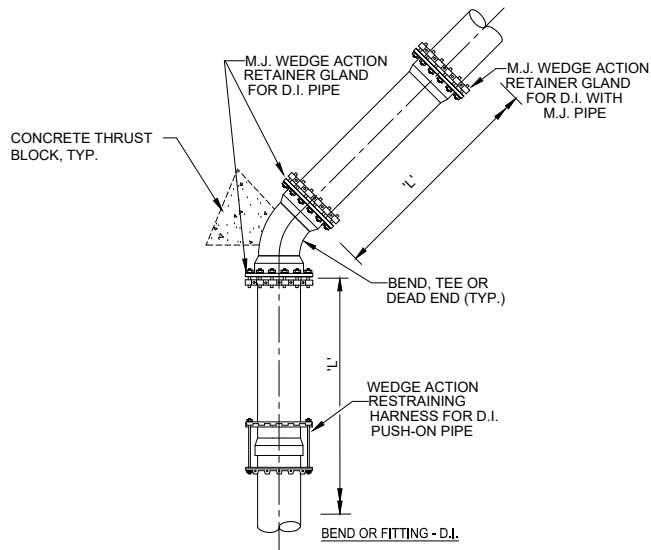
**THRUST BLOCK FOR VERTICAL BEND**  
ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



| TIE ROD SCHEDULE |                           |     |
|------------------|---------------------------|-----|
| PIPE SIZE        | TEE, 90° BEND OR DEAD END |     |
|                  | # RODS - Ø                | "L" |
| 8"D.I.           | 2-1"                      | 33' |
| 10" OR 12" D.I.  | 2-1 3/8"                  | 47' |
| 16" D.I.         | 4-1 3/8"                  | 61' |

- NOTES:**
1. TIE ROD SCHEDULE DOES NOT APPLY TO HYDRANT TEE.
  2. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.
  3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.

**TYPICAL TIE ROD SCHEDULE FOR TEES, 90° BENDS & DEAD ENDS**  
ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



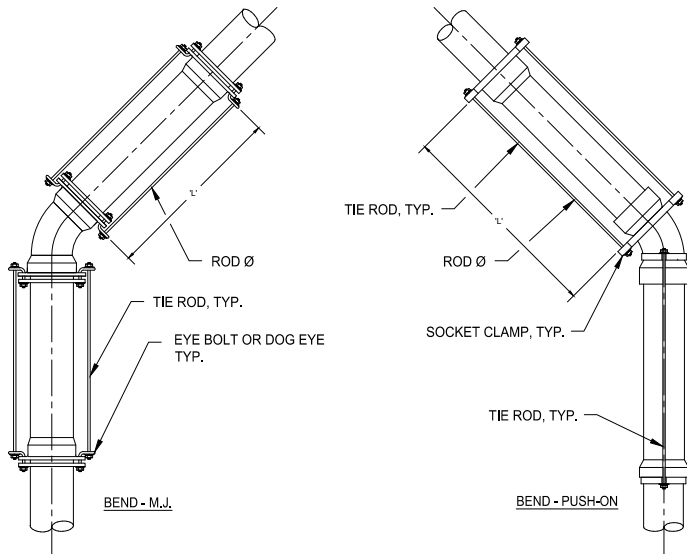
| TEE RESTRAINED JOINT SCHEDULE |                        |              |          |            |
|-------------------------------|------------------------|--------------|----------|------------|
| MAIN<br>PIPE<br>SIZE          | BRANCH<br>PIPE<br>SIZE | PIPE<br>TYPE | TEE      |            |
|                               |                        |              | MAIN 'L' | BRANCH 'L' |
| 12"                           | 4"                     | DIP          | 4'       | 4'         |
| 12"                           | 6"                     | DIP          | 4'       | 4'         |
| 12"                           | 8"                     | DIP          | 4'       | 12'        |
| 12"                           | 12"                    | DIP          | 4'       | 33'        |
| 16"                           | 4"                     | DIP          | 4'       | 4'         |
| 16"                           | 6"                     | DIP          | 4'       | 4'         |
| 16"                           | 8"                     | DIP          | 4'       | 5'         |
| 16"                           | 12"                    | DIP          | 4'       | 27'        |

| LG. PIPE SIZE | SMALL PIPE SIZE | PIPE TYPE | REDUCER        |
|---------------|-----------------|-----------|----------------|
|               |                 |           | LARGE SIDE "L" |
| 8"            | 6"              | DIP       | 14'            |

- NOTES:**
1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.
  2. NO UNRESTRAINED JOINT WITHIN 5 FEET ON EITHER SIDE OF THE TEE FITTING.

| RESTRAINED JOINT SCHEDULE |           |              |             |           |     |       |     |                    |
|---------------------------|-----------|--------------|-------------|-----------|-----|-------|-----|--------------------|
| PIPE SIZE                 | PIPE TYPE | 11.25° ELBOW | 22.5° ELBOW | 45° ELBOW | 90° | VALVE | CAP | VERTICAL 45° ELBOW |
|                           |           | "L"          | "L"         | "L"       | "L" | "L"   | "L" | "L"                |
| 6"                        | DIP       | 2'           | 3'          | 5'        | 12' | 25'   | 25' | 21'                |
| 8"                        | DIP       | 2'           | 4'          | 7'        | 16' | 33'   | 33' | 27'                |
| 10" OR 12"                | DIP       | 3'           | 5'          | 10'       | 22' | 47'   | 47' | 38'                |
| 16"                       | DIP       | 3'           | 6'          | 12'       | 29' | 61'   | 61' | 49'                |

**TYPICAL RESTRAINED JOINT SCHEDULE**  
ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE



**TYPICAL TIE ROD SCHEDULE FOR BENDS 45° AND LESS**  
ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE

| PIPE SIZE       | 45° ELBOW  |     | 22.5° ELBOW |     | 11.25° ELBOW |     |
|-----------------|------------|-----|-------------|-----|--------------|-----|
|                 | # RODS - Ø | "L" | # RODS - Ø  | "L" | # RODS - Ø   | "L" |
| 8" D.I.         | 2-1"       | 7'  | 2-1"        | 4'  | 2-1"         | 2'  |
| 10" OR 12" D.I. | 2-1 3/8"   | 10' | 2-1 3/8"    | 5'  | 2-1 3/8"     | 3'  |
| 16" D.I.        | 4-1 3/8"   | 12' | 4-1 3/8"    | 6'  | 4-1 3/8"     | 3'  |

- NOTE:**
- DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING

**DRAFT  
NOT FOR  
CONSTRUCTION**

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



**BUFFALO**  
SEWER AUTHORITY



ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED  
**NIAGARA STREET CORRIDOR PROJECT**  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY DETAILS

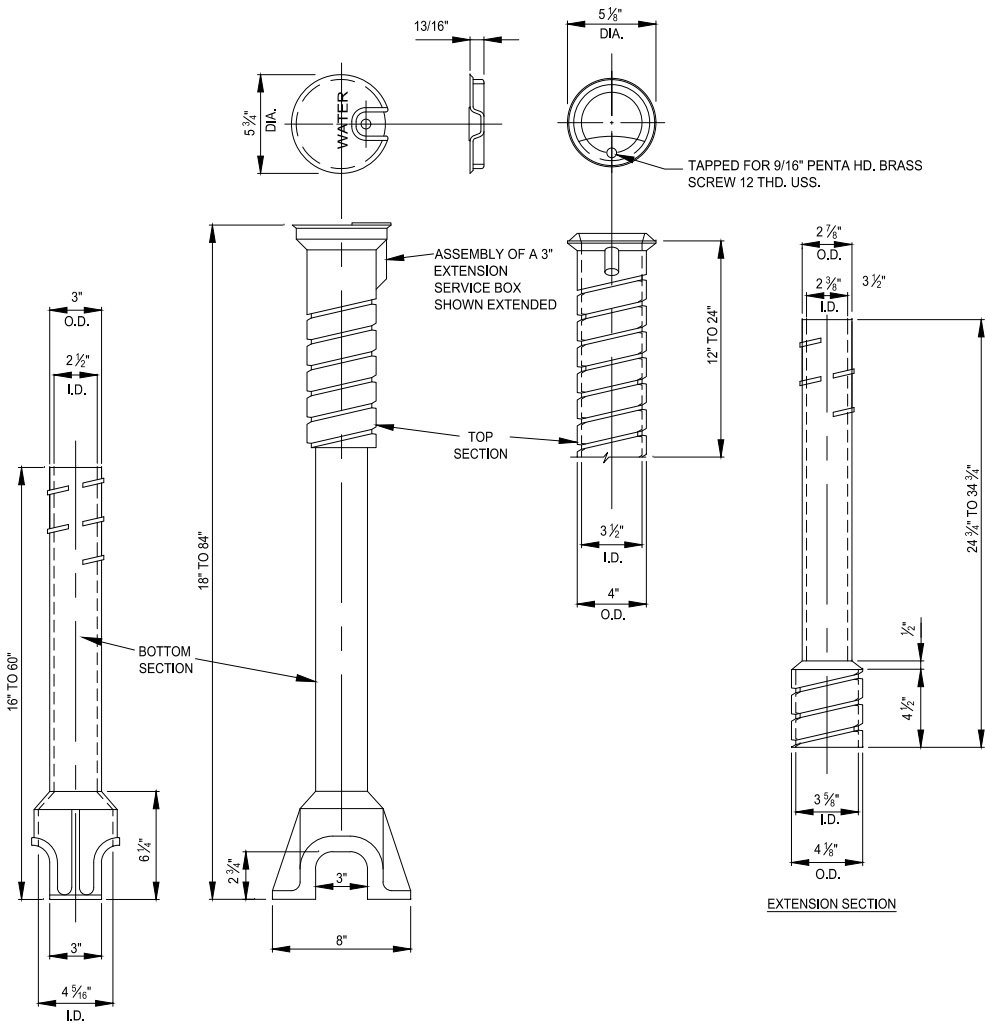
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUD-10  
SHEET NO. 72

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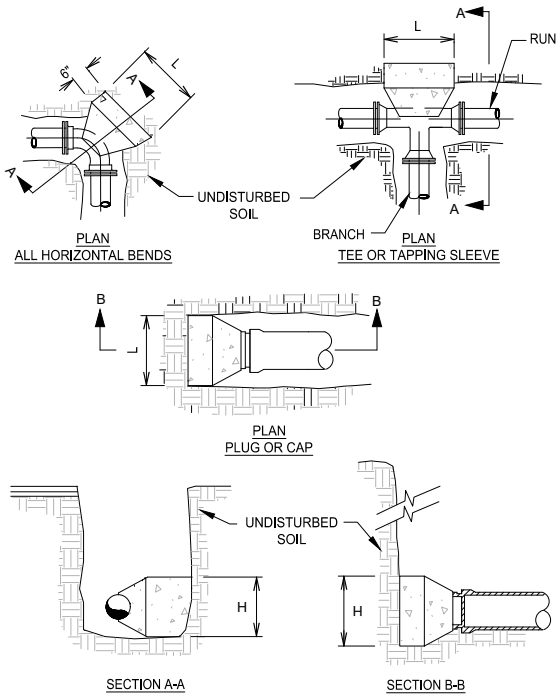
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DATE/TIME = 12/12/2022 11:24:45 AM  
USER = Victoria Coners

JOB MANAGER T. DUK  
DESIGN J. KOCH  
CHECK J. ROSS  
DRAFTING J. KOCH  
CHECK J. ROSS  
PROJECT MANAGER P. GALBO



3" STANDARD EXTENSION SERVICE BOX  
ALL WORK INCLUDED IN ITEM 663.322000ER UNLESS OTHERWISE NOTED ABOVE

| EXTENSION SERVICE BOX DATA  |                        |                       |                       |                          |                          |
|-----------------------------|------------------------|-----------------------|-----------------------|--------------------------|--------------------------|
| PART NO.                    | BOXES EXTENDED FROM-TO | LENGTH OF TOP SECTION | APPROX. WEIGHT OF TOP | LENGTH OF BOTTOM SECTION | APPROX. WEIGHT OF BOTTOM |
| 1 1/2                       | 1'-6" TO 2'-4"         | 12"                   | 9 LB.                 | 16"                      | 10 1/4 LB.               |
| 2                           | 2'-0" TO 3'-3"         | 17"                   | 13 LB.                | 23"                      | 16 1/2 LB.               |
| 3                           | 2'-8" TO 4'-0"         | 17"                   | 13 LB.                | 31"                      | 18 1/4 LB.               |
| 4                           | 2'-10" TO 4'-10"       | 24"                   | 19 3/4 LB.            | 31"                      | 18 1/4 LB.               |
| 5                           | 3'-6" TO 5'-6"         | 24"                   | 19 3/4 LB.            | 40"                      | 23 1/4 LB.               |
| 7                           | 4'-0" TO 6'-0"         | 24"                   | 19 3/4 LB.            | 48"                      | 26 1/4 LB.               |
| 8                           | 5'-0" TO 7'-0"         | 24"                   | 19 3/4 LB.            | 60"                      | 33 LB.                   |
| EXTENSION SECTION           |                        |                       |                       |                          |                          |
| PART NO.                    | LENGTH                 | APPROX. WEIGHT        | INCREASES LENGTH      |                          |                          |
| 155                         | 24 3/4"                | 13 LB.                | 20"                   |                          |                          |
| 156                         | 28 3/4"                | 15 LB.                | 24"                   |                          |                          |
| 157                         | 34 3/4"                | 18 LB.                | 30"                   |                          |                          |
| SERVICE BOX COVER           |                        |                       |                       | 1 1/2 LB.                |                          |
| 9/16" PENT. HD. BRASS SCREW |                        |                       |                       | 2 OZ.                    |                          |



#### THRUST BLOCKS

ALL WORK INCLUDED IN PIPE ITEMS 663.01XX01ER UNLESS OTHERWISE NOTED ABOVE

| HORIZONTAL ANCHOR DIMENSIONS      |                   |          |          |              |              |      |      |      |      |      |
|-----------------------------------|-------------------|----------|----------|--------------|--------------|------|------|------|------|------|
| UP TO 250 P.S.I. WORKING PRESSURE |                   |          |          |              |              |      |      |      |      |      |
| PIPE SIZE IN INCHES               | TEE OR TAP SLEEVE | 90° BEND | 45° BEND | 22 1/2° BEND | 11 1/4° BEND |      |      |      |      |      |
|                                   | 'H'               | 'L'      | 'H'      | 'L'          | 'H'          | 'L'  | 'H'  | 'L'  | 'H'  | 'L'  |
| 6"                                | 1.5'              | 2.5'     | 2.0'     | 2.5'         | 1.5'         | 2.0' | 1.0' | 1.5' | 1.0' | 1.5' |
| 8"                                | 1.5'              | 3.5'     | 2.5'     | 3.5'         | 2.0'         | 2.5' | 1.5' | 1.5' | 1.0' | 2.0' |
| 10"                               | 2.5'              | 3.5'     | 3.0'     | 4.5'         | 2.5'         | 3.0' | 1.5' | 3.0' | 1.0' | 2.5' |
| 12"                               | 3.5'              | 3.5'     | 3.5'     | 5.0'         | 3.0'         | 3.5' | 2.5' | 2.5' | 1.5' | 2.5' |
| 14"                               | 3.5'              | 4.5'     | 4.0'     | 5.5'         | 3.5'         | 3.5' | 2.5' | 2.5' | 1.5' | 2.0' |
| 16"                               | 4.0'              | 5.0'     | 4.5'     | 6.5'         | 3.5'         | 4.5' | 2.5' | 3.0' | 2.0' | 2.0' |
| 18"                               | 5.0'              | 5.5'     | 5.5'     | 7.0'         | 4.0'         | 5.0' | 3.0' | 3.5' | 2.0' | 2.5' |
| 20"                               | 5.5'              | 6.0'     | 6.0'     | 7.5'         | 4.5'         | 5.5' | 3.5' | 3.5' | 2.5' | 2.5' |
| 24"                               | 6.0'              | 7.5'     | 7.0'     | 9.5'         | 5.0'         | 7.0' | 4.0' | 4.5' | 3.0' | 3.0' |

- \* TO BE USED AS A GUIDE ONLY. ACTUAL DIMENSIONS AS DETERMINED BY THE ENGINEER DEPENDING ON SOIL CONDITIONS.
- NOTES:
- ALL CONCRETE ANCHORS, HARNESSES AND RELATED HARDWARE FOR REACTION BACKING SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS IN THE CONTRACT. CONCRETE SHALL MEET THE REQUIREMENTS FOR CLASS "A" CONCRETE AS SPECIFIED IN N.Y.S.D.O.T. SPECIFICATION SECTION 501.
  - HARNESS DESIGN, MATERIAL AND USAGE SHALL BE APPROVED AND DIRECTED BY THE ENGINEER.
  - CLAMPS AND ANCHOR BOLTS FOR GRAVITY THRUST BLOCKS SHALL BE OF A DESIGN RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER. ALL PARTS EXPOSED TO SURROUNDING SOIL SHALL BE ASPHALT COATED AS DIRECTED BY THE ENGINEER.
  - CONCRETE FOR THRUST BLOCKS SHALL NOT BE ALLOWED TO COVER OR INTERFERE WITH JOINT OR RESTRAINT HARDWARE, PLASTIC SHEETING OR BUILDING FELT MAY BE PLACED OVER PIPE OR FITTINGS TO PREVENT CONCRETE FROM ADHERING TO SURFACES.

|                                     |                    |
|-------------------------------------|--------------------|
| AFFIX SEAL:<br>ON:                  | ALTERED BY:<br>ON: |
| <h1>DRAFT NOT FOR CONSTRUCTION</h1> |                    |

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



**BUFFALO**  
SEWER AUTHORITY



ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE & UTILITY DETAILS

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. DUD-11  
SHEET NO. 73

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



| EXISTING MANHOLE FRAME AND DRAINAGE STRUCTURE ADJUSTMENTS TABLE                      |      |                 |        |                      |                      |
|--------------------------------------------------------------------------------------|------|-----------------|--------|----------------------|----------------------|
| ITEM 604.070501 - ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES (RAISE) |      |                 |        |                      |                      |
| ITEM 604.070502 - ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES (LOWER) |      |                 |        |                      |                      |
| DESCRIPTION                                                                          | SIDE | APPROX. STATION | OFFSET | ITEM 604.070501 (EA) | ITEM 604.070502 (EA) |
| TMH #871                                                                             | RT   | 167+95          | 52.0   |                      |                      |
| EMH #865                                                                             | RT   | 168+14          | 51.0   |                      |                      |
| EMH #874                                                                             | RT   | 168+49          | 10.6   |                      |                      |
| EMH #860                                                                             | RT   | 171+75          | 13.7   |                      |                      |
| DI #858                                                                              | RT   | 172+13          | 24.5   | 1                    |                      |
| EMH #857                                                                             | RT   | 175+05          | 14.1   |                      |                      |
| SAMH #854                                                                            | RT   | 175+39          | 46.5   | 1                    |                      |
| EMH #880                                                                             | RT   | 178+38          | 14.8   |                      |                      |
| DI #883                                                                              | RT   | 178+98          | 37.0   |                      | 1                    |
| EMH #888                                                                             | RT   | 179+22          | 17.7   |                      |                      |
| SAMH #890                                                                            | RT   | 179+97          | 4.3    |                      | 1                    |
| EMH #902                                                                             | RT   | 180+91          | 16.4   |                      |                      |
| SAMH #897                                                                            | RT   | 182+65          | 5.8    |                      | 1                    |
| EMH #936                                                                             | RT   | 184+50          | 2.5    |                      |                      |
| SAMH #933                                                                            | RT   | 184+79          | 40.3   | 1                    |                      |
| TMH #932                                                                             | RT   | 184+80          | 27.0   |                      |                      |
| SAMH #931                                                                            | RT   | 184+96          | 28.2   | 1                    |                      |
| EMH #930                                                                             | RT   | 185+47          | 3.4    |                      |                      |
| EMH #843                                                                             | LT   | 168+03          | 23.4   |                      |                      |
| SAMH #950                                                                            | LT   | 168+07          | 50.6   |                      | 1                    |
| EMH #850                                                                             | LT   | 171+61          | 27.1   |                      |                      |
| SAMH #851                                                                            | LT   | 173+28          | 30.9   | 1                    |                      |
| EMH #879                                                                             | LT   | 175+17          | 27.1   |                      |                      |
| SAMH #852                                                                            | LT   | 175+32          | 32.0   | 1                    |                      |
| SAMH #853                                                                            | LT   | 175+46          | 40.9   |                      | 1                    |
| EMH #881                                                                             | LT   | 177+93          | 27.0   |                      |                      |
| EMH #896                                                                             | LT   | 180+67          | 28.0   |                      |                      |
| EMH #903                                                                             | LT   | 183+67          | 23.3   |                      |                      |
| SAMH #904                                                                            | LT   | 184+18          | 18.0   |                      | 1                    |
| DMH #907                                                                             | LT   | 185+80          | 35.4   |                      | 1                    |
| TOTAL ITEM:                                                                          |      |                 |        | 6                    | 7                    |

AFFIX SEAL:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

ALTERED BY:  
ON:

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



BUFFALO  
SEWER AUTHORITY



Watts  
Architects  
&Engineers

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE AND UTILITY TABLES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. DUT-01  
SHEET NO. 74

| PLANTER/STORMWATER CATCHMENT SUMMARY TABLE |       |               |             |      |                         |                                   |                                      |                                        |                                                  |                                          |                             |                              |                                                       |                          |                                                   |                                                |                                                    |                                             |                                                      |
|--------------------------------------------|-------|---------------|-------------|------|-------------------------|-----------------------------------|--------------------------------------|----------------------------------------|--------------------------------------------------|------------------------------------------|-----------------------------|------------------------------|-------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------------------------|----------------------------------------------------|---------------------------------------------|------------------------------------------------------|
| PLANTER NO.                                | SHEET | STATION BEGIN | STATION END | SIDE | TOTAL SURFACE AREA (SF) | GENERAL PLANTER SURFACE AREA (SF) | STORMWATER PLANTER SURFACE AREA (SF) | STORMWATER CATCHMENT SURFACE AREA (SF) | ITEM 206.0201 (CY) TRENCH AND CULVERT EXCAVATION | ITEM 203.02 (CY) UNCLASSIFIED EXCAVATION | ITEM 207.22 (SY) GEOTEXTILE | ITEM 207.25 (SY) GEOMEMBRANE | ITEM 304.010000ER (CY) OPEN GRADE PERMEABLE AGGREGATE | ITEM 610.1101 (CY) MULCH | ITEM 610.1404 (CY) TOPSOIL - SPECIAL PLANTING MIX | ITEM 611.0452 (EA) PLANTING - DECIDUOUS SHRUBS | ITEM 611.0651 (EA) PLANTINGS - VINES, GROUNDCOVERS | ITEM 610.01100210 (CY) PLANTER BACKFILL MIX | ITEM 613.0100001OD (CY) RAIN GARDEN FACILITY TOPSOIL |
| 2-1                                        | PL-02 | 176+43        | 177+98      | LT   | 2333.6                  | 596.2                             | 1737.4                               | 629.1                                  | 180.3                                            | 34.3                                     | 164.56                      | 0.00                         | 23.3                                                  | 21.6                     | 33.1                                              | 23                                             | 6271                                               | 30.8                                        | 85.4                                                 |
| 3-1                                        | PL-03 | 178+44        | 179+05      | LT   | 970.5                   | 0.0                               | 970.5                                | 368.0                                  | 104.3                                            | 0.0                                      | 95.81                       | 7.34                         | 13.6                                                  | 9.0                      | 0.0                                               | 0                                              | 679                                                | 14.6                                        | 56.4                                                 |
| 3-2                                        | PL-03 | 179+53        | 180+78      | RT   | 1312.0                  | 501.7                             | 810.3                                | 703.9                                  | 114.6                                            | 32.5                                     | 171.06                      | 21.90                        | 26.1                                                  | 12.1                     | 27.9                                              | 10                                             | 3725                                               | 34.9                                        | 40.5                                                 |
| N/A                                        | PL-03 | 179+82        | 180+27      | LT   | 299.0                   | 0.0                               | 0.0                                  | 299.0                                  | 33.2                                             | 0.0                                      | 78.12                       | 0.00                         | 11.1                                                  | 0.0                      | 0.0                                               | 0                                              | 0                                                  | 0.0                                         | 0.0                                                  |
| N/A                                        | PL-03 | 181+17        | 182+03      | LT   | 517.0                   | 0.0                               | 0.0                                  | 517.0                                  | 57.4                                             | 0.0                                      | 135.41                      | 46.44                        | 19.1                                                  | 0.0                      | 0.0                                               | 0                                              | 0                                                  | 0.0                                         | 0.0                                                  |
| N/A                                        | PL-04 | 182+09        | 182+70      | LT   | 369.0                   | 0.0                               | 0.0                                  | 369.0                                  | 41.0                                             | 0.0                                      | 97.01                       | 36.44                        | 13.7                                                  | 0.0                      | 0.0                                               | 0                                              | 0                                                  | 0.0                                         | 0.0                                                  |
| 3-3                                        | PL-04 | 181+39        | 182+84      | RT   | 2237.4                  | 1806.5                            | 430.9                                | 381.1                                  | 47.2                                             | 100.9                                    | 93.90                       | 11.89                        | 14.1                                                  | 20.7                     | 100.4                                             | 0                                              | 1994                                               | 15.0                                        | 26.1                                                 |
| 4-1                                        | PL-04 | 183+01        | 184+15      | LT   | 1567.4                  | 1567.4                            | 0.0                                  | 0.0                                    | 0.0                                              | 87.4                                     | 0.00                        | 0.00                         | 0.0                                                   | 14.5                     | 87.1                                              | 11                                             | 4695                                               | 0.0                                         | 0.0                                                  |
| 4-2                                        | PL-04 | 183+33        | 184+38      | RT   | 1611.5                  | 1611.5                            | 0.0                                  | 0.0                                    | 0.0                                              | 90.2                                     | 0.00                        | 0.00                         | 0.0                                                   | 14.9                     | 89.5                                              | 17                                             | 4865                                               | 0.0                                         | 0.0                                                  |
| 4-3                                        | PL-04 | 185+12        | 185+32      | LT   | 163.2                   | 163.2                             | 0.0                                  | 0.0                                    | 0.0                                              | 10.0                                     | 0.00                        | 0.00                         | 0.0                                                   | 1.5                      | 9.1                                               | 0                                              | 114                                                | 0.0                                         | 0.0                                                  |
| 4-4                                        | PL-05 | 185+93        | 186+19      | LT   | 187.4                   | 187.4                             | 0.0                                  | 0.0                                    | 0.0                                              | 11.6                                     | 0.00                        | 0.00                         | 0.0                                                   | 1.7                      | 10.4                                              | 3                                              | 492                                                | 0.0                                         | 0.0                                                  |
| TOTALS:                                    |       |               |             |      | 11,568.0                | 6,433.9                           | 3,949.1                              | 3,267.1                                | 579                                              | 367                                      | 836                         | 125                          | 122                                                   | 97                       | 358                                               | 64                                             | 22,835                                             | 96                                          | 209                                                  |

| WATER LINE VALVE BOX ADJUSTMENT TABLE                          |             |      |                        |
|----------------------------------------------------------------|-------------|------|------------------------|
| ITEM 663.302000ER WATERLINE VALVE BOX – TOP SECTION-ADJUSTMENT |             |      |                        |
| STATION                                                        | OFFSET (FT) | SIDE | ITEM 663.302000ER (EA) |
| 167+94                                                         | 40.6        | RT   | 1                      |
| 168+01                                                         | 15.6        | RT   | 1                      |
| 168+33                                                         | 41.0        | RT   | 1                      |
| 168+45                                                         | 41.1        | RT   | 1                      |
| 171+22                                                         | 37.4        | RT   | 1                      |
| 171+50                                                         | 49.6        | RT   | 1                      |
| 171+62                                                         | 42.8        | RT   | 1                      |
| 175+01                                                         | 52.5        | RT   | 1                      |
| 175+04                                                         | 49.7        | RT   | 1                      |
| 175+07                                                         | 42.7        | RT   | 1                      |
| 178+90                                                         | 43.5        | RT   | 1                      |
| 179+02                                                         | 53.5        | RT   | 1                      |
| 179+06                                                         | 47.6        | RT   | 1                      |
| 179+16                                                         | 38.4        | RT   | 1                      |
| 181+17                                                         | 18.8        | RT   | 1                      |
| 184+48                                                         | 26.3        | RT   | 1                      |
| 167+97                                                         | 43.6        | LT   | 1                      |
| 168+08                                                         | 36.5        | LT   | 1                      |
| 168+13                                                         | 33.3        | LT   | 1                      |
| 168+16                                                         | 36.5        | LT   | 1                      |
| 169+32                                                         | 34.6        | LT   | 1                      |
| 173+14                                                         | 32.9        | LT   | 1                      |
| 173+72                                                         | 34.7        | LT   | 1                      |
| 176+22                                                         | 35.9        | LT   | 1                      |
| 176+25                                                         | 35.9        | LT   | 1                      |
| 178+98                                                         | 34.6        | LT   | 1                      |
| 179+03                                                         | 31.4        | LT   | 1                      |
| 179+06                                                         | 34.5        | LT   | 1                      |
| 179+23                                                         | 36.2        | LT   | 1                      |
| 180+24                                                         | 38.9        | LT   | 1                      |
| TOTAL ITEM:                                                    |             |      | 30                     |

| GEOMEMBRANE PLACEMENT TABLE |               |             |      |                       |                       |           |                  |
|-----------------------------|---------------|-------------|------|-----------------------|-----------------------|-----------|------------------|
| ITEM 207.25 - GEOMEMBRANE   |               |             |      |                       |                       |           |                  |
| PLANTER NO.                 | STATION BEGIN | STATION END | SIDE | EAST EDGE OFFSET (FT) | WEST EDGE OFFSET (FT) | AREA (SF) | ITEM 207.25 (SY) |
| 3-1                         | 178+93        | 179+00      | LT   | 18.5                  | 25.0                  | 66.1      | 7.34             |
| 3-2                         | 180+22        | 180+78      | RT   | 32.9                  | 30.4                  | 197.1     | 21.90            |
| NA                          | 181+17        | 182+03      | LT   | 21.7                  | 25.5                  | 418       | 46.44            |
| NA                          | 182+09        | 182+71      | LT   | 22.8                  | 26.6                  | 328       | 36.44            |
| 3-3                         | 182+00        | 182+28      | RT   | 36.1                  | 33.5                  | 107       | 11.89            |
| TOTAL ITEM:                 |               |             |      |                       |                       |           | 125.00           |

| FRESH AIR INLET ADJUSTMENTS                      |        |      |                    |                         |
|--------------------------------------------------|--------|------|--------------------|-------------------------|
| ITEM 664.094000ER - FRESH AIR INLET - ADJUSTMENT |        |      |                    |                         |
| STATION                                          | OFFSET | SIDE | EXISTING ELEVATION | ITEM 664.094000ER (EA.) |
| 170+99                                           | 45.0   | LT   | 584.70             | 1                       |
| 175+43                                           | 46.0   | LT   | 583.69             | 1                       |
| TOTAL ITEM:                                      |        |      |                    | 2                       |



FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R18, CADD\Trans\23 Drainage Table.dwg  
DATE/TIME = 12/12/2022 11:32:06 AM  
USER = Victoria Coners

JOB MANAGER T. DUK      DESIGN T. BUCKLEY      CHECK J. ROSS      DRAFTING T. BUCKLEY      CHECK J. ROSS      PROJECT MANAGER P. GALBO

| STRUCTURE<br>NUMBER | STATION | SIDE | OFFSET<br>(SEE NOTE 1) | EXISTING ELEVATION |                           | PROPOSED ELEVATION |                           |        | WORK DESCRIPTION                                                                                                                                                                                                                                                                                                                       |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
|---------------------|---------|------|------------------------|--------------------|---------------------------|--------------------|---------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------------|------------------------------|--------------------------------------|---------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|
|                     |         |      |                        | RIM                | INVERT                    | RIM                | INVERT                    | SUMP   |                                                                                                                                                                                                                                                                                                                                        | 206.05 (EA)<br>TEST PITS | 664.503100ER (EA)<br>RECEIVER - NEW | 664.503300ER (EA)<br>REMOVE/PLUG<br>LATERAL | 664.503400ER (EA)<br>RECEIVER CURB BOX -<br>REPLACE | 664.503600ER (EA)<br>RECEIVER - RISER<br>SECTION | 664.505220ER (EA)<br>2' X 2' | 664.506140ER (LF)<br>4' DIA. MANHOLE | 605.1502 (LF)<br>6" PERF. | 664.010601ER (LF)<br>6" PVC | 664.011001ER (LF)<br>10" PVC | 664.011201ER (LF)<br>12" PVC | 656.01<br>CLEANOUTS (LB) |
| 1-DS-1              | 168+23  | RT   | 61.4                   | 584.44             |                           | 584.42             |                           |        | REMOVE EXISTING TOP SECTION, CURB BOX AND GRATE (DI #866). FURNISH AND<br>INSTALL NEW TOP SECTION, CURB BOX AND GRATE.                                                                                                                                                                                                                 |                          |                                     |                                             | 1                                                   | 1                                                |                              |                                      |                           |                             |                              |                              |                          |
| 1-DS-2              | 168+24  | RT   | 33.0                   | 584.59             | 575.80 NW-SE<br>579.60 NE | 584.51             | 575.80 NW-SE<br>579.60 NE | 575.80 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING MANHOLE (SAMH #864).<br>INSTALL NEW 4' DIA. MANHOLE. FURNISH AND INSTALL FRAME AND GRATE. CONNECT<br>TO EXISTING 12" VTP COMBINED SEWER FROM SAMH #873 AT EXISTING INVERT<br>ELEVATION. CONNECT THE PROPOSED 12" PVC COMBINED SEWER FROM THIS<br>STRUCTURE TO 1-DS-3 SLOPED @ 0.3%.   |                          |                                     |                                             |                                                     |                                                  |                              | 9.6                                  |                           |                             |                              | 8                            |                          |
| 1-DS-3              | 168+58  | RT   | 15.0                   |                    |                           | 584.45             | 575.83 NW-SE              | 575.83 | PERFORM TEST PIT TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES<br>(ELECTRICAL LINES) PRIOR TO ORDERING NEW MANHOLE. INSTALL NEW 4' DIA.<br>MANHOLE. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO 12" PVC COMBINED<br>SEWER FROM 1-DS-2 . CONNECT NEW 12" PVC COMBINED SEWER FROM THIS<br>STRUCTURE TO 1-DS-5 SLOPED @ 0.3%. | 1                        |                                     |                                             |                                                     |                                                  |                              | 9.5                                  |                           |                             |                              | 236                          |                          |
| DI #863             | 168+64  | RT   | 30.8                   | 583.92             |                           |                    |                           |        | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN AND PLUG<br>LATERAL. BACKFILL WITH SELECT FILL.                                                                                                                                                                                                                           |                          |                                     | 1                                           |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
| 1-DS-4              | 168+87  | RT   | 30.0                   |                    |                           | 583.91             | 580.12 SW                 | 578.12 | INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT<br>NEW 12" PVC LATERAL FROM THIS STRUCTURE TO THE PROPOSED 12" PVC COMBINED<br>SEWER LINE.                                                                                                                                                               |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      |                           |                             | 5                            |                              |                          |
| 1-DS-5              | 170+44  | RT   | 15.3                   |                    |                           | 584.61             | 576.61 N-SE               | 576.61 | INSTALL NEW 4' DIA. MANHOLE. FURNISH AND INSTALL FRAME AND GRATE. CONNECT<br>TO 12" PVC COMBINED SEWER FROM 1-DS-3. CONNECT PROPOSED 12" PVC COMBINED<br>SEWER FROM THIS STRUCTURE TO 1-DS-6 SLOPED @ 0.3%.                                                                                                                            |                          |                                     |                                             |                                                     |                                                  |                              | 8.9                                  |                           |                             | 30                           |                              |                          |
| 1-DS-6              | 171+06  | RT   | 36.0                   | 584.80             | 576.71 NW-SE              | 584.62             | 576.71 NW-S               | 576.71 | REMOVE EXISTING FRAME AND COVER. REMOVE EXISTING MANHOLE (SAMH #862).<br>INSTALL NEW 4' DIA. MANHOLE. FURNISH AND INSTALL FRAME AND GRATE. CONNECT<br>TO EXISTING 12" VTP COMBINED SEWER TO THE NORTHWEST AT EXISTING INVERT<br>ELEVATION. CONNECT TO THE PROPOSED 12" PVC COMBINED SEWER FROM 1-DS-5.                                 |                          |                                     |                                             |                                                     |                                                  |                              | 8.8                                  |                           |                             |                              |                              |                          |
| 1-DS-7              | 171+25  | RT   | 24.3                   | 583.70             | 581.30                    | 583.86             | 581.3 SE                  | 580.47 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #861).<br>INSTALL NEW STEEL RECEIVER. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>10" SEWER LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING<br>INVERT ELEVATION.                                                                                 |                          | 1                                   |                                             |                                                     |                                                  |                              |                                      |                           | 2                           |                              |                              |                          |
| 2-DS-1              | 172+14  | LT   | 25.0                   | 583.39             | 582.19                    | 583.66             | 582.19 SW                 | 581.36 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #859).<br>INSTALL NEW STEEL RECEIVER. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>10" SEWER LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING<br>INVERT ELEVATION.                                                                                 |                          | 1                                   |                                             |                                                     |                                                  |                              |                                      |                           | 2                           |                              |                              |                          |
| 2-DS-2              | 174+95  | RT   | 36.4                   | 582.57             | 580.37 NW                 | 582.47             | 580.37 NW                 | 579.54 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #856).<br>INSTALL NEW STEEL RECEIVER. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>12" SEWER LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING<br>INVERT ELEVATION.                                                                                 |                          | 1                                   |                                             |                                                     |                                                  |                              |                                      |                           | 2                           |                              |                              |                          |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

NOTES:

1. OFFSET DISTANCE IS MEASURED IN FEET AND REPRESENTS THE DISTANCE FROM THE CENTERLINE OF THE ROAD TO THE CENTER OF THE STRUCTURE.

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE AND UTILITY TABLES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. DUT-02  
SHEET NO. 75

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



| STRUCTURE<br>NUMBER | STATION | SIDE | OFFSET<br>(SEE NOTE 1) | EXISTING ELEVATION |           | PROPOSED ELEVATION |                                     |        | WORK DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
|---------------------|---------|------|------------------------|--------------------|-----------|--------------------|-------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------------|------------------------------|--------------------------------------|---------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|
|                     |         |      |                        | RIM                | INVERT    | RIM                | INVERT                              | SUMP   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 206.05 (EA)<br>TEST PITS | 664.503100ER (EA)<br>RECEIVER - NEW | 664.503300ER (EA)<br>REMOVE/PLUG<br>LATERAL | 664.503400ER (EA)<br>RECEIVER CURB BOX -<br>REPLACE | 664.503600ER (EA)<br>RECEIVER - RISER<br>SECTION | 664.505220ER (EA)<br>2' X 2' | 664.506140ER (LF)<br>4' DIA. MANHOLE | 605.1502 (LF)<br>6" PERF. | 664.010601ER (LF)<br>6" PVC | 664.011001ER (LF)<br>10" PVC | 664.011201ER (LF)<br>12" PVC | 656.01<br>CLEANOUTS (LB) |
| 2-DS-3              | 175+25  | RT   | 49.0                   | 582.71             | 579.66 NW | 582.68             | 579.66 NW                           | 578.83 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #855).<br>INSTALL NEW STEEL RECEIVER. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>12" SEWER LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING<br>INVERT ELEVATION.                                                                                                                                                                                                                    |                          | 1                                   |                                             |                                                     |                                                  |                              |                                      |                           |                             | 2                            |                              |                          |
| 2-DS-4              | 176+42  | LT   | 25.0                   |                    |           | 582.22             | 578.30 NW<br>579.55 SW              | 576.30 | PERFORM TEST PIT TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES<br>(NATIONAL GRID DUCT BANK). INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL<br>FRAME AND GRATE. CONNECT TO STORMWATER PLANTER TO THE NORTH WITH 6" PVC<br>UNDERDRAIN SLOPED @ 0.5%. PVC UNDERDRAIN INVERT EL. 578.30 (NORTHERN LIMIT)<br>AT STA. 176+98. CONNECT NEW 12" PVC LATERAL FROM THIS STRUCTURE TO THE<br>EXISTING 12" VTP COMBINED SEWER USING A 12"x12"x12" PVC WYE.             | 1                        |                                     |                                             |                                                     |                                                  | 1                            |                                      | 55                        | 4                           |                              | 30                           | 38                       |
| 3-DS-1              | 177+45  | LT   | 18.0                   |                    |           | 582.04             | 579.37 SW<br>578.12 SW              | 576.12 | INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT<br>TO STORMWATER PLANTER TO THE NORTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%.<br>PVC UNDERDRAIN INVERT EL. 578.12 (NORTHERN LIMIT) AT STA. 177+84. CONNECT NEW<br>12" PVC LATERAL FROM THIS STRUCTURE TO THE EXISTING 12" VTP COMBINED SEWER<br>USING A 12"x12"x12" PVC WYE.                                                                                                                    |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      | 40                        | 4                           |                              | 37                           | 38                       |
| 3-DS-2              | 178+45  | LT   | 18.0                   |                    |           | 581.64             | 578.97 SW<br>577.72 SW              | 575.72 | INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT<br>TO STORMWATER PLANTER TO THE NORTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%.<br>PVC UNDERDRAIN INVERT EL. 577.72 (NORTHERN LIMIT) AT STA. 178+98. CONNECT NEW<br>12" PVC LATERAL FROM THIS STRUCTURE TO THE EXISTING 12" VTP COMBINED SEWER<br>USING A 12"x12"x12" PVC WYE.                                                                                                                    |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      | 55                        | 4                           |                              | 37                           | 38                       |
| DI #891             | 180+23  | LT   | 25.3                   | 580.30             |           |                    |                                     |        | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN. BACKFILL<br>WITH SELECT FILL.                                                                                                                                                                                                                                                                                                                                                                               |                          |                                     | 1                                           |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
| 3-DS-3              | 180+23  | LT   | 18.3                   |                    |           | 580.03             | 577.36 NE<br>576.36 SW              | 574.36 | PERFORM TEST PIT TO CONFIRM LOCATION, SIZE AND DEPTH OF EXISTING SEWER<br>LATERAL PRIOR TO ORDERING NEW DRAINAGE STRUCTURE. INSTALL NEW 2' X 2' CATCH<br>BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO STORMWATER<br>CATCHMENT AREA TO THE SOUTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%. PVC<br>UNDERDRAIN INVERT EL. 576.36 (SOUTHERN LIMIT) AT STA. 179+83. EXISTING SEWER<br>LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING INVERT<br>ELEVATION. | 1                        |                                     |                                             |                                                     |                                                  | 1                            |                                      | 42                        | 4                           |                              | 2                            | 38                       |
| 3-DS-4              | 180+21  | RT   | 26.1                   | 580.16             | 577.77 SW | 580.03             | 577.36 SW<br>576.11 NW              | 574.11 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #889).<br>INSTALL NEW 2'X2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>12" LATERAL TO REMAIN AND BE CONNECTED AT EXISTING INVERT ELEVATION.<br>CONNECT TO STORMWATER PLANTER TO THE NORTH WITH 6" PVC UNDERDRAIN<br>SLOPED @ 0%. PVC INVERT EL. 576.11 (NORTHERN LIMIT) AT STA. 180+75.                                                                                               |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      | 53                        | 4                           |                              | 5                            | 38                       |
| 3-DS-5              | 180+58  | LT   | 62.0                   | 578.76             |           | 578.74             | 574.95 NW                           | 572.95 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #893).<br>INSTALL NEW 2'X2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>12" SEWER LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING<br>INVERT ELEVATION.                                                                                                                                                                                                                 |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      |                           |                             | 2                            |                              |                          |
| 3-DS-6              | 180+90  | LT   | 69.0                   | 578.44             |           | 578.32             | 573.60 SE<br>573.57 NE              | 571.57 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #894).<br>INSTALL NEW 2'X2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. EXISTING<br>12" SEWER LATERALS TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT<br>EXISTING INVERT ELEVATIONS.                                                                                                                                                                                                               |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      |                           |                             | 4                            |                              |                          |
| 3-DS-7              | 181+03  | LT   | 17.4                   |                    |           | 578.92             | 574.50 NW<br>573.06 NE<br>573.06 SW | 573.06 | PERFORM TEST PIT TO CONFIRM LOCATION, SIZE AND DEPTH OF EXISTING 12" RCP<br>SEWER LATERAL PRIOR TO ORDERING NEW DRAINAGE STRUCTURE. INSTALL NEW 4'<br>DIA. MANHOLE IN LINE WITH EXISTING 12" RCP STORM SEWER LATERAL . FURNISH AND<br>INSTALL FRAME AND COVER. CONNECT NEW 12" PVC FROM THIS STRUCTURE TO 3-DS-8.                                                                                                                                                         | 1                        |                                     |                                             |                                                     |                                                  |                              | 6.9                                  |                           |                             |                              | 56                           |                          |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

NOTES:

1. OFFSET DISTANCE IS MEASURED IN FEET AND REPRESENTS THE DISTANCE FROM THE CENTERLINE OF THE ROAD TO THE  
CENTER OF THE STRUCTURE.

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

SEAL OF THE  
CITY OF BUFFALO

BUFFALO  
SEWER AUTHORITY

Watts  
Architects  
&Engineers

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE AND UTILITY TABLES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. DUT-03  
SHEET NO. 76

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR,  
TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR  
SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



FILE NAME = R:\2022\20220475 Niagara St. Ph. 4B R18. CADD\Trans\23 Drainage Table.dwg  
DATE/TIME = 12/12/2022 11:32:29 AM  
USER = Victoria Coners

JOB MANAGER T. DUK      DESIGN T. BUCKLEY      CHECK J. ROSS      DRAFTING T. BUCKLEY      CHECK J. ROSS      PROJECT MANAGER P. GALBO

| STRUCTURE<br>NUMBER | STATION | SIDE | OFFSET<br>(SEE NOTE 1) | EXISTING ELEVATION |          | PROPOSED ELEVATION |                                     |        | WORK DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                              |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
|---------------------|---------|------|------------------------|--------------------|----------|--------------------|-------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------------|------------------------------|--------------------------------------|---------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|
|                     |         |      |                        | RIM                | INVERT   | RIM                | INVERT                              | SUMP   |                                                                                                                                                                                                                                                                                                                                                                                               | 206.05 (EA)<br>TEST PITS | 664.503100ER (EA)<br>RECEIVER - NEW | 664.503300ER (EA)<br>REMOVE/PLUG<br>LATERAL | 664.503400ER (EA)<br>RECEIVER CURB BOX -<br>REPLACE | 664.503600ER (EA)<br>RECEIVER - RISER<br>SECTION | 664.505220ER (EA)<br>2' X 2' | 664.506140ER (LF)<br>4' DIA. MANHOLE | 605.1502 (LF)<br>6" PERF. | 664.010601ER (LF)<br>6" PVC | 664.011001ER (LF)<br>10" PVC | 664.011201ER (LF)<br>12" PVC | 666.01<br>CLEANOUTS (LB) |
| 3-DS-8              | 181+61  | LT   | 19.4                   |                    |          | 577.83             | 575.16 SE<br>573.91 SW<br>573.91 SW | 571.91 | INSTALL NEW 2'X2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO 12" PVC FROM 3-DS-7. CONNECT TO STORMWATER CATCHMENT AREA TO THE SOUTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%. PVC INVERT EL. 573.91 (SOUTHERN LIMIT) AT STA. 181+19. CONNECT TO STORMWATER CATCHMENT AREA TO THE NORTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%. PVC INVERT EL. 573.91 (NORTHERN LIMIT) AT STA. 182+01. |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      | 90                        | 8                           |                              |                              | 76                       |
| 4-DS-1              | 182+59  | RT   | 22.3                   |                    |          | 576.16             | 573.49 NE<br>572.87 SE              | 570.87 | INSTALL NEW 2'X2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO NEW 12" PVC FROM 4-DS-2. CONNECT TO STORMWATER PLANTER TO THE SOUTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%. PVC INVERT EL. 572.87 (SOUTHERN LIMIT) AT STA. 180+02.                                                                                                                                                 |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      | 26                        | 35                          |                              |                              | 38                       |
| 4-DS-2              | 182+62  | RT   | 30.3                   | 576.17             | 568.69 W | 576.89             | 573.43 SW<br>568.69 W               | 568.69 | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN (DI #898). INSTALL NEW 4' DIA. MANHOLE. FURNISH AND INSTALL FRAME AND COVER. EXISTING 12" SEWER LATERAL TO REMAIN AND BE CONNECTED TO NEW STRUCTURE AT EXISTING INVERT ELEVATION. CONNECT NEW 12" PVC FROM THIS STRUCTURE TO 4-DS-1 SLOPED AT 1.0%.                                                                              |                          |                                     |                                             |                                                     |                                                  |                              | 9.1                                  |                           |                             |                              | 6                            |                          |
| SAMH #897           | 182+65  | LT   | 5.8                    | 576.71             | N/A      | 576.71             | 573.19 W                            |        | EXISTING STRUCTURE TO REMAIN. CONNECT NEW 12" PVC FROM THIS STRUCTURE TO 4-DS-3 SLOPED @ 1.0%.                                                                                                                                                                                                                                                                                                |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              | 25                           |                          |
| 4-DS-3              | 182+66  | LT   | 20.9                   |                    |          | 576.20             | 573.53 E<br>573.00 W                | 571.00 | INSTALL NEW 2'X2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO NEW 12" PVC FROM SAMH#897. CONNECT TO STORMWATER CATCHMENT AREA TO THE SOUTH WITH 6" PVC UNDERDRAIN SLOPED @ 0%. PVC INVERT EL. 573.00 (SOUTHERN LIMIT) AT STA. 182+11.                                                                                                                                        |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      | 58                        | 4                           |                              |                              | 38                       |
| 4-DS-4              | 184+69  | LT   | 28.5                   |                    |          | 574.13             | 571.27 S                            | 570.47 | PERFORM TEST PIT TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (57" COMBINED SEWER MAIN, COMMUNICATION LINE AND NATIONAL GRID DUCT BANK) PRIOR TO ORDERING NEW DRAINAGE STRUCTURE. INSTALL NEW STEEL RECEIVER. FURNISH AND INSTALL FRAME AND GRATE. EXISTIG 12" LATERAL FOR DI #905 TO REMAIN AND BE CONNECTED TO NEW STRUCTURE.                                                      | 1                        | 1                                   |                                             |                                                     |                                                  |                              |                                      |                           |                             | 2                            | 17                           |                          |
| DI #905             | 184+52  | LT   | 29.8                   | 574.39             | 569.22 S |                    |                                     |        | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN AND REUSE LATERAL TO CONNECT TO 4-DS-4. BACKFILL WITH SELECT FILL.                                                                                                                                                                                                                                                               |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
| 4-DS-5              | 184+89  | RT   | 22.4                   |                    |          | 574.03             | 571.36 NE                           | 569.36 | PERFORM TEST PIT TO CONFIRM LOCATION OF EXISTING UNDERGROUND UTILITIES (10'X8' COMBINED SEWER MAIN, AND COMMUNICATION LINE) PRIOR TO ORDERING NEW DRAINAGE STRUCTURE. INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO 12" PVC LATERAL FROM SAMH #931.                                                                                                        | 1                        |                                     |                                             |                                                     |                                                  | 1                            |                                      |                           |                             |                              |                              |                          |
| SAMH #931           | 184+96  | RT   | 28.3                   | 574.26             |          | 574.71             | 571.29 SW                           |        | EXISTING STRUCTURE TO REMAIN. CONNECT NEW 12" PVC LATERAL FROM THIS STRUCTURE TO 4-DS-4 SLOPED @ 1.0%.                                                                                                                                                                                                                                                                                        |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              | 7                            |                          |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

NOTES:

1. OFFSET DISTANCE IS MEASURED IN FEET AND REPRESENTS THE DISTANCE FROM THE CENTERLINE OF THE ROAD TO THE CENTER OF THE STRUCTURE.

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE AND UTILITY TABLES

CITY OF BUFFALO  
ERIE COUNTY, NEW YORK

DRAWING NO. DUT-04  
SHEET NO. 77

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



| STRUCTURE<br>NUMBER | STATION | SIDE | OFFSET<br>(SEE NOTE 1) | EXISTING ELEVATION |                        | PROPOSED ELEVATION |          |        | WORK DESCRIPTION                                                                                                                                       |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
|---------------------|---------|------|------------------------|--------------------|------------------------|--------------------|----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------------|------------------------------|--------------------------------------|---------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|
|                     |         |      |                        | RIM                | INVERT                 | RIM                | INVERT   | SUMP   |                                                                                                                                                        | 206.05 (EA)<br>TEST PITS | 664.503100ER (EA)<br>RECEIVER - NEW | 664.503300ER (EA)<br>REMOVE/PLUG<br>LATERAL | 664.503400ER (EA)<br>RECEIVER CURB BOX -<br>REPLACE | 664.503600ER (EA)<br>RECEIVER - RISER<br>SECTION | 664.505220ER (EA)<br>2' X 2' | 664.506140ER (LF)<br>4' DIA. MANHOLE | 605.1502 (LF)<br>6" PERF. | 664.010601ER (LF)<br>6" PVC | 664.011001ER (LF)<br>10" PVC | 664.011201ER (LF)<br>12" PVC | 656.01<br>CLEANOUTS (LB) |
| DI #929             | 185+26  | RT   | 29.3                   | 574.05             |                        |                    |          |        | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN AND PLUG LATERAL. BACKFILL WITH SELECT FILL.                                              |                          |                                     | 1                                           |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
| 4-DS-6              | 185+79  | LT   | 21.9                   |                    |                        | 573.92             | 571.25 W | 568.00 | INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT TO NEW 12" PVC FROM DMH #907.                                            |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      |                           |                             |                              |                              |                          |
| DMH #907            | 185+80  | LT   | 35.5                   | 574.81             | 567.51 N-S<br>570.01 E | 574.77             | 570.01 E |        | EXISTING STRUCTURE TO REMAIN. CONNECT NEW 12" PVC FROM THIS STRUCTURE TO 4-DS-6 SLOPED @ 2.0%.                                                         |                          |                                     |                                             |                                                     |                                                  |                              |                                      |                           |                             |                              | 12                           |                          |
| DI # 906            | 185+79  | LT   | 29.4                   | 574.09             | 568.92 W               |                    |          |        | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN AND LATERAL. BACKFILL WITH SELECT FILL.                                                   |                          |                                     | 1                                           |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
| 5-DS-1              | 186+43  | RT   | 22.6                   |                    |                        | 574.88             | 572.21 E | 570.21 | INSTALL NEW 2' X 2' CATCH BASIN. FURNISH AND INSTALL FRAME AND GRATE. CONNECT NEW 12" PVC FROM THIS STUCTURE TO THE EXISTING 72" BRICK COMBINED SEWER. |                          |                                     |                                             |                                                     |                                                  | 1                            |                                      |                           |                             |                              | 6                            |                          |
| DI #923             | 186+62  | RT   | 33.5                   | 575.61             | 572.89 NW              |                    |          |        | REMOVE EXISTING FRAME AND GRATE. REMOVE EXISTING CATCH BASIN AND PLUG LATERAL. BACKFILL WITH SELECT FILL.                                              |                          |                                     | 1                                           |                                                     |                                                  |                              |                                      |                           |                             |                              |                              |                          |
| TOTAL ITEM:         |         |      |                        |                    |                        |                    |          |        |                                                                                                                                                        | 6                        | 5                                   | 5                                           | 1                                                   | 1                                                | 14                           | 52.8                                 | 419                       | 67                          | 10                           | 525                          | 342                      |

AFFIX SEAL:  
ON:

ALTERED BY:  
ON:

DRAFT  
NOT FOR  
CONSTRUCTION

NOTES:

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AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:



BUFFALO  
SEWER AUTHORITY



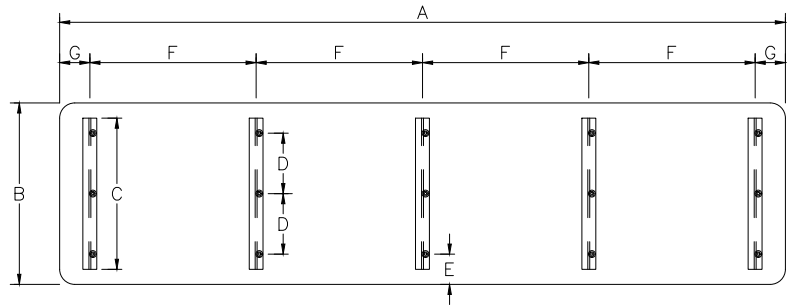
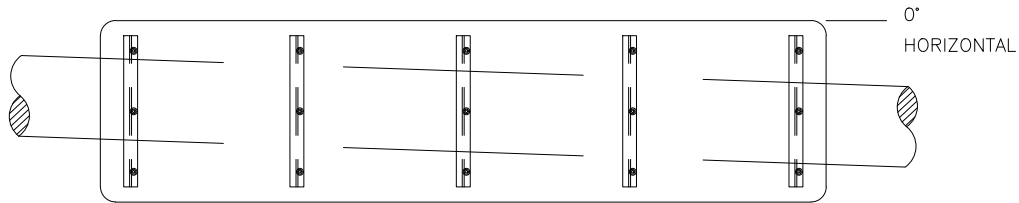
Watts  
Architects  
&Engineers

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
NIAGARA STREET CORRIDOR PROJECT  
PHASE 4B - 5762.90  
HERTEL AVENUE TO ONTARIO STREET  
DRAINAGE AND UTILITY TABLES

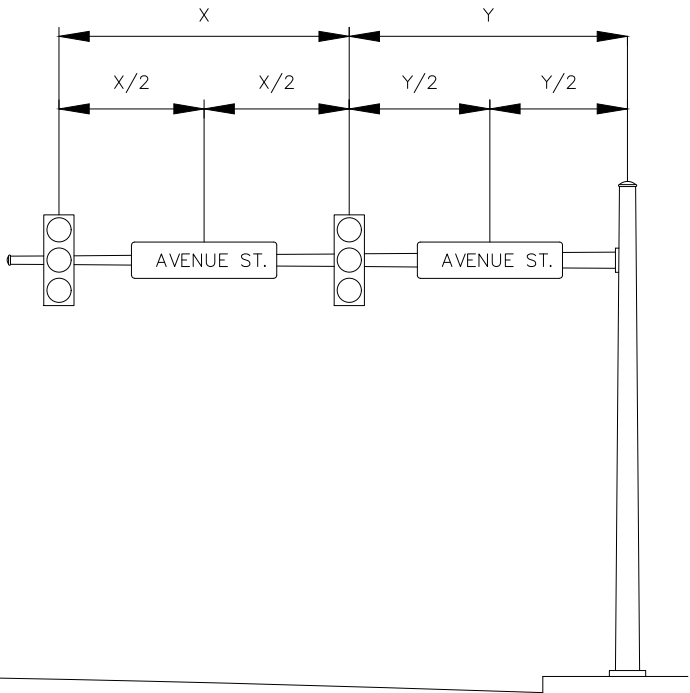
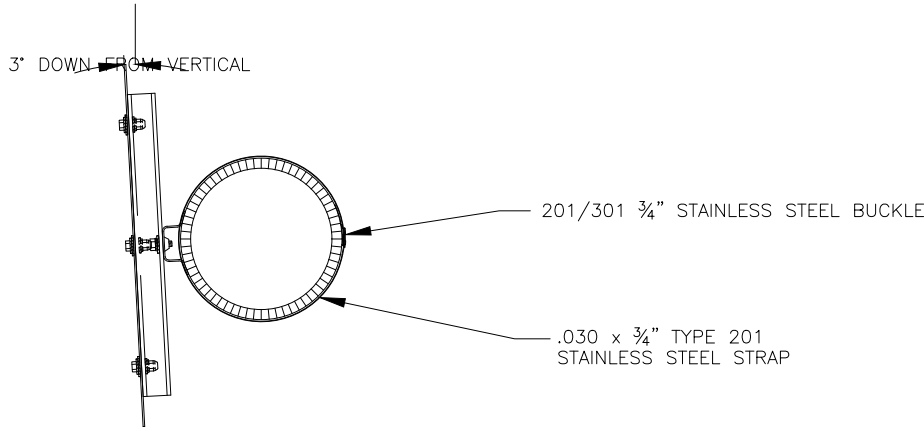
CITY OF BUFFALO  
ERIE COUNTY, NEW YORK  
DRAWING NO. DUT-05  
SHEET NO. 78

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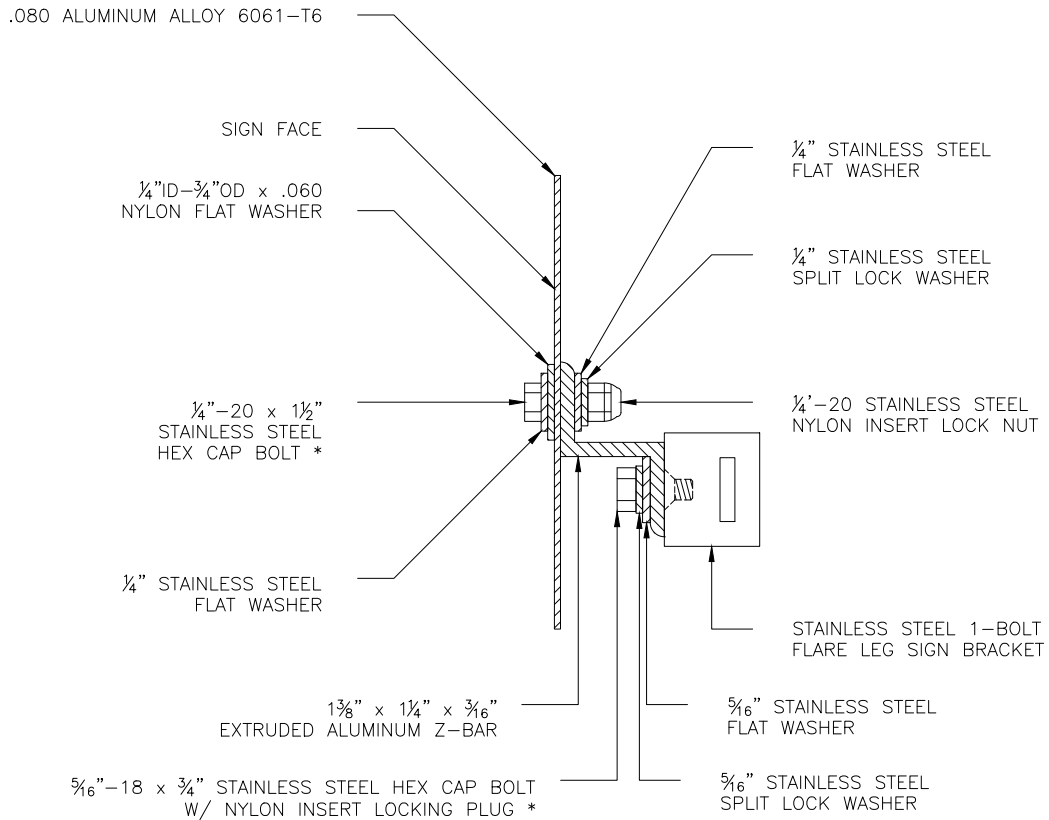


| OVERSIZE STREETNAME SIGN | DIMENSIONS |     |     |    |    |          |    |
|--------------------------|------------|-----|-----|----|----|----------|----|
|                          | A          | B   | C   | D  | E  | F        | G  |
| VARIESx18"               | VARIES     | 18" | 15" | 6" | 3" | <OR= 18" | 3" |

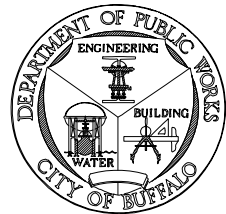


NOTES:

1. ALL BOLT LENGTHS SHOWN ARE ESTIMATED. THE CONTRACTOR SHALL SELECT BOLT LENGTHS SUFFICIENT TO RESULT IN EACH BOLT EXTENDING BETWEEN  $\frac{1}{4}$ " AND  $\frac{1}{2}$ " BEYOND A PROPERLY TIGHTENED NUT. THE CONTRACTOR SHALL ALSO VERIFY PROPER BOLT LENGTHS WHERE NUTS ARE NOT REQUIRED. BOLT DIAMETERS SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE E.I.C.
2.  $\frac{5}{16}$ " DIAMETER BOLTS FOR BANDING BRACKETS SHALL HAVE NYLON PLUG LOCKING FEATURE.
3. BUCKLES AND STRAPS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS. ALL STRAPS SHALL BE .030 MINIMUM THICKNESS BY  $\frac{3}{4}$ " WIDE TYPE 201 STAINLESS STEEL AND ALL BUCKLES SHALL BE  $\frac{3}{4}$ " SIZE AND TYPE 201/301 STAINLESS STEEL.
4. SIGN PANELS SHALL BE ALUMINUM ALLOY 6061-T6.
5. OVERSIZE STREET NAME SIGNS SHALL BE MOUNTED HALFWAY BETWEEN SIGNAL HEADS, HALFWAY BETWEEN POLE AND NEAREST SIGNAL HEAD OR ON POLE, A.O.B.E.



HARDWARE MOUNTING DETAIL  
TOP VIEW

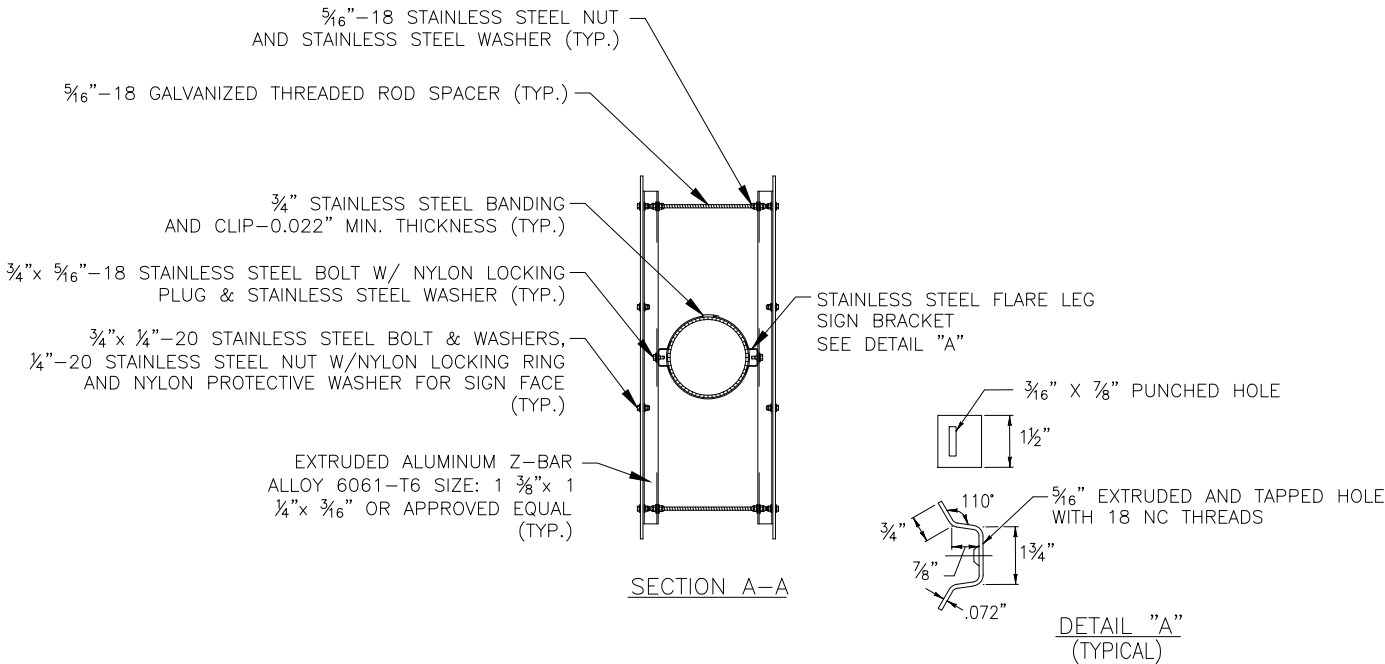


DEPARTMENT OF PUBLIC WORKS, PARKS AND STREETS  
DIVISION OF TRAFFIC ENGINEERING

MAST ARM MOUNT STREET NAME  
INSTALLATION DETAIL

|               |                                                      |                   |                          |
|---------------|------------------------------------------------------|-------------------|--------------------------|
| SCALE<br>NONE | DESIGNED BY: JJP<br>DRAWN BY: JJP<br>CHECKED BY: DEK | DATE<br>16 NOV 05 | DRAWING NO.<br>DPW-MAMSN |
|---------------|------------------------------------------------------|-------------------|--------------------------|

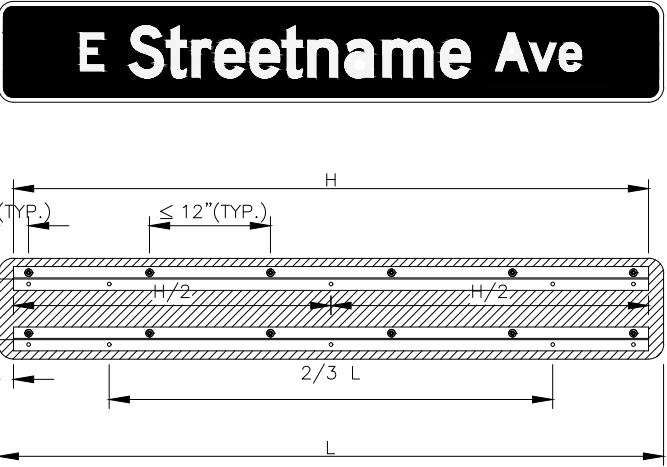




TYPICAL POLE MOUNTED INSTALLATION

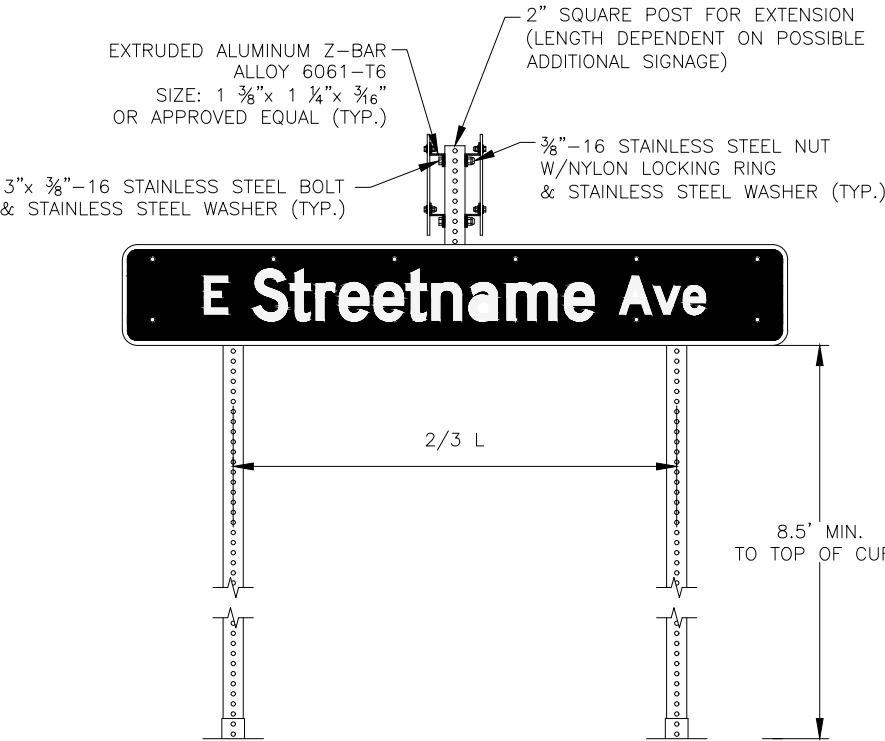


GROUND MOUNT STREET NAME INSTALLATION  
IF BOTH L ARE  $\leq 42"$



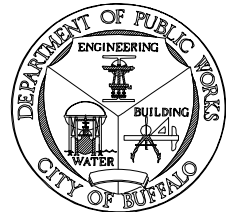
$L = \text{VARIES} *$   
 $H = L - 3"$

\* VARIES BY LENGTH OF  
LEGEND



GROUND MOUNT STREET NAME INSTALLATION  
IF EITHER L IS  $> 42"$

- NOTES:
1. ALLUMINUM Z BARS  $1\frac{3}{8}" \times 1\frac{1}{4}" \times \frac{3}{16}"$  OR APPROVED EQUAL.
  2. ALL BANDING AND CLIPS SHALL BE 0.022" MINIMUM THICKNESS BY  $\frac{3}{4}"$  WIDE STAINLESS STEEL.
  3. FLAT WASHERS SHALL BE PLACED AFTER EACH BOLT HEAD, BEFORE EACH NUT, BEFORE EACH NYLON WASHER AND BETWEEN SPACERS AND SIGN PANELS. WASHERS IN CONTACT WITH REFLECTIVE SHEETING SHALL BE NYLON. ALL OTHER WASHERS SHALL BE STAINLESS STEEL. ALL THREADED ROD USED FOR SPACERS SHALL BE GALVANIZED STEEL. ALL OTHER NUTS AND BOLTS SHALL BE STAINLESS STEEL. ALL STAINLESS STEEL NUTS AND  $\frac{5}{16}"$  DIAMETER BOLTS FOR BANDING BRACKETS SHALL HAVE NYLON PLUG OR RING LOCKING FEATURES.
  4. ALL BOLT LENGTHS SHOWN ARE ESTIMATED. THE CONTRACTOR SHALL SELECT BOLT LENGTHS SUFFICIENT TO RESULT IN EACH BOLT EXTENDING BETWEEN  $\frac{1}{4}"$  TO  $\frac{1}{2}"$  BEYOND A PROPERLY TIGHTENED NUT. THE CONTRACTOR SHALL ALSO VERIFY PROPER BOLT LENGTHS WHERE NUTS ARE NOT REQUIRED. BOLT DIAMETERS SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER.
  5. SEE NYSDOT 645 SERIES STANDARD SHEETS FOR ADDITIONAL INFORMATION ON SIGN MOUNTING AND LOCATION DETAILS.
  6. USE BACK-TO-BACK  $1\frac{3}{8}" \times 1\frac{1}{4}" \times \frac{3}{16}"$  OR  $2" \times 1" \times \frac{3}{16}"$  ALUMINUM Z-MEMBER CONFORMING TO MATERIAL SPEC T30-20 FOR TRAFFIC SIGNS. SIZE OF Z-MEMBERS SHALL BE DETERMINED BY THE ENGINEER BASED ON SIZE AND SHAPE OF POLE THE BRACKET WILL BE ATTACHED TO.

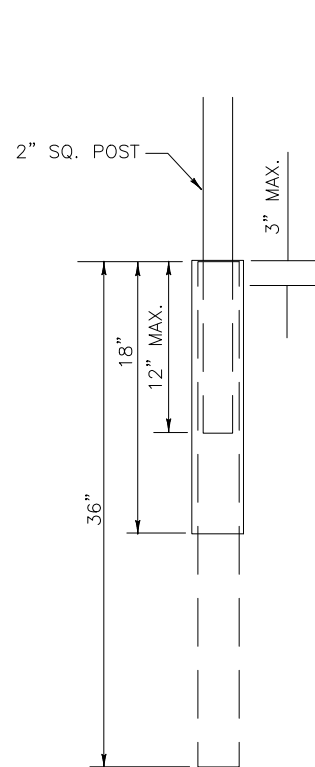


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DIVISION OF TRAFFIC ENGINEERING

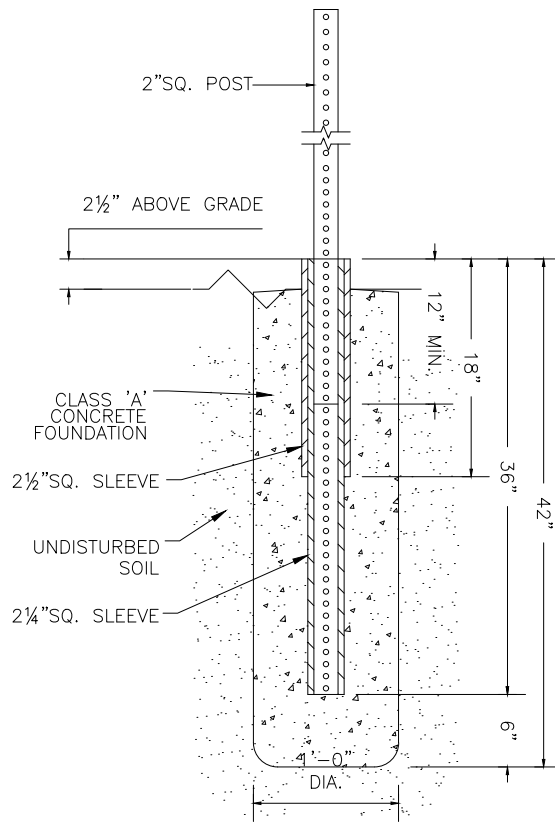
GROUND MOUNT STREET NAME  
INSTALLATION DETAIL

|               |                                                      |                  |                         |
|---------------|------------------------------------------------------|------------------|-------------------------|
| SCALE<br>NONE | DESIGNED BY: XXX<br>DRAWN BY: XXX<br>CHECKED BY: XXX | DATE<br>6 FEB 13 | DRAWING NO.<br>DPW-GMSN |
|---------------|------------------------------------------------------|------------------|-------------------------|

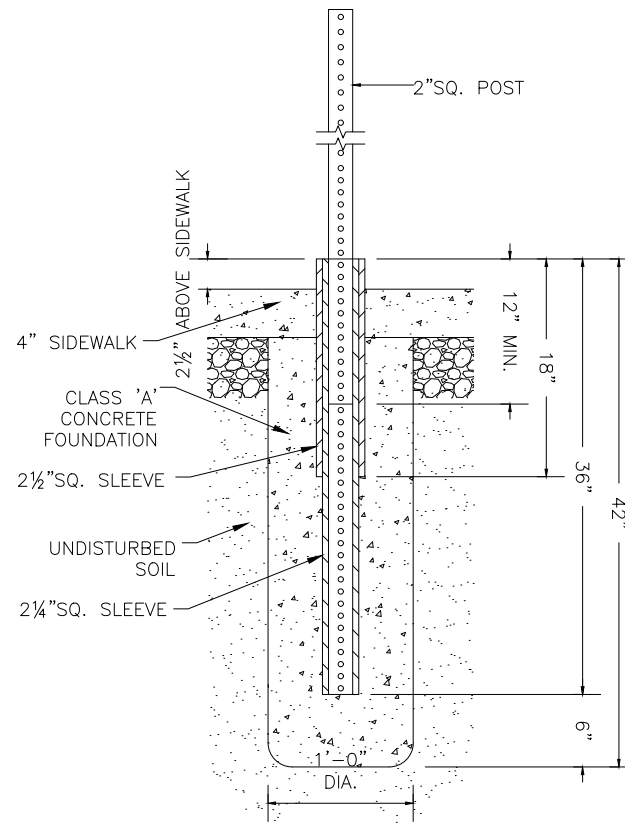




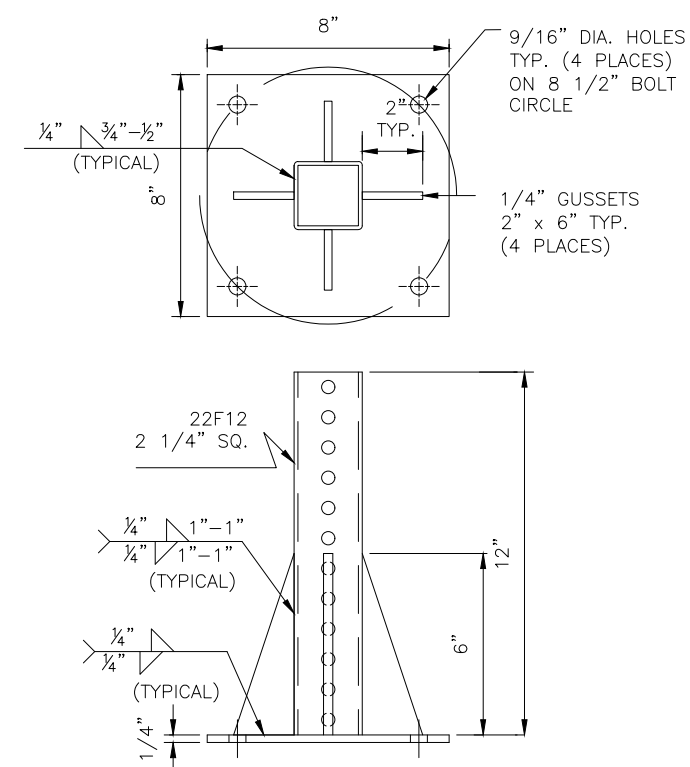
(TYPICAL)



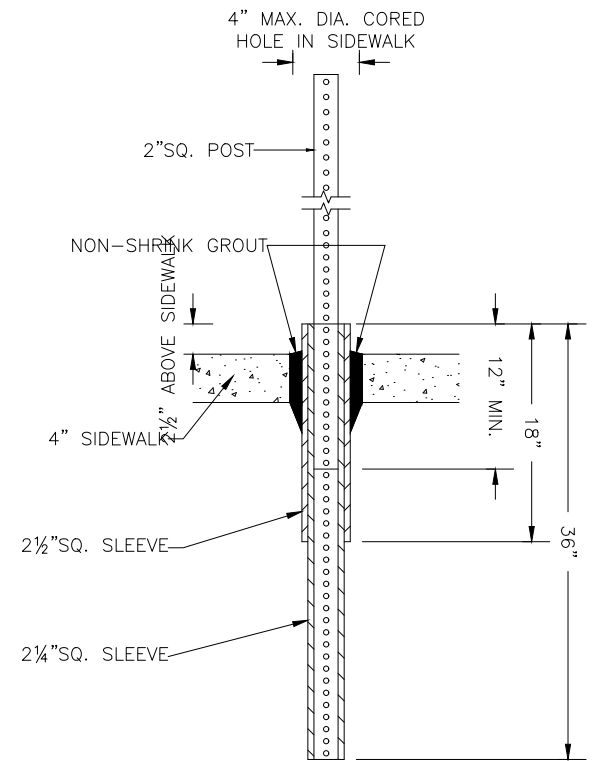
IN AREAS OTHER THAN SIDEWALK



IN SIDEWALK AREA



GALVANIZED SURFACE MOUNTED BASE  
FOR GALVANIZED TELESPAR SIGN POST



CORED SIGN POST INSTALLATION  
IN UNDISTURBED SIDEWALK AREA

# NOTES

SLEEVES SHALL MEET THE SAME MINIMUM ASTM REQUIREMENTS AS POSTS.

SLEEVES SHALL BE MASKED OFF IN SUCH A MANNER AS TO PREVENT FOUNDATION SEEPAGE INTO THE INNER SLEEVE.

# NOTE

ALL BASE COMPONENTS SHALL BE STEEL AND MEET THE MINIMUM REQUIREMENTS OF ASTM DESIGNATION A-466 GRADE A. GALVANIZATION SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM 525, G-90.

BASES TO BE INSTALLED WITH 1/2"-13 SNAP OFF SELF DRILL ANCHORS (OR EQUIVALENT) PER MANUFACTURER'S SPECIFICATIONS.

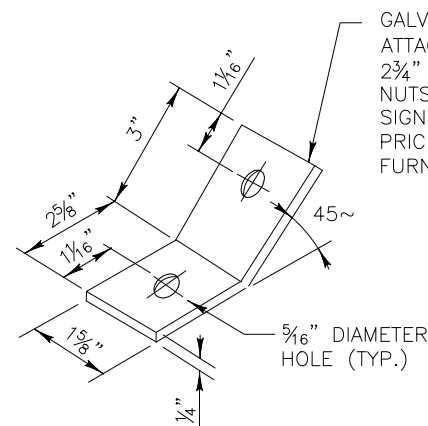
DO NOT USE UNLESS CALLED FOR IN PLANS FOR AN INDIVIDUAL SITE

# NOTE

IN UNDISTURBED SIDEWALK AREA, A 4" MAXIMUM DIAMETER HOLE SHALL BE CORED IN SIDEWALK. SIGNPOSTS AND BASE SECTIONS SHALL BE DRIVEN INTO SUB-BASE BELOW SIDEWALK TO TYPICAL DEPTH SHOWN. NON-SHRINK GROUT, NYSDOT SPECIFICATION 701-05, SHALL BE PLACED AROUND SIGN POST IN SIDEWALK. TOP OF GROUT SHALL BE SLOPED FOR DRAINAGE AWAY FROM POST AND FLUSH WITH SURROUNDING GRADE AT PERIMETER.

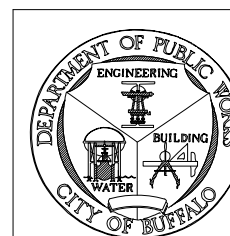
SLEEVES SHALL MEET THE SAME MINIMUM ASTM REQUIREMENTS AS POSTS.

SLEEVES SHALL BE MASKED OFF IN SUCH A MANNER AS TO PREVENT GROUT SEEPAGE INTO THE INNER SLEEVE.



ANGLE DETAIL

(FOR MOUNTING PARKING SIGN PANELS BELOW NON-ANGLE SIGNS)

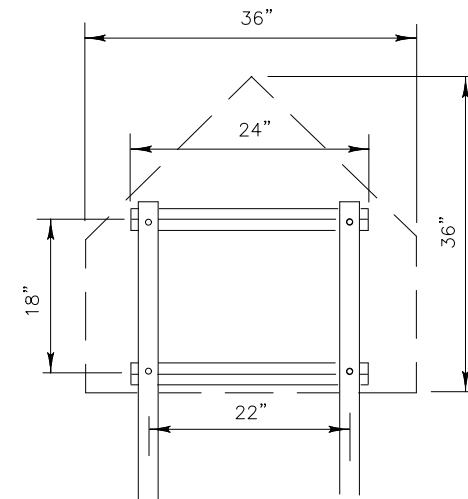
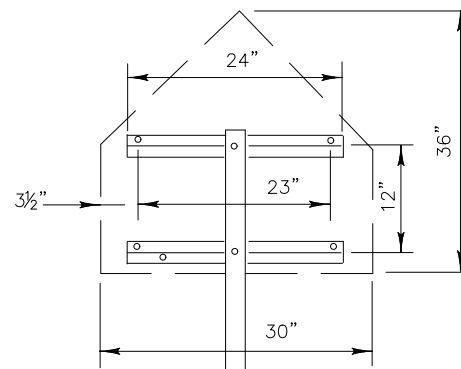
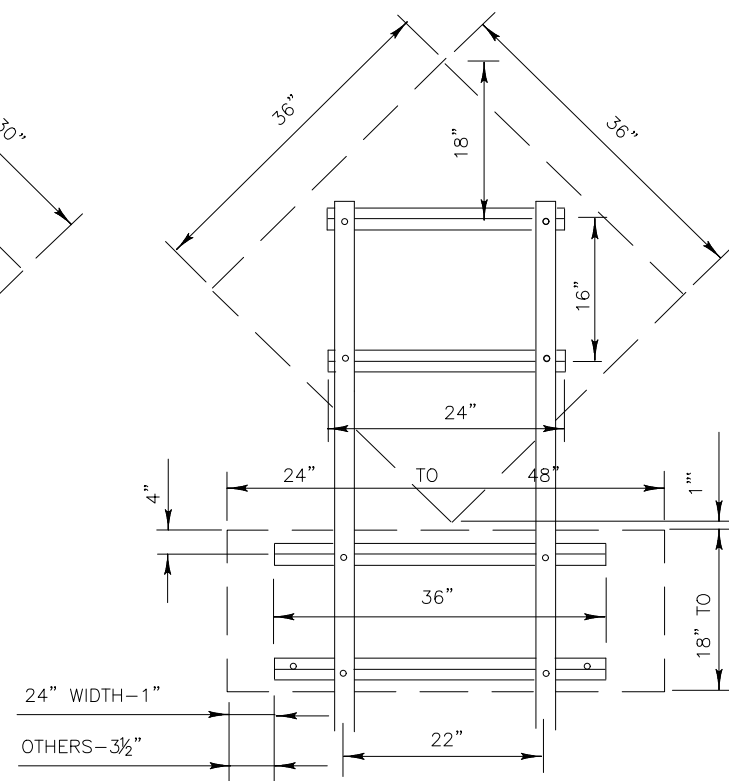
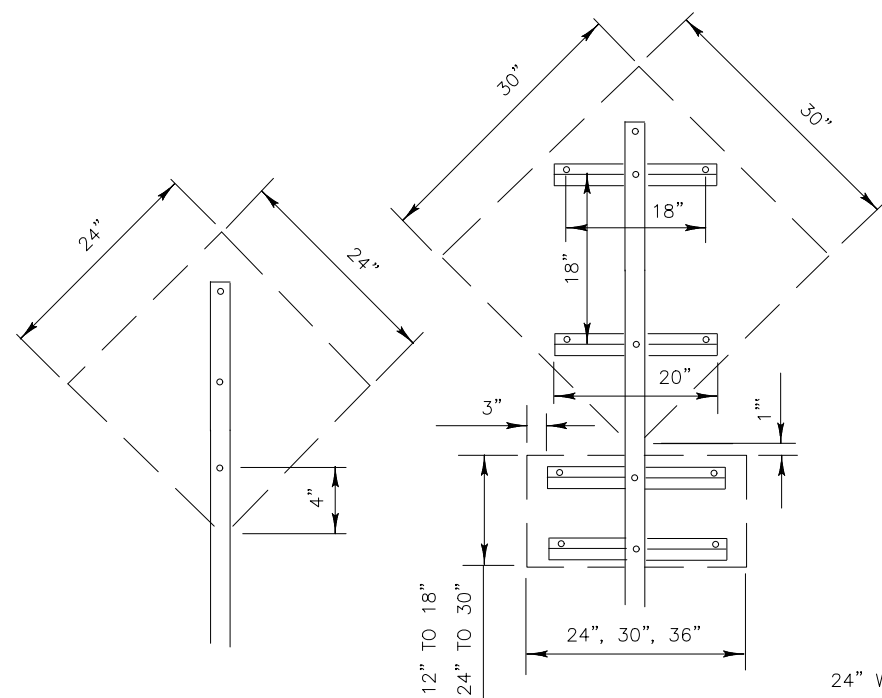
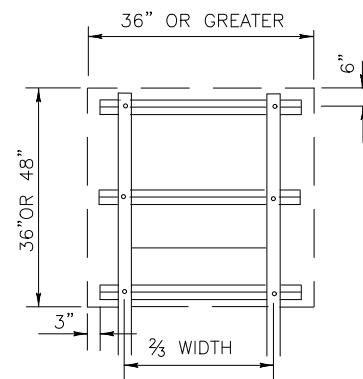
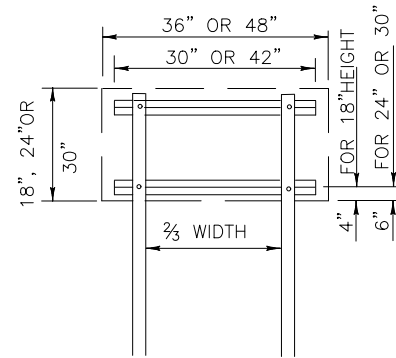
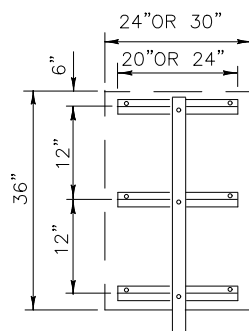
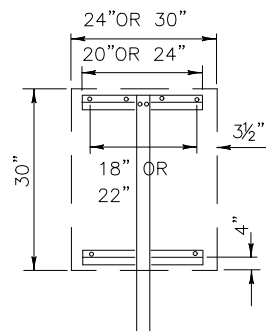
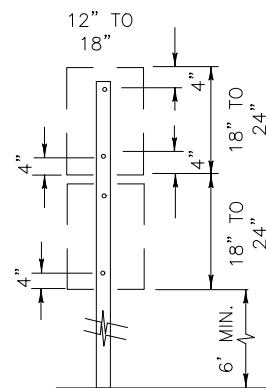
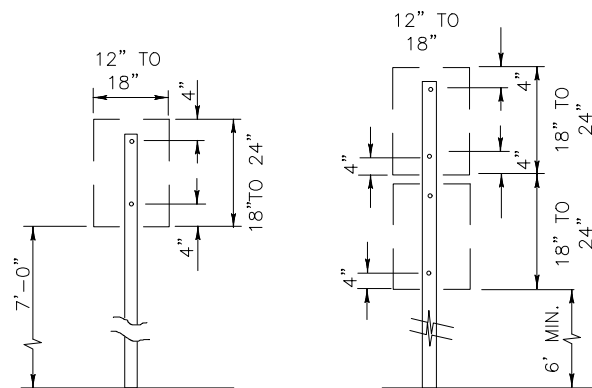
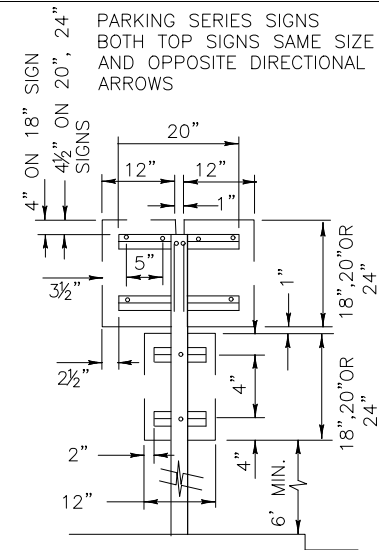
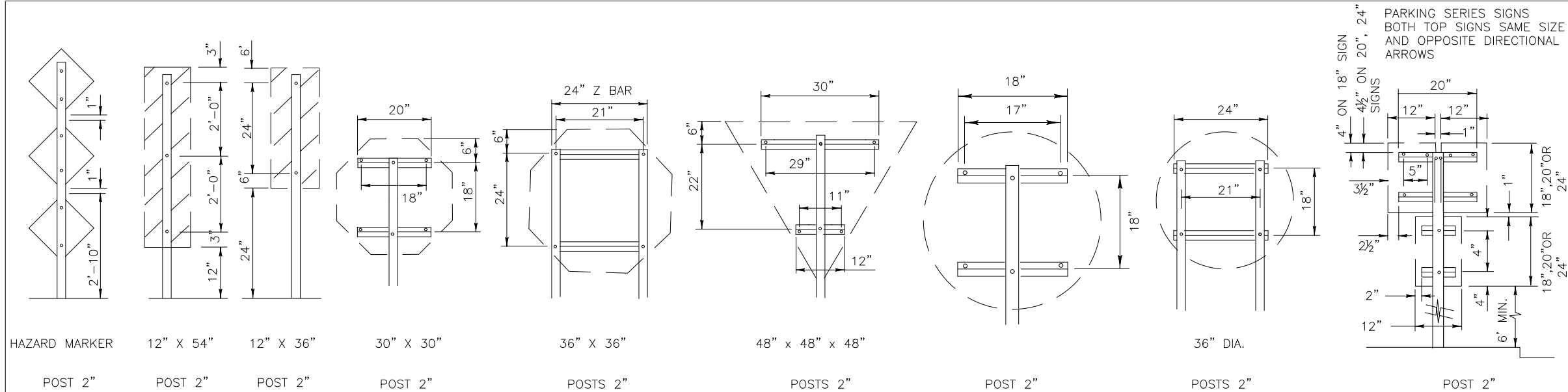


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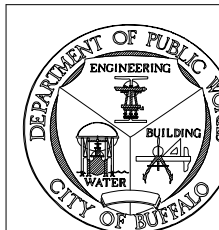
## STANDARD SIGN POST INSTALLATION DETAIL

|               |                                                      |                  |                        |
|---------------|------------------------------------------------------|------------------|------------------------|
| SCALE<br>NONE | DESIGNED BY: XXX<br>DRAWN BY: XXX<br>CHECKED BY: XXX | DATE<br>6 FEB 13 | DRAWING NO.<br>DPW-SSP |
|---------------|------------------------------------------------------|------------------|------------------------|





- NOTES:
1. GENERAL: ALL SIGN MATERIAL AND INSTALLATIONS SHALL CONFORM TO THE LATEST FEDERAL AND NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS AND STANDARD SHEETS EXCEPT AS MODIFIED BY THESE PLANS AND CONTRACT DOCUMENTS.
  2. SIGN PANELS: ALL SIGN PANELS SHALL BE ALUMINUM AND SCREENED OR REVERSE SCREENED TRANSPARENT COLOR CHARACTERS. BLACK CHARACTERS MAY BE PAINTED.
  3. CHARACTERS AND BORDERS OF ALL STREET NAME SIGNS ARE TO BE DIAMOND GRADE VIP MATERIAL OR EQUIVALENT.
  4. THE BACK SIDE OF ALL SIGNS SHALL BE PAINTED BLACK WHEN THEY OBSCURE THE SHAPE OF A STOP, YIELD OR WARNING SIGN WHEN PLACED BACK-TO-BACK.
  5. ALL CORNER RADII OF PANELS SHALL BE 1½" FOR STREET NAME AND PARKING SERIES SIGNS.
  6. SIGN PANELS SHALL BE EITHER ALUMINUM ALLOY 6061-T6, 5154-H38 OR 5052-H38 EXCEPT STREET NAME SIGNS WHICH SHALL BE 6061-T6. ALL ALUMINUM SIGN PANELS SHALL CONFORM TO THE REQUIREMENTS OF NYSDOT MATERIAL SPECIFICATIONS 715-04, WROUGHT ALUMINUM AND 645-2.02 FOR MATERIAL THICKNESS.
  7. SIGN POSTS AND FOOTINGS: SIGN POSTS AND BASE SECTION SHALL BE AT LEAST 12 GAGE GALVANIZED PERFORATED SQUARE STRUCTURAL STEEL TUBING MEETING REQUIREMENTS OF ASTM DESIGNATION A-466 GRADE A.
  8. BASE POSTS DAMAGED OR DEFORMED ON THE TOP OR SIDES IN THE SPLICE CONTACT AREA SHALL BE REPLACED OR REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT.
  9. CONCRETE FOOTINGS SHALL BE CLASS A CONCRETE AND REST AGAINST UNDISTURBED SOIL.
  10. IN CURBED AREAS, A 3'-0" HORIZONTAL SETBACK FOR POSTS IS DESIRABLE WITH A 2'-0" MINIMUM. IN NO CASE SHALL A SIGN PANEL EXTEND WITHIN 6" OF THE CURB LINE.
  11. ALL POSTS NOT SET IN SIDEWALK OR CONCRETE PAVED AREAS SHALL HAVE TYPE 'A' CONCRETE ENCASED FOUNDATIONS. THE DEPTH OF A FOUNDATION MAY BE REDUCED TO A MINIMUM OF 1'-0" INTO SOLID ROCK AND ENCASED IN CONCRETE. THE TOP OF CONCRETE SHALL BE SLOPED FOR DRAINAGE AWAY FROM THE POST AND FLUSH WITH SURROUNDING GRADE AT THE PERIMETER.
  12. IF IT IS FOUND DURING CONSTRUCTION THAT UTILITY OR TRAFFIC SIGNAL POLES EXIST IN APPROXIMATELY THE SAME LOCATION AS THAT SPECIFIED FOR GROUND MOUNTED SIGNS, THE SIGNS SHALL BE BANDO TO THE POLE AS LONG AS THE POLE LOCATION SATISFIES REQUIREMENTS AS LISTED IN THE FEDERAL OR NYSDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND PERMISSION TO USE THE POLE IS OBTAINED FROM THE OWNER AND ENGINEER IN CHARGE.
  13. HARDWARE: STIFFENERS FOR PANELS 24" WIDE OR GREATER SHALL BE ALUMINUM Z-BARS 1½" x 1¼" x ⅝" OR APPROVED EQUAL.
  14. ALL BANDING AND CLIPS SHALL BE 0.022" MINIMUM THICKNESS BY ¾" WIDE STAINLESS STEEL.
  15. FLAT WASHERS SHALL BE PLACED AFTER EACH BOLT HEAD, BEFORE EACH NUT, BEFORE EACH NYLON WASHER AND BETWEEN SPACERS AND SIGN PANELS. WASHERS IN CONTACT WITH REFLECTIVE SHEETING SHALL BE NYLON. ALL OTHER WASHERS SHALL BE STAINLESS STEEL. ALL BOLTS, WASHERS AND NUTS FOR U-BOLTS SHALL BE GALVANIZED STEEL. ALL OTHER NUTS AND BOLTS SHALL BE STAINLESS STEEL. ALL STAINLESS STEEL NUTS AND ⅝" DIAMETER BOLTS FOR BANDING BRACKETS SHALL HAVE NYLON PLUG OR RING LOCKING FEATURES.
  16. ALL BOLT LENGTHS SHOWN ARE ESTIMATED. THE CONTRACTOR SHALL SELECT BOLT LENGTHS SUFFICIENT TO RESULT IN EACH BOLT EXTENDING BETWEEN ¼" TO ½" BEYOND A PROPERLY TIGHTENED NUT. THE CONTRACTOR SHALL ALSO VERIFY THE PROPER BOLT LENGTHS WHERE NUTS ARE NOT REQUIRED. BOLT DIAMETERS SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER.

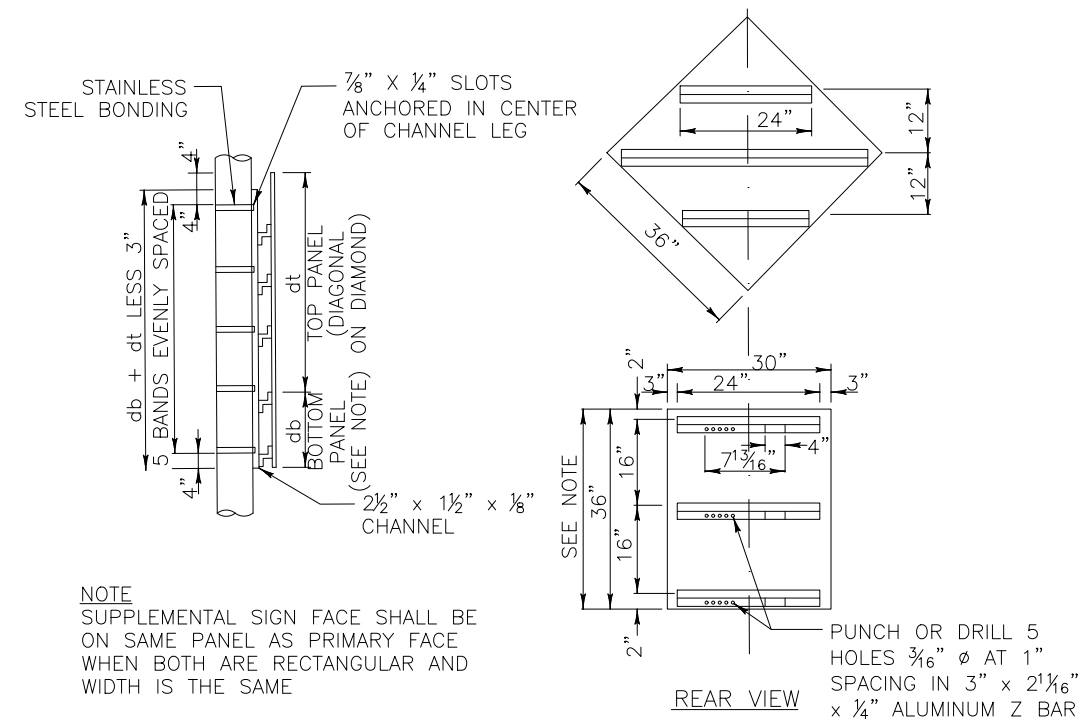


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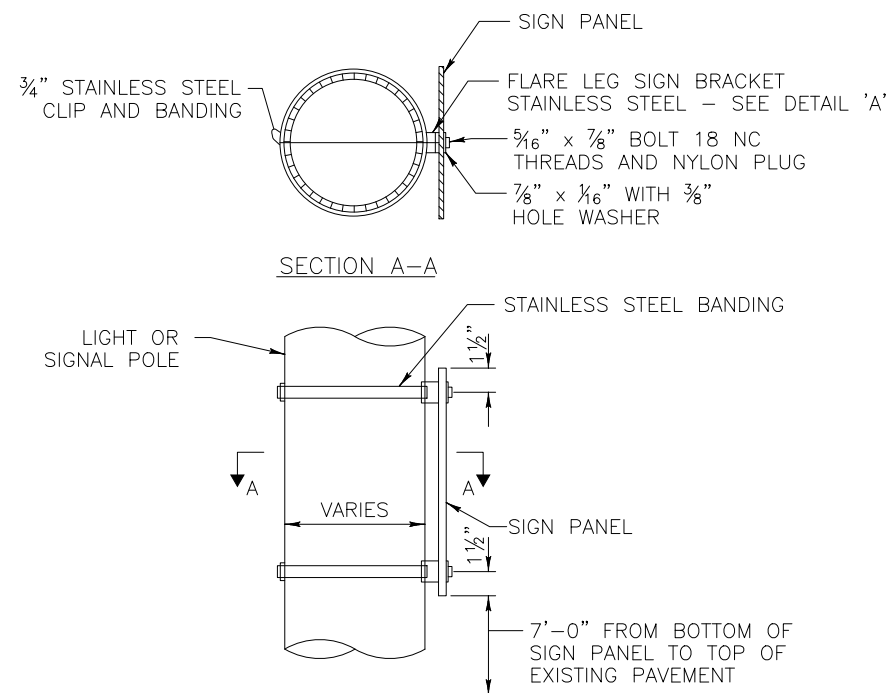
### TYPICAL SIGN POST ATTACHMENT DETAILS

|               |                                                      |                  |                         |
|---------------|------------------------------------------------------|------------------|-------------------------|
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|---------------|------------------------------------------------------|------------------|-------------------------|

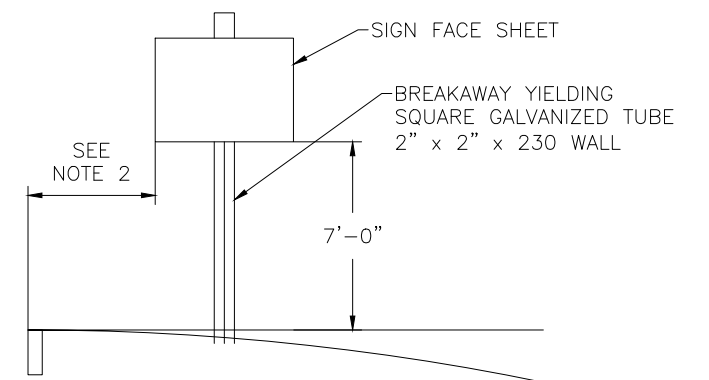




POLE MOUNTED SIGNS AND SUPPLEMENTAL PANELS



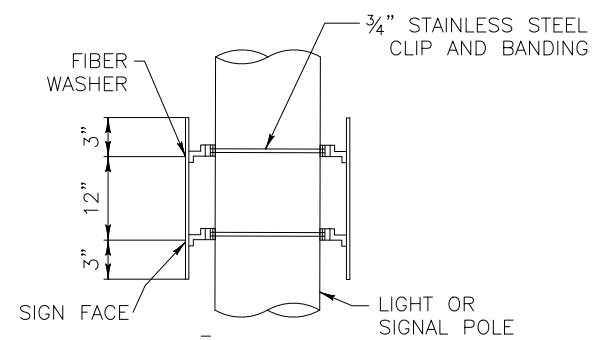
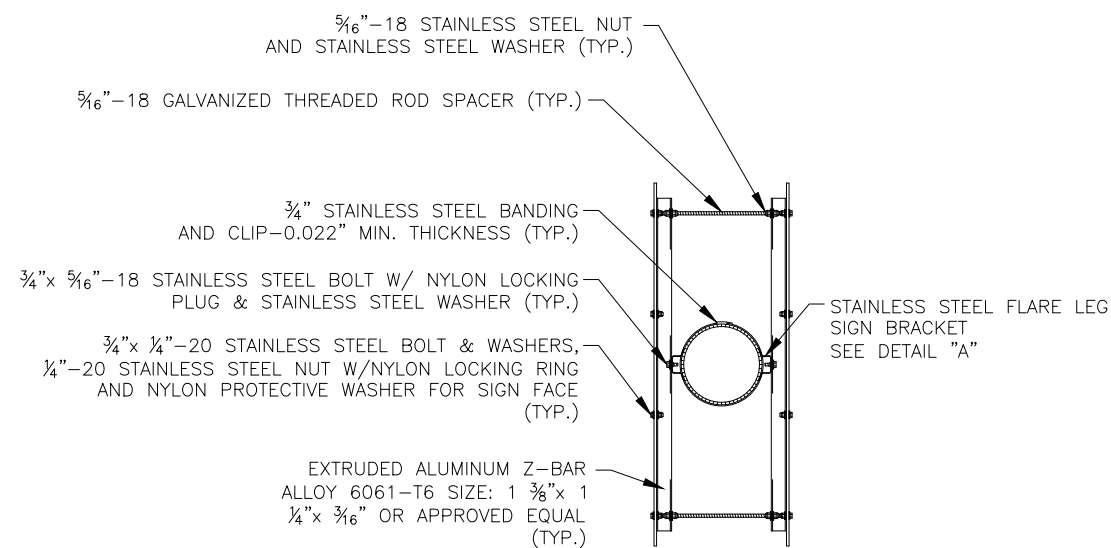
POLE MOUNTED PARKING SERIES SIGNS



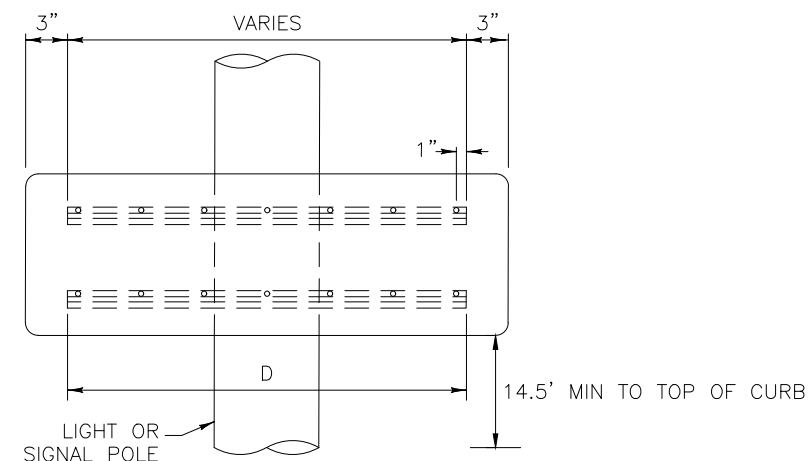
NOTES

1. COLUMN MOUNTED SIGNS TO BE A MINIMUM OF 7' ABOVE SIDEWALK AREA. REFER TO SIGN DATA SHEETS FOR SPECIFIC MOUNTING HEIGHTS.
2. 2' MINIMUM FROM FACE OF CURB.
3. FOR TRAFFIC SIGN ASSEMBLY DETAILS REFER TO NYSDOT STANDARD SHEET 645-01 AND 645-03.
4. ALL REGULATORY/PARKING SIGNS SHALL CONFORM TO THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND NYS SUPPLEMENTAL.
5. FOR NEW SIGN ASSEMBLY SEE NYSDOT STANDARD SHEET 645-01.

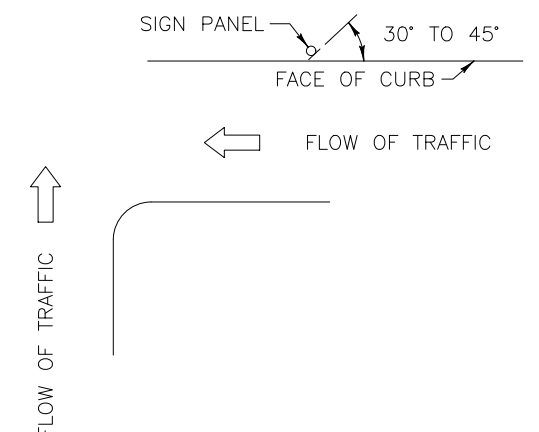
GROUND MOUNTED TRAFFIC SIGN PLACEMENT



END POLE VIEW

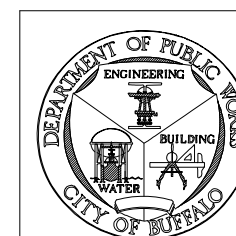


FRONT POLE VIEW



PARKING SIGN MOUNTING ANGLE

POLE MOUNTED OVERSIZE STREET NAME SIGNS

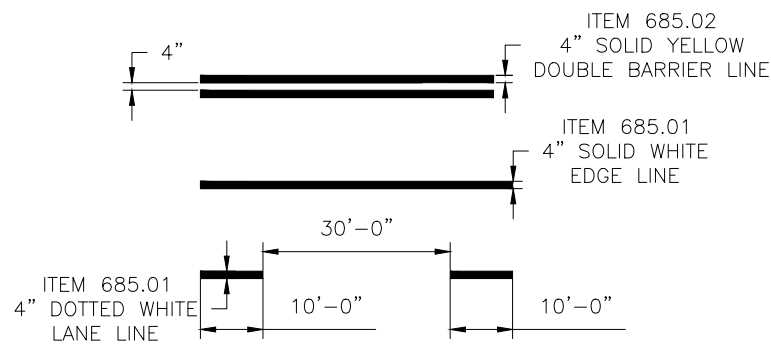


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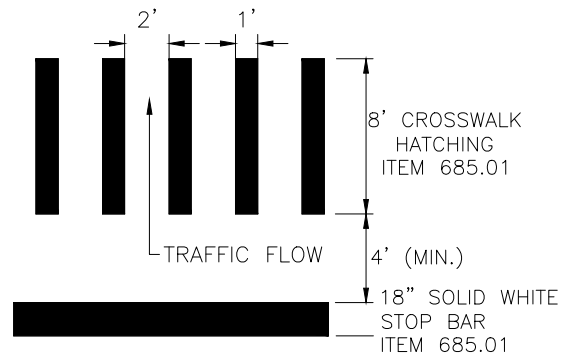
MISCELLANEOUS SIGN  
DETAILS

|               |                                                      |                  |                         |
|---------------|------------------------------------------------------|------------------|-------------------------|
| SCALE<br>NONE | DESIGNED BY: XXX<br>DRAWN BY: XXX<br>CHECKED BY: XXX | DATE<br>6 FEB 13 | DRAWING NO.<br>DPW-MSCS |
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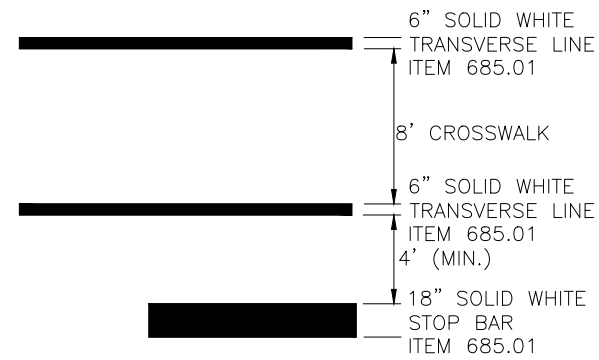




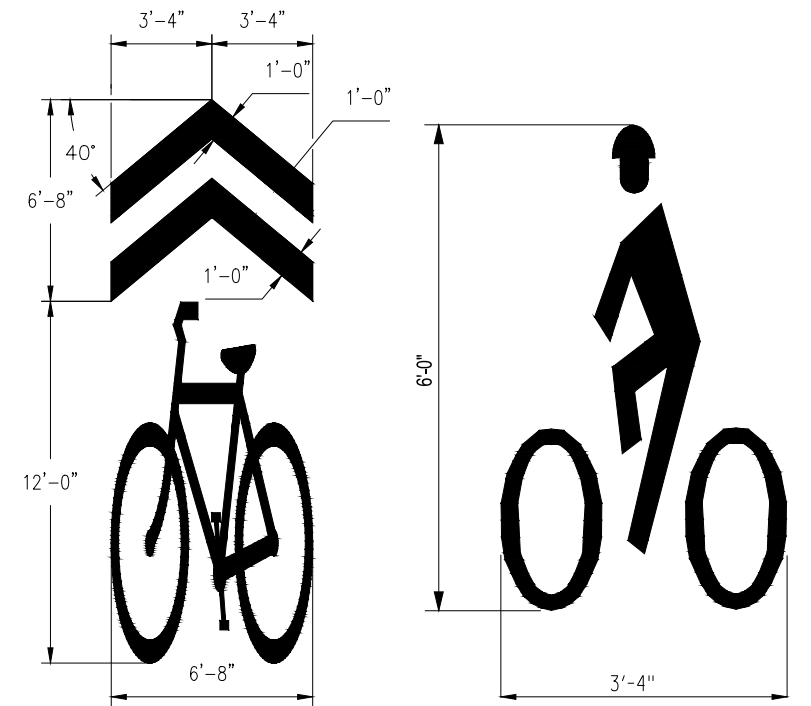
TYPICAL STRIPING DETAILS



TYPICAL CROSS WALK STRIPING  
DETAIL WITH HATCHING

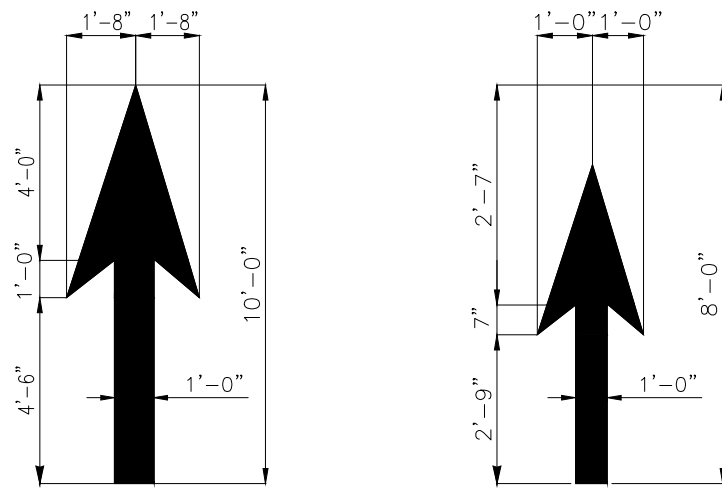


TYPICAL CROSS WALK STRIPING  
DETAIL WITHOUT HATCHING

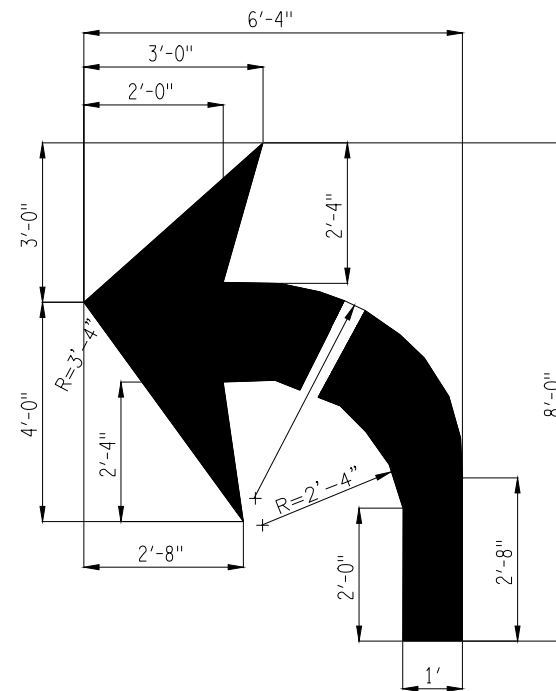


SHARED LANE USE  
MARKING DETAIL

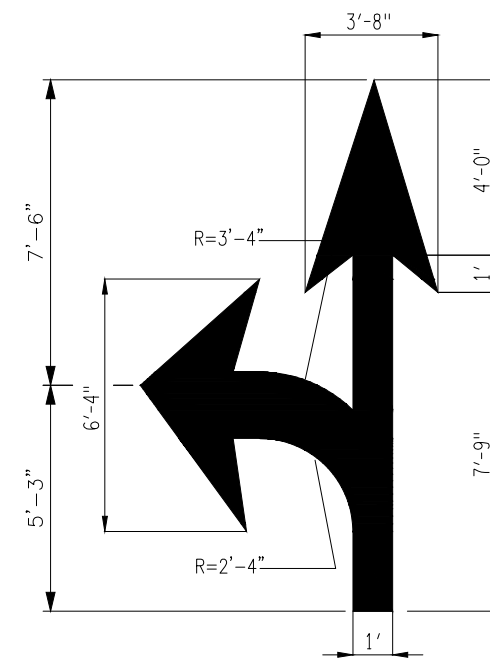
BICYCLE SYMBOL



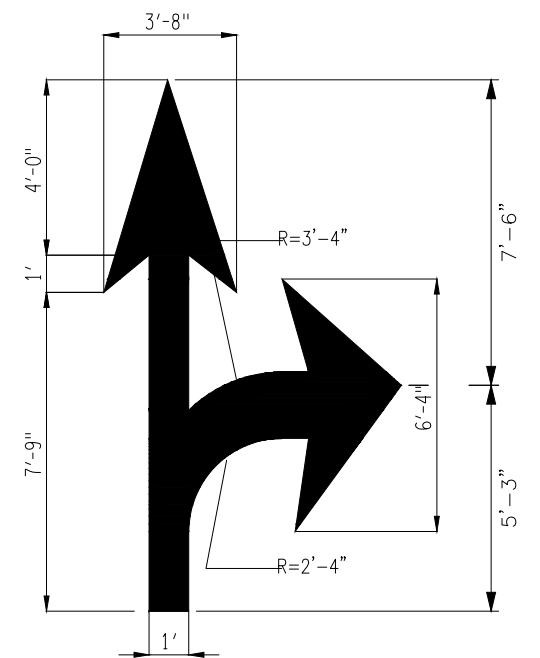
STRAIGHT ARROWS



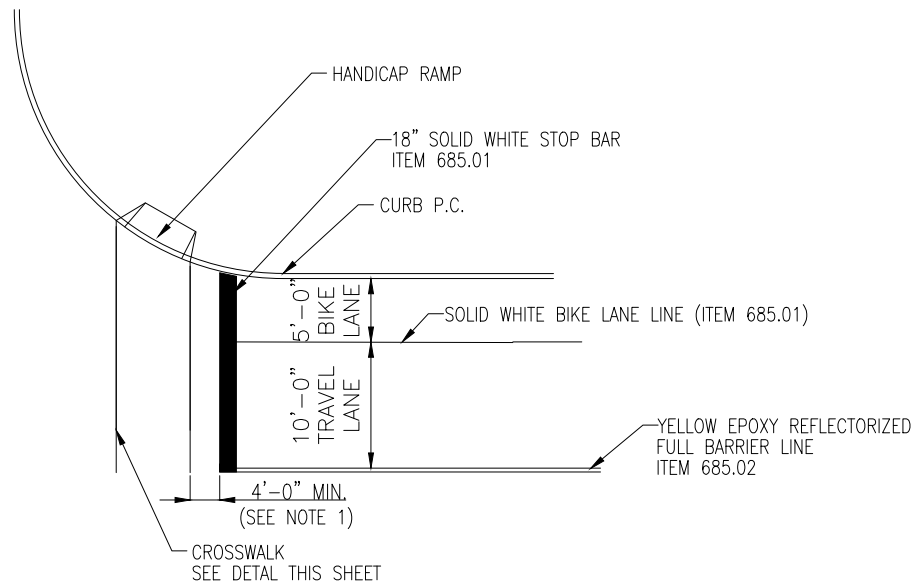
LEFT TURN ARROW



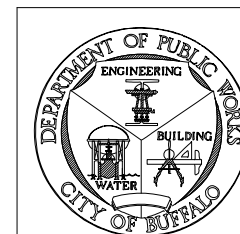
LEFT TURN AND STRAIGHT  
ARROW FOR SHARED LANE



RIGHT TURN AND STRAIGHT  
ARROW FOR SHARED LANE



TYPICAL INTERSECTION MARKINGS



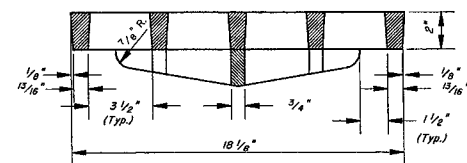
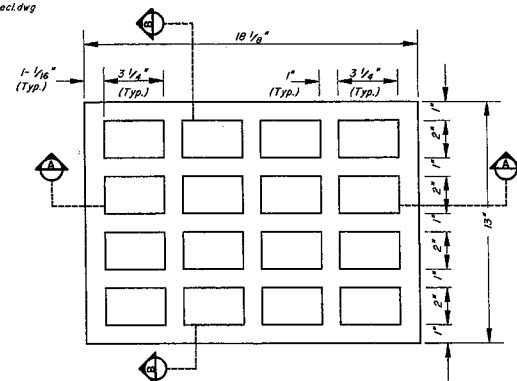
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## PAVEMENT MARKING DETAILS

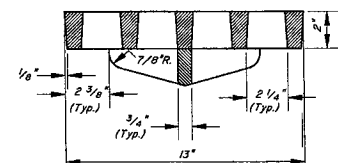
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| SCALE<br>NONE | DESIGNED BY: XXX<br>DRAWN BY: XXX<br>CHECKED BY: XXX | DATE<br>6 FEB 13 | DRAWING NO.<br>DPW-PM |
|---------------|------------------------------------------------------|------------------|-----------------------|



Drawing No.  
20557-RS-1

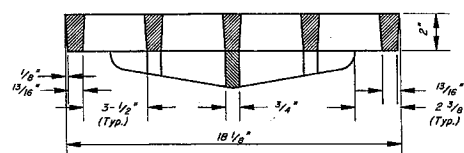
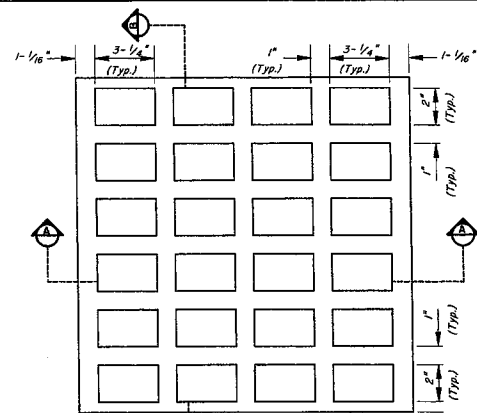


SECTION A-A  
APPROX. WT. 66-68 LBS.

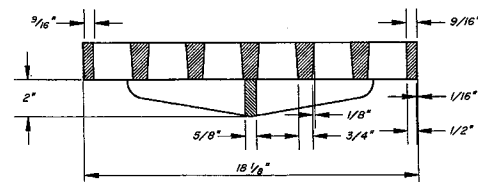


SECTION B-B

HALF SIZE GRATE  
13" X 18 1/8"  
Scale: 3/4"=1'-0"



SECTION A-A  
APPROX. WT. 104-106 LBS.

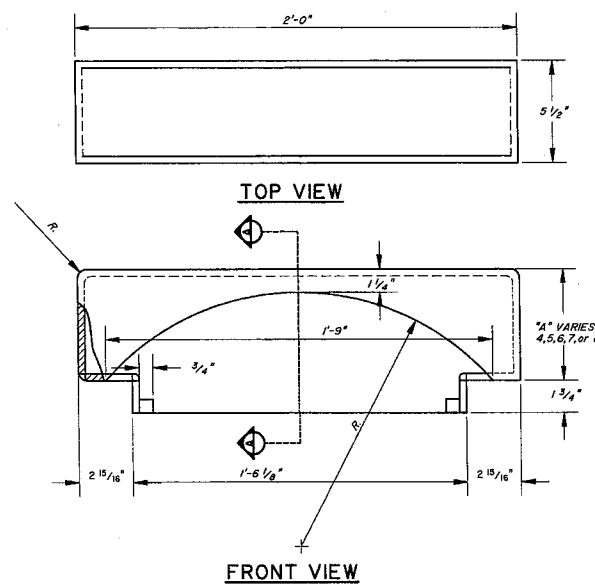


SECTION B-B

FULL SIZE GRATE  
18 1/8" X 18 1/8"  
Scale: 3/4"=1'-0"

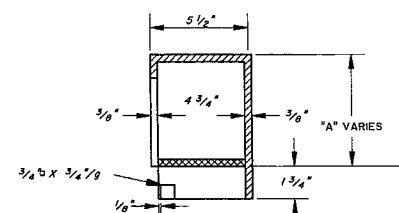
#### NOTES

1. ALL GRATES SHALL BE TOUGH, CLEAN, CLOSE GRAINED, SMOOTH GRAY IRON, CONFORMING IN ALL RESPECTS TO THE "STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS" (DESIGNATION A-48-60T), CLASS NO. 35-B OR BETTER-A.S.T.M. (INCLUDING LATEST REVISIONS).
2. ALL CAST IRON UNITS SHALL BE THOROUGHLY CLEANED AND PAINTED BEFORE RUSTING BEGINS AND BEFORE LEAVING THE SHOP WITH (1) ONE COAT OF A HIGH GRADE BITUMINOUS PAINT.
3. FOR 12" X 18" GRATE SEE DWG. # 20557-R-CI-7
4. PLEASE NOTE THIS DRAWING REPLACES B.S.A. DRAWING NO'S. 20557-R-S-2, 20557-R-S-3, & 20557-R-CI-6



FRONT VIEW

TOP VIEW



SECTION A-A

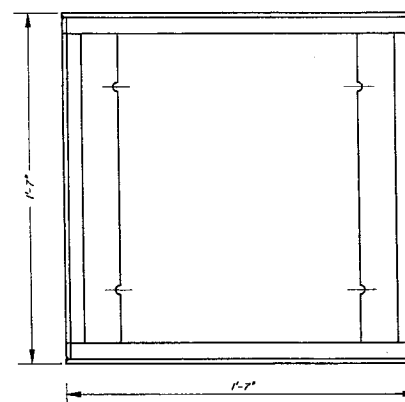
END VIEW

DETAILS OF DARK FABRICATED  
STEEL CURB BOX  
(4", 5", 6", 7" & 8")  
Scale: 3/4"=1'-0"

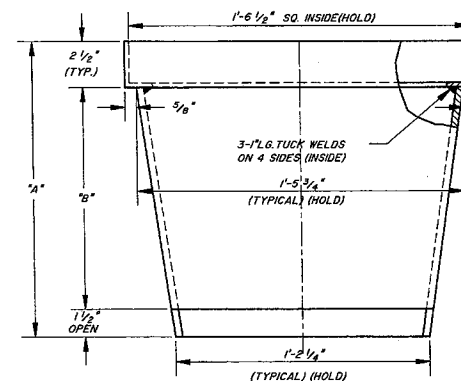
#### NOTES

1. ALL STEEL UNITS SHALL BE THOROUGHLY CLEANED AND PAINTED BEFORE RUSTING BEGINS AND BEFORE LEAVING THE SHOP WITH (1) ONE COAT OF A HIGH GRADE BITUMINOUS PAINT.
2. MATERIAL # 1018 OR # 1020 LOW CARBON HOT ROLLED STEEL.
3. ALL 3/8" PLATE.

| "A" | "B"     | WT. IN POUNDS |
|-----|---------|---------------|
| 4"  | 22 3/4" | 36            |
| 5"  | 17 3/8" | 43            |
| 6"  | 14 1/2" | 46            |
| 7"  | 12 7/8" | 53            |
| 8"  | 11 1/8" | 57            |

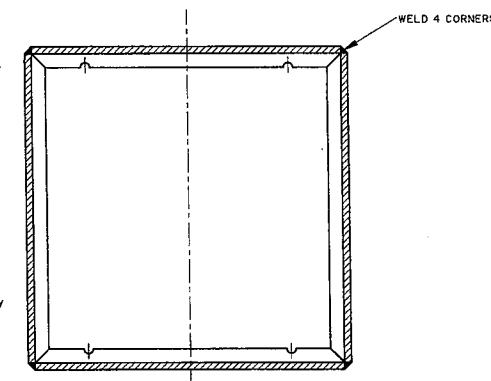


PLAN VIEW

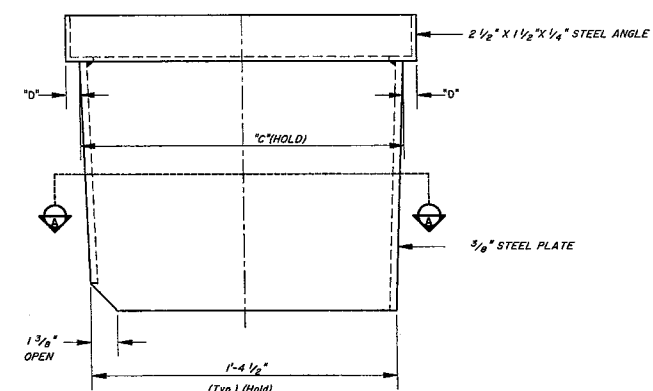


ELEVATION VIEW

TOP SECTIONS FOR DARK RECEIVERS  
Scale: 3/4"=1'-0"



SECTION A-A



ELEVATION VIEW

#### DIMENSION CHART

| "A" | "B" | "C"     | "D"    |
|-----|-----|---------|--------|
| 4"  | 0"  | 16 1/2" | 1 1/4" |
| 6"  | 2"  | 16 3/4" | 1 1/8" |
| 8"  | 4"  | 17"     | 1"     |
| 12" | 8"  | 17 1/2" | 3/4"   |
| 14" | 10" | 17 3/4" | 5/8"   |
| 16" | 12" | 18"     | 1/2"   |
| 18" | 14" | 18 1/4" | 3/8"   |
| 20" | 16" | 18 1/2" | 1/4"   |
| 24" | 20" | 19"     | 0"     |

#### PAINT

CLEAN & PAINT WITH ONE COAT OF HIGH GRADE BITUMINOUS PAINT DIRECTLY AFTER FABRICATION.

#### MATERIAL

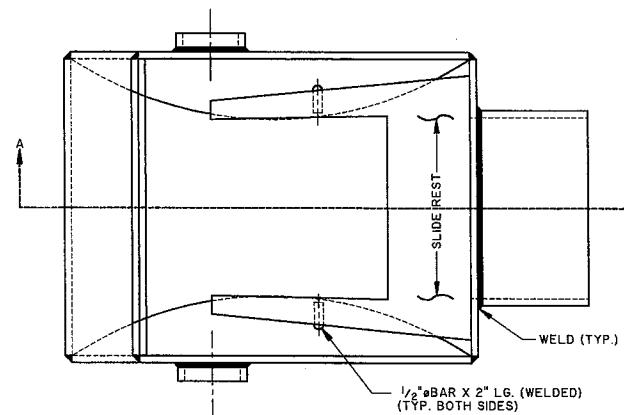
MATERIAL-#1018 OR #1020 LOW CARBON HOT ROLLED STEEL.

ENGINEERING DIVISION  
BUFFALO SEWER AUTHORITY  
MARCH, 1997 BUFFALO NEW YORK  
SCALE AS NOTED

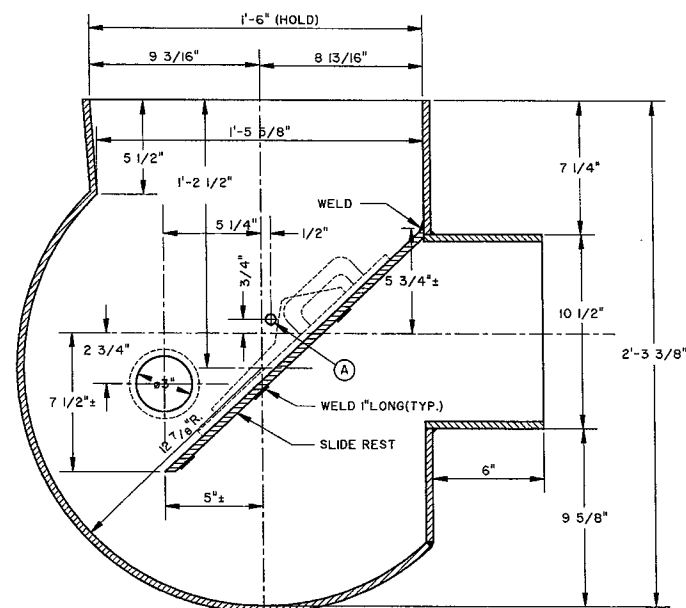
|                     |                      |
|---------------------|----------------------|
| REVISED:            | REVISED: MARCH, 1997 |
| DESIGNED BY: R.G.B. | TRACED BY: CADD      |
| DRAWN BY: CADD      | CHECKED BY: J.M.B.   |

20557-RS-1





TOP VIEW

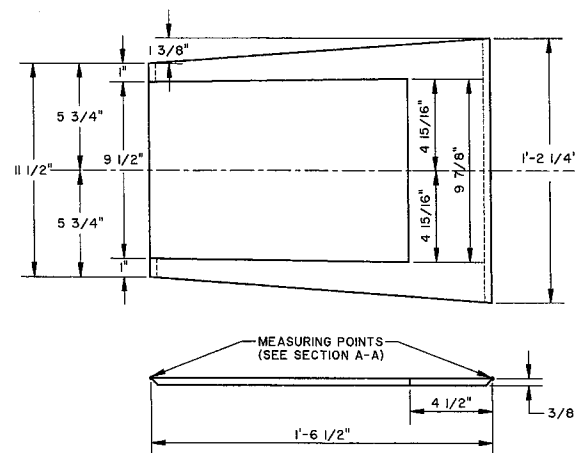


SECTION A-A

(A)=9/16" HOLE FOR 1/2" BAR X 2" LG. (WELDED)

## NOTES:

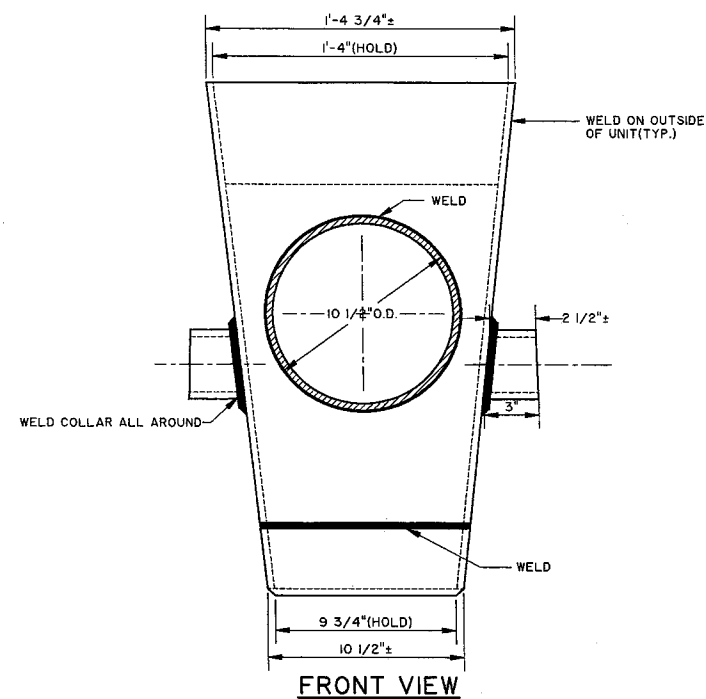
1. ALL PARTS TO BE INTERCHANGEABLE
2. ALL MATERIAL TO BE #1018 OR #1020 LOW CARBON HOT ROLLED STEEL 3/8" THICK
3. ALL STEEL UNITS SHALL BE THOROUGHLY CLEANED AND PAINTED BEFORE RUSTING AND BEFORE LEAVING THE SHOP, WITH ONE(1) COAT OF HIGH GRADE BITUMINOUS PAINT.
4. ALL WELDS TO BE ON OUTSIDE OF UNITS 3/8"



SLIDE REST FOR RECEIVER

SCALE: 3"=1'-0"

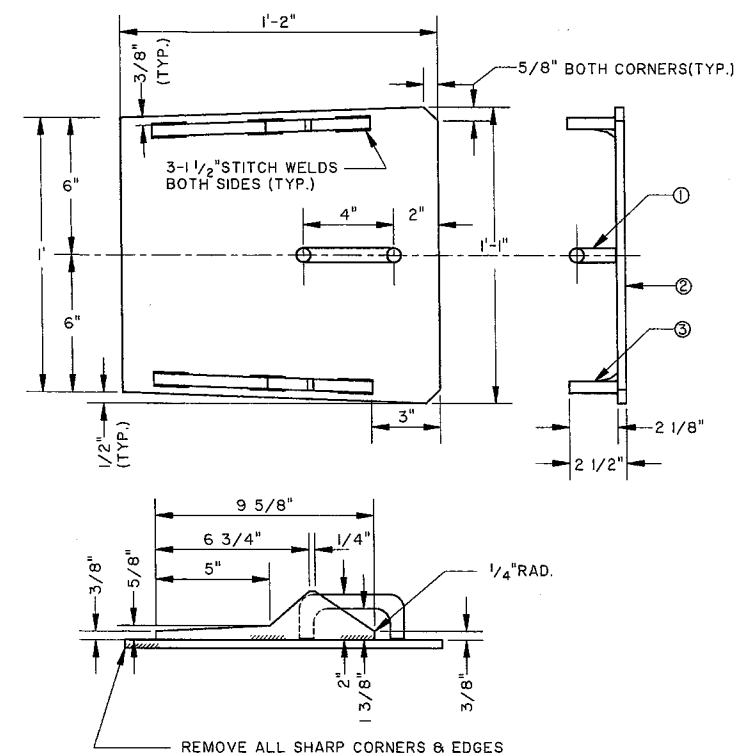
REMOVE ALL SHARP CORNERS AND EDGES



FRONT VIEW

STEEL RECEIVER BOTTOM SECTION

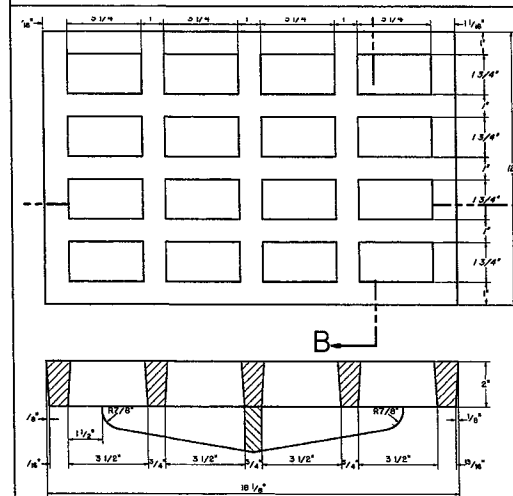
SCALE: 3"=1'-0"



SLIDE FOR RECEIVER

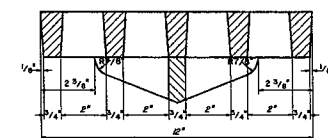
SCALE: 3"=1'-0"

- MATERIALS: ① 5/8" DIA. C.R. STEEL-8" LONG (1 REQ'D.)  
 ② 3/8" STEEL PLATE-13 1/4" X 14 1/4" (1 REQ'D.)  
 ③ 1/2" STEEL PLATE-2 1/4" X 10" (2 REQ'D.)



SECTION A-A

APPROX. WT. 66-68 LBS.



SECTION B-B

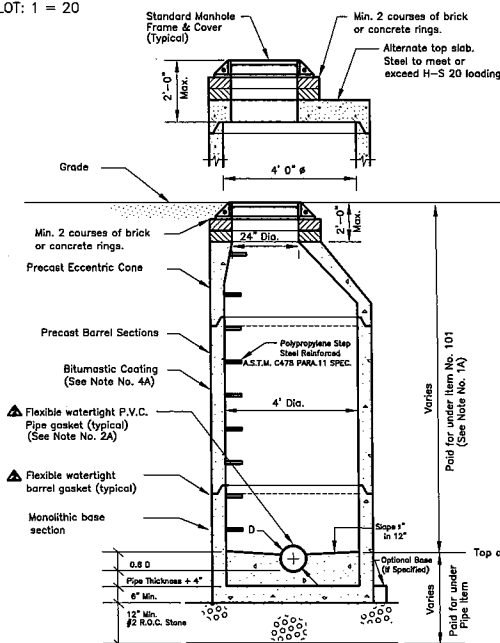
HALF SIZE GRATE  
12" X 18 1/8"

ENGINEERING DIVISION  
 BUFFALO SEWER AUTHORITY  
 MARCH, 1997 BUFFALO, NEW YORK  
 SCALE AS NOTED

|                |                      |
|----------------|----------------------|
| REVISED:       | REVISED: APRIL, 1992 |
| DESIGNED BY:   | TRACED BY: CADD      |
| DRAWN BY: CADD | CHECKED BY: F.W.K.   |



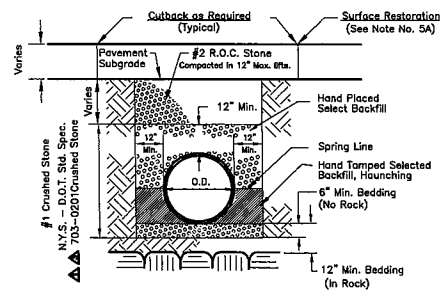
G:STDPCH.DWG  
PLOT: 1 = 20



- NOTE:
- When pipe is installed with concrete cradle manhole shall be placed on a minimum of four (4) solid concrete blocks and a minimum of 8" concrete bedding shall be placed beneath manhole.
  - Pay limits shown are for all manholes.

#### STANDARD PRECAST MANHOLE

SCALE: 1/4" = 1' - 0"  
(Paid for under item No. 101)  
(See Note No. 1A)

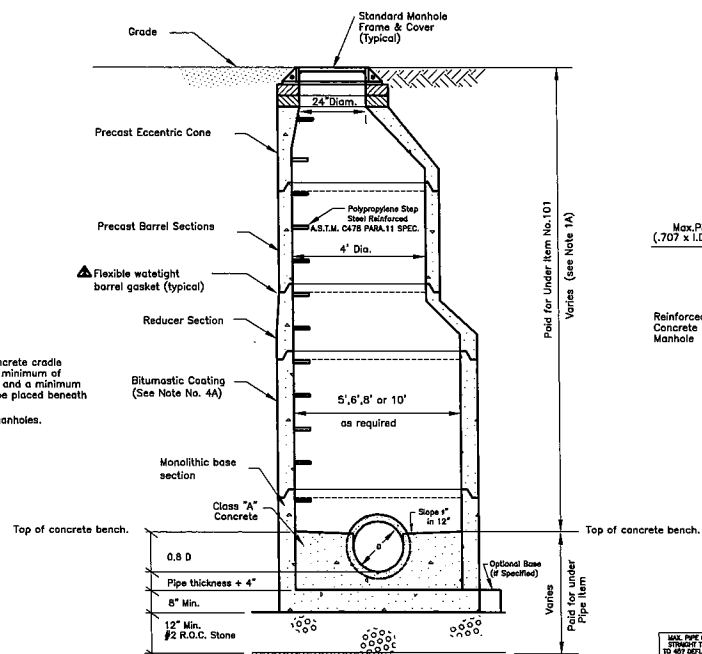


#### P.V.C. PIPE TRENCH DETAIL IN R.O.W.

N.T.S.  
(Paid for under appropriate pipe item unless otherwise specified.)

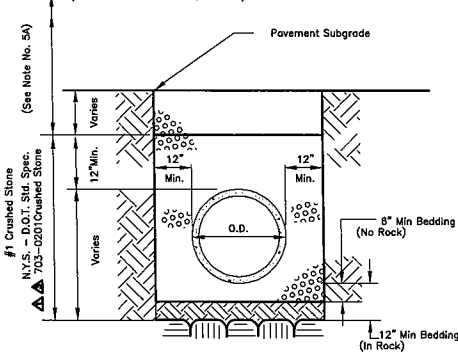
Legend:  
O.D. = Outside diameter  
d = Depth of bedding material below pipe  
D = Inside diameter  
T = Wall thickness of pipe  
R.O.C. = Run of Crusher

| DEPTH OF CONCRETE BELOW PIPE |        |
|------------------------------|--------|
| O                            | d Min. |
| 27" & SMALLER                | 3"     |
| 30" TO 36"                   | 4"     |
| 36" & LARGER                 | 6"     |



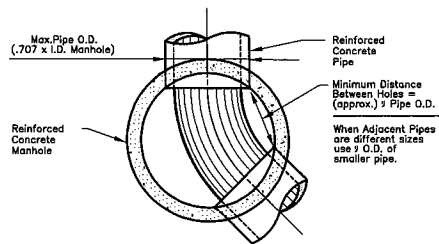
#### PIPE SIZE 27" AND LARGER

- NOTE:
- Pipe to comply with table 1 of the Standard specifications of Reinforced Concrete Culvert Pipes of the A.S.T.M. (Serial Des. A.S.T.M. C 76, Class IV)



#### CLASS IV R.C.P. TRENCH DETAIL IN STREET R.O.W.

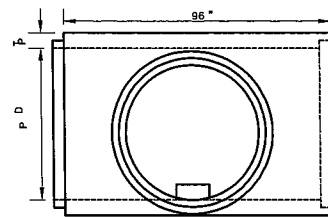
N.T.S.  
(Paid for under appropriate pipe item unless otherwise specified.)



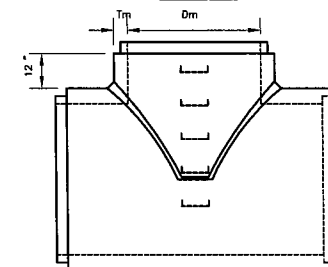
#### PLAN VIEW OF MANHOLE SHOWING 45° DEFLECTION

SCALE: 1/4" = 1' - 0"

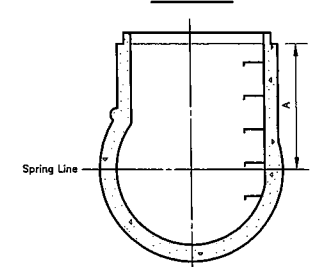
| 4 FOOT MANHOLE 7" WALL       | 5 FOOT MANHOLE 8" WALL | 6 FOOT MANHOLE 9" WALL | 8 FOOT MANHOLE 11" WALL | 10 FOOT MANHOLE 13" WALL |
|------------------------------|------------------------|------------------------|-------------------------|--------------------------|
| MAX. PIPE O.D. 36" R.C. PIPE | 42" R.C. PIPE          | 48" R.C. PIPE          | 54" R.C. PIPE           | 60" R.C. PIPE            |
| MIN. PIPE O.D. 30" R.C. PIPE | 36" R.C. PIPE          | 42" R.C. PIPE          | 48" R.C. PIPE           | 54" R.C. PIPE            |



#### TOP VIEW



#### SIDE VIEW



#### CLASS IV REINFORCED CONCRETE PRECAST MANHOLE TEE

SCALE: 1/4" = 1' - 0"

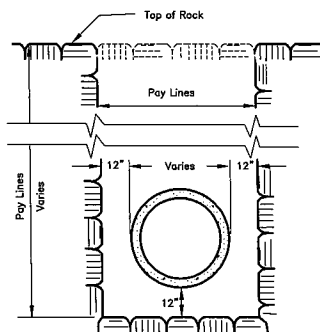
(Paid for under item No. 101 as per Standard Precast Manhole)

#### Notes:

- Reinforced concrete pipe manufactured to A.S.T.M. C 478 specification.
- Precast manhole riser manufactured to A.S.T.M. C 478 specification.
- Precast manhole riser will be spigot and up (Spigot end up illustrated).
- Manhole riser section reinforcing welded to pipe reinforcing. Additional reinforcing used in joint. Joint grouted with non-shrink mortar.
- Rungs may be installed on left or right hand side looking at spigot end of pipe. (Right hand installation illustrated).
- Polypropylene Step Steel Reinforced A.S.T.M. C 478 installed on 12" centers to spring line.
- All M.H. tees to be eccentric as shown so that M.H. steps may be extended downward to the spring line of the pipe.

#### Precast Manhole Tee Dimensions

| (Inches)  |           |           |           |    |  |
|-----------|-----------|-----------|-----------|----|--|
| I.D. PIPE | I.D. M.H. | WALL PIPE | WALL M.H. | A  |  |
| 48        | 48        | 5         | 5         | 41 |  |
| 54        | 48        | 6         | 5         | 46 |  |
| 60        | 48        | 6         | 5         | 48 |  |
| 66        | 48        | 6         | 5         | 52 |  |
| 72        | 48        | 7         | 5         | 55 |  |
| 78        | 48        | 7         | 5         | 59 |  |
| 84        | 48        | 8         | 5         | 62 |  |
| 90        | 48        | 8         | 5         | 66 |  |
| 96        | 48        | 9         | 5         | 69 |  |
| 102       | 48        | 9         | 5         | 73 |  |
| 108       | 48        | 10        | 5         | 76 |  |
| 120       | 48        | 11        | 5         | 83 |  |



#### PAY LINES FOR ROCK EXCAVATION FOR PIPE TRENCH

(Paid under item 105 unless otherwise specified)

#### Notes:

- To be paid for under item No. 101, unless otherwise noted in Lump Sum Contracts.
- When P.V.C. pipe is used, the manhole will be supplied with a watertight boot seal(s). Materials must meet or exceed A.S.T.M. C-923.
- This drawing represents, in general, a standard manhole in which the inlet/outlet connection is shown in a position to fit the particular condition. This drawing will accompany the location plan for each manhole and must be adjusted to fit that location. The general idea as to sizes, construction and minor details remains the same.
- All sanitary and combined sewer manholes to be coated on the outside with a bitumastic coating.

5A. Trench backfill and surface restoration shall conform to the City of Buffalo Dept. of Public Works latest specifications with regard to pavement subgrade, pavement, curbs, sidewalks, driveways and lawn areas except where otherwise noted.

#### STANDARD PRECAST CONCRETE MANHOLES AND VARIOUS STANDARD DETAILS

ENGINEERING DIVISION  
BUFFALO SEWER AUTHORITY  
JULY 1990  
SHEET OF SHEETS

|                     |                    |
|---------------------|--------------------|
| REVISED 00          | REVISED 92         |
| DESIGNED BY: R.V.V. | TRACED BY: CADD    |
| DRAWN BY: R.V.V.    | CHECKED BY: R.G.B. |

20092 C



**Attachment E to the Semi-Annual Status Report: March 2023**

Scajaquada Creek and Black Rock Canal Smart Sewer Project Pre-95% Design Plans



# BUFFALO

SEWER AUTHORITY

## SCAJAQUADA CREEK AND BLACK ROCK CANAL SMART SEWER PROJECT

FEBRUARY 2023

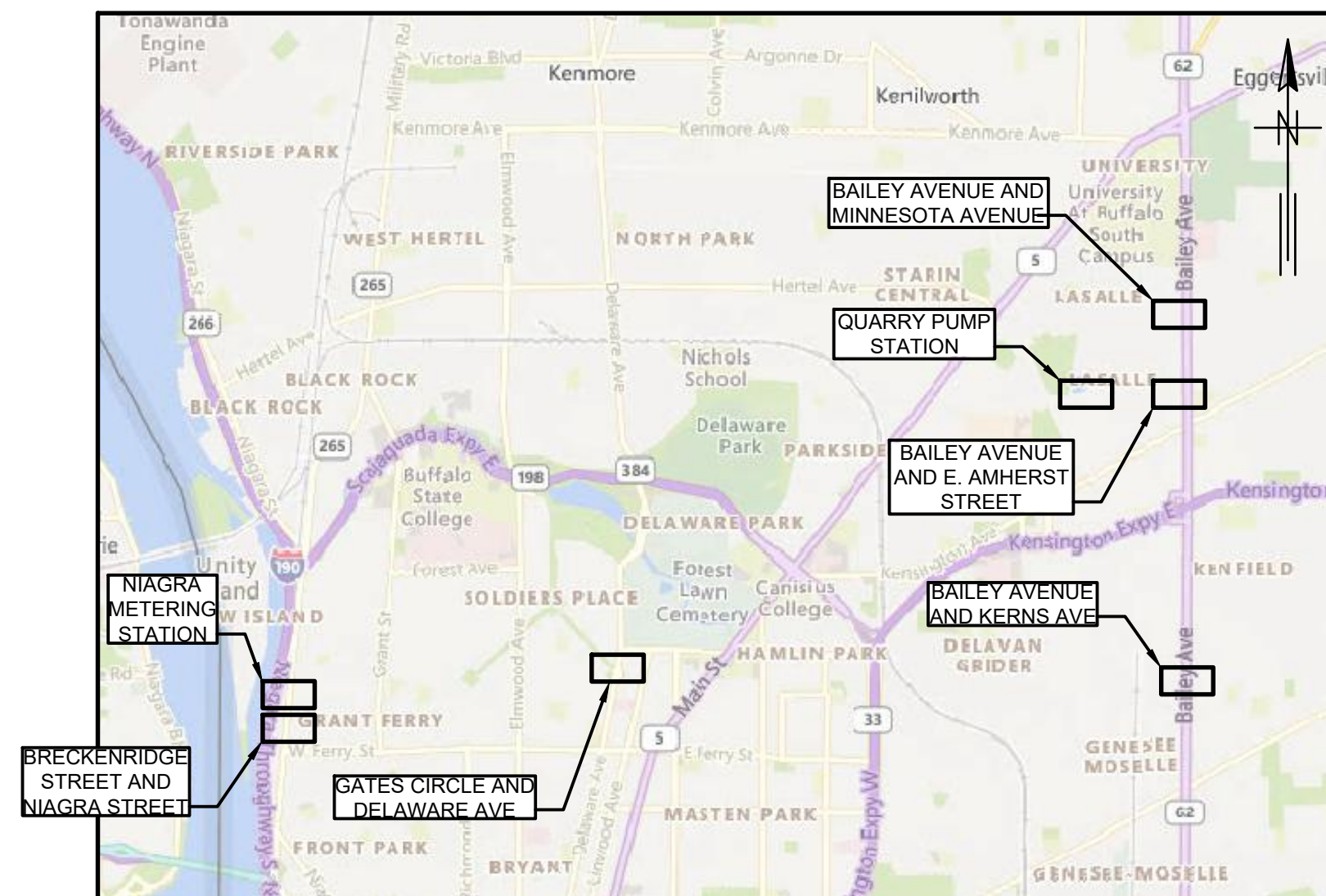
BYRON W. BROWN  
MAYOR

### MEMBERS OF THE BUFFALO SEWER AUTHORITY BOARD

HERBERT L. BELLAMY, JR  
CHRISTOPHER ROOSEVELT  
ELEANOR PETRUCCI

CHAIRMAN  
VICE CHAIRMAN  
SECRETARY

BUFFALO SEWER AUTHORITY  
ROOM 1038 CITY HALL  
65 NIAGARA SQUARE  
BUFFALO, NEW YORK 14202



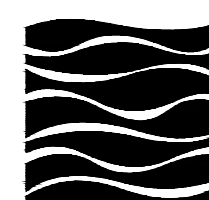
LOCATION MAP  
NOT TO SCALE

GENERAL MANAGER  
OLUWOLE A. MCFOY, P.E.

TREATMENT PLANT  
ADMINISTRATOR  
ROBERTA L. GAIEK, P.E.

PRINCIPAL SANITARY ENGINEER  
ROSALEEN B. NOGLE, P.E.

PREPARED BY:



**GREELEY AND HANSEN**

111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006



2023/02/15 3:27 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO\_SEWER\_AUTHORITY\141222.01\_RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_001 MORENO, ROBERTO

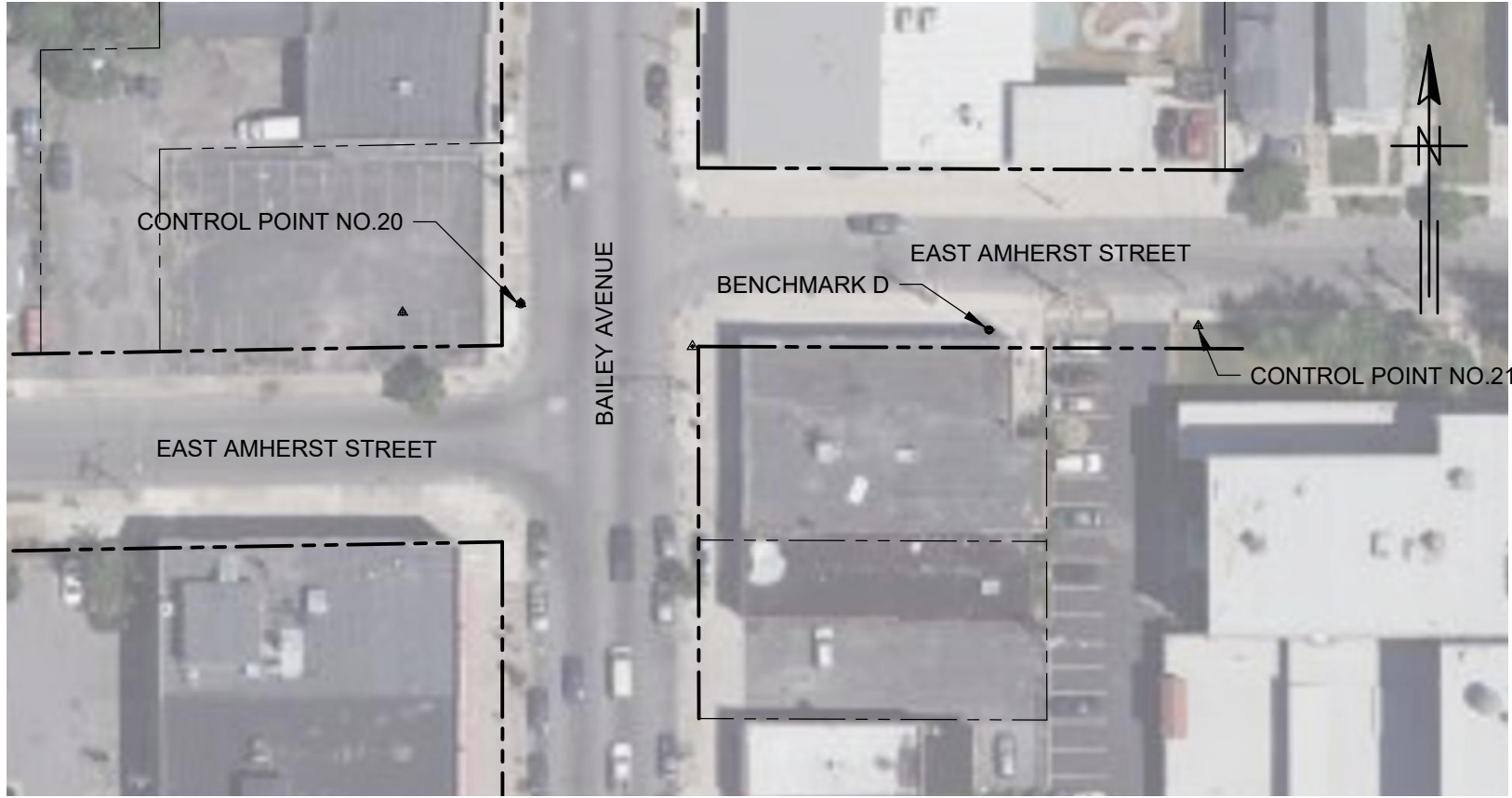
| SHEET NO.              | DWG NO. | DWG TITLE                                                                                         |
|------------------------|---------|---------------------------------------------------------------------------------------------------|
| <b>GENERAL</b>         |         |                                                                                                   |
| 1                      | G00     | COVER SHEET AND LOCATION MAP                                                                      |
| 2                      | G01     | DRAWING INDEX AND SITE KEY MAPS W/GEOMETRIC CONTROL SHEET 1                                       |
| 3                      | G02     | SITE KEY MAPS W/GEOMETRIC CONTROL SHEET 2                                                         |
| 4                      | G03     | CONTROL POINTS AND BENCHMARK DATA                                                                 |
| 5                      | G04     | GENERAL CONSTRUCTION NOTES                                                                        |
| 6                      | G05     | GENERAL ABBREVIATIONS                                                                             |
| 7                      | G06     | HAZARDOUS CLASSIFICATION AREAS                                                                    |
| <b>CIVIL</b>           |         |                                                                                                   |
| 8                      | C01     | SYMBOL LEGEND                                                                                     |
| 9                      | C02     | BRECKENRIDGE ST & NIAGARA ST RTC - SITE PLAN W/IMPROVEMENTS                                       |
| 10                     | C03     | BRECKENRIDGE ST & NIAGARA ST RTC - 16" WATER PLAN & PROFILE                                       |
| 11                     | C04     | BRECKENRIDGE ST & NIAGARA ST RTC - 42" SEWER PLAN & PROFILE                                       |
| 12                     | C05     | BRECKENRIDGE ST & NIAGARA ST RTC - 24" DISCHARGE PIPE PLAN & PROFILE                              |
| 13                     | C06     | BRECKENRIDGE ST & NIAGARA ST RTC - RELOCATED COMBINED SEWER PIPES PLAN & PROFILE                  |
| 14                     | C07     | GATES CIRCLE & DELAWARE AVE RTC - SITE PLAN W/IMPROVEMENTS                                        |
| 15                     | C08     | GATES CIRCLE & DELAWARE AVE RTC - DOGHOUSE MANHOLES (MH 10, MH 11A & MH 11B) - PLANS & SECTIONS   |
| 16                     | C09     | BAILEY AVE & E. AMHERST ST RTC - SITE PLAN W/IMPROVEMENTS                                         |
| 17                     | C10     | BAILEY AVE & E. AMHERST ST RTC - HOUSING MANHOLE (MH 12) - PLAN AND SECTIONS                      |
| 18                     | C11     | BAILEY AVE & MINNESOTA AVE SEWER IMPROVEMENTS - SITE PLAN W/IMPROVEMENTS                          |
| 19                     | C12     | BAILEY AVE & KERNS AVE (SPP 338) - SITE PLAN W/IMPROVEMENTS                                       |
| 20                     | C13     | TYPICAL DETAILS                                                                                   |
| 21                     | C14     | TYPICAL DETAILS                                                                                   |
| 22                     | C15     | TYPICAL DETAILS                                                                                   |
| 23                     | C16     | WORK ZONE TRAFFIC CONTROL LEGEND & NOTES                                                          |
| 24                     | C17     | BRECKENRIDGE ST & NIAGARA ST RTC - WORK ZONE TRAFFIC CONTROL PLAN                                 |
| 25                     | C18     | GATES CIRCLE & DELAWARE AVE RTC - WORK ZONE TRAFFIC CONTROL PLAN                                  |
| 26                     | C19     | GATES CIRCLE & DELAWARE AVE RTC - WORK ZONE TRAFFIC CONTROL PLAN                                  |
| 27                     | C20     | BAILEY AVE & E. AMHERST ST RTC - WORK ZONE TRAFFIC CONTROL PLAN                                   |
| 28                     | C21     | BAILEY AVE & E. AMHERST ST RTC - DETOUR PLAN                                                      |
| 29                     | C22     | BAILEY AVE & MINNESOTA AVE SEWER IMPROVEMENTS - WORK ZONE TRAFFIC CONTROL PLAN                    |
| 30                     | C23     | BAILEY AVE & KERNS AVE (SPP 338) - WORK ZONE TRAFFIC CONTROL PLAN                                 |
| <b>STRUCTURAL</b>      |         |                                                                                                   |
| 31                     | S01     | STRUCTURAL NOTES                                                                                  |
| 32                     | S02     | BRECKENRIDGE ST & NIAGARA ST RTC - DIVERSION CHAMBER AND WEIR PLANS AND SECTIONS                  |
| 33                     | S03     | BRECKENRIDGE RTC - DROP MANHOLE PLANS                                                             |
| 34                     | S04     | BRECKENRIDGE RTC - DROP MANHOLE SUPPORT OF EXCAVATION                                             |
| 35                     | S05     | GATES CIRCLE & DELAWARE AVE RTC - SPP 332 PLAN AND SECTIONS                                       |
| 36                     | S06     | BAILEY AVE & E. AMHERST ST RTC - PLAN AND SECTIONS                                                |
| 37                     | S07     | BAILEY AVE & MINNESOTA AVE SEWER IMPROVEMENTS - PLAN AND SECTIONS                                 |
| 38                     | S08     | BRECKENRIDGE RTC - SLUICE GATE STRUCTURE PLANS AND SECTIONS                                       |
| 39                     | S09     | SEWER CONTROL STURCTURES SEWER CONNECTION DETAILS                                                 |
| 40                     | S10     | STANDARD DETAILS                                                                                  |
| 41                     | S11     | MANHOLE DETAILS 1                                                                                 |
| 42                     | S12     | MANHOLE DETAILS 2                                                                                 |
| 43                     | S13     | MANHOLE DETAILS 3                                                                                 |
| <b>MECHANICAL</b>      |         |                                                                                                   |
| 44                     | M01     | SYMBOL LEGEND                                                                                     |
| 45                     | M02     | BRECKENRIDGE ST & NIAGARA ST RTC - DIVERSION CHAMBER W/WEIR (MH 8 & MH 9) - PLANS & SECTIONS      |
| 46                     | M03     | BRECKENRIDGE ST & NIAGARA ST RTC - GATE STRUCTURE (MH-7) PLANS & SECTIONS                         |
| 47                     | M04     | BRECKENRIDGE ST & NIAGARA ST RTC - DROP MANHOLE (MH-6A & 6B) PLANS                                |
| 48                     | M05     | BRECKENRIDGE ST & NIAGARA ST RTC - DROP MANHOLE (MH-6A & 6B) SECTIONS                             |
| 49                     | M06     | GATES CIRCLE & DELAWARE AVE RTC - EXISTING CONTROL STRUCTURE (SPP332) - PLANS                     |
| 50                     | M07     | GATES CIRCLE & DELAWARE AVE RTC - EXISTING CONTROL STRUCTURE (SPP332) - SECTIONS                  |
| 51                     | M08     | BAILEY AVE & E. AMHERST ST RTC - EXISTING CONTROL STRUCTURE (SPP255) - PLANS                      |
| 52                     | M09     | BAILEY AVE & E. AMHERST ST RTC - EXISTING CONTROL STRUCTURE (SPP255) - SECTIONS                   |
| 53                     | M10     | TYPICAL DETAILS                                                                                   |
| <b>ELECTRICAL</b>      |         |                                                                                                   |
| 54                     | E01     | ELECTRICAL SYMBOLS LEGEND                                                                         |
| 55                     | E02     | ELECTRICAL NOTES AND SINGLE-LINE DIAGRAM                                                          |
| 56                     | E03     | BRECKENRIDGE ST & NIAGARA ST RTC - SITE PLAN - ELECTRICAL IMPROVEMENTS                            |
| 57                     | E04     | BRECKENRIDGE ST & NIAGARA ST RTC - ELECTRICAL DIAGRAMS AND DETAILS                                |
| 58                     | E05     | GATES CIRCLE & DELAWARE AVE RTC - SITE PLAN - ELECTRICAL IMPROVEMENTS                             |
| 59                     | E06     | GATES CIRCLE & DELAWARE AVE RTC - ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES                 |
| 60                     | E07     | BAILEY AVE & E. AMHERST ST RTC - SITE PLAN - ELECTRICAL IMPROVEMENTS                              |
| 61                     | E08     | BAILEY AVE & E. AMHERST ST RTC - ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES                  |
| 62                     | E09     | BAILEY AVE & KERNS AVE (SPP 338) - SITE PLAN - ELECTRICAL IMPROVEMENTS                            |
| 63                     | E10     | BAILEY AVE & KERNS AVE (SPP 338) - ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES                |
| 64                     | E11     | QUARRY PUMP STATION ROOF & CONTROL BUILDING RTC - SITE PLAN - ELECTRICAL IMPROVEMENTS             |
| 65                     | E12     | QUARRY PUMP STATION ROOF & CONTROL BUILDING RTC - ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES |
| 66                     | E13     | NIAGARA STREET METERING STATION RTC - SITE PLAN - ELECTRICAL IMPROVEMENTS                         |
| 67                     | E14     | NIAGARA STREET METERING STATION RTC - ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES             |
| <b>INSTRUMENTATION</b> |         |                                                                                                   |
| 68                     | I01     | SYMBOL LEGEND                                                                                     |
| 69                     | I02     | SCADA NETWORK ARCHITECTURE                                                                        |
| 70                     | I03     | BRECKENRIDGE ST & NIAGARA ST RTC - P&ID                                                           |
| 71                     | I04     | BRECKENRIDGE ST & NIAGARA ST RTC - CONTROL PANEL DIAGRAMS                                         |
| 72                     | I05     | GATES CIRCLE & DELAWARE AVE RTC - P&ID                                                            |
| 73                     | I06     | GATES CIRCLE & DELAWARE AVE RTC - CONTROL PANEL DIAGRAMS                                          |
| 74                     | I07     | BAILEY AVE & E. AMHERST ST RTC - P&ID                                                             |
| 75                     | I08     | BAILEY AVE & E. AMHERST ST RTC - CONTROL PANEL DIAGRAMS                                           |
| 76                     | I09     | BAILEY AVE & KERNS AVE (SPP 338) - P&ID                                                           |
| 77                     | I10     | BAILEY AVE & KERNS AVE (SPP 338) - CONTROL PANEL DIAGRAMS                                         |
| 78                     | I11     | QUARRY PUMP STATION - P&ID                                                                        |
| 79                     | I12     | QUARRY PUMP STATION - CONTROL PANEL DIAGRAMS                                                      |
| 80                     | I13     | NIAGARA ST. METERING STATION - P&ID                                                               |
| 81                     | I14     | NIAGARA ST. METERING STATION - CONTROL PANEL DIAGRAMS                                             |
| 82                     | I15     | CONTROL PANEL WIRING DIAGRAM                                                                      |
| 83                     | I16     | MANHOLE AND INSTRUMENT DETAILS                                                                    |
| 84                     | I17     | MANHOLE AND INSTRUMENT DETAILS                                                                    |
| 85                     | I18     | MANHOLE AND INSTRUMENT DETAILS                                                                    |



BRECKENRIDGE STREET AND NIAGARA STREET

KEY MAP

SCALE 1" = 60'



BAILEY AVENUE AND E. AMHERST STREET

KEY MAP

SCALE 1" = 60'



GATES CIRCLE AND DELAWARE AVENUE

KEY MAP

SCALE 1" = 60'



BAILEY AVENUE AND MINNESOTA AVENUE

KEY MAP

SCALE 1" = 60'

| CONTROL POINTS DATA |            |            |           |             |
|---------------------|------------|------------|-----------|-------------|
| IDENTIFIER          | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
| 1                   | 1062979.14 | 1063709.45 | 34.94     | SET XCUT    |
| 2                   | 1063212.69 | 1063673.90 | 33.38     | SET XCUT    |
| 3                   | 1062710.08 | 1063628.64 | 37.62     | SET XCUT    |
| 4                   | 1062969.10 | 1063962.13 | 36.10     | SET XCUT    |
| 10                  | 1064281.13 | 1072208.65 | 54.61     | SET XCUT    |
| 11                  | 1064405.62 | 1072132.11 | 54.40     | SET XCUT    |
| 20                  | 1071416.31 | 1086595.09 | 83.82     | SET MAG     |
| 21                  | 1071408.85 | 1086822.77 | 84.83     | SET XCUT    |
| 30                  | 1073436.77 | 1086586.75 | 96.41     | SET XCUT    |
| 31                  | 1073397.47 | 1086768.24 | 97.10     | SET XCUT    |

| BENCHMARK DATA |            |            |           |                |
|----------------|------------|------------|-----------|----------------|
| IDENTIFIER     | NORTHING   | EASTING    | ELEVATION | DESCRIPTION    |
| A              | 1063002.85 | 1063651.31 | 34.57     | SET ON MANHOLE |
| B              | 1064382.99 | 1072195.22 | 54.58     | SET ON MANHOLE |
| C              | 1073427.47 | 1086588.79 | 96.56     | SET ON MANHOLE |
| D              | 1071407.48 | 1086752.46 | 84.63     | SET ON MANHOLE |

SURVEY DATUM

HORIZONTAL DATUM:  
NYS PLANE COORDINATE SYSTEM NAD 83

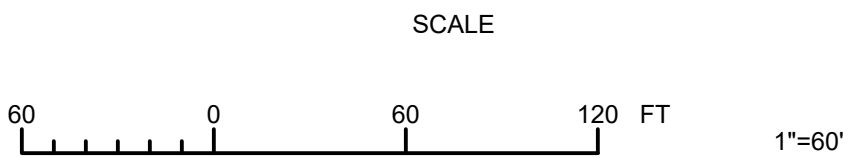
VERTICAL DATUM:  
BSA DATUM

BUFFALO  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |     |          |  |
|----------|-----|----------|--|
| DESIGNED | DH  | APPROVED |  |
| DRAWN    | RAM |          |  |
| CHECKED  | MS  |          |  |

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

GENERAL

DATE: FEBRUARY 2023

DWG INDEX & SITE KEY MAPS W/GEOMETRIC CONTROL SHEET 1

BSA CONTRACT NO. 82000041

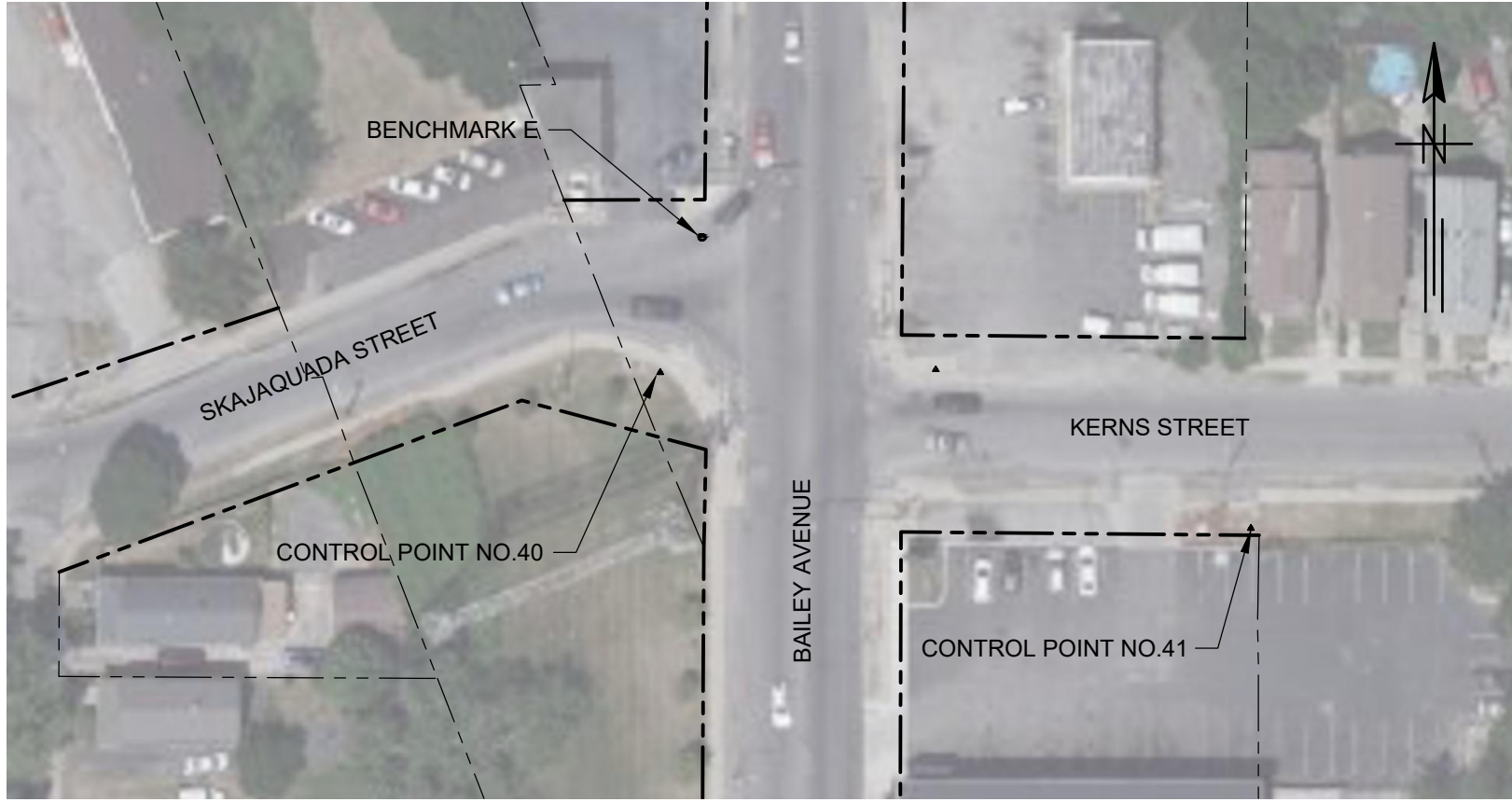
DWG: **G01**

SHEET: 2 OF 85

REV: 0

95% SUBMITTAL





BAILEY AVENUE AND KERNS AVENUE  
KEY MAP  
SCALE 1" = 60'



NIAGARA METERING STATION  
KEY MAP  
SCALE 1" = 60'



AMHERST QUARRY  
KEY MAP  
SCALE 1" = 60'

| CONTROL POINTS DATA |            |            |           |             |
|---------------------|------------|------------|-----------|-------------|
| IDENTIFIER          | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
| 40                  | 1062937.29 | 1086537.72 | 64.66     | SET X CUT   |
| 41                  | 1062885.09 | 1086735.60 | 65.19     | SET X CUT   |


| BENCHMARK DATA |            |            |           |                |
|----------------|------------|------------|-----------|----------------|
| IDENTIFIER     | NORTHING   | EASTING    | ELEVATION | DESCRIPTION    |
| E              | 1062982.57 | 1086551.75 | 64.77     | SET ON MANHOLE |

SURVEY DATUM

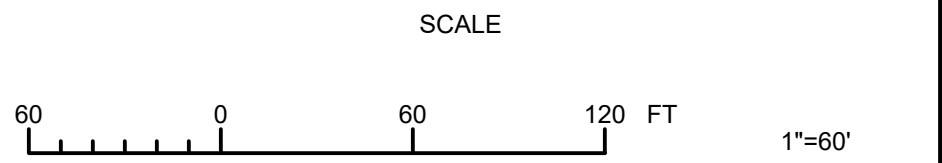
HORIZONTAL DATUM:  
NYS PLANE COORDINATE SYSTEM NAD 83

VERTICAL DATUM:  
BSA DATUM

BUFFALO  
SEWER AUTHORITY

 **GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |      |          |          |  |  |
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| DESIGNED | DH   | APPROVED |          |  |  |
| DRAWN    | RAM  |          |          |  |  |
| CHECKED  | MS   |          |          |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |



SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

GENERAL

SITE KEY MAPS W/GEOMETRIC CONTROL SHEET 2

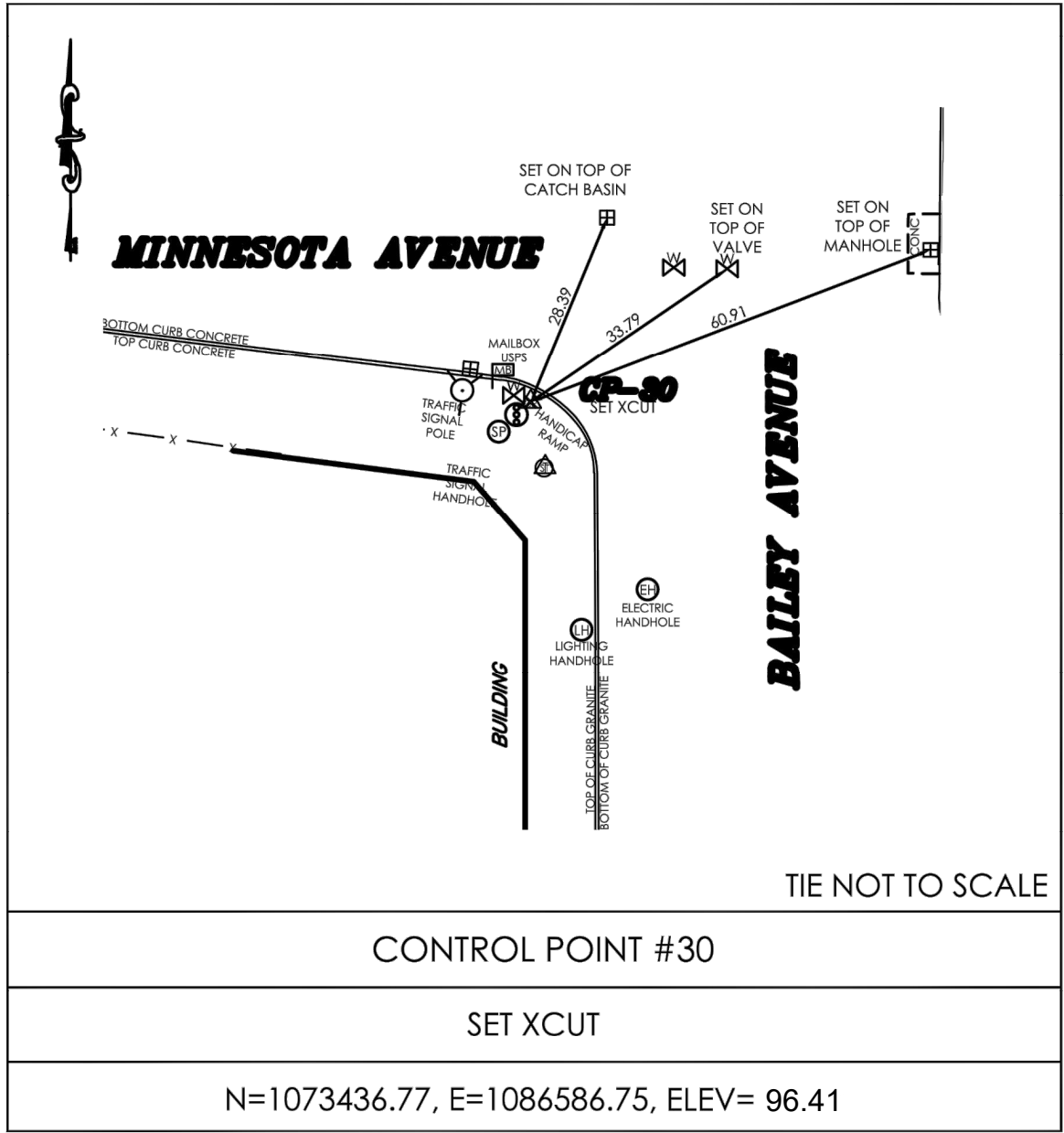
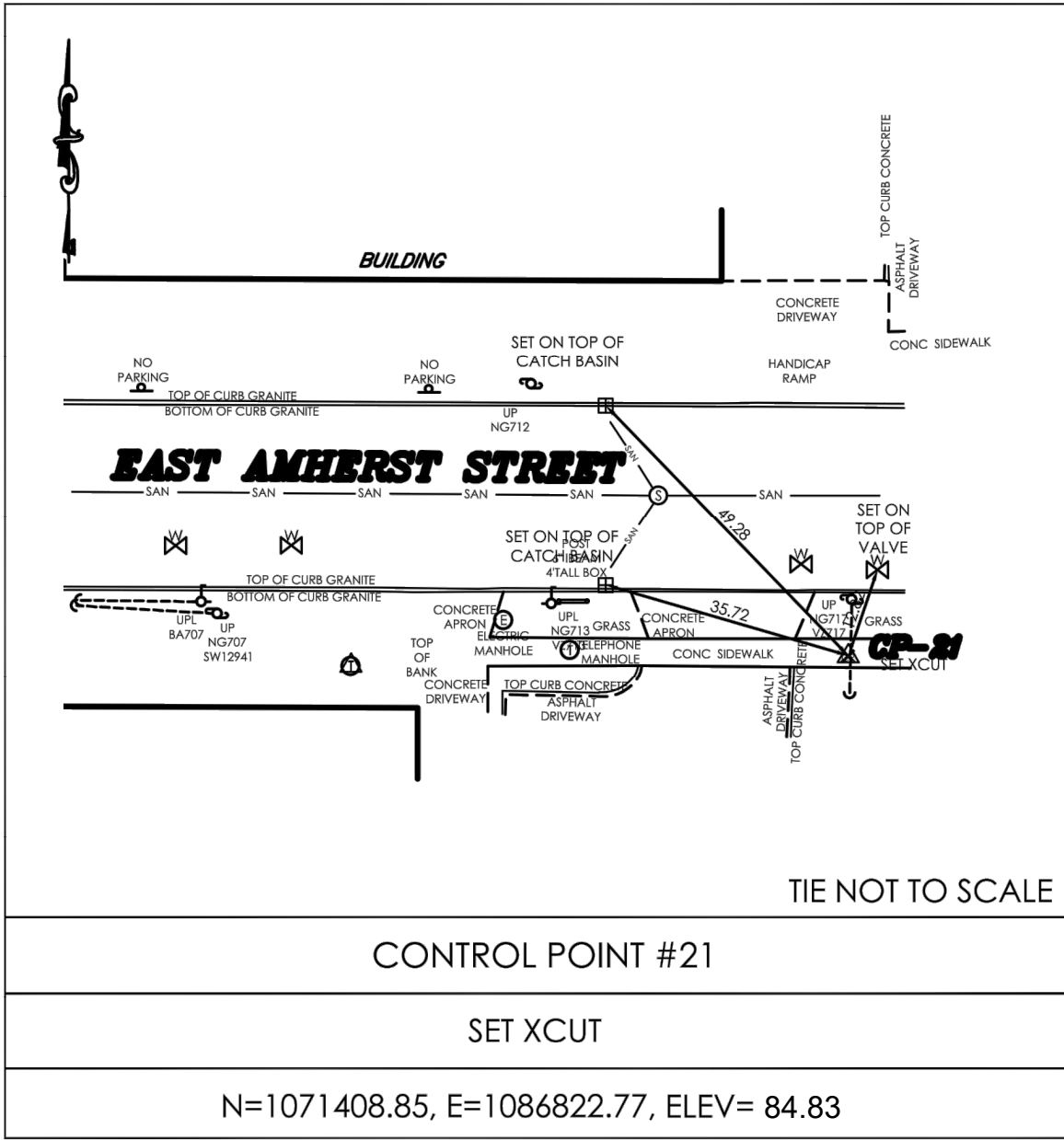
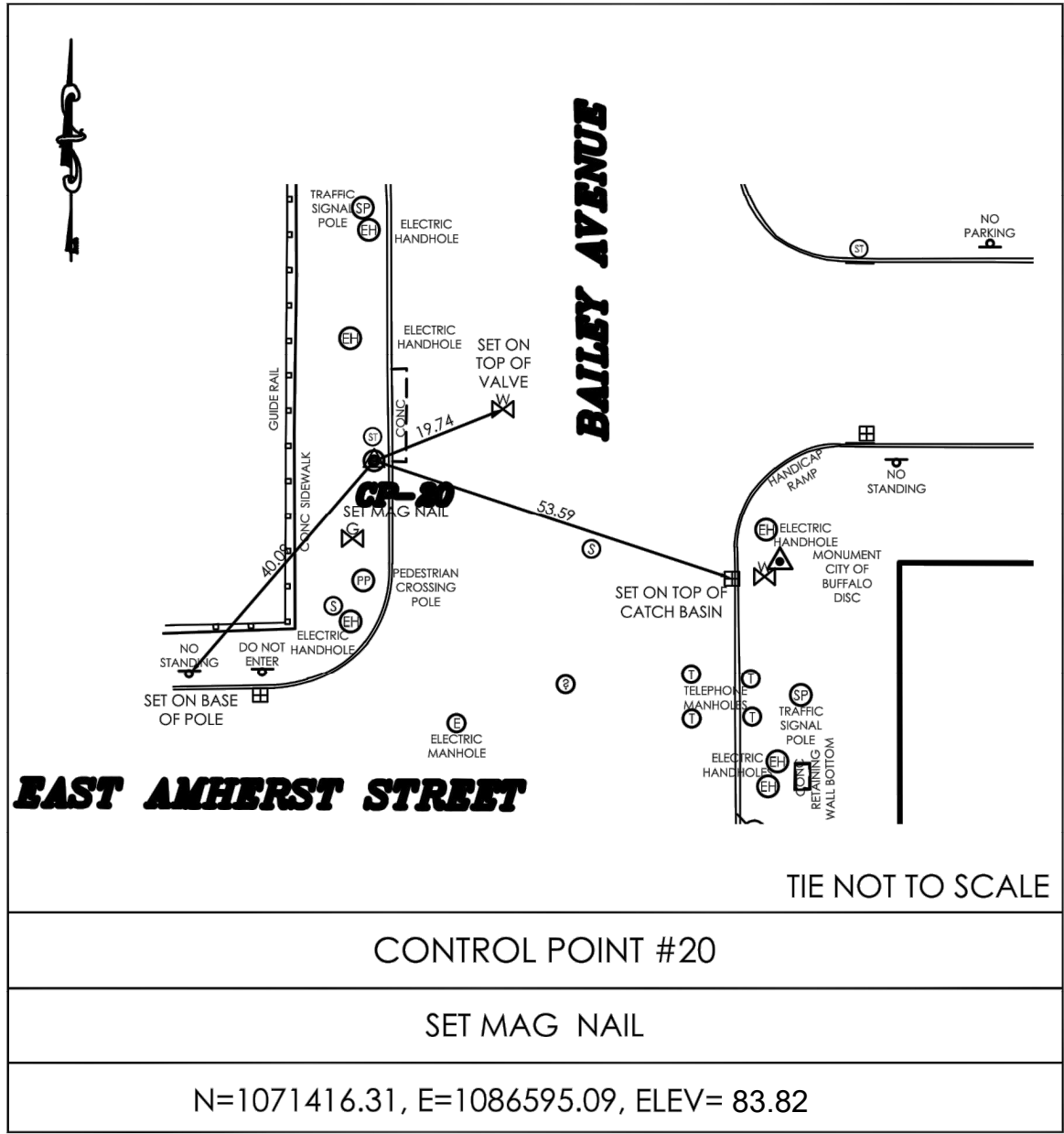
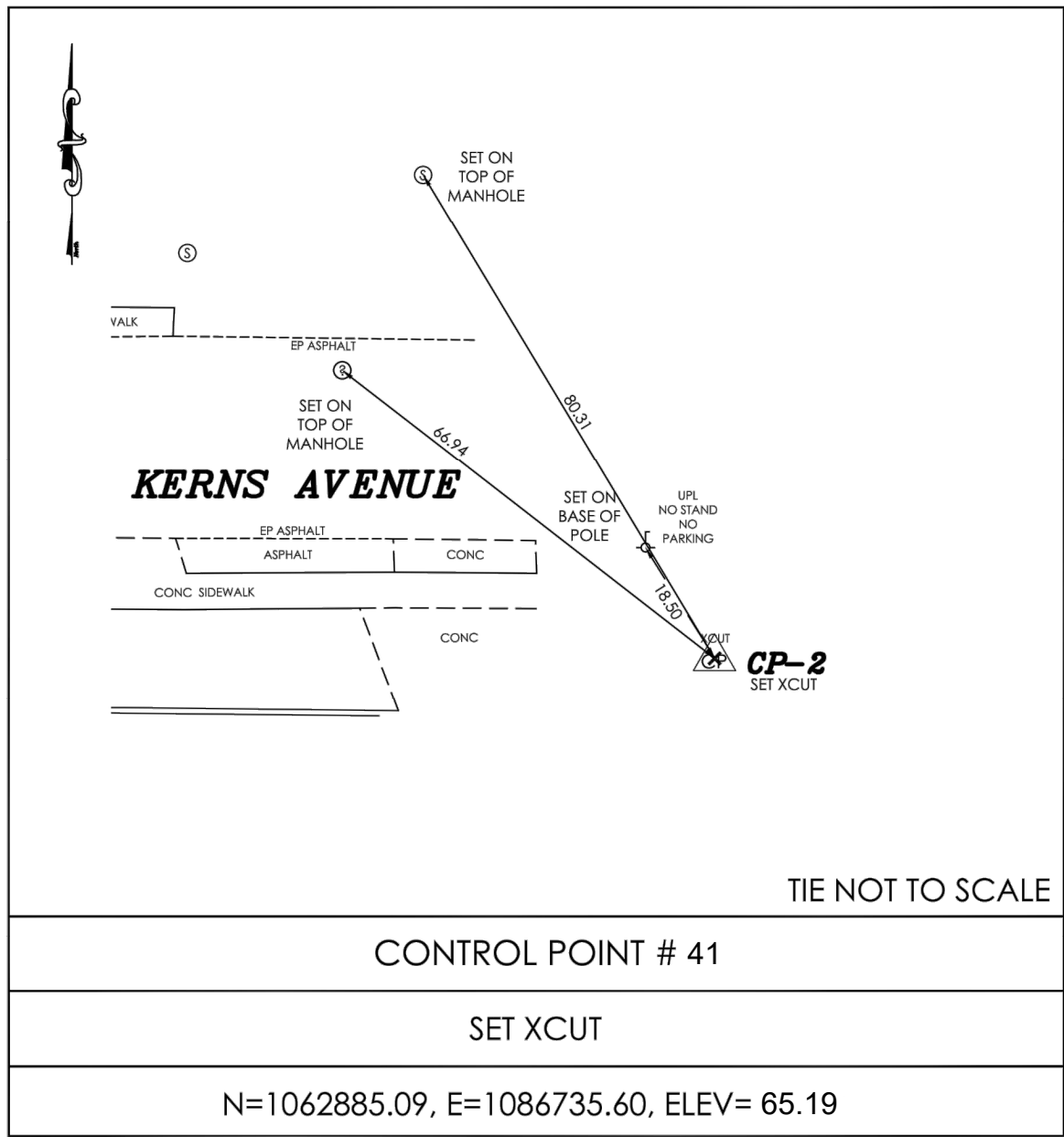
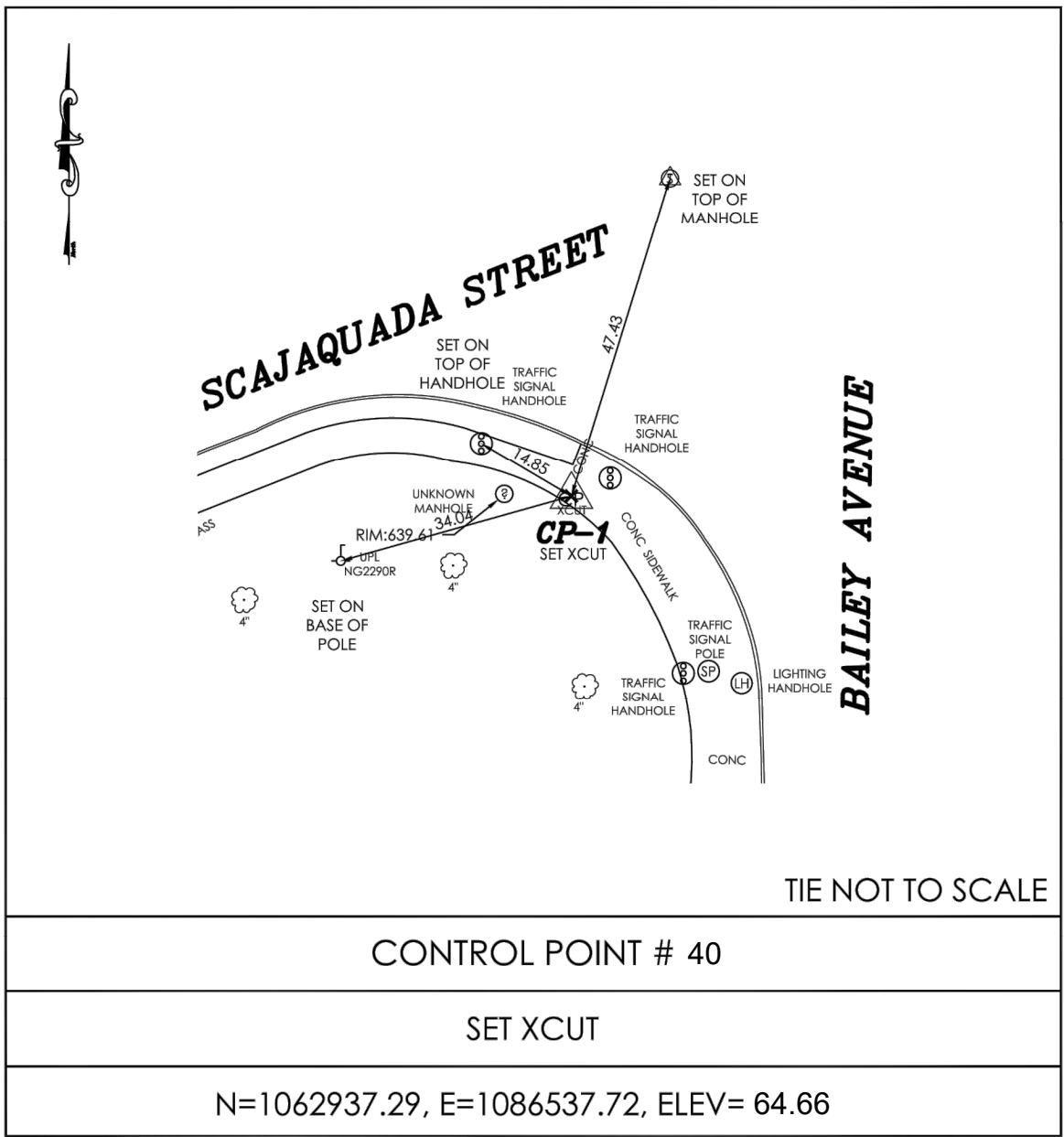
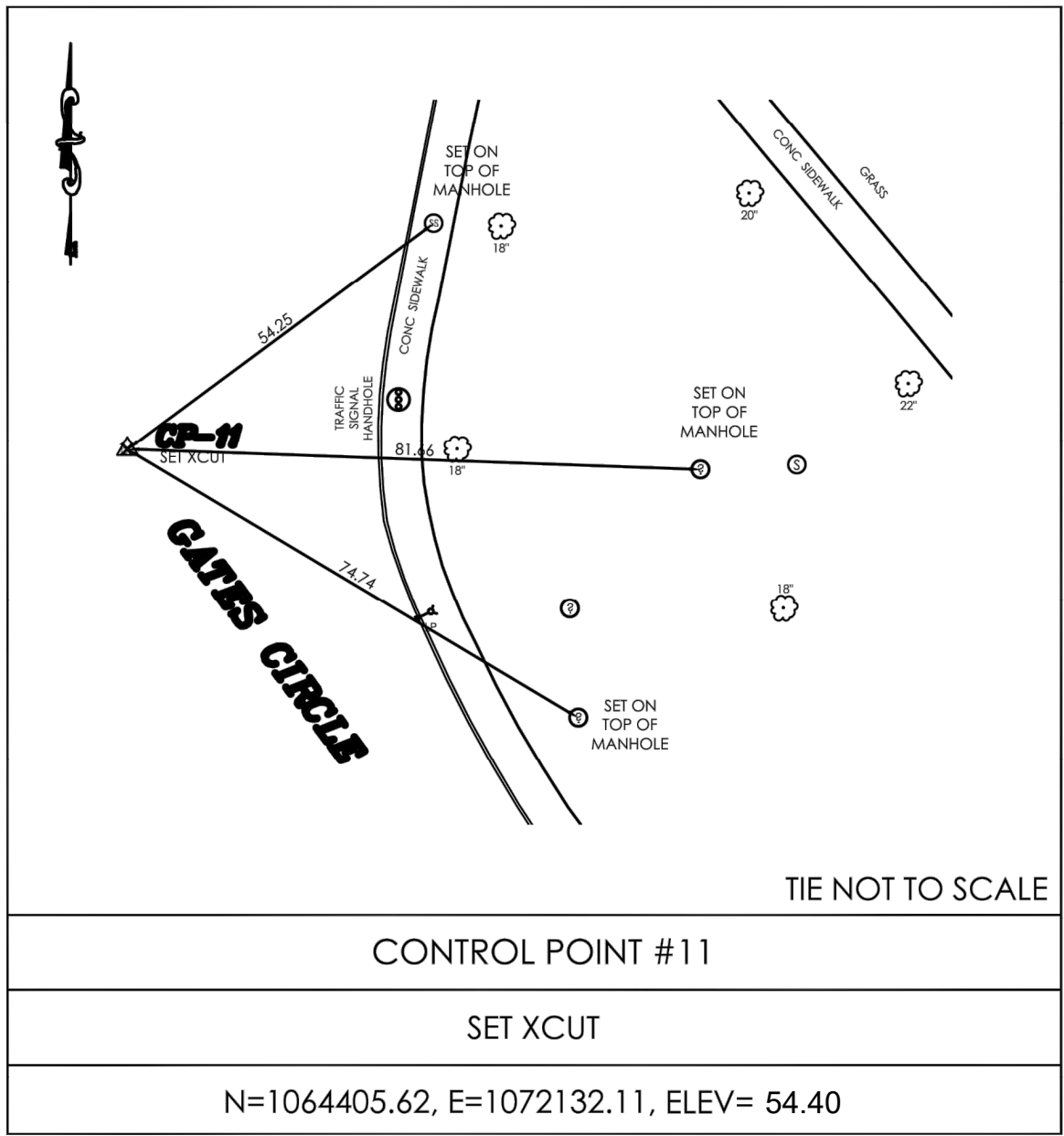
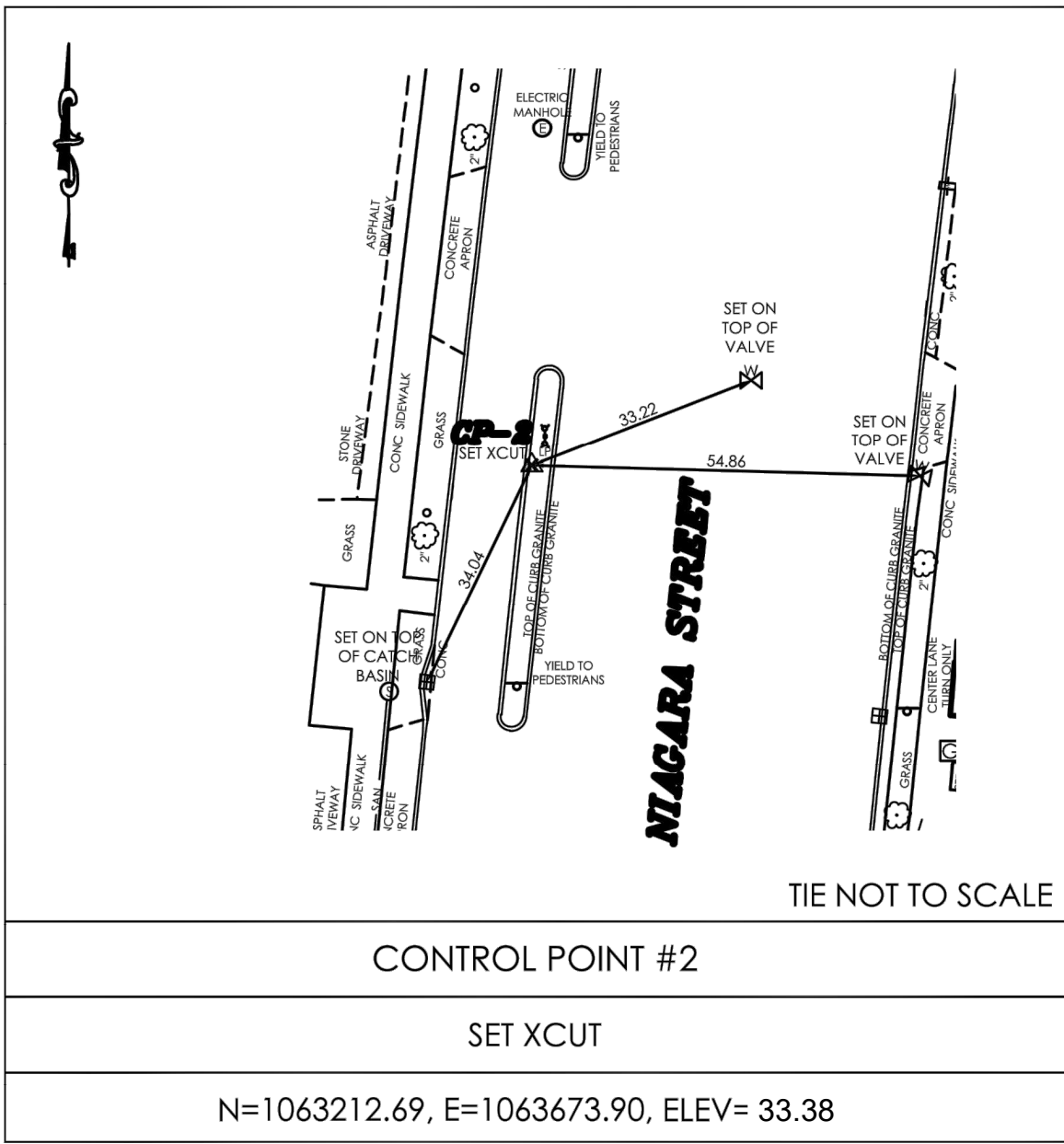
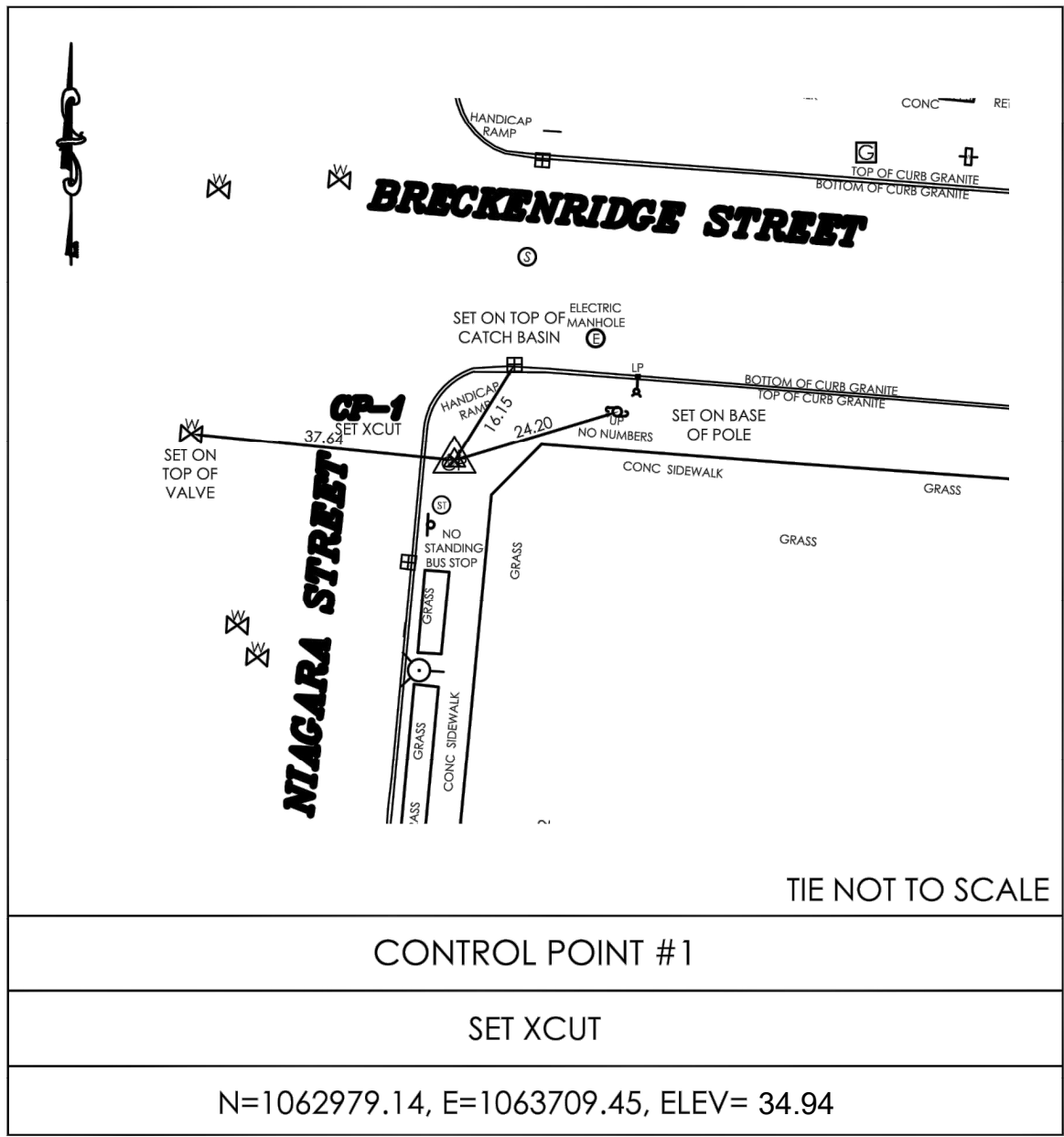
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| BSA CONTRACT NO. 82000041 |               |      |    |
| DWG:                      | G02           |      |    |
| SHEET:                    | 3             | OF   | 85 |
| DATE:                     | FEBRUARY 2023 | REV: | 0  |

95% SUBMITTAL



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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_G03 MORENO, ROBERTO



### LEGEND:

- CATCH BASIN (SQUARE)
- CHISELED CUT/XCUT
- CONTROL POINT
- DECIDUOUS TREE
- ELECTRIC HANDHELD
- GROUND SHOT 1DP
- HYDRANT
- LIGHTING HANDHOLE
- LIGHT POLE 1 LIGHTS
- POST
- SIGN 1 POST
- SANITARY MANHOLE
- TEMPORARY BENCHMARK
- TRAFFIC SIGNAL HAND HOLE
- TRAFFIC SIGNAL POLE
- UNKNOWN MAN HOLE
- CALC
- UTILITY POLE
- UTILITY POLE WITH LIGHT
- WATER VALVE
- PEDESTRIAN CROSSING POLE
- STORM MANHOLE

### SURVEY LINE TYPES:

- CONTOUR (MAJOR) 5
- CONTOUR (MINOR) 1
- EDGE OF PAVEMENT
- FENCE (CHAINLINK)
- GUIDE RAIL (CABLE)
- PROPERTY LOT LINE (APPROX)
- ROW (APPROX)

### UTILITY LINE TYPES:

- COMMUNICATION LINE (RECORD) Cx(R) Cx(R)
- GAS LINE (RECORD) G(R) G(R)
- OVERHEAD WIRES OHW OHW
- SANITARY SEWER LINE SAN SAN
- SANITARY SEWER LINE (RECORD) SAN(R) SAN(R)
- STORM SEWER LINE (RECORD) ST(R) ST(R)
- WATER LINE (RECORD) W(R) W(R)

**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

GENERAL

CONTROL POINTS AND BENCHMARK DATA

BSA CONTRACT NO. 82000041

DWG: **G03**  
SHEET: 4 OF 85  
DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL



2023/02/16 12:06 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO\_SEWER\_AUTHORITY\14122\_01\_RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\Civil\3DCD\14122\_G04 MORENO, ROBERTO

GENERAL NOTES:

1. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THESE DRAWINGS WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.
2. NEW WORK IS SHOWN USING HEAVIER LINES THAN THOSE USED FOR EXISTING CONDITIONS AND FACILITIES.
3. THE PIPE LENGTHS INDICATED ON THESE DRAWINGS ARE IN LINEAR FEET AND ARE NOT THE ACTUAL LENGTH OF PIPE. PIPE CALLOUT IS NOMINAL DIAMETER.
4. PROVIDE SHEETING, SHORING, AND BRACING NEEDED TO PROTECT THE WORK, EXISTING PROPERTY, UTILITIES, PAVEMENT, AND OTHER STRUCTURES AND TO PROVIDE SAFE WORKING CONDITIONS IN THE TRENCH IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS.
5. RESTORE GRADES DISTURBED BY CONSTRUCTION ACTIVITIES TO THE ORIGINAL CONDITION OR BETTER IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. RESTORE GRADE ABOVE PIPES AND STRUCTURES IN DISTURBED AREA TO PREEXISTING GRADE.
6. UNLESS OTHERWISE SHOWN, REPLACE FENCES EITHER DAMAGED OR REMOVED DURING CONSTRUCTION ACTIVITIES WITH NEW MATERIALS OF SAME TYPE, SIZE, AND HEIGHT, INCLUDING GATES, GATE POSTS AND LINE POSTS.
7. AT THE SITE KEEP AND MAINTAIN ONE RECORD COPY OF THE CONTRACT DOCUMENTS, REFERENCE DOCUMENTS, AND TECHNICAL DOCUMENTS SUBMITTED IN GOOD ORDER. USING DRAFTING SYMBOLS AND STANDARDS CONSISTENT WITH THE ORIGINAL DOCUMENTS, ANNOTATE CONTRACT DRAWINGS TO SHOW CHANGES MADE DURING CONSTRUCTION PERIOD. ANNOTATED DRAWINGS WITH CURRENT FIELD CHANGES ARE TO BE MADE AVAILABLE TO THE RESIDENT PROJECT REPRESENTATIVE AND ENGINEER FOR REFERENCE. AT COMPLETION OF THE CONTRACT AND BEFORE FINAL PAYMENT IS MADE, DELIVER TO THE RESIDENT PROJECT REPRESENTATIVE AND ENGINEER ONE SET OF CLEARLY READABLE, REPRODUCIBLE CONTRACT DRAWINGS REFLECTING CHANGES MADE DURING CONSTRUCTION.
8. PROVIDE ADEQUATE, TEMPORARY THRUST RESTRAINT DURING CONSTRUCTION AT FITTINGS AND VALVES IN EXISTING WATERMAINS AND OTHER PRESSURIZED UTILITIES IN PROXIMITY TO EXCAVATION AS REQUIRED TO PREVENT DISLODGEMENT, SEPARATION, OR LEAKAGE OF THESE UTILITIES. REMOVE AND REPLACE IN KIND EXISTING THRUST RESTRAINT DAMAGED BY CONSTRUCTION.
9. CLEAR AND GRUB TREES AND SHRUBS LOCATED WITHIN THE LIMITS OF CONSTRUCTION AS REQUIRED FOR PIPELINE INSTALLATION, EXCEPT AS NOTED OR DIRECTED BY THE RESIDENT PROJECT REPRESENTATIVE. WHERE TREE CANOPIES EXTEND INTO THE WORK AREA FROM BEYOND THE LIMITS OF CONSTRUCTION, PREVENT DAMAGE FROM CONSTRUCTION ACTIVITIES. PRIOR TO CONSTRUCTION, CONTACT A LICENSED ARBORIST OR THE FORESTRY DEPARTMENT OF THE MUNICIPALITY HAVING JURISDICTION FOR TREE TRIMMING IF CANOPY DAMAGE IS ANTICIPATED.
10. ALL ELEVATIONS REFER TO CITY OF BUFFALO DATUM.
11. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND FURNISH COPIES TO THE ENGINEER PRIOR TO COMMENCING WORK.
12. THE LOCATIONS AND DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE PLANS AND PROFILES ARE APPROXIMATE. OTHER UNDERGROUND UTILITIES NOT SHOWN MAY BE ENCOUNTERED. THE CONTRACTOR SHALL PERFORM TEST PITS TO VERIFY THE LOCATION AND ELEVATION OF UTILITIES AT INTERCONNECTIONS AND CROSSINGS AS REQUIRED. THE CONTRACTOR SHALL EXCAVATE IN ADVANCE OF THE PIPE LAYING OPERATION AND EXPOSE ALL EXISTING UNDERGROUND UTILITIES TO PREVENT DAMAGE DURING CONSTRUCTION AND TO DETERMINE REQUIRED CHANGES IN GRADE NECESSARY TO INSTALL THE SEWER AND WATERMAIN TO AVOID CONFLICTS.
13. THE CONTRACTOR SHALL INSTALL THOSE MEASURES REQUIRED TO LIMIT EROSION OF AREAS DISTURBED BY THE WORK. CLEARING SHALL BE PERFORMED ON AN AS NEEDED BASIS, PHASED TO REDUCE EROSION POTENTIAL AND VISUAL IMPACT.
14. BLASTING WILL NOT BE PERMITTED.
15. THE CITY OF BUFFALO ONLY SHALL OPERATE EXISTING VALVES AND FIRE HYDRANTS, INCLUDING NEWLY INSTALLED VALVES AND FIRE HYDRANTS THAT HAVE BEEN PLACED INTO SERVICE. THE CONTRACTOR IS ADVISED THAT WATERTIGHT CONDITIONS MAY NOT EXIST WHEN EXISTING VALVES ARE CLOSED.
16. THE CONTRACTOR SHALL HAVE ALL EQUIPMENT, MANPOWER, AND MATERIALS REQUIRED ON SITE AND READY FOR USE PRIOR TO COMMENCING ANY SHUT-DOWN OR REMOVING ANY EXISTING FACILITIES FROM SERVICE. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED CUSTOMERS OF ANY SHUT-DOWN AT LEAST 48 HOURS IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE FIRE STATIONS 48 HOURS IN ADVANCE PRIOR TO TAKING ANY FIRE HYDRANTS OUT OF SERVICE. ANY FIRE HYDRANTS NOT IN SERVICE SHALL BE BAGGED IN BURLAP OR PLASTIC. ANY SHUT-DOWN SHALL BE LIMITED TO 6 CONSECUTIVE HOURS. IT MAY BE NECESSARY TO SCHEDULE SHUT-DOWNS AT NIGHT, WEEKENDS, OR OTHER OFF HOURS SO AS TO NOT AFFECT SCHOOLS, BUSINESSES OR OTHER CUSTOMERS, AS DETERMINED BY THE ENGINEER.
17. SHUT-DOWN REQUESTS SHALL BE SUBMITTED TO THE CITY OF BUFFALO A MINIMUM OF 3 BUSINESS DAYS IN ADVANCE OF THE REQUESTED SHUT-DOWN DATE.
18. ALL STORM SEWER PIPING SHALL BE INSTALLED WITH MINIMUM COVER OF 3'-0". IF MINIMUM COVER CANNOT BE OBTAINED, THE STORM SEWER MAIN SHALL BE ENCASED IN FLOWABLE FILL.
19. ALL SEWER PIPING SHALL BE INSTALLED WITH A MINIMUM OF 1'-6" OF VERTICAL CLEARANCE AND 10'-0" OF HORIZONTAL CLEARANCE FROM WATERMAIN PIPING, MEASURED FROM THE OUTSIDE OF THE PIPES AT THE POINT OF CROSSING. ENCASE WATERMAIN IN CONCRETE WHEN REQUIRED CLEARANCE IS NOT AVAILABLE.
20. IF THE MATERIAL AT THE DESIGN GRADE IS UNSUITABLE AS DETERMINED BY THE ENGINEER, THE CONTRACTOR, WHEN ORDERED IN WRITING, SHALL EXCAVATE ADDITIONAL MATERIAL TO THE DEPTH NECESSARY AND SHALL BACKFILL TO THE PROPOSED GRADE WITH SELECT GRANULAR BACKFILL MATERIAL.
21. THE INSTALLATION OF 90 DEGREE BENDS IN THE WATERMAIN IS NOT ALLOWED, UNLESS APPROVED BY THE CITY OF BUFFALO.
22. THRUST RESTRAINT FOR PRESSURIZED PIPING THROUGH 12-INCH DIAMETER SHALL CONSIST OF PIPE JOINT RESTRAINT, UNLESS OTHERWISE INDICATED.
23. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY UTILITY POLE IN ADVANCE OF ANY EXCAVATION WORK THAT WILL TAKE PLACE WITHIN 5'-0" OF THE UTILITY POLE. THE CONTRACTOR SHALL INCLUDE THE COST OF TEMPORARY POLE SUPPORT IN THE APPROPRIATE BID ITEM. WHERE UTILITY POLES ARE REQUIRED TO BE SUPPORTED DURING CONSTRUCTION, THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY.
24. IF MATERIALS ARE ENCOUNTERED DURING THE CONSTRUCTION THAT ARE SUSPECTED OF BEING CONTAMINATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE NYSDEC FOR DIRECTION REGARDING TESTING, SEPARATION, CONTAINMENT AND DISPOSAL PROCEDURES.
25. IF A PROPOSED SEWER CONFLICTS WITH A SUBSURFACE OBSTRUCTION AND WHEN THE MINIMUM COVER CANNOT BE MAINTAINED BY GOING ABOVE THE OBSTRUCTION, THE CONTRACTOR SHALL INSTALL THE STORM SEWER BELOW THE OBSTRUCTION MAINTAINING THE APPROPRIATE SEPARATION AND GRADE.
26. THE CONTRACTOR SHALL COLD PATCH ALL TRENCH EXCAVATIONS IN TRAVELED AREAS INCLUDING ROADS, DRIVEWAYS, SIDEWALKS AND PARKING AREAS.
27. THE CONTRACTOR SHALL NOT RESTRICT SCHOOL ACCESS.
28. THE USE OF EXISTING FIRE HYDRANTS FOR ANY REASON IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE CITY OF BUFFALO.
29. THE CONTRACTOR SHALL SUBMIT PROCEDURES FOR TESTING OF THE SEWER TO THE ENGINEER FOR APPROVAL.
30. THE CONTRACTOR SHALL BE PRESENT AND ASSIST IN THE FINAL WALK INSPECTION. THE CONTRACTOR SHALL PROVIDE SUFFICIENT PERSONNEL AND EQUIPMENT TO DEMONSTRATE TO THE ENGINEER THAT ALL VALVES, AND OTHER MECHANICAL EQUIPMENT OPERATE AS REQUIRED.
31. TO FACILITATE INSTALLATION OF THE NEW SEWER AND APPURTENANCES, THE CONTRACTOR SHALL REMOVE AND REINSTALL, OR RELOCATE EXISTING MAILBOXES, SIGNS, GUIDE RAILS, OR OTHER STRUCTURES AND OBSTACLES ENCOUNTERED DURING

THE WORK. NO SEPARATE PAYMENT SHALL BE PAID FOR THIS WORK.

32. ALL OPEN EXCAVATED AREAS SHALL BE ADEQUATELY MARKED AND/OR COVERED WITH STEEL PLATE AT THE END OF EACH WORK DAY.
33. CONTRACTOR SHALL REMOVE AND REPLACE CURBS, SIDEWALKS, DRIVEWAYS, MAILBOXES, ETC. TO LIKE KIND CONDITION OR BETTER AS NECESSARY TO ACCOMMODATE CONSTRUCTION OF THE PROPOSED UTILITIES HERE IN.
34. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND FIELD MEASUREMENTS. THE CONTRACTOR MUST CONTACT ALL APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION TO REQUEST DETAILED FIELD LOCATION OF EACH UTILITY. THE CONTRACTOR IS RESPONSIBLE TO CONTACT DIG SAFELY NEW YORK (UFPD) AT 1-800-962-7962 OR 811 FOR UTILITY MARKOUT PRIOR TO THE START OF ANY EXCAVATION WORK ON THIS PROJECT.
35. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PERTINENT TO THE WORK OF THE CONTRACT. NO ALLOWANCE SHALL BE MADE ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLECT ON HIS PART.
36. ALL SURFACES DISTURBED BY THE CONTRACTOR WHICH ARE OUTSIDE THE WORK LIMITS OR WORK SCOPE, OR ARE SURFACES DISTURBED WITHOUT PRIOR AUTHORIZATION BY THE ENGINEER, SHALL BE RESTORED TO ORIGINAL CONDITIONS OR BETTER, AT THE CONTRACTOR'S EXPENSE.
37. CONTRACTOR SHALL INVESTIGATE DRIVEWAY CULVERTS AND STORM DRAINAGE PIPING FOR LOCATION AND CONDITION IN ADVANCE OF CONSTRUCTION TO DETERMINE ANY CONFLICTS WITH THE PROPOSED SEWER INSTALLATION. DRIVEWAY CULVERTS AND STORM DRAINAGE PIPING SHALL BE REMOVED AND REINSTALLED OR REPLACED AS REQUIRED WITH THE TYPE AND SIZE AS EXISTING. ALL COSTS ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF DRIVEWAY CULVERTS, STORM DRAINAGE PIPING AND APPURTENANCES SHALL BE INCLUDED IN THE UNIT BID PRICE TO FURNISH AND INSTALL PROPOSED SEWER AND WATERMAINS.
38. CONTRACTOR SHALL FIELD LOCATE ALL SEWER LATERALS, WATER SERVICES, AND OTHER SERVICES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPAIR ANY DAMAGED SEWER LATERALS, WATER SERVICES, AND OTHER SERVICES AS A RESULT OF CONSTRUCTION AT HIS OWN EXPENSE.
39. ALL CLEARING AND GRUBBING NECESSARY FOR INSTALLATION OF THE WORK SHALL BE PERFORMED TO THE LIMITS AND EXTENT AS IS MUTUALLY DETERMINED BY THE ENGINEER AND CONTRACTOR IN THE FIELD. EVERY EFFORT SHALL BE MADE TO MINIMIZE THE AMOUNT OF CLEARING. THE COST FOR ALL CLEARING AND GRUBBING SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS PIPE ITEMS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR THIS WORK.
40. THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY, WITHOUT INTERRUPTION TO EXISTING SANITARY SERVICES. THE CONTRACTOR SHALL UTILIZE APPROVED BYPASSING TECHNIQUES IN ORDER TO PERFORM SAID WORK UNDER SAID CONDITIONS. ALL PROPOSED BYPASSING TECHNIQUES AND EQUIPMENT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF THIS WORK. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THIS PROJECT. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR THIS WORK.
41. IN THE EVENT THAT A SERVICE MUST BE INTERRUPTED, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO NOTIFY THE RESIDENT OF SAID INTERRUPTION. IN NO CASE SHALL ANY SERVICE BE INTERRUPTED FOR MORE THAN 6-HOURS, AND IN NO CASE SHALL THE INTERRUPTION EXTEND BEYOND THE END OF THE WORKING DAY. IN THE EVENT THAT ANY INTERRUPTION CONTINUES FOR MORE THAN 6-HOURS, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR WORK ASSOCIATED WITH ALL SUCH TEMPORARY SERVICES OR A.O.B.E., REQUIRES THE REMOVAL OF EXISTING PAVED SURFACES, TO INCLUDE BUT NOT BE LIMITED TO, ROADWAYS, DRIVEWAYS, SIDEWALKS, AND PARKING LOTS. THE CONTRACTOR SHALL BE REQUIRED TOSAW-CUT THE LIMITS OF THE PROPOSED EXCAVATION PRIOR TO EXCAVATION OF SAID AREA. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE AND MAINTAIN TEMPORARY RESTORATION OF ALL SUCH AREAS, UNTIL PERMANENT RESTORATION IS PROVIDED. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR ALL SUCH SAW CUTTING AND TEMPORARY RESTORATION.
42. THE CONTRACTOR SHALL BE AWARE THAT NUMEROUS WYES, TAP-INS, AND ASSOCIATED LATERALS MAY BE ENCOUNTERED. NEW (PROPOSED) WYES SHALL ONLY BE INSTALLED TO PROVIDE FOR RECONNECTION OF SERVICE LATERALS TO THE NEW (PROPOSED) SANITARY SEWER MAIN. ALL OTHER WYES AND TAP-INS, OF UNKNOWN ORIGINATION, SHALL BE EXCLUDED FROM RECONNECTION INTO NEW MAINLINE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY WHICH EXISTING WYES, TAP-INS, AND THEIR ASSOCIATED LATERALS, ARE FOR RESIDENCES, AND FOR WHICH ARE NOT, BY WHATEVER MEANS ARE NECESSARY. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR ALL SUCH WORK.
43. SUBSURFACE INVESTIGATIONS HAVE BEEN PERFORMED IN THE AREAS IN WHICH WORK IS PROPOSED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE IF ANY ADDITIONAL SUBSURFACE INVESTIGATIONS ARE NECESSARY. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY SUCH WORK. IN THE EVENT THAT TRENCH EXCAVATION BECOMES DIFFICULT DUE TO THE MATERIAL ENCOUNTERED, THE ENGINEER SHALL DETERMINE WHETHER ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR ALL SUCH EXCAVATING. THE CONTRACTOR SHALL REFER TO THE PROJECT SPECIFICATIONS FOR FURTHER INTERPRETATION OF WHEN SUCH ADDITIONAL ALLOWANCES WILL BE MADE, AND WHAT IS CONSIDERED "ROCK" EXCAVATION.
44. UNDER THIS PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE TO RESTORE, ACCORDING TO THE PLANS AND SPECIFICATIONS, ALL AREAS DISTURBED AS A RESULT OF THEIR WORK.
45. IN ALL CASES WHERE THE PLANS AND SPECIFICATIONS VARY, THE SPECIFICATIONS SHALL PREVAIL, UNLESS OTHERWISE ORDERED BY THE ENGINEER.
46. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR, TO THE EXTENT SPECIFIED BY THE ENGINEER, ALL DAMAGED PAVEMENT AREAS, (OUTSIDE THE LIMITS OF EXCAVATION) DAMAGED AS A RESULT OF HIS (OR ANY OF HIS REPRESENTATIVES) OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ALL SUCH WORK.
47. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RULES AND REGULATIONS FOR STATE, COUNTY AND CITY.
48. ALL SEWER MAINS SHALL MAINTAIN THE MINIMUM SEPARATION REQUIREMENTS AS SET FORTH BY THE TEN STATE STANDARDS, MOST RECENT EDITION.
49. NO PAVEMENT CUTS SHALL REMAIN OPEN OVERNIGHT OR WITHIN NYSDOT RIGHT-OF-WAY, WITH EXCEPTION OF THE GATE CONTROL STRUCTURE AND VALVE CHAMBER.
50. STEEL PLATES SHALL NOT BE USED IN THE PAVEMENT BETWEEN OCTOBER 15 AND APRIL 15.
51. ALL PAVEMENT MARKINGS SHALL BE RECORDED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION AND REPLACED TO PRE CONSTRUCTION LAYOUT AS APPROVED BY THE ENGINEER AND OWNER.
52. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN FLOW IN ALL SEWERS AT ALL TIMES DURING CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. THE CONTRACTOR SHALL DEVELOP A PROPOSED SEQUENCE OF CONSTRUCTION INCLUDING BUT NOT LIMITED TO BYPASS PUMPING, TEMPORARY SEWERS/FLOWES, TEMPORARY BULKHEADS, ETC. CONSTRUCTION SEQUENCE SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE BUFFALO SEWER AUTHORITY. NOTIFY THE ENGINEER AND OWNER AT LEAST THREE (3) DAYS IN ADVANCE OF PROPOSED BY-PASSING OPERATIONS.
53. CONTRACTOR IS ADVISED THAT SEWER FLOW, DEPTH, VELOCITY AND VOLUME VARY GREATLY IN ALL SEWERS. THESE COMBINED SEWERS MAY SURCHARGE (FLOOD) DURING WET WEATHER. THE CONTRACTOR SHALL PROTECT THE WORK SURFACES AND SHALL AS NECESSARY SUSPEND WORK AND RE-CLEAN SURFACES FOLLOWING WET WEATHER.
54. THE CONTRACTOR SHALL BE ADVISED THAT THE PRESENCE OF STOP LIGHT VEHICLE DETECTION SYSTEMS MAY BE THROUGHOUT THE EXTENTS OF THE PROPOSED WORK. THE CONTRACTOR SHALL TAKE PRECAUTION TO PRESERVE AND PROTECT SUCH FACILITIES. IF DAMAGED IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETURN THE SYSTEM TO WORKING ORDER AT THE EXPENSE OF THE CONTRACTOR.

SUGGESTED CONSTRUCTION SEQUENCING:

NIAGARA STREET AND BRECKENRIDGE STREET

SEQUENCING NOTES TO BE UPDATED

GATES CIRCLE

- 1.SUPPORT AND PROTECT UTILITIES WITHIN CONSTRUCTION ENVELOPE.
- 2.PROTECT TREES PER TRAFFIC CONTROL DRAWINGS.
- 3.INSTALL NEW ELECTRICAL POLE ON LAFAYETTE AVENUE.
- 4.INSTALL CONTROL PANEL.
- 5.INSTALL UNDERGROUND ELECTRIC FROM NEW POLE TO CONTROL PANEL, AND CONTROL PANEL TO INSTRUMENTS.
- 6.CONNECT NEW POLE TO EXISTING POLE ##.
- 7.CONSTRUCT DOGHOUSE MANHOLE MH 6 AND KEEP SEWER INTACT. ROOF TO REMAIN OPEN FOR SUBSEQUENT BYPASS PUMPING.
- 8.CONSTRUCT DOGHOUSE MANHOLE MH 7 AND KEEP SEWER INTACT. ROOF TO REMAIN OPEN FOR SUBSEQUENT BYPASS PUMPING.
- 9.SET UP BYPASS PUMPING FROM MH 6 TO MH 7.
- 10.INSTALL NEW HATCH IN SPP 332 AND CORE INTO EXISTING WEIR.
- 11.INSTALL ALL MECHANICAL, ELECTRICAL, AND INSTRUMENTATION EQUIPMENT, INCLUDING SUPPORTS.
- 12.TEST ALL EQUIPMENT AND PLACE INTO SERVICE.
- 13.INTEGRATE INTO OVATION SYSTEM.

BAILEY AVENUE AND EAST AMHERST STREET

- 1.SUPPORT AND PROTECT UTILITIES WITHIN CONSTRUCTION ENVELOPE.
- 2.REMOVE LEAD WATER SERVICE LINE AND REPLACE UP TO METER WITHIN BUILDING.
- 3.CONSTRUCT NEW MANHOLE, MH 8.
- 4.INSTALL NEW ELECTRICAL POLE ON EAST AMHERST STREET.
- 5.INSTALL UNDERGROUND ELECTRIC FROM NEW POLE TO CONTROL PANEL, AND CONTROL PANEL TO INSTRUMENTS.
- 6.CONNECT NEW POLE TO EXISTING POLE ##.
- 7.INSTALL BULKHEAD IN WEIR CHANNEL.
- 8.INSTALL ALL MECHANICAL, ELECTRICAL, AND INSTRUMENTATION EQUIPMENT, INCLUDING SUPPORTS.
- 9.TEST ALL EQUIPMENT AND PLACE INTO SERVICE.
- 10.INTEGRATE INTO OVATION SYSTEM.


KERNS AVENUE

- 1.INSTALL NEW ELECTRICAL POLE ON KERNS AVENUE.
- 2.INSTALL UNDERGROUND ELECTRIC FROM NEW POLE TO CONTROL PANEL, AND CONTROL PANEL TO INSTRUMENTS.
- 3.CONNECT NEW POLE TO EXISTING POLE ##.
- 4.INSTALL EQUIPMENT IN SPP 338.
- 5.TEST EQUIPMENT AND PLACE INTO SERVICE.
- 6.INTEGRATE INTO OVATION SYSTEM.

WATER LEVELS AND FLOW RATES:

1. BRECKENRIDGE STREET 36" BRICK ARCH COMBINED SEWER, MEAN DRY WEATHER DEPTH, FT, 0.3  
MEAN DRY WEATHER FLOW, MGD, 1.0.
2. BIRD AVE TRUNK AT GATES CIRCLE (SPP332) SWMM NODE ID SPP332, MEAN DRY WEATHER DEPTH, FT, 1.2  
MEAN DRY WEATHER FLOW, MGD, 3.8.
3. BAILEY AT AMHERST SWWM NODE ID 4713, MEAN DRY WEATHER DEPTH, FT, 0.5. MEAN DRY WEATHER FLOW, MGD, 1.6.
4. AMHERST QUARRY SWWM NODE ID QUARST, MEAN DRY WEATHER DEPTH, FT, 0. MEAN DRY WEATHER FLOW, MGD, 0.
5. BAILEY AT KERNS (SPP338) SWWM NODE ID 7942, MEAN DRY WEATHER DEPTH, FT, 0.8. MEAN DRY WEATHER FLOW, MGD , 3.8.
6. BAILEY AT MINNESOTA SWWM NODE ID 4076, MEAN DRY WEATHER DEPTH, FT, 0.8. MEAN DRY WEATHER FLOW, MGD, 0.7.

BUFFALO  
SEWER AUTHORITY

 **GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |     |
|----------|-----|
| DESIGNED | DH  |
| DRAWN    | RAM |
| CHECKED  | MS  |

APPROVED

NO

DATE

APPD

REVISION

SCALE

NO SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

GENERAL

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GENERAL CONSTRUCTION NOTES

BSA CONTRACT NO. 82000041

DWG: **G04**

SHEET: 5 OF 85

DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL



GENERAL ABBREVIATIONS

|             |                                          |
|-------------|------------------------------------------|
| A           | AT                                       |
| @           | AND                                      |
| &           | VERIFY IN FIELD                          |
| *           | ANCHOR BOLT                              |
| AB          | ABANDON(ED)                              |
| ABAND       | AGGREGATE BASE COURSE                    |
| ABC         | ASPHALTIC CONCRETE                       |
| AC          | ASBESTOS CEMENT PIPE                     |
| ACP         | ADDITIONAL                               |
| ADDL        | ADMINISTRATION                           |
| ADMIN       | ABOVE FINISHED FLOOR                     |
| AFF         | AIR HANDLING UNIT                        |
| AHU         | ALTERNATEorALTERNATIVE                   |
| ALT         | ALUMINUM                                 |
| ALUM        | APPROXIMATE / APPROXIMATELY              |
| APPROX      | ARCHITECTURAL                            |
| ARCH        | AIR RELEASE VALVE                        |
| ARV         | ASPHALT                                  |
| ASPH        | AMERICAN SOCIETY FOR TESTING & MATERIALS |
| ASTM        | AUXILIARY                                |
| AUX         | AVENUE                                   |
| AVE         | AVERAGE                                  |
| AVG         |                                          |
| B           |                                          |
| B/          | BOTTOM OF                                |
| BF          | BLIND FLANGE                             |
| BFV         | BUTTERFLY VALVE                          |
| BL          | BASELINE                                 |
| BLDG        | BUILDING                                 |
| BP          | BOOSTER PUMP                             |
| BPS         | BOOSTER PUMP STATION                     |
| BRG         | BEARING                                  |
| BOT         | BOTTOM                                   |
| BC          | BACK OF CURB                             |
| BM          | BENCHMARK                                |
| BMPs        | BEST MANAGEMENT PRACTICES                |
| BSMT        | BASEMENT                                 |
| BTWN        | BETWEEN                                  |
| BVC         | BEGIN VERTICAL CURVE                     |
| C           |                                          |
| CAP         | CORRUGATED ALUMINUM PIPE                 |
| CB          | CATCH BASIN                              |
| CEN         | CENTER                                   |
| CHEM        | CHEMICAL                                 |
| CI          | CAST IRON                                |
| CIP         | CAST IRON PIPE / CAST IN PLACE           |
| CIR         | CIRCLE                                   |
| CJ          | CONTROL JOINT / CONSTRUCTION JOINT       |
| CKV         | CHECK VALVE                              |
| CL          | CENTERLINE                               |
| CLR         | CLEAR                                    |
| CLSM        | CONTROLLED LOW STRENGTH MATERIAL         |
| CMP         | CORRUGATED METAL PIPE                    |
| CMU         | CONCRETE MASONRY UNIT                    |
| CO          | CLEANOUT                                 |
| COL         | COLUMN                                   |
| CONN        | CONNECTION                               |
| CONC        | CONCRETE                                 |
| CONT        | CONTINUOUS                               |
| CONT'D      | CONTINUED                                |
| COORD       | COORDINATE                               |
| CP          | CONTROL POINT                            |
| CPVC        | CHLORINATED POLYVINYL CHLORIDE           |
| CS          | COMBINED SEWER                           |
| CU          | CUBIC                                    |
| D           |                                          |
| D           | DEPTH                                    |
| DB          | DUCT BANK                                |
| DBL         | DOUBLE                                   |
| DEG         | DEGREE                                   |
| DEMO        | DEMOLISH / DEMOLITION                    |
| DIA or Ø    | DIAMETER                                 |
| DIAG        | DIAGONAL                                 |
| DI          | DUCTILE IRON                             |
| DIM         | DIMENSION                                |
| DIP         | DUCTILE IRON PIPE                        |
| DISCH       | DISCHARGE                                |
| DN          | DOWN                                     |
| DR          | DRIVE                                    |
| DWG         | DRAWING (S)                              |
| E           |                                          |
| E           | EAST                                     |
| EA          | EACH                                     |
| ECC         | ECCENTRIC                                |
| EF          | EACH FACE                                |
| EFL         | EFFLUENT                                 |
| EG          | EXISTING GRADE                           |
| EHH         | ELECTRIC HAND HOLE                       |
| EJ          | EXPANSION JOINT                          |
| EL/ELEV     | ELEVATION                                |
| ELEC        | ELECTRIC / ELECTRICAL                    |
| EMH         | ELECTRIC MANHOLE                         |
| EO          | EDGE OF                                  |
| EOP         | EDGE OF PAVEMENT                         |
| EQ          | EQUAL                                    |
| EQUIP       | EQUIPMENT                                |
| EW          | EACH WAY                                 |
| EX or EXIST | EXISTING                                 |
| EXP         | EXPANSION                                |
| EXT         | EXTERIOR                                 |

|          |                                       |
|----------|---------------------------------------|
| F        | FLOOR DRAIN                           |
| FD       | FIRE DEPARTMENT CONNECTION            |
| FDC      | FOUNDATION                            |
| FDN      | FLUORINATED ETHYLENE PROPYLENE        |
| FEP      | FINISHED FLOOR                        |
| FF       | FINISHED GRADE                        |
| FG       | FIRE HYDRANT                          |
| FH       | FLOOR                                 |
| FL       | FLANGE (D)                            |
| FLG      | FORCE MAIN                            |
| FM       | FOUND                                 |
| FND      | FEET PER SECOND                       |
| FPS      | FIBERGLASS REINFORCED PLASTIC         |
| FRP      | FEET                                  |
| FT       | FOOTING                               |
| FTG      | FREEWAY                               |
| FWY.     |                                       |
| G        |                                       |
| GA       | GAUGE                                 |
| GAL      | GALLON                                |
| GB       | GRADE BREAK                           |
| GM       | GAS MAIN                              |
| GPM      | GALLONS PER MINUTE                    |
| GR       | GRADE                                 |
| GV       | GATE VALVE                            |
| H        |                                       |
| H        | HEIGHT                                |
| HDD      | HORIZONTAL DIRECTIONAL DRILLING       |
| HDPE     | HIGH DENSITY POLYETHYLENE             |
| HORIZ    | HORIZONTAL                            |
| HP       | HIGH POINT                            |
| HPI      | HORIZONTAL POINT OF INTERSECTION      |
| HW       | HEADWALL                              |
| HWL      | HIGH WATER LEVEL                      |
| HWY.     | HIGHWAY                               |
| HYD      | HYDRANT                               |
| I        |                                       |
| ID       | INSIDE DIAMETER                       |
| I.F.     | INSIDE FACE                           |
| IN.      | INCHES                                |
| INF      | INFLUENT                              |
| INLT     | INLET                                 |
| INT      | INTERIOR                              |
| INV      | INVERT                                |
| IP       | INLET PROTECTION                      |
| IPS      | IRON PIPE STRAIGHT (THREAD)           |
| IR       | IRRIGATION                            |
| J        |                                       |
| JB       | JUNCTION BOX                          |
| JT       | JOINT                                 |
| K        |                                       |
| KGV      | KNIFE GATE VALVE                      |
| L        |                                       |
| L        | LENGTH                                |
| LB(S)    | POUND(S)                              |
| LF       | LINEAR FOOT / FEET                    |
| LN.      | LANE                                  |
| LOC      | LIMIT OF CONSTRUCTION                 |
| LOD      | LIMIT OF DISTURBANCE                  |
| LP       | LOW PRESSURE / LOW POINT / LIGHT POST |
| LR       | LONG RADIUS                           |
| LS       | LIFT STATION                          |
| LT       | LEFT                                  |
| LWL      | LOW WATER LEVEL                       |
| M        |                                       |
| MAX      | MAXIMUM                               |
| MFR      | MANUFACTURER                          |
| MG       | MILLION GALLONS                       |
| MGD      | MILLION GALLONS PER DAY               |
| MH       | MANHOLE                               |
| MIN      | MINIMUM                               |
| MISC     | MISCELLANEOUS                         |
| MJ       | MECHANICAL JOINT                      |
| ML       | MONUMENT LINE                         |
| N        |                                       |
| N        | NORTH                                 |
| NAD      | NORTH AMERICAN DATUM                  |
| NAVD     | NORTH AMERICAN VERTICAL DATUM         |
| N/A      | NOT APPLICABLE                        |
| NEC      | NATIONAL ELECTRICAL CODE              |
| NFPA     | NATIONAL FIRE PROTECTION ASSOCIATION  |
| NO. or # | NUMBER                                |
| NOM      | NOMINAL                               |
| NPT      | NATIONAL PIPE THREAD                  |
| NTP      | NOTICE TO PROCEED                     |
| NTS      | NOT TO SCALE                          |
| O        |                                       |
| OC       | OVERHEAD COMMUNICATION                |
| O.C.     | ON CENTER                             |
| OD       | OUTSIDE DIAMETER                      |
| OE       | OVERHEAD ELECTRIC                     |
| OF       | OVERHEAD FIBER                        |
| O.F.     | OUTSIDE FACE                          |
| OH       | OVERHEAD                              |
| OPNG     | OPENING                               |

|        |                                               |
|--------|-----------------------------------------------|
| OPP    | OPPOSITE                                      |
| OSHA   | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION |
| OT     | OVERHEAD TELEPHONE                            |
| OTV    | OVERHEAD TELEVISION                           |
| P      |                                               |
| PB     | PULLBOX                                       |
| PC     | POINT OF CURVATURE                            |
| PE     | PLAIN END                                     |
| PKWY.  | PARKWAY                                       |
| PL     | PLACE / PLATE / PROPERTY LINE                 |
| PMP    | PUMP                                          |
| PC     | POINT OF CURVATURE                            |
| PCC    | POINT OF COMPOUND CURVE                       |
| Ph     | POTENTIAL OF HYDROGEN                         |
| PH     | POTHOLE                                       |
| PRC    | POINT OF REVERSE CURVATURE                    |
| PRV    | PRESSURE REDUCING VALVE                       |
| PS     | PUMPING STATION                               |
| PSF    | PRESSURE PER SQUARE FOOT                      |
| PSI    | POUNDS PER SQUARE INCH                        |
| PSV    | PRESSURE SUSTAINING VALVE                     |
| PT     | POINT OF TANGENCY / PRESSURE TREATED          |
| PV     | PLUG VALVE                                    |
| PVC    | POLYVINYL CHLORIDE                            |
| PVI    | POINT OF VERTICAL INTERSECTION                |
| PVMT   | PAVEMENT                                      |
| PVR    | PRESSURE VACUUM RELIEF                        |
| Q      |                                               |
| QS     | QUARTER SECTION                               |
| R      |                                               |
| R      | RADIUS                                        |
| RCA    | RESTRAINED COUPLING ADAPTER                   |
| RCP    | REINFORCED CONCRETE PIPE                      |
| RD.    | ROAD                                          |
| RED    | REDUCER                                       |
| RECIRC | RECIRCULATION                                 |
| REF    | REFERENCE                                     |
| REINF  | REINFORCED/REINFORCEMENT                      |
| REQ'D  | REQUIRED                                      |
| RES    | RESERVOIR                                     |
| RFCA   | RESTRAINED FLANGED COUPLING ADAPTER           |
| RJ     | RESTRAINED JOINT                              |
| ROW    | RIGHT OF WAY                                  |
| RR     | RAILROAD                                      |
| RT     | RIGHT                                         |
| RTU    | ROOF TOP UNIT                                 |
| S      |                                               |
| S      | SOUTH / SLOPE                                 |
| SB     | SOIL BORING                                   |
| SCH    | SCHEDULE                                      |
| SDR    | STANDARD DIMENSION RATIO                      |
| SF     | SQUARE FOOT / FEET                            |
| SHGC   | SOLAR HEAT GAIN COEFFICIENT                   |
| SHT    | SHEET                                         |
| SIM    | SIMILAR                                       |
| SPEC   | SPECIFICATION(S)                              |
| SS     | SANITARY SEWER                                |
| SST    | STAINLESS STEEL                               |
| ST     | STORM SEWER                                   |
| ST.    | STREET                                        |
| STL    | STEEL                                         |
| STA    | STATION                                       |
| STR    | STRUCTURE                                     |
| S/W    | SIDEWALK                                      |
| SWPP   | STORM WATER POLLUTION PREVENTION PLAN         |
| SY     | SQUARE YARD                                   |
| SYM    | SYMMETRICAL                                   |
| T      |                                               |
| T      | TANGENT                                       |
| T/     | TOP OF                                        |
| T&B    | TOP AND BOTTOM                                |
| TBD    | TO BE DETERMINED                              |
| TBM    | TEMPORARY BENCHMARK                           |
| TC     | TOP OF CURB                                   |
| TEL    | TELEPHONE                                     |
| TEMP   | TEMPORARY / TEMPERATURE                       |
| THK    | THICK(NESS)                                   |
| TOB    | TOP OF BANK                                   |
| TOC    | TOP OF CONCRETE                               |
| T.O.P. | TOP OF PIPE                                   |
| TP     | TREE PROTECTION                               |
| TS     | TRAFFIC SIGNAL                                |
| TV     | TELEVISION                                    |
| TYP    | TYPICAL                                       |
| U      |                                               |
| UC     | UNDERGROUND COMMUNICATION                     |
| UE     | UNDERGROUND ELECTRIC                          |
| UF     | UNDERGROUND FIBER                             |
| UT     | UNDERGROUND TELEPHONE                         |
| UTV    | UNDERGROUND TELEVISION                        |
| UNK    | UNKNOWN                                       |
| UON    | UNLESS OTHERWISE NOTED                        |
| UV     | ULTRA VIOLET                                  |
| V      |                                               |
| V      | VOLUME / VELOCITY                             |
| VB     | VALVE BOX                                     |
| VCP    | VITRIFIED CLAY PIPE                           |

|      |                                          |
|------|------------------------------------------|
| VERT | VERTICAL                                 |
| VPI  | VERTICAL POINT OF INTERSECTION           |
| W    |                                          |
| W    | WEST / WIDE                              |
| W/   | WITH                                     |
| W/O  | WITHOUT                                  |
| WM   | WATER MAIN                               |
| WP   | WORKPOINT                                |
| WS   | WATER STOP                               |
| WSE  | WATER SURFACE ELEVATION                  |
| WT   | WEIGHT / WATER TIGHT                     |
| WTP  | WATER TREATMENT PLANT                    |
| WWF  | WELDED WIRE FABRIC                       |
| WWTP | WASTE WATER TREATMENT PLANT              |
| X    |                                          |
| X    | COORDINATE VALUE (EAST-WEST DIRECTION)   |
| XFR  | TRANSFORMER                              |
| Y    |                                          |
| Y    | COORDINATE VALUE (NORTH-SOUTH DIRECTION) |
| YD   | YARD                                     |
| YH   | YARD HYDRANT                             |
| YR   | YEAR                                     |
| Z    |                                          |



**GREELEY AND HANSEN**

111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |     |          |      |      |  |          |
|----------|-----|----------|------|------|--|----------|
| DESIGNED | DH  | APPROVED |      |      |  |          |
| DRAWN    | RAM |          |      |      |  |          |
| CHECKED  | MS  |          |      |      |  |          |
|          |     | NO.      | DATE | APPD |  | REVISION |

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SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

|                       |
|-----------------------|
| GENERAL               |
| GENERAL ABBREVIATIONS |

|                           |               |
|---------------------------|---------------|
| BSA CONTRACT NO. 82000041 |               |
| DWG:                      | G05           |
| SHEET:                    | 6 OF 85       |
| DATE:                     | FEBRUARY 2023 |
| REV:                      | 0             |

95% SUBMITTAL



2023/02/15 3:32 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3D\CDD14122\_G06 MORENO, ROBERTO

| HAZARDOUS CLASSIFICATION AREAS |                                                   |                     |                |                       |                                                                                                                             |
|--------------------------------|---------------------------------------------------|---------------------|----------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|
| SITE                           | ROOM/AREA                                         | CLASSIFICATION      | ENVIRONMENT    | NFPA 820 Reference    | Remarks                                                                                                                     |
| Niagara at Breckenridge RTC    | Above grade                                       | Unclassified        | Wet            | N/A                   |                                                                                                                             |
|                                | Inside sewer and below grade structures           | Class I, Division 1 | Wet, Corrosive | Table 4.2.2, Line 13a |                                                                                                                             |
| Gates Circle RTC (SPP 332)     | Above grade                                       | Unclassified        | Wet            | N/A                   |                                                                                                                             |
|                                | Inside sewer and below grade structures           | Class I, Division 1 | Wet, Corrosive | Table 4.2.2, Line 13a | Reduced from Class I, Division 2 to unclassified by ventilation at 6 ACH. Repairs to existing ventilation system by others. |
| Niagara Metering Station       | Operating room and other above grade spaces       | Unclassified        | Dry            | Table 4.2.2, Line 34b |                                                                                                                             |
|                                | Below grade metering and stairwell                | Class I, Division 2 | Corrosive      | Table 4.2.2, Line 34a |                                                                                                                             |
|                                | Below grade areas with exposed wastewater surface | Class I, Division 1 | Wet, Corrosive | Table 4.2.2, Line 35a |                                                                                                                             |
| Bailey at Amherst RTC          | Above grade                                       | Unclassified        | Wet            | N/A                   |                                                                                                                             |
|                                | Inside sewer and below grade structures           | Class I, Division 1 | Wet, Corrosive | Table 4.2.2, Line 13a |                                                                                                                             |
| Quarry Pump Station            | Control Building                                  | Unclassified        | Dry            | N/A                   |                                                                                                                             |
|                                | Pump Station Building Exterior                    | Unclassified        | Wet            | N/A                   |                                                                                                                             |
| Bailey at Kerns (SPP 338)      | Above grade                                       | Unclassified        | Wet            | N/A                   |                                                                                                                             |
|                                | Inside sewer and below grade structures           | Class I, Division 1 | Wet, Corrosive | Table 4.2.2, Line 13a |                                                                                                                             |





**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |     |          |     |      |      |          |
|----------|-----|----------|-----|------|------|----------|
| DESIGNED | DH  | APPROVED |     |      |      |          |
| DRAWN    | RAM |          |     |      |      |          |
| CHECKED  | MS  |          |     |      |      |          |
|          |     |          | NO. | DATE | APPD | REVISION |

|       |  |  |
|-------|--|--|
| SCALE |  |  |
|       |  |  |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

|                                |  |
|--------------------------------|--|
| GENERAL                        |  |
| HAZARDOUS CLASSIFICATION AREAS |  |

BSA CONTRACT NO. 82000041

DWG: **G06**

SHEET: 7 OF 85

DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL



UTILITY LINETYPES

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| UC  | UC  | UC  | UNDERGROUND COMMUNICATION |
| UE  | UE  | UE  | UNDERGROUND ELECTRIC      |
| UF  | UF  | UF  | UNDERGROUND FIBER OPTIC   |
| UT  | UT  | UT  | UNDERGROUND TELEPHONE     |
| UTV | UTV | UTV | UNDERGROUND TV            |
| OC  | OC  | OC  | OVERHEAD COMMUNICATION    |
| OE  | OE  | OE  | OVERHEAD ELECTRIC         |
| OF  | OF  | OF  | OVERHEAD FIBER OPTIC      |
| OT  | OT  | OT  | OVERHEAD TELEPHONE        |
| OTV | OTV | OTV | OVERHEAD TV               |
| TS  | TS  | TS  | TRAFFIC SIGNAL            |
| IR  | IR  | IR  | IRRIGATION MAIN           |
| GM  | GM  | GM  | GAS MAIN                  |
| WM  | WM  | WM  | WATER MAIN                |
| FM  | FM  | FM  | FORCE MAIN                |
| ST  | ST  | ST  | STORM SEWER               |
| SS  | SS  | SS  | SANITARY SEWER            |
| CS  | CS  | CS  | COMBINED SEWER            |
| IS  | IS  | IS  | INTERCEPTOR SEWER         |
| D   | D   | D   | PLANT DRAIN               |
| CW  | CW  | CW  | CITY WATER/CHILL WATER    |
| PW  | PW  | PW  | PLANT WATER               |
| HW  | HW  | HW  | HOT WATER                 |

SITE LINETYPES

|   |   |                                 |
|---|---|---------------------------------|
| X | X | FENCELINE X (CHAINLINK)         |
| □ | □ | FENCELINE BOX (METAL/WOOD POST) |
| ○ | ○ | FENCELINE CIRCLE (GUARDRAIL)    |
|   |   | TREELINE                        |
|   |   | TRACKS                          |
|   |   | GRADING FLOWLINE                |
|   |   | LIMITS OF DISTURBANCE           |
| 5 |   | MAJOR CONTOUR (5'-0" INTERVAL)  |
| 1 |   | MINOR CONTOUR (1'-0" INTERVAL)  |

DOUBLE LINE PIPELINE

|  |                   |
|--|-------------------|
|  | BURIED PIPE       |
|  | ABOVE GROUND PIPE |

JURISDICTION LINES

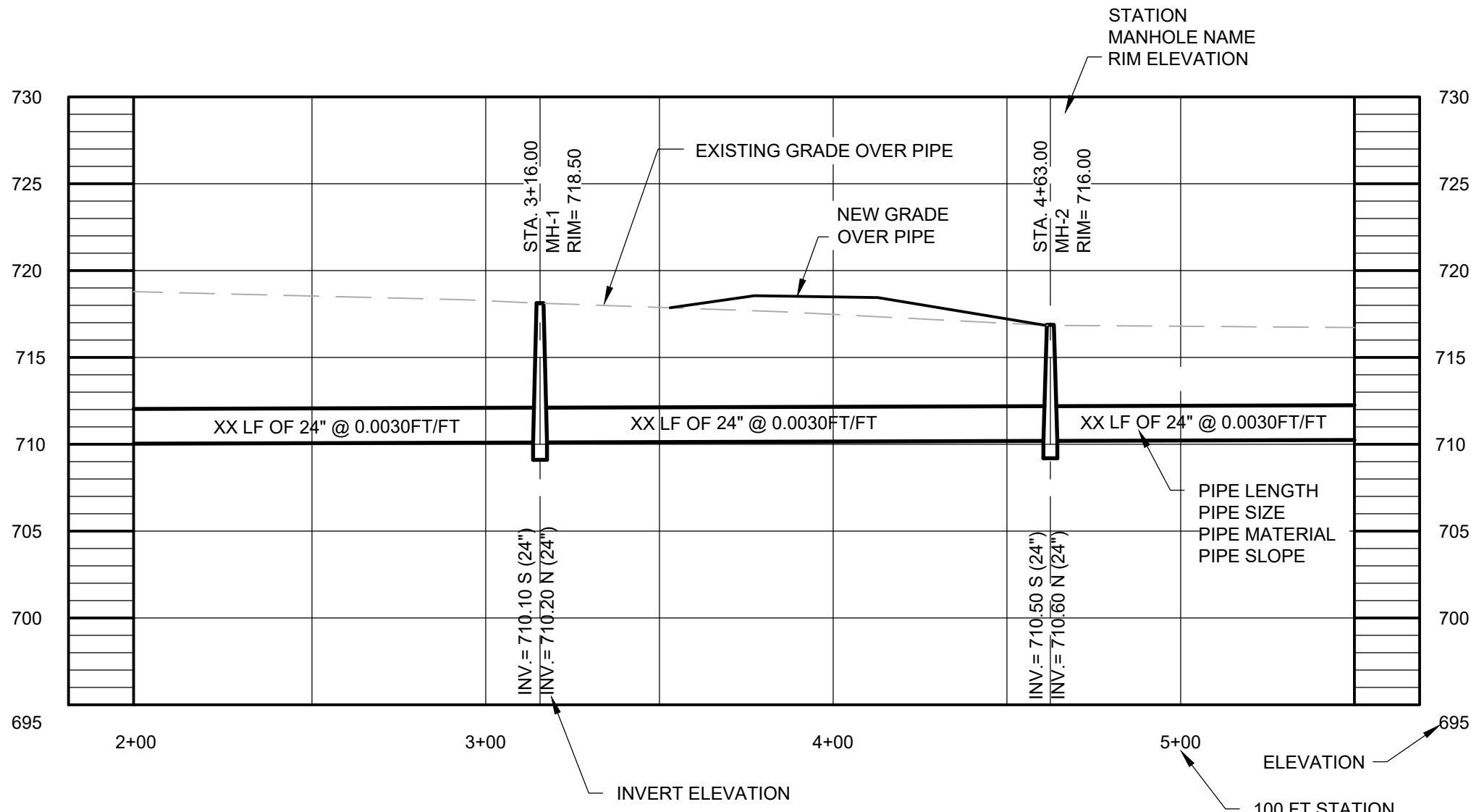
|  |                      |
|--|----------------------|
|  | PROPERTY LINE        |
|  | RIGHT OF WAY LINE    |
|  | QUARTER/SECTION LINE |
|  | EXISTING EASEMENT    |
|  | NEW EASEMENT         |

CIVIL SYMBOLS

|     |                                 |     |                              |
|-----|---------------------------------|-----|------------------------------|
| ○   | GENERAL MANHOLE                 | XFR | TRANSFORMER                  |
| Ⓢ   | SANITARY MANHOLE                | AC  | AIR CONDITIONING UNIT        |
| ○CO | SANITARY CLEANOUT               | T   | TELEPHONE JUNCTION BOX       |
| Ⓢ   | COMBINED SEWER MANHOLE          | TS  | TRAFFIC SIGNAL JUNCTION BOX  |
| Ⓢ   | ODOR CONTROL MANHOLE            |     | NEW GRADING FLOW AREA        |
| Ⓢ   | TELEPHONE MANHOLE               |     | EXISTING GRADING FLOW AREA   |
| Ⓢ   | ELECTRICAL MANHOLE              |     | PIPE BREAK                   |
| Ⓢ   | STORM MANHOLE                   | ◆   | GRADE BREAK                  |
| CB  | CATCH BASIN                     | ●   | BOLLARD                      |
| HYO | FIRE HYDRANT                    | ⊗●  | STREET LIGHT                 |
| WV  | WATER VALVE                     | ⊗   | TRAFFIC SIGNAL (NO ARM)      |
| GV  | GAS VALVE                       | ▽   | TRAFFIC SIGNAL (WITH ARM)    |
| IV  | IRRIGATION VALVE                | ⊖   | SIGN                         |
| ⊗   | GENERAL BURIED VALVE            | ⊙   | BRASS CAP                    |
|     | WATER HOUSE SERVICE             | ⊙   | BRASS CAP IN HANDHOLE        |
|     | SEWER HOUSE SERVICE             | ⊕   | SURVEY MONUMENT (AS NOTED)   |
|     | PIPELINE CAP                    | ⊗   | SOIL BORING                  |
|     | PARKING CURB                    | ⚠   | CONTROL POINT                |
| W   | WATER METER                     | ⚡   | WOODEN POWER POLE            |
| WVL | WATER VAULT                     | ⚡   | STEEL OR CONCRETE POWER POLE |
| ⊗⊗  | ABOVE GROUND BACKFLOW PREVENTER | ⌋   | GUY WIRE                     |
| GM  | GAS METER                       | ⊗   | LIGHT POST                   |
| E   | ELECTRIC JUNCTION BOX           |     |                              |
| EM  | ELECTRIC METER                  |     |                              |

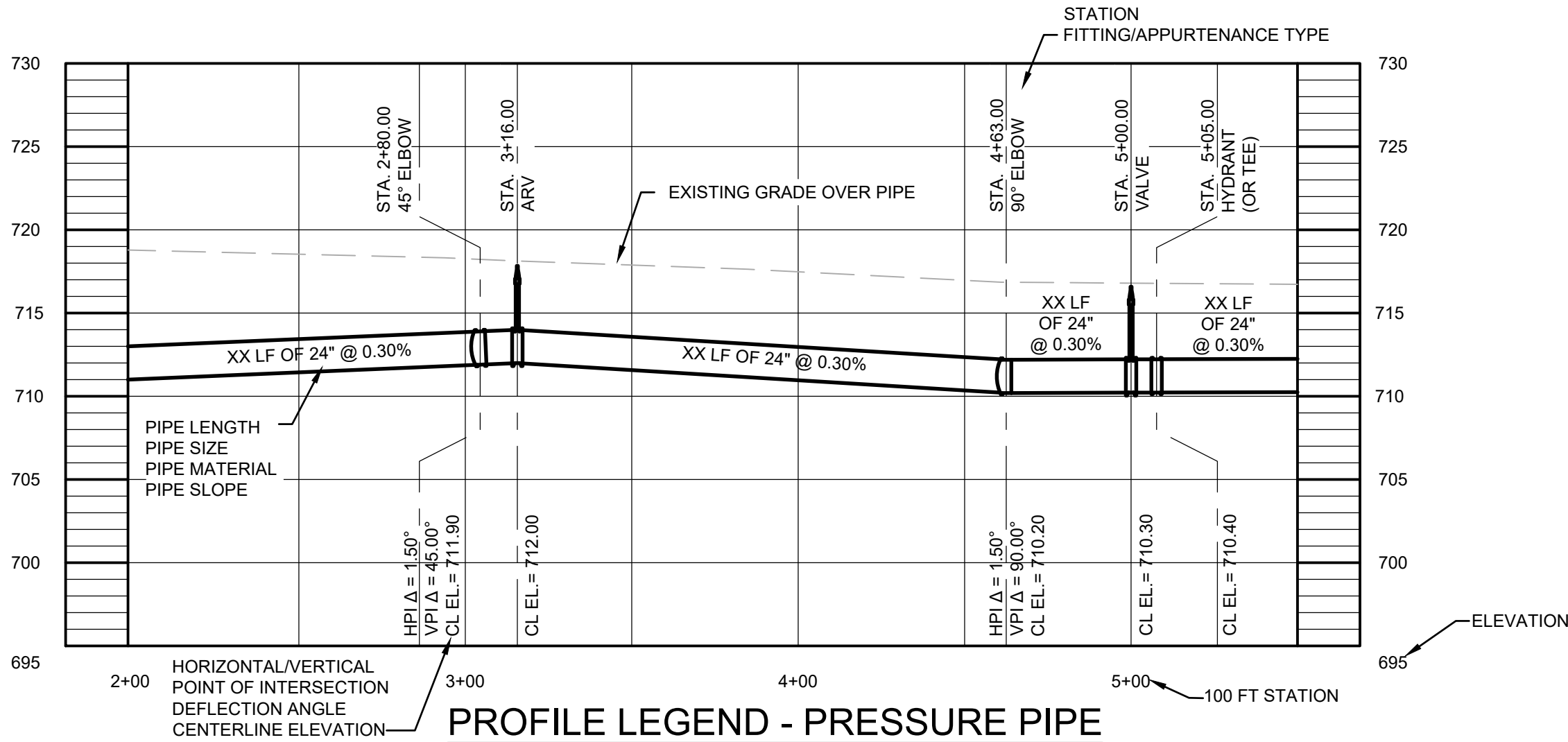
CONSTRUCTION KEY NOTES

|   |                           |
|---|---------------------------|
| 1 | DEMOLITION KEY NOTE       |
| 1 | NEW CONSTRUCTION KEY NOTE |



PROFILE LEGEND - GRAVITY PIPE

SCALE: NOT TO SCALE



PROFILE LEGEND - PRESSURE PIPE

SCALE: NOT TO SCALE

BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

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| NO. | DATE | APPD | REVISION |

SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL

SYMBOL LEGEND

BSA CONTRACT NO. 82000041

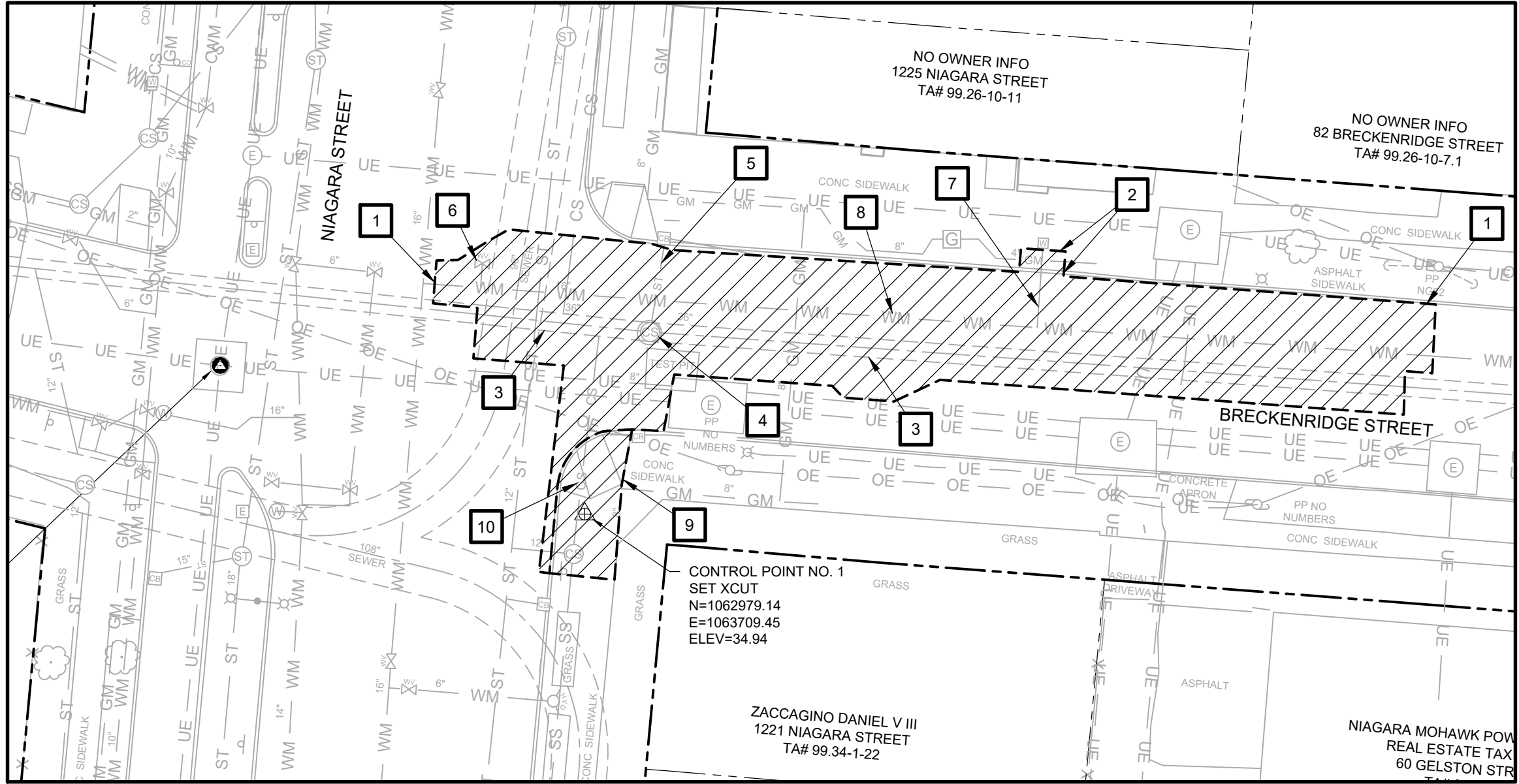
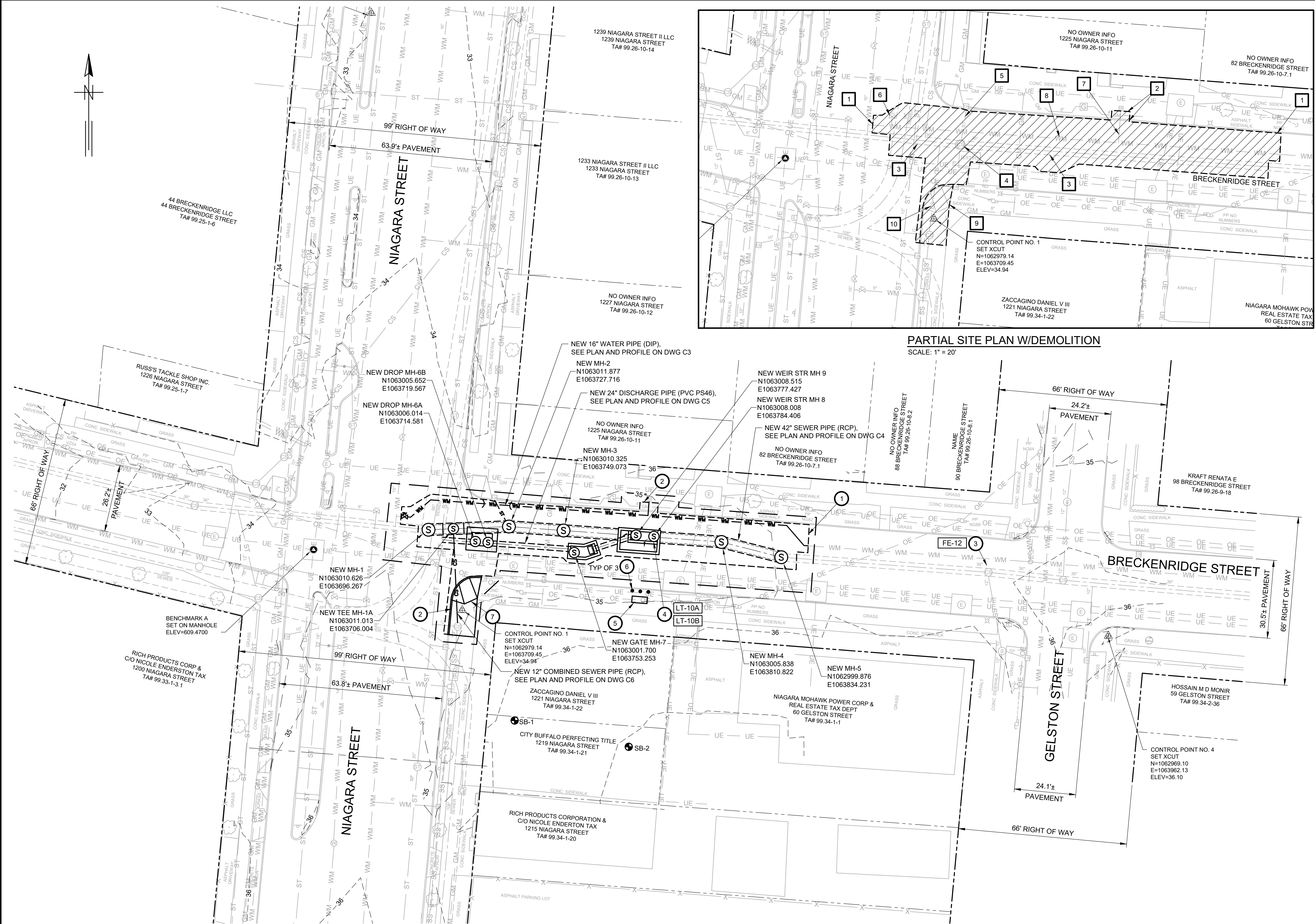
DWG: C01

SHEET: 8 OF 85

DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL





PARTIAL SITE PLAN W/DEMOLITION  
SCALE: 1" = 20'

SITE PLAN W/IMPROVEMENTS  
SCALE: 1" = 20'

DEMOLITION KEY NOTES

- 1 DEMOLISH AND REMOVE PAVEMENT
- 2 DEMOLISH AND REMOVE CONCRETE CURB AND SIDEWALK TO LIMITS SHOWN ON PLANS
- 3 DEMOLISH AND REMOVE BRICK SEWER PIPE TO LIMITS SHOWN ON PLANS
- 4 DEMOLISH AND REMOVE SEWER MANHOLE
- 5 DEMOLISH AND REMOVE STORM PIPE
- 6 DEMOLISH AND REMOVE WATER VALVE
- 7 DEMOLISH AND REMOVE WATER SERVICE LEAD TO WATER METER
- 8 DEMOLISH AND REMOVE EXISTING WATER MAIN TO LIMITS SHOWN ON PLANS
- 9 DEMOLISH AND REMOVE CONCRETE RAMP AND ADJACENT SIDEWALK TO LIMITS SHOWN ON PLANS
- 10 DEMOLISH AND REMOVE COMBINED SEWER PIPE TO LIMITS SHOWN, CAP AND GROUT EXISTING PIPE MINIMUM 2 FEET FROM EXISTING CONNECTIONS

NEW CONSTRUCTION KEY NOTES

- 1 REPLACE PAVEMENT IN KIND PER DETAIL ON DWG C14, ELEVATIONS TO MATCH EXISTING CONDITIONS
- 2 REPLACE CONCRETE CURB AND SIDEWALK IN KIND, ELEVATIONS TO MATCH EXISTING CONDITIONS
- 3 INSTALL FLOW METER (SEE I&C DWGS FOR DETAILS)
- 4 INSTALL RADAR AND LASER LEVEL SENSORS (SEE I&C DWGS FOR DETAILS)
- 5 CONSTRUCT EQUIPMENT PAD (SEE STRUCTURAL DWGS FOR DETAILS) AND INSTALL PLC/CONTROL PANEL <NAME> (SEE ELEC AND I&C DWGS FOR DETAILS)
- 6 INSTALL CONCRETE BOLLARD PER DETAIL ON DWG C14
- 7 REPLACE CONCRETE RAMP IN KIND, ELEVATIONS TO MATCH EXISTING CONDITIONS

SOIL BORING DATA

| POINT | NORTHING     | EASTING      |
|-------|--------------|--------------|
| SB-1  | 1062936.025E | 1063729.957E |
| SB-2  | 1062925.734E | 1063774.564E |

NOTE: SEE GEOTECH REPORT FOR SOIL BORING FINDINGS.

NOTES:

1. CONTRACTOR TO PROTECT ALL UNMODIFIED EQUIPMENT, UTILITIES AND APPURTENANCES DURING DEMOLITION AND CONSTRUCTION.
2. CONTRACTOR TO VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

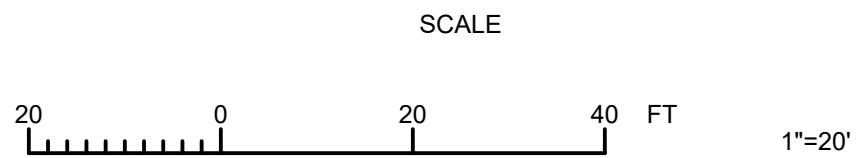
BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC

SITE PLAN W/IMPROVEMENTS

BSA CONTRACT NO. 82000041

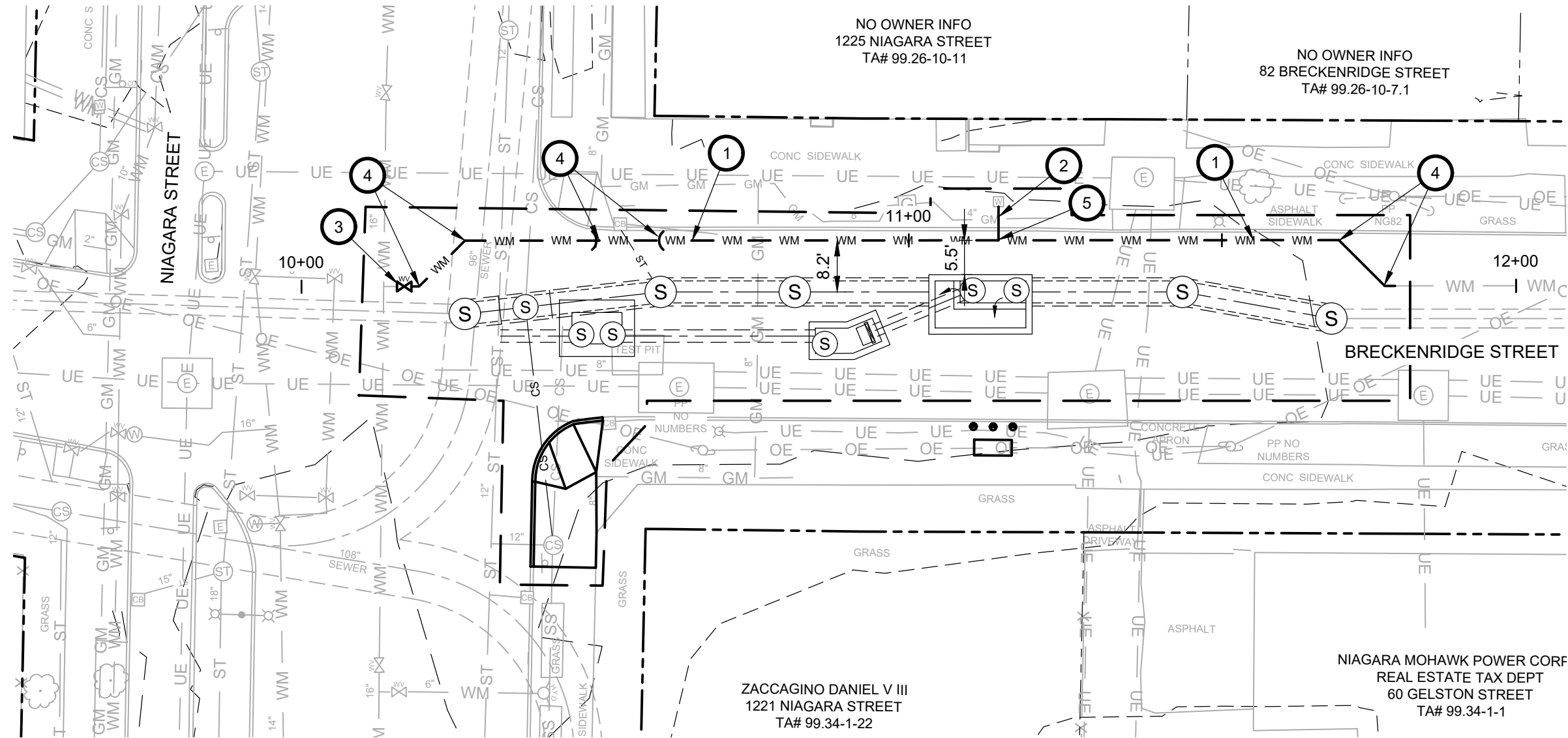
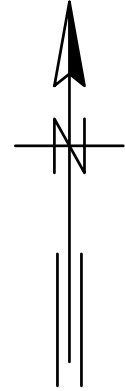
DWG: C02

SHEET: 9 OF 85

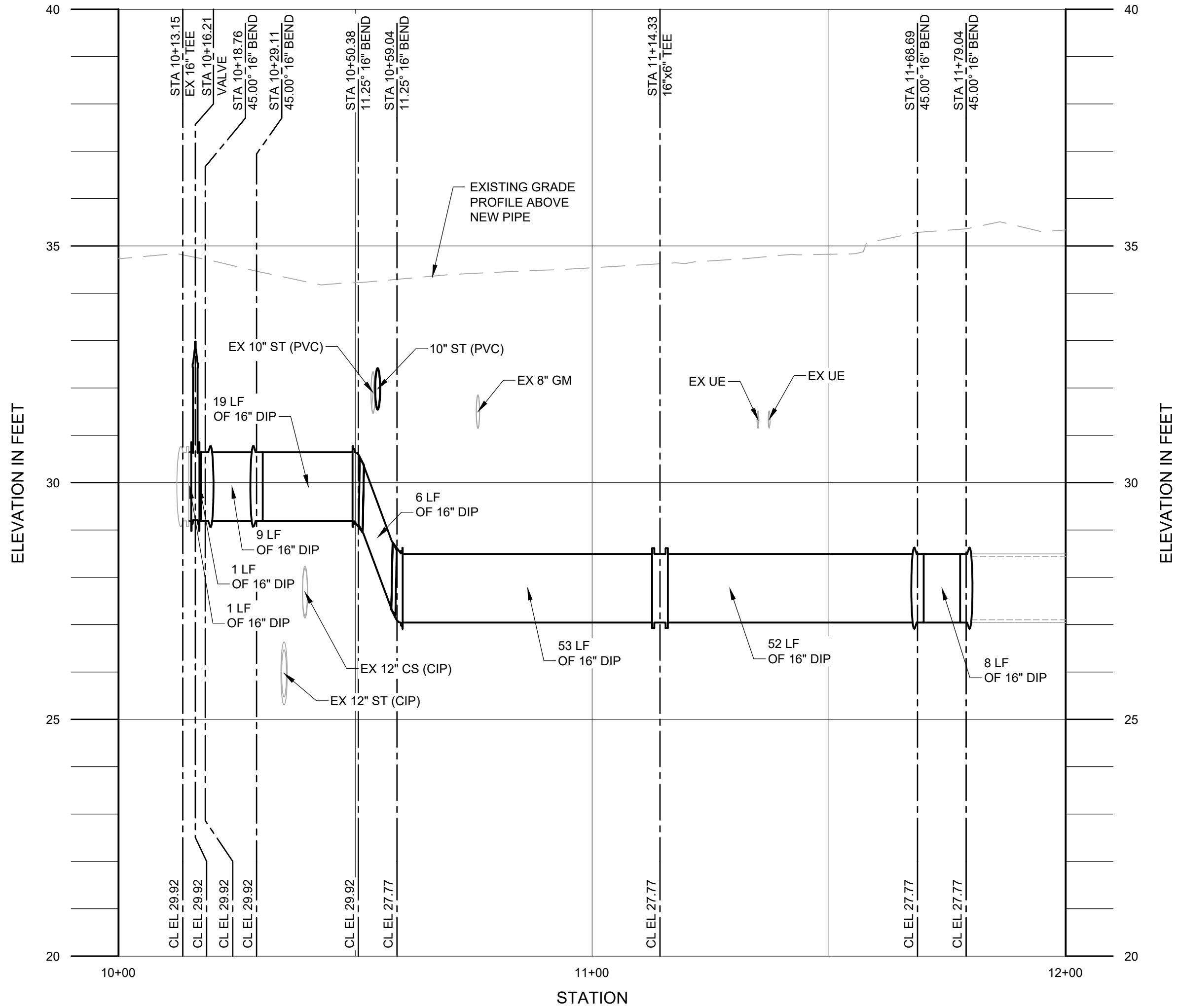
DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL





16" WATER - PLAN  
SCALE: 1" = 20'



16" WATER - PROFILE  
SCALE: 1" = 20' (H), 1" = 2' (V)

NEW CONSTRUCTION KEY NOTES

1. INSTALL NEW 16" DIP WATER PIPE
2. INSTALL NEW 6" DIP WATER PIPE
3. INSTALL NEW 16" WATER VALVE, SEE DWG C15
4. INSTALL NEW DIP BEND, DEFLECTION AND SIZE AS SHOWN ON PROFILE
5. INSTALL NEW DIP TEE, SIZE AS SHOWN ON PROFILE

NOTES:

1. CONTRACTOR TO PROTECT ALL UNMODIFIED EQUIPMENT, UTILITIES AND APPURTENANCES DURING DEMOLITION AND CONSTRUCTION.
2. CONTRACTOR TO VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. NEW GRADES TO MATCH EXISTING CONDITIONS AFTER CONSTRUCTION.

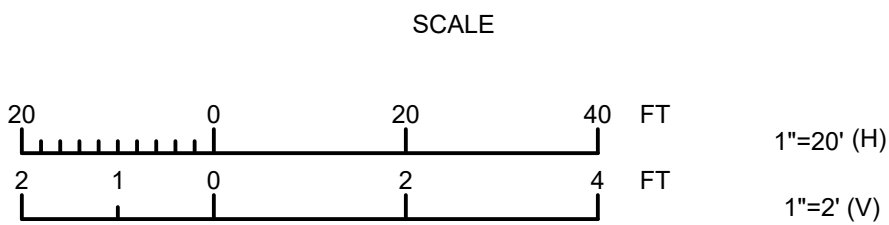
BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC

16" WATER PLAN AND PROFILE

BSA CONTRACT NO. 82000041

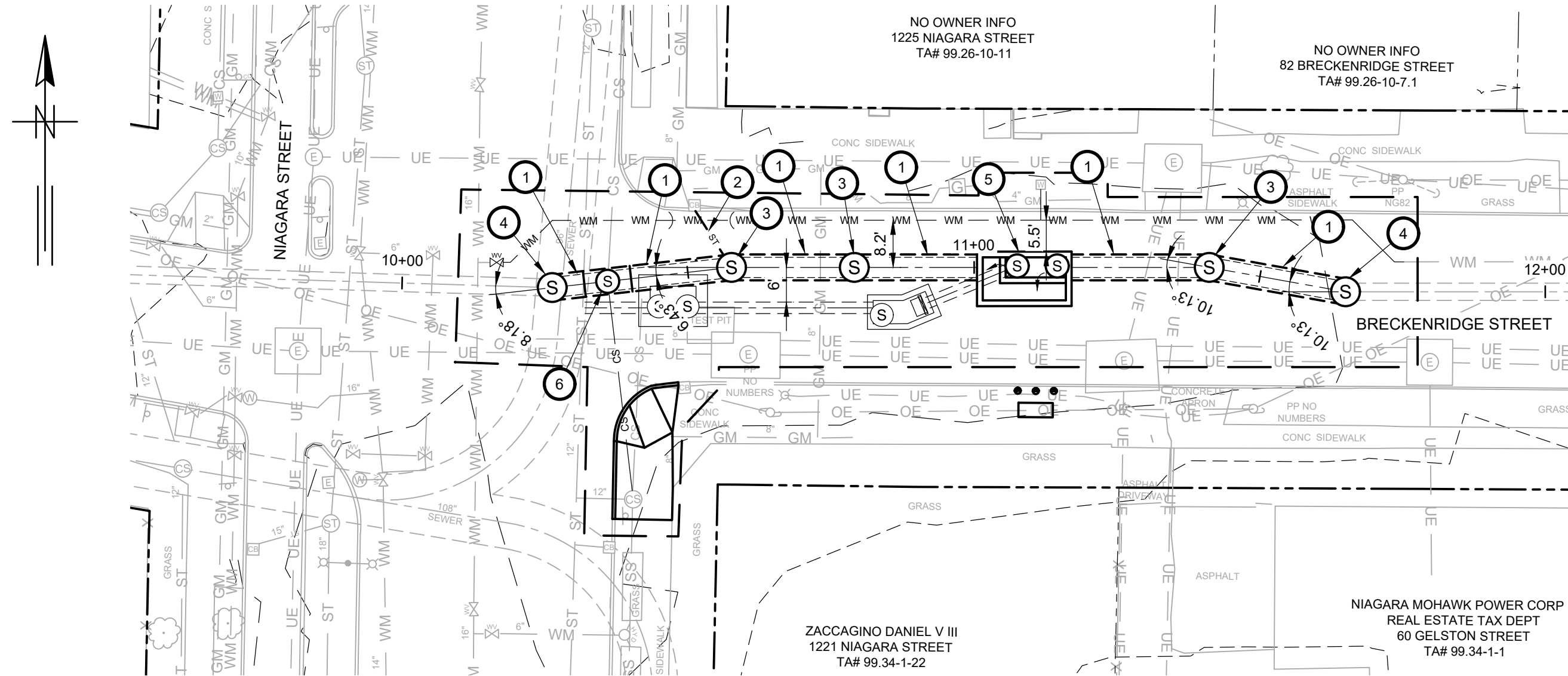
DWG: C03

SHEET: 10 OF 85

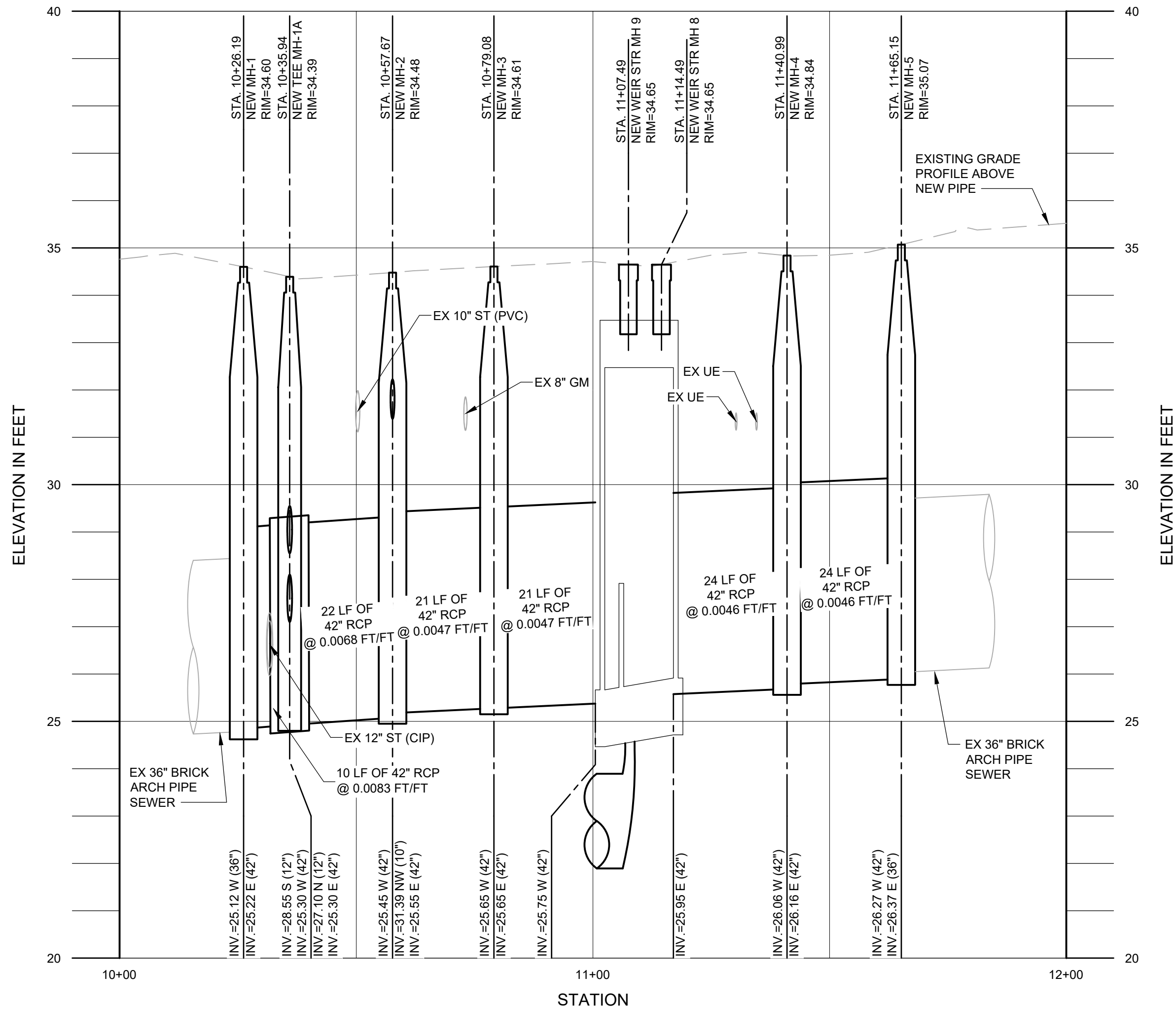
DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL





42" SEWER - PLAN  
SCALE: 1" = 20'



24" SEWER - PROFILE  
SCALE: 1" = 20' (H), 1" = 2' (V)

NEW CONSTRUCTION KEY NOTES

- 1. INSTALL NEW 42" RCP SEWER PIPE
- 2. INSTALL NEW 10" PVC PS46 STORM PIPE
- 3. INSTALL NEW 60" DIA. SEWER MANHOLE, SEE DWG C13
- 4. INSTALL NEW 60" DIA. DOGHOUSE SEWER MANHOLE, SEE DWG C13
- 5. CONSTRUCT NEW WEIR STRUCTURE W/MH 8 & 9, SEE DWG M02
- 6. INSTALL NEW CONCRETE TEE MANHOLE, SEE DWG C13

NOTES:

- 1. CONTRACTOR TO PROTECT ALL UNMODIFIED EQUIPMENT, UTILITIES AND APPURTENANCES DURING DEMOLITION AND CONSTRUCTION.
- 2. CONTRACTOR TO VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- 3. NEW GRADES TO MATCH EXISTING CONDITIONS AFTER CONSTRUCTION.

95% SUBMITTAL

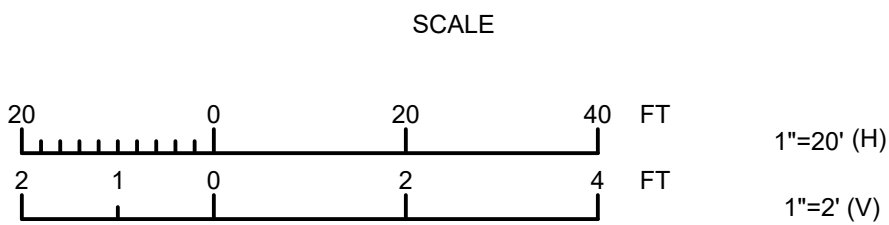
BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC

42" SEWER PLAN AND PROFILE

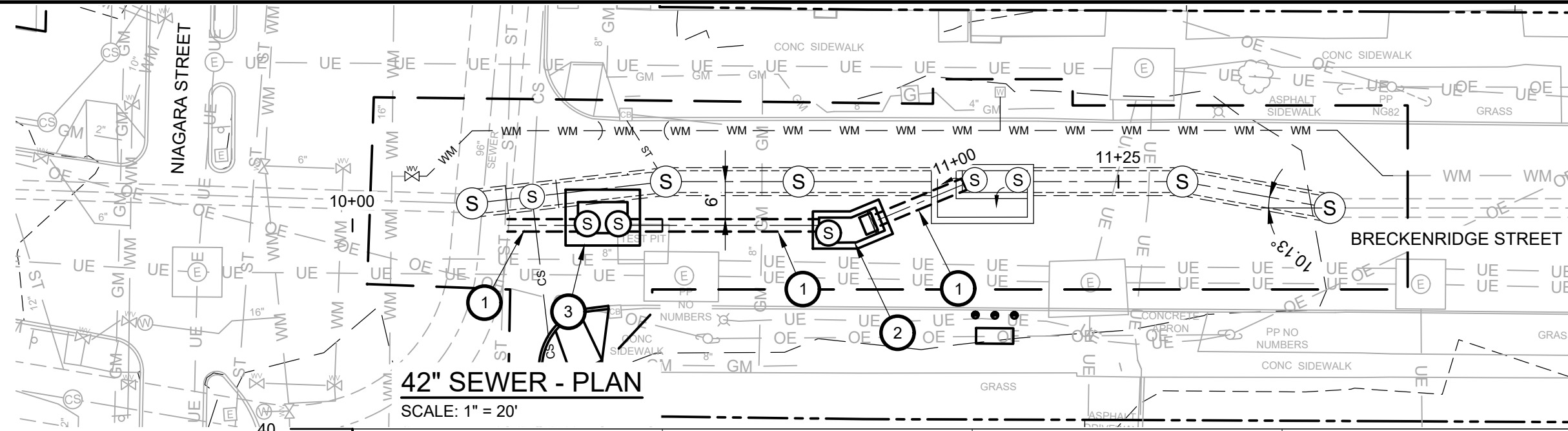
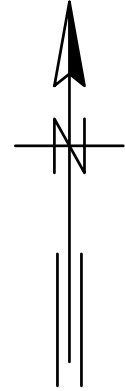
BSA CONTRACT NO. 82000041

DWG: C04

SHEET: 11 OF 85

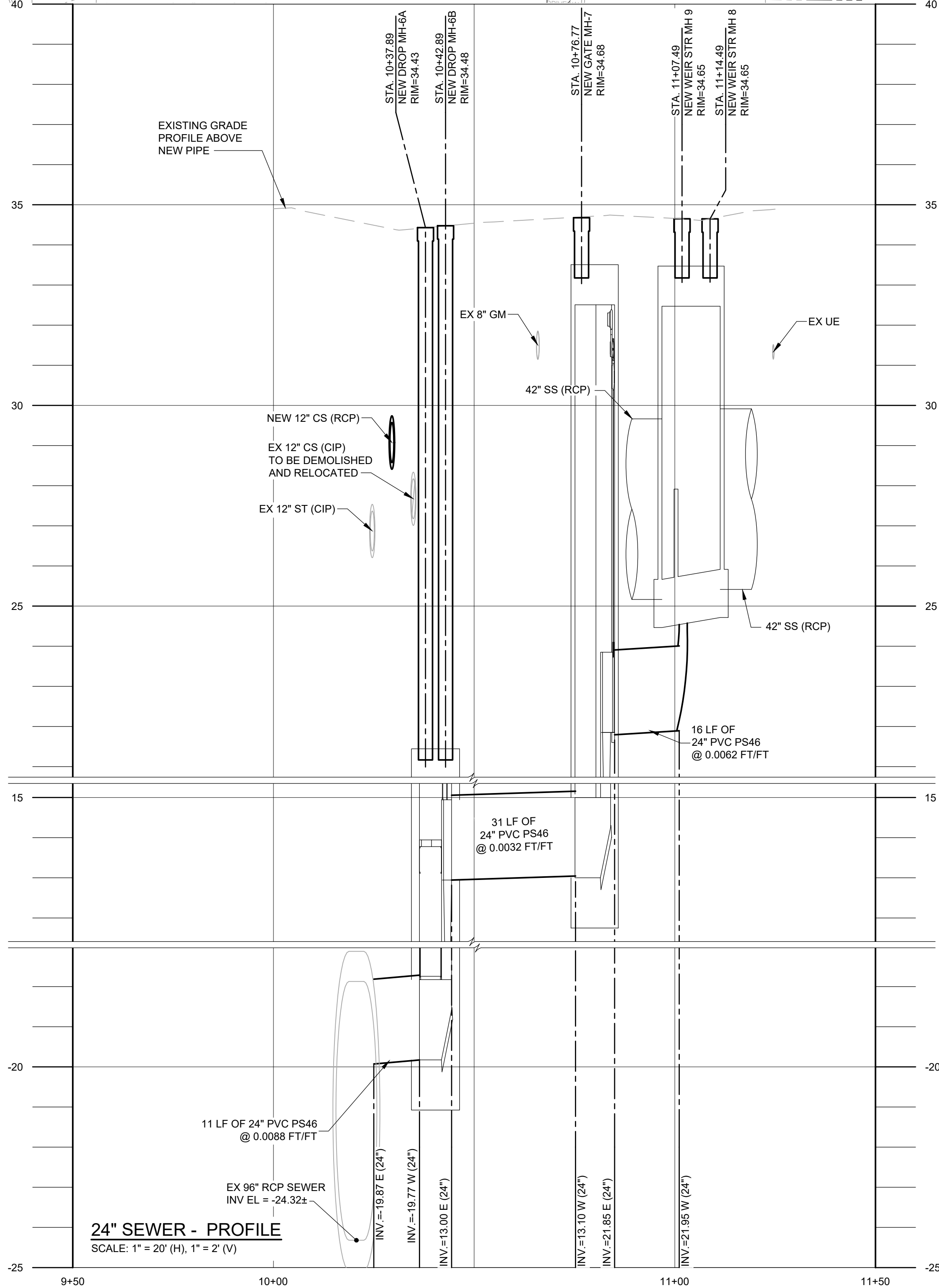
DATE: FEBRUARY 2023 REV: 0





42" SEWER - PLAN

SCALE: 1" = 20'



24" SEWER - PROFILE

SCALE: 1" = 20' (H), 1" = 2' (V)

NEW CONSTRUCTION KEY NOTES

1. INSTALL NEW 24" PVC PS46 DISCHARGE PIPE
2. CONSTRUCT NEW GATE STRUCTURE W/MH7, SEE DWG M03
3. CONSTRUCT NEW DROP STRUCTURE W/MH 6A & 6B, SEE DWGS M04 & M05

NOTES:

1. CONTRACTOR TO PROTECT ALL UNMODIFIED EQUIPMENT, UTILITIES AND APPURTENANCES DURING DEMOLITION AND CONSTRUCTION.
2. CONTRACTOR TO VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. NEW GRADES TO MATCH EXISTING CONDITIONS AFTER CONSTRUCTION.

95% SUBMITTAL

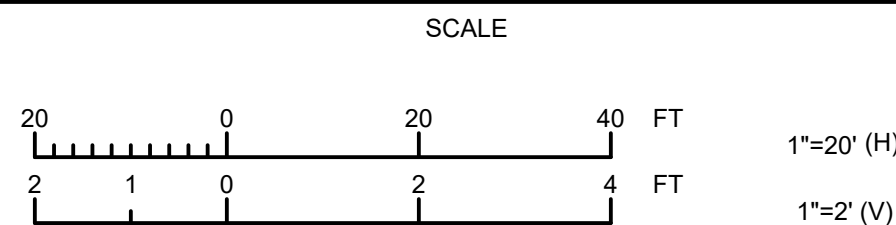
BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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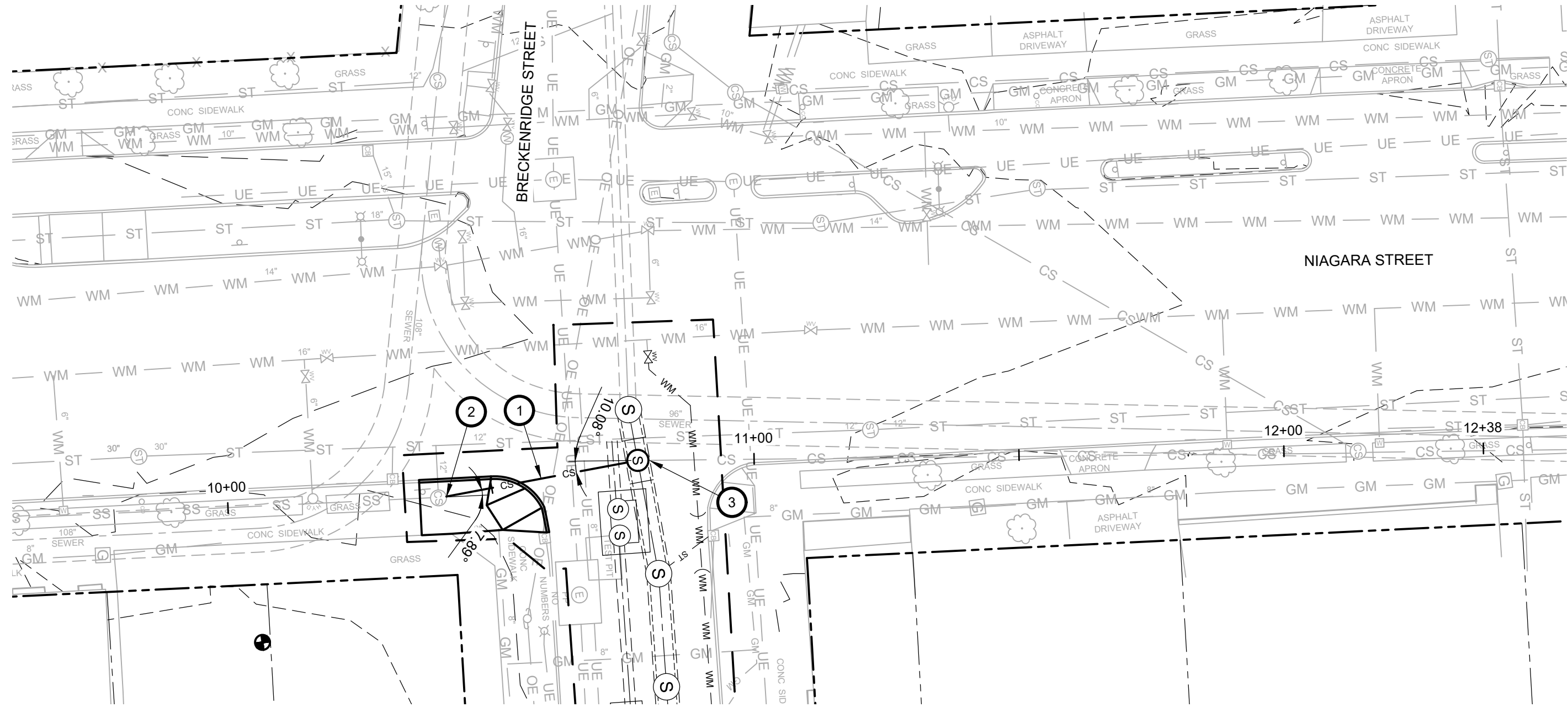


SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

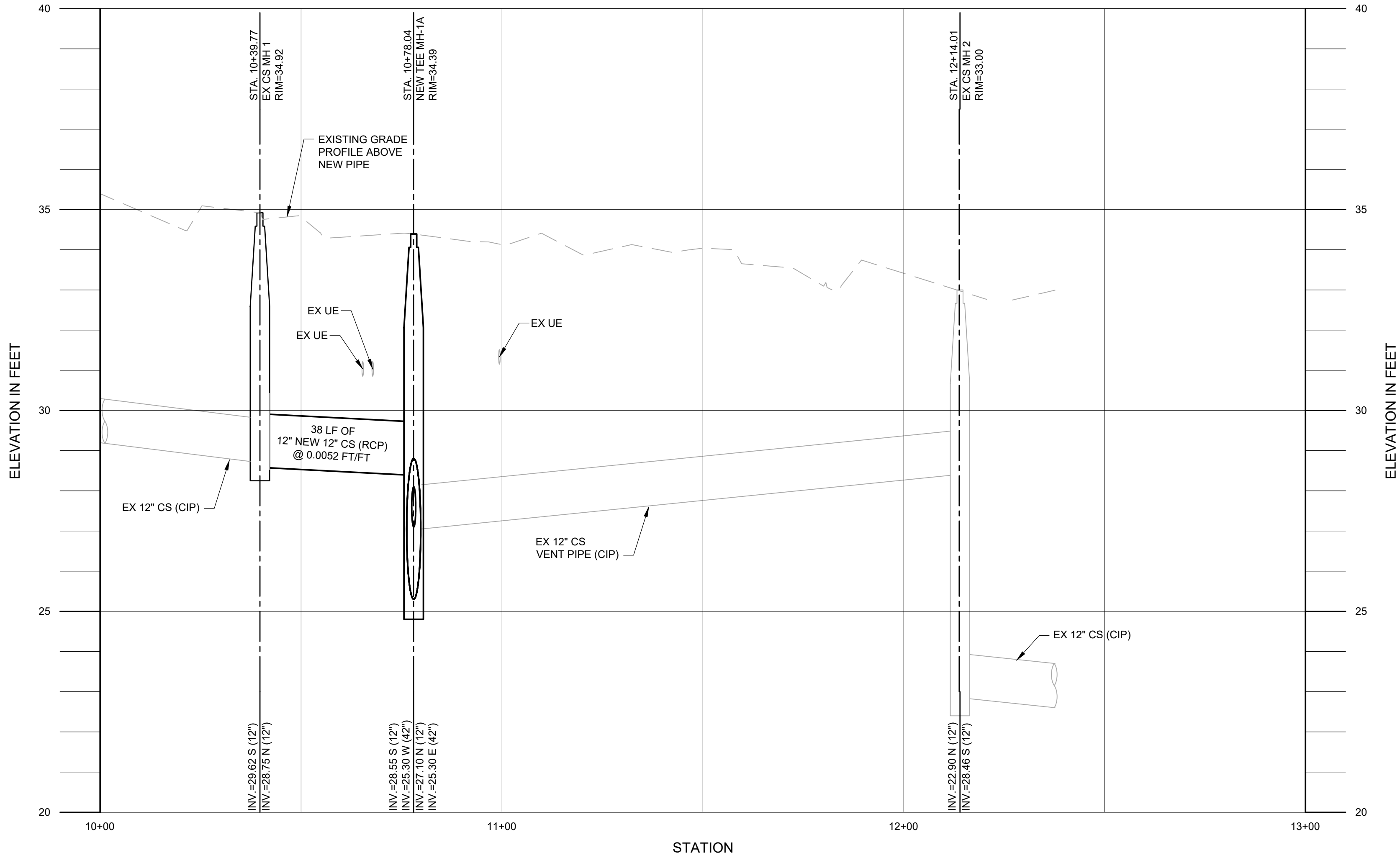
CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC  
24" DISCHARGE PIPE PLAN AND PROFILE

|                           |
|---------------------------|
| BSA CONTRACT NO. 82000041 |
| DWG: C05                  |
| SHEET: 12 OF 85           |
| DATE: FEBRUARY 2023       |
| REV: 0                    |





12" COMBINED SEWER - PLAN  
SCALE: 1" = 20'



12" COMBINED SEWER - PROFILE  
SCALE: 1" = 20' (H), 1" = 2' (V)

NEW CONSTRUCTION KEY NOTES

1. INSTALL NEW 12" RCP COMBINED SEWER PIPE
2. INSTALL WATER TIGHT CONNECTION TO EXISTING MANHOLE WITH NEW PIPE
3. INSTALL WATER TIGHT CONNECTION TO NEW MANHOLE WITH EXISTING PIPE

NOTES:

1. CONTRACTOR TO PROTECT ALL UNMODIFIED EQUIPMENT, UTILITIES AND APPURTENANCES DURING DEMOLITION AND CONSTRUCTION.
2. CONTRACTOR TO VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. NEW GRADES TO MATCH EXISTING CONDITIONS AFTER CONSTRUCTION.

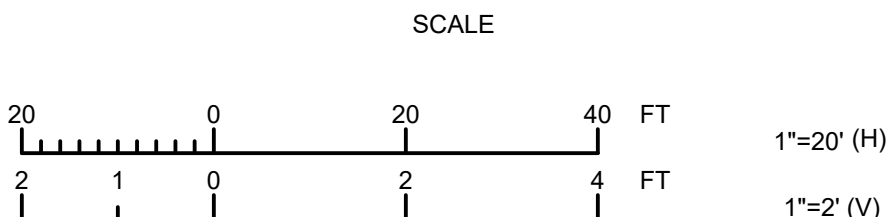
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC

RELOCATED COMBINED SEWER PIPE PLAN & PROFILE

BSA CONTRACT NO. 82000041

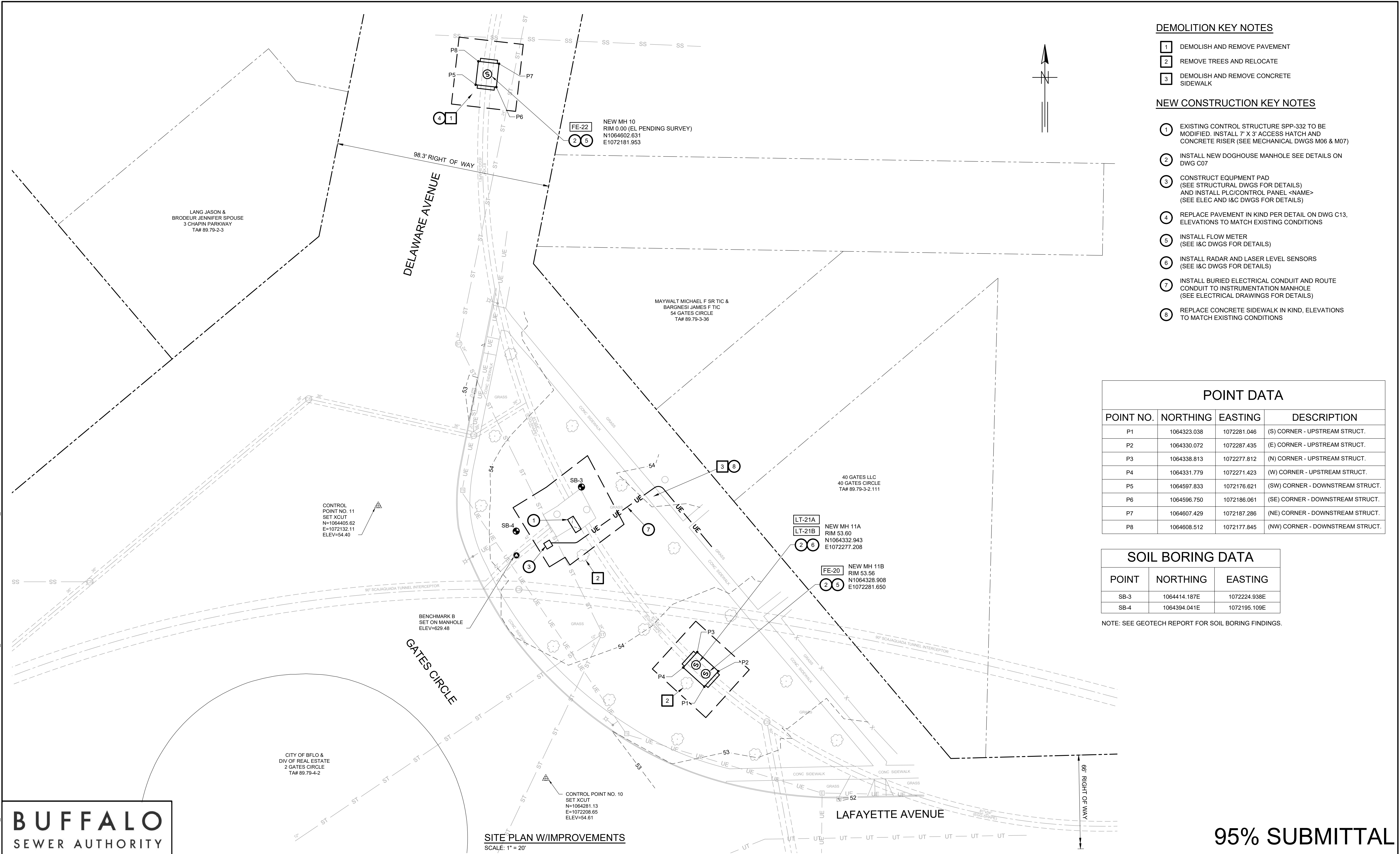
DWG: **C06**  
SHEET: 13 OF 85  
DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL



2023/02/15 3:58 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04.DESIGN\CIVIL\3DC\14122\_C07 MORENO, ROBERTO



DEMOLITION KEY NOTES

- 1 DEMOLISH AND REMOVE PAVEMENT
- 2 REMOVE TREES AND RELOCATE
- 3 DEMOLISH AND REMOVE CONCRETE SIDEWALK

NEW CONSTRUCTION KEY NOTES

- 1 EXISTING CONTROL STRUCTURE SPP-332 TO BE MODIFIED. INSTALL 7' X 3' ACCESS HATCH AND CONCRETE RISER (SEE MECHANICAL DWGS M06 & M07)
- 2 INSTALL NEW DOGHOUSE MANHOLE SEE DETAILS ON DWG C07
- 3 CONSTRUCT EQUIPMENT PAD (SEE STRUCTURAL DWGS FOR DETAILS) AND INSTALL PLC/CONTROL PANEL <NAME> (SEE ELEC AND I&C DWGS FOR DETAILS)
- 4 REPLACE PAVEMENT IN KIND PER DETAIL ON DWG C13. ELEVATIONS TO MATCH EXISTING CONDITIONS
- 5 INSTALL FLOW METER (SEE I&C DWGS FOR DETAILS)
- 6 INSTALL RADAR AND LASER LEVEL SENSORS (SEE I&C DWGS FOR DETAILS)
- 7 INSTALL BURIED ELECTRICAL CONDUIT AND ROUTE CONDUIT TO INSTRUMENTATION MANHOLE (SEE ELECTRICAL DRAWINGS FOR DETAILS)
- 8 REPLACE CONCRETE SIDEWALK IN KIND, ELEVATIONS TO MATCH EXISTING CONDITIONS

POINT DATA

| POINT NO. | NORTHING    | EASTING     | DESCRIPTION                      |
|-----------|-------------|-------------|----------------------------------|
| P1        | 1064323.038 | 1072281.046 | (S) CORNER - UPSTREAM STRUCT.    |
| P2        | 1064330.072 | 1072287.435 | (E) CORNER - UPSTREAM STRUCT.    |
| P3        | 1064338.813 | 1072277.812 | (N) CORNER - UPSTREAM STRUCT.    |
| P4        | 1064331.779 | 1072271.423 | (W) CORNER - UPSTREAM STRUCT.    |
| P5        | 1064597.833 | 1072176.621 | (SW) CORNER - DOWNSTREAM STRUCT. |
| P6        | 1064596.750 | 1072186.061 | (SE) CORNER - DOWNSTREAM STRUCT. |
| P7        | 1064607.429 | 1072187.286 | (NE) CORNER - DOWNSTREAM STRUCT. |
| P8        | 1064608.512 | 1072177.845 | (NW) CORNER - DOWNSTREAM STRUCT. |

SOIL BORING DATA

| POINT | NORTHING     | EASTING      |
|-------|--------------|--------------|
| SB-3  | 1064414.187E | 1072224.938E |
| SB-4  | 1064394.041E | 1072195.109E |

NOTE: SEE GEOTECH REPORT FOR SOIL BORING FINDINGS.

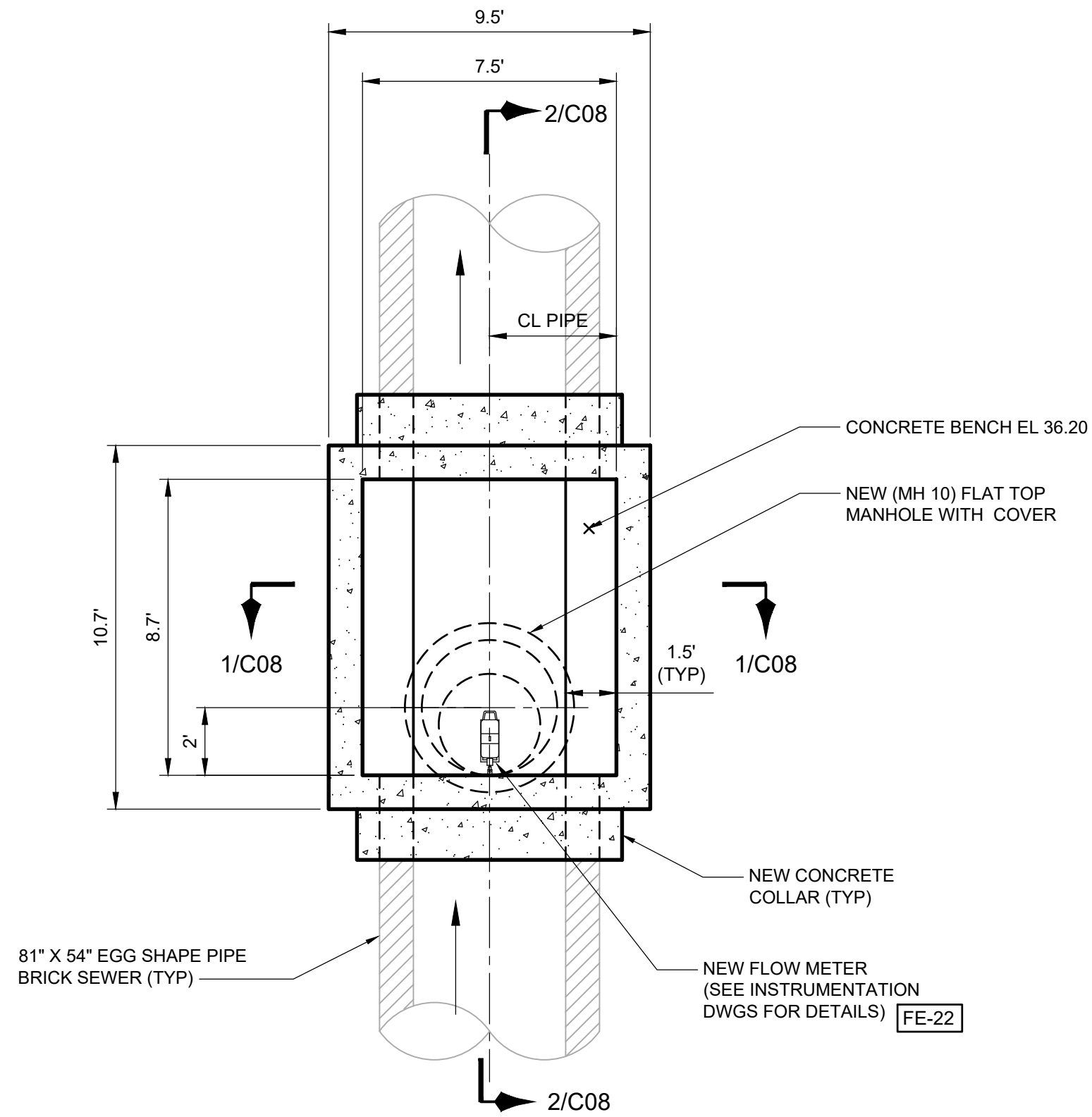
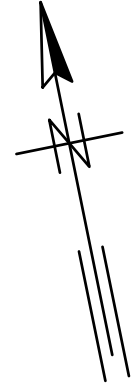


|                                                    |          |     |          |     |      |      |          |                                  |                                                                            |                                                                                                   |
|----------------------------------------------------|----------|-----|----------|-----|------|------|----------|----------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 | DESIGNED | XXX | APPROVED |     |      |      |          | SCALE<br>20 0 20 40 FT<br>1"=20' | CIVIL<br>GATES CIRCLE AND DELAWARE AVE RTC<br><br>SITE PLAN W/IMPROVEMENTS | BSA CONTRACT NO. 82000041<br><br>DWG: <b>C07</b><br>SHEET: 14 OF 85<br>DATE: FEBRUARY 2023 REV: 0 |
|                                                    | DRAWN    | RAM |          |     |      |      |          |                                  |                                                                            |                                                                                                   |
|                                                    | CHECKED  | MS  |          | NO. | DATE | APPD | REVISION |                                  |                                                                            |                                                                                                   |

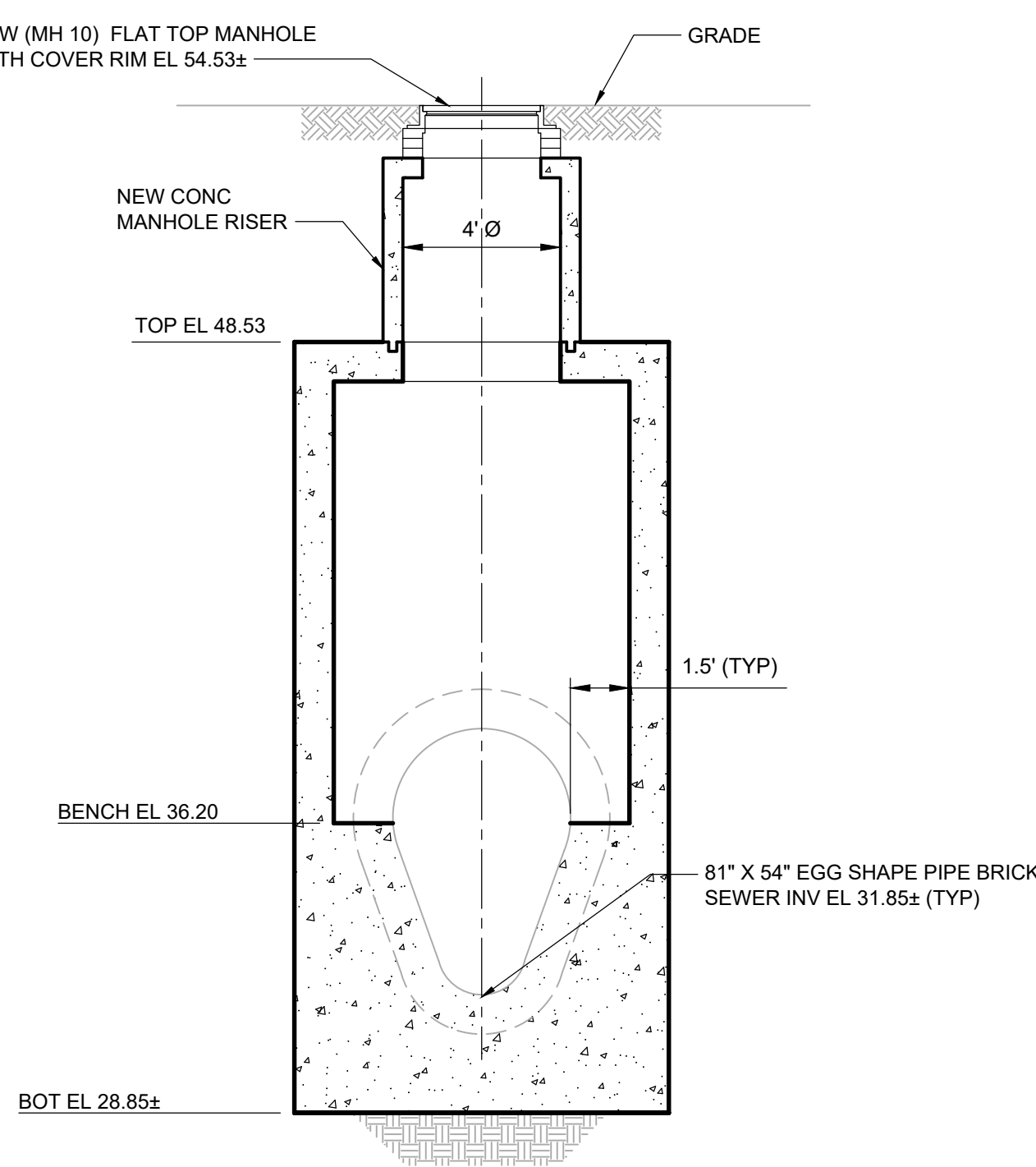


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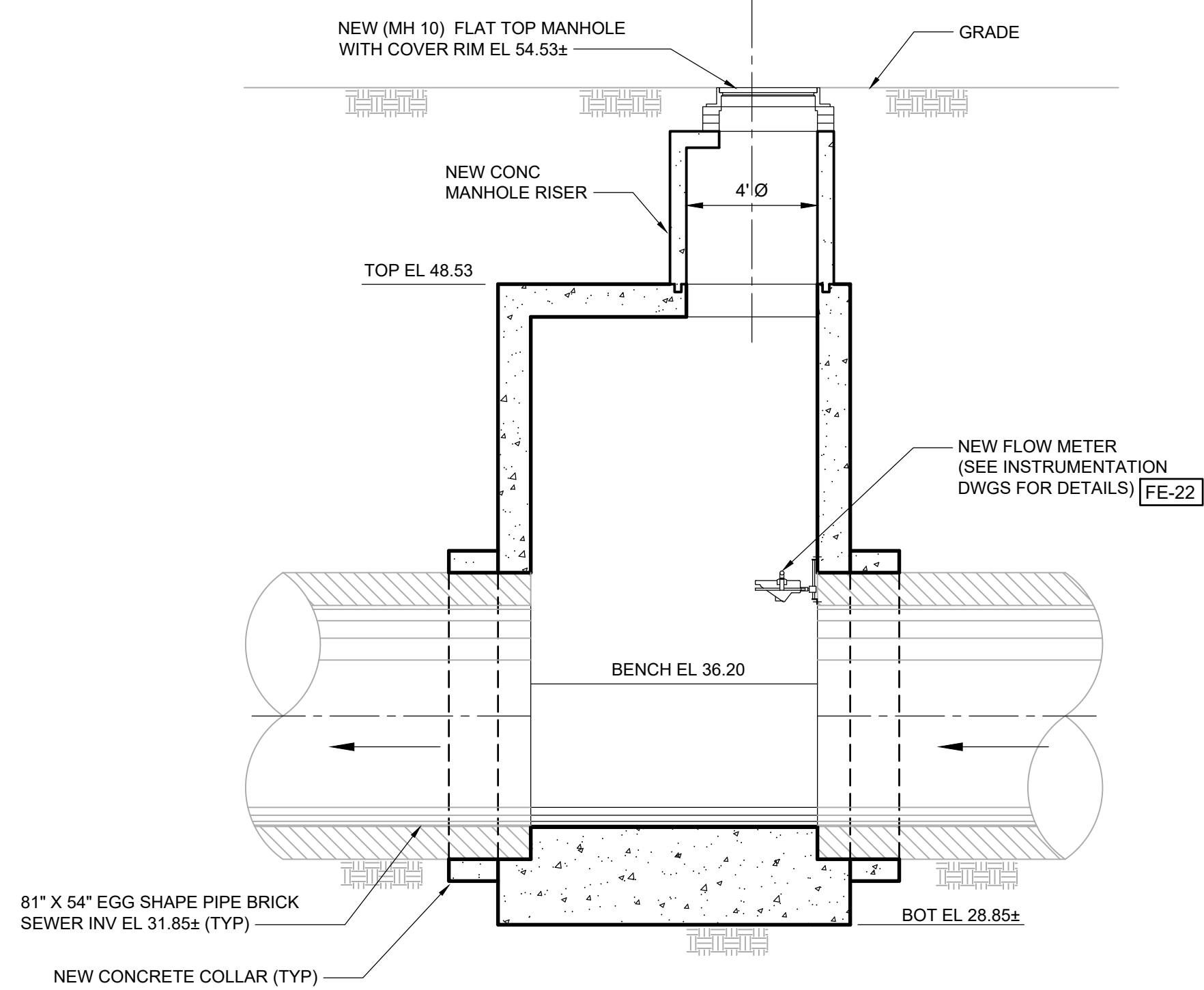
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\141222.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_C08\_MORENO, ROBERTO



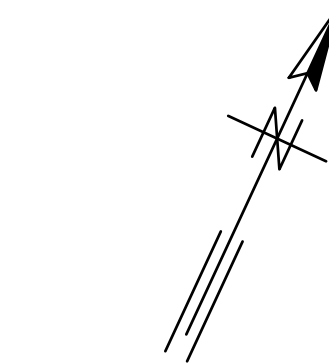
**NORTHERN DOGHOUSE MANHOLE (MH 10) PLAN  
@ GATES CIRCLE AND DELAWARE AVENUE**  
SCALE: 1" = 4'-0"



**SECTION 1/C08**  
SCALE: 1" = 4'-0"

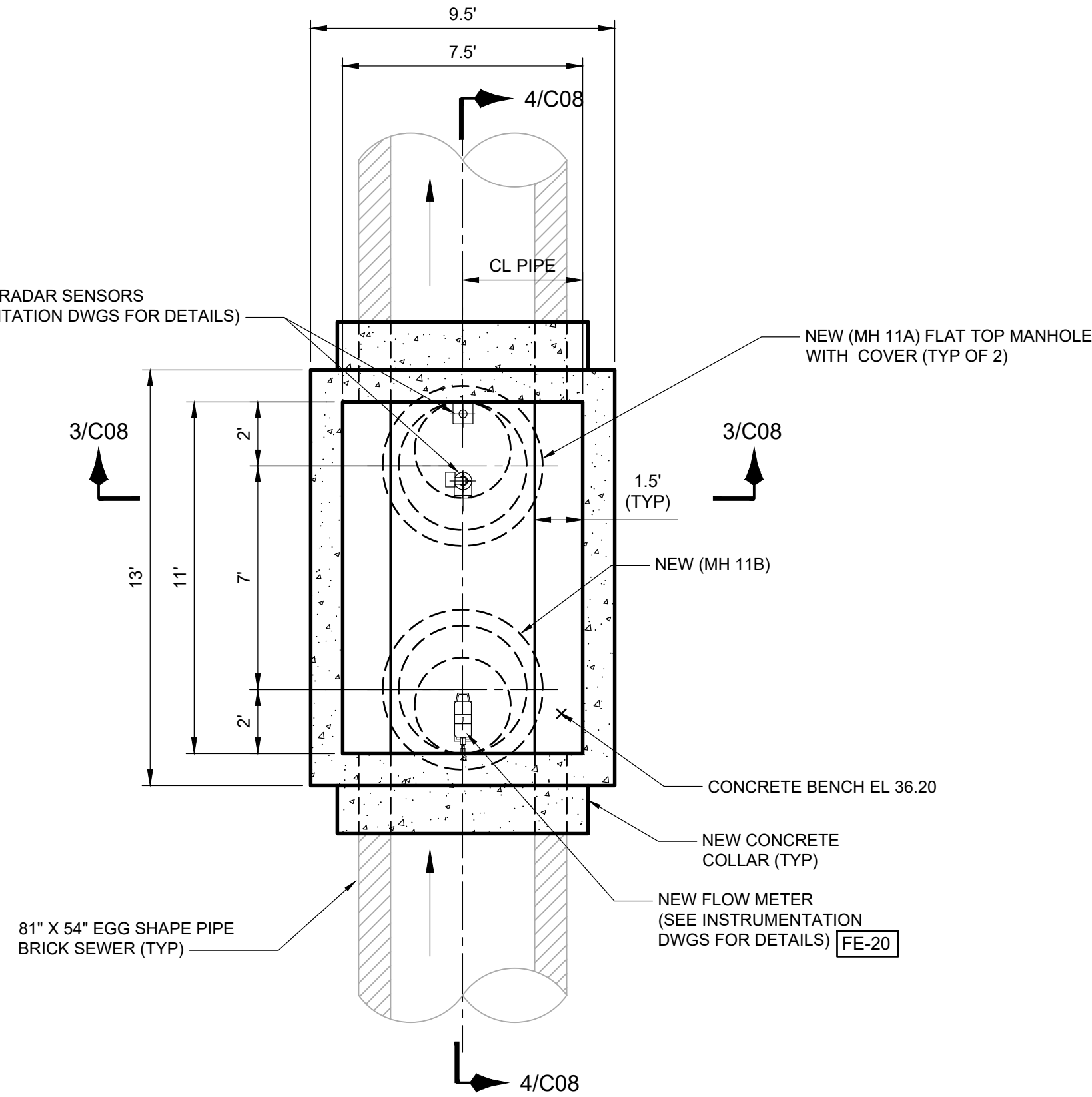


**SECTION 2/C08**  
SCALE: 1" = 4'-0"

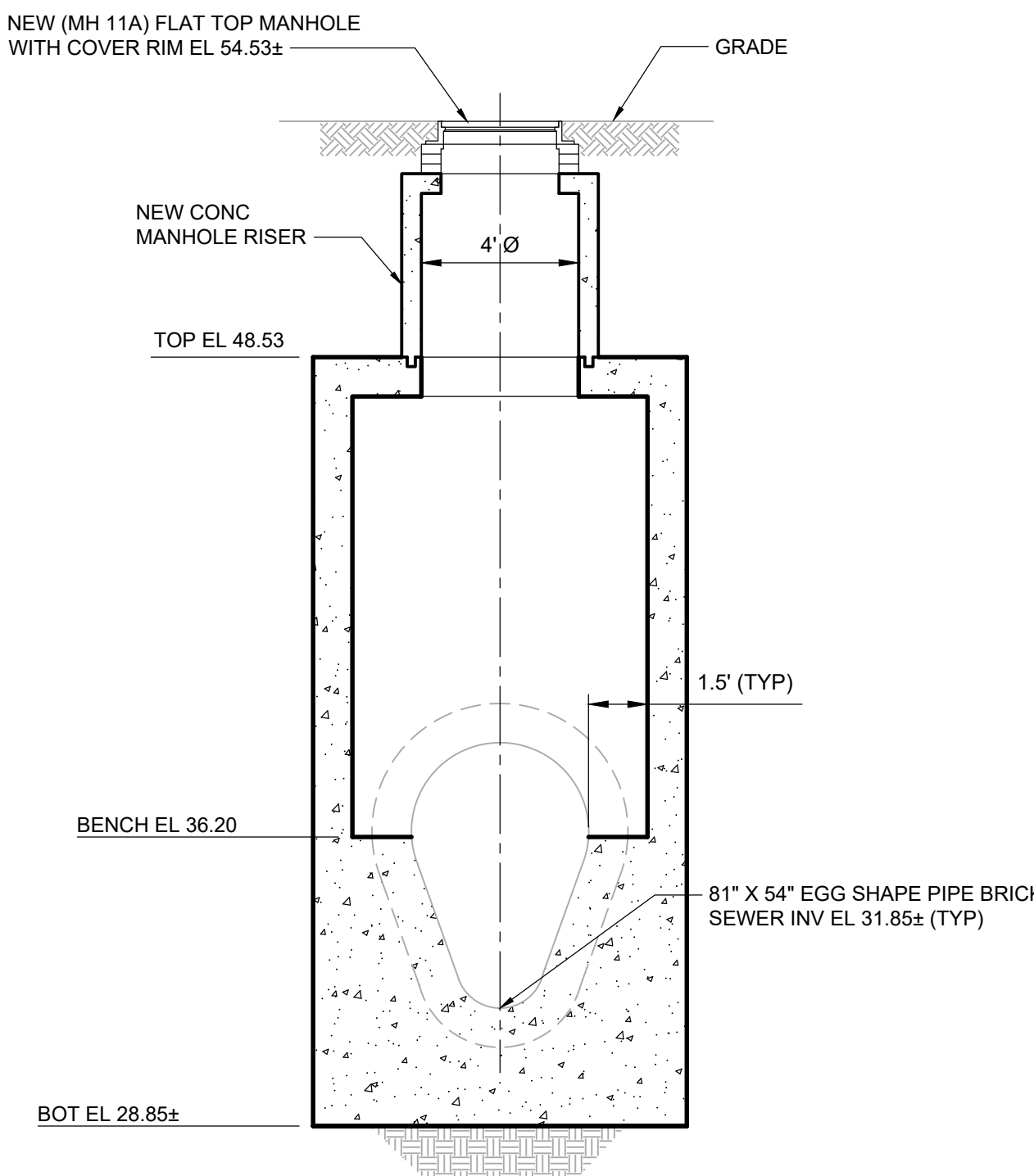


LT-21A  
LT-21B

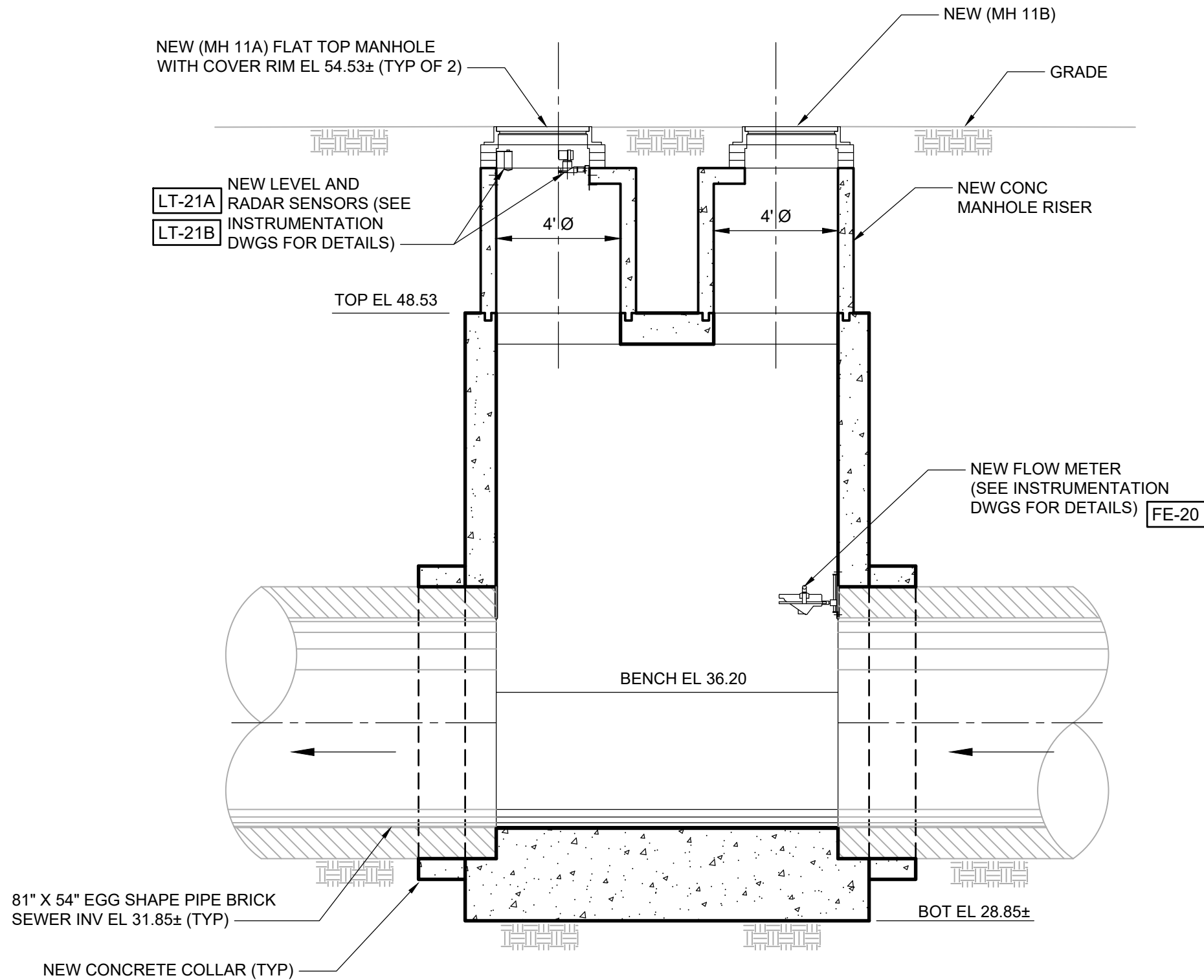
NEW LEVEL AND RADAR SENSORS  
(SEE INSTRUMENTATION DWGS FOR DETAILS)



**SOUTHERN DOGHOUSE MANHOLE (MH 11A & MH 11B)  
PLAN @ GATES CIRCLE AND DELAWARE AVENUE**  
SCALE: 1" = 4'-0"



**SECTION 3/C08**  
SCALE: 1" = 4'-0"



**SECTION 4/C08**  
SCALE: 1" = 4'-0"

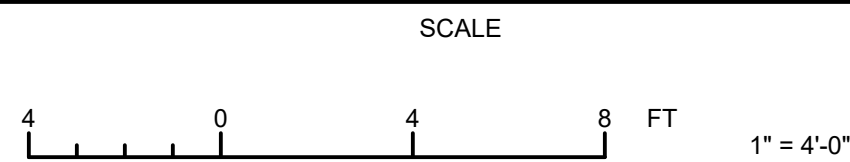
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
GATES CIRCLE & DELAWARE AVE RTC

DOGHOUSE MANHOLES (MH10, MH11A & MH11B) PLAN AND SECTIONS

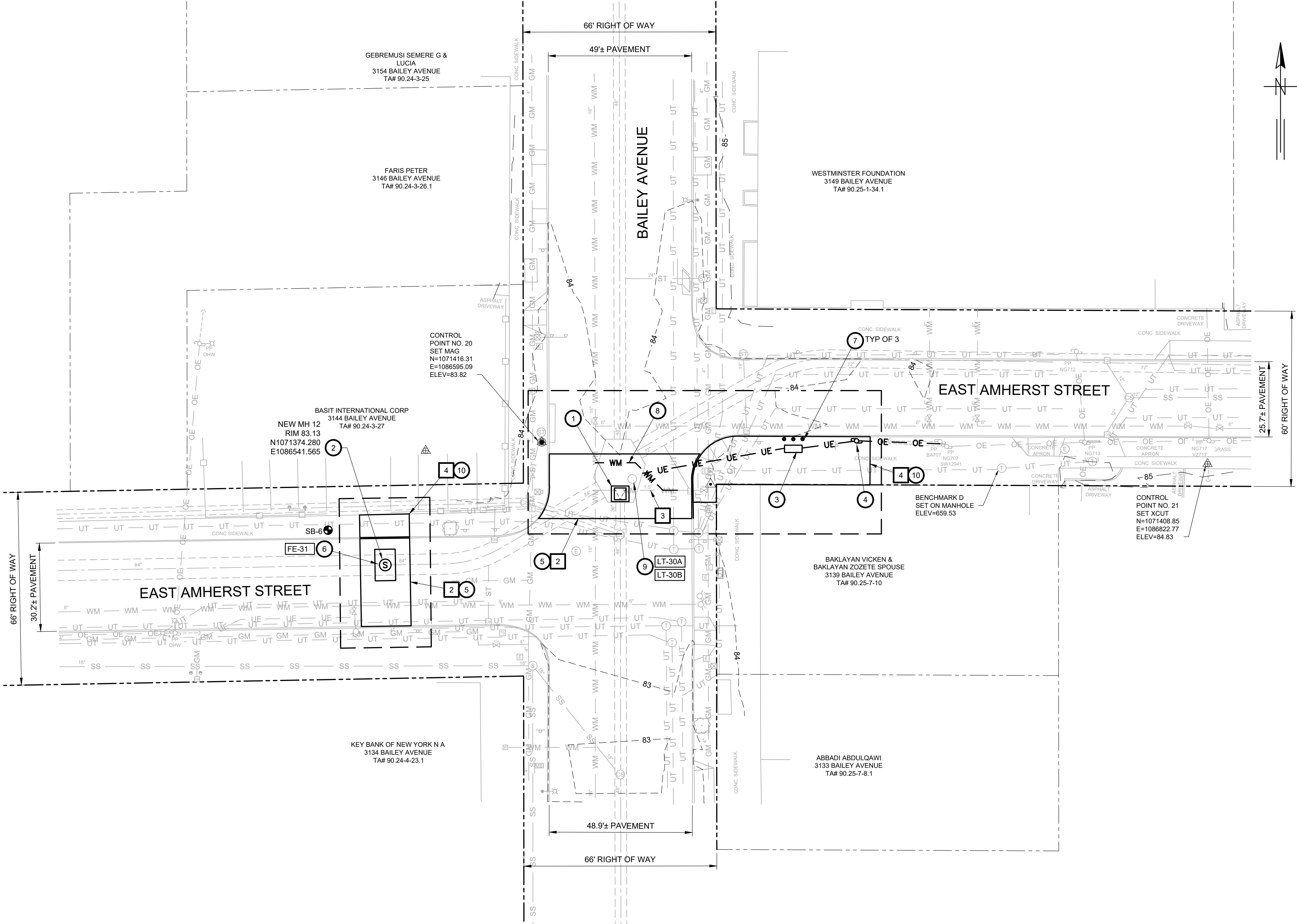
**95% SUBMITTAL**

|                            |
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| BSA CONTRACT NO. 82000041  |
| DWG: <b>C08</b>            |
| SHEET: 15 OF 85            |
| DATE: FEBRUARY 2023 REV: 0 |



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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DC\14122\_C09 MORENO, ROBERTO



SITE PLAN W/IMPROVEMENTS  
SCALE: 1" = 20'

DEMOLITION KEY NOTES

- 1 EXISTING SIGN TO BE RELOCATED
- 2 DEMOLISH AND REMOVE PAVEMENT
- 3 PLUG AND ABANDON EXISTING WATER SERVICE PIPE TO LIMITS SHOWN ON PLANS
- 4 DEMOLISH AND REMOVE SIDEWALK

NEW CONSTRUCTION KEY NOTES

- 1 EXISTING CONTROL STRUCTURE SPP-255 TO BE MODIFIED. INSTALL 4' X 4' ACCESS HATCH AND CONCRETE RISER (SEE MECHANICAL DWGS M06 & M07)
- 2 INSTALL NEW 4'-0" HOUSING MANHOLE PER DETAIL ON DWG C09
- 3 CONSTRUCT EQUIPMENT PAD (SEE STRUCTURAL DWG S10 FOR DETAILS) AND INSTALL PLC/CONTROL PANEL <NAME> (SEE ELEC AND I&C DWGS FOR DETAILS)
- 4 INSTALL NEW POWER POLE (SEE ELECTRICAL DWGS FOR DETAILS)
- 5 REPLACE PAVEMENT IN KIND PER DETAIL ON DWG C13. ELEVATIONS TO MATCH EXISTING CONDITIONS
- 6 INSTALL FLOW METER (SEE I&C DWGS FOR DETAILS)
- 7 INSTALL CONCRETE BOLLARD PER DETAIL ON DWG C13
- 8 INSTALL NEW 1.5" WATER PIPE. CONTRACTOR TO VERIFY VERTICAL AND HORIZONTAL LOCATION PRIOR TO INSTALLATION. NEW WATER PIPE CONNECTIONS TO EXISTING WATER PIPE SHALL MATCH EXISTING PIPE ELEVATIONS.
- 9 INSTALL RADAR AND LASER LEVEL SENSORS (SEE I&C DWGS FOR DETAILS)
- 10 REPLACE CONCRETE, SIDEWALK AND CURB IN KIND PER DETAIL 8/C13 ON DWG C13. ELEVATIONS TO MATCH EXISTING CONDITIONS

| SOIL BORING DATA |              |              |
|------------------|--------------|--------------|
| POINT            | NORTHING     | EASTING      |
| SB-6             | 1071386.187E | 1086522.007E |

NOTE: SEE GEOTECH REPORT FOR SOIL BORING FINDINGS.

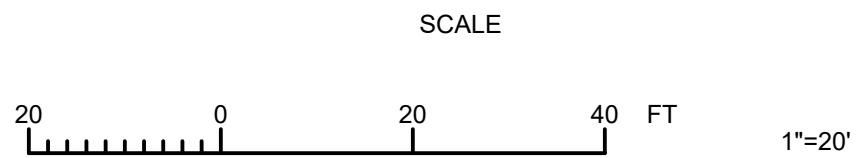
BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BAILEY AVE AND E. AMHURST ST RTC

HOUSING MANHOLE (MH-12) - PLAN & SECTIONS

BSA CONTRACT NO. 82000041

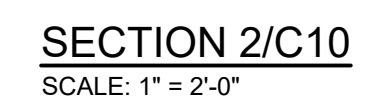
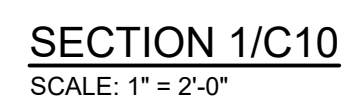
DWG: C09


SHEET: 16 OF 85

DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL





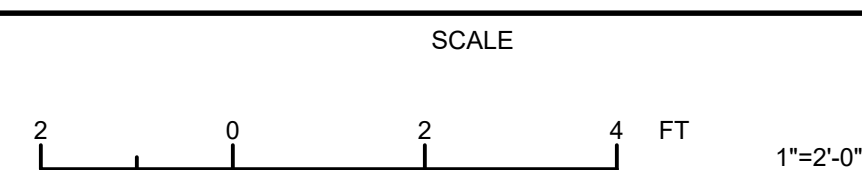
 **GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

APPROVED

RAM

MS

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| NO. | DATE | APPD | REVISION |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

HOUSING MANHOLE (MH 12) - PLAN AND SECTIONS

DWG: C10

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| DATE: FEBRUARY 2023 | REV |
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| DATE: FEBRUARY 2023 | REV |
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## 95% SUBMITTAL



2023/02/15 4:07 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DC\14122\_C11 MORENO, ROBERTO

**BUFFALO**  
SEWER AUTHORITY

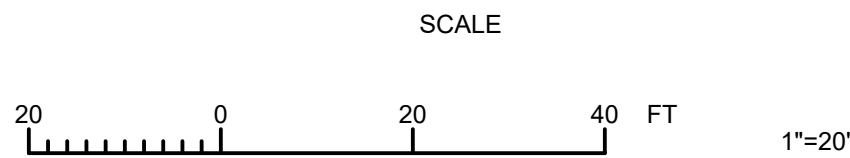


**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BAILEY AVE AND MINNESOTA SEWER IMPROVEMENTS

SITE PLAN W/IMPROVEMENTS

BSA CONTRACT NO. 82000041

DWG: **C11**

SHEET: 18 OF 85

DATE: FEBRUARY 2023 REV: 0

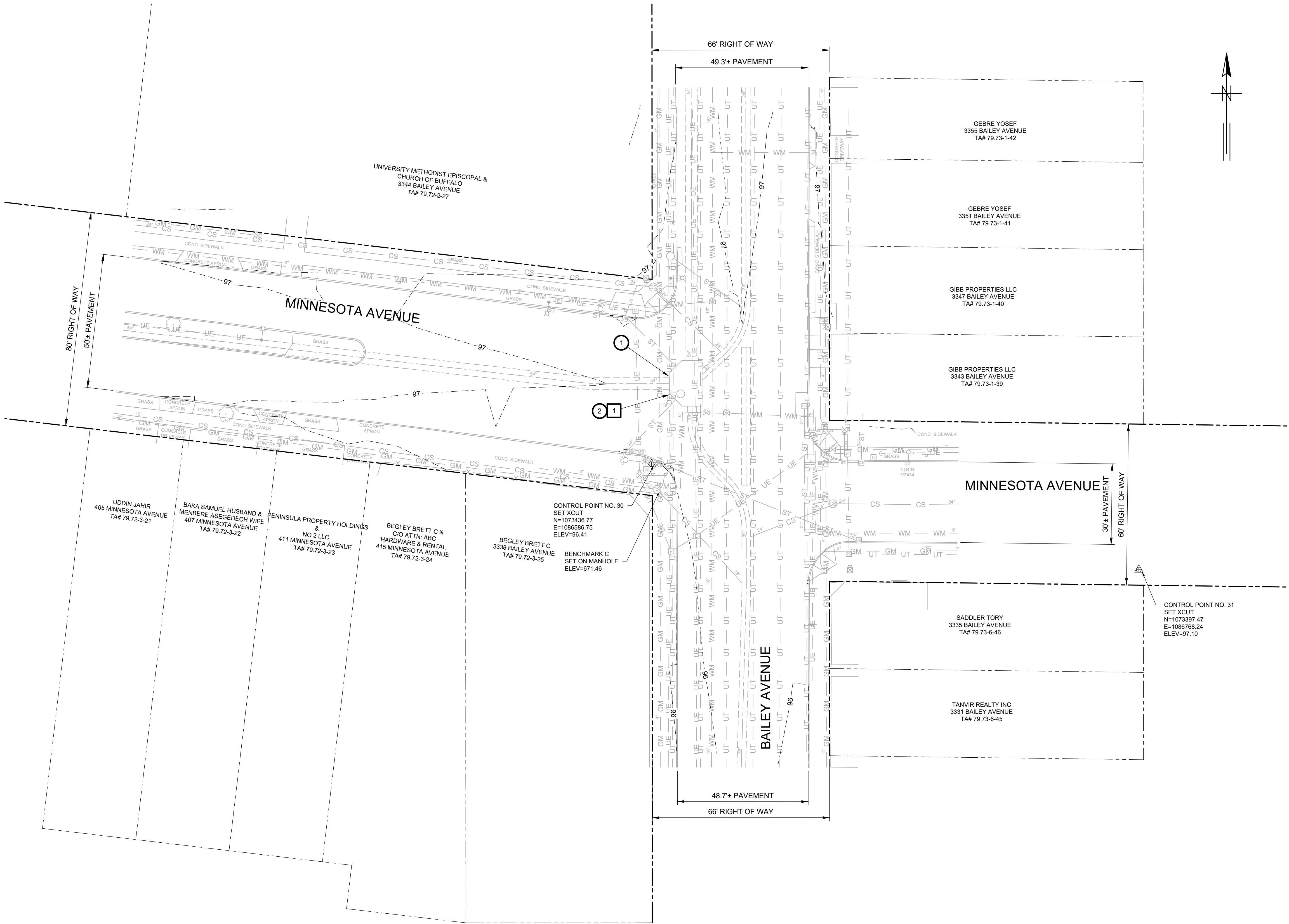
DEMOLITION KEY NOTES

1 DEMOLISH AND REMOVE PAVEMENT

NEW CONSTRUCTION KEY NOTES

1 EXISTING CONTROL STRUCTURE TO BE MODIFIED, SEE STRUCTURAL DWG S07

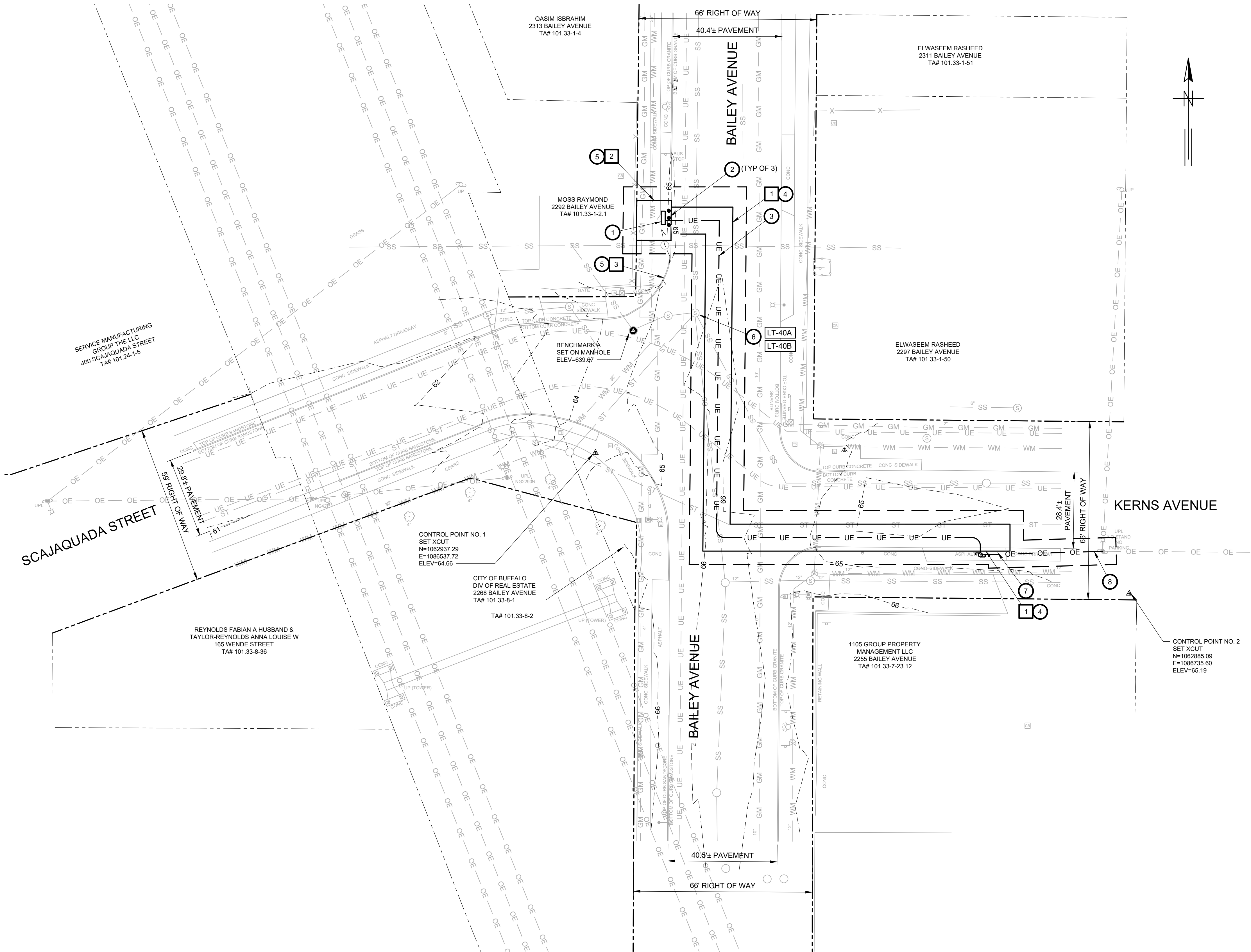
2 REPLACE PAVEMENT IN KIND PER DETAIL ON DWG C13, ELEVATIONS TO MATCH EXISTING CONDITIONS



SITE PLAN W/IMPROVEMENTS  
SCALE: 1" = 20'

**95% SUBMITTAL**





DEMOLITION KEY NOTES

- 1 DEMOLISH AND REMOVE PAVEMENT
- 2 DEMOLISH AND REMOVE CONCRETE SIDEWALK
- 3 DEMOLISH AND REMOVE CONCRETE CURB

NEW CONSTRUCTION KEY NOTES

- 1 CONSTRUCT EQUIPMENT PAD (SEE STRUCTURAL DWGS FOR DETAILS) AND INSTALL PLC/CONTROL PANEL <NAME> (SEE ELEC AND I&C DWGS FOR DETAILS)
- 2 INSTALL CONCRETE BOLLARD PER DETAIL ON DWG C13
- 3 INSTALL BURIED ELECTRICAL CONDUIT AND ROUTE CONDUIT TO INSTRUMENTATION MANHOLE (SEE ELECTRICAL DRAWINGS FOR DETAILS)
- 4 REPLACE PAVEMENT IN KIND PER DETAIL ON DWG C13, ELEVATIONS TO MATCH EXISTING CONDITIONS
- 5 REPLACE CONCRETE SIDEWALK AND CURB IN KIND, PER DETAIL ON DWG C13, ELEVATIONS TO MATCH EXISTING CONDITIONS
- 6 INSTALL RADAR AND LASER LEVEL SENSORS (SEE I&C DWGS FOR DETAILS)
- 7 INSTALL NEW POWER POLE (SEE ELECTRICAL DWGS FOR DETAILS)
- 8 INSTALL OVERHEAD ELECTRICAL CONDUIT AND CONNECT TO EXISTING POWER POLE

SITE PLAN W/IMPROVEMENTS  
SCALE: 1" = 20'

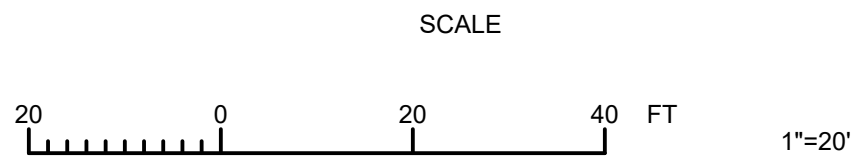
BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BAILEY AVE & KERNS AVE (SPP 338)

SITE PLAN WIMPROVEMENTS

BSA CONTRACT NO. 82000041

DWG: C12

SHEET: 19 OF 85

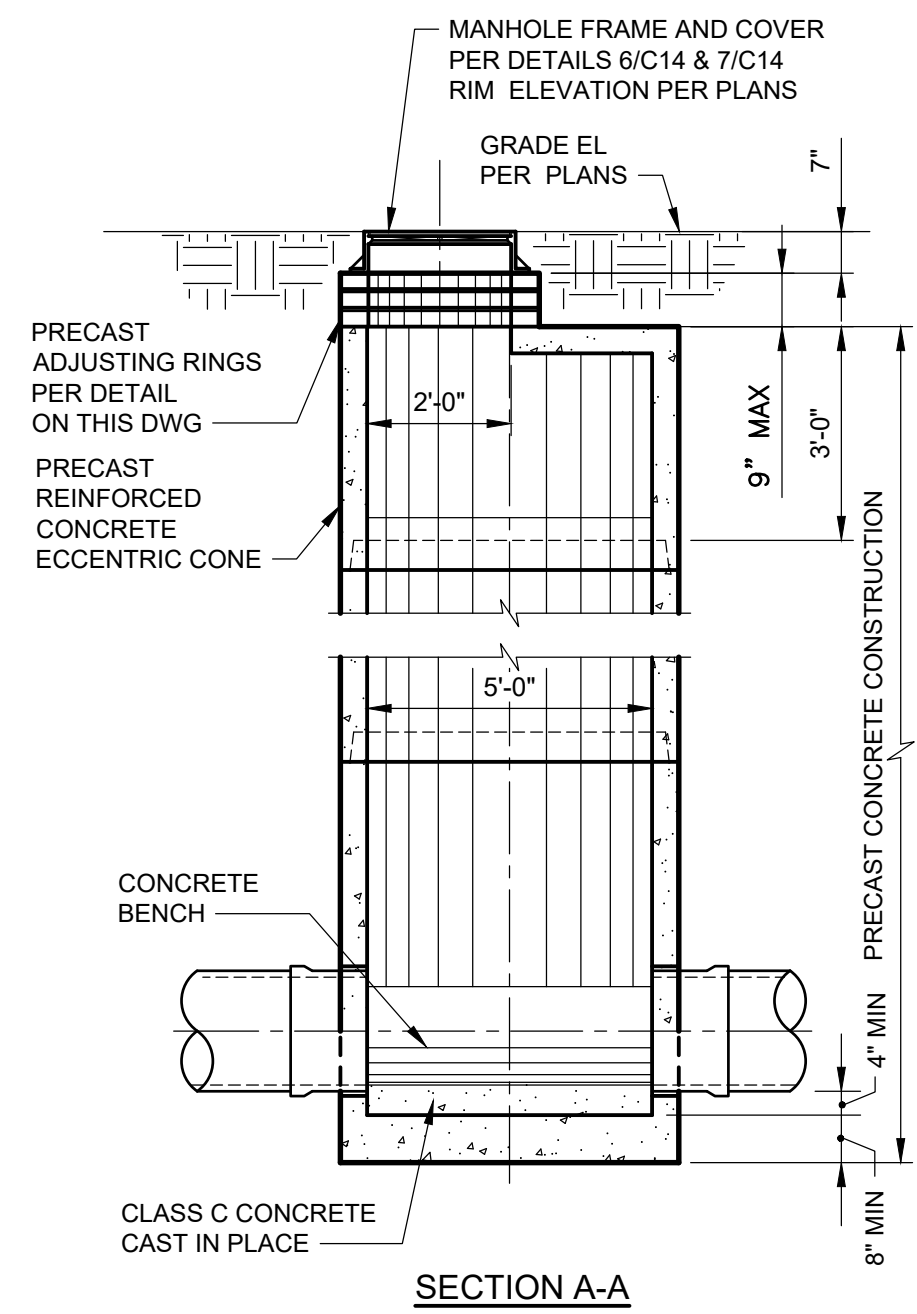
DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL

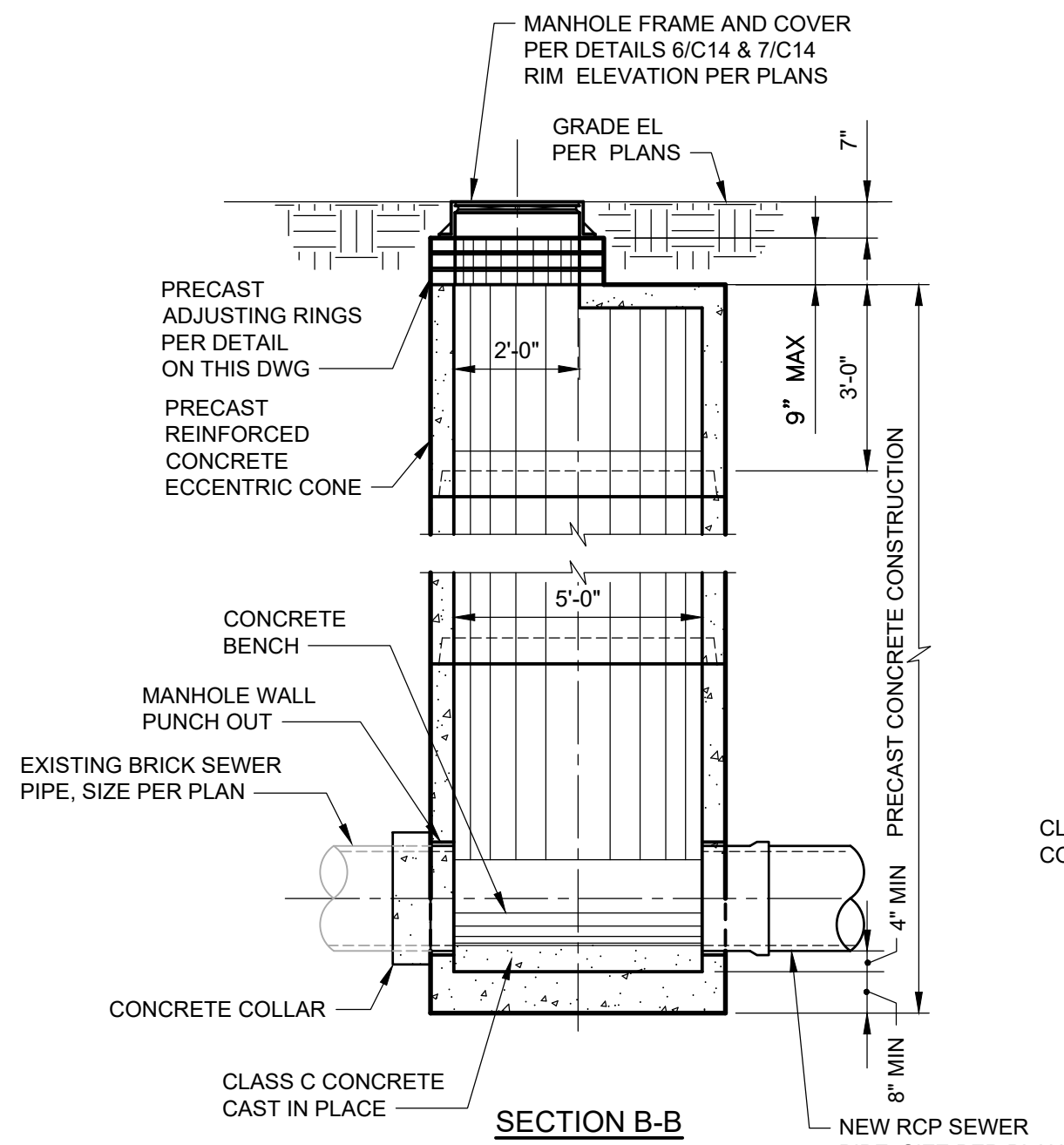


2023/02/15 4:12 PM

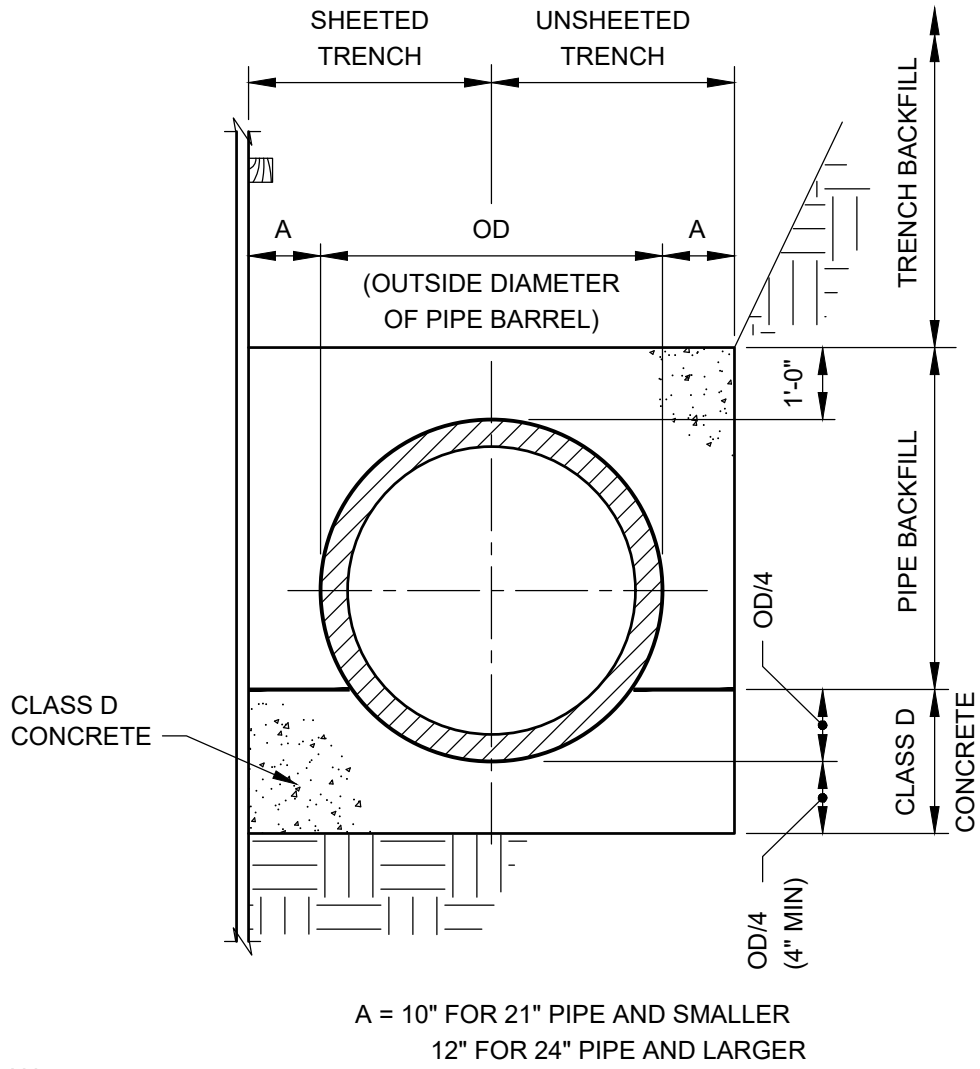
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\141222.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\Civil\3DCD\14122\_C13 MORENO, ROBERTO



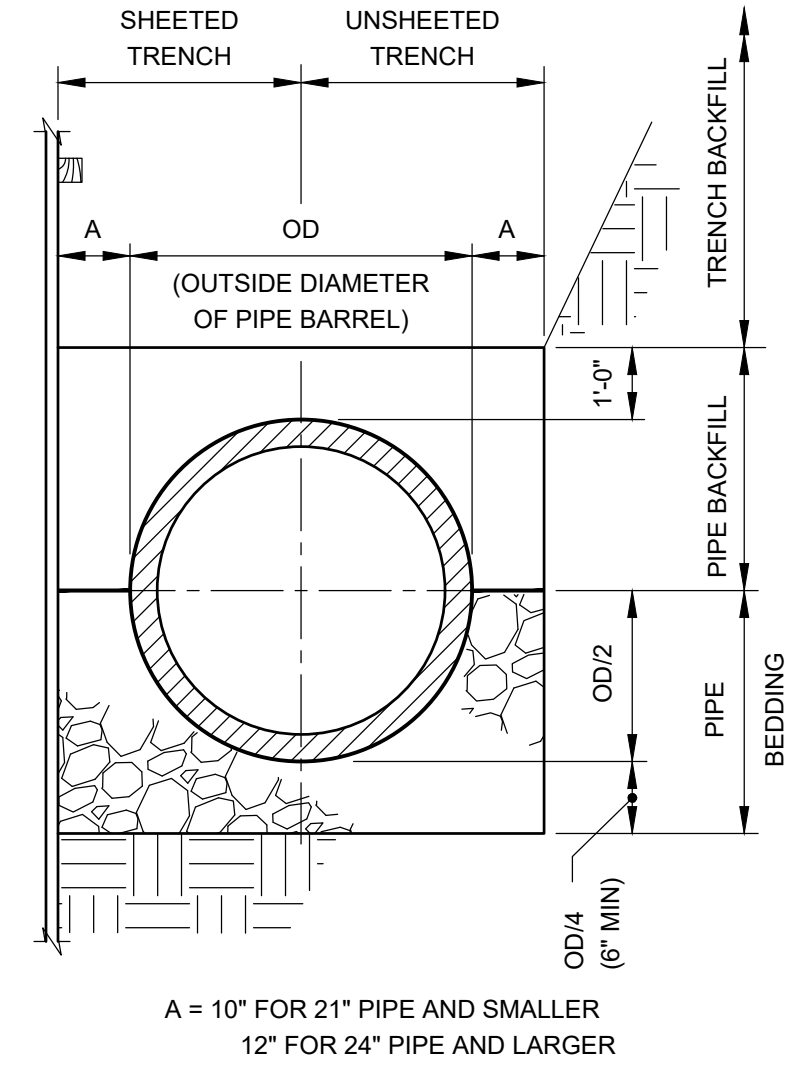
SECTION A-A



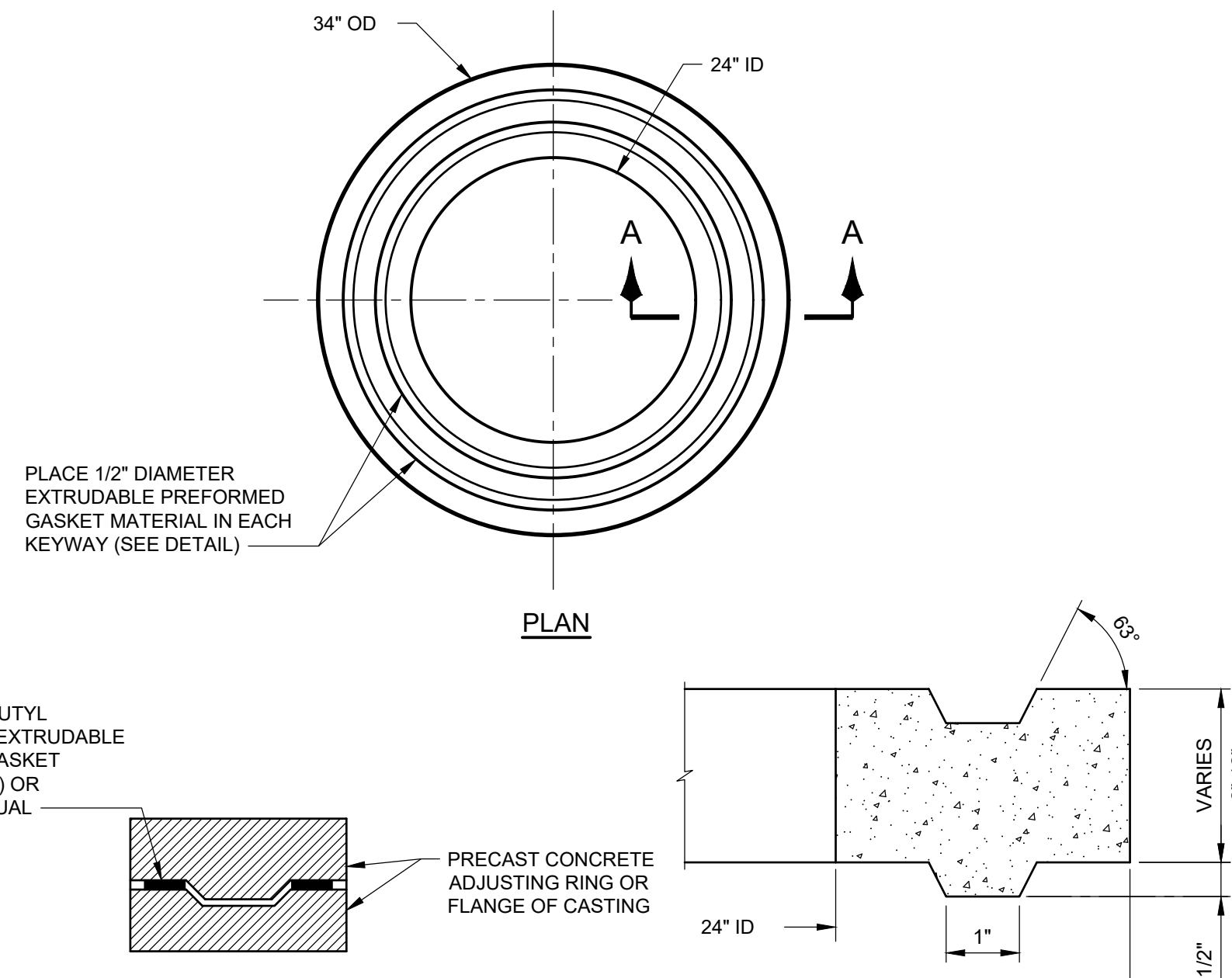
SECTION B-B



CLASS A BEDDING (CONCRETE CRADLE)



CLASS B BEDDING

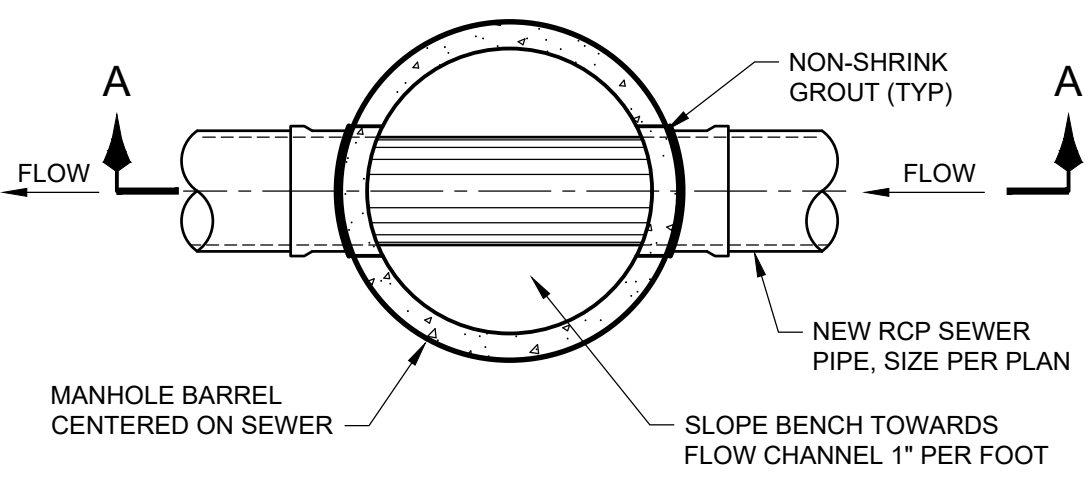


GASKET DETAIL

SECTION A-A

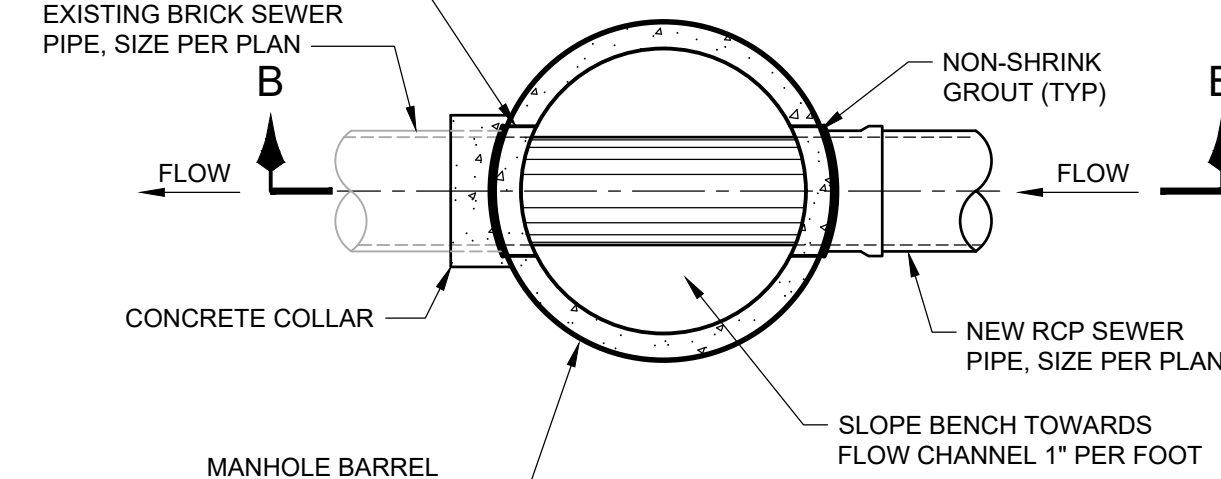
DETAIL 4/C13 - PRECAST ADJUSTING RINGS

NOT TO SCALE



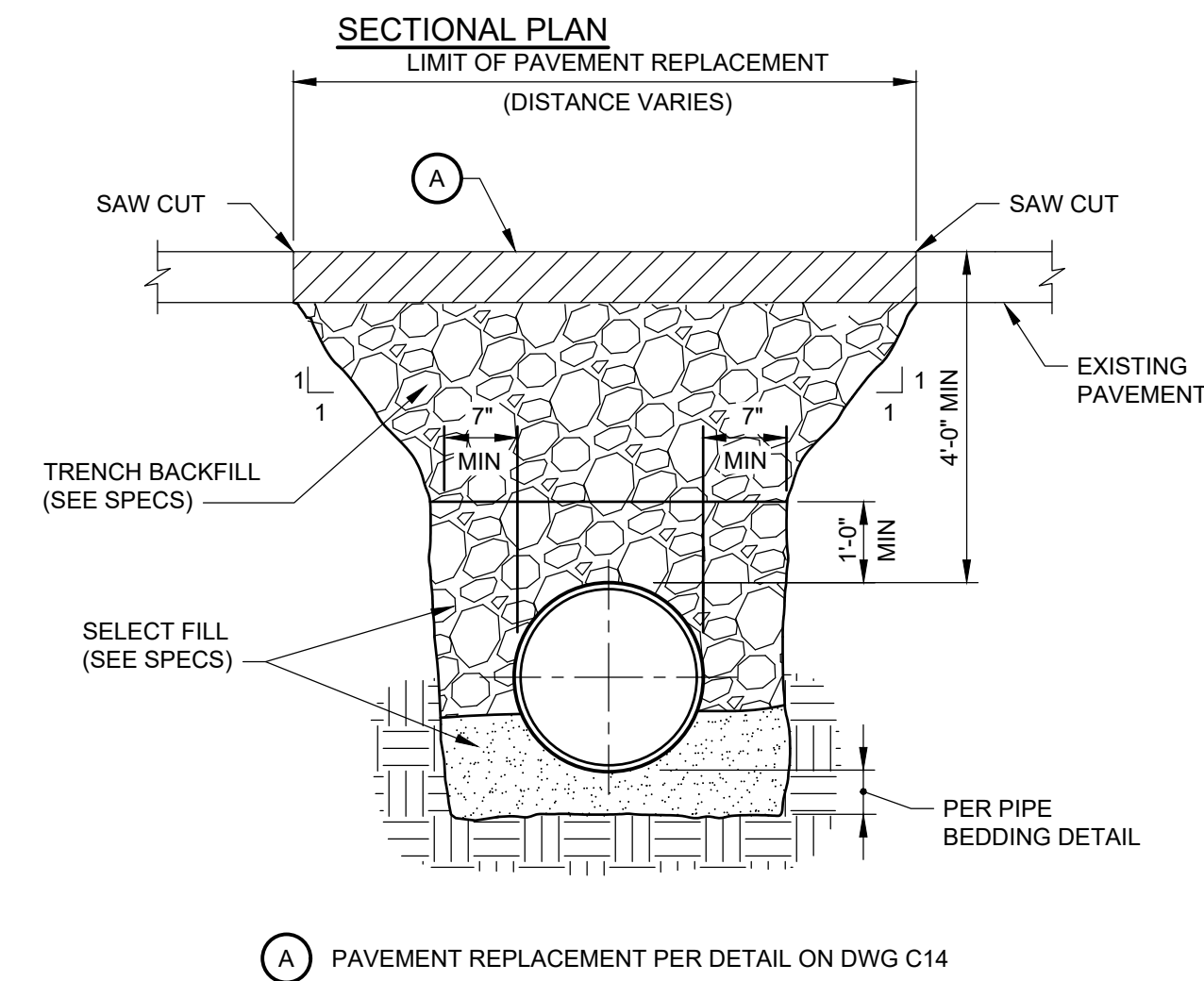
DETAIL 1/C13 - 5'-0" SEWER MANHOLE

NOT TO SCALE



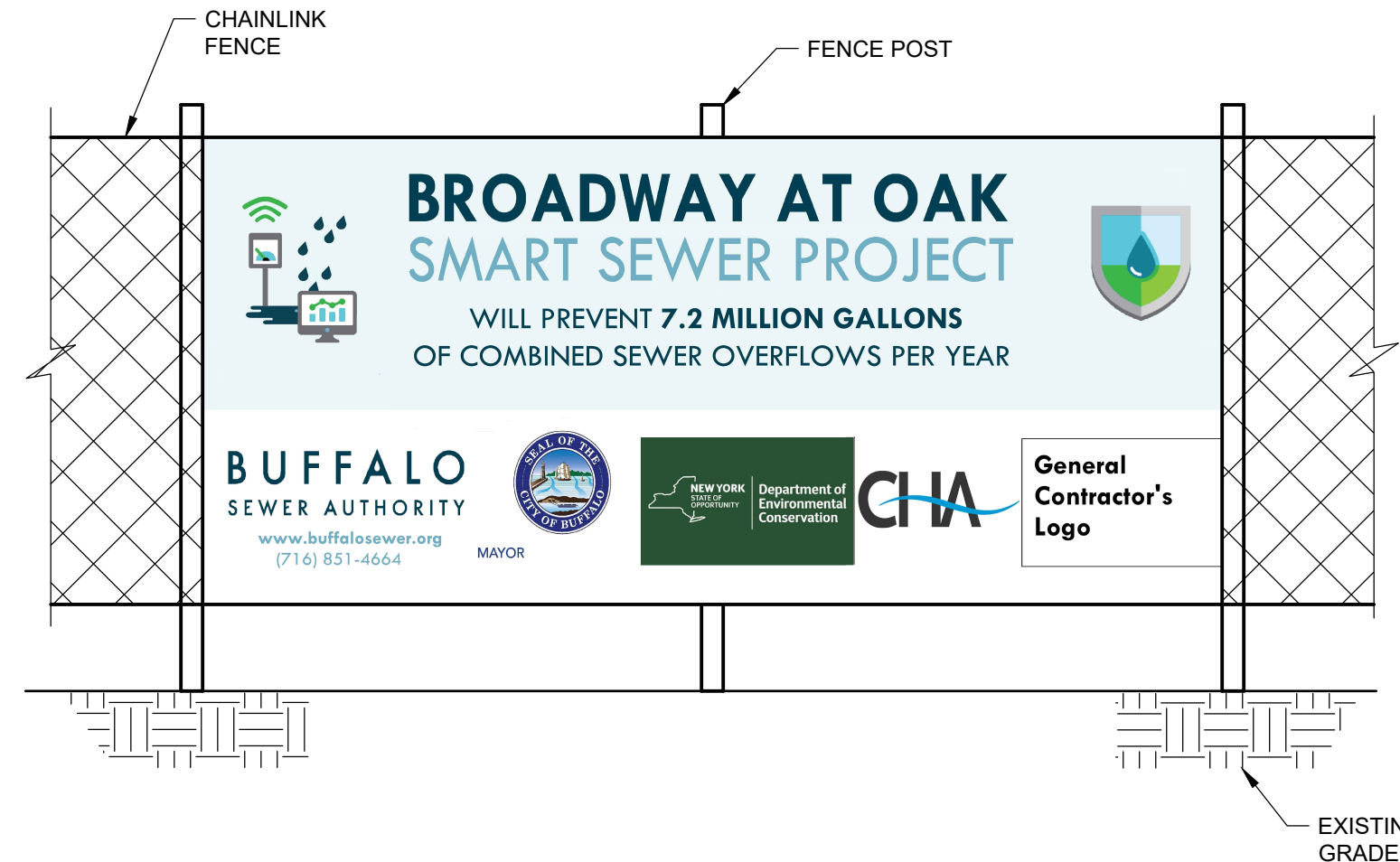
DETAIL 2/C13 - 5'-0" SEWER DOGHOUSE MANHOLE

NOT TO SCALE



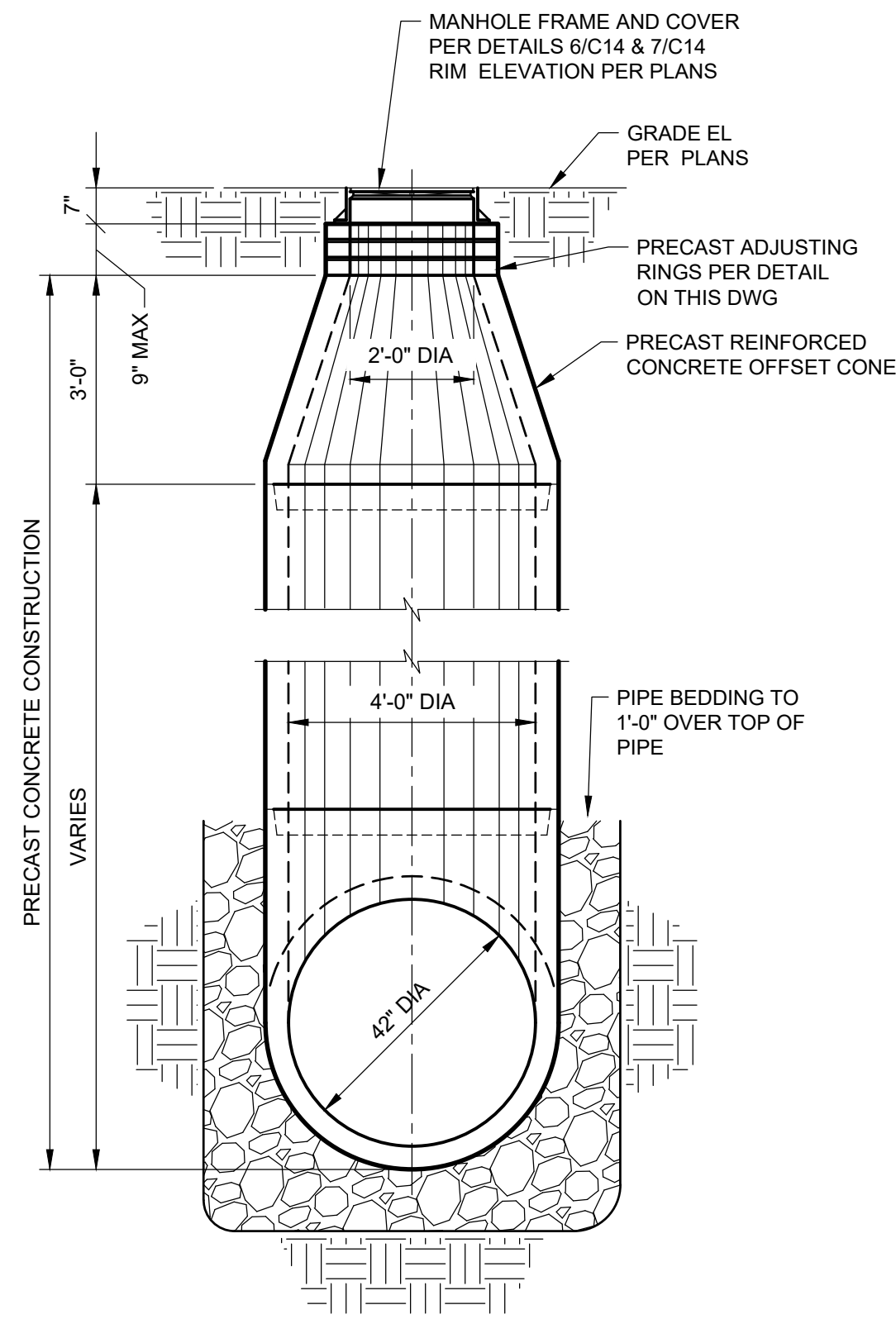
DETAIL 5/C13 - TRENCH  
INSTALLATION ACROSS ROADWAY

NOT TO SCALE

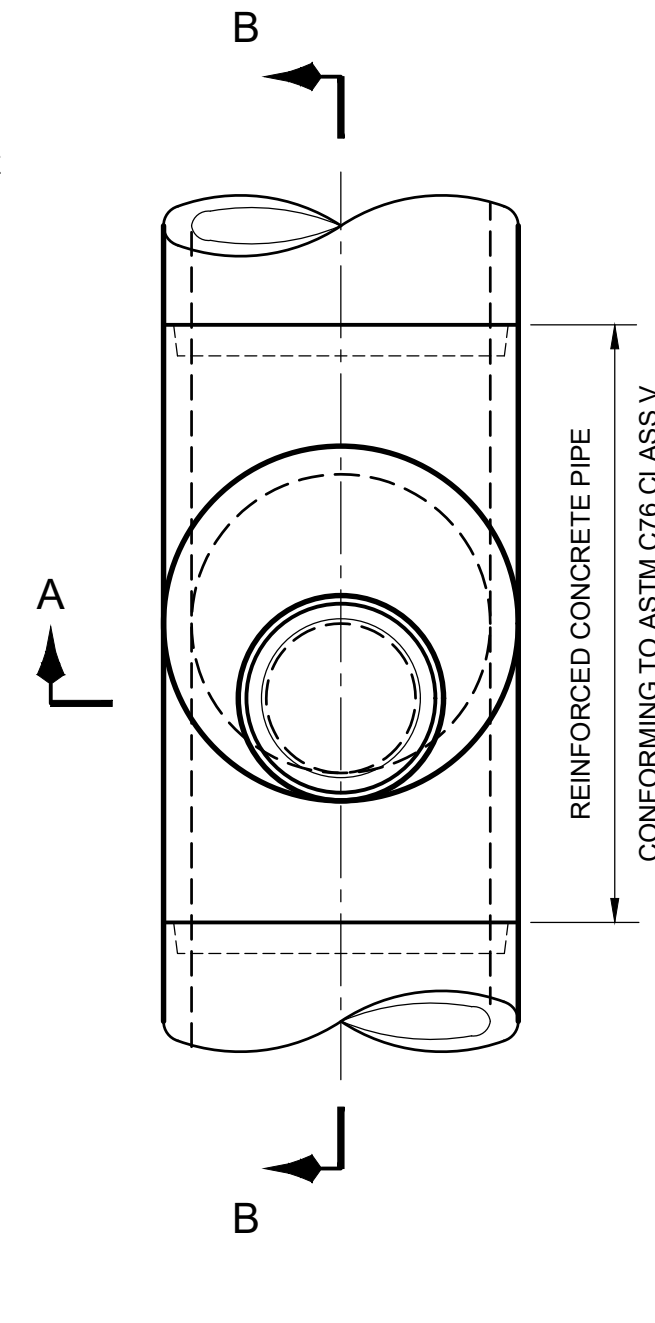


DETAIL 6/C13 - SMART SEWER PROJECT  
BANNER AND FENCE DETAIL

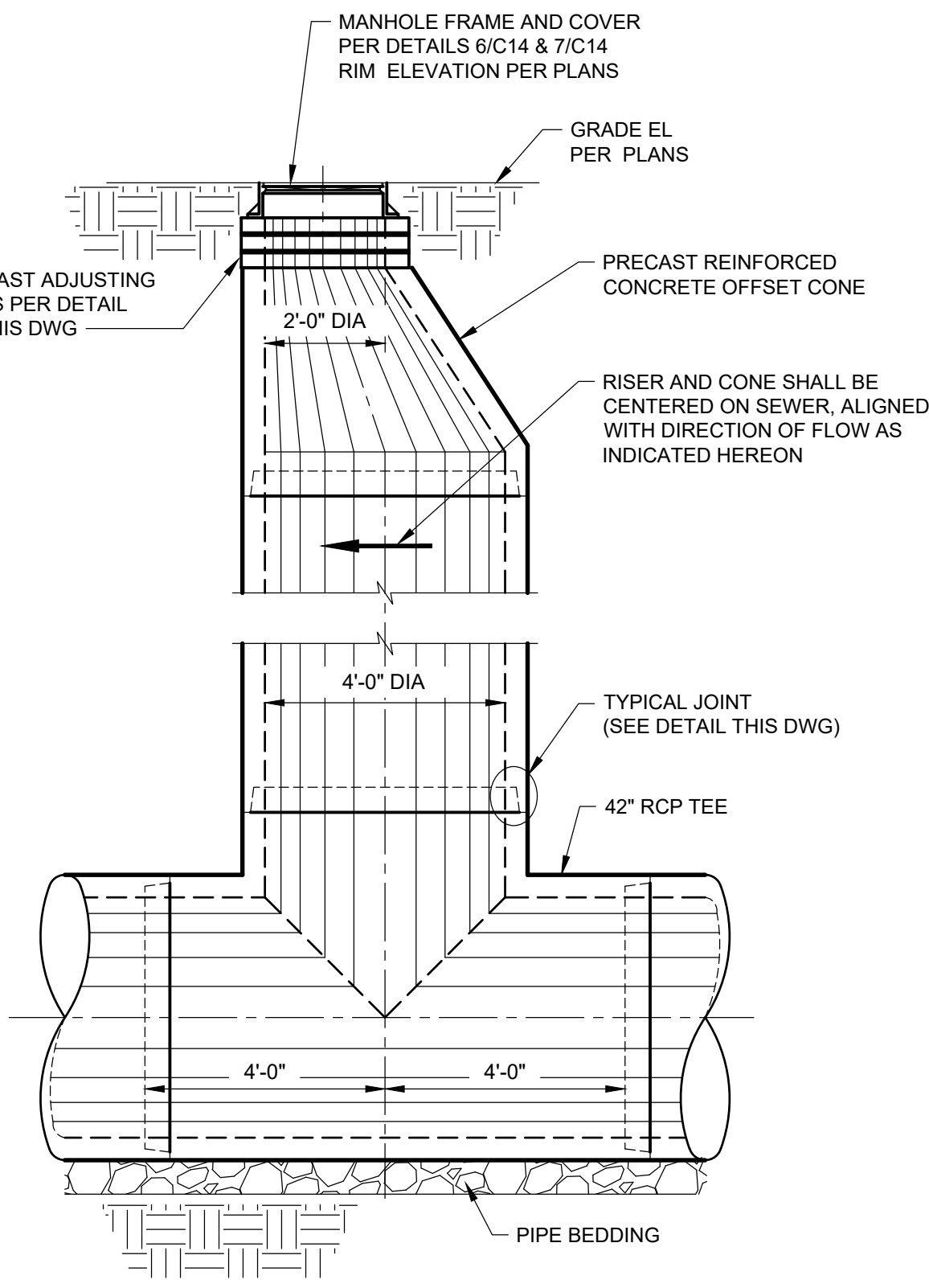
NOT TO SCALE



SECTION A-A



PLAN



SECTION B-B

DETAIL 7/C13 - STANDARD TEE MANHOLE

NOT TO SCALE

**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL

TYPICAL DETAILS

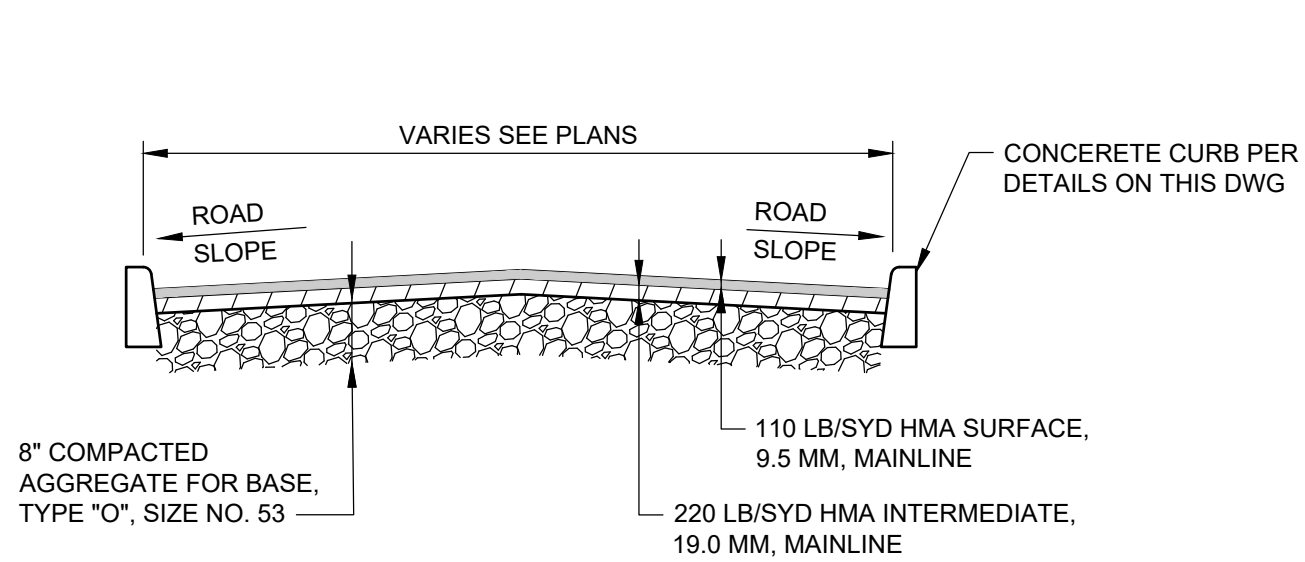
95% SUBMITTAL

BSA CONTRACT NO. 82000041  
DWG: **C13**  
SHEET: 20 OF 85  
DATE: FEBRUARY 2023 REV: 0

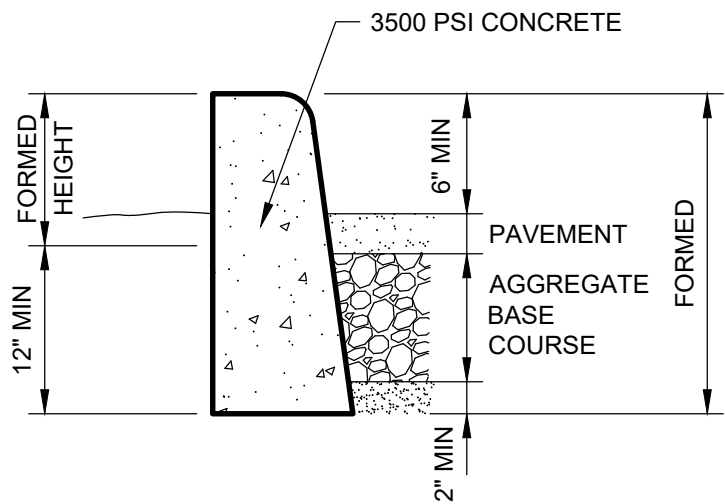


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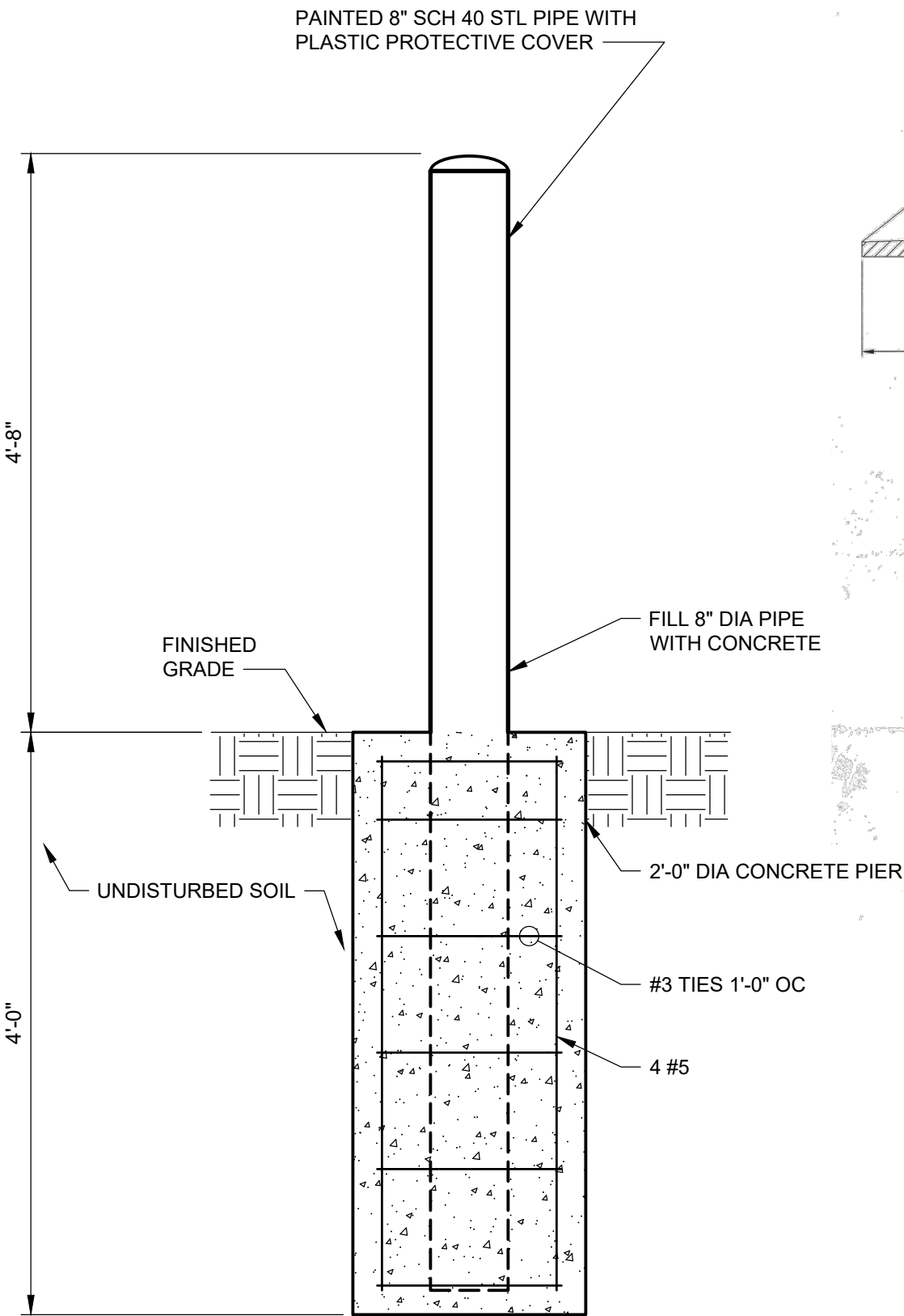
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DC\14122\_C14 MORENO, ROBERTO



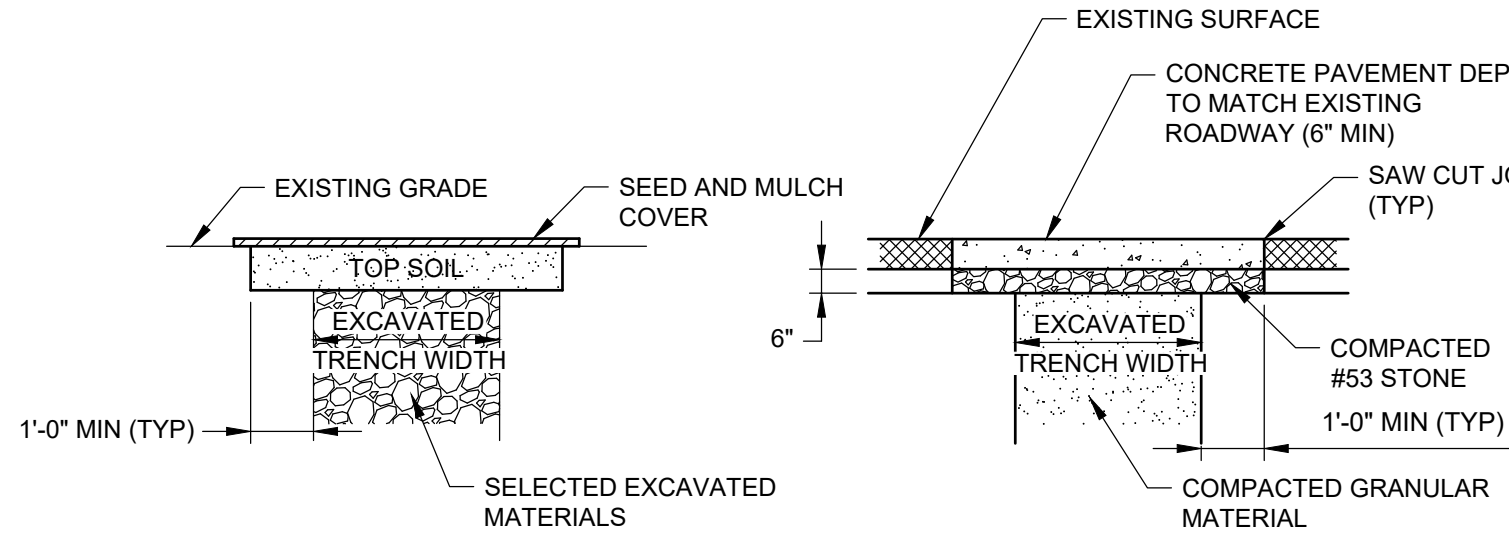
DETAIL 1/C14 - TYPICAL ROAD SECTION  
SCALE: NOT TO SCALE



DETAIL 3/C14 - VERTICAL CURB  
NOT TO SCALE

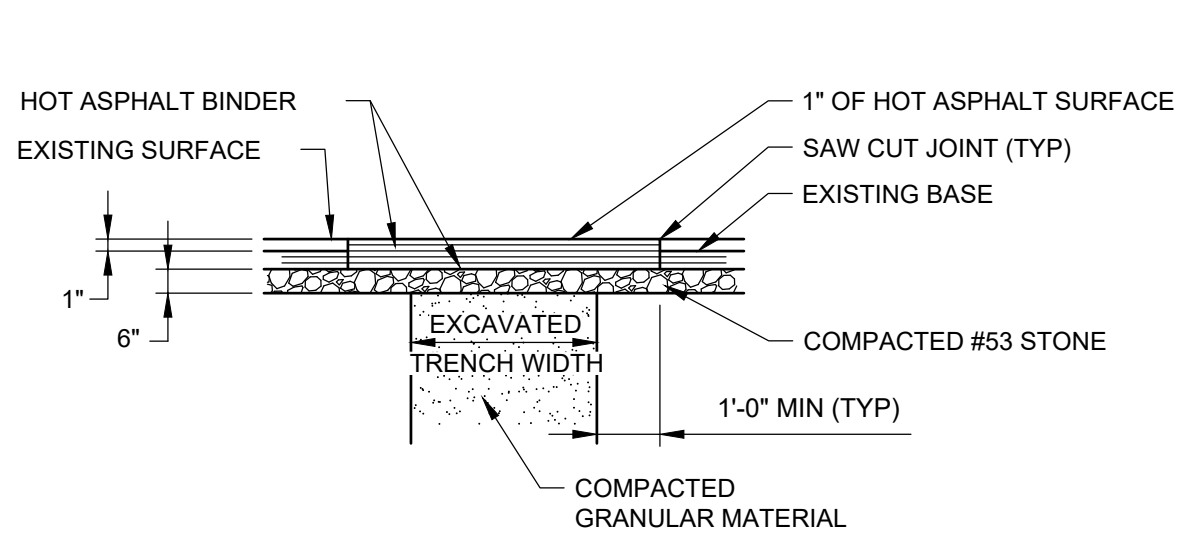


DETAIL 5/C14 - PIPE BOLLARD  
SCALE: NOT TO SCALE

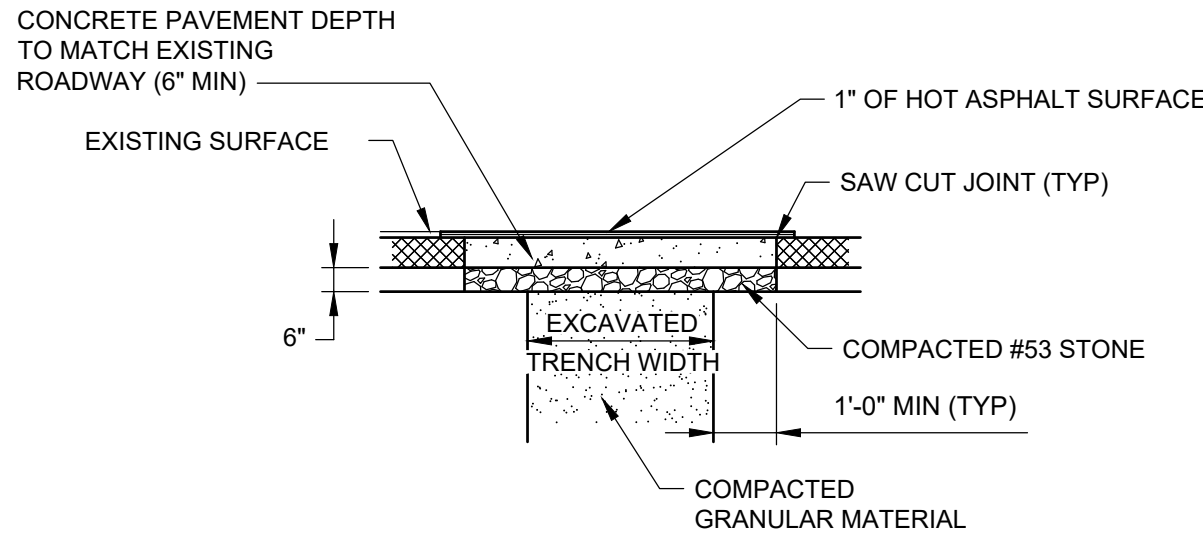


GRASSED AREA

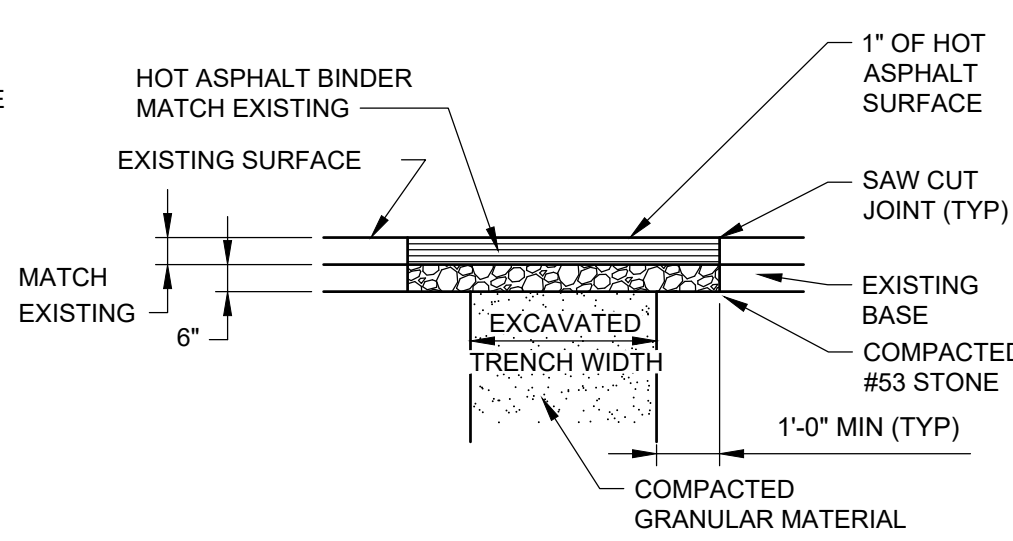
CONCRETE ROAD  
SCALE: NOT TO SCALE



ASPHALT ROAD REPAIR  
SCALE: NOT TO SCALE



ASPHALT OVER CONCRETE  
SCALE: NOT TO SCALE

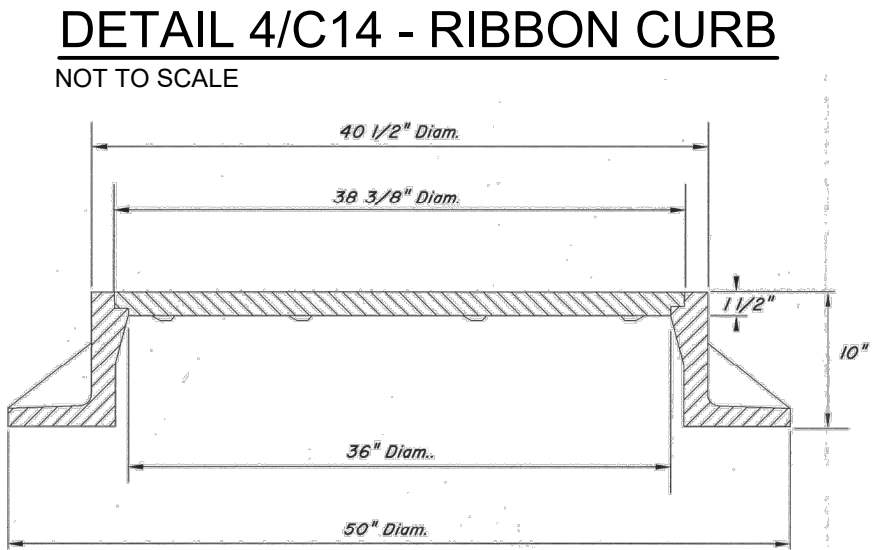


ASPHALT DRIVE REPAIR  
SCALE: NOT TO SCALE

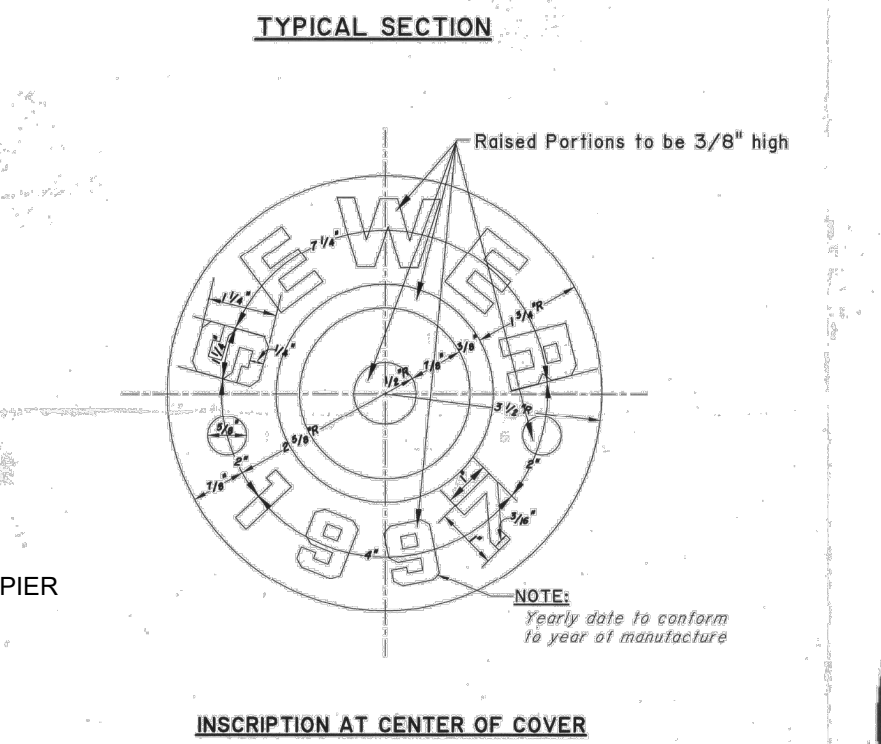
NOTE:

1. ALL STREETS ROADS AND PAVED DRIVE CROSSINGS ARE TO BE BACKFILLED WITH GRANULAR MATERIAL AND TOPPED WITH 10\"/>

DETAIL 2/C14 - STREET AND DRIVE REPAIR DETAILS  
NOT TO SCALE



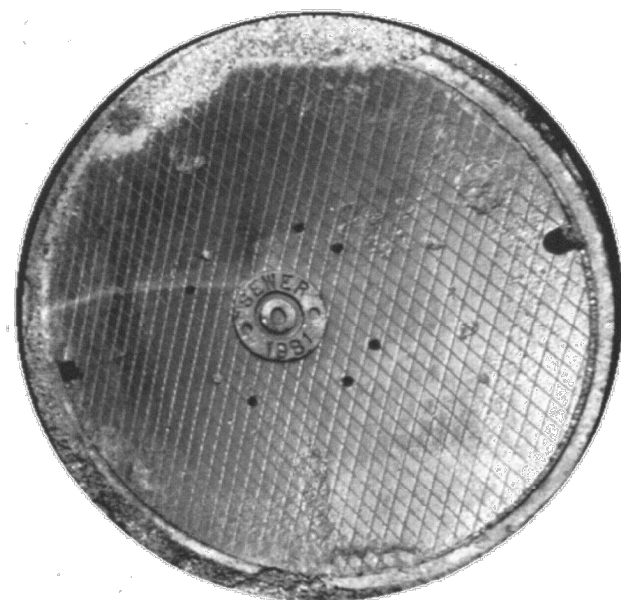
DETAIL 4/C14 - RIBBON CURB  
NOT TO SCALE



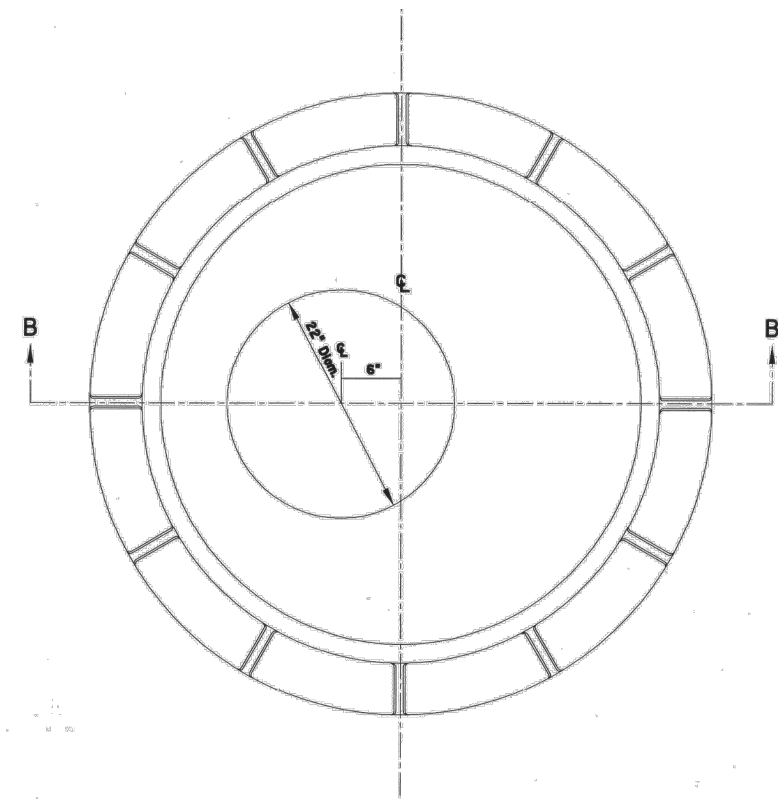
TYPICAL SECTION

INSCRIPTION AT CENTER OF COVER

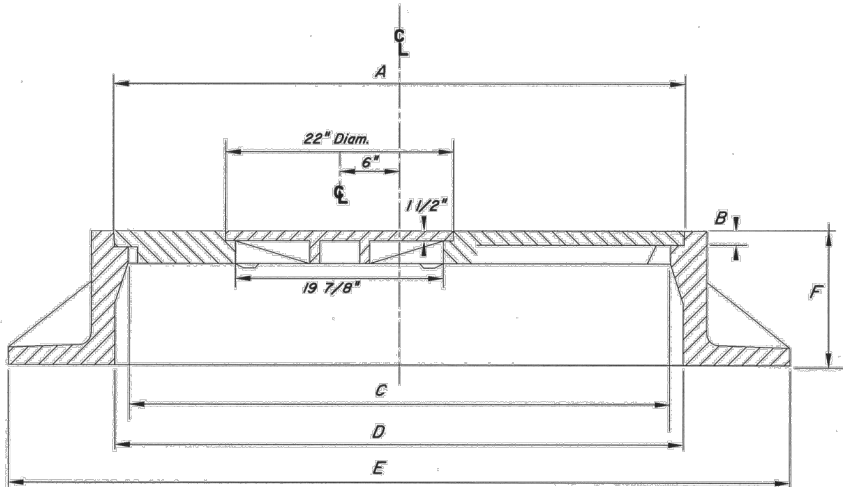
- NOTE:
1. C.I. Heavy Duty Frame & Vented Lid Machined Horizontal Bearing Surfaces.
  2. This cover shall be used for all manholes, interception chambers and diversion chambers.
  3. Covers for Manholes SP-1, SP-2 and C-1 shall be furnished with an externally operated CAM lug type locking device and operating wrench.



PHOTOGRAPH OF COVER IN FIELD  
No Scale



| Dimensions in Inches |    |       |    |    |    |    |
|----------------------|----|-------|----|----|----|----|
|                      | A  | B     | C  | D  | E  | F  |
| Type I               | 38 | 1 1/2 | 36 | 40 | 49 | 10 |
| Type II              | 50 | 2     | 48 | 51 | 62 | 10 |



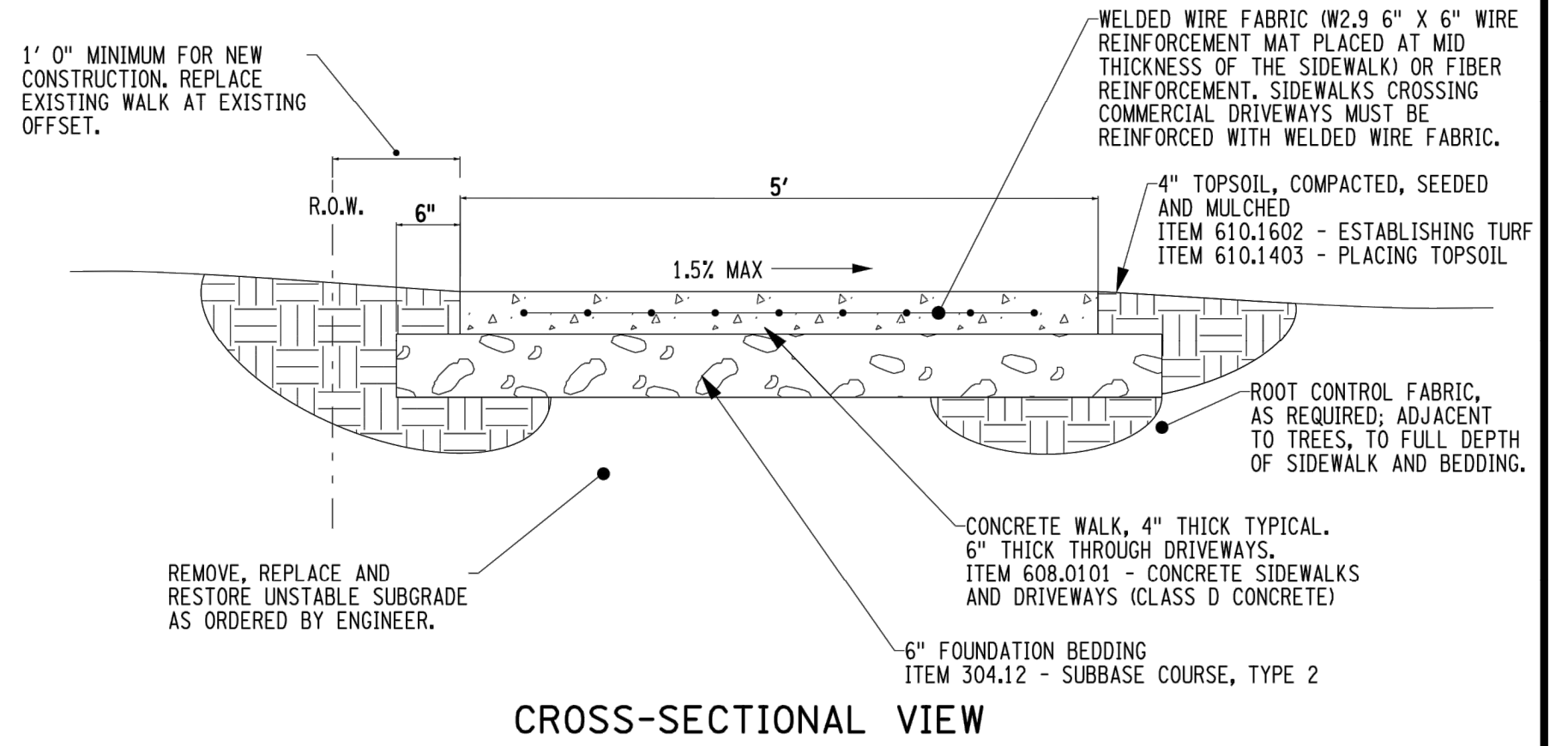
SECTION B-B

DETAIL 7/C14 - TYPICAL MANHOLE FRAME & COVER  
AT BACKWATER PROTECTION GATE CHAMBER  
SCALE: NOT TO SCALE

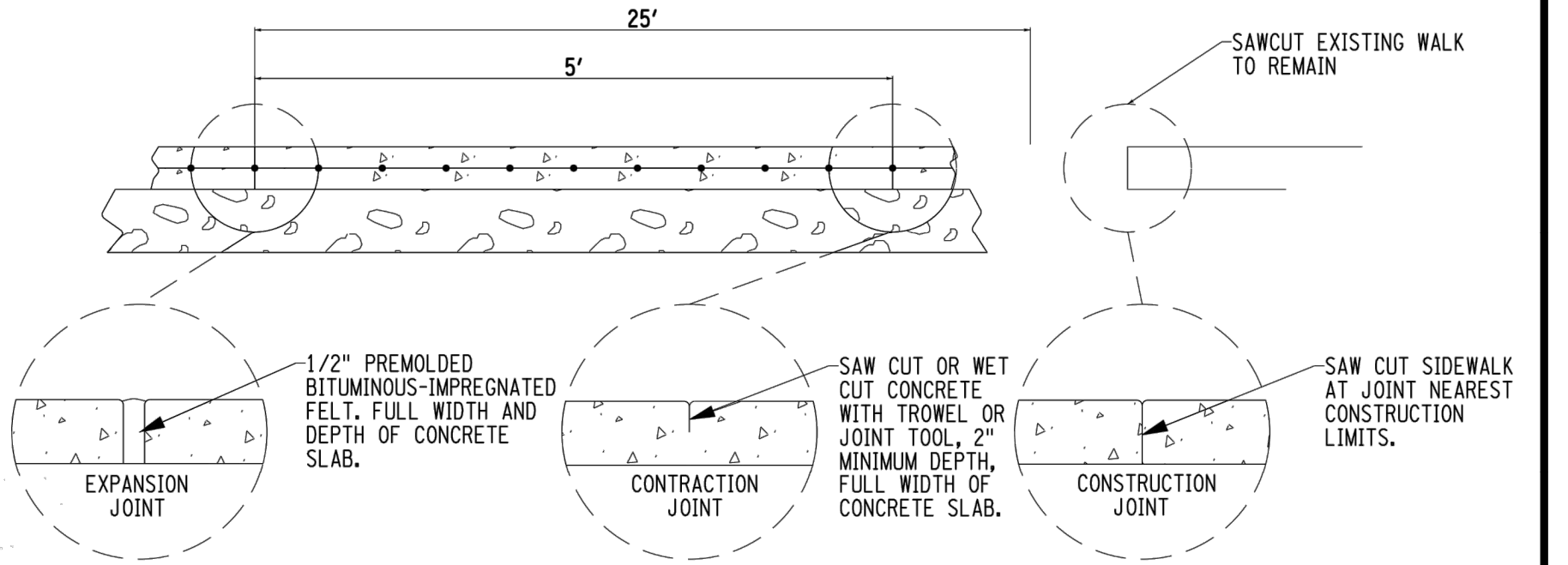


PHOTOGRAPH OF FRAME AND OUTSIDE COVER  
No Scale

HIGHWAY WORK PERMITS  
SIDEWALK WITHIN NYS RIGHT-OF-WAY  
(N.T.S.)



CROSS-SECTIONAL VIEW



PROFILE VIEW

NOTES:

- 1) THE GRAVEL OR STONE BASE SHALL BE PLACED ON A WELL GRADED AND COMPACTED SUBGRADE. THE GRAVEL OR STONE BASE SHALL BE THOROUGHLY COMPACTED.
- 2) ALL EXPOSED SURFACES SHALL BE BROOMED AND EDGES FINISHED WITH A 1/4\"/>
- 3) NO CONCRETE SHALL BE PLACED BEFORE APRIL 20TH, OR AFTER OCTOBER 31ST. NO CONCRETE SHALL BE PLACED UNLESS THE AMBIENT AIR AND BASE MATERIAL SURFACE TEMPERATURE IS ABOVE 40 DEGREES.
- 4) ALL WORK SHALL CONFORM TO NYSDOT SPECIFICATIONS.
- 5) ALL WORK SHALL CONFORM TO ADA REQUIREMENTS.
- 6) CONTACT NYSDOT ENGINEER IF PROPOSED SIDEWALK IS LESS THAN 5' WIDE.
- 7) RUNNING SLOPE/GRADE WHERE HWY GRADE IS 5% OR LESS: 4.5% HWY EDGE OF PVMT GRADE IS MAX  
RUNNING SLOPE/GRADE WHERE HWY GRADE IS 5% OR MORE: 4.5% HWY EDGE OF PVMT GRADE IS MAX



STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

4/7/16

REGION 4

DETAIL 8/C14 - TYPICAL  
CONCRETE SIDEWALK DETAIL  
SCALE: NOT TO SCALE

BUFFALO  
SEWER AUTHORITY

GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

| NO. | DATE | APPD | REVISION |
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SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL

TYPICAL DETAILS

BSA CONTRACT NO. 82000041

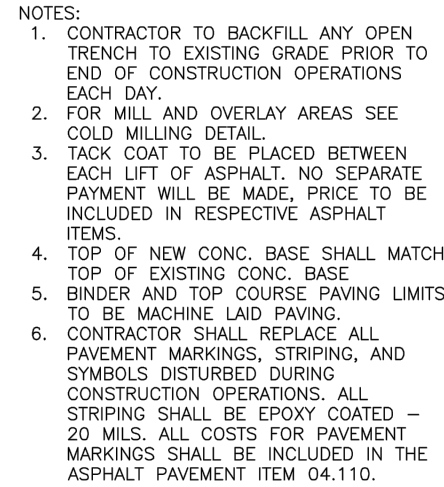
DWG: C14

SHEET: 21 OF 85

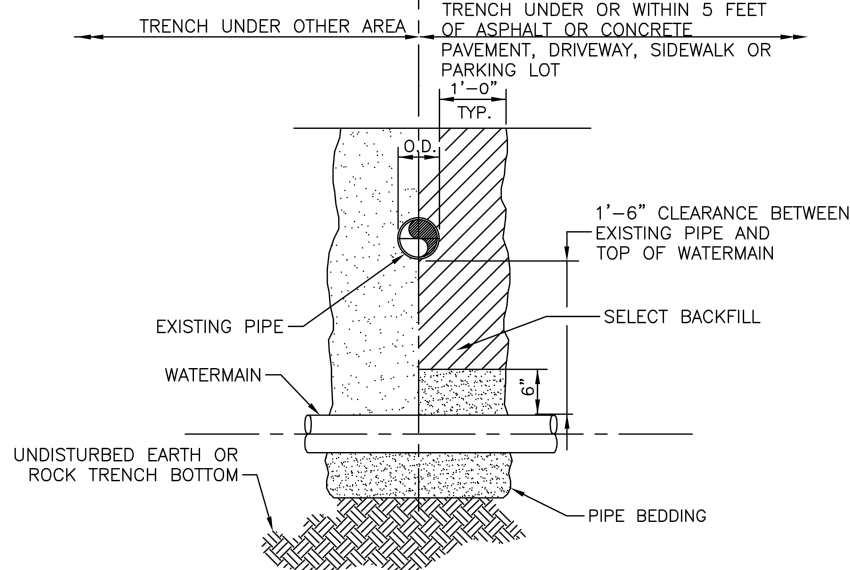
DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL

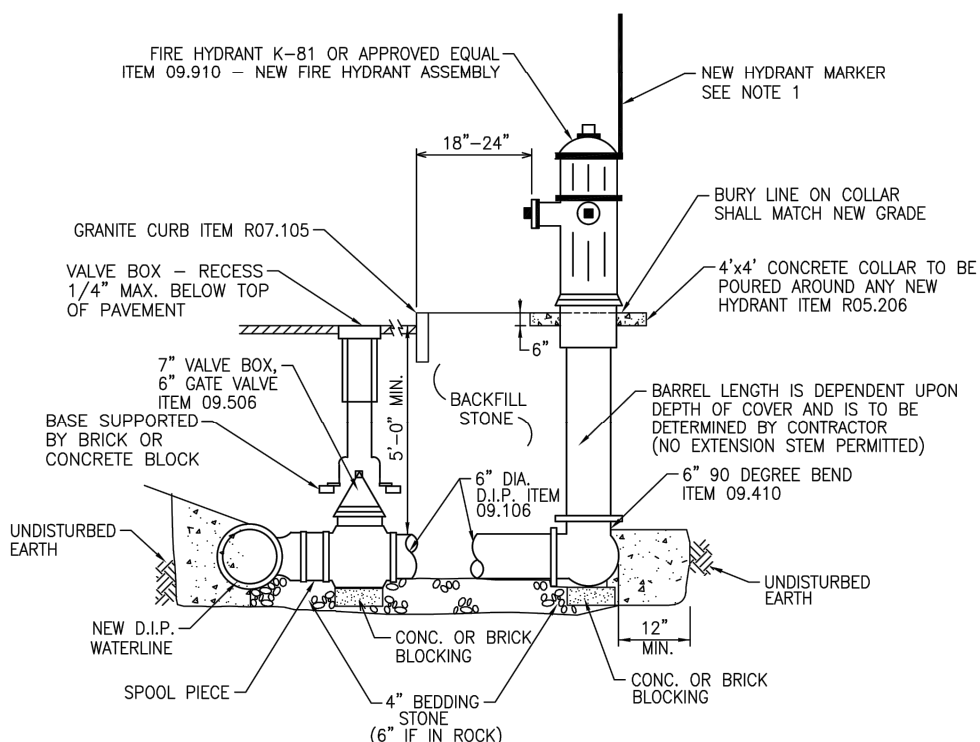




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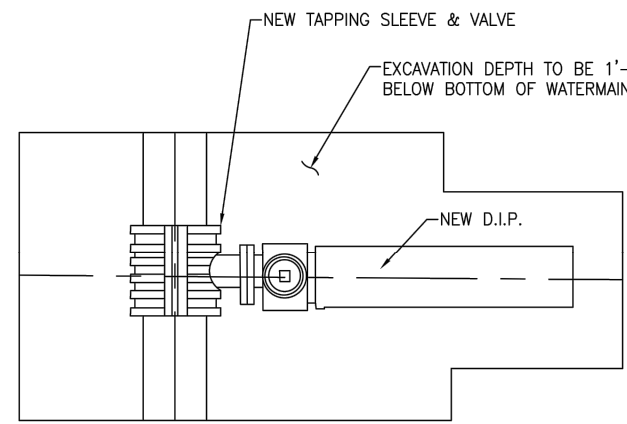


SCALE: NOT TO SCALE



SCALE: NOT TO SCALE

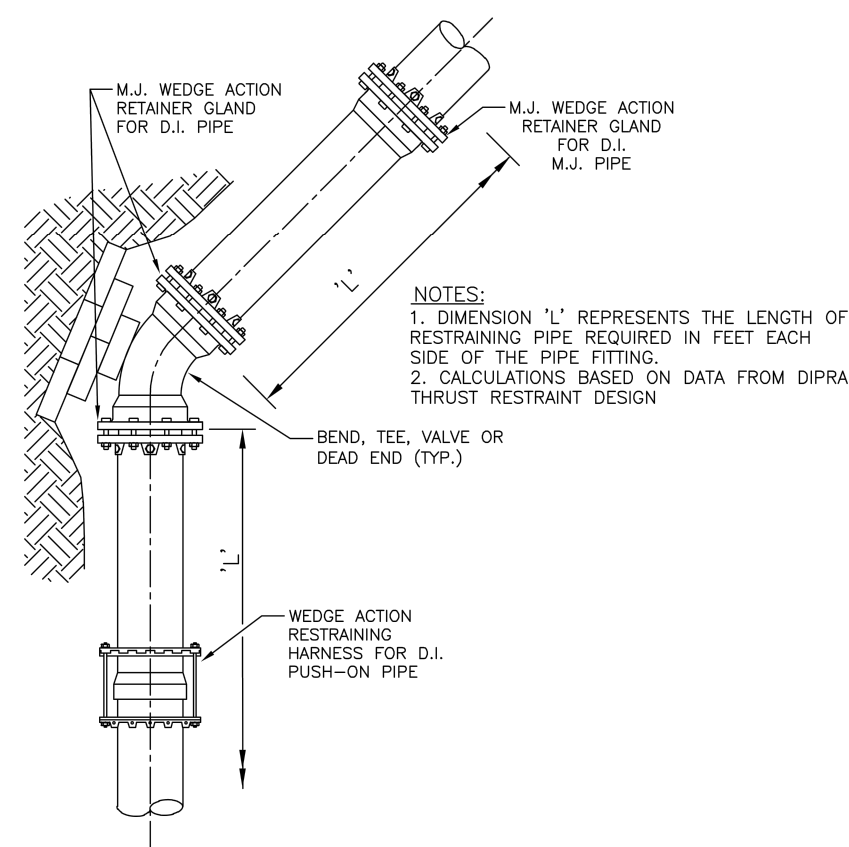
- NOTES:
1. CONTRACTOR SHALL PROVIDE POLLARDWATER MODEL NO. PP69117 72-INCH CORRUGATION FIRE AND VIB RESISTANT FIBERGLASS MARKER WITH REFLECTIVE RED STRIPES AND NON REFLECTIVE RED FLAG ON TOP. COST TO BE INCLUDED IN ITEM 09.910 – FIRE HYDRANTS.
  2. BEFORE SETTING HYDRANT, THE CONTRACTOR SHALL UNPLUG THE WASTE OPENING IN THE BOWL OF HYDRANT AS DIRECTED BY THE ENGINEER IF ANY OF THE ABOVE MANUFACTURERS.
  3. ALL 6" PIPING SHALL BE RESTRAINED FROM THE HYDRANT TO THE BRANCH OF TEE INCLUDING HYDRANT, VALVE, BRANCH AND TEE OR THRUST BLOCKS PLACED AT TEE AND HYDRANT AS SHOWN ON DETAIL.
  4. BACKFILL WITH #2 CRUSHED STONE TO BOTTOM OF PAVEMENT SUBBASE ELEVATION, TAMP IN 6" LAYERS, PLACE 4" (6" IF IN ROCK) OF #1 WASHED STONE FOR BEDDING OF BRANCH PIPING.
  5. HYDRANT SHALL NOT BE LOCATED IN ANY CURB RAMP, HYDRANT SHALL BE LOCATED 5' MINIMUM FROM CURB.
- HYDRANT 24 HOUR NOTICE IS GOVERNED BY THE DIVISION OF WATER'S ENGINEER



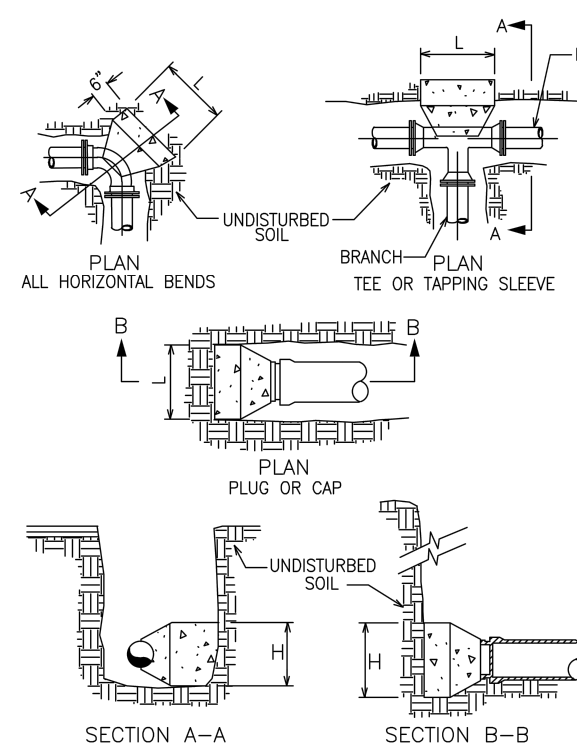
SCALE: NOT TO SCALE

| RESTRAINED JOINT SCHEDULE |              |              |             |           | RESTRAINED JOINT SCHEDULE CONTINUED        |          |
|---------------------------|--------------|--------------|-------------|-----------|--------------------------------------------|----------|
| PIPE<br>SIZE              | PIPE<br>TYPE | 11.25" ELBOW | 22.5" ELBOW | 45" ELBOW | TEE BRANCH: 90° BEND,<br>VALVE OR DEAD END | REDUCERS |
| 6"                        | D.I.P.       | 1'           | 1'          | 1'        | 1'                                         | 8" X 6"  |
| 8"                        | D.I.P.       | 9'           | 18'         | 38'       | 67'                                        | 33'      |
| 10"                       | D.I.P.       | 12'          | 24'         | 50'       | 88'                                        |          |
| 12"                       | D.I.P.       | 15'          | 29'         | 60'       | 107'                                       |          |
| 14"                       | D.I.P.       | 17'          | 35'         | 71'       | 127'                                       |          |
| 16"                       | D.I.P.       | 22'          | 45'         | 93'       | 165'                                       |          |

SCALE: NOT TO SCALE



SCALE: NOT TO SCALE



SCALE: NOT TO SCALE

| HORIZONTAL ANCHOR DIMENSIONS      |                      |          |      |          |      |              |      |              |      |      |      |
|-----------------------------------|----------------------|----------|------|----------|------|--------------|------|--------------|------|------|------|
| UP TO 250 P.S.I. WORKING PRESSURE |                      |          |      |          |      |              |      |              |      |      |      |
| PIPE SIZE<br>IN INCHES            | TEE OR<br>TAP SLEEVE | 90° BEND |      | 45° BEND |      | 22 1/2° BEND |      | 11 1/4° BEND |      |      |      |
|                                   |                      | "L"      | "H"  | "L"      | "H"  | "L"          | "H"  | "L"          | "H"  |      |      |
| 1"                                | 1.5"                 | 2.5"     | 2.0" | 2.5"     | 1.5" | 2.0"         | 1.0" | 1.5"         | 1.0" | 1.5" | 1.0" |
| 8"                                | 1.5"                 | 3.5"     | 2.5" | 3.5"     | 2.0" | 2.5"         | 1.5" | 1.5"         | 1.0" | 2.0" | 2.0" |
| 10"                               | 2.5"                 | 3.5"     | 3.0" | 4.5"     | 2.5" | 3.0"         | 1.5" | 3.0"         | 1.0" | 2.5" | 2.5" |
| 12"                               | 3.5"                 | 3.5"     | 3.5" | 5.0"     | 3.0" | 3.5"         | 2.5" | 3.5"         | 1.5" | 2.5" | 2.5" |
| 14"                               | 3.5"                 | 4.5"     | 4.0" | 5.5"     | 3.5" | 3.5"         | 2.5" | 2.5"         | 1.5" | 2.5" | 2.5" |
| 16"                               | 4.0"                 | 5.0"     | 4.5" | 6.5"     | 3.5" | 4.5"         | 2.5" | 3.0"         | 2.0" | 2.0" | 2.0" |
| 18"                               | 5.0"                 | 5.5"     | 5.5" | 7.0"     | 4.0" | 5.0"         | 3.0" | 3.5"         | 2.0" | 2.5" | 2.5" |
| 20"                               | 5.5"                 | 6.0"     | 6.0" | 7.5"     | 4.5" | 5.5"         | 3.5" | 3.5"         | 2.5" | 2.5" | 2.5" |
| 24"                               | 6.0"                 | 7.5"     | 7.0" | 9.5"     | 5.0" | 7.0"         | 4.0" | 4.5"         | 3.0" | 3.0" | 3.0" |

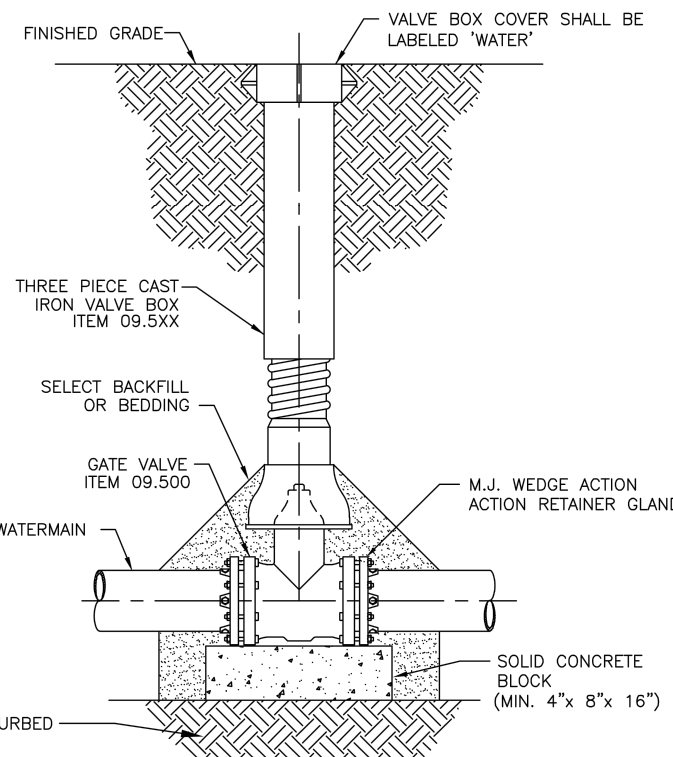
\* TO BE USED AS A GUIDE ONLY. ACTUAL DIMENSIONS AS DETERMINED BY THE ENGINEER DEPENDING ON SOIL CONDITIONS.

NOTES:

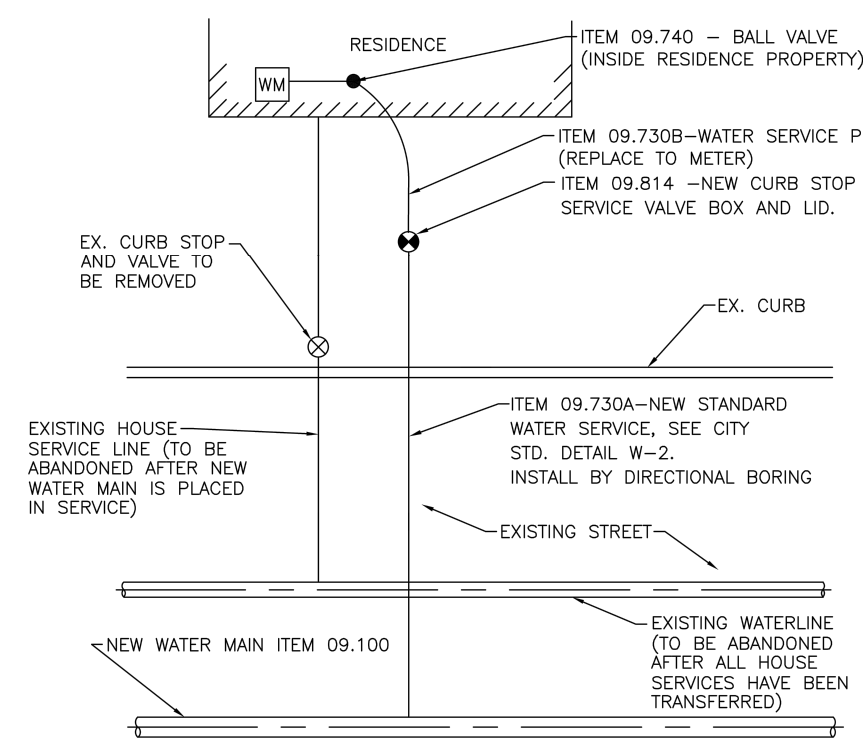
ALL CONCRETE ANCHORS, HARNESSSES AND RELATED HARDWARE FOR REACTION BACKS SHALL BE INCLUDED IN THE PRICE FOR OTHER ITEMS IN THE CONTRACT. CONCRETE SHALL MEET THE REQUIREMENTS FOR CLASS "A" CONCRETE AS SPECIFIED IN N.Y.S.D.O.T. SPECIFICATION SECTION 501.

HARNESS DESIGN, MATERIAL AND USAGE SHALL BE APPROVED AND DETERMINED BY THE ENGINEER.

CLAMPS AND ANCHOR BOLTS FOR GRAVITY TRUSS BLOCKS SHALL BE OF A DESIGN RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER. ALL PARTS EXPOSED TO SURROUNDING SOIL SHALL BE ASPHALT COATED AS DIRECTED BY THE ENGINEER.



SCALE: NOT TO SCALE



SCALE: NOT TO SCALE

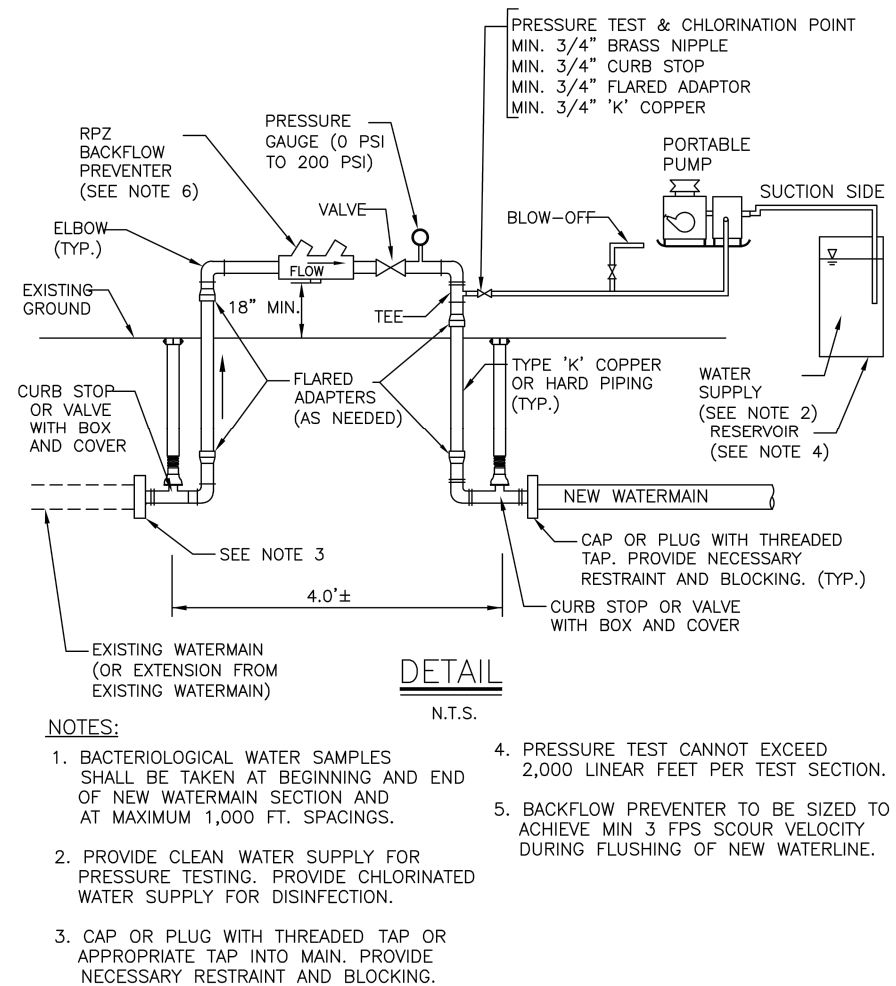
## TESTING NOTES

## PRESSURE AND LEAKAGE TEST RESTRICTIONS

1. ALL PRESSURE AND LEAKAGE TESTS SHALL CONFORM TO AWWA C600 – INSTALLATION OF DUCTILE-IRON WATER MAINS AND THEIR APPURTENANCES.
2. TEST PRESSURE SHALL NOT BE LESS THAN 1.25 TIMES THE WORKING PRESSURE AT THE HIGHEST POINT ALONG THE TEST SECTION.
3. AFTER PIPE HAS BEEN LAID, ALL NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF SHALL BE SUBJECT TO A HYDROSTATIC PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE AT THE POINT OF TESTING.
4. TEST PRESSURE SHALL NOT EXCEED PIPE OR THRUST–RESTRAINT DESIGN PRESSURES.
5. THE HYDROSTATIC TEST SHALL BE OF AT LEAST 2-HOUR DURATION.
6. TEST PRESSURE SHALL NOT VARY BY MORE THAN  $\pm 5$  PSI ( $34.5 \text{ kPa}$ ) FOR THE DURATION OF THE TEST.
7. LEAKAGE TEST SHALL MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED.

## DISINFECTION OF WATER MAINS

1. ALL NEW WATER MAINS SHALL BE DISINFECTED OR EXISTING WATER MAINS TAKEN OUT OF SERVICE FOR INSPECTION, REPAIR OR OTHER ACTIVITIES WHICH MAY LEAD TO CONTAMINATION OF THE MAIN SHALL BE DISINFECTED PRIOR TO RETURN OF SERVICE ACCORDING TO AWWA C651 - DISINFECTING WATER MAINS.
2. BASIC DISINFECTION PROCEDURE CONSISTS OF
  - A. PREVENTING CONTAMINATED MATERIAL FROM ENTERING THE WATER MAIN DURING STORAGE, CONSTRUCTION AND REPAIR.
  - B. REMOVING, BY FLUSHING, THOSE MATERIALS THAT MAY HAVE ENTERED THE MAIN.
  - C. CHLORINATING ANY RESIDUAL CONTAMINATION THAT MAY REMAIN AND FLUSHING THE CHLORINATED WATER FROM THE MAIN.
  - D. PROTECTING THE EXISTING DISTRIBUTION SYSTEM FROM BACKFLOW DUE TO HYDROSTATIC PRESSURE TEST AND DISINFECTION PROCEDURES.
  - E. DETERMINING THE BACTERIOLOGICAL QUALITY BY LABORATORY TEST AFTER DISINFECTION.
  - F. FINAL CONNECTION OF APPROVED NEW WATER MAIN TO THE ACTIVE DISTRIBUTION SYSTEM.




DETAIL  
N.T.S.

| PIPE<br>DIAMETER<br>(in) | PIPE MATERIAL |          | WORKING<br>PRESSURE<br>(psi) | TEST<br>PRESSURE<br>(psi) |
|--------------------------|---------------|----------|------------------------------|---------------------------|
|                          | Type          | Rating   |                              |                           |
| 6"                       | D.I.P.        | CLASS 52 | 75                           | 115                       |
| 8"—12"                   | D.I.P.        | CLASS 52 | 75                           | 115                       |
| 16"                      | D.I.P.        | CLASS 52 | 75                           | 115                       |
| 20"                      | D.I.P.        | CLASS 52 | 75                           | 115                       |

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|                                                                                                                                                                 |     |                     |      |          |  |      |          |                     |  |       |  |  |  |                     |  |                                                              |  |  |  |               |  |                              |  |  |  |  |  |                           |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------|------|----------|--|------|----------|---------------------|--|-------|--|--|--|---------------------|--|--------------------------------------------------------------|--|--|--|---------------|--|------------------------------|--|--|--|--|--|---------------------------|--|--|--|
| <b>BUFFALO</b><br>SEWER AUTHORITY                                                                                                                               |     | SCALE: NOT TO SCALE |      |          |  |      |          | SCALE: NOT TO SCALE |  |       |  |  |  | SCALE: NOT TO SCALE |  |                                                              |  |  |  | 95% SUBMITTAL |  |                              |  |  |  |  |  |                           |  |  |  |
|  <b>GREELEY AND HANSEN</b><br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 |     | DESIGNED            | DH   | APPROVED |  |      |          |                     |  | SCALE |  |  |  |                     |  | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT |  |  |  |               |  | CIVIL<br><br>TYPICAL DETAILS |  |  |  |  |  | BSA CONTRACT NO. 82000041 |  |  |  |
| DRAWN                                                                                                                                                           | RAM |                     |      |          |  |      |          |                     |  |       |  |  |  |                     |  |                                                              |  |  |  |               |  |                              |  |  |  |  |  | DWG: <b>C15</b>           |  |  |  |
| CHECKED                                                                                                                                                         | MS  |                     |      |          |  |      |          |                     |  |       |  |  |  |                     |  |                                                              |  |  |  |               |  |                              |  |  |  |  |  | SHEET: 22 OF 85           |  |  |  |
|                                                                                                                                                                 |     | NO.                 | DATE |          |  | APPD | REVISION |                     |  |       |  |  |  |                     |  |                                                              |  |  |  |               |  |                              |  |  |  |  |  | DATE: FEBRUARY 2023       |  |  |  |



V:\JMDAVIDSON PROJECTS - ACTIVE\262202 BSA BRECKENRIDGE GATES RTCS\3.0 DWGS\3.1 CADD STD\14122\_BRDX\_JMD MICHAEL TERRANA

GENERAL NOTES

1. MAINTAIN TRAFFIC THROUGHOUT THE DURATION OF THE CONTRACT IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 619 OF THE NEW YORK STATE DEPT. OF TRANSPORTATION STANDARD SPECIFICATIONS. THE TRAFFIC CONTROL REQUIREMENTS CONTAINED IN THE PLANS AND/OR PROPOSAL OF THIS CONTRACT, APPLICABLE NYSDOT STANDARD SHEETS, AND THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD), THE NEW YORK STATE SUPPLEMENT, AND ALL APPLICABLE ADDENDA, HEREIN TOGETHER KNOWN AS THE MUTCD.
2. THE CONTRACTOR MAY SUBMIT TO THE ENGINEER, IN WRITING, PROPOSED REVISIONS TO THE TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE OWNER AND PROJECT STAKEHOLDERS AT LEAST FIFTEEN (15) WORKING DAYS PRIOR TO THE PLANNED IMPLEMENTATION OF SUCH PROPOSED REVISIONS, EXCEPT FOR CHANGES THAT ALTER THE SCOPE OF THE TRAFFIC CONTROL PLAN. SUCH CHANGES IN SCOPE MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE OWNER AND STAKEHOLDERS AT LEAST THIRTY (30) WORKING DAYS PRIOR TO IMPLEMENTATION.
3. THE TYPICAL DETAILS DEPICTED IN THESE PLANS, ON THE NYSDOT STANDARD SHEETS, AND IN THE MUTCD REFLECT MINIMUM REQUIREMENTS. FOR TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION AREAS NOT SPECIFIED IN THE PLANS OR NYSDOT STANDARD SHEETS, THE PROVISIONS OF PART 6 OF THE MUTCD SHALL APPLY.
4. SUBMIT TO THE ENGINEER A DETAILED SCHEDULE FOR EACH CONSTRUCTION STAGE PRIOR TO BEGINNING ANY WORK.
5. HAVE IN PLACE PRIOR TO THE START OF ANY WORK OPERATIONS, ALL NECESSARY WORK ZONE TRAFFIC CONTROL AS REQUIRED BY THESE NOTES, SHOWN IN THE PLANS, OR AS ORDERED BY THE ENGINEER. THIS INCLUDES BUT IS NOT LIMITED TO, ALL SIGNS, SIGNALS, PAVEMENT MARKINGS, BARRIERS, DELINEATORS, FLAGGERS, PAVEMENT MODIFICATIONS, AND ANY OTHER RELATED WORK.
6. IF AT ANY TIME THE OWNER, OR OWNER'S REPRESENTATIVE, DETERMINES THAT TRAFFIC IS NOT BEING PROPERLY MAINTAINED WITHIN THE WORK ZONE, IMMEDIATELY CORRECT THE INDICATED DEFICIENCY.
7. THE CONTRACTOR WILL NOT BE ALLOWED TO OCCUPY OR WORK ON OPPOSITE SIDES OF A ROADWAY IN OVERLAPPING LOCATIONS WHILE TRAFFIC IS BEING MAINTAINED ON THAT ROADWAY.
8. THE ROADWAY CLASSIFICATIONS OF NON-FREEWAY ROAD SHALL BE USED WITH THE MUTCD AND NYSDOT STANDARD SHEETS FOR ALL PROJECT LOCATIONS.
9. MAINTAIN POSITIVE STORM DRAINAGE THROUGHOUT ALL PHASES OF CONSTRUCTION.
10. THE CONTRACTORS WORK AREA SHALL BE CONFINED TO THE LIMITS OF THE RIGHT-OF-WAYS AND EASEMENTS. THE CONTRACTOR SHALL OBTAIN ANY ADDITIONAL EASEMENTS OR WORK RELEASES SHOULD THE CONTRACTOR REQUIRE ADDITIONAL AREA TO ACCOMMODATE HIS OPERATIONS.

OVERLAPPING WORK AREAS

1. COORDINATE THE WORK WITH ANY OTHER CONTRACTORS, PUBLIC MAINTENANCE, OR UTILITY COMPANY OPERATIONS IN THE AREA TO ENSURE PROPER WORK ZONE TRAFFIC CONTROL.
2. WHEN TWO OR MORE AREAS ARE ADJACENT, OVERLAP, OR ARE IN CLOSE PROXIMITY, ENSURE THERE ARE NO CONFLICTING SIGNS AND THAT LANE CONTINUITY IS MAINTAINED THROUGHOUT ALL WORK AREAS.

VEHICLE RESTRICTIONS

1. KEEP TO A MINIMUM THE MOVEMENT OF CONSTRUCTION VEHICLES AND EQUIPMENT IN AND OUT OF DESIGNATED TRAVEL LANES. ALLOW ONLY NECESSARY OR AUTHORIZED VEHICLES AS DETERMINED BY THE ENGINEER TO ENTER ANY PHASE WORK AREA.
2. DO NOT PARK VEHICLES BELONGING TO THE CONTRACTOR OR THEIR WORKERS IN A MANNER WHICH OBSTRUCTS ANY SIGNS, BARRICADES, OR ANY OTHER TRAFFIC CONTROL DEVICES, OR IN A MANNER WHICH INTERFERES WITH ACCESS TO ABUTTING PROPERTIES, VEHICLES, SIDEWALKS, OR SHOULDERS, BEING USED BY THE TRAVELING PUBLIC.
3. NO CONSTRUCTION MATERIAL MAY BE STORED OR PLACED ON THE ROADWAY OR ROADBED EXCEPT WITHIN A PROTECTED WORK AREA.
4. PARK AND STORE CONTRACTOR VEHICLES AND MATERIALS DURING NON-WORKING HOURS IN ACCORDANCE WITH SECTION 619-3.02F OF THE NYSDOT STANDARD SPECIFICATIONS.

INGRESS AND EGRESS

1. MAINTAIN PUBLIC ACCESS TO INTERSECTING ROADS, RESIDENCES, BUSINESS ESTABLISHMENTS, AND ADJACENT PROPERTY, FOR VEHICLES, PEDESTRIANS, AND BICYCLISTS IN ACCORDANCE WITH SECTION 619 OF THE NYSDOT STANDARD SPECIFICATIONS.
2. PROVIDE RESIDENT/PROPERTY OWNERS WITH A MINIMUM OF FORTY-EIGHT (48) HOURS ADVANCE NOTICE BEFORE STARTING ANY WORK THAT IMPACTS AN ACTIVE DRIVEWAY OR ENTRANCE WALK.
3. NOTIFY PROPERTY OWNERS WHOSE DRIVEWAYS WILL BE MADE INACCESSIBLE BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO RESTRICTING USE OF THE DRIVEWAY. RESTORE ACCESS TO ALL DRIVEWAYS WITHIN 24 HOURS OF CLOSURE OR SPECIAL ARRANGEMENTS SHALL BE MADE BY THE CONTRACTOR WITH THE PROPERTY OWNER.
4. FOR MULTIPLE ACCESS PROPERTIES, AT LEAST ONE DRIVEWAY TO REMAIN OPEN AT ALL TIMES.
5. THE CONTRACTOR SHALL KEEP TO A MINIMUM THE MOVEMENT OF CONSTRUCTION VEHICLES AND EQUIPMENT IN AND OUT OF DESIGNATED TRAVEL LANES. ONLY NECESSARY OR AUTHORIZED VEHICLES, AS DETERMINED BY THE ENGINEER, SHALL BE ALLOWED TO ENTER THE WORK AREA.
6. THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS WITH PROPER ACCESS AND MINIMUM WIDTHS FOR THEIR DRIVEWAYS ACCORDING TO THE POLICY AND STANDARDS FOR ENTRANCES TO STATE HIGHWAYS, NYSDOT STANDARD SPECIFICATIONS SECTION 619 - WORK ZONE TRAFFIC CONTROL, AND SHALL MAINTAIN THEM THROUGH ALL PHASES OF WORK AND SHALL DELINEATE THESE BY MEANS OF SIGNS, CONES, AND/OR DRUMS.
7. WHERE DIRECT ACCESS TO DRIVEWAYS IS NOT POSSIBLE DUE TO NECESSARY CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL PLAN ALTERNATE MEANS OF ACCESS AND SUBMIT SUCH PLANS TO THE ENGINEER AND CITY DPW FOR REVIEW BEFORE OPERATIONS COMMENCE.

MILLING OPERATIONS

1. INSTALL W8-15 "GROOVED PAVEMENT" SIGNS ON THE APPROACH TO MILLED PAVEMENT WHEN THE GROOVES RUN PARALLEL TO TRAFFIC.
2. INSTALL W8-8 "ROUGH ROAD" SIGNS ON THE APPROACH TO MILLED PAVEMENT WHEN THE GROOVES RUN TRANSVERSELY TO TRAFFIC.

SIGNING

1. ALL SIGNS NECESSARY FOR WORK ZONE TRAFFIC CONTROL (INCLUDING RELOCATION, RESTORATION AND/OR RESTORATION OF EXISTING SIGN PANELS) AS NOTED IN THE TRAFFIC CONTROL PLANS, NYSDOT STANDARD SHEETS, STANDARD SPECIFICATIONS, MUTCD, OR A.O.B.E. SHALL BE INCLUDED IN THE VARIOUS ITEMS BID.
2. THE SIZE, SHAPE AND COLORS OF WORK ZONE SIGNS SHALL COMPLY WITH NYSDOT STANDARD SHEET 619-12 AND THE MUTCD.
3. SIGNING INSTALLED BY THE CONTRACTOR PRIOR TO THE ACTUAL START OF WORK SHALL BE COVERED UNTIL THE CONDITIONS WARRANTING THE SIGNS ARE PRESENT. WHEN NO EVIDENCE OF WORK IS PRESENT OUTSIDE OF WORKING HOURS, WORK ZONE TRAFFIC CONTROL SIGNING SHALL BE TAKEN DOWN OR COVERED.
4. REFER TO VARIOUS NYSDOT STANDARD SHEET TYPICAL DRAWINGS FOR REQUIRED PROJECT APPROACH SIGNING. THESE SIGNS SHOULD BE LEFT IN PLACE FOR THE DURATION OF THE WORK, INCLUDING DURING NON-WORKING HOURS, WHENEVER EVIDENCE OF THE WORK IS PRESENT.
5. SIGN LOCATIONS ARE APPROXIMATE. ACTUAL FIELD CONDITIONS MAY REQUIRE OTHER SIGNS AND OTHER ARRANGEMENTS OF SIGNS. EXACT LOCATIONS AND ARRANGEMENTS SHALL BE DETERMINED BY THE CONTRACTOR AND REVIEWED AND APPROVED BY THE ENGINEER.
6. SIGN SPACING SHALL BE PER THE NYSDOT STANDARD SHEETS, MUTCD, AND ADAPTED TO PREVAILING CONDITIONS. SIGNS SHALL BE LOCATED TO PROVIDE OPTIMUM VISIBILITY.
7. THE CORRECT SEQUENCE AND SPACING OF SIGNS, WHETHER PERMANENT, TEMPORARY, OR CONSTRUCTION, MUST BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE NYSDOT STANDARD SHEETS AND MUTCD.
8. ALL SIGNS, INCLUDING GUIDE SIGNS, SHALL INDICATE ACTUAL CONDITIONS AT ALL TIMES.
9. CONFLICTING SIGNS SHALL BE COVERED, MOVED, RELOCATED, OR CHANGED BY THE CONTRACTOR IMMEDIATELY A.O.B.E.
10. EXISTING SIGNS MAY BE NEW AND THEREFORE IN VERY GOOD CONDITION. ANY EXISTING DAMAGE IS TO BE DOCUMENTED AND ANY SUBSEQUENT DAMAGE REMEDIED. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE DONE, DUE TO THE CONTRACTOR'S METHODS, TO TEMPORARILY REMOVE, RELOCATE OR COVER SIGN PANELS OR SIGN TEXT.
11. RIGID AND FLEXIBLE SIGN PANELS SHALL BE MOUNTED PER SECTION 619.3.02H OF THE NYSDOT STANDARD SPECIFICATIONS.
12. THE CONTRACTOR SHALL TRIM ANY FOLIAGE OBSTRUCTING THE VISIBILITY OF SIGNS, WHETHER PERMANENT, TEMPORARY, OR CONSTRUCTION, NEEDED FOR WORK ZONE TRAFFIC CONTROL A.O.B.E. THE COST SHALL BE INCLUDED IN THE VARIOUS ITEMS BID.
13. IF ADVANCE SIGNING OBSTRUCTS THE VISIBILITY OF A FLAGGER OR CONFLICTS WITH DRIVEWAYS OR SIDE ROADS, SIGNS SHOULD BE MOVED UPSTREAM AS DIRECTED BY THE ENGINEER.
14. W8-1 "BUMP" OR W8-2 "DIP" SIGNS SHALL BE PLACED ON ALL APPROACHES AHEAD OF A BUMP OR DIP IN THE PAVEMENT CAUSED BY CONSTRUCTION OPERATIONS SUCH AS ROAD PLATES, MILLING PAVEMENT TERMINATION, ETC. NUMEROUS BUMPS OR DIPS SHALL WARRANT THE USE OF W8-8 "ROUGH ROAD" SIGNS INSTEAD OF BUMP OR DIP SIGNS.
15. THE CONTRACTOR SHALL PERIODICALLY RE-EXAMINE IN-PLACE SIGNING AND MAKE ADJUSTMENTS TO REMOVE CONFLICTS THAT MAY OCCUR DUE TO MULTIPLE CONSTRUCTION ACTIVITIES. SIGN DESIGNATIONS, LOCATIONS, ETC. SHALL BE REVISED IF NECESSARY (A.O.B.E.).
16. REGULATORY SIGNS SHOWN IN THE WORK ZONE TRAFFIC CONTROL PLANS MUST REMAIN POSTED AT ALL TIMES WHETHER EXISTING, TEMPORARY, OR PERMANENT. ADDITIONAL REGULATORY SIGNS MAY BE REQUIRED BASED UPON FIELD CONDITIONS (A.O.B.E.).

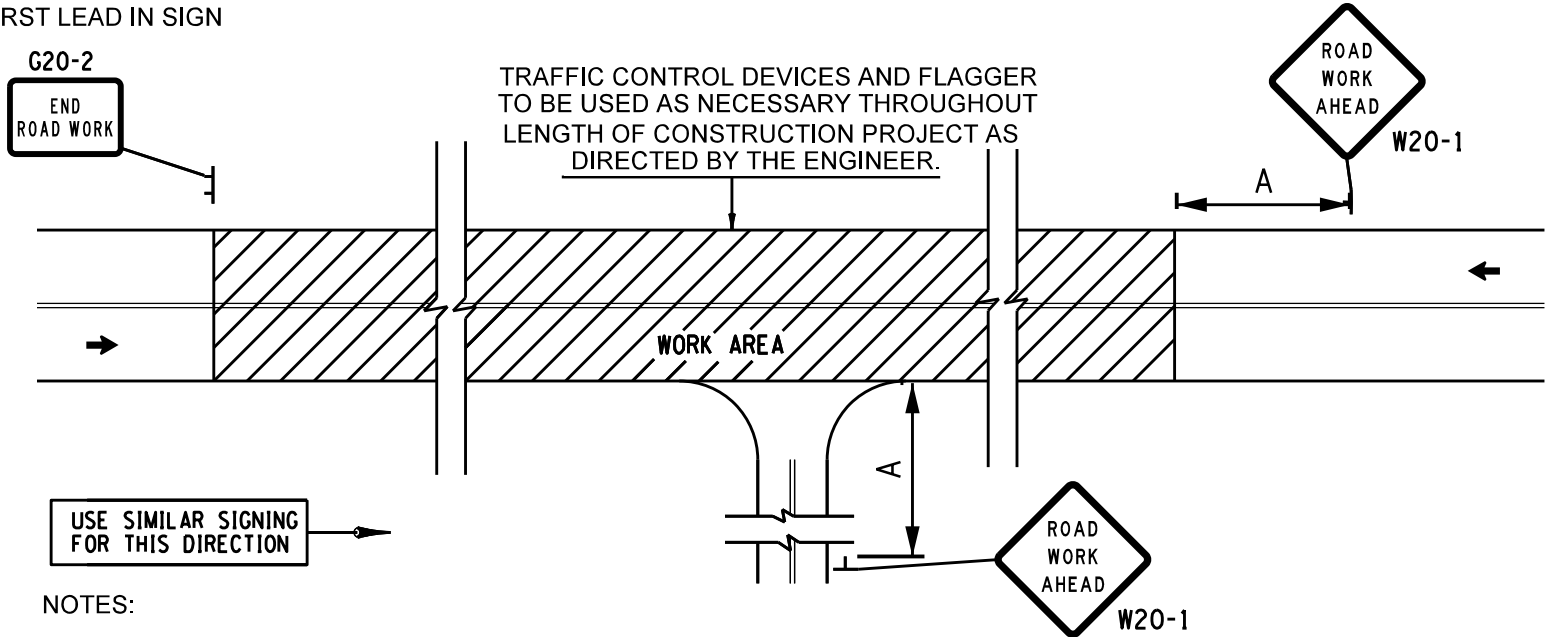
OPEN EXCAVATIONS

1. NO PAVEMENT CUTS SHALL REMAIN OPEN OVERNIGHT UNLESS PROTECTED WITH A POSITIVE BARRIER SYSTEM AND FENCING AS SHOWN ON THE WORK ZONE TRAFFIC CONTROL PLANS.
2. STEEL PLATES SHALL NOT BE USED ON THE PAVEMENT BETWEEN OCTOBER 15 AND APRIL 15. ALL EXCAVATIONS WITHIN THE PAVEMENT SECTION DURING THIS TIME SHALL BE RESTORED WITH TEMPORARY ASPHALT UNTIL FINAL RESTORATION IS COMPLETED.

PAVEMENT MARKINGS

1. CONTRACTOR SHALL REMOVE OR COVER EXISTING PERMANENT PAVEMENT MARKINGS TO ACCOMMODATE TRAFFIC PATTERN CHANGES FOR EACH WORK ZONE. CONTRACTOR MAY COVER THE EXISTING PAVEMENT MARKINGS WITH REMOVABLE PAVEMENT MARKING MASKING TAPE. PAVEMENT MARKING MASKING TAPE, IF USED, SHALL BE PLACED IN BLOCKS TO PREVENT THE UNDERLYING SHAPE OF PAVEMENT MARKING SYMBOLS OR LETTERS FROM SHOWING. MASKING OR REMOVAL OF PAVEMENT MARKINGS SHALL BE PERFORMED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATIONS SECTION 619.
2. ALL PERMANENT PAVEMENT MARKINGS REMOVED OR DAMAGED AS PART OF TEMPORARY WORK ZONE TRAFFIC CONTROL OR PART OF CONSTRUCTION SHALL BE RESTORED TO THEIR PRECONSTRUCTION LAYOUT. PAVEMENT MARKING PAINT SHALL BE PROVIDED PER NYSDOT ITEMS 685.01 - WITH EPOXY REFLECTORIZED PAVEMENT STRIPES AND ITEM 685.02 - YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES. PAVEMENT SYMBOLS SHALL BE REPLACED IN ACCORDANCE WITH ITEM 685.04 - WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS. SEE NYSDOT 685 SERIES OF STANDARD SHEETS FOR PAVEMENT MARKING LAYOUT REQUIREMENTS.

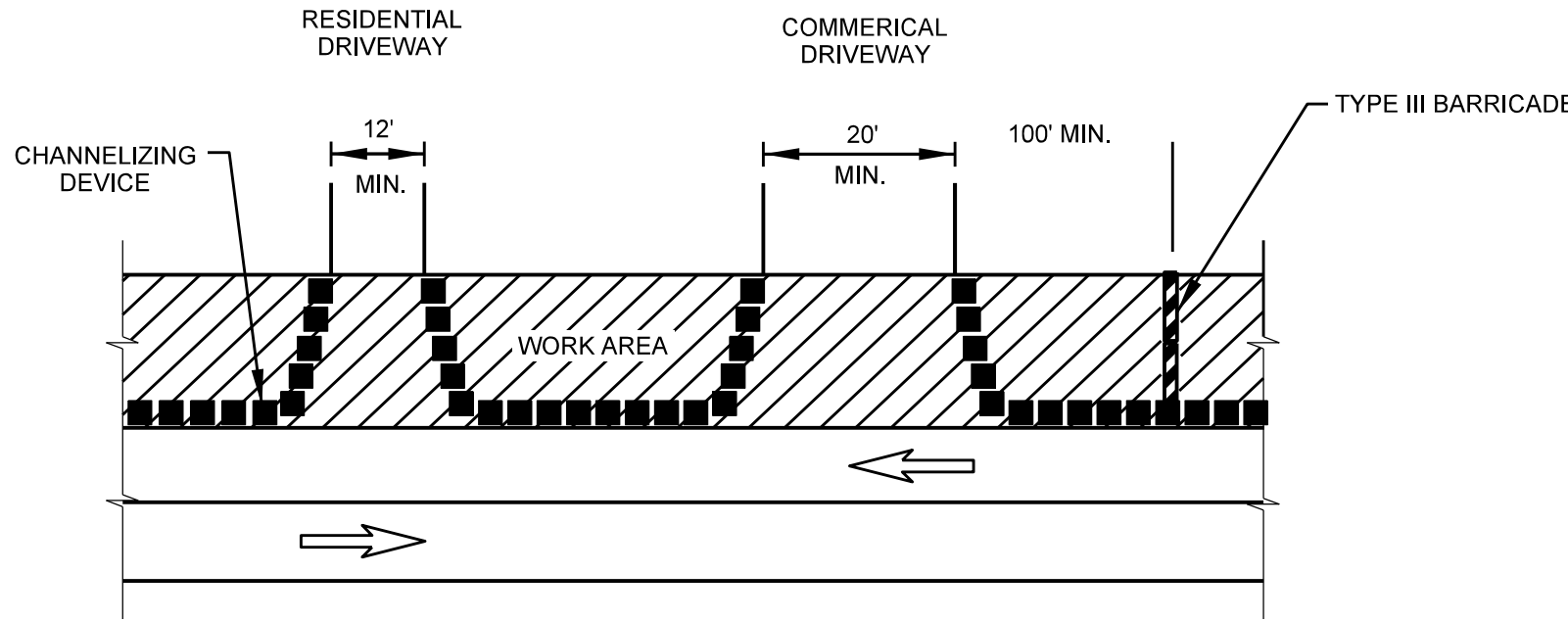
SIGN SHALL BE LOCATED ON THE OPPOSITE SIDE OF THE ROAD FROM THE FIRST LEAD IN SIGN



NOTES:

1. PROVIDE ROAD WORK AHEAD SIGNS (W20-1) AND END ROAD WORK (G20-2) AT THE PROJECT LIMITS AND INTERSECTING STREETS AT ALL SEWER IMPROVEMENT SITES.
2. PROVIDE NON-FREEWAY SIZE SIGNS.
3. DISTANCE A = 100 FT FOR SPEEDS 30 MPH OR LESS;  
DISTANCE A = 200 FT FOR SPEEDS 35 MPH TO 40 MPH;  
DISTANCE A = 350 FT FOR SPEEDS 45 MPG OR GREATER

TYPICAL WORK ZONE ADVANCED WARNING SIGNING



TYPICAL DELINEATION FOR DRIVEWAY ENTRANCES

LEGEND

- TYPE III BARRICADE
- WORK ZONE SIGN
- WARNING LIGHT
- CHANNELIZING DEVICE
- TEMPORARY CONCRETE BARRIER WITH WARNING LIGHTS
- IMPACT ATTENUATOR
- WORK AREA
- TEMPORARY CONSTRUCTION CHAIN LINK FENCE

PRELIMINARY 95%

BUFFALO  
SEWER AUTHORITY

JMDavidson  
Engineering, D.P.C.

|          |     |          |
|----------|-----|----------|
| DESIGNED | MAT | APPROVED |
| DRAWN    | MAT |          |
| CHECKED  | JMD |          |

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| NO. | DATE | APPD |  | REVISION |  |

SCALE

NO SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL

WORK ZONE TRAFFIC CONTROL LEGEND & NOTES

BSA CONTRACT NO. 82000041

DWG: C16

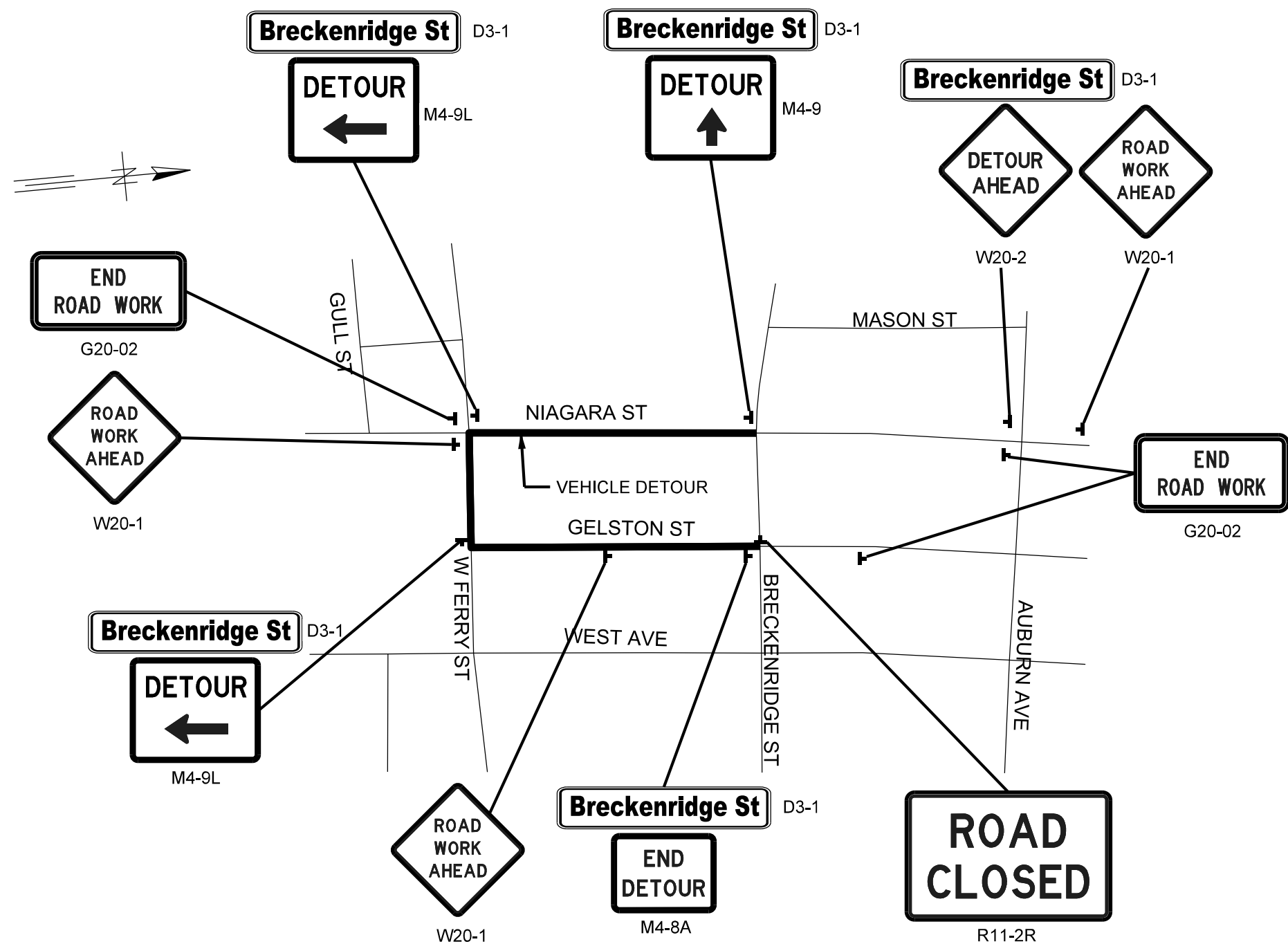
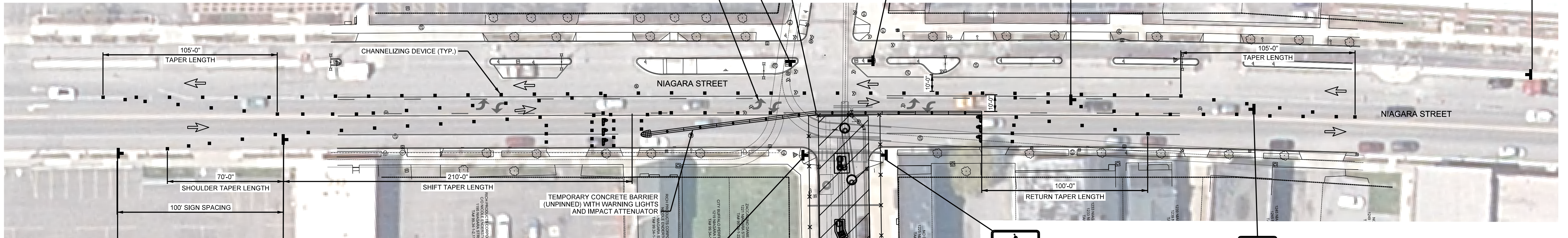
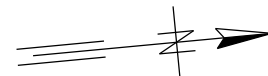
SHEET: 23 OF 85

DATE: FEBRUARY 2023

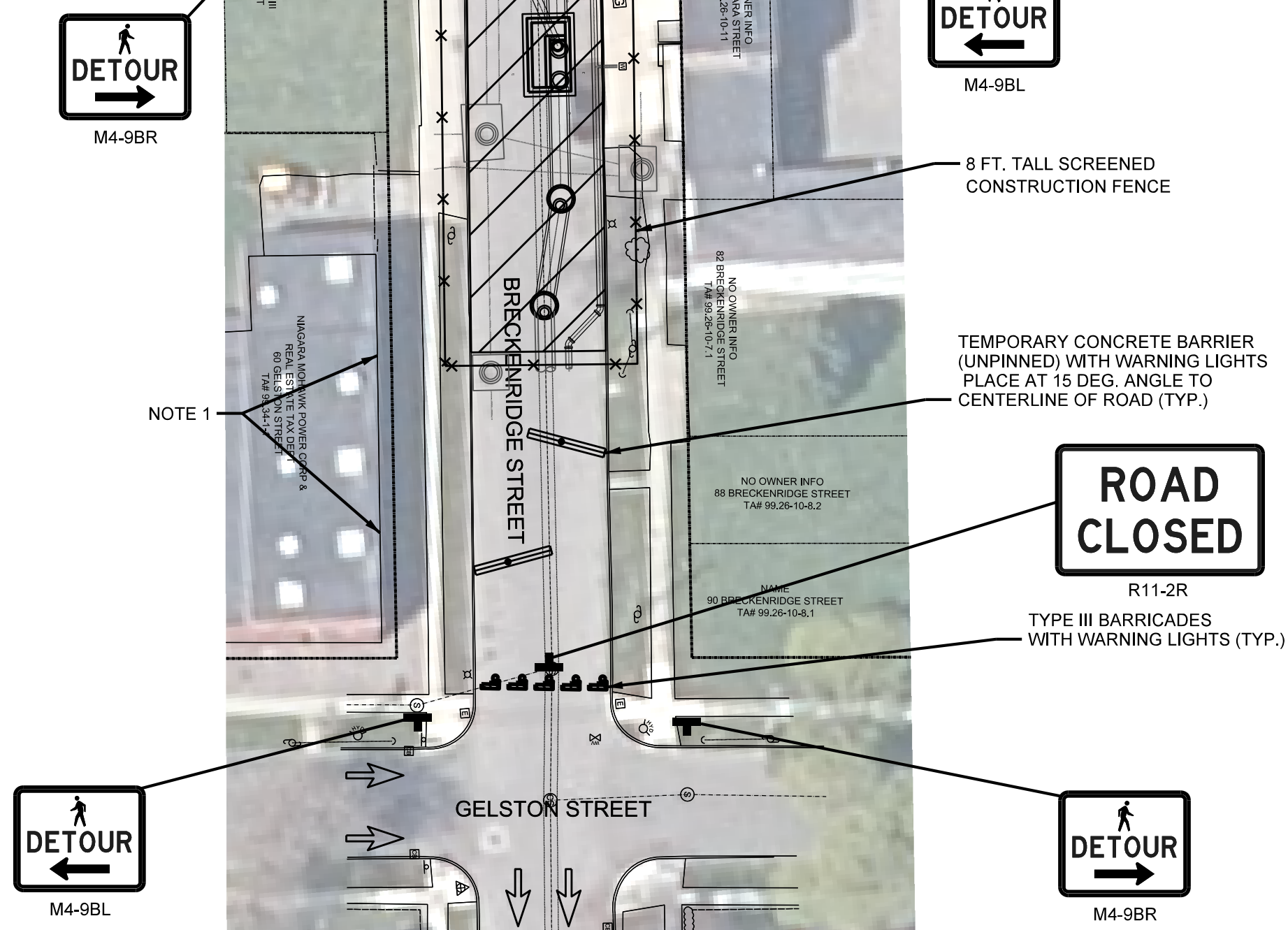
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VAJMDAVIDSON PROJECTS - ACTIVE/202202 BSA BRECKENRIDGE GATES RTCS/3.0 DIVGS/3.1 CADD STD/14122\_BROD\_JMD MICHAEL TERRANA



SITE DETOUR PLAN  
SCALED TO GRADE



WORK ZONE TRAFFIC CONTROL PLAN  
NIAGARA ST AT BRECKENRIDGE ST  
SCALE: 1" = 30'

NOTES:

1. CONTRACTOR SHALL REPLACE THE WATERLINE PRIOR TO INSTALLATION OF THE TEMPORARY CONCRETE BARRIER FOR THE WORK ZONE. INTERCONNECTION OF THE NEW WATERLINE TO THE EXISTING WATERLINE IN NIAGARA STREET SHALL BE COMPLETED USING FLAGGERS MAINTAINING AT LEAST ONE LANE OF TRAFFIC ON NIAGARA STREET. SEE NYSDOT STANDARD SHEET 619-323 "WORK ZONE TRAFFIC CONTROL TWO-LANE, TWO-WAY ROADWAY FLAGGING OPERATION AT INTERSECTION - SHORT TERM OPERATION" FOR FLAGGING AND WORK ZONE REQUIREMENTS DURING THAT OPERATION.
2. CONTRACTOR SHALL MAINTAIN ACCESS TO NATIONAL GRID'S BUILDING AND SITE FOR NATIONAL GRID STAFF FOR THE DURATION OF THE PROJECT.
3. SEE SITE DETOUR PLAN FOR ADVANCED WORK ZONE WARNING SIGNAGE NOT SHOWN ON THE ABOVE WORK ZONE PLAN.

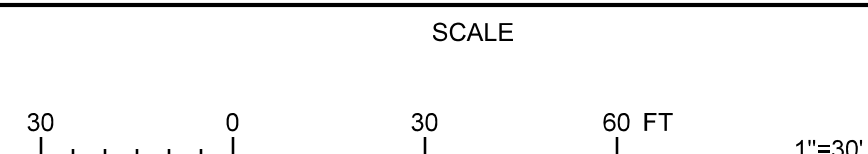
BUFFALO  
SEWER AUTHORITY

JM Davidson  
Engineering, D.P.C.

DESIGNED MAT  
DRAWN MAT  
CHECKED JMD

APPROVED

| NO. | DATE | APPD | REVISION |
|-----|------|------|----------|
|     |      |      |          |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC

WORK ZONE TRAFFIC CONTROL PLAN

BSA CONTRACT NO. 82000041

DWG: C17

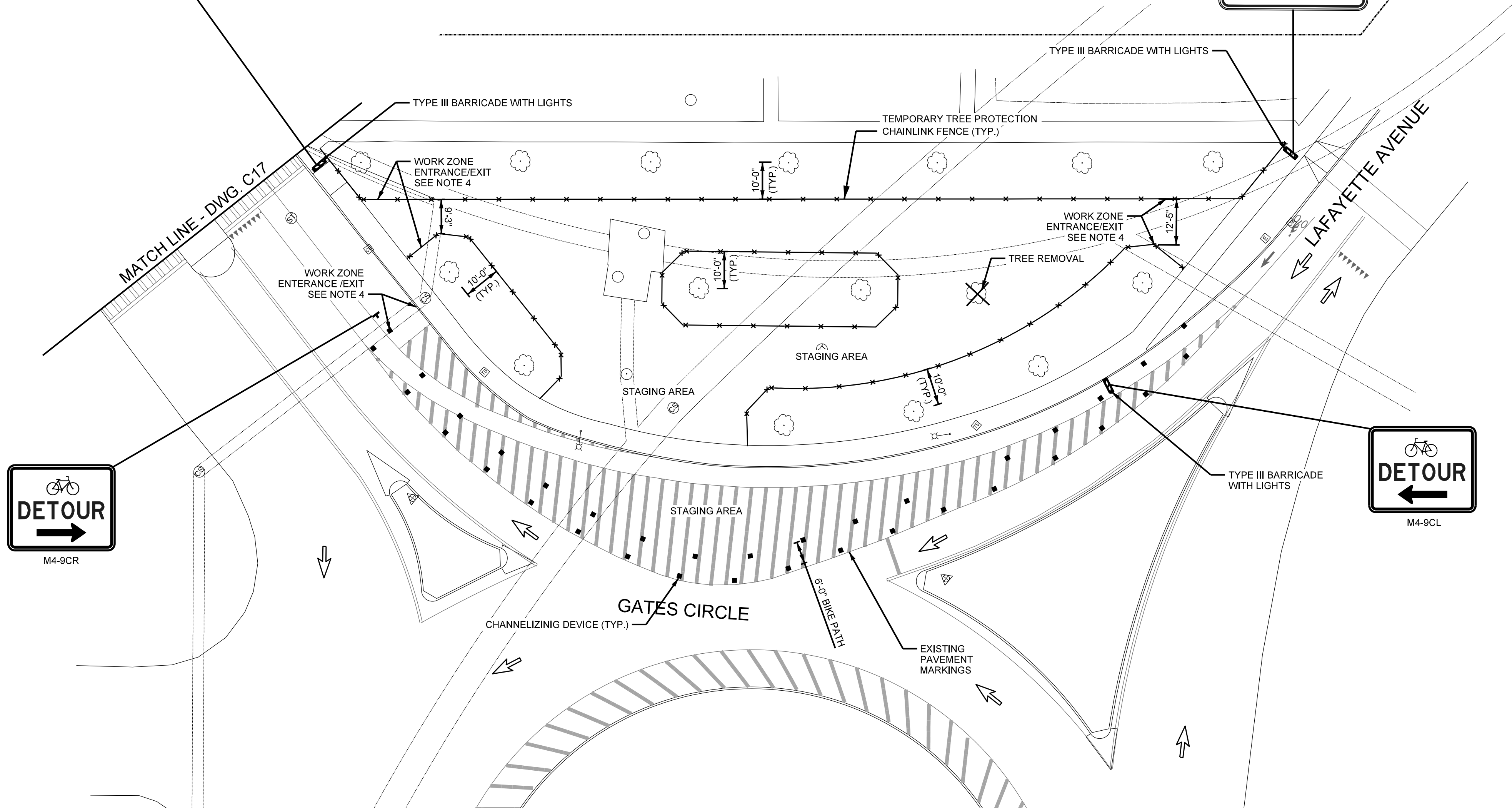
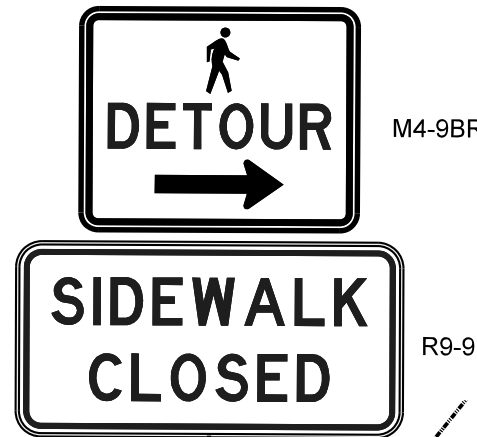
SHEET: 24 OF 85

DATE: FEBRUARY 2023 REV:

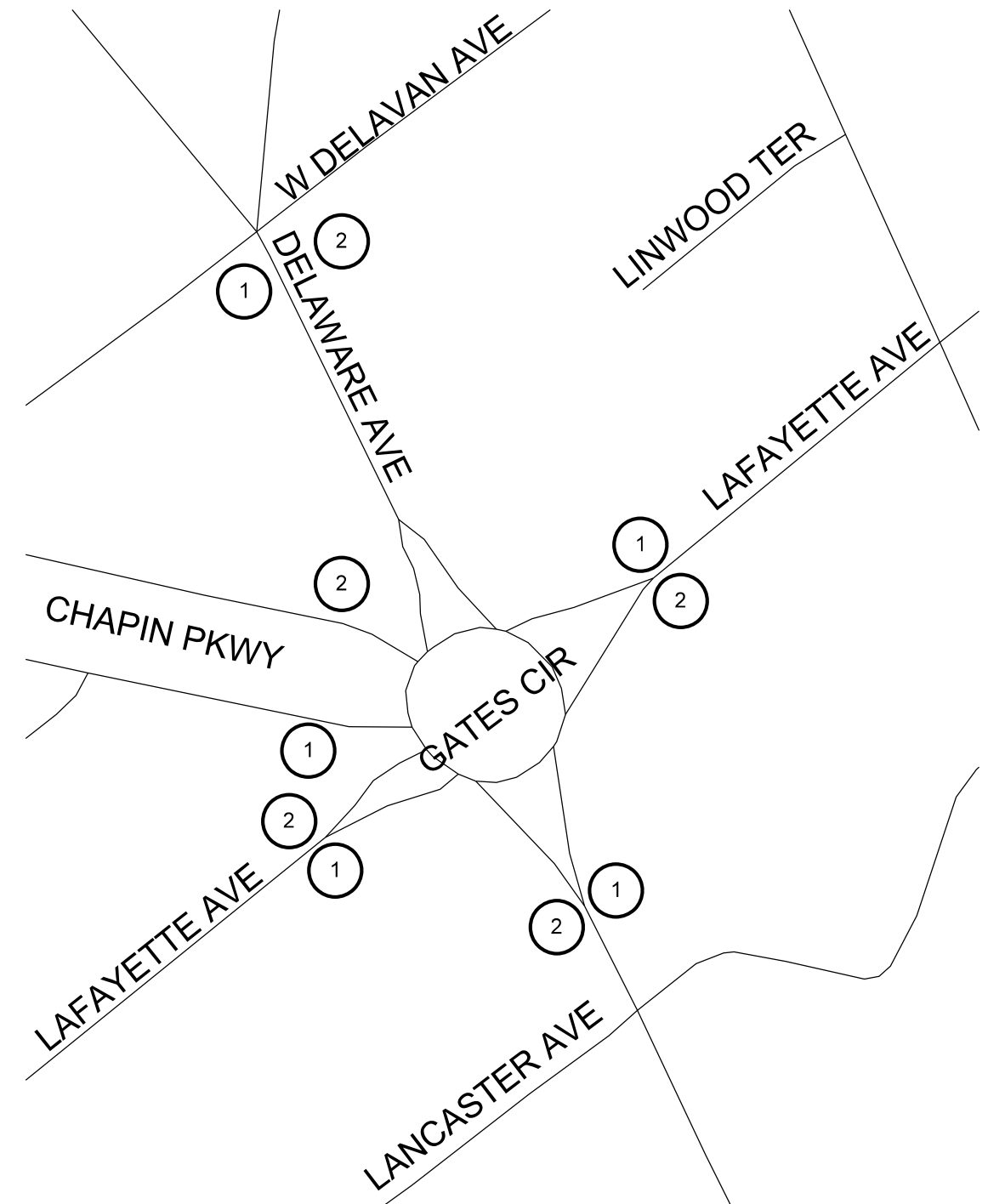
PRELIMINARY 95%



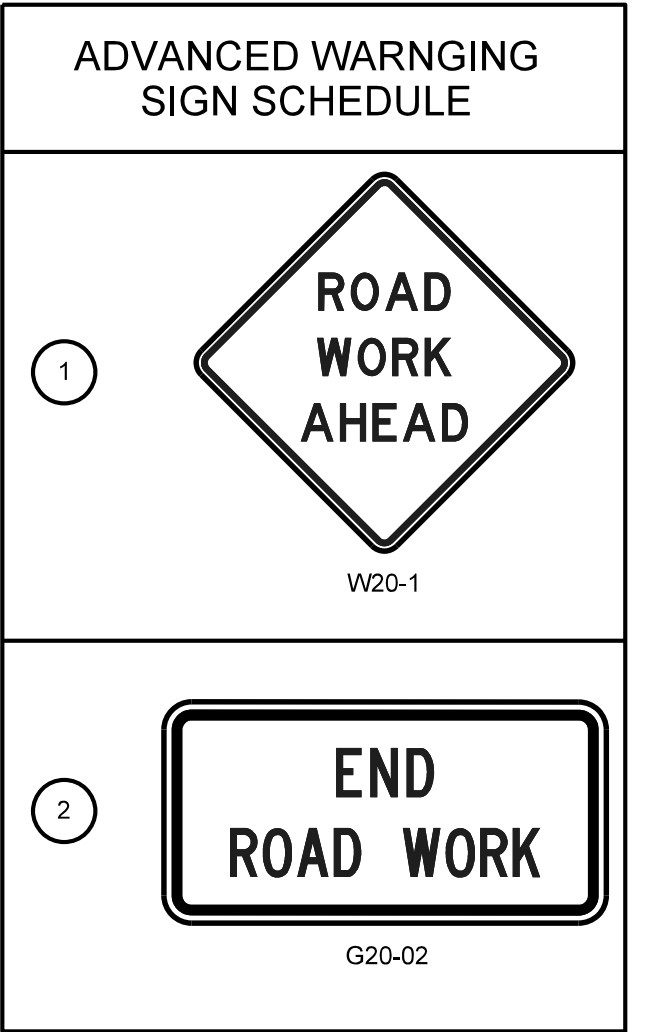
VAJMDAVIDSON PROJECTS - ACTIVE/262202 BSA BRECKENRIDGE GATES RTCS/3.0 DWGS/3.1 CADD STDS/14122\_BRDX\_JMD MICHAEL TERRANA



GATES CIRCLE WORK ZONE TRAFFIC CONTROL PLAN  
SCALE: 1" = 20'



ADVANCED WARNING SIGNAGE LAYOUT  
NOT TO SCALE

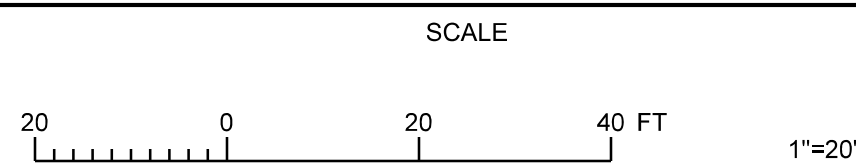


- NOTES:
- DETOUR EXISTING BIKE LANE FROM ALONG CURB LINE TO ALONG EDGE LINE AND PROVIDE DELINEATION DEVICES ALONG BOTH SIDES OF THE BIKE LANE FOR THE FULL LENGTH OF THE DETOUR.
  - CONTRACTOR ACCESS TO THE STAGING AREA IDENTIFIED ON THE PLAN SHALL BE MADE BY TEMPORARILY MOVING DELINEATION DEVICES FOR THE BIKE LANE. CONTRACTOR SHALL MAINTAIN SAFE ACCESS THROUGH THE WORK SITE FOR BIKES FOR THE DURATION OF THE PROJECT.
  - ANY DAMAGE TO THE ASPHALT PAVEMENT OR PAVEMENT MARKINGS WITHIN THE STAGING AREA AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
  - CONSTRUCTION VEHICLES ENTERING AND LEAVING THE WORK ZONE SHALL DO SO FROM THE LAFAYETTE AVE. OR DELAWARE AVE. LEGS OF THE TRAFFIC CIRCLE ONLY. VEHICLES SHALL NOT ENTER THE WORK ZONE DIRECTLY FROM THE CIRCULAR ROADWAY.
  - CONTRACTOR SHALL PROTECT EXISTING PAVEMENT AND GRANITE CURB AT CONSTRUCTION ENTRANCES / EXITS FROM DAMAGE. ALL CONCRETE SIDEWALKS DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED.
  - TREE BRANCHES IN CONFLICT WITH THE PROPOSED WORK AND ACCESS TO THE WORK LOCATIONS SHALL ONLY BE REMOVED BY A CERTIFIED ARBORIST.
  - ANY GRASS AREAS THAT BECOME COMPACTED BY OPERATION OF CONSTRUCTION EQUIPMENT SHALL BE EXCAVATED DOWN 1 FT. TO BREAKUP THE COMPACTED SOIL SUBGRADE AND INSTALL NEW TOPSOIL AND SEEDING ON THE DISTURBED AREA.

BUFFALO  
SEWER AUTHORITY

JM Davidson  
Engineering, D.P.C.

|          |      |          |          |  |  |
|----------|------|----------|----------|--|--|
| DESIGNED | MAT  | APPROVED |          |  |  |
| DRAWN    | MAT  |          |          |  |  |
| CHECKED  | JMD  |          |          |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |



SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

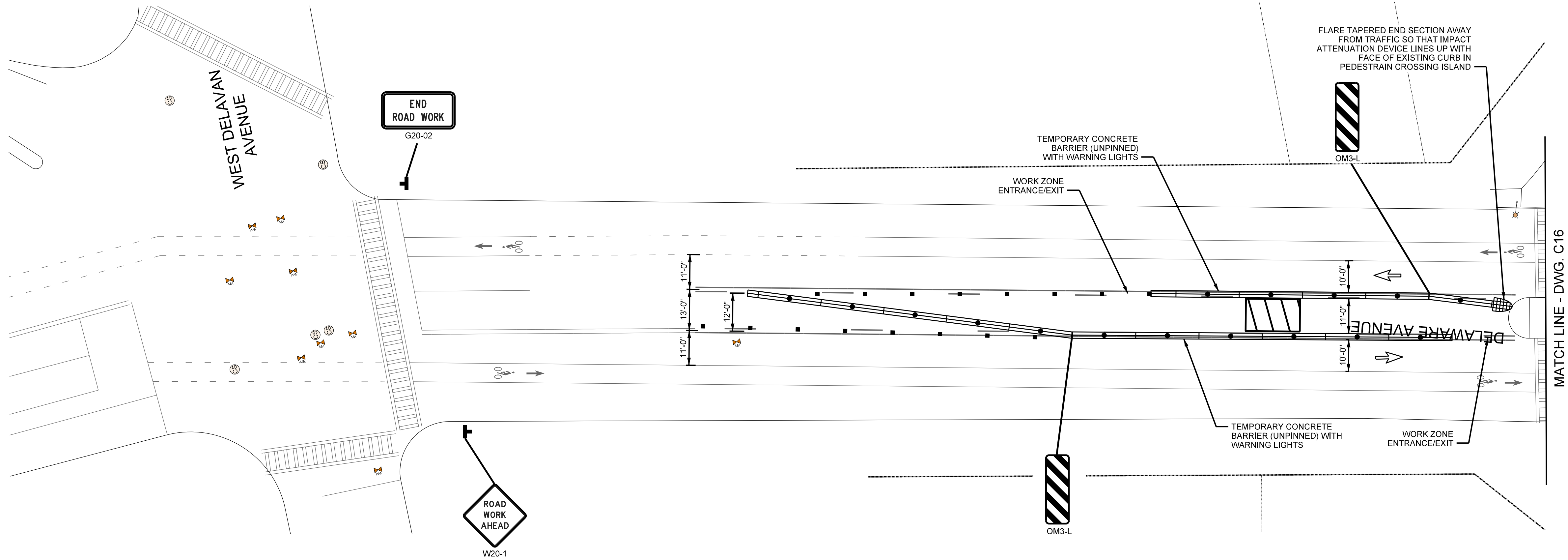
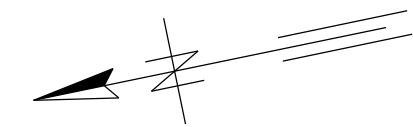
CIVIL  
GATES CIRCLE & DELAWARE AVE RTC  
  
WORK ZONE TRAFFIC CONTROL PLAN

|                           |               |      |    |
|---------------------------|---------------|------|----|
| BSA CONTRACT NO. 82000041 |               |      |    |
| DWG:                      | C18           |      |    |
| SHEET:                    | 25            | OF   | 85 |
| DATE:                     | FEBRUARY 2023 | REV: |    |

PRELIMINARY 95%



VAJMDAVIDSON PROJECTS - ACTIVE/262202 BSA BRECKENRIDGE GATES RTCS/3.0 DWGS/3.1 CADD STDS/14122\_BROD\_JMD MICHAEL TERRANA



DELAWARE AVENUE WORK ZONE TRAFFIC CONTROL PLAN  
SCALE: 1" = 20'

- NOTES:
- TEMPORARY CONCRETE BARRIER SHALL BE FLARED AWAY FROM TRAFFIC AT A RATE OF 8:1 IN ACCORDANCE WITH NYS DOT STANDARD SPECIFICATION SECTION 619-3.12 - TEMPORARY POSITIVE BARRIER.

PRELIMINARY 95%

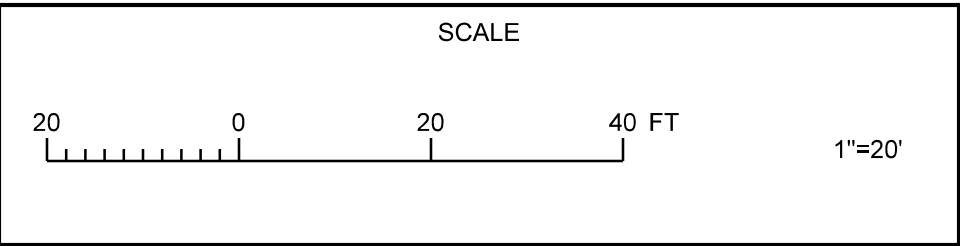
BUFFALO

SEWER AUTHORITY

JMDavidson

Engineering, D.P.C.

|          |      |          |          |  |  |
|----------|------|----------|----------|--|--|
| DESIGNED | MAT  | APPROVED |          |  |  |
| DRAWN    | MAT  |          |          |  |  |
| CHECKED  | JMD  |          |          |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |



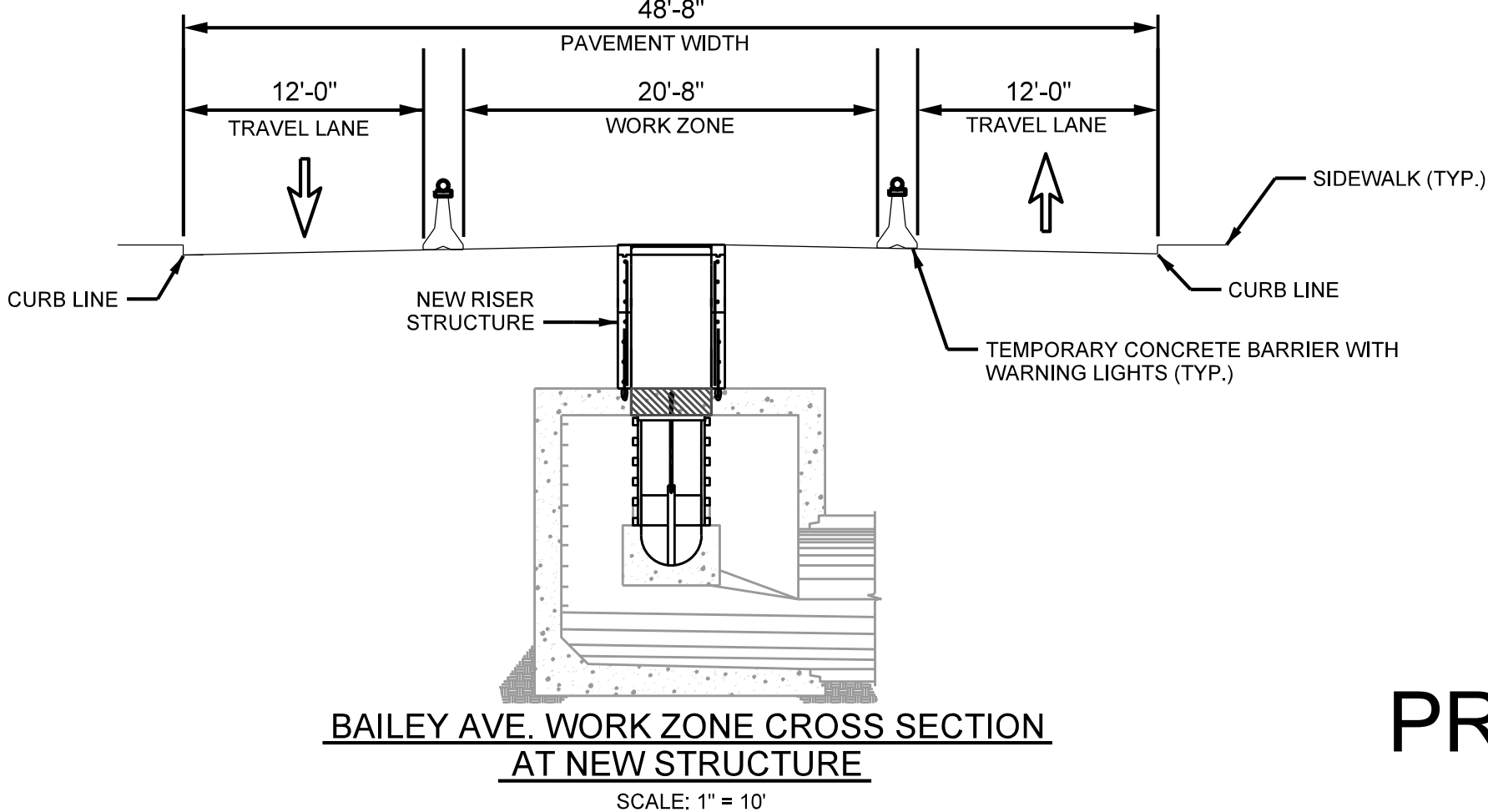
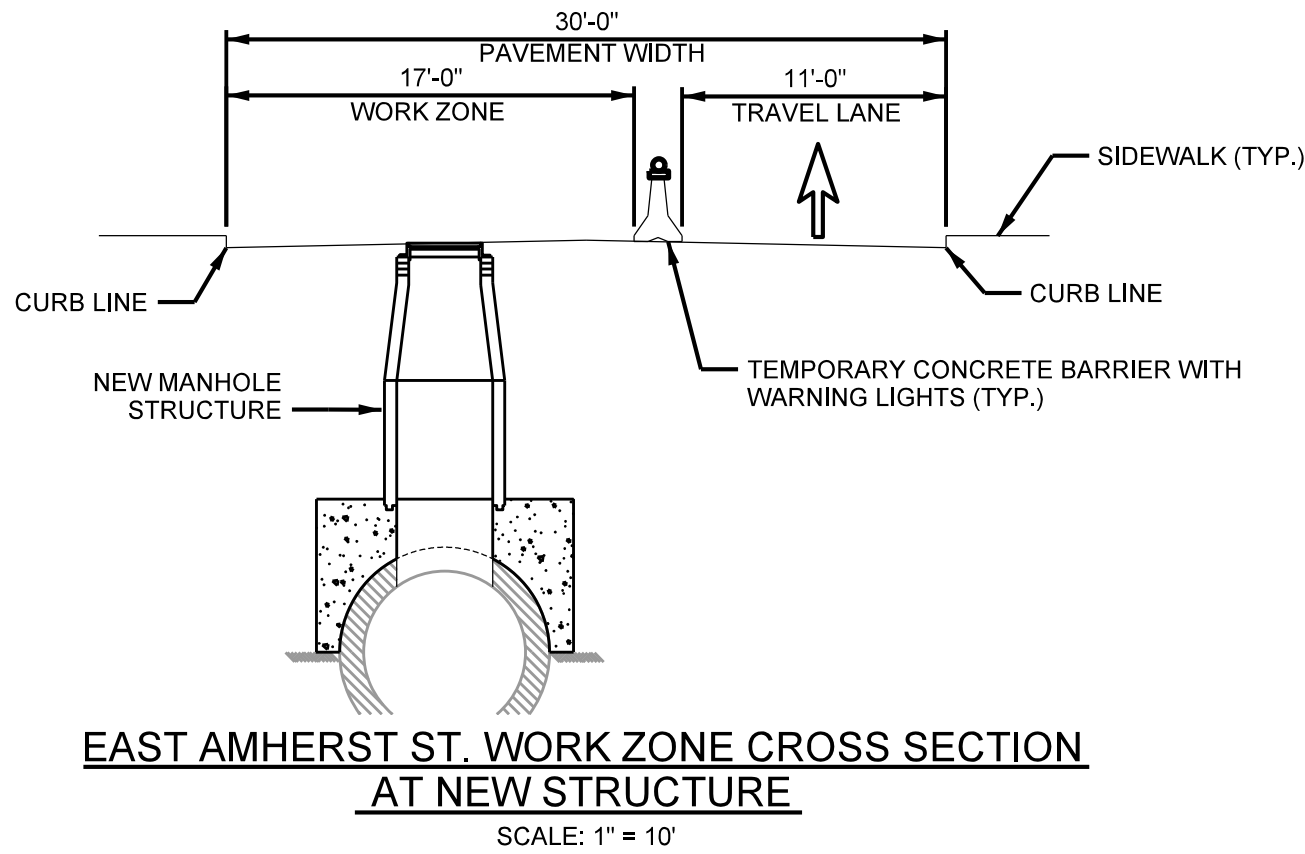
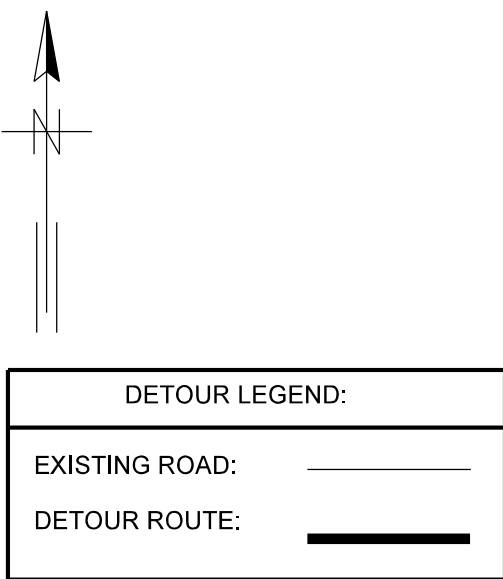
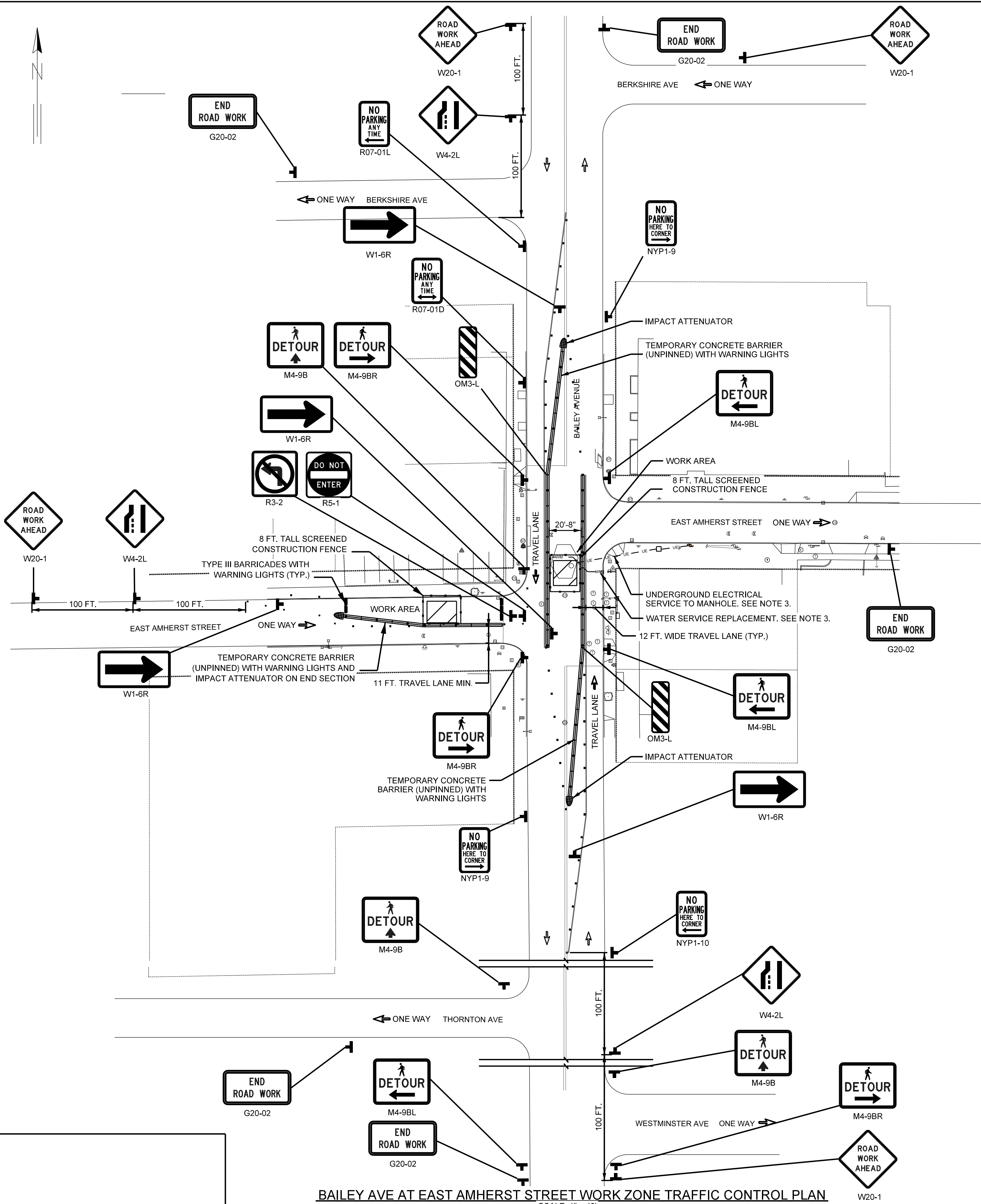
SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

|                                          |  |
|------------------------------------------|--|
| CIVIL<br>GATES CIRCLE & DELAWARE AVE RTC |  |
| WORK ZONE TRAFFIC CONTROL PLAN           |  |

|                           |               |
|---------------------------|---------------|
| BSA CONTRACT NO. 82000041 |               |
| DWG:                      | C19           |
| SHEET:                    | 26 OF 85      |
| DATE:                     | FEBRUARY 2023 |
| REV:                      |               |



VA\JMDAVIDSON PROJECTS - ACTIVE\262202 BSA BRECKENRIDGE GATES RTC\3.0 DWG\3.1 CADD STD\14122\_BRD\JMD MICHAEL TERRANA



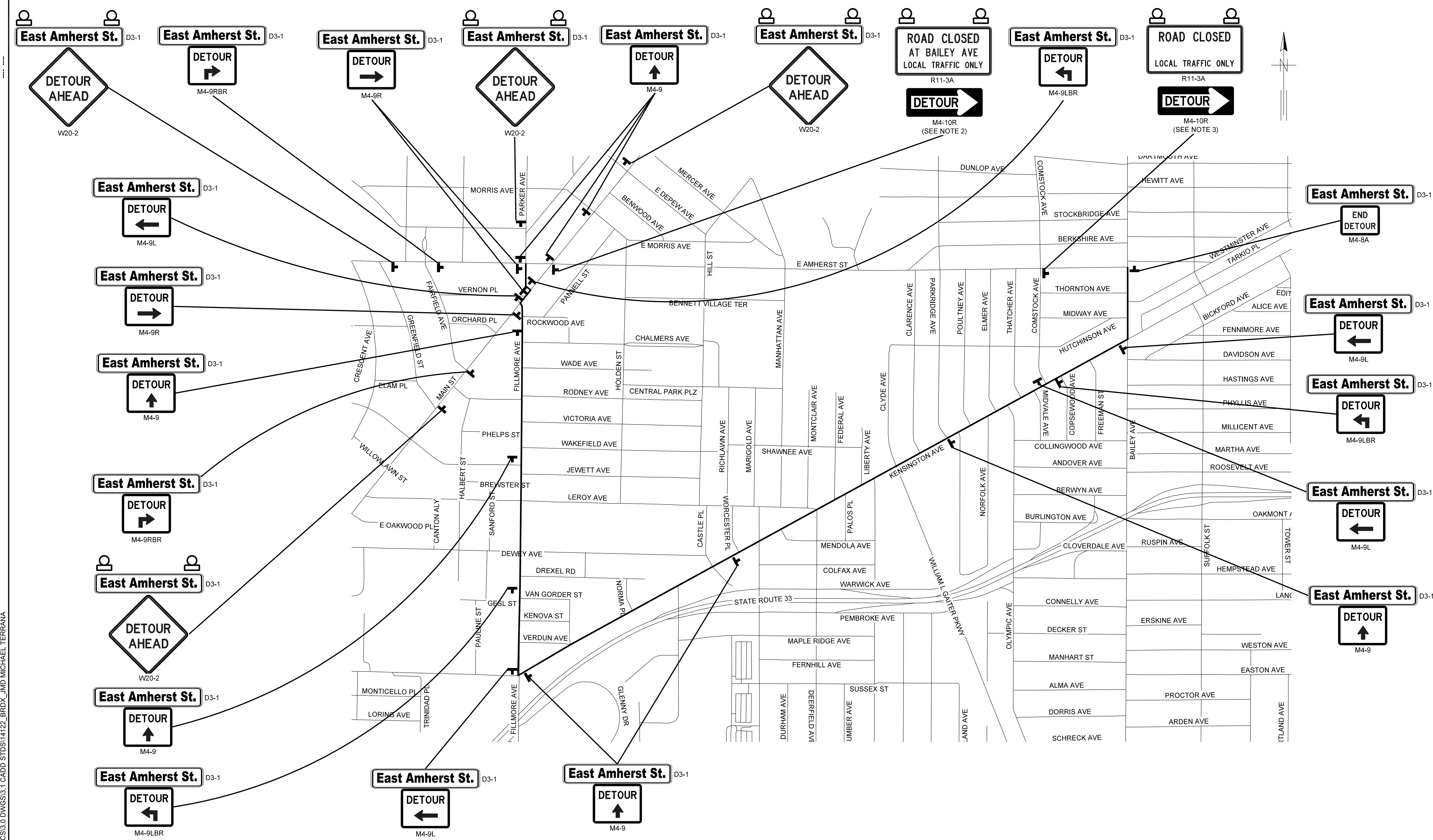
- NOTES:
- CONTRACTOR TO COORDINATE IMPLEMENTATION OF WORK ZONE WITH CITY OF BUFFALO TRAFFIC SO THAT EXISTING TRAFFIC SIGNAL CAN BE PLACED ON FLASHING YELLOW FOR THE DURATION THE WORK ZONE IS ACTIVE.
  - TEMPORARY CONCRETE BARRIER SHALL BE FLARED AWAY FROM TRAFFIC AT A RATE OF 3:1 IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION SECTION 619-3.12 - TEMPORARY POSITIVE BARRIER.
  - REPLACEMENT OF THE WATER SERVICE AND INSTALLATION OF THE UNDERGROUND ELECTRICAL CONDUITS SHALL BE PERFORMED WHEN THE TEMPORARY CONCRETE BARRIER IS NOT IN PLACE SO AS TO MAINTAIN BAILEY AVE. TRAFFIC DURING THAT SCOPE OF WORK. MAINTAIN TRAFFIC IN THE INTERSECTION IN ACCORDANCE WITH NYSDOT STANDARD SHEET 619-421 - WORK ZONE TRAFFIC CONTROL - TWO-LANE TWO-WAY ROADWAY FLAGGING OPERATION AT INTERSECTION.

PRELIMINARY 95%

|                                                      |          |      |          |          |  |  |  |                                                                                                                          |                                                              |                                         |                           |      |
|------------------------------------------------------|----------|------|----------|----------|--|--|--|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------|---------------------------|------|
| <div>JMDavidson</div> <div>Engineering, D.P.C.</div> | DESIGNED | MAT  | APPROVED |          |  |  |  | <div>SCALE</div> <div><div><div>40</div><div>0</div><div>40</div><div>80</div></div><div>FT</div><div>1"=40'</div></div> | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | CIVIL<br>BAILEY AVE & E. AMHERST ST RTC | BSA CONTRACT NO. 82000041 |      |
|                                                      | DRAWN    | MAT  |          |          |  |  |  |                                                                                                                          |                                                              |                                         | DWG: <div>C20</div>       |      |
|                                                      | CHECKED  | JMD  |          |          |  |  |  |                                                                                                                          |                                                              |                                         | SHEET: 27 OF 85           |      |
|                                                      |          |      |          |          |  |  |  |                                                                                                                          |                                                              |                                         | DATE: FEBRUARY 2023       | REV: |
|                                                      |          |      |          |          |  |  |  |                                                                                                                          |                                                              |                                         |                           |      |
|                                                      | NO.      | DATE | APPD     | REVISION |  |  |  |                                                                                                                          |                                                              |                                         |                           |      |



VAJMDAVIDSON PROJECTS - ACTIVE\262202 BSA BRECKENRIDGE GATES RTC\3.0 DWG\3.1 CADD STD\14122\_BRDX\_JMD MICHAEL TERRANA



- NOTES:
- SEE NYSDOT STANDARD SHEET 619-503 FOR REQUIRED SIGN PLACEMENT DISTANCES FROM INTERSECTIONS.
  - SIGNS SHALL BE MOUNTED ON TYPE III BARRICADES WITH WARNING LIGHTS. WARNING LIGHTS SHALL BE TYPE A LIGHTING PER NYSDOT SPECIFICATION SECTION 619 REQUIREMENTS. PLACE SIGN ALONG THE RIGHT SHOULDER OF ROAD.
  - SIGNS SHALL BE MOUNTED ON TYPE III BARRICADES WITH WARNING LIGHTS. WARNING LIGHTS SHALL BE TYPE A LIGHTING PER NYSDOT SPECIFICATION SECTION 619 REQUIREMENTS. PLACE SIGN IN CENTER OF STREET.

DETOUR LEGEND:

EXISTING ROAD:

DETOUR ROUTE:

WARNING LIGHT:

BUFFALO

SEWER AUTHORITY

JMDavidson

Engineering, D.P.C.

|          |      |          |          |
|----------|------|----------|----------|
| DESIGNED | MAT  | APPROVED |          |
| DRAWN    | MAT  |          |          |
| CHECKED  | JMD  |          |          |
| NO.      | DATE | APPD     | REVISION |

BAILEY AVE AT EAST AMHERST STREET WORK ZONE DETOUR PLAN

SCALE: NO SCALE

|          |
|----------|
| SCALE    |
| NO SCALE |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BAILEY AVE & E. AMHERST ST RTC

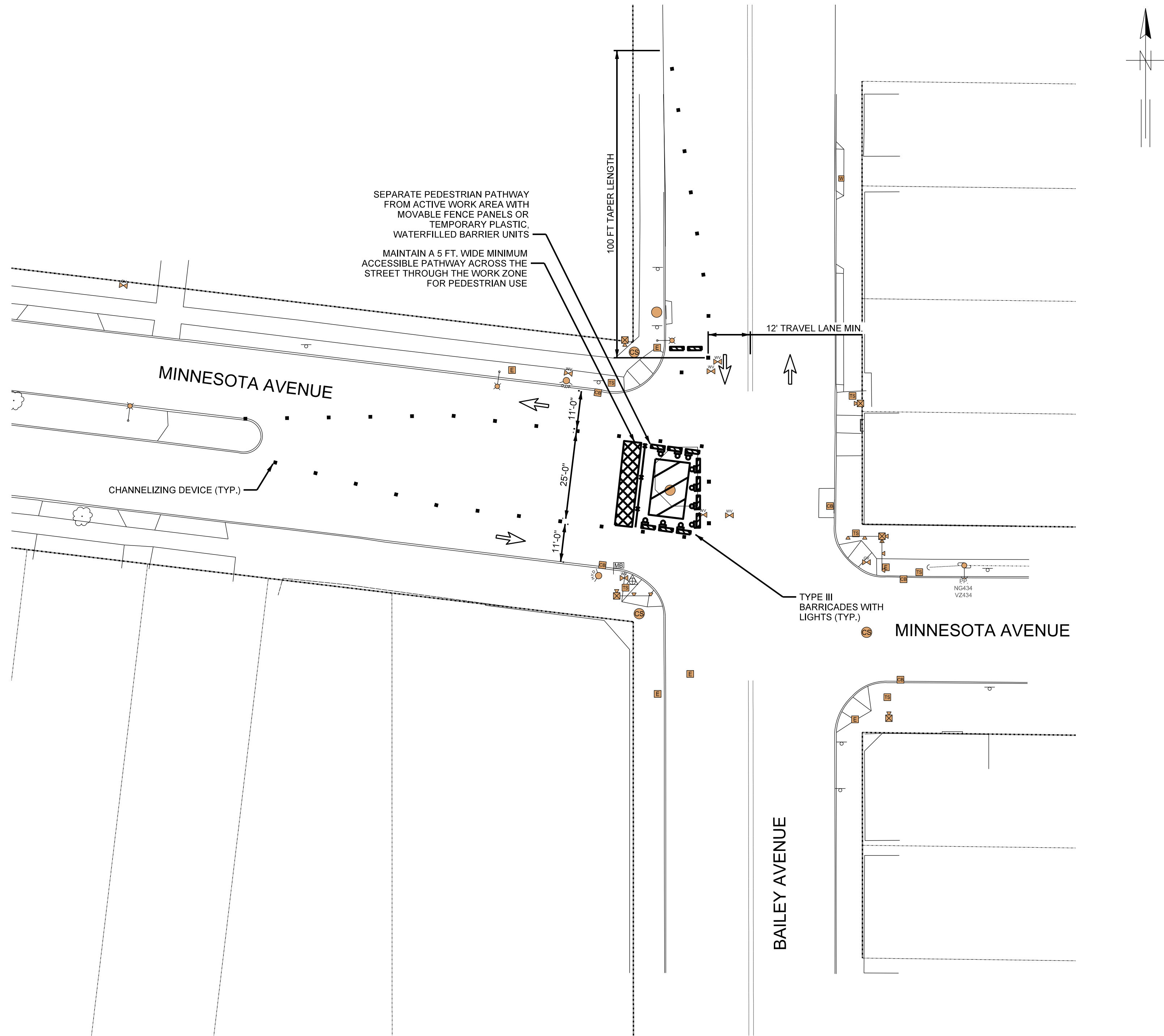
DETOUR PLAN

|                           |          |
|---------------------------|----------|
| BSA CONTRACT NO. 82000041 |          |
| DWG:                      | C21      |
| SHEET:                    | 28 OF 85 |
| DATE: FEBRUARY 2023       | REV:     |

PRELIMINARY 95%



VAJMDAVIDSON PROJECTS - ACTIVE 2/26/2022 BSA BRECKENRIDGE GATES RTCS 3.0 DWGS 3.1 CADD STDS 14122\_BROD\_JMD MICHAEL TERRANA



BAILEY AVE AT MINNESOTA AVE WORK ZONE TRAFFIC CONTROL PLAN  
SCALE: 1" = 20'

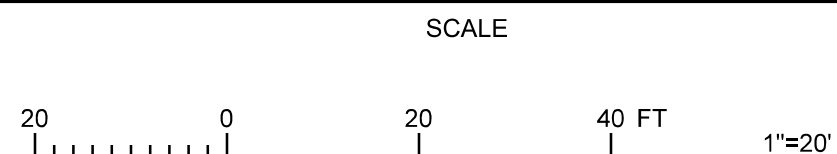
BUFFALO  
SEWER AUTHORITY

JMDavidson  
Engineering, D.P.C.

|          |     |
|----------|-----|
| DESIGNED | MAT |
| DRAWN    | MAT |
| CHECKED  | JMD |

APPROVED

|     |      |      |          |
|-----|------|------|----------|
| NO. | DATE | APPD | REVISION |
|     |      |      |          |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BAILEY AVE & MINNESOTA AVE SEWER IMPROVEMENTS

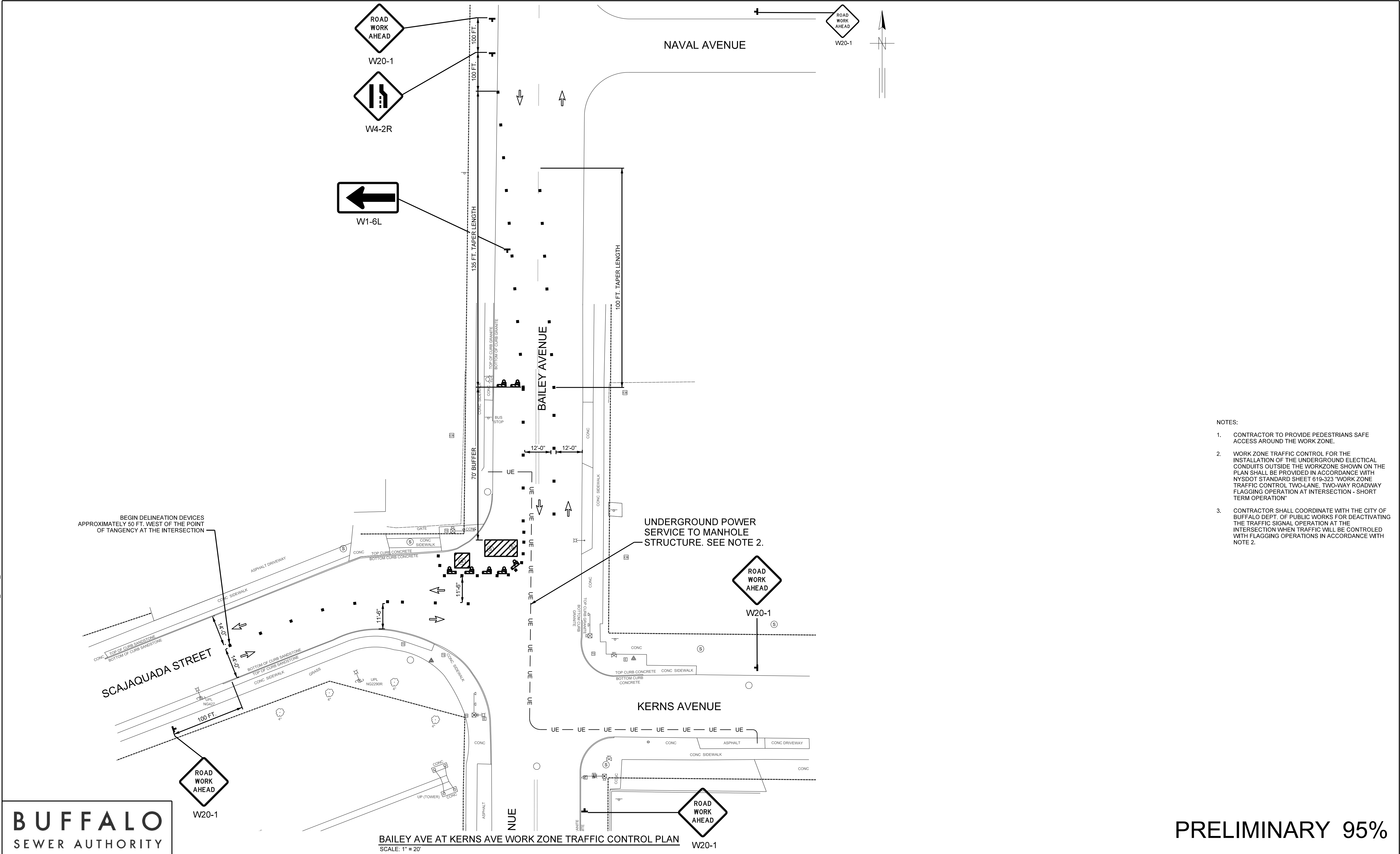
WORK ZONE TRAFFIC CONTROL PLAN

|                           |               |
|---------------------------|---------------|
| BSA CONTRACT NO. 82000041 |               |
| DWG:                      | C22           |
| SHEET:                    | 29 OF 85      |
| DATE:                     | FEBRUARY 2023 |
| REV:                      |               |

PRELIMINARY 95%



VAJMDAVIDSON PROJECTS - ACTIVE/262202 BSA BRECKENRIDGE GATES RTCS/3.0 DWGS/3.1 CADD STDS/14122\_BROD\_JMD MICHAEL TERRANA



- NOTES:
1. CONTRACTOR TO PROVIDE PEDESTRIANS SAFE ACCESS AROUND THE WORK ZONE.
  2. WORK ZONE TRAFFIC CONTROL FOR THE INSTALLATION OF THE UNDERGROUND ELECTRICAL CONDUITS OUTSIDE THE WORKZONE SHOWN ON THE PLAN SHALL BE PROVIDED IN ACCORDANCE WITH NYSDOT STANDARD SHEET 619-323 "WORK ZONE TRAFFIC CONTROL TWO-LANE, TWO-WAY ROADWAY FLAGGING OPERATION AT INTERSECTION - SHORT TERM OPERATION"
  3. CONTRACTOR SHALL COORDINATE WITH THE CITY OF BUFFALO DEPT. OF PUBLIC WORKS FOR DEACTIVATING THE TRAFFIC SIGNAL OPERATION AT THE INTERSECTION WHEN TRAFFIC WILL BE CONTROLLED WITH FLAGGING OPERATIONS IN ACCORDANCE WITH NOTE 2.

BUFFALO

SEWER AUTHORITY

JMDavidson

Engineering, D.P.C.

|          |      |          |          |  |  |
|----------|------|----------|----------|--|--|
| DESIGNED | MAT  | APPROVED |          |  |  |
| DRAWN    | MAT  |          |          |  |  |
| CHECKED  | JMD  |          |          |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |

SCALE

20 0 20 40 FT

1"=20'

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

|                                    |  |                           |  |
|------------------------------------|--|---------------------------|--|
| CIVIL<br>BAILEY AT KERNS (SPP 338) |  | BSA CONTRACT NO. 82000041 |  |
| DWG: C23                           |  |                           |  |
| SHEET: 30 OF 85                    |  |                           |  |
| DATE: FEBRUARY 2023                |  | REV:                      |  |



RL20224203201 BSA RTC SMART SEWERS18 CADDSTRUCTS01 STRUCTURAL NOTES THOMAS MCCOY

GENERAL NOTES

- A. ALL STRUCTURAL WORK WILL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, HAZARDOUS MATERIALS, AND ALL OTHER TRADE DRAWINGS AND SHALL CONFORM TO THE PROJECT SPECIFICATIONS INCLUDING THE BUILDING CODE OF NEW YORK STATE, LATEST EDITION.
- B. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING, BRACING, AND MAKE SAFE ALL FLOORS, ROOFS, WALLS, AND ADJACENT PROPERTY AS PROJECT CONDITIONS REQUIRE. SHORING SHALL BE DESIGNED BY A STATE OF NEW YORK LICENSED PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR, WHO SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR THE ENGINEER TO REVIEW AND APPROVE.
- C. DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION SHOWN IN THE STRUCTURAL DRAWINGS ARE BASED ON INFORMATION OBTAINED IN VARIOUS ORIGINAL DESIGN AND CONSTRUCTION DOCUMENTS PROVIDED BY THE OWNER AND LIMITED FIELD OBSERVATIONS AND MEASUREMENTS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY ACTUAL MEASUREMENT AND OBSERVATION AT THE SITE. ALL DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE OF RECORD FOR EVALUATION BEFORE THE AFFECTED CONSTRUCTION IS PUT IN PLACE.
- D. CHECK ALL DIMENSIONS AGAINST THE REQUIREMENTS OF OTHER CONTRACT DOCUMENTS. RESOLVE APPARENT INCONSISTENCIES IN THE CONTRACT DOCUMENTS WITH THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH WORK.
- E. PROMPTLY NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY STRUCTURAL MEMBER CALLED OUT ON THE CIVIL, MECHANICAL, INSTRUMENTATION OR ELECTRICAL DRAWINGS THAT IS NOT IDENTIFIED ON THE STRUCTURAL DRAWINGS. DESIGN OF THESE MEMBERS WILL BE PROVIDED AS NECESSARY BY THE STRUCTURAL ENGINEER UPON NOTIFICATION.
- F. NO MODIFICATIONS, ALTERATION OR REPAIR SHALL BE MADE WITHOUT PRIOR REVIEW BY STRUCTURAL ENGINEER. SUBMIT DETAILS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK.
- G. WHERE INCIDENTAL WORK IS REQUIRED TO ACCOMPLISH WORK SHOWN ON THE DRAWINGS, THIS WORK IS IMPLIED AND SHALL BE INCLUDED AS PART OF THE BASE BID.
- H. PRIOR TO ANY WORK COMMENCING IN AN AREA, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF HIS INTENTION TO WORK IN THE AREA AND SHALL SCHEDULE A WALK THROUGH WITH THE PROJECT ENGINEER TO DETERMINE EXISTING CONDITIONS. AFTER THE WORK, THE EXISTING WORK AREAS SHALL BE RETURNED TO THEIR ORIGINAL STATE BEFORE FINAL APPROVAL SHALL BE GIVEN.
- I. ALL COSTS OF INVESTIGATION AND/OR REDESIGN, DUE TO CONTRACTOR MISLOCATION OF STRUCTURAL ELEMENTS OR OTHER LACK OF CONFORMANCE WITH THE PROJECT DOCUMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
- J. WASTE MATERIAL CREATED FROM MASONRY, CONCRETE AND STRUCTURAL STEEL REMOVAL OPERATIONS MUST DISPOSED OF BY THE CONTRACTOR LEGALLY AND IN COMPLIANCE WITH ALL NECESSARY REGULATIONS.

SPECIAL INSPECTIONS

- A. OWNER/CONTRACTOR SHALL PROVIDE AN OUTSIDE TESTING AGENCY TO PERFORM THE FOLLOWING SPECIAL INSPECTIONS IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AND THE 2016 NYS BUILDING STANDARDS AND CODES UNIFORM CODE SUPPLEMENT:
1. EARTHWORK/ SOILS

2. QUALITY CONTROL OF CONCRETE MATERIALS, BATCHING, STRENGTH, SLUMP, AIR CONTENT, UNIT WEIGHT, TEMPERATURE, FORMS, SIZE AND PLACEMENT OF REINFORCEMENT.

3. STABILITY OF BUILDING CONSTRUCTION.

4. POST-INSTALLED ANCHOR INSTALLATION.
- B. SEE THE STATEMENT OF SPECIAL INSPECTIONS INCLUDED IN THE PROJECT MANUAL FOR A COMPLETE LIST OF REQUIRED SPECIAL INSPECTIONS.
- C. THE TESTING AGENCY FOR THE INSPECTIONS WILL FILE ALL APPROPRIATE FORMS WITH THE CODE ENFORCEMENT OFFICIAL, ARCHITECT AND ENGINEER-OF-RECORD.
- D. CONTRACTOR SHALL COORDINATE WITH THE TESTING AGENCY, AND PROVIDE A MINIMUM OF FORTY-EIGHT HOURS ADVANCE NOTIFICATION.

FOUNDATION NOTES

- A. THE FOUNDATIONS HAVE BEEN DESIGNED TO THE REQUIREMENTS SET IN THE GEOTECHNICAL REPORTS PREPARED BY WMA ENGINEERING DPC, dba: EMPIRE GEOTECHNICAL ENGINEERING SERVICES , DATED JULY 15, 2022 AND NOVEMBER 21, 2022.
- B. THE SUBSURFACE CONDITIONS DESCRIBED IN THE GEOTECHNICAL REPORT REPRESENT CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND TIME THEY WERE INVESTIGATED. SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS SHOULD BE CONSIDERED APPROXIMATE.
- C. ALL PROPOSED FOOTINGS SHALL BEAR ON ROCK, A MUD SLAB OVER UNDISTURBED SOILS OR COMPACTED ENGINEERED FILL.
- D. EXTERIOR CONSTRUCTION SHALL EXTEND DOWN TO SUBGRADE NOT LESS THAN FOUR FEET BELOW FINISHED EXTERIOR GRADE.
- E. OWNER'S GEOTECHNICAL CONSULTANT SHALL INSPECT AND APPROVE ALL EXCAVATIONS AND BEARING SUBGRADE PRIOR TO PLACEMENT OF CONCRETE.
- F. DO NOT PLACE CONCRETE IN EXCAVATIONS CONTAINING FREE WATER, FROST, ICE OR FROZEN GROUND.
- G. REMOVE ALL ORGANIC AND UNSUITABLE MATERIAL PRIOR TO PLACING FILL. IF ON-SITE MATERIAL IS UNSUITABLE OR CANNOT BE COMPACTED AS REQUIRED, THE CONTRACTOR SHALL PROVIDE BORROW MATERIAL AS REQUIRED.
- H. DO NOT BACKFILL BEHIND FOUNDATION WALLS UNTIL PERMANENT LATERAL STRUCTURAL SUPPORT SYSTEM IS IN PLACE AND OPERATIONAL. BACKFILL AGAINST FOUNDATION WALLS SO THAT THE DIFFERENCE IN FILL LEVELS ON OPPOSITE SIDES OF THE WALL DOES NOT EXCEED 1'-0" AT ANY TIME.
- I. PROVIDE POSITIVE PROTECTION FOR ALL EXCAVATION SLOPES AGAINST INSTABILITY AND DETERIORATION DUE TO GROUNDWATER, RAIN, WIND, SNOW OR ICE.
- J. EXPOSED SUBGRADE SOILS MAY BE SENSITIVE TO DISTURBANCE, CONTROL SURFACE AND GROUND WATER BY SITE GRADING, CUTOFF TRENCHES, SUMP AND PUMP METHODS OF DEWATERING. DO NOT POND WATER ON THE SUBGRADES.
- K. FOUNDATION UNITS SHALL BE CENTERED UNDER SUPPORTED STRUCTURAL MEMBERS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- L. PROJECT ADJACENT STRUCTURES FROM CONSTRUCTION ACTIVITIES AND LOADS.

CONCRETE NOTES

- A. ALL CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318), LATEST EDITION AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE," LATEST EDITION.
- B. DO NOT USE CALCIUM CHLORIDE IN ANY CONCRETE.
- C. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS, UNLESS OTHERWISE SPECIFIED. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- D. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 WITH ULTIMATE TENSILE STRENGTH OF 90,000 PSI. REINFORCING STEEL SHALL BE DETAILED ACCORDING TO THE ACI "DETAILS AND DETAILING OF REINFORCEMENT", (ACI 315), LATEST EDITION.
- E. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE NECESSARY CHAIRS, REBAR, TIES, SPACERS, ETC., TO SECURE AND SUPPORT THE REINFORCEMENT WHILE PLACING THE CONCRETE.
- F. DOWEL EMBEDMENTS SHALL BE INSTALLED USING EPOXY ADHESIVE AS SHOWN ON THE DRAWINGS AND SPECIFICATIONS.
- G. WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A1064 WITH A MINIMUM YIELD STRENGTH OF 70,000 PSI.
- H. LAP WELDED WIRE FABRIC ONE FULL MESH PANEL OR TWO FULL MESH PANELS OR 1'-0" MIN. AT CONSTRUCTION JOINTS AND TIE SECURELY.
- I. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
- J. CONSTRUCTION JOINTS SHOWN ON DRAWINGS OR REFERENCED IN SPECIFICATIONS ARE MANDATORY, ADDITIONS OR CHANGES SHALL NOT BE MADE EXCEPT WITH THE SUBMISSION OF A WRITTEN REQUEST TOGETHER WITH DRAWINGS OF PROPOSED JOINT LOCATIONS FOR APPROVAL OF THE ENGINEER. VERTICAL CONSTRUCTION JOINTS IN ALL WALLS SHALL BE LOCATED AT LEAST 4'-0" FROM ANY SUPPORTING COLUMN OR WALL OPENING. HORIZONTAL JOINTS IN WALLS OTHER THAN THOSE DETAILED SHOULD BE AVOIDED. NO HORIZONTAL JOINTS WILL BE ALLOWED IN FOOTINGS OR GRADE BEAMS.
- K. REINFORCEMENT IS TO BE CONTINUOUS AROUND CORNERS, LAPPED AT NECESSARY SPLICES AND HOOKED AT DISCONTINUOUS ENDS. LAPS SHALL BE CLASS B TENSION SPLICES UNLESS NOTED OTHERWISE.
- L. ALL SPLICES SHALL BE LAPPED IN ACCORDANCE WITH ACI 318. THE LOCATIONS SHALL BE INDICATED ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. SPLICES SHALL BE STAGGERED AND LOCATED AWAY FROM THE SECTION OF MAXIMUM TENSILE STRESS. ALL REINFORCEMENT SHALL BE ACCURATELY PLACED AND SECURELY WIRED TO PREVENT DISLOCATION FROM PROPER POSITION. PROVIDE CHAIRS FOR SUPPORT OF ALL REINFORCEMENTS. LIFTING OF BARS OR MESH DURING PLACEMENT OF CONCRETE IS NOT PERMITTED.
- M. SHOP DRAWINGS OF REINFORCING STEEL SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. NO CONCRETE WORK SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS.
- N. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS AND PIPE SLEEVES WITH CIVIL, MECHANICAL AND INSTRUMENTATION DRAWINGS. THE MINIMUM CLEAR DISTANCE OF CONCRETE BETWEEN SLEEVES SHALL BE 6 INCHES.
- O. CLEAN AND ROUGHEN TO 1/4" AMPLITUDE ALL EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE PRIOR TO PLACEMENT.
- P. CONCRETE PLACEMENT SHALL BE LIMITED BY THE FOLLOWING LENGTH AND AREA, UNLESS NOTED OTHERWISE:
- | MAX AREA<br>( SQ FT ) | MAX LENGTH<br>( FT ) |
|-----------------------|----------------------|
| -                     | 60                   |
| 900                   | 30                   |
- Q. REFER TO ACI 305 FOR PLACING CONCRETE IN HOT WEATHER AND ACI 306 FOR REQUIREMENTS FOR PLACING CONCRETE IN COLD WEATHER.
- R. PROVIDE THE FOLLOWING MINIMUM CLEARANCE FROM FACE OF CONCRETE TO REINFORCEMENT, UNLESS NOTED OTHERWISE:
- |                | 3/4"                     |
|----------------|--------------------------|
| SLABS          | 1 1/2"                   |
| BEAMS, COLUMNS | 3"                       |
| FOOTINGS       | 2" FOR #6 OR LARGER      |
| EXTERIOR WALLS | 1 1/2" FOR #5 OR SMALLER |

EARTHWORK

- A. REFER TO SPECIFICATION SECTIONS: 312323 BACKFILLING AND 321123 BASE COURSES

POST-INSTALLED ANCHOR NOTES

- A. POST-INSTALLED ANCHORS SHALL ARE AS INDICATED ON THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE WITH THEIR RESPECTIVE ICC-ES REPORT AND MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
- B. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY ANCHOR MANUFACTURER, THE APPLICABLE ICC-ES REPORT OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT INCLUDING AN ICC-ES REPORT SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE, SEISMIC USE, LOAD RESISTANCE, INSTALLATION CATEGORY, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, ETC.
- C. HOLE DRILLING AND CLEANING OPERATIONS FOR POST INSTALLED ANCHORS SHOULD CAPTURE CRYSTALLINE SILICA DUST IN ACCORDANCE WITH OSHA 29 CFR 1926.1153 USING AN APPROVED METHOD AS DESCRIBED IN TABLE 1 OF THE SAME OSHA REGULATION.
- D. ADHESIVE ANCHORS INSTALLED IN A HORIZONTALLY OR UPWARDLY INCLINED ORIENTATION INTO CONCRETE AND SUPPORTING A SUSTAINED TENSION LOAD SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER. INSTALLER SHALL BE CERTIFIED THROUGH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR APPROVED EQUAL.
- E. CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON-SITE ANCHOR INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. CONTRACTOR SHALL SUBMIT DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL INSTALLING ANCHORS HAVE RECEIVED THE REQUIRED TRAINING PRIOR TO THE COMMENCEMENT OF WORK.
- F. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- G. CONTINUOUS OR PERIODIC SPECIAL INSPECTION FOR POST INSTALLED ANCHORS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4.3 OR SECTION 4.4 OF THE ICC-ES REPORT FOR EACH RESPECTIVE ANCHOR. SPECIAL INSPECTOR SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK TO COORDINATE INSPECTION EFFORTS.

ABBREVIATIONS

|                |                       |      |                        |       |                         |
|----------------|-----------------------|------|------------------------|-------|-------------------------|
| AB             | ANCHOR BOLT           | EXP  | EXPANSION              | RD    | ROOF DRAIN              |
| AFF            | ABOVE FINISHED FLOOR  | FDN  | FOUNDATION             | REF   | REFERENCE               |
| AFG            | ABOVE FINISHED GRADE  | FF   | FINISHED FLOOR         | REINF | REINFORCING             |
| B/B            | BACK TO BACK          | F/F  | FACE TO FACE           | REQD  | REQUIRED                |
| BLDG           | BUILDING              | FIN  | FINISH FLOOR           | RO    | ROUGH OPENING           |
| BLK            | BLOCK                 | FLR  | FLOOR                  | SC    | SLIP CRITICAL           |
| BM             | BEAM/BENCHMARK        | FOC  | FACE OF CONCRETE       | SCH   | SCHEDULE                |
| BS             | BOTH SIDES            | FOM  | FACE OF MASONRY        | SCN   | SHEAR CONNECTOR         |
| BTWN           | BETWEEN               | FTG  | FOOTING                | SF    | SQUARE FOOT/SQUARE FEET |
| BTM            | BOTTOM                | GA   | GAUGE                  | SHT   | SHEET                   |
| BW             | BOTH WAYS             | GALV | GALVANIZED             | SIM   | SIMILAR                 |
| C/C            | CENTER TO CENTER      | GC   | GENERAL CONTRACTOR     | SJ    | SAWCUT JOINT            |
| CI             | CAST IRON             | GND  | GROUND                 | SPECS | SPECIFICATIONS          |
| CJ             | CONCRETE JOINT        | ID   | INSIDE DIAMETER        | SQ    | SQUARE                  |
| CLG            | CEILING               | IJ   | ISOLATION JOINT        | SS    | STAINLESS STEEL         |
| CLR            | CLEAR                 | INV  | INVERT                 | STD   | STANDARD                |
| CMP            | CORRUGATED METAL PIPE | LLH  | LONG LEG HORIZONTAL    | STL   | STEEL                   |
| CMU            | CONCRETE MASONRY UNIT | LLV  | LONG LEG VERTICAL      | SYM   | SYMMETRICAL             |
| CO             | CLEANOUT              | LL   | LIVE LOAD              | T&B   | TOP AND BOTTOM          |
| COL            | COLUMN                | MATL | MATERIAL               | TC    | TOP OF CURB             |
| CONC           | CONCRETE              | MAX  | MAXIMUM                | THK   | THICK                   |
| CP             | CONCRETE PIPE         | MC   | MISCELLANEOUS CHANNEL  | TOC   | TOP OF CONCRETE         |
| CRS            | COLD ROLLED STEEL     | MEZZ | MEZZANINE              | TOF   | TOP OF FOOTING          |
| CS             | CARBON STEEL          | MIN  | MINIMUM                | TOJ   | TOP OF JOIST            |
| DIA            | DIAMETER              | MISC | MISCELLANEOUS          | TOP   | TOP OF PIER             |
| DIM            | DIMENSION             | ML   | MATCH LINE             | TOW   | TOP OF WALL             |
| DN             | DOWN                  | MO   | MASONRY OPENING        | TOS   | TOP OF STEEL            |
| DWG            | DRAWING               | NTS  | NOT TO SCALE           | TYP   | TYPICAL                 |
| EA             | EACH                  | OC   | ON CENTER              | UG    | UNDERGROUND             |
| EJ             | EXPANSION JOINT       | OD   | OUTSIDE DIAMETER       | UNO   | UNLESS NOTED OTHERWISE  |
| EL             | ELEVATION             | OPG  | OPENING                | VERT  | VERTICAL                |
| EQ             | EQUAL                 | OPP  | OPPOSITE               | W/    | WITH                    |
| EW             | EACH WAY              | PSF  | POUNDS PER SQUARE FOOT | W/O   | WITHOUT                 |
| EXIST/EXISTING |                       | PSI  | POUNDS PER SQUARE INCH | WWF   | WELDED WIRE FABRIC      |
|                |                       | QTY  | QUANTITY               |       |                         |

STRUCTURAL DESIGN CRITERIA:

GATES CIRCLE/DELAWARE AVE (RTC)

|                                         |          |                                         |          |
|-----------------------------------------|----------|-----------------------------------------|----------|
| BUILDING RISK CATEGORY                  | III      | BUILDING RISK CATEGORY                  | III      |
| LIVE LOAD DATA                          |          | LIVE LOAD DATA                          |          |
| CONCENTRATED LOAD                       | HS-20    | CONCENTRATED LOAD                       | HS-20    |
| UNIFORM LOAD                            | 300PSF   | UNIFORM LOAD                            | 300PSF   |
| SEISMIC DATA                            |          | SEISMIC DATA                            |          |
| SITE CLASSIFICATION                     | D        | SITE CLASSIFICATION                     | D        |
| Ss                                      | 0.162    | Ss                                      | 0.166    |
| S1                                      | 0.044    | S1                                      | 0.045    |
| Fa                                      | 1.6      | Fa                                      | 1.6      |
| Fv                                      | 2.4      | Fv                                      | 2.4      |
| SEISMIC DESIGN CATEGORY                 | B        | SEISMIC DESIGN CATEGORY                 | B        |
| SEISMIC IMPORTANCE FACTOR               | 1.25     | SEISMIC IMPORTANCE FACTOR               | 1.25     |
| SOILS                                   |          | SOILS                                   |          |
| DESIGN FOUNDATION BEARING PRESSURE, NET | 4000 PSF | DESIGN FOUNDATION BEARING PRESSURE, NET | 500 PSF  |
| RAIN INTENSITY                          |          | RAIN INTENSITY                          |          |
| RAIN INTENSITY (I)                      | 2.5 IN/H | RAIN INTENSITY (I)                      | 2.5 IN/H |

NIAGARA ST./BRECKENRIDGE ST. (RTC)

|                                                |            |                                                |            |
|------------------------------------------------|------------|------------------------------------------------|------------|
| BUILDING RISK CATEGORY                         | III        | BUILDING RISK CATEGORY                         | III        |
| LIVE LOAD DATA                                 |            | LIVE LOAD DATA                                 |            |
| CONCENTRATED LOAD                              | HS-20      | CONCENTRATED LOAD                              | HS-20      |
| UNIFORM LOAD                                   | 300PSF     | UNIFORM LOAD                                   | 300PSF     |
| SEISMIC DATA                                   |            | SEISMIC DATA                                   |            |
| SITE CLASSIFICATION                            | C          | SITE CLASSIFICATION                            | C          |
| Ss                                             | 0.16       | Ss                                             | 0.16       |
| S1                                             | 0.044      | S1                                             | 0.044      |
| Fa                                             | 1.3        | Fa                                             | 1.3        |
| Fv                                             | 1.5        | Fv                                             | 1.5        |
| SEISMIC DESIGN CATEGORY                        | A          | SEISMIC DESIGN CATEGORY                        | A          |
| SEISMIC IMPORTANCE FACTOR                      | 1.25       | SEISMIC IMPORTANCE FACTOR                      | 1.25       |
| SOILS                                          |            | SOILS                                          |            |
| DESIGN FOUNDATION BEARING PRESSURE, NET (ROCK) | 10 TONS/SF | DESIGN FOUNDATION BEARING PRESSURE, NET (ROCK) | 10 TONS/SF |
| RAIN INTENSITY                                 |            | RAIN INTENSITY                                 |            |
| RAIN INTENSITY (I)                             | 2.5 IN/H   | RAIN INTENSITY (I)                             | 2.5 IN/H   |

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Watts

Architects

&Engineers

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Buffalo, NY 14203

GREELEY AND HANSEN

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NEW YORK, NY 10006

|          |          |      |          |  |  |
|----------|----------|------|----------|--|--|
| DESIGNED | APPROVED |      |          |  |  |
| DRAWN    |          |      |          |  |  |
| CHECKED  |          |      |          |  |  |
| NO.      | DATE     | APPD | REVISION |  |  |

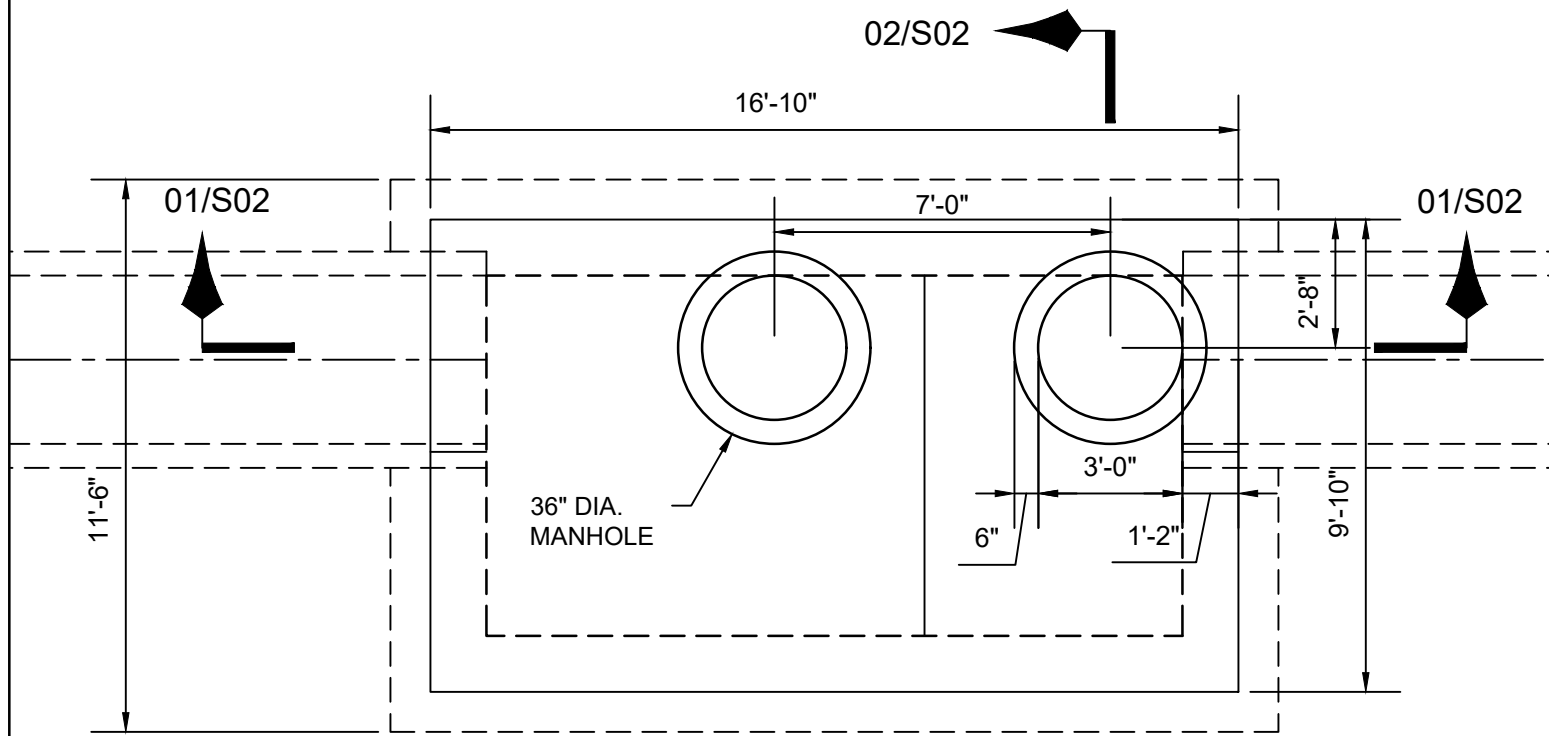
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

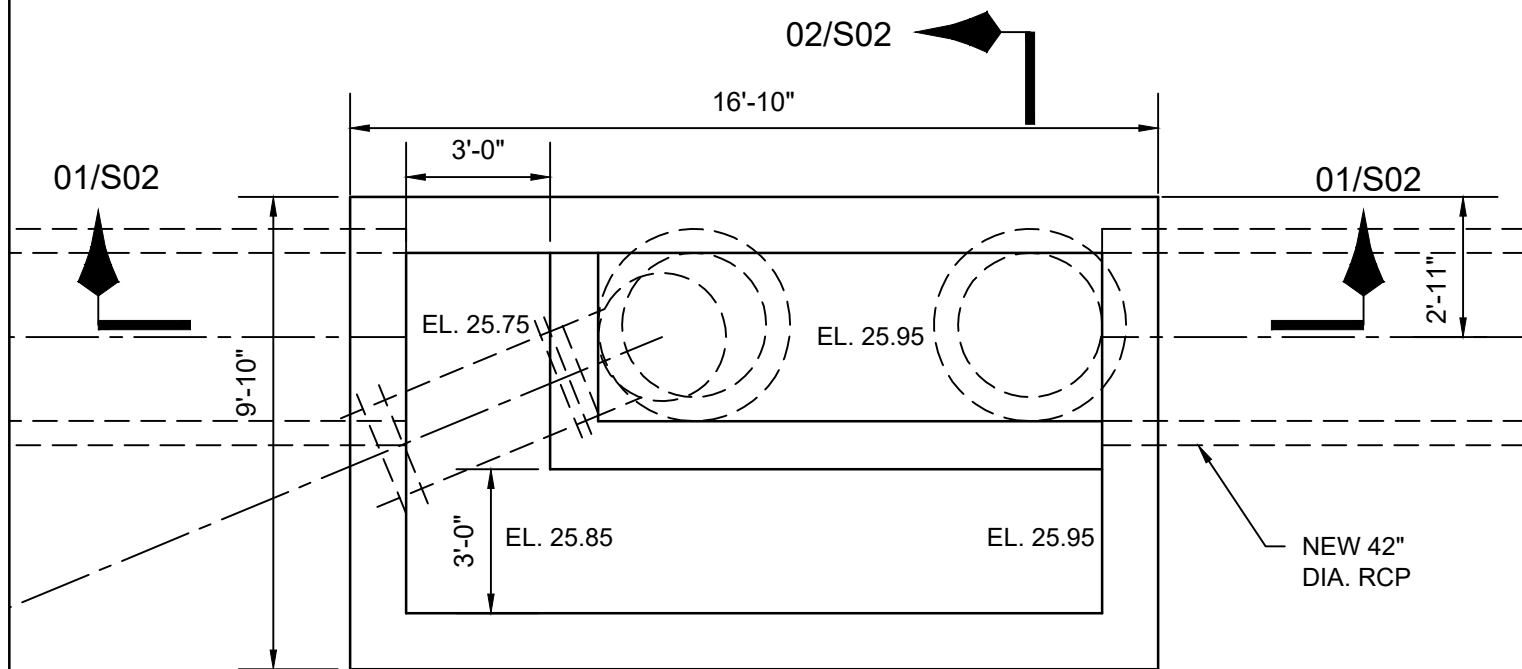
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|------------------|
| STRUCTURAL (RTC) |
| STRUCTURAL NOTES |

|                           |        |
|---------------------------|--------|
| BSA CONTRACT NO. 82000041 |        |
| DWG:                      | S01    |
| SHEET: 31                 | OF 85  |
| DATE: FEBRUARY 2023       | REV: 0 |

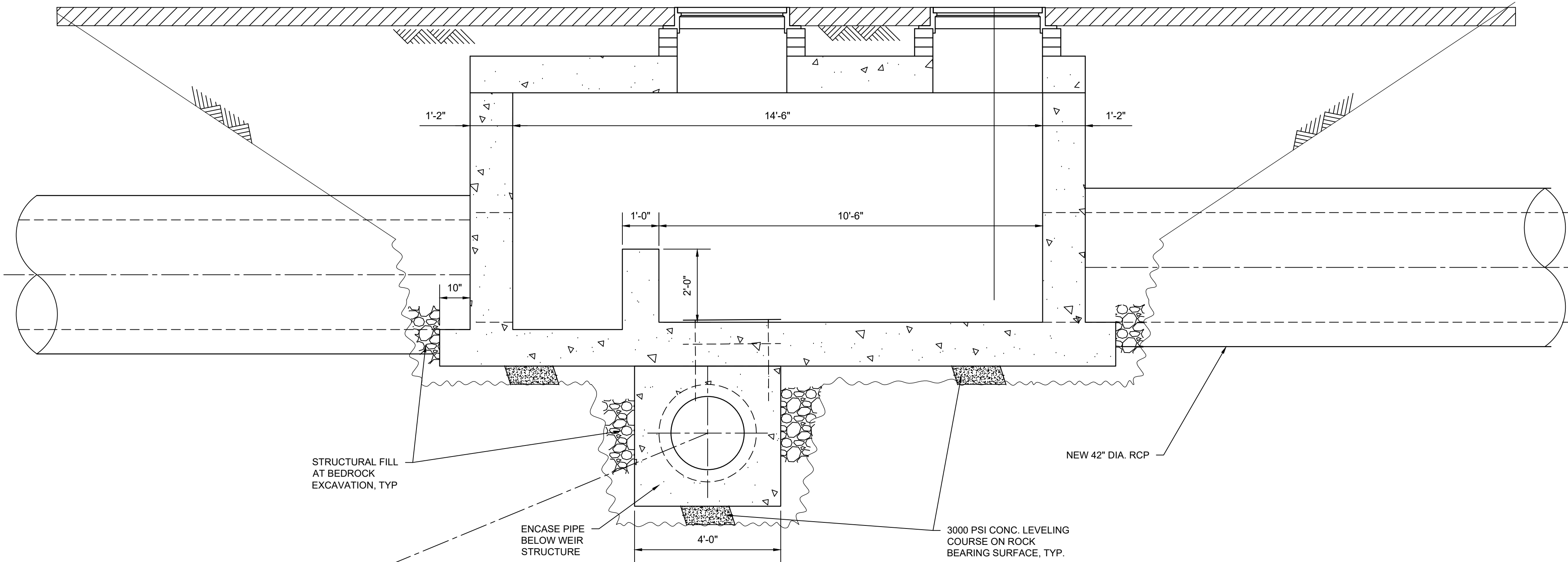




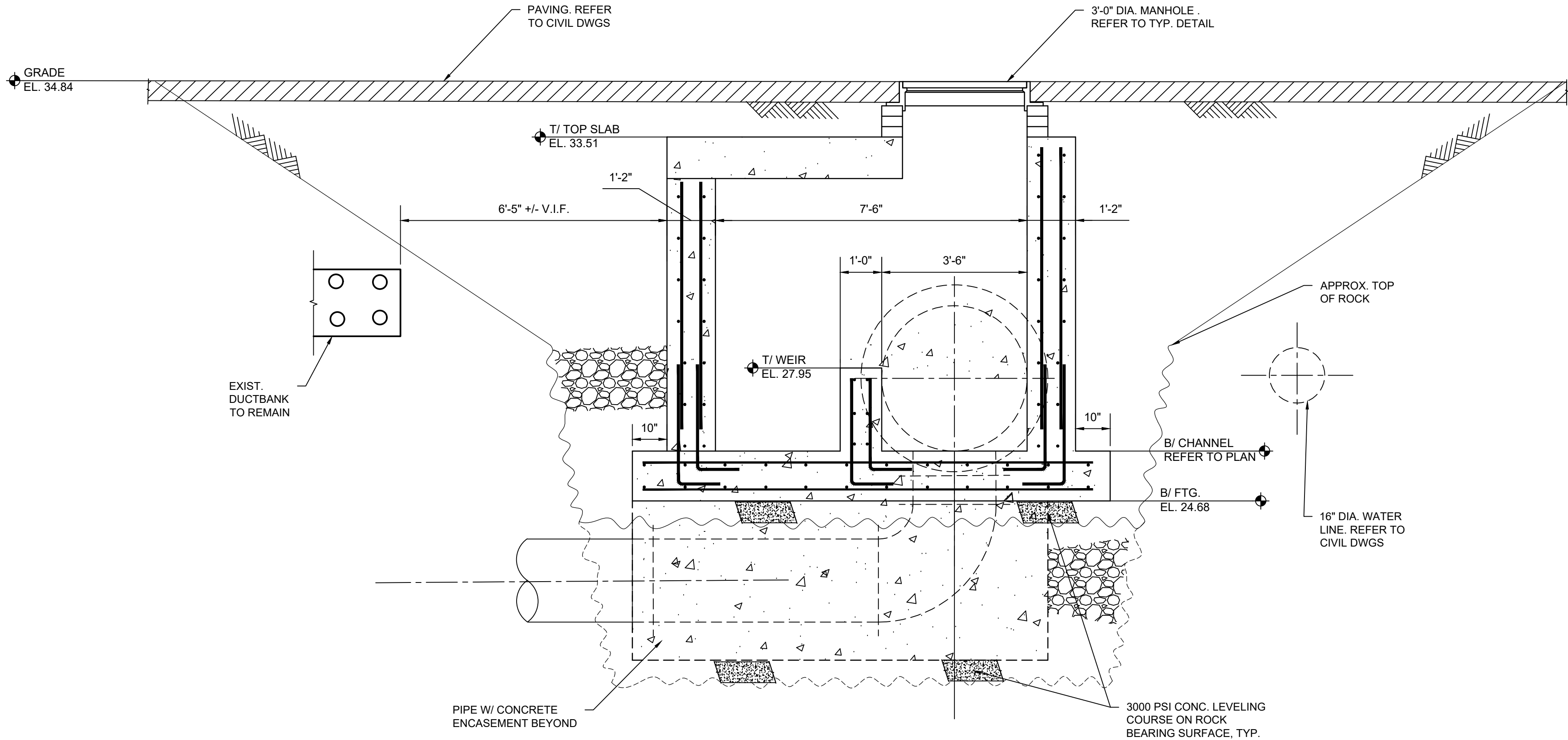
TOP PLAN  
1/4" = 1'-0"



SECTIONAL PLAN  
1/4" = 1'-0"



SECTION 01/S02  
1/2" = 1'-0"




SECTION 02/S02  
1/2" = 1'-0"

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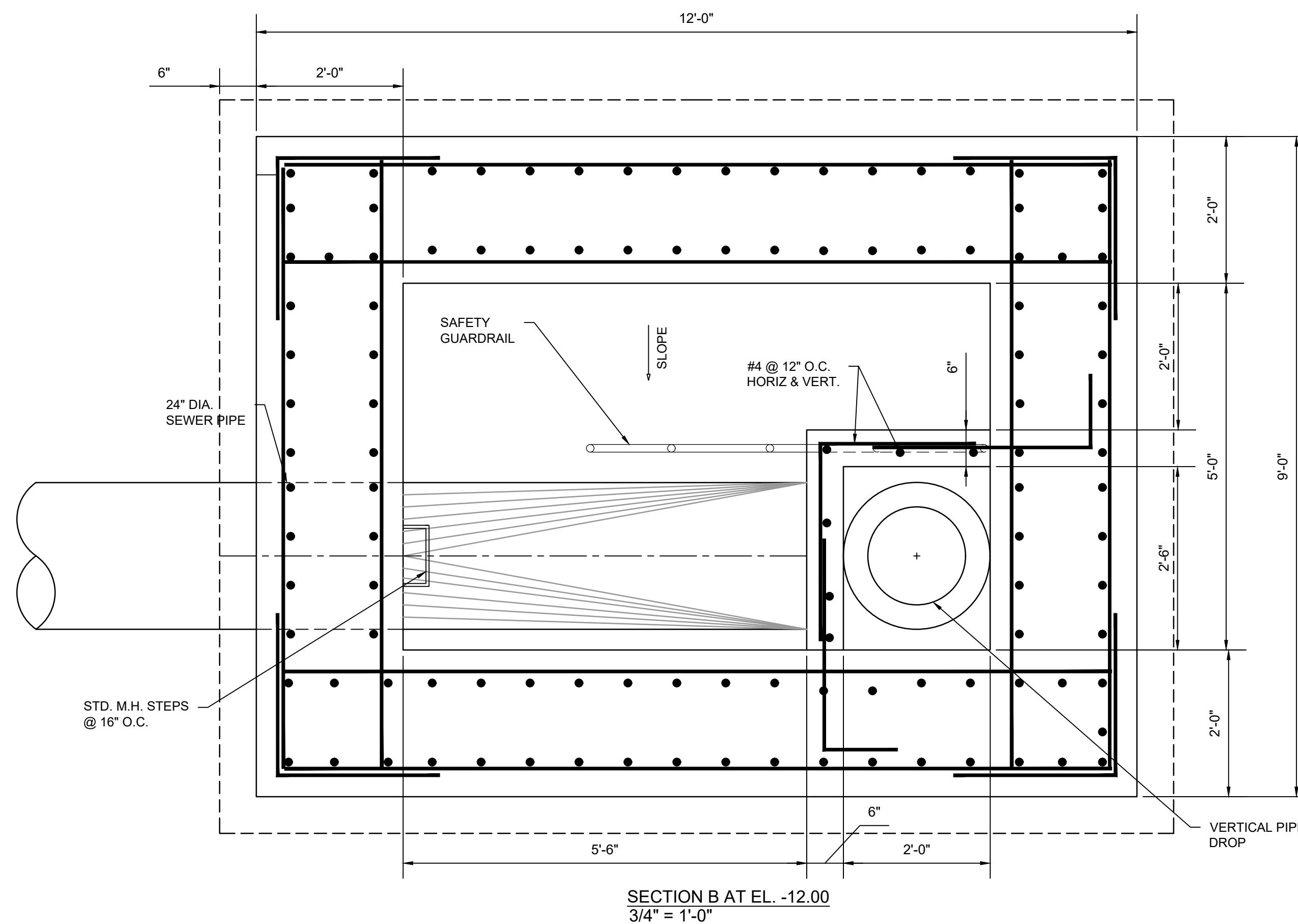
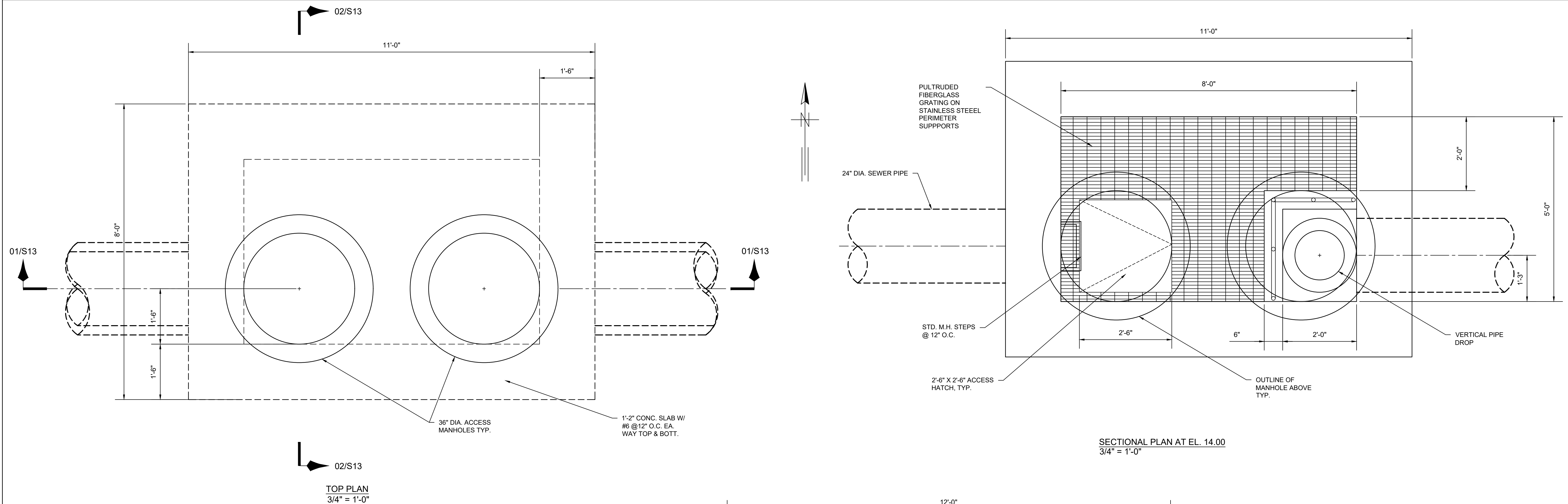
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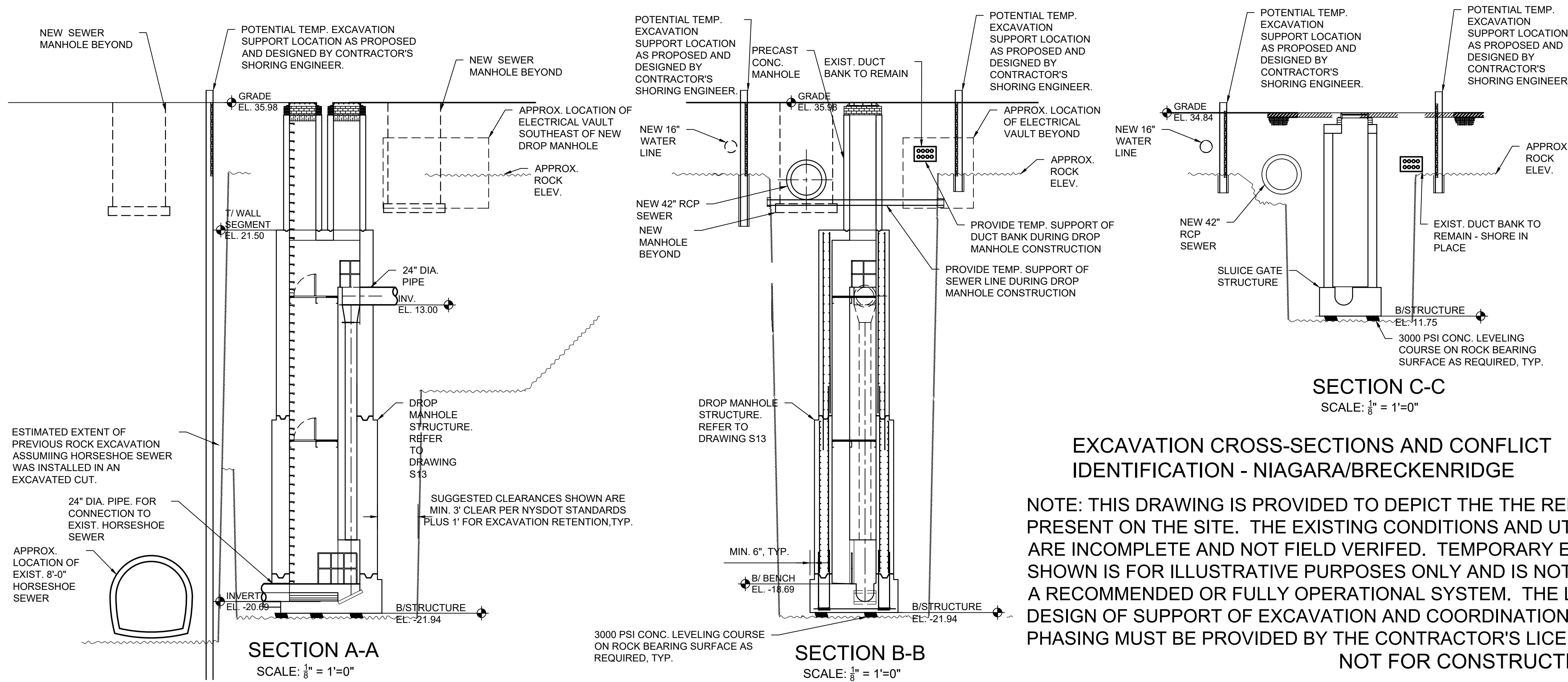
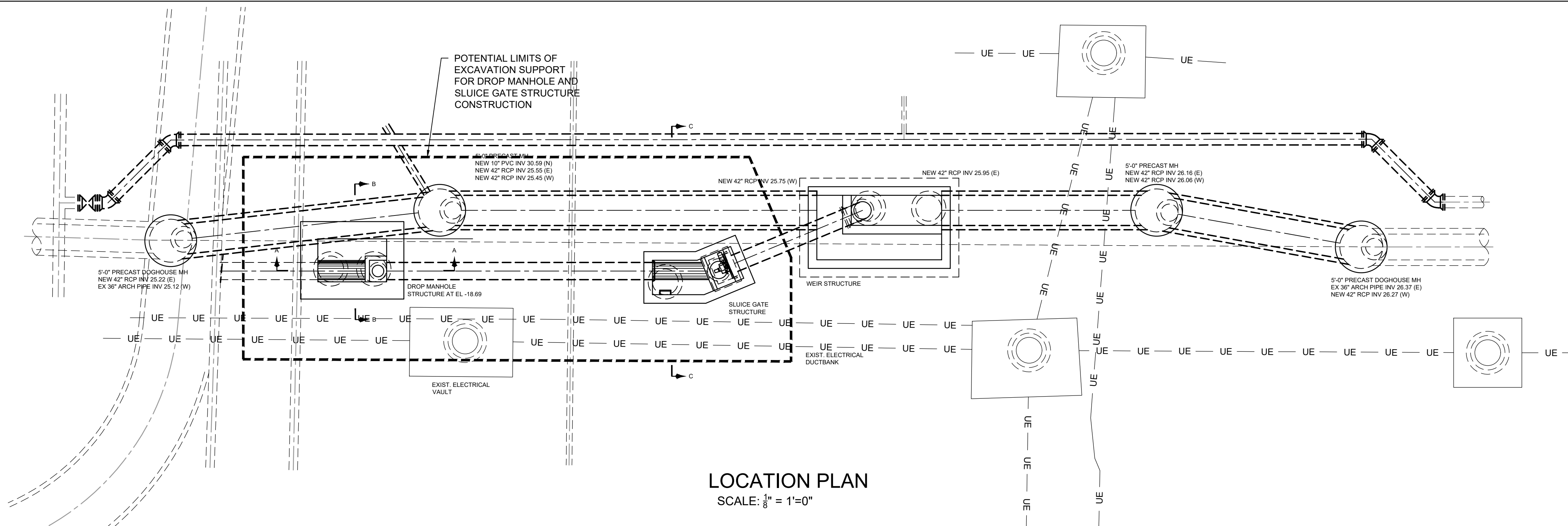
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| DESIGNED | APPROVED |     |      |      |          | SCALE<br><br>AS INDICATED | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>CSO CONTROL SMART SEWER PROJECT | STRUCTURAL<br>NIAGARA & BRECKENRIDGE (RTC) -<br>DIVERSION CHAMBER CONNECTION AND WEIR<br><br>PLANS AND SECTIONS | BSA CONTRACT NO. 82000041 |        |
| DRAWN    |          |     |      |      |          |                           |                                                                          |                                                                                                                 | DWG: <b>S02</b>           |        |
| CHECKED  |          |     |      |      |          |                           |                                                                          |                                                                                                                 | SHEET: 32 OF 85           |        |
|          |          |     |      |      |          |                           |                                                                          |                                                                                                                 | DATE: FEBRUARY 2023       | REV: 0 |
|          |          | NO. | DATE | APPD | REVISION |                           |                                                                          |                                                                                                                 |                           |        |





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NOTE: THIS DRAWING IS PROVIDED TO DEPICT THE THE RELATIVE COMPLEXITIES PRESENT ON THE SITE. THE EXISTING CONDITIONS AND UTILITY INFORMATION SHOWN ARE INCOMPLETE AND NOT FIELD VERIFIED. TEMPORARY EXCAVATION SUPPORT SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS NOT INTENDED TO REPRESENT A RECOMMENDED OR FULLY OPERATIONAL SYSTEM. THE LOCATION, EXTENTS AND DESIGN OF SUPPORT OF EXCAVATION AND COORDINATION WITH CONSTRUCTION PHASING MUST BE PROVIDED BY THE CONTRACTOR'S LICENSED SHORING ENGINEER.

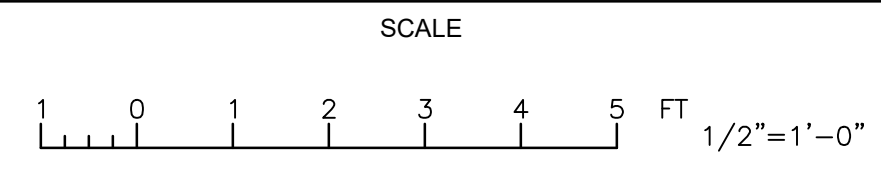
NOT FOR CONSTRUCTION

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| DRAWN    |          |      |          |  |  |
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| NO.      | DATE     | APPD | REVISION |  |  |



SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

STRUCTURAL  
(RTC)

BRECKENRIDGE RTC - DROP MANHOLE CROSS SECTION

|                           |             |
|---------------------------|-------------|
| BSA CONTRACT NO. 82000041 |             |
| DWG:                      | <b>S-04</b> |
| SHEET: 34                 | OF 85       |
| DATE: FEBRUARY 2023       | REV: 0      |



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SEWER AUTHORITY

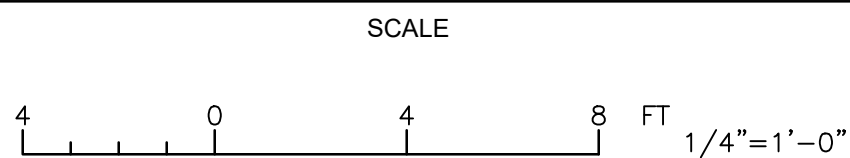
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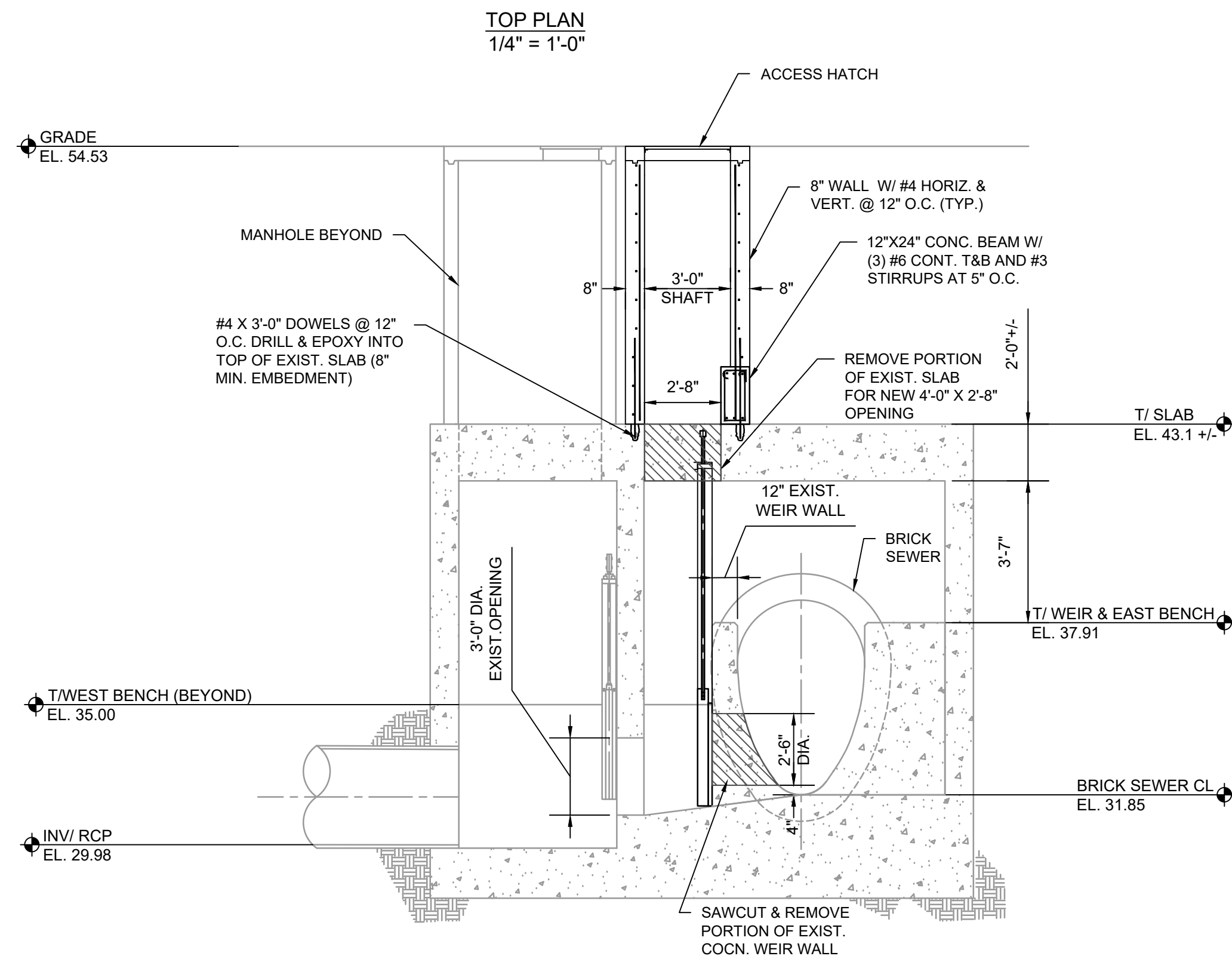


SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

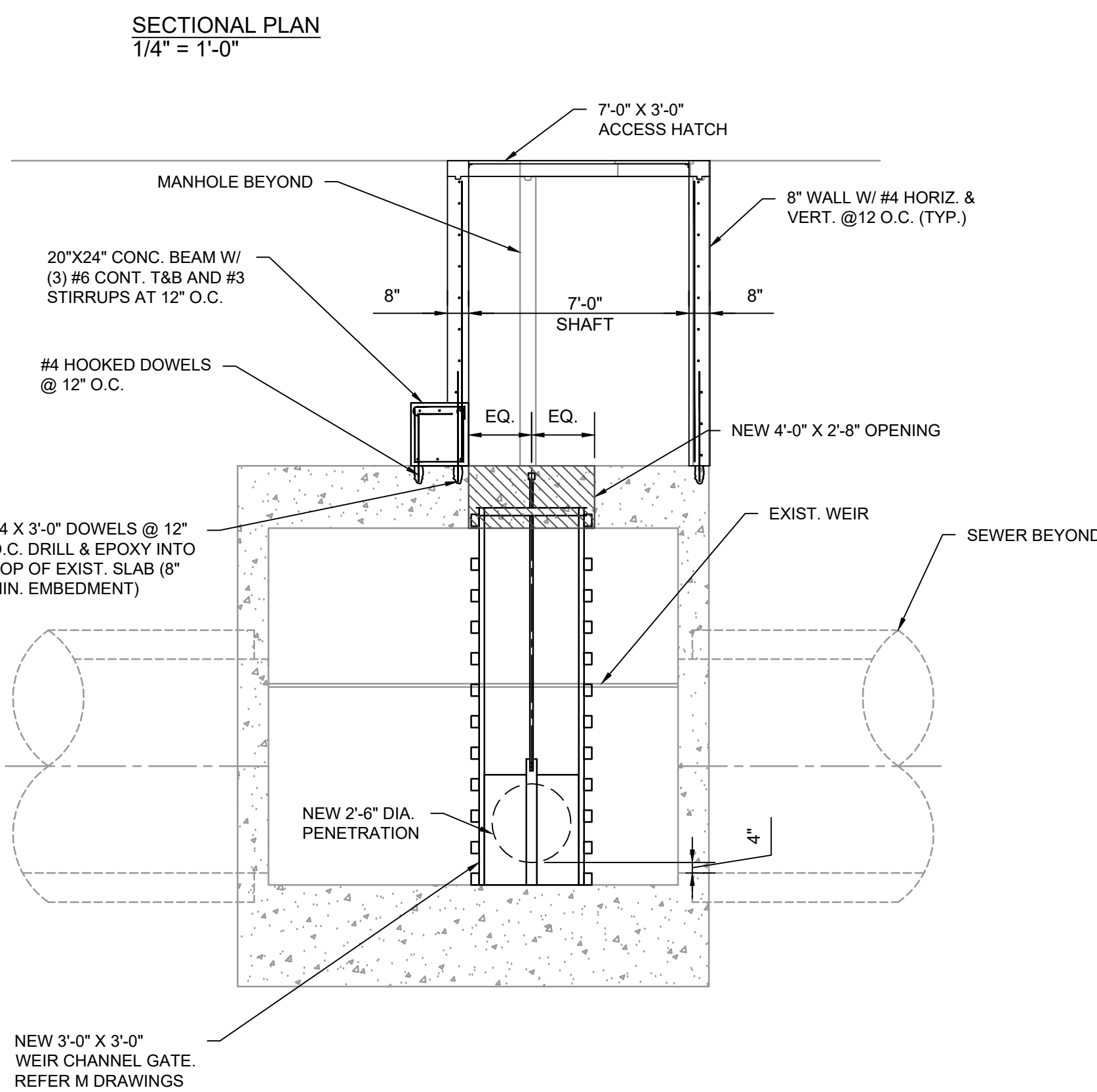
STRUCTURAL  
GATES CIRCLE & DELAWARE AVE (RTC)  
PLANS AND SECTIONS

|                           |            |
|---------------------------|------------|
| BSA CONTRACT NO. 82000041 |            |
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| SHEET: 35                 | OF 85      |
| DATE: FEBRUARY 2023       | REV: 0     |

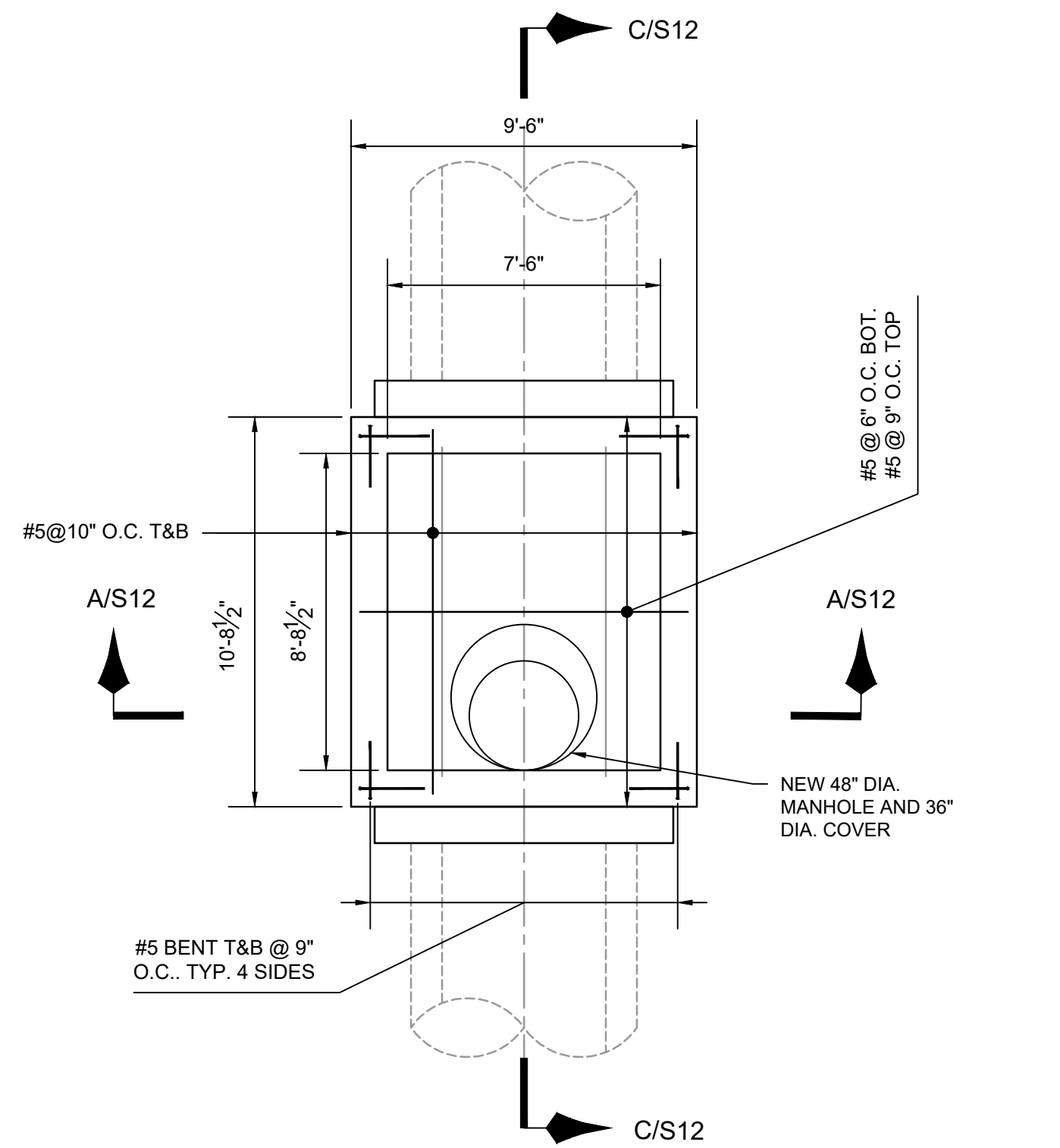
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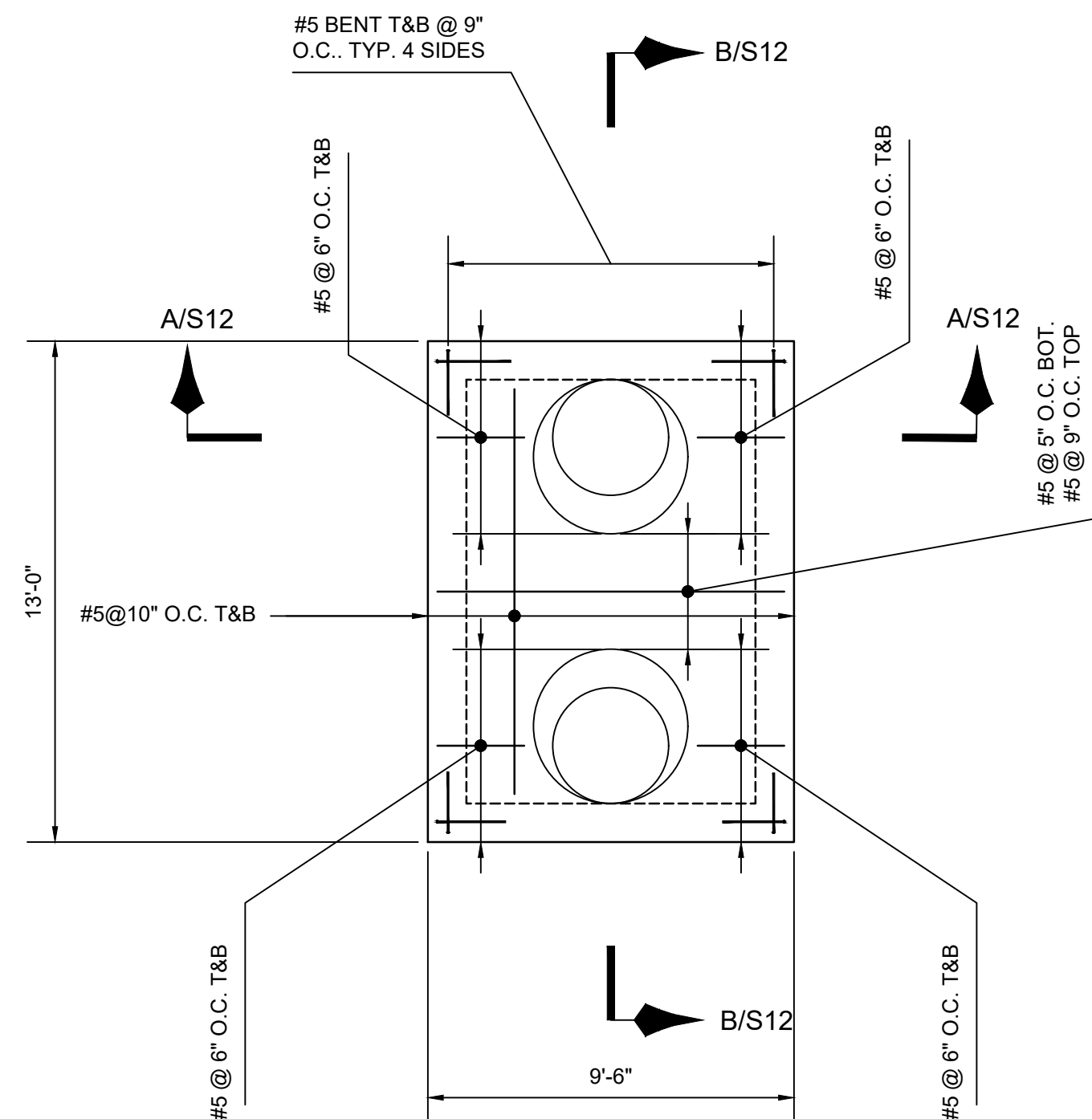
**SECTION B/S05**  
1/4" = 1'-0"



**SECTION A/S05**  
1/4" = 1'-0"



**NORTHERN DOGHOUSE MANHOLE PLAN**  
1/4" = 1'-0"



**SOUTHERN DOGHOUSE MANHOLE PLAN**  
1/4" = 1'-0"



R:\2022\2203201 BSA RTC SMART SEWERS\18. CADD\STRUCT\BAILEY\AMHERST-1 THOMAS MCCOY

1/S06

2/S06

2/S06

PLAN AT TOP OF SLAB  
1/4" = 1'-0"

1/S06

2/S06

1/S06

2/S06

SECTIONAL PLAN  
1/4" = 1'-0"

1/S06

T/ PAVEMENT  
EL. 83.86

T/ CHANNEL SLAB  
EL. 75.65

B/ CHANNEL  
EL. 67.59

T/CHAMBER SLAB  
EL. 76.61

T/WEIR  
EL. 69.77

SECTION 2/S06  
1/4" = 1'-0"

T/ PAVEMENT  
EL. 83.86

T/ CHAMBER SLAB  
EL. 76.61

B/ CHAMBER (HIGHER POINT)  
EL. 62.88

T/WEIR  
EL. 69.77

B/CHAMBER (LOWER POINT)  
EL. 62.63

SECTION 1/S06  
1/4" = 1'-0"

**BUFFALO**  
SEWER AUTHORITY

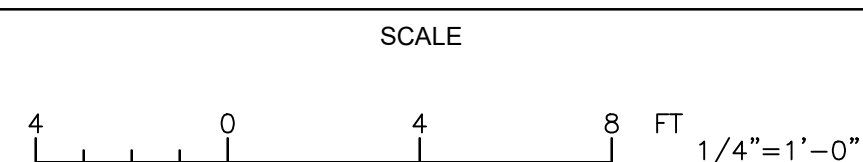
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|     |      |      |          |



SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

STRUCTURAL  
BAILEY AVE & AMHERST ST (RTC)

PLANS AND SECTIONS

BSA CONTRACT NO. 82000041

DWG: **S06**

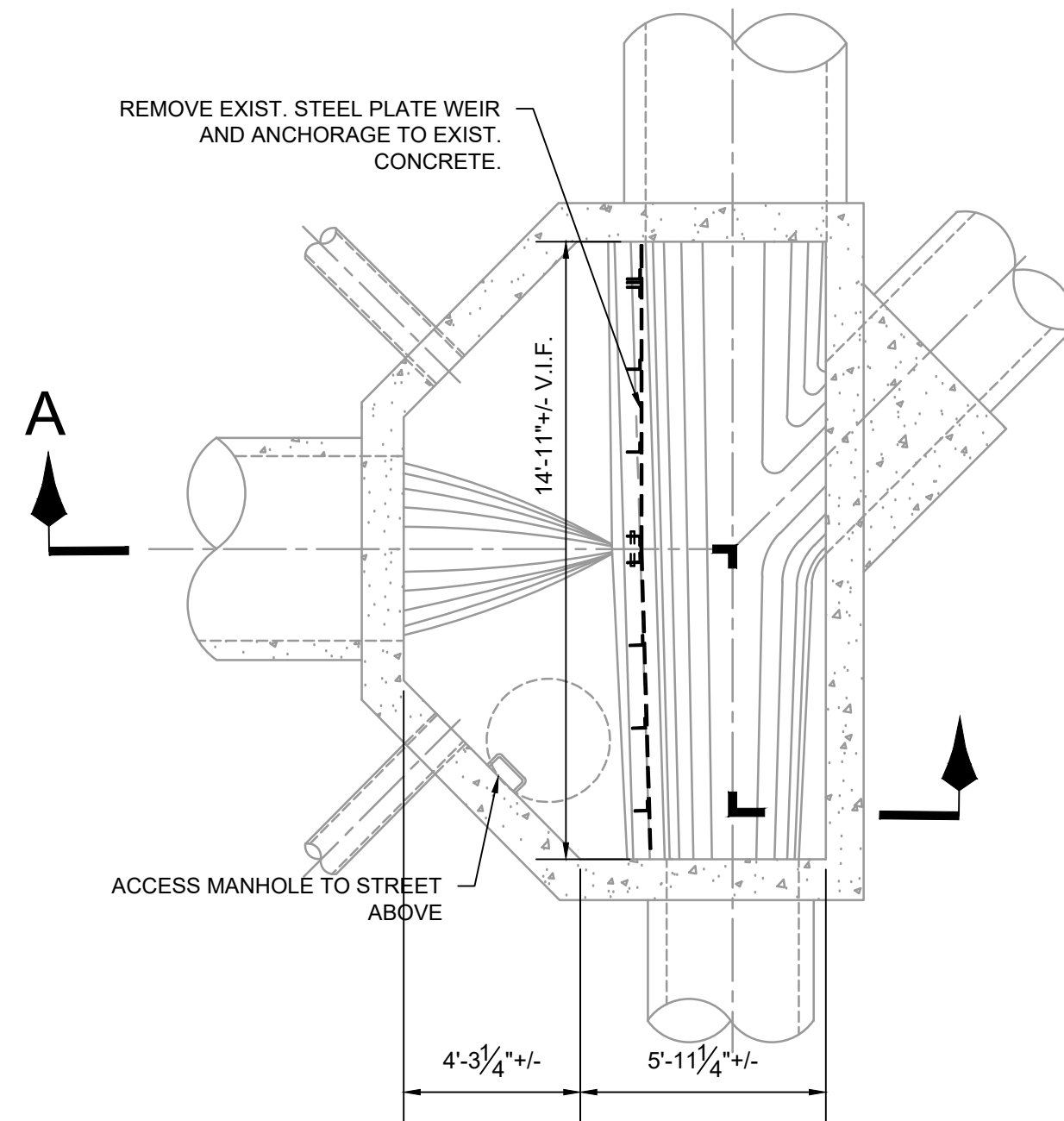
SHEET: 36 OF 85

DATE: FEBRUARY 2023 REV: 0

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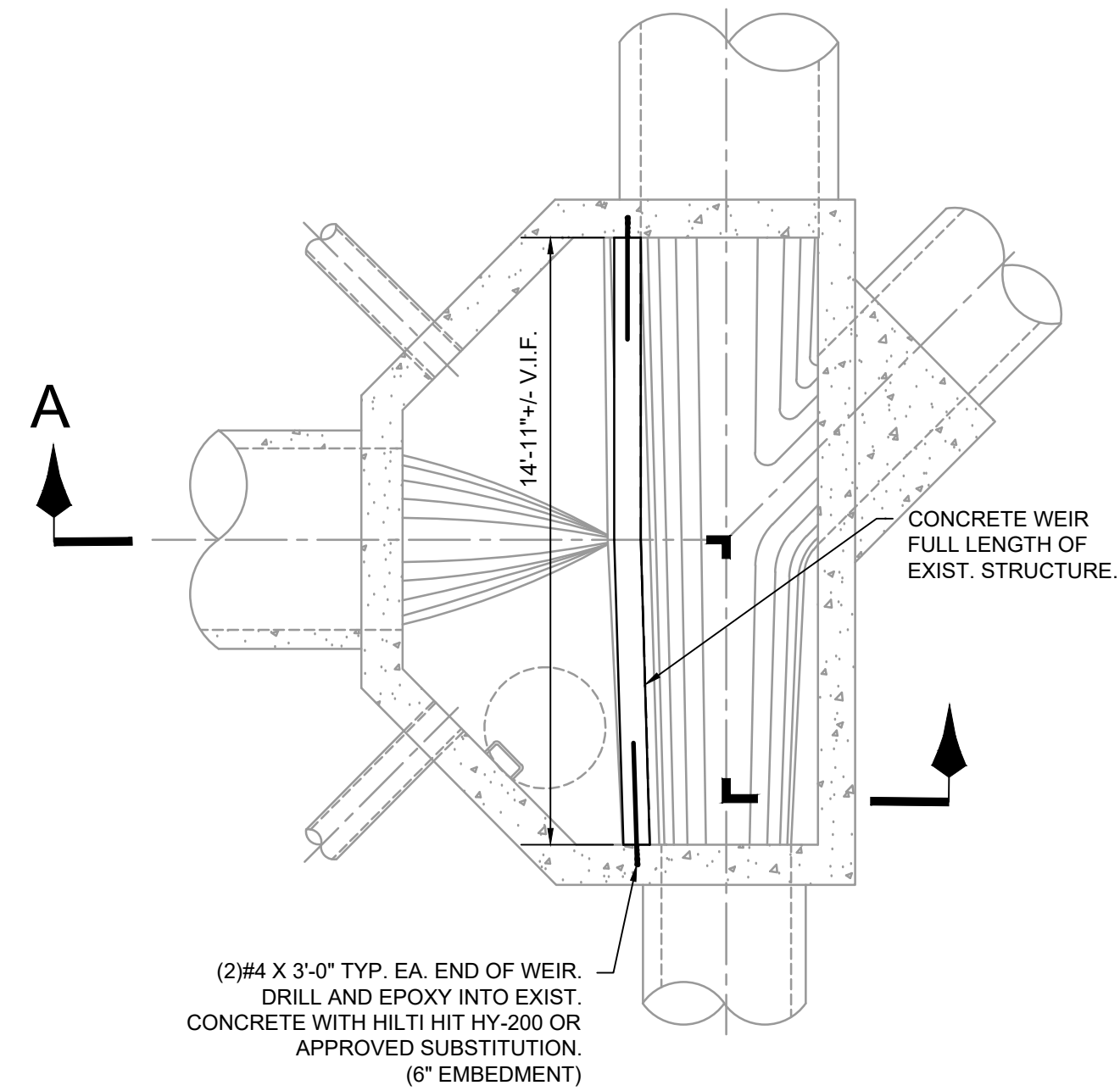


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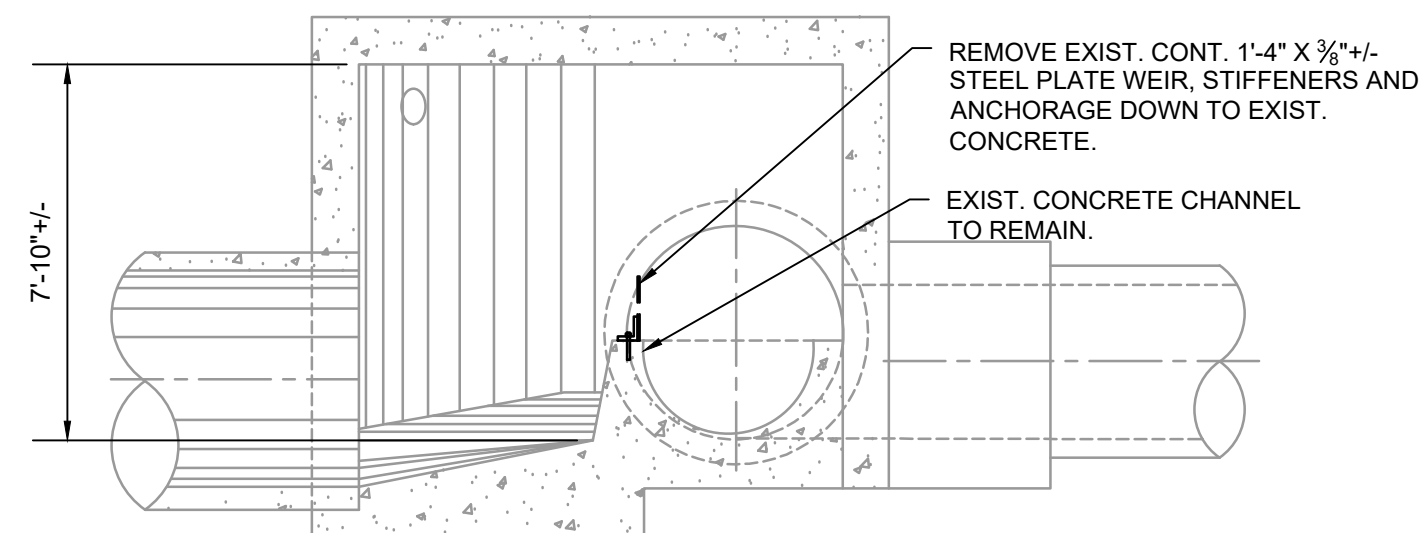
BAILEY & MINNESOTA - DEMO PLAN

1/4" = 1'-0"



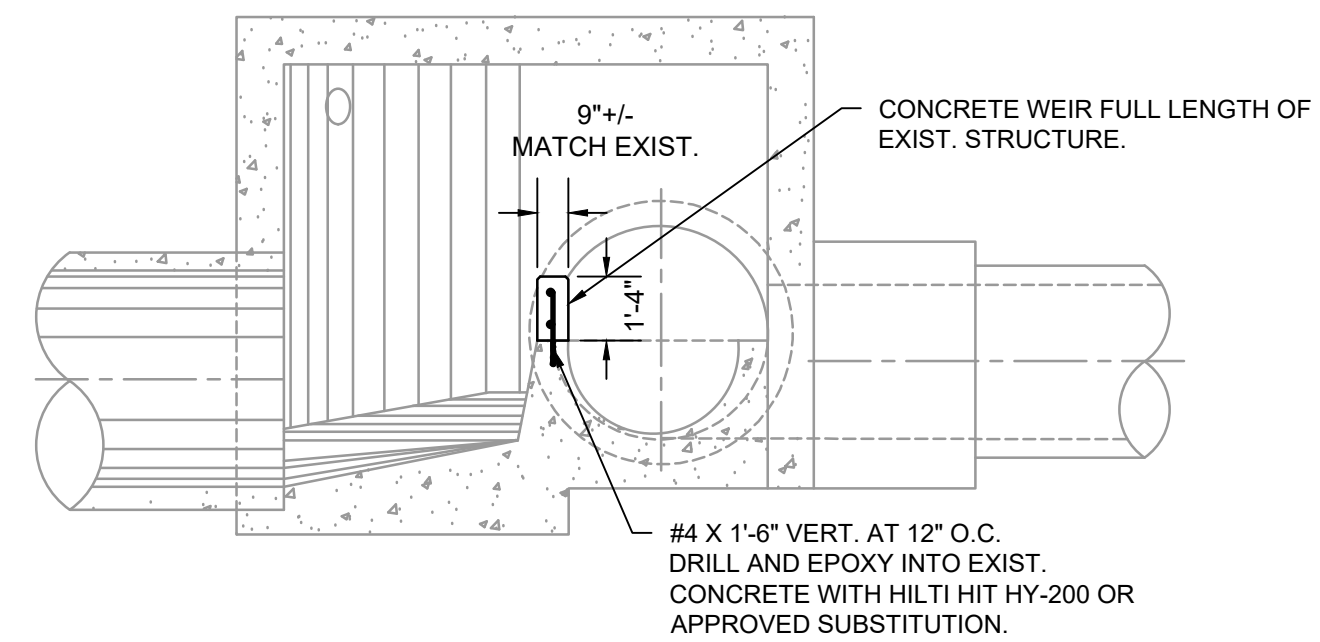
BAILEY & MINNESOTA - STRUCT PLAN

1/4" = 1'-0"



DEMO SECTION A

1/4" = 1'-0"



STRUCTURAL SECTION A

1/4" = 1'-0"

**BUFFALO**  
SEWER AUTHORITY

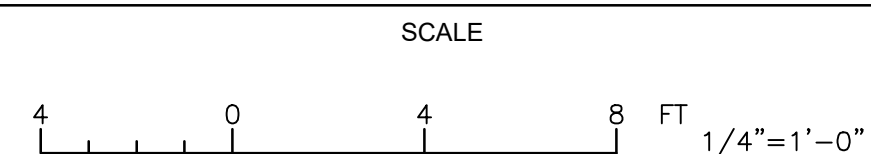
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DESIGNED  
DRAWN  
CHECKED

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

STRUCTURAL  
BAILEY AVE & MINNESOTA AVE (RTC)

PLANS AND SECTIONS

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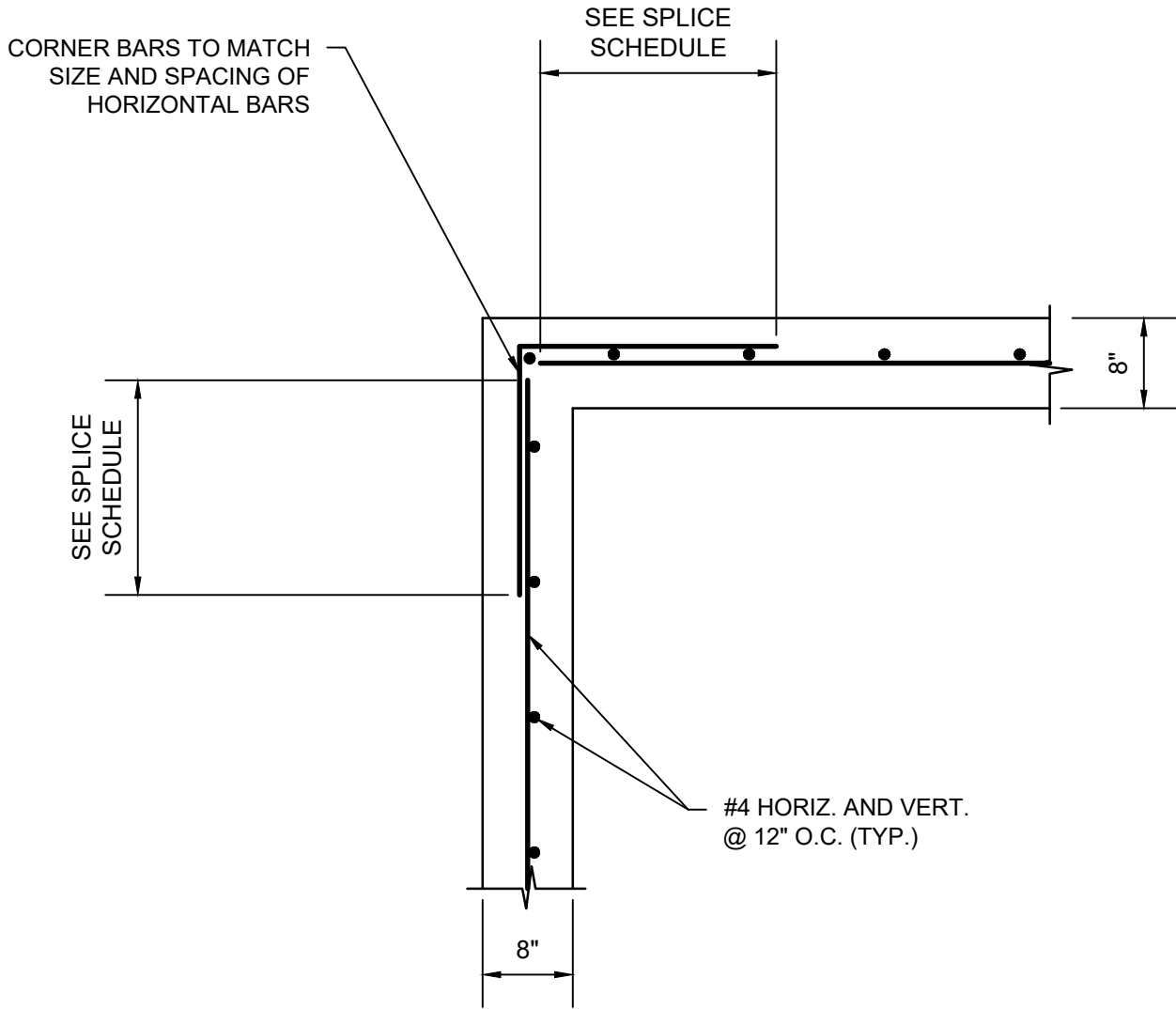
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| BSA CONTRACT NO. 82000041 |               |      |    |
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| SHEET:                    | 37            | OF   | 85 |
| DATE:                     | FEBRUARY 2023 | REV: | 0  |



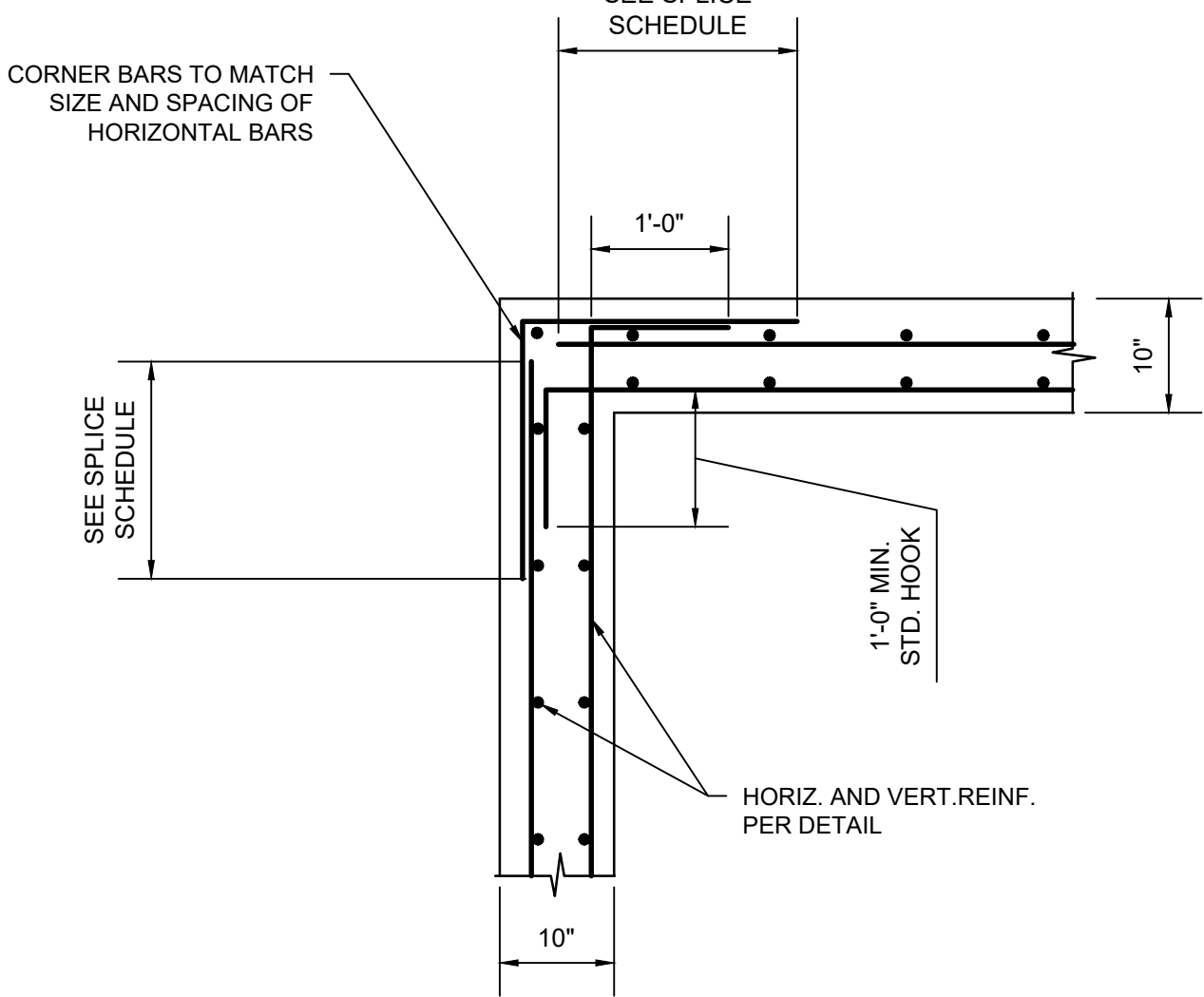
RL/2022/2203201 BSA RTC SMART SEWERS18\_CADD/STRUCTANDARD DETAILS THOMAS MCCOY

| TYPICAL LAP SPLICE SCHEDULE |                       |     |
|-----------------------------|-----------------------|-----|
| BAR SIZE                    | MINIMUM SPLICE LENGTH |     |
|                             | BOTTOM                | TOP |
| #3                          | 19"                   | 24" |
| #4                          | 25"                   | 32" |
| #5                          | 31"                   | 40" |
| #6                          | 37"                   | 48" |
| #7                          | 54"                   | 70" |
| #8                          | 62"                   | 80" |
| #9                          | 70"                   | 90" |

f'c = 4,000 PSI MIN., fy = 60,000 PSI.  
USE TOP BAR VALUES WHERE 12" OR MORE OF FRESH CONCRETE IS PLACED BELOW HORIZONTAL BARS.



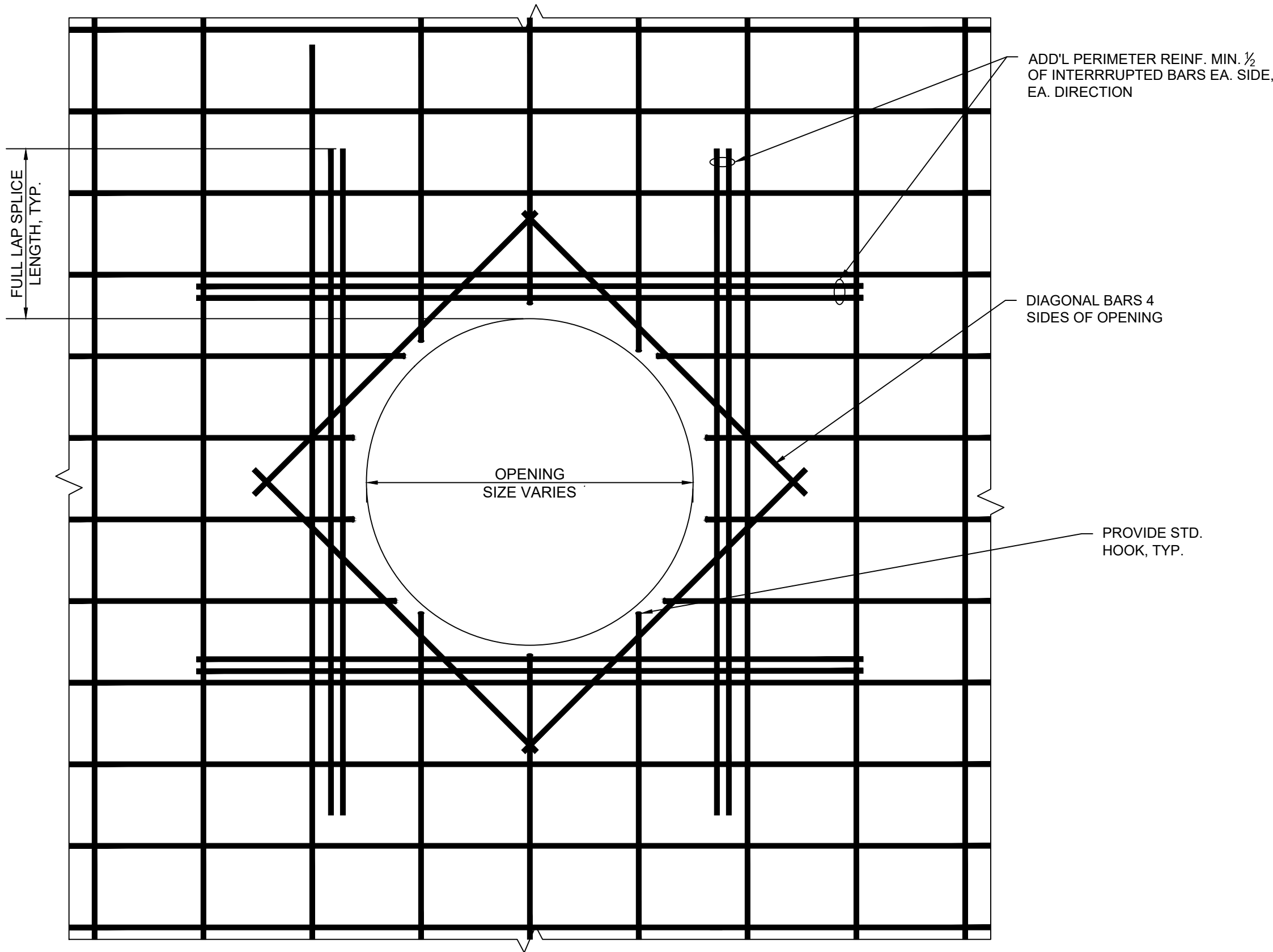
8" WALL W/ SINGLE LAYER OF REINF.



10" MIN. WALL W/ DOUBLE LAYER OF REINF.

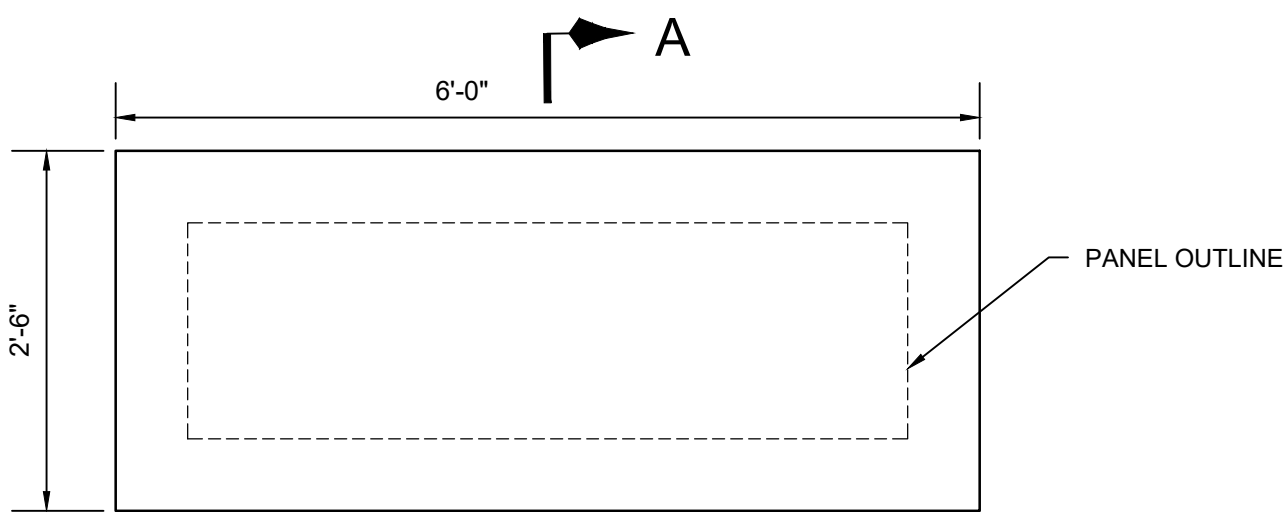
TYPICAL WALL CORNER REINF. DETAIL

3/4" = 1'-0"

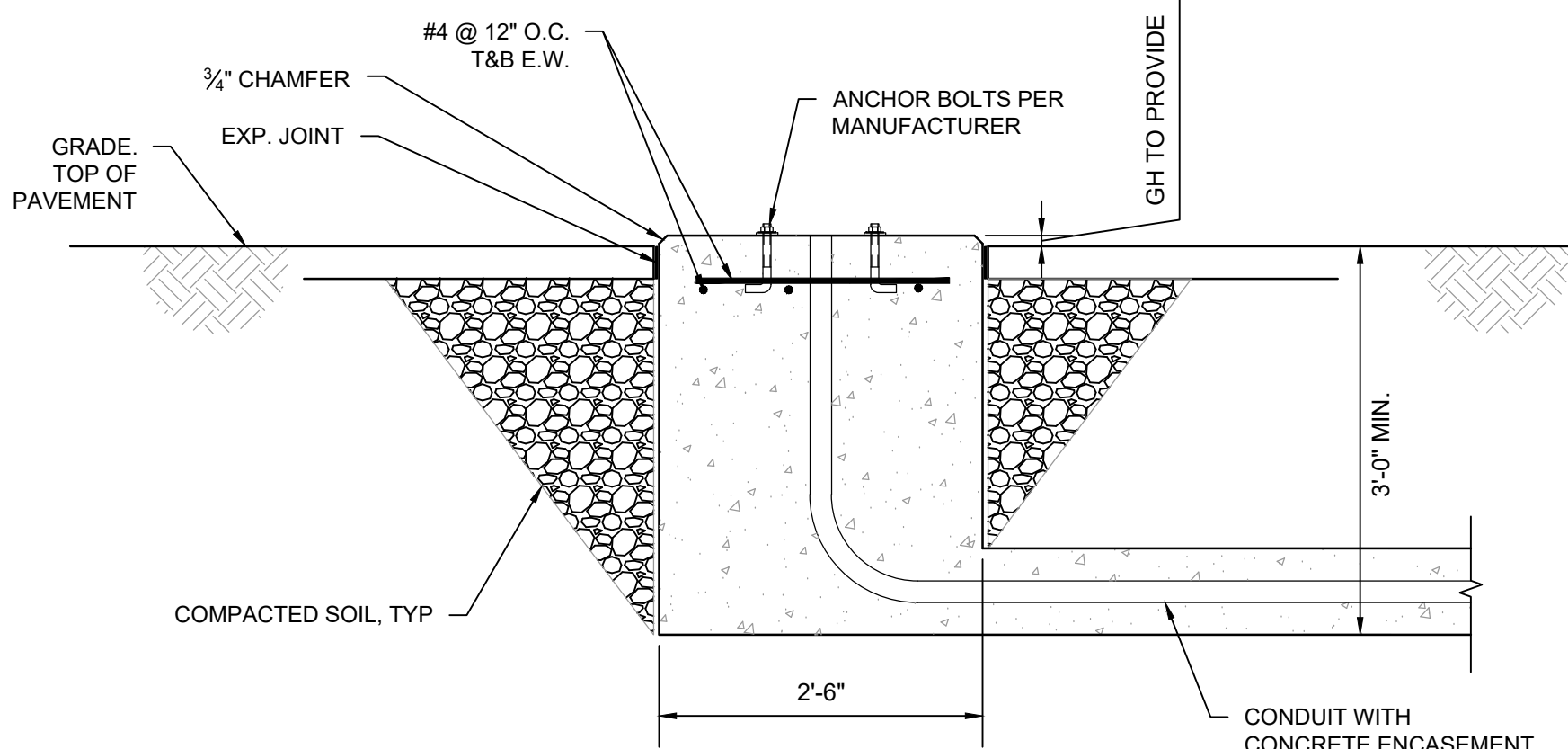


TYPICAL OPENING REINFORCING DETAIL

NTS



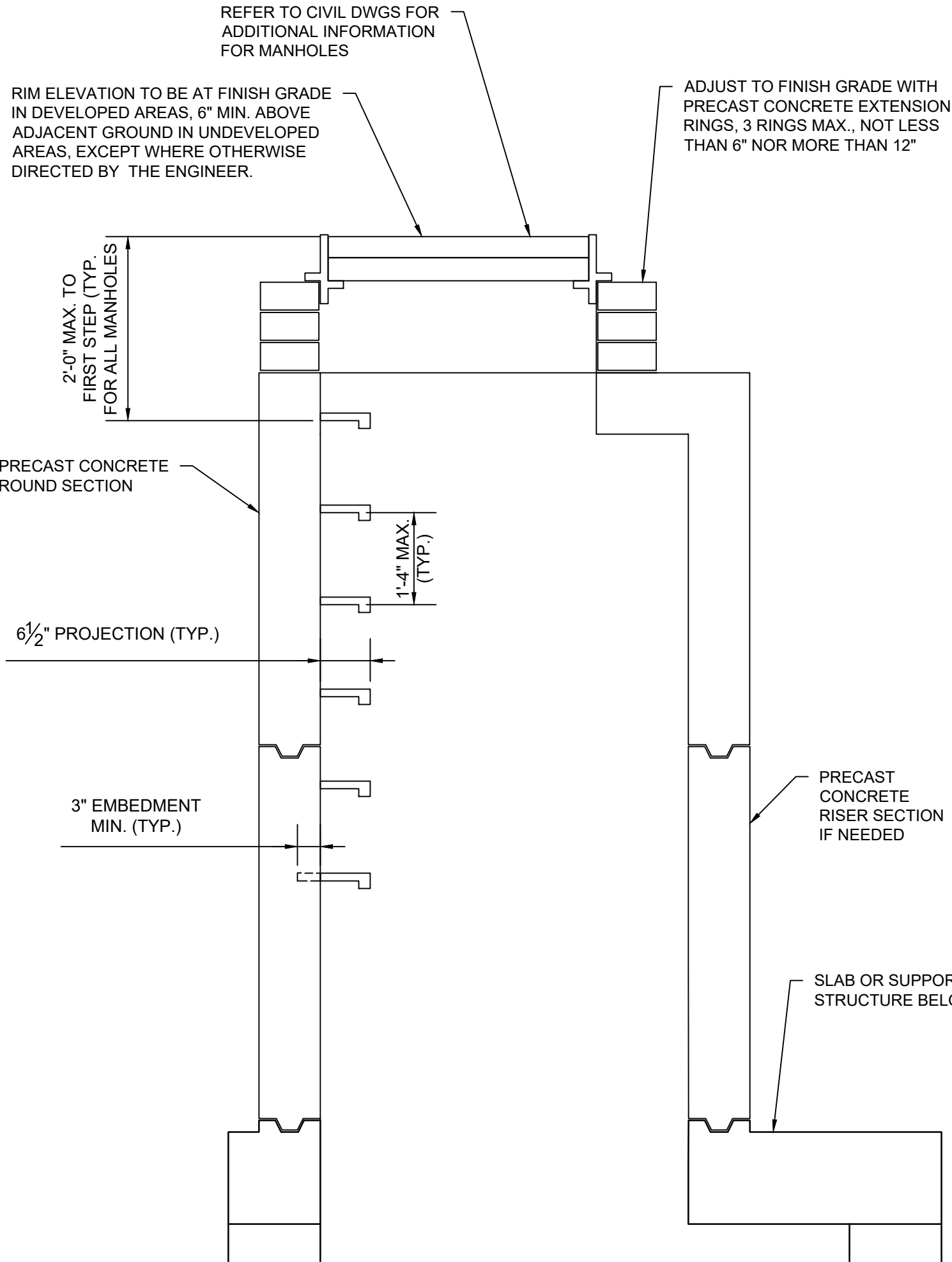
CONC. PAD PLAN



SECTION A-A

PLC CONCRETE PAD DETAIL

3/4" = 1'-0"



TYPICAL MANHOLE DETAIL

3/4" = 1'-0"

**BUFFALO**  
SEWER AUTHORITY



**Watts**  
**Architects**  
**&Engineers**  
95 Perry Street, Suite 300  
Buffalo, NY 14203



**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED  
DRAWN  
CHECKED

APPROVED

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| NO. | DATE | APPD. | REVISION |
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SCALE

1 0 1 2 3 FT 3/4"=1'-0"

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

STRUCTURAL  
(RTC)

STANDARD DETAILS

PRELIMINARY 95%

BSA CONTRACT NO. 82000041

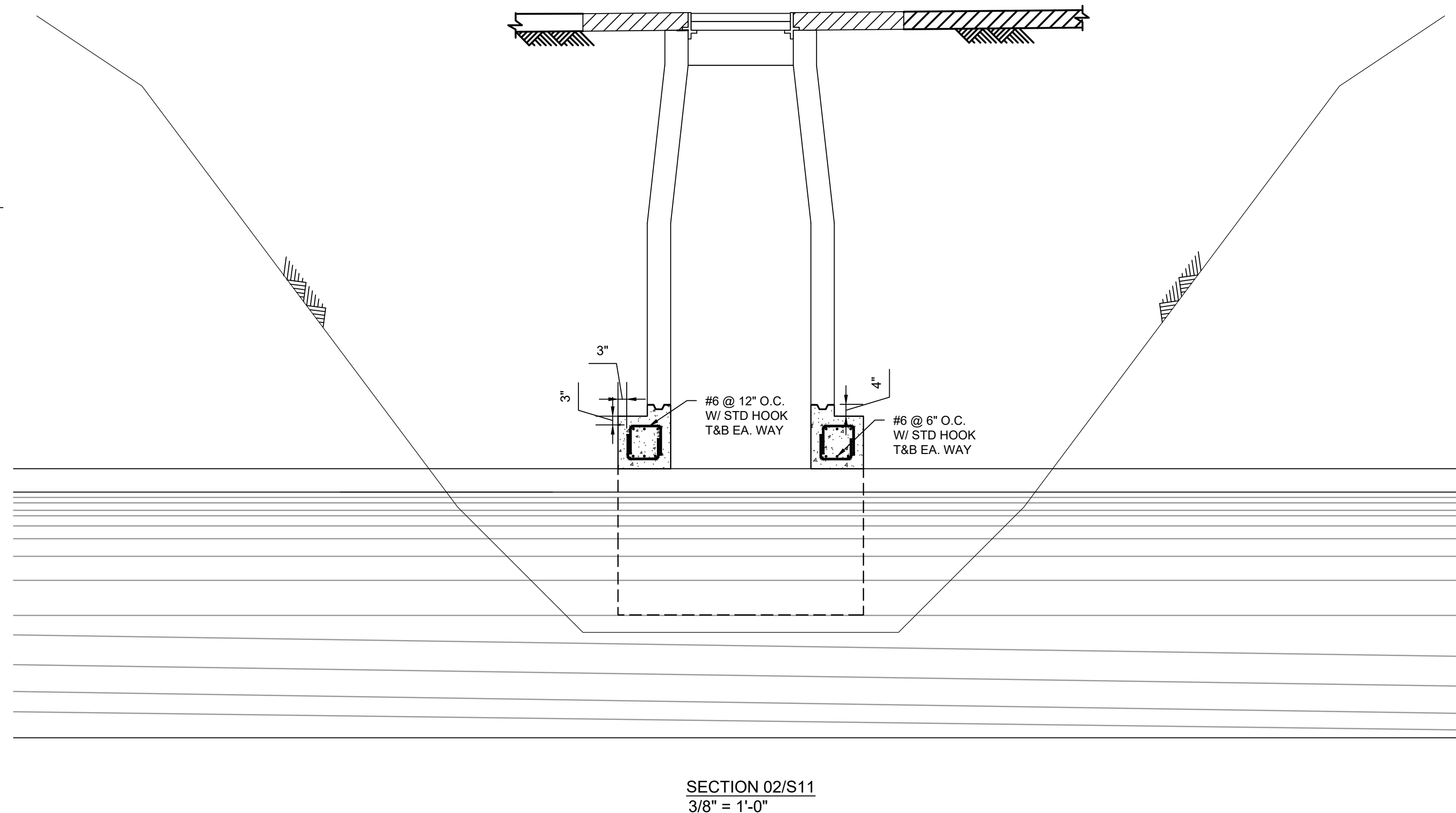
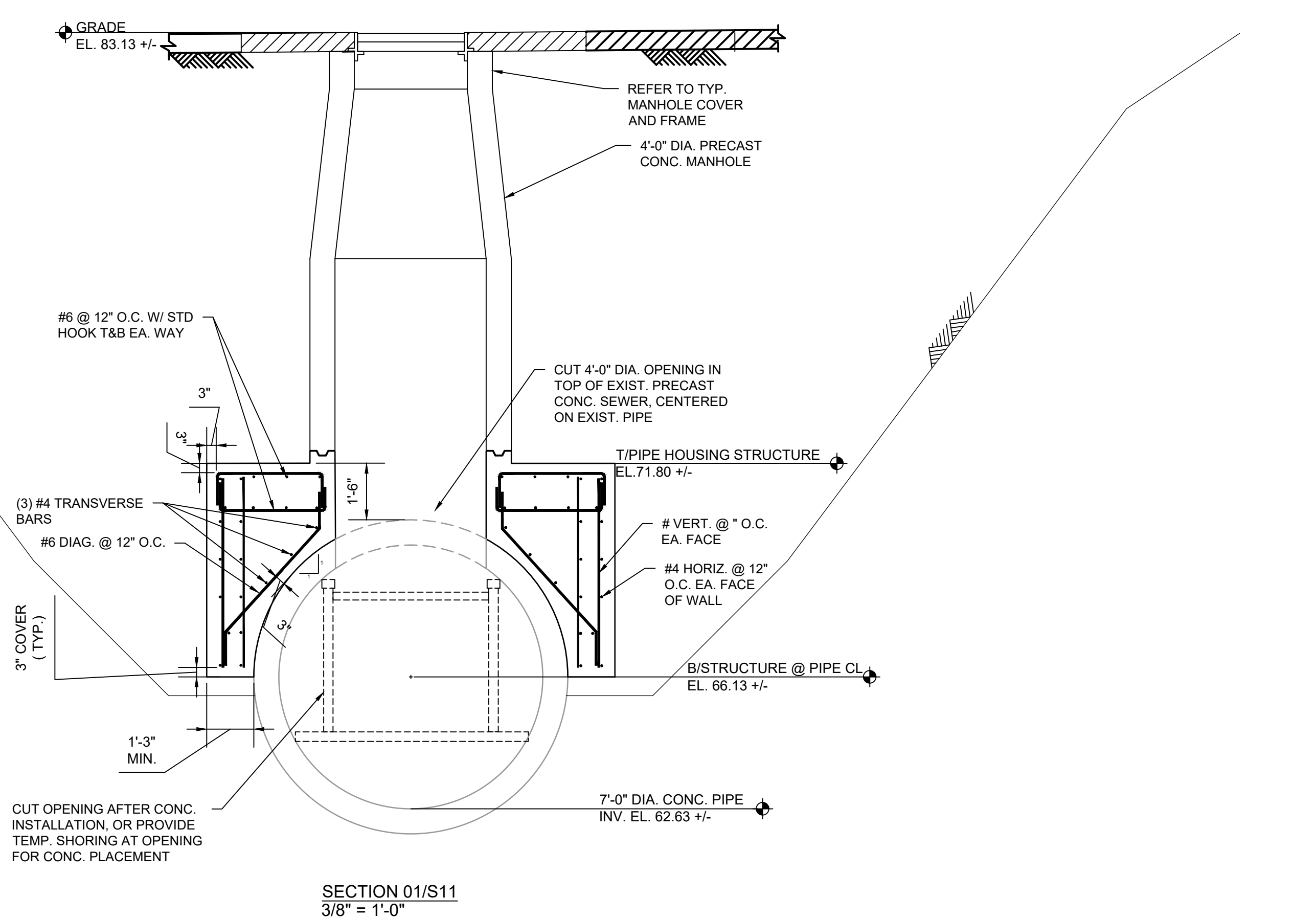
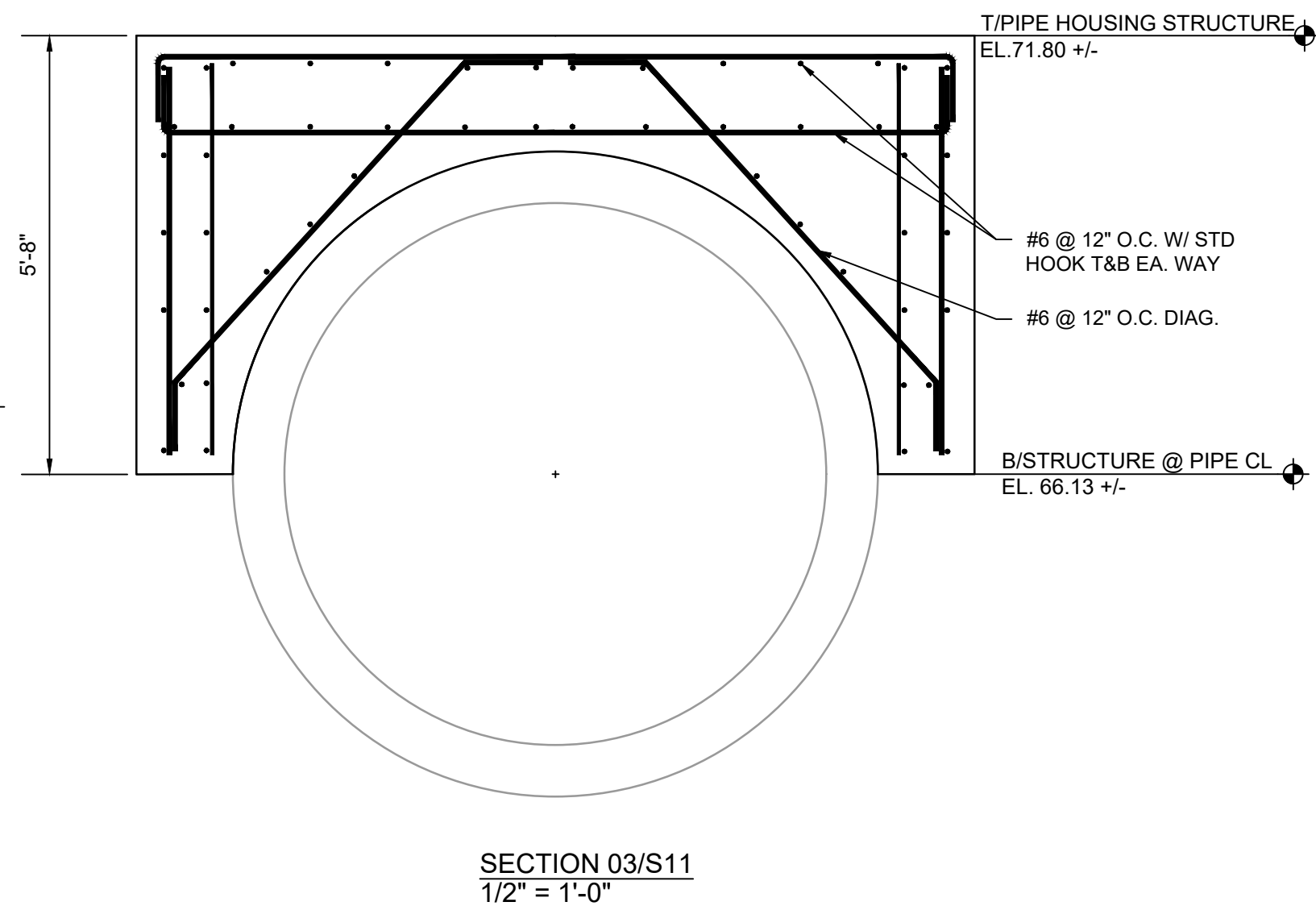
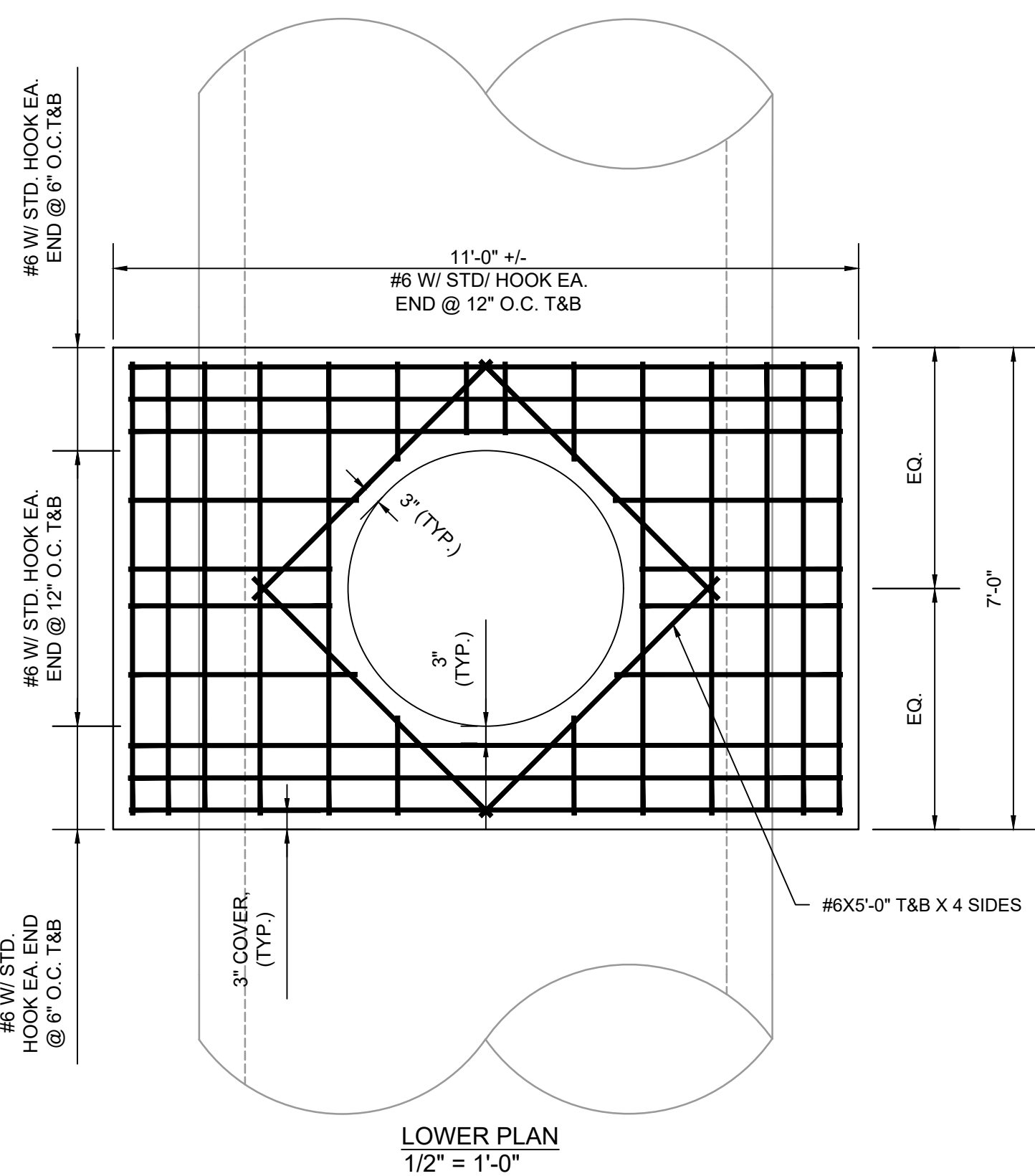
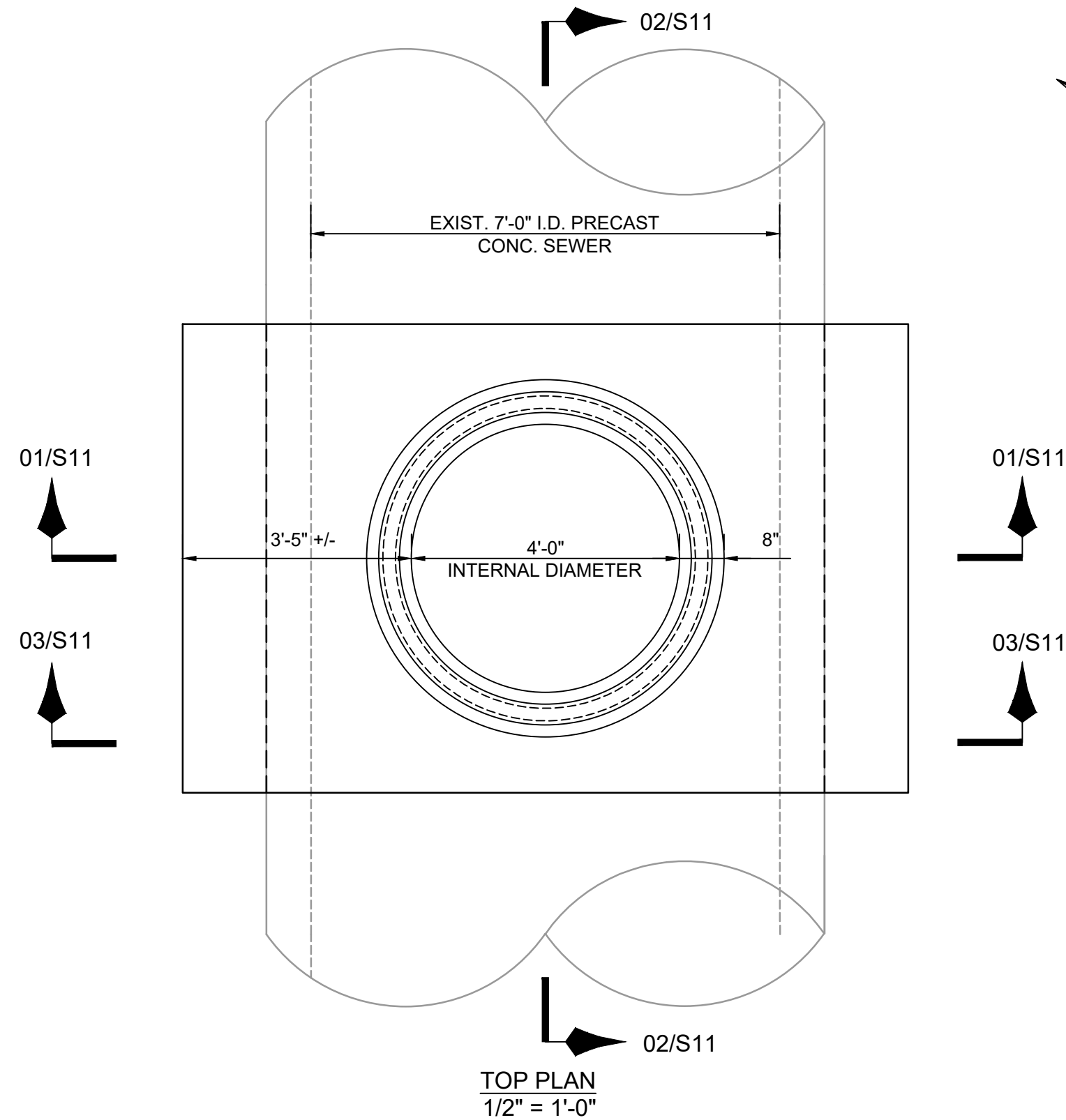
DWG: **S10**

SHEET: 40 OF 85

DATE: FEBRUARY 2023 REV: 0



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**BUFFALO**  
SEWER AUTHORITY

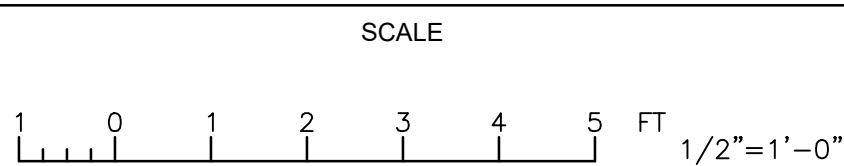
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&Engineers  
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

STRUCTURAL  
(RTC)

MANHOLE DETAILS 1

BSA CONTRACT NO. 82000041

DWG: **S11**

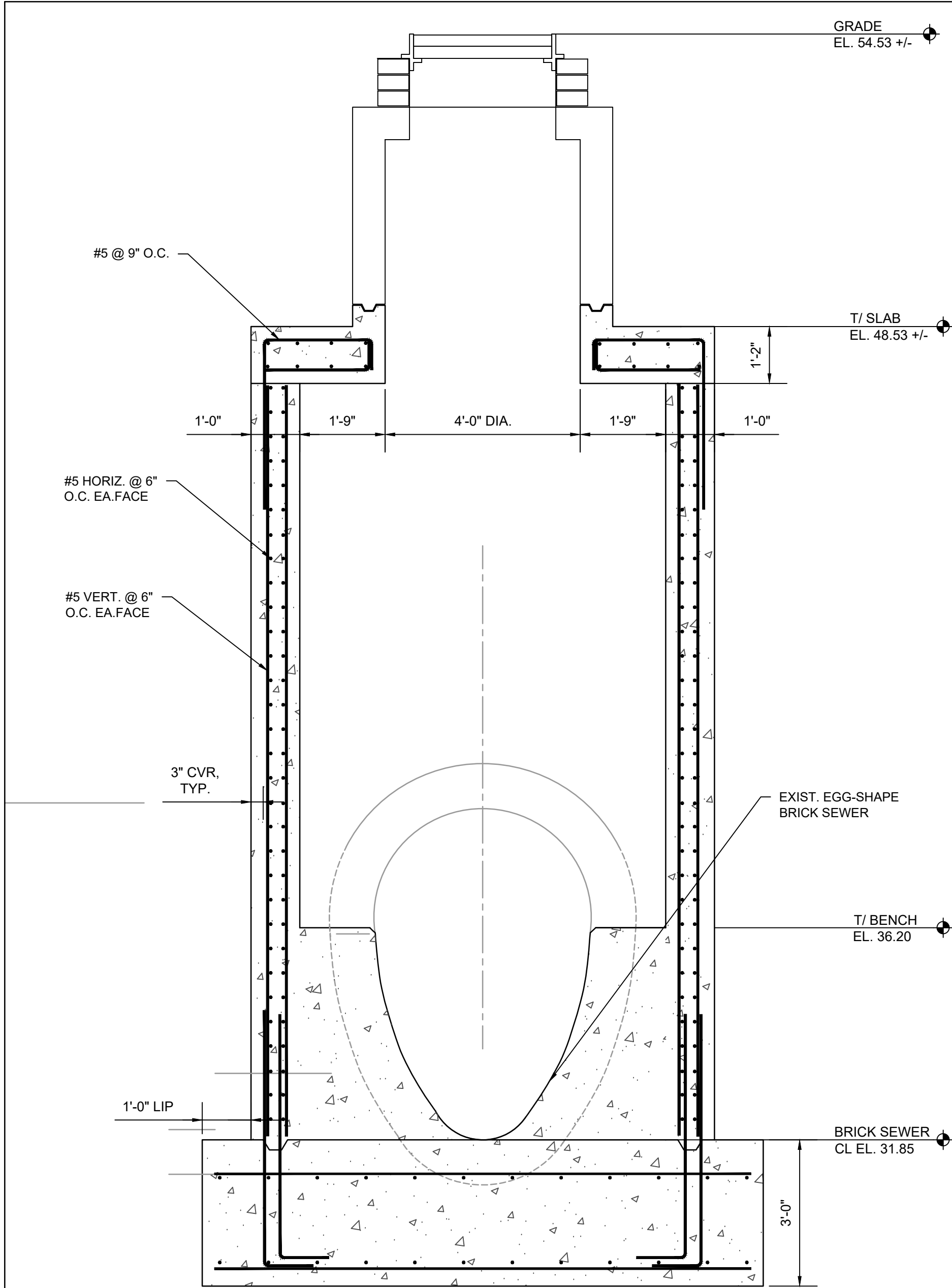
SHEET: 41 OF 85

DATE: FEBRUARY 2023 REV: 0

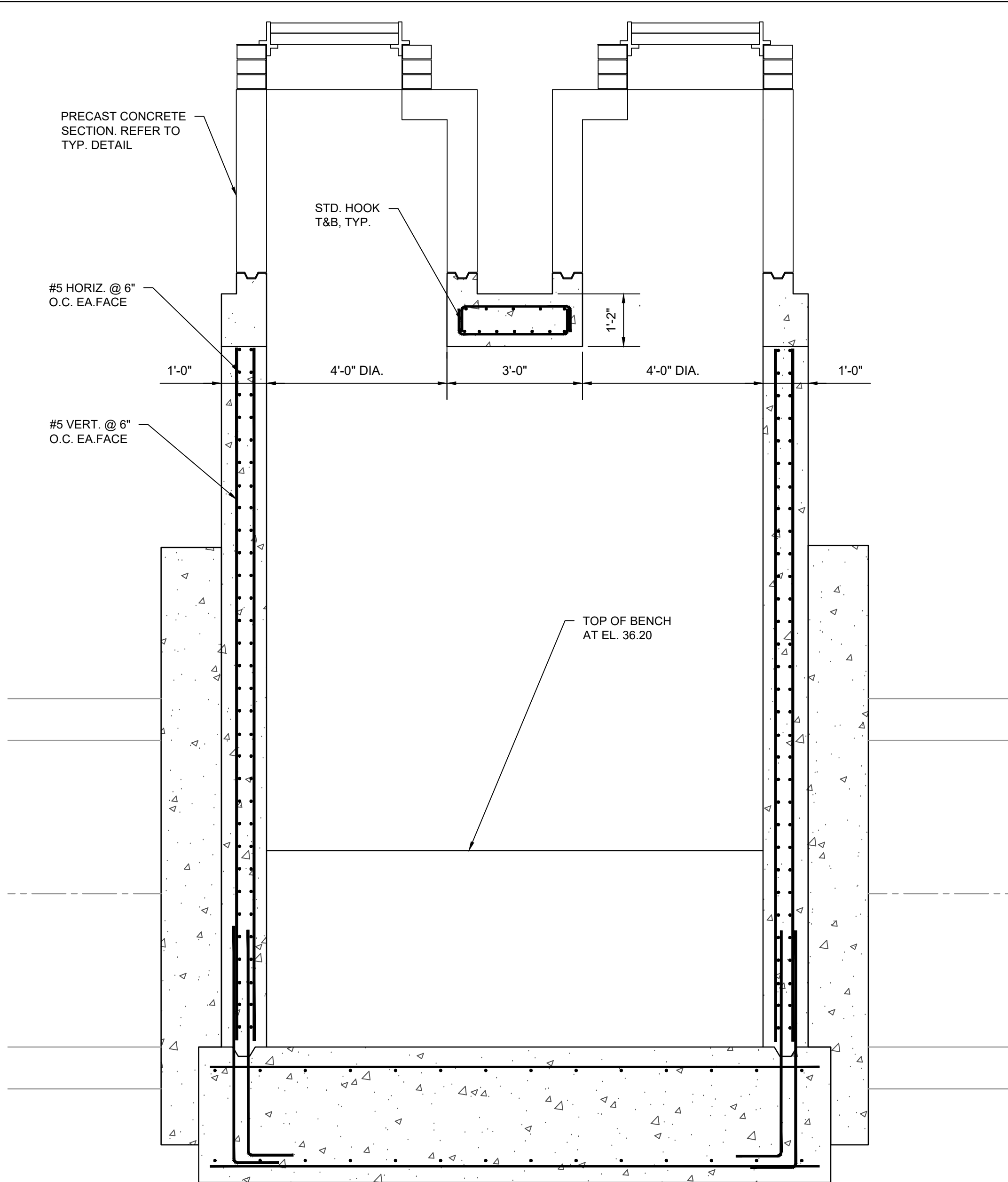
**PRELIMINARY 95%**



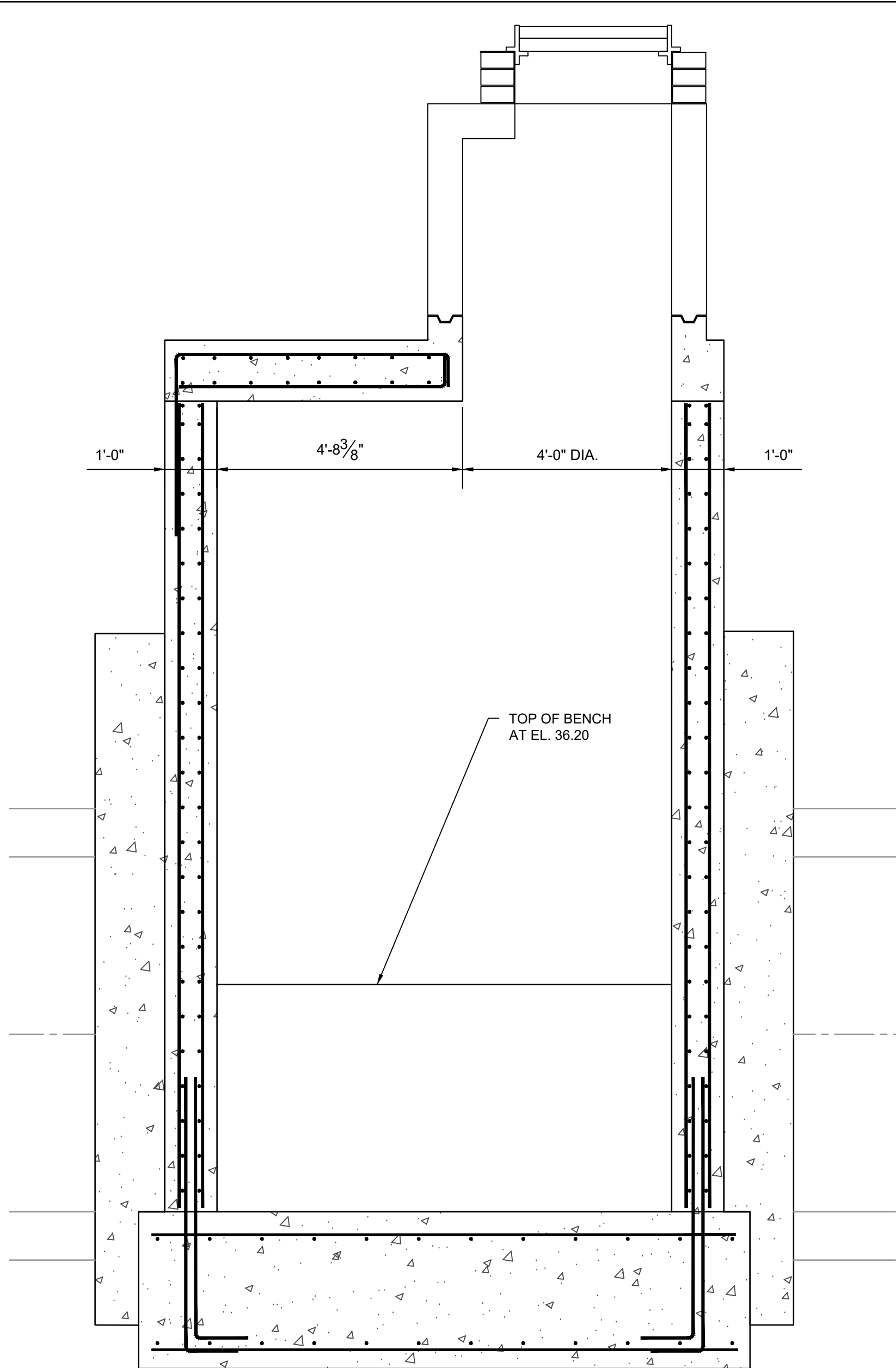
R:\2022\2203201 BSA RTC SMART SEWERS\18\_CADD\STRUCT\MANHOLE DETAILS THOMAS MCCOY



SECTION A/S12  
1/2" = 1'-0"



SECTION B/S12  
1/2" = 1'-0"



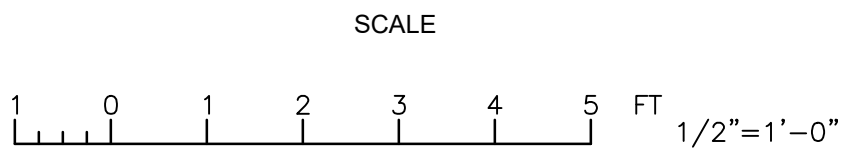
SECTION C/S12  
1/2" = 1'-0"

**BUFFALO**  
SEWER AUTHORITY

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Architects  
& Engineers  
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
CSO CONTROL SMART SEWER PROJECT

STRUCTURAL  
(RTC)

MANHOLE DETAILS 2

|                           |        |
|---------------------------|--------|
| BSA CONTRACT NO. 82000041 |        |
| DWG: <b>S12</b>           |        |
| SHEET: 42                 | OF 85  |
| DATE: FEBRUARY 2023       | REV: 0 |

PRELIMINARY 95%







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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3D\CDD114122\_M01\_MORENO, ROBERTO

| VALVE SYMBOLS               |           |            |             |
|-----------------------------|-----------|------------|-------------|
| DESCRIPTION                 | SCHEMATIC | THREE LINE | SINGLE LINE |
| GATE                        |           |            |             |
| BUTTERFLY                   |           |            |             |
| PLUG                        |           |            |             |
| CHECK (SWING)               |           |            |             |
| CONE                        |           |            |             |
| BALL                        |           |            |             |
| DIAPHRAGM                   |           |            |             |
| GLOBE                       |           |            |             |
| ANGLE                       |           |            |             |
| THREE WAY                   |           |            |             |
| FOUR WAY                    |           |            |             |
| FLAP                        |           |            |             |
| PRESSURE RELIEF             |           |            |             |
| AUTO AIR AND VACUUM RELEASE |           |            |             |
| AUTO AIR RELEASE            |           |            |             |
| AUTO VACUUM RELEASE         |           |            |             |
| PRESSURE REDUCING           |           |            |             |
| HOSE                        |           |            |             |
| STOP AND DRAIN              |           |            |             |

| PIPE FITTINGS           |           |            |             |
|-------------------------|-----------|------------|-------------|
| DESCRIPTION             | SCHEMATIC | THREE LINE | SINGLE LINE |
| CROSS                   | NA        |            |             |
| CROSS                   | NA        |            |             |
| TEE                     | NA        |            |             |
| TEE                     | NA        |            |             |
| TEE                     | NA        |            |             |
| SIDE OUTLET TEE         | NA        |            |             |
| SIDE OUTLET TEE         | NA        |            |             |
| LATERAL                 | NA        |            |             |
| 90° ELBOW               | NA        |            |             |
| 90° ELBOW               | NA        |            |             |
| 90° ELBOW               | NA        |            |             |
| 90° ELBOW (LONG RADIUS) | NA        |            |             |
| 45° ELBOW               | NA        |            |             |
| 45° ELBOW               | NA        |            |             |
| 45° ELBOW               | NA        |            |             |
| 45° ELBOW               | NA        |            |             |
| 45° ELBOW (LONG RADIUS) | NA        |            |             |
| SIDE OUTLET ELBOW       | NA        |            |             |
| SIDE OUTLET ELBOW       | NA        |            |             |
| BASE ELBOW              | NA        |            |             |

VALVE OPERATORS

|   |                                      |      |                    |   |                    |
|---|--------------------------------------|------|--------------------|---|--------------------|
| X | PLACE KEY FOR OPERATOR IN PLACE OF X | NONE | MANUAL             | M | MOTOR (ELECTRIC)   |
|   |                                      | C    | CHAINWHEEL         | P | PNEUMATIC CYLINDER |
|   |                                      | D    | DIAPHRAGM          | S | SOLENOID           |
|   |                                      | F    | FLOAT              | A | AIR MOTOR          |
|   |                                      | G    | GEAR               | N | NUT                |
|   |                                      | H    | HYDRAULIC CYLINDER |   |                    |

| PIPE FITTINGS                       |           |            |             |
|-------------------------------------|-----------|------------|-------------|
| DESCRIPTION                         | SCHEMATIC | THREE LINE | SINGLE LINE |
| UNION (SCREWED)                     |           |            |             |
| REDUCER                             |           |            |             |
| REDUCER – ECCENTRIC (OFFSET VIEW)   | NA        |            |             |
| BLIND FLANGE                        |           |            |             |
| SLEEVE TYPE COUPLING                |           |            |             |
| SLEEVE TYPE COUPLING (HARNESSED)    |           |            |             |
| GROOVED TYPE COUPLING               |           |            |             |
| EXPANSION JOINT RUBBER BELLOWS TYPE |           |            |             |
| EXPANSION JOINT METAL BELLOWS TYPE  |           |            |             |
| VENTURI METER                       |           |            |             |
| METER                               |           |            |             |
| STRAINER                            |           |            |             |
| DUPLEX STRAINER                     |           |            |             |
| LUBE OIL FILTER                     |           | NA         |             |
| MOISTURE SEPARATOR                  |           | NA         |             |
| SCALE TRAP                          |           | NA         |             |
| FLAME TRAP                          |           |            |             |
| VENT                                |           |            |             |
| THERMOSTAT (TEMPERATURE REGULATOR)  |           |            |             |
| PRESSURE GAUGE                      |           |            |             |
| THERMOMETER                         |           |            |             |
| WATER LEVEL ALARM                   |           |            |             |
| DIFFERENTIAL PRESSURE GAUGE         |           |            |             |

| PIPE JOINTS                             |           |            |             |
|-----------------------------------------|-----------|------------|-------------|
| DESCRIPTION                             | SCHEMATIC | THREE LINE | SINGLE LINE |
| FLANGE                                  | NA        |            |             |
| MECHANICAL JOINT                        | NA        |            |             |
| MECHANICAL JOINT (RESTRAINED)           | NA        |            |             |
| PUSH ON OR BELL AND SPIGOT              | NA        |            |             |
| PUSH ON OR BELL AND SPIGOT (RESTRAINED) | NA        |            |             |
| WELDED                                  | NA        |            | NA          |
| SCREWED                                 | NA        |            |             |
| JOINT IN CONCRETE PIPE                  | NA        |            | NA          |

| WALL FITTINGS                                                                          |           |            |             |
|----------------------------------------------------------------------------------------|-----------|------------|-------------|
| DESCRIPTION                                                                            | SCHEMATIC | THREE LINE | SINGLE LINE |
| WALL SLEEVE (CAULKED)                                                                  | NA        |            |             |
| WALL SLEEVE (ANNULAR TYPE SEAL)                                                        | NA        |            |             |
| WALL SLEEVE (MECHANICAL JOINT)                                                         | NA        |            |             |
| FLANGE AND FLANGE WALL PIPE WITH INTERMEDIATE COLLAR (F x F x F)                       | NA        |            |             |
| BELL AND BELL WALL PIPE WITH INTERMEDIATE COLLAR (B x F x B)                           | NA        |            |             |
| MECHANICAL JOINT AND MECHANICAL JOINT WALL PIPE WITH INTERMEDIATE COLLAR (MJ x F x MJ) | NA        |            |             |
| BELL AND FLANGE WALL PIPE WITH INTERMEDIATE COLLAR (B x F x F)                         | NA        |            |             |
| MECHANICAL JOINT AND FLANGE WALL PIPE WITH INTERMEDIATE COLLAR (MJ x F x F)            | NA        |            |             |
| STEEL WALL RING FOR MECHANICAL JOINT AND CONCRETE PIPE (RUBBER AND STEEL)              | NA        |            | NA          |

NOTES:

- THIS IS A GENERAL LEGEND PROVIDED TO FACILITATE USE OF THE DRAWINGS. REFER TO THE DRAWINGS AND SPECIFICATIONS FOR ITEMS REQUIRED.
- VALVES AND PIPE FITTINGS ARE SHOWN WITH FLANGED JOINTS. ITEMS ARE AVAILABLE WITH VARIOUS JOINTS AND ARE SHOWN AS REQUIRED.
- NA MEANS NOT APPLICABLE.

95% SUBMITTAL

**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

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SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL

SYMBOL LEGEND

BSA CONTRACT NO. 82000041

DWG: **M01**

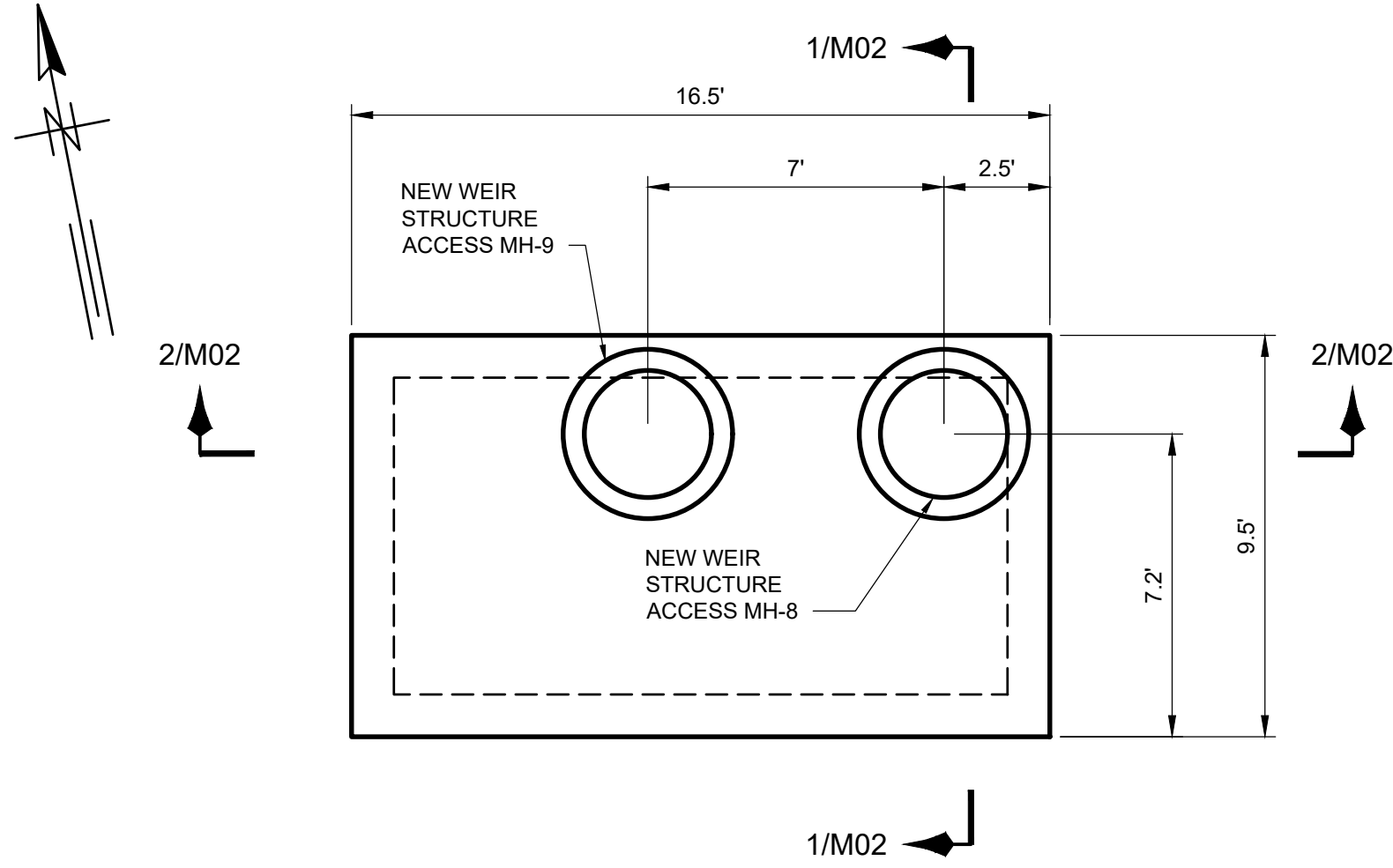
SHEET: 44 OF 85

DATE: FEBRUARY 2023 REV: 0

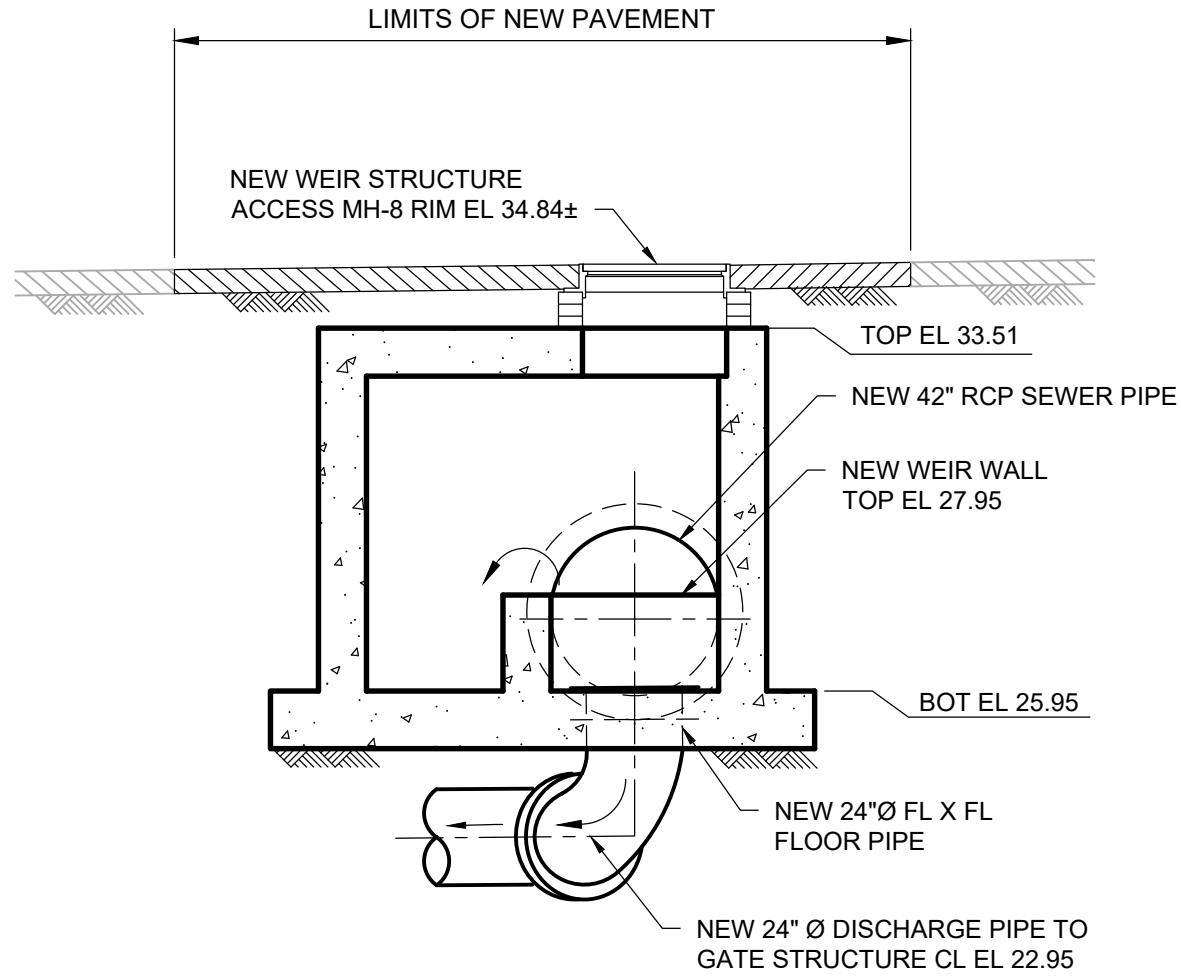


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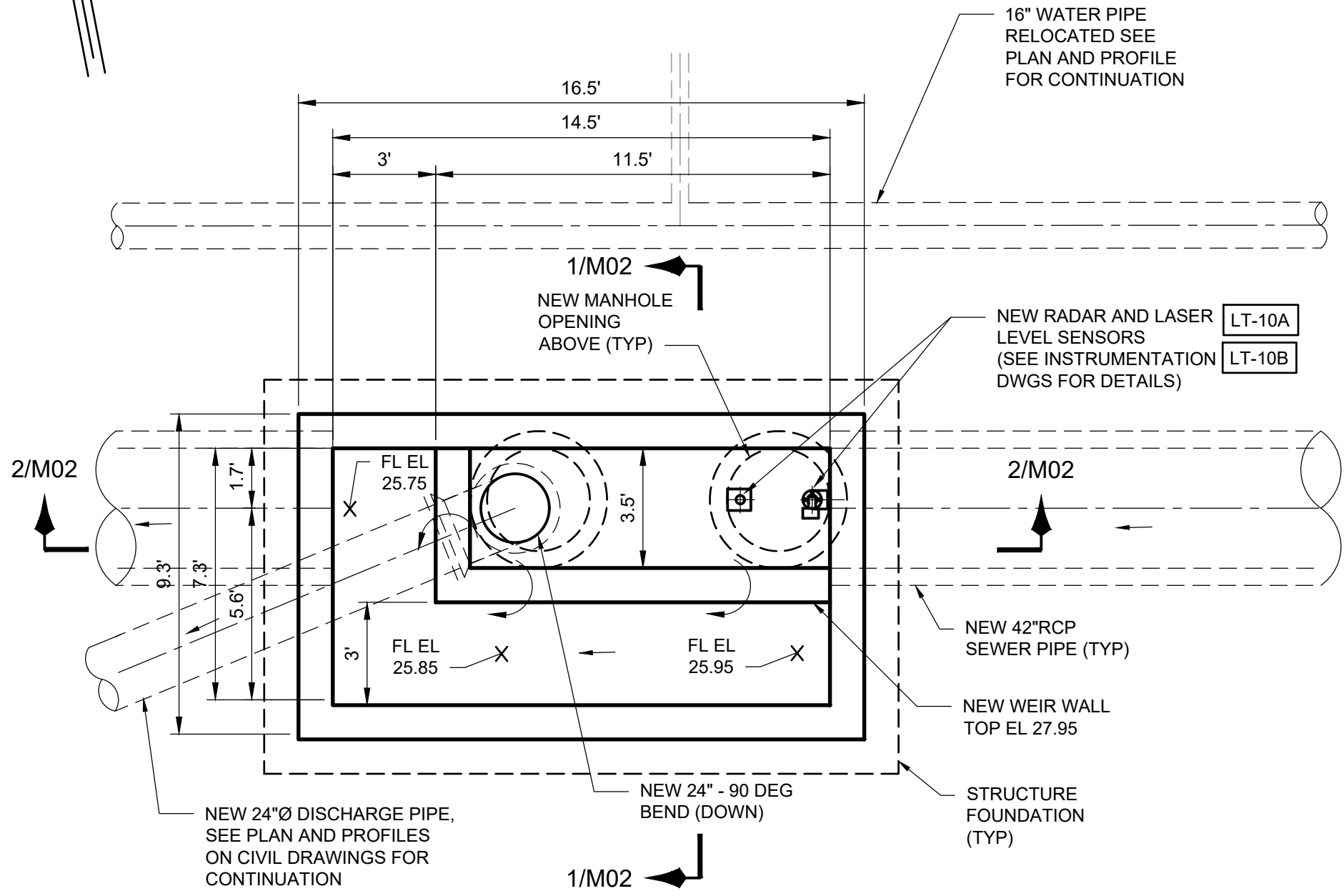
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\141222.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_M02 MORENO, ROBERTO



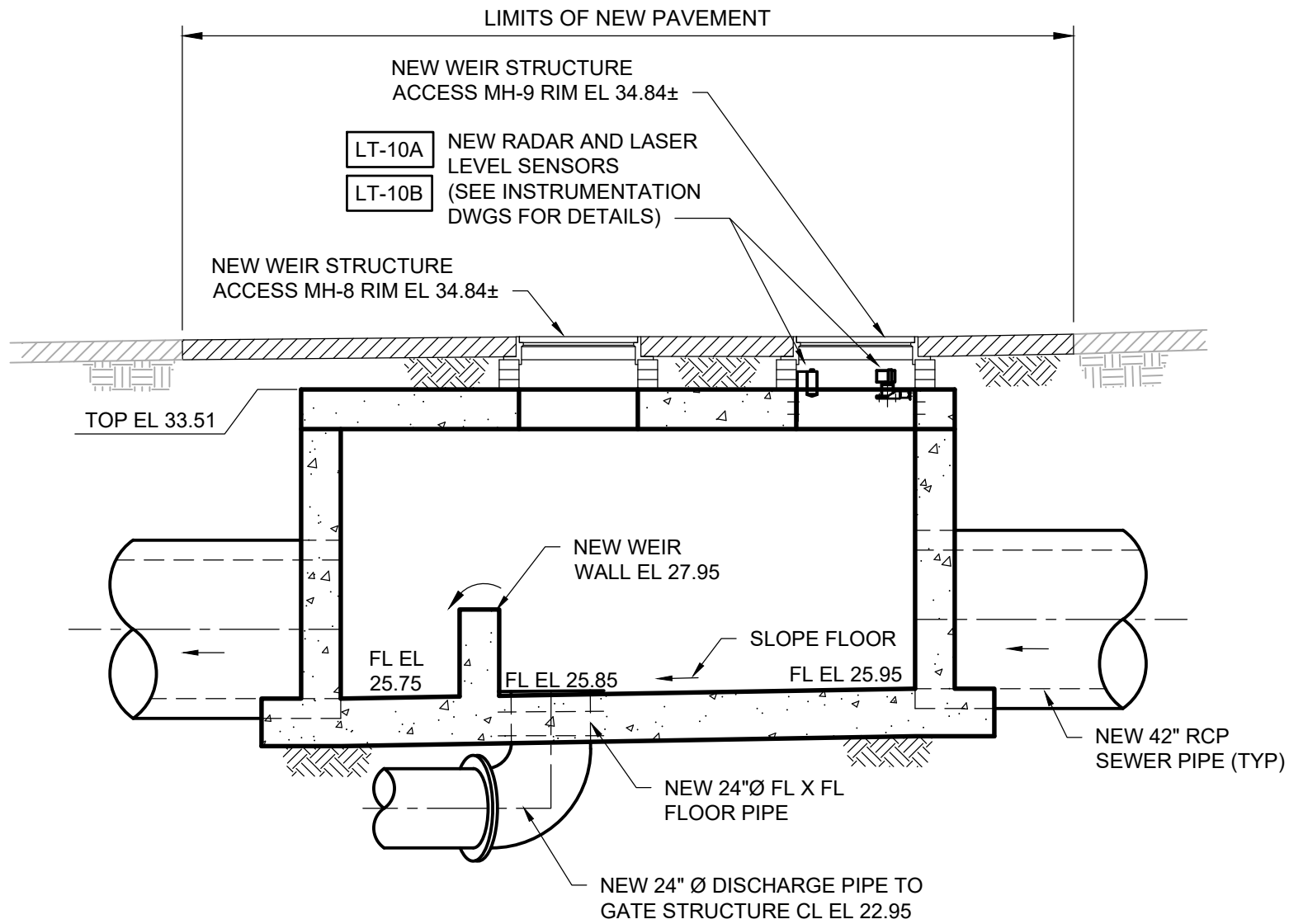
TOP PLAN @ EL 34.84  
SCALE 1" = 4'-0"



SECTION 1/M02  
SCALE 1" = 4'-0"



PLAN @ 27.95  
SCALE 1" = 4'-0"



SECTION 2/M02  
SCALE 1" = 4'-0"

- NOTES:
1. ALL PIPES AND FITTINGS FOR DISCHARGE PIPE ARE TO BE PVC PS46.
  2. SEE ELECTRICAL DRAWINGS FOR NEW LOCATION OF REROUTED ELECTRICAL DUCT BANK.

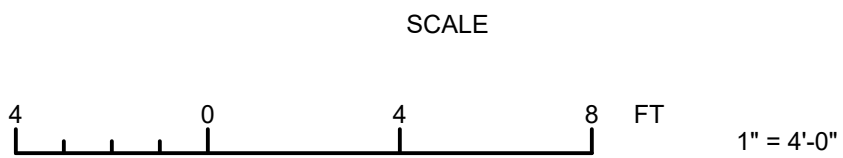
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL  
BRECKENRIDGE ST & NIAGARA ST RTC

DIVERSION CHAMBER W/WEIR (MH 8 & MH 9) - PLANS & SECTIONS

BSA CONTRACT NO. 82000041

DWG: **M02**

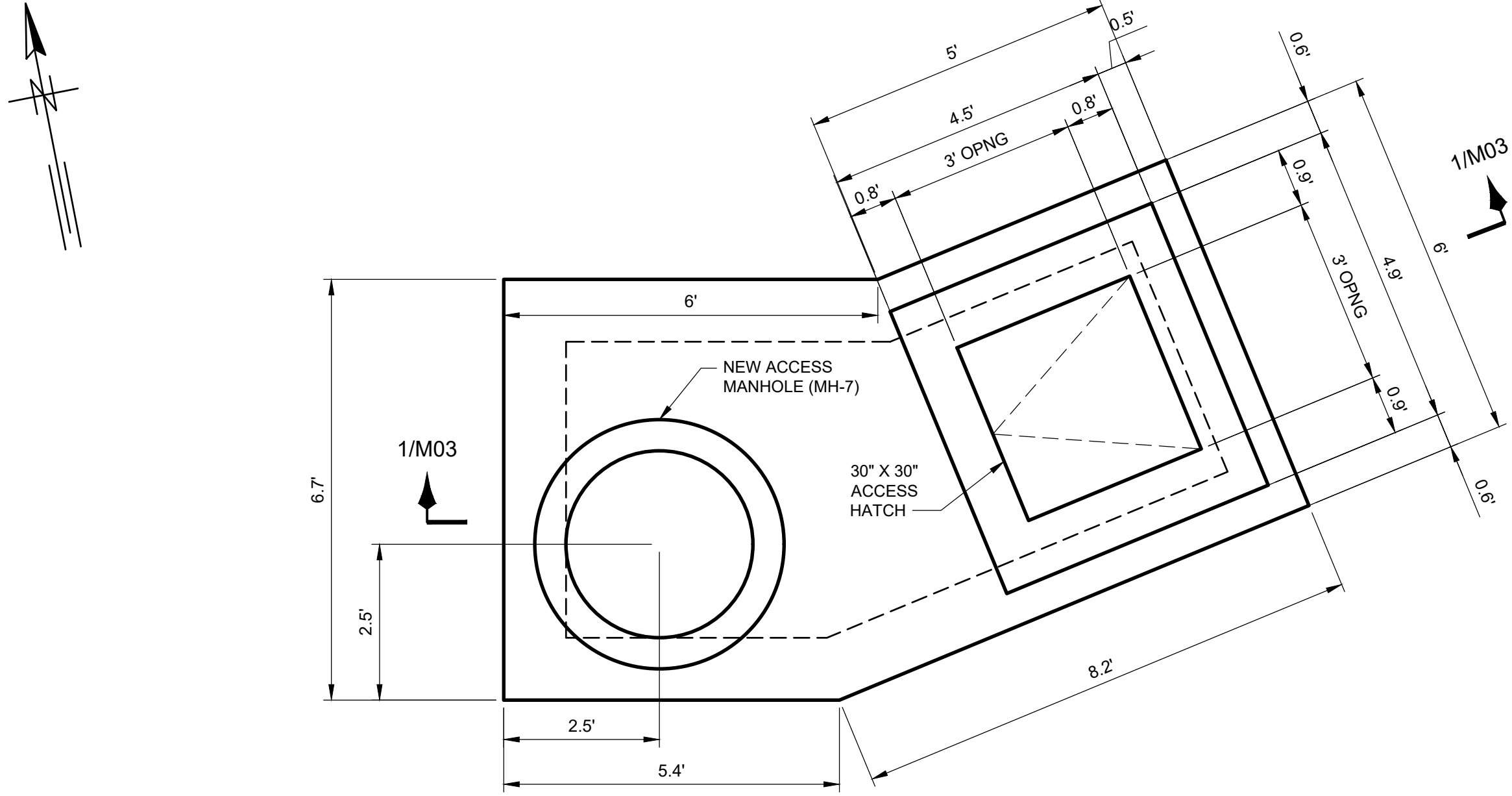
SHEET: 45 OF 85  
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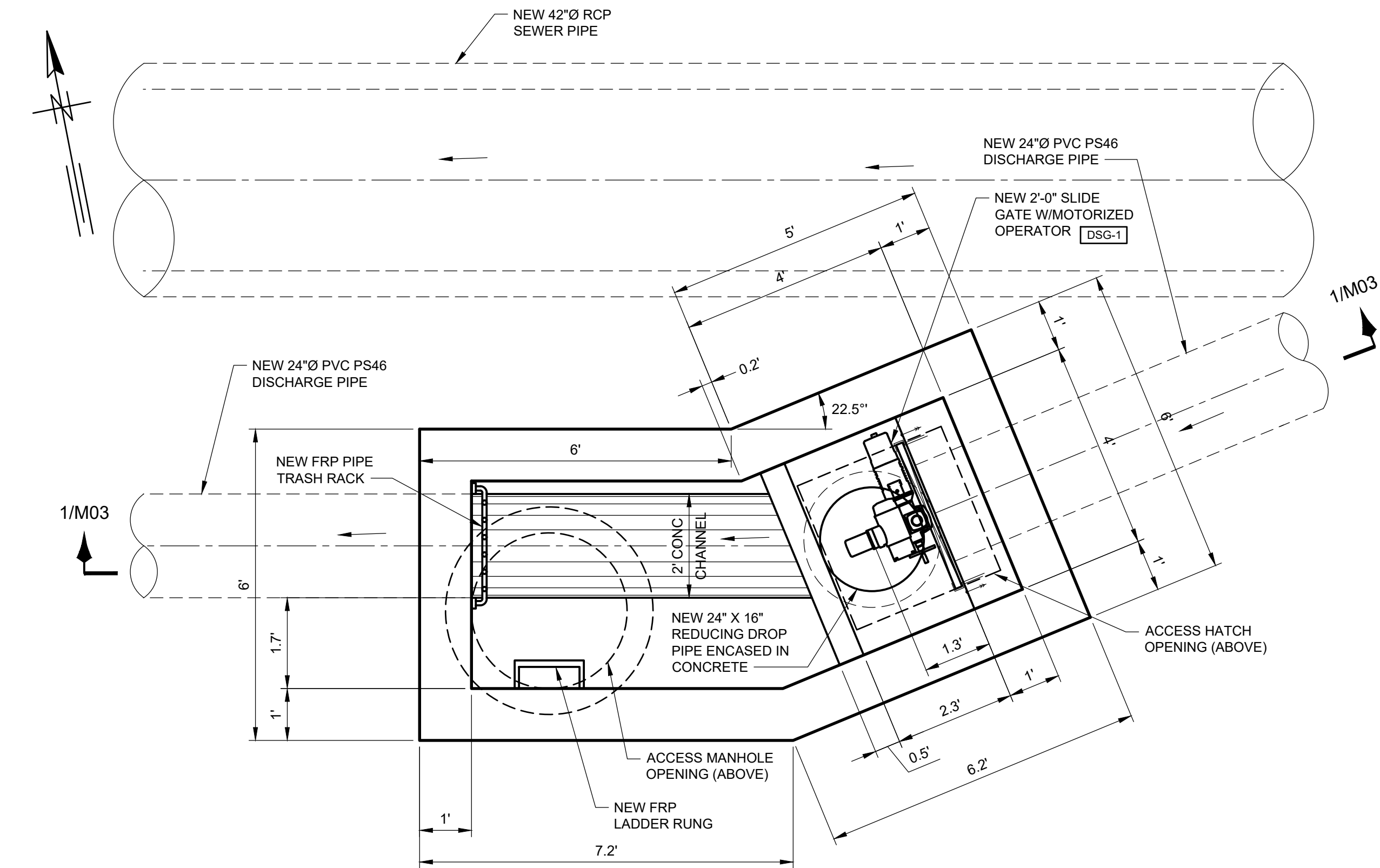


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**GATE STRUCTURE (MH-7)**  
**TOP PLAN @ EL 34.84**  
SCALE 1" = 2'-0"



**GATE STRUCTURE (MH-7)**  
**PLAN @ 28.23**  
SCALE 1" = 2'-0"

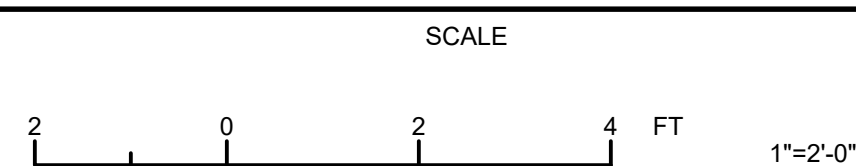
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NEW YORK, NY 10006

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL  
BRECKENRIDGE ST & NIAGARA ST RTC

GATE STRUCTURE (MH 7) - PLANS & SECTIONS

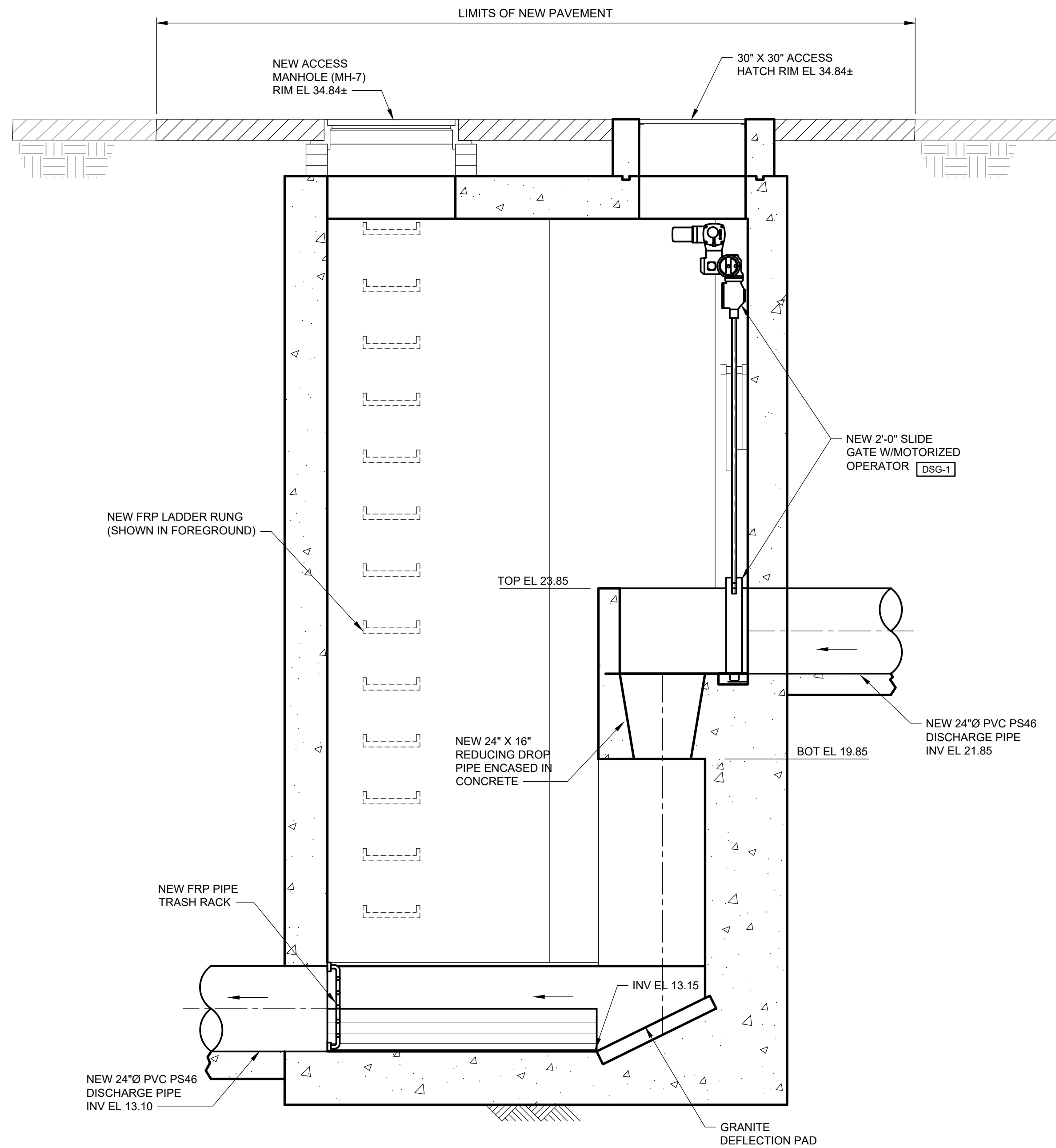
BSA CONTRACT NO. 82000041

DWG: **M03**

SHEET: 45 OF 85

DATE: FEBRUARY 2023 REV: 0

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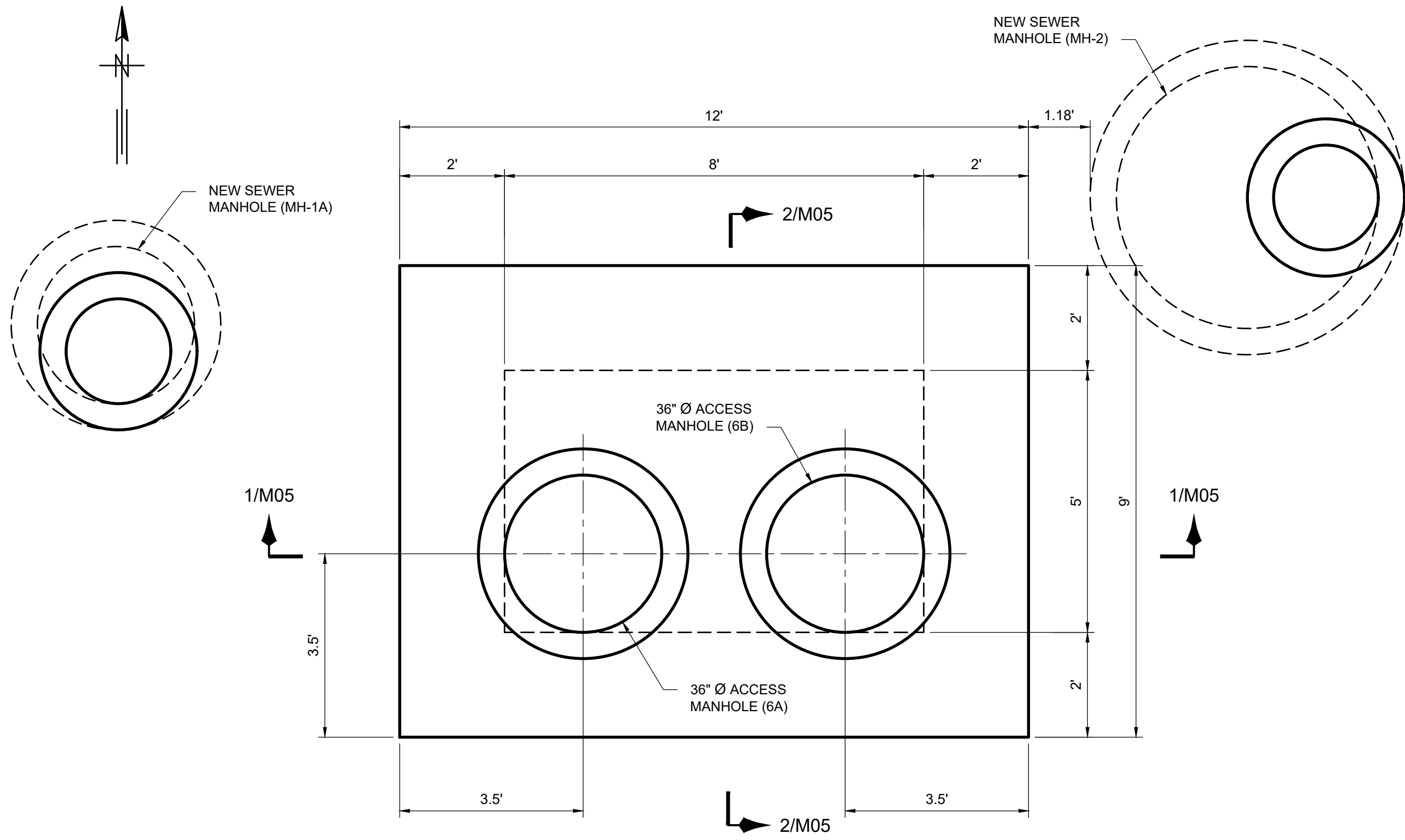


**SECTION 1/M03**  
SCALE 1" = 2'-0"

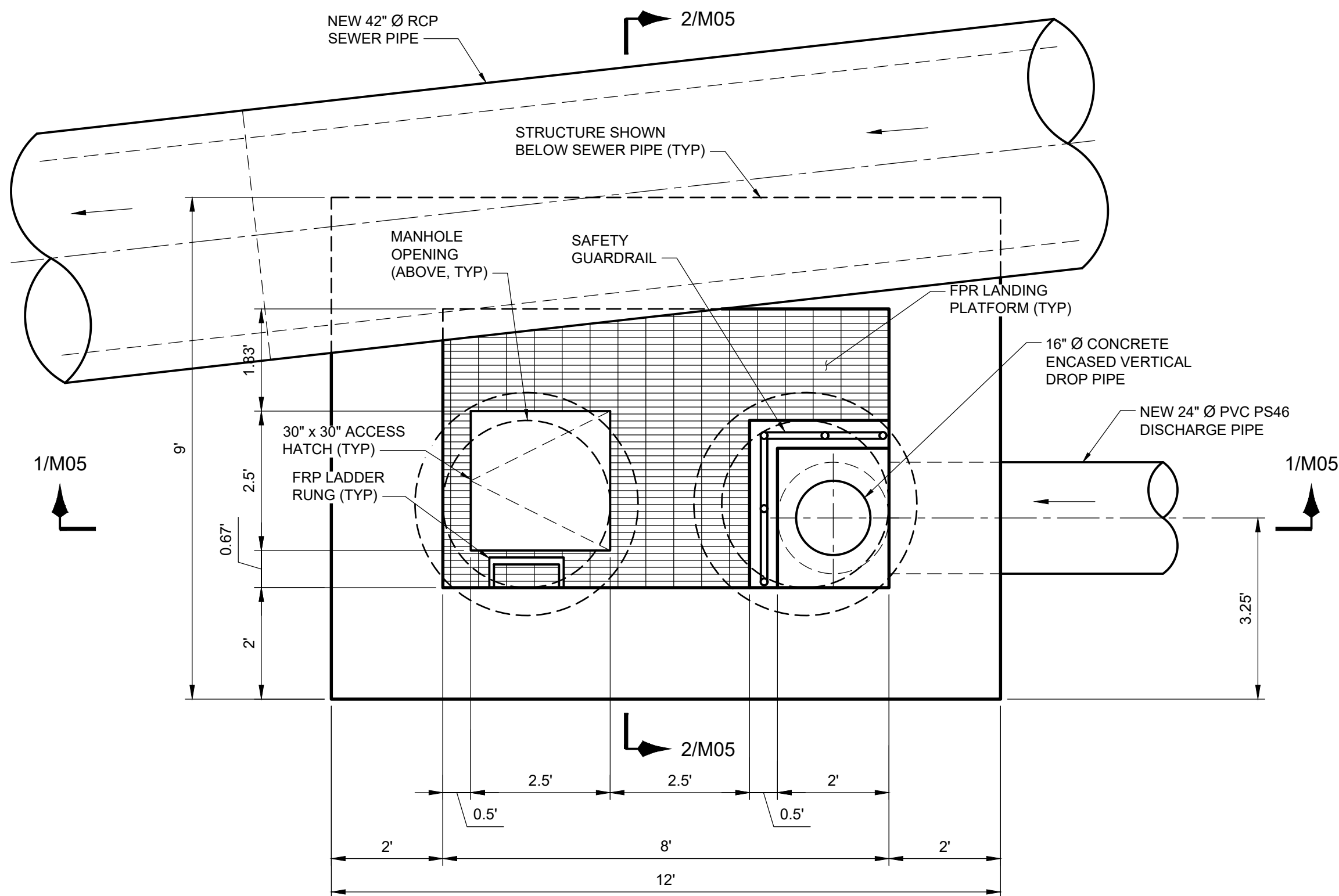


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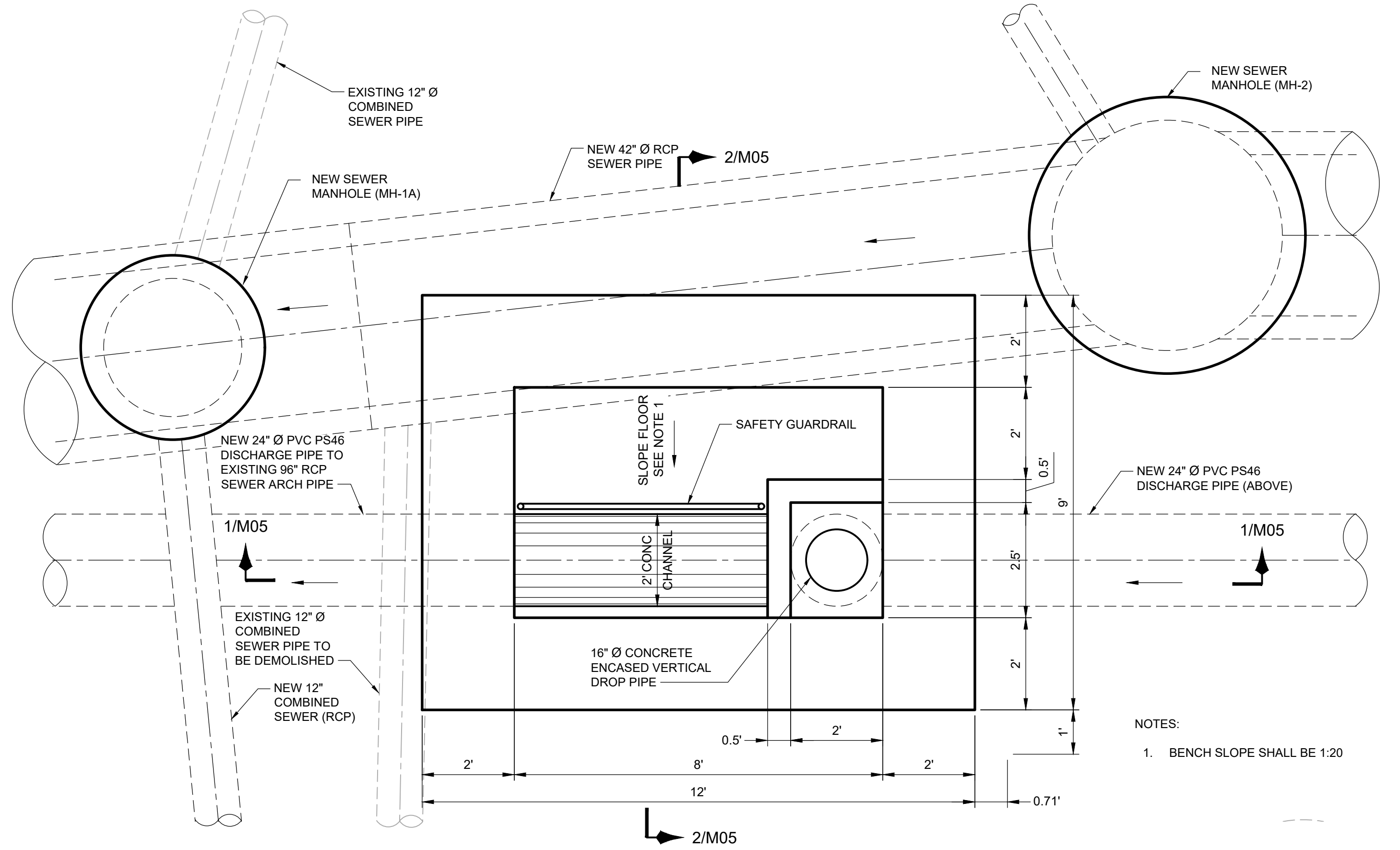
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**DROP MANHOLE (MH 6A & 6B)**  
**PLAN AT GRADE EL 35.98**  
SCALE: 3" = 1'-0"



**DROP MANHOLE (MH 6A & 6B)**  
**PLAN AT EL 14.00**  
SCALE: 3" = 1'-0"



**DROP MANHOLE (MH 6A & 6B)**  
**PLAN AT EL -19.77**  
SCALE: 3" = 1'-0"

- NOTES:
1. BENCH SLOPE SHALL BE 1:20

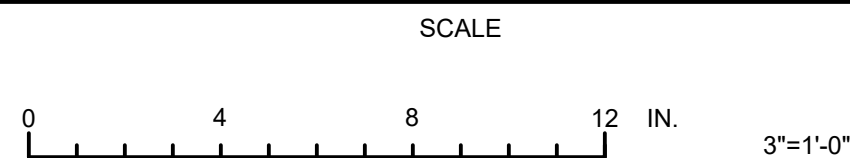
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NITAGARA ST RTC

DROP MANHOLE (MH 6A & 6B) - PLANS

BSA CONTRACT NO. 82000041

DWG: **M04**

SHEET: 47 OF 85

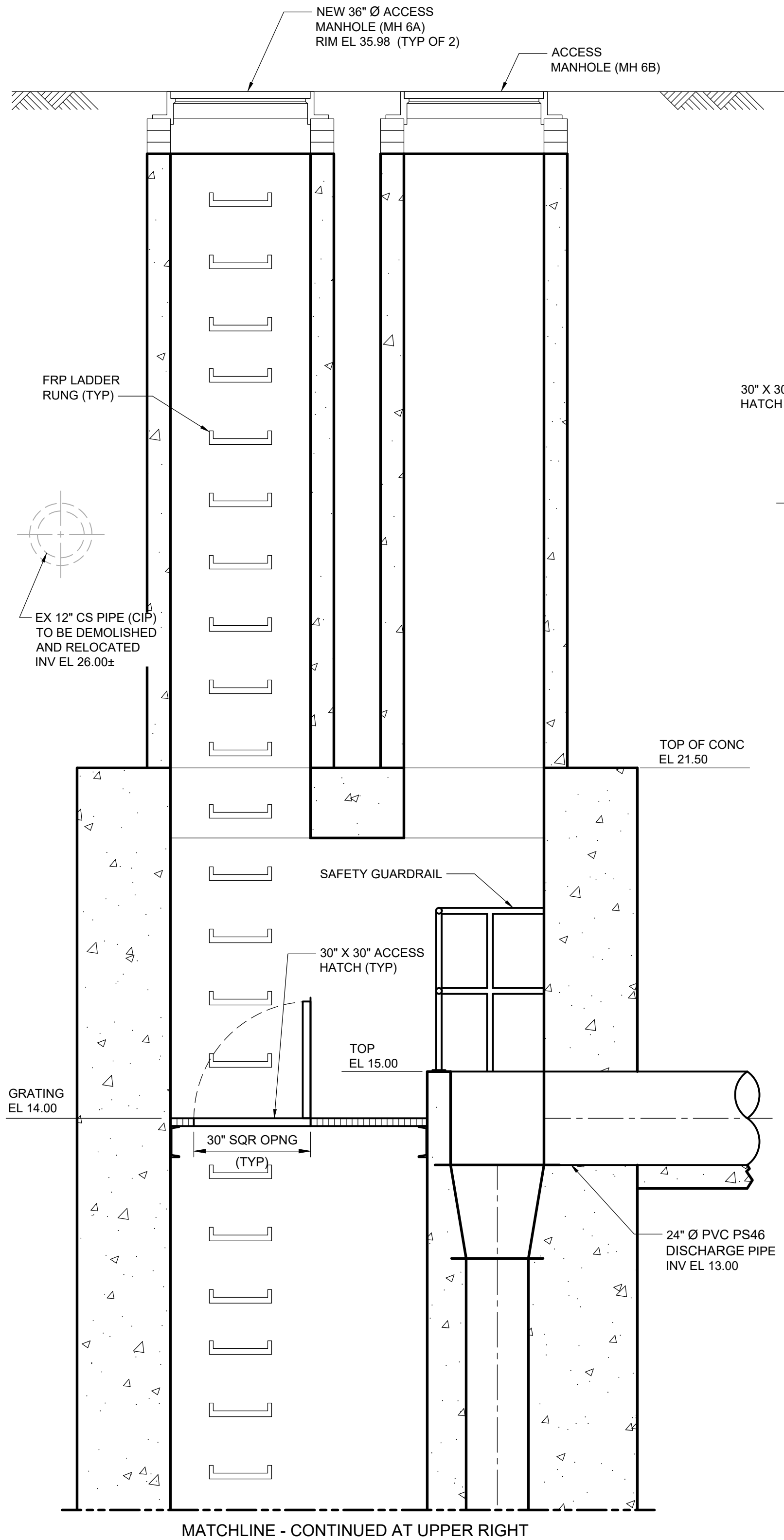
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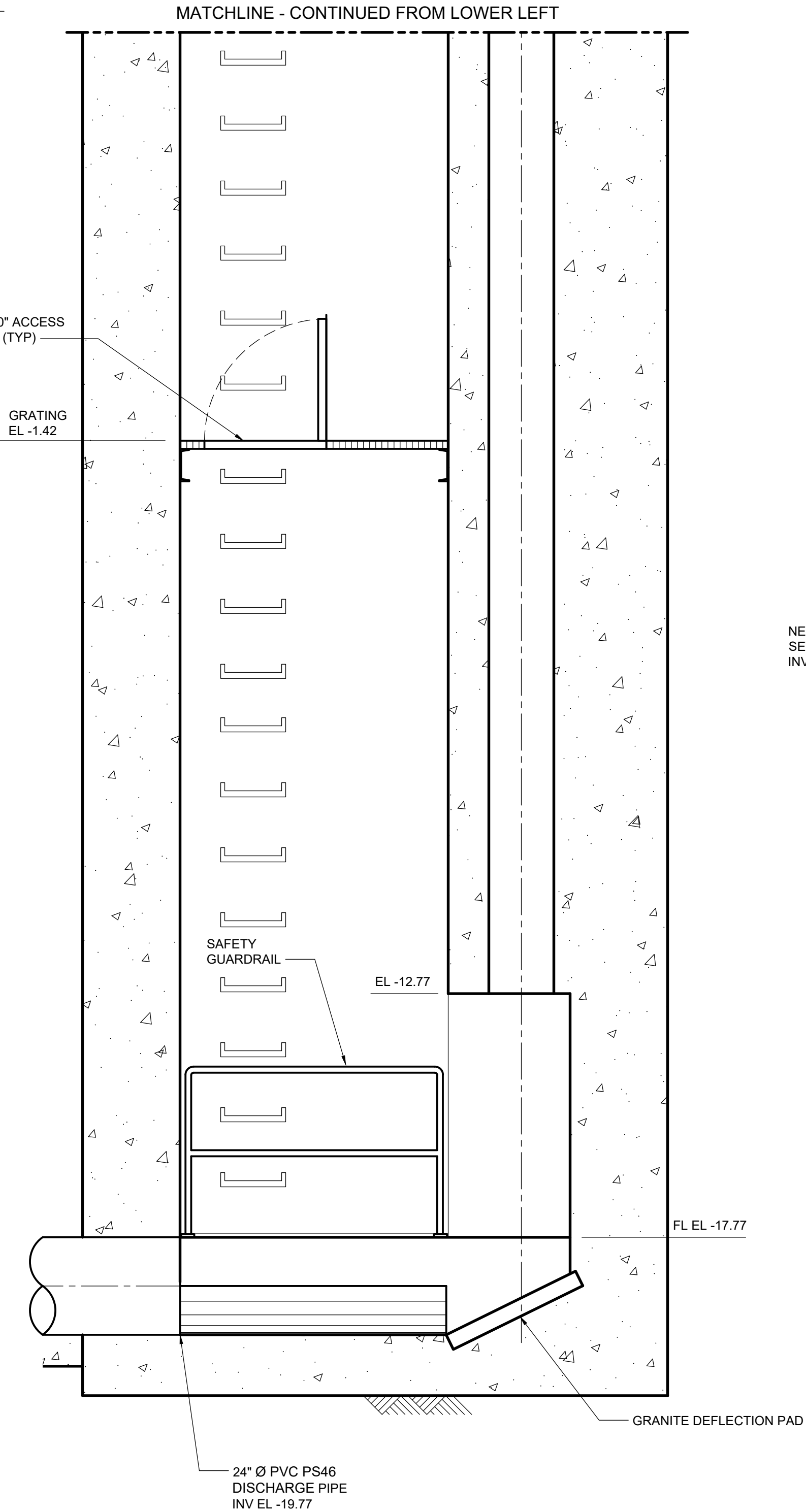


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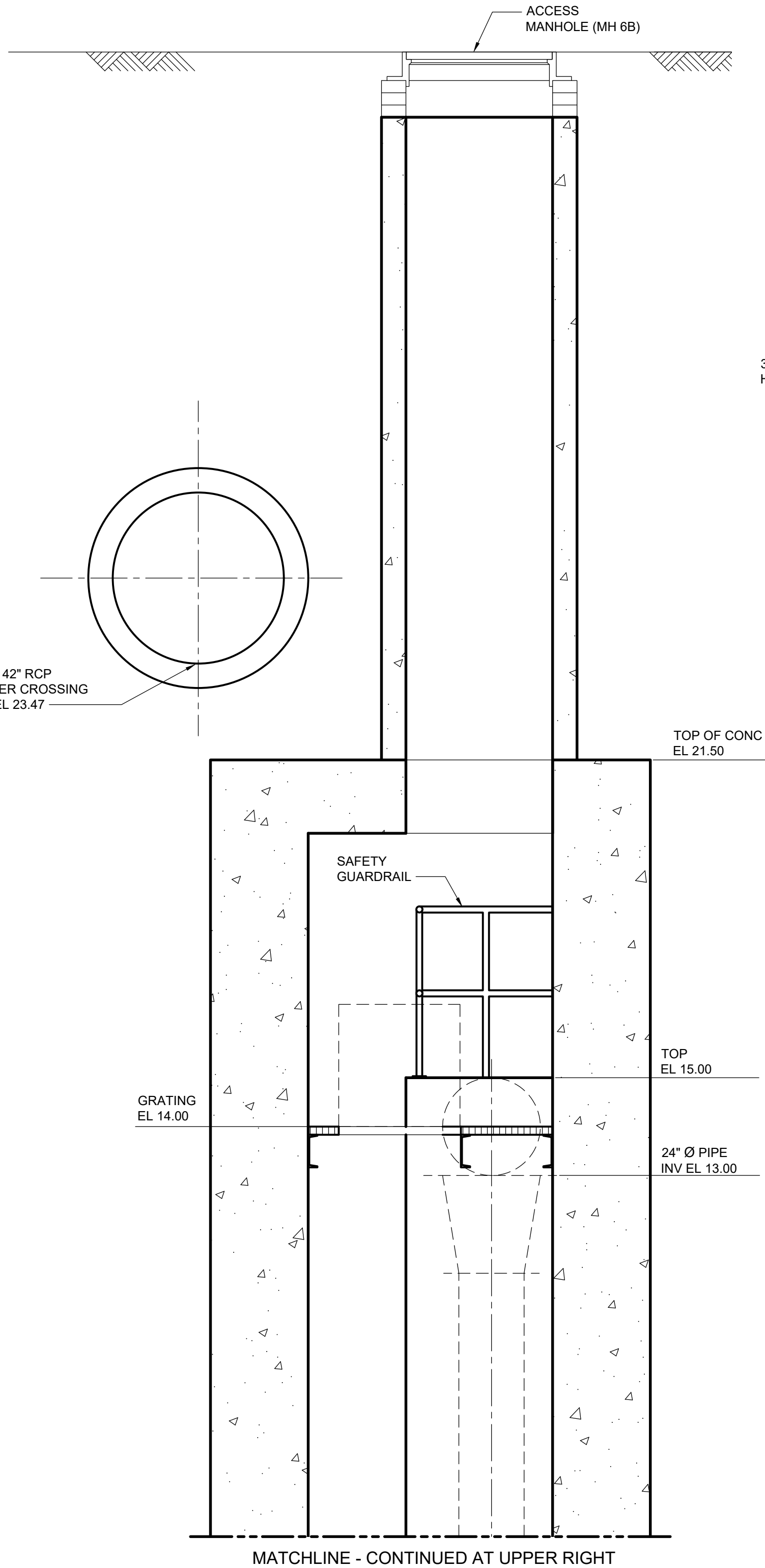
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_M05 MORENO, ROBERTO



SECTION 1/M5  
SCALE: 1" = 2'-0"



SECTION 2/M5  
SCALE: 1" = 2'-0"



- NOTES:
1. BENCH SLOPE SHALL BE 1:20

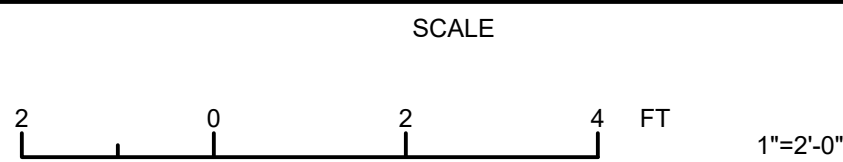
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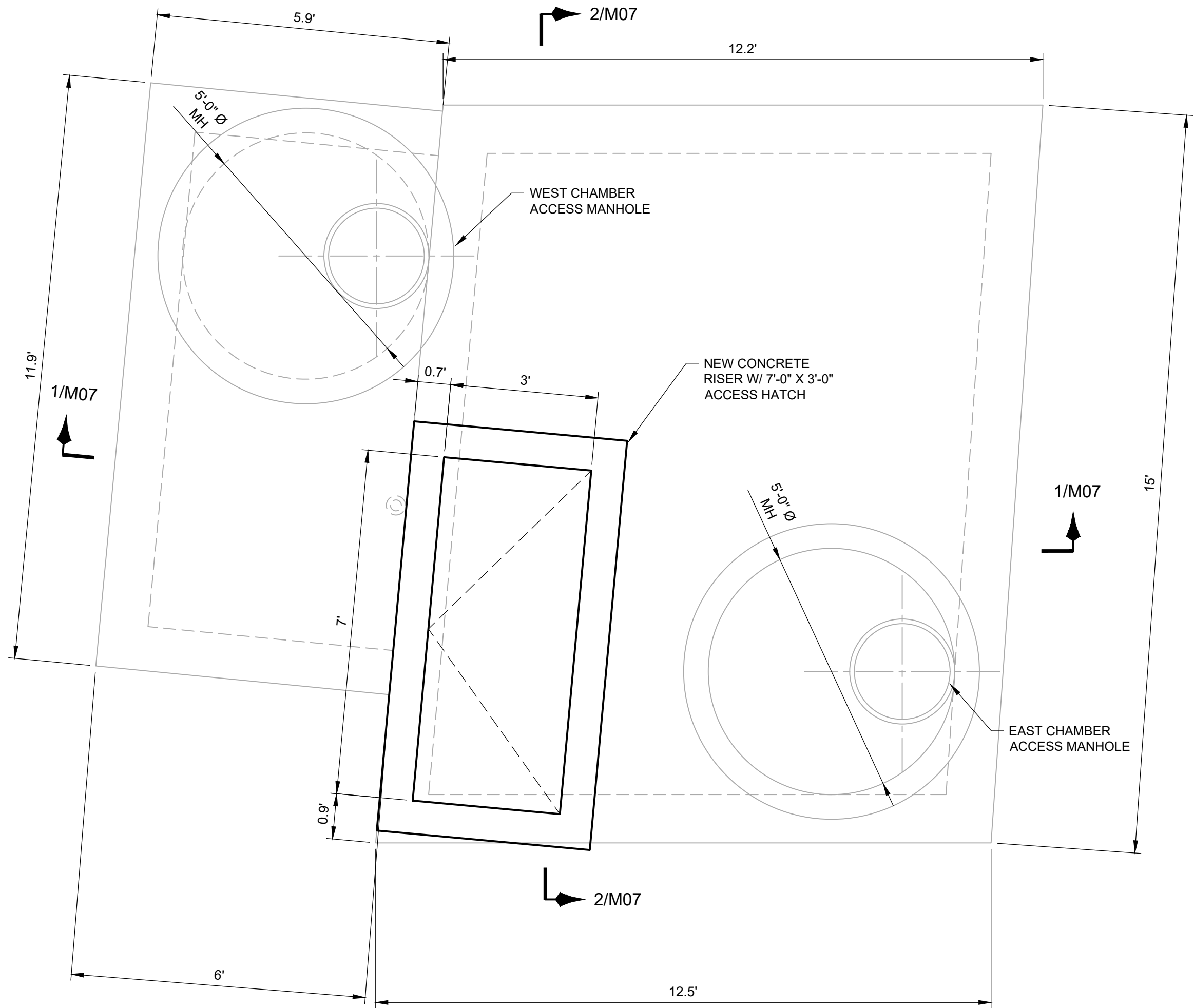
SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

CIVIL  
BRECKENRIDGE ST & NIAGARA ST RTC  
DROP MANHOLE (MH 6A & 6B) - SECTIONS

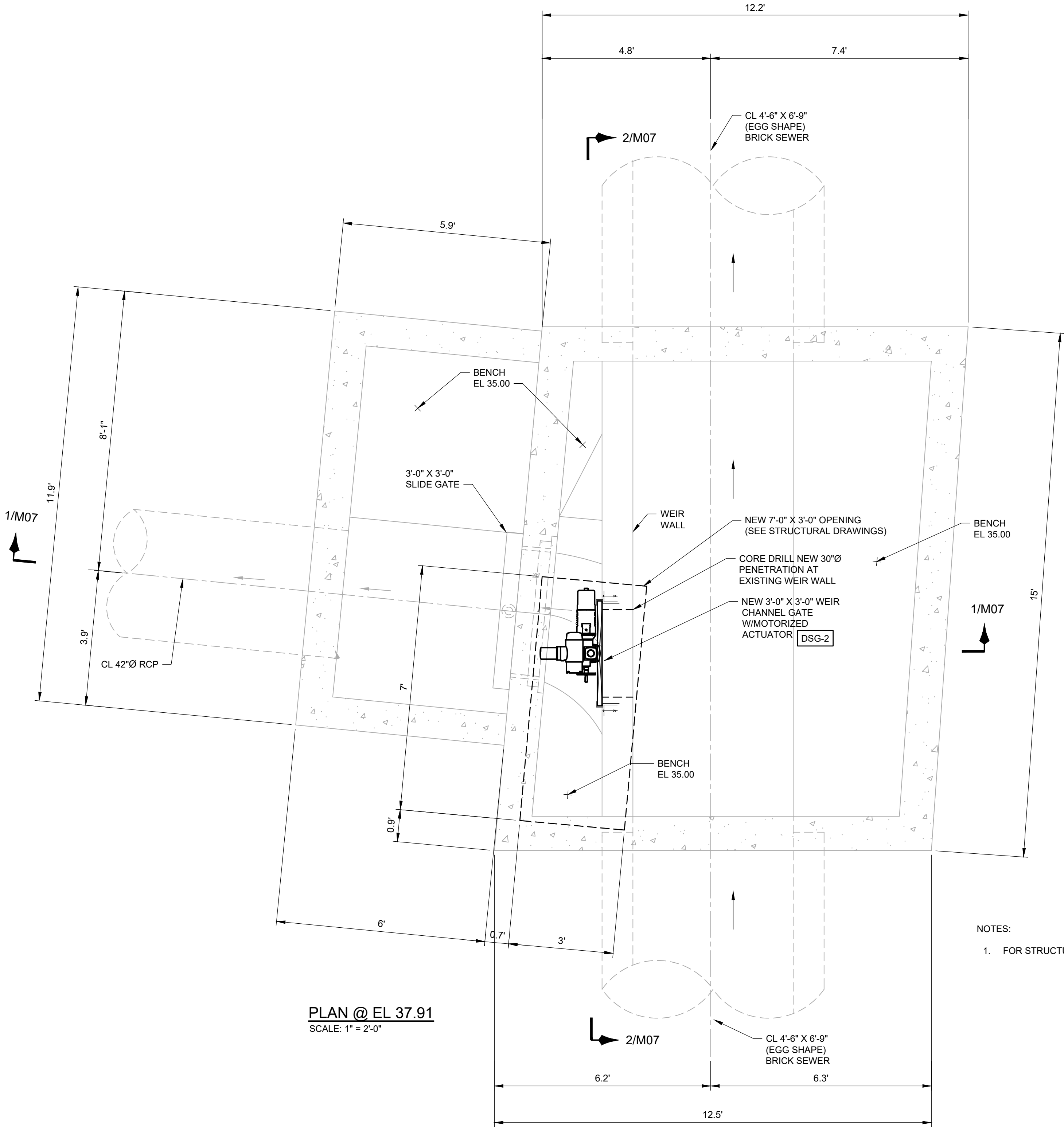
BSA CONTRACT NO. 82000041  
DWG: **M05**  
SHEET: 48 OF 85  
DATE: FEBRUARY 2023 REV: 0

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PLAN @ EL 54.53  
SCALE: 1" = 2'-0"



PLAN @ EL 37.91  
SCALE: 1" = 2'-0"

- NOTES:
- FOR STRUCTURAL MODIFICATIONS SEE DWG S05.

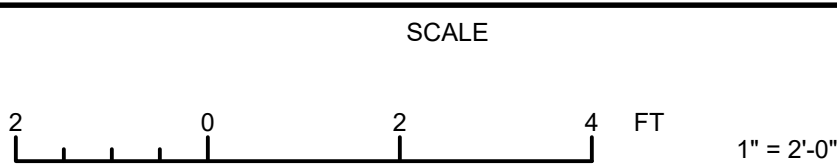
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL  
GATES CIRCLE & DELAWARE AVE RTC

EXISTING CONTROL STRUCTURE (SPP332) - PLANS

BSA CONTRACT NO. 82000041

DWG: **M06**

SHEET: 49 OF 85

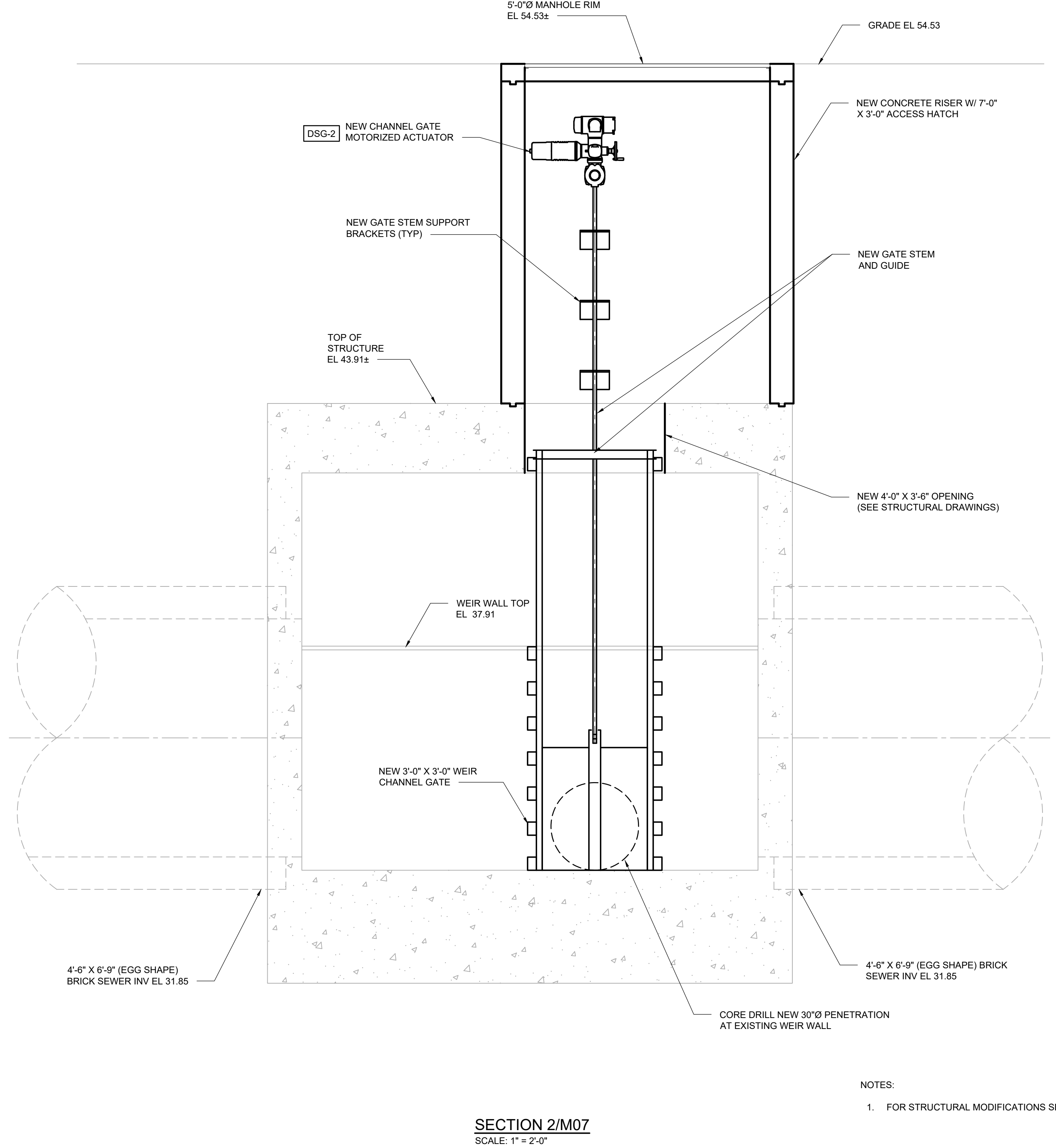
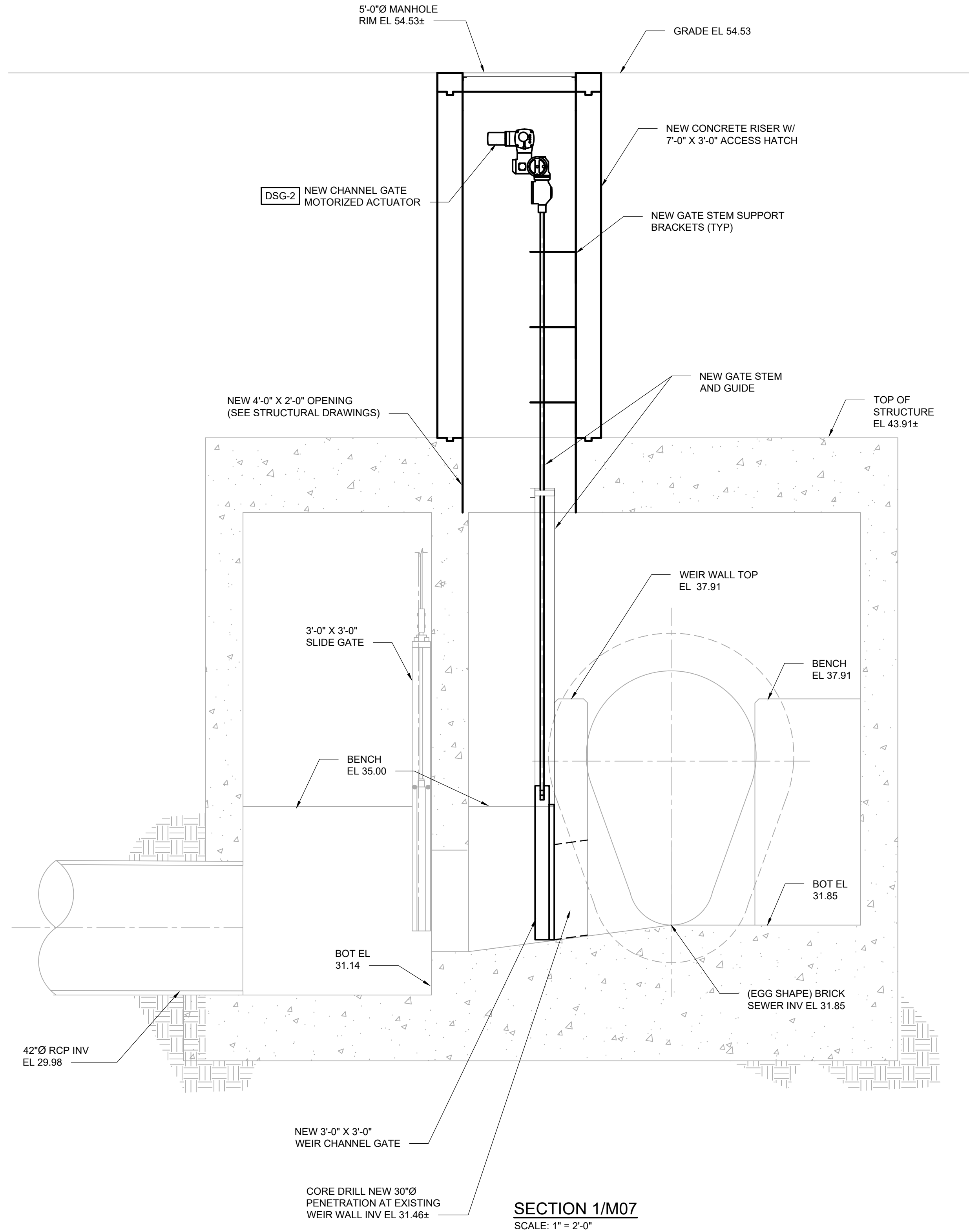
DATE: FEBRUARY 2023 REV: 0

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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_M07 MORENO, ROBERTO



- NOTES:
- FOR STRUCTURAL MODIFICATIONS SEE DWG S05.

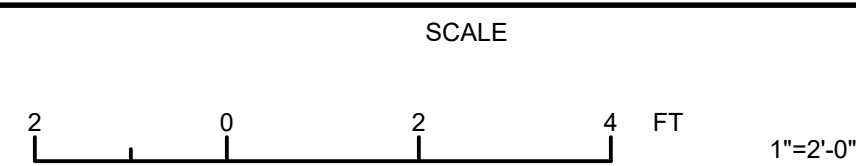
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL  
GATES CIRCLE & DELAWARE AVE RTC

EXISTING CONTROL STRUCTURE (SPP332) - SECTIONS

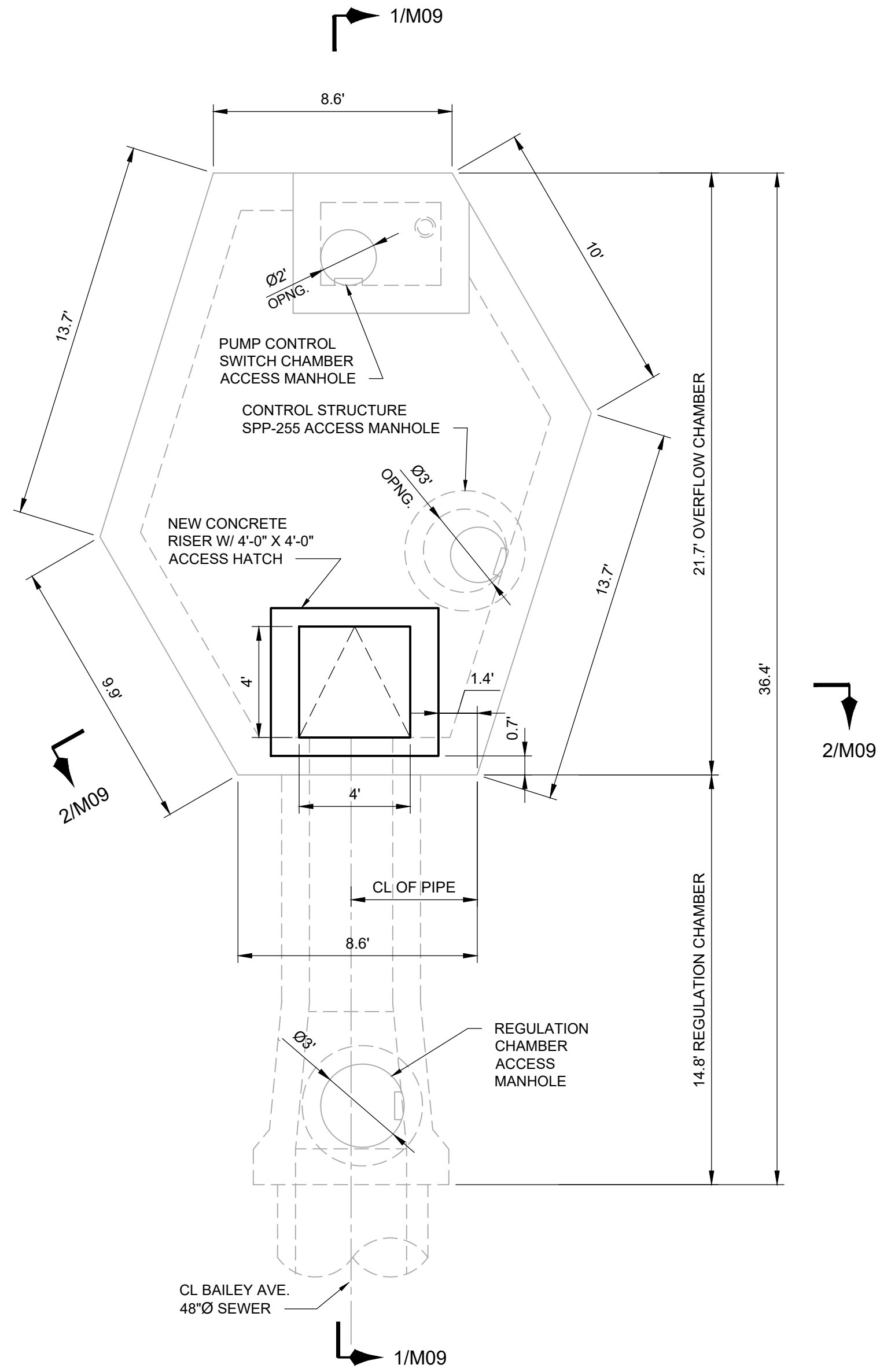
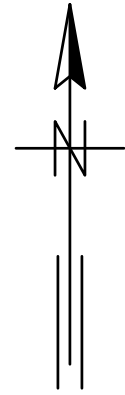
BSA CONTRACT NO. 82000041  
DWG: **M07**  
SHEET: 50 OF 85  
DATE: FEBRUARY 2023 REV: 0

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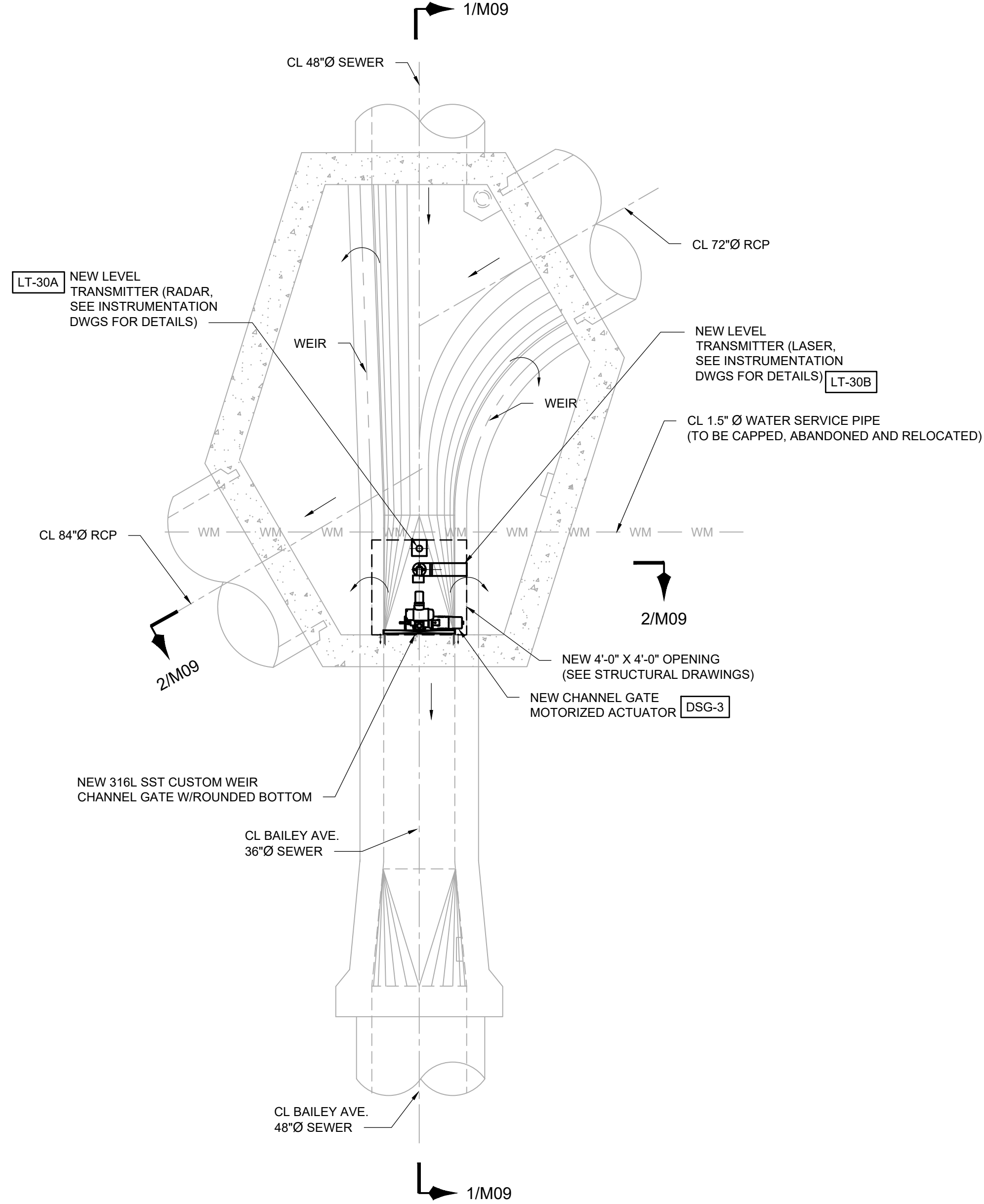


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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_M08 MORENO, ROBERTO



TOP PLAN 1/M08  
SCALE: 1" = 4'-0"



SECTIONAL PLAN 2/M08  
SCALE: 1" = 4'-0"

- NOTES:
1. FOR STRUCTURAL MODIFICATIONS SEE DWG S06.
  2. SEE INSTRUMENTATION DWGS FOR LEVEL TRANSMITTER DETAILS.

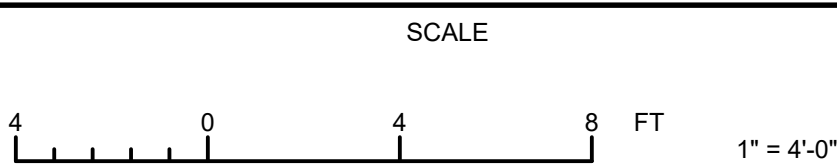
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NEW YORK, NY 10006

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DRAWN RAM  
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL  
BAILEY AVE & E. AMHERST ST RTC

EXISTING CONTROL STRUCTURE (SPP255) - PLANS

BSA CONTRACT NO. 82000041

DWG: **M08**

SHEET: 51 OF 85

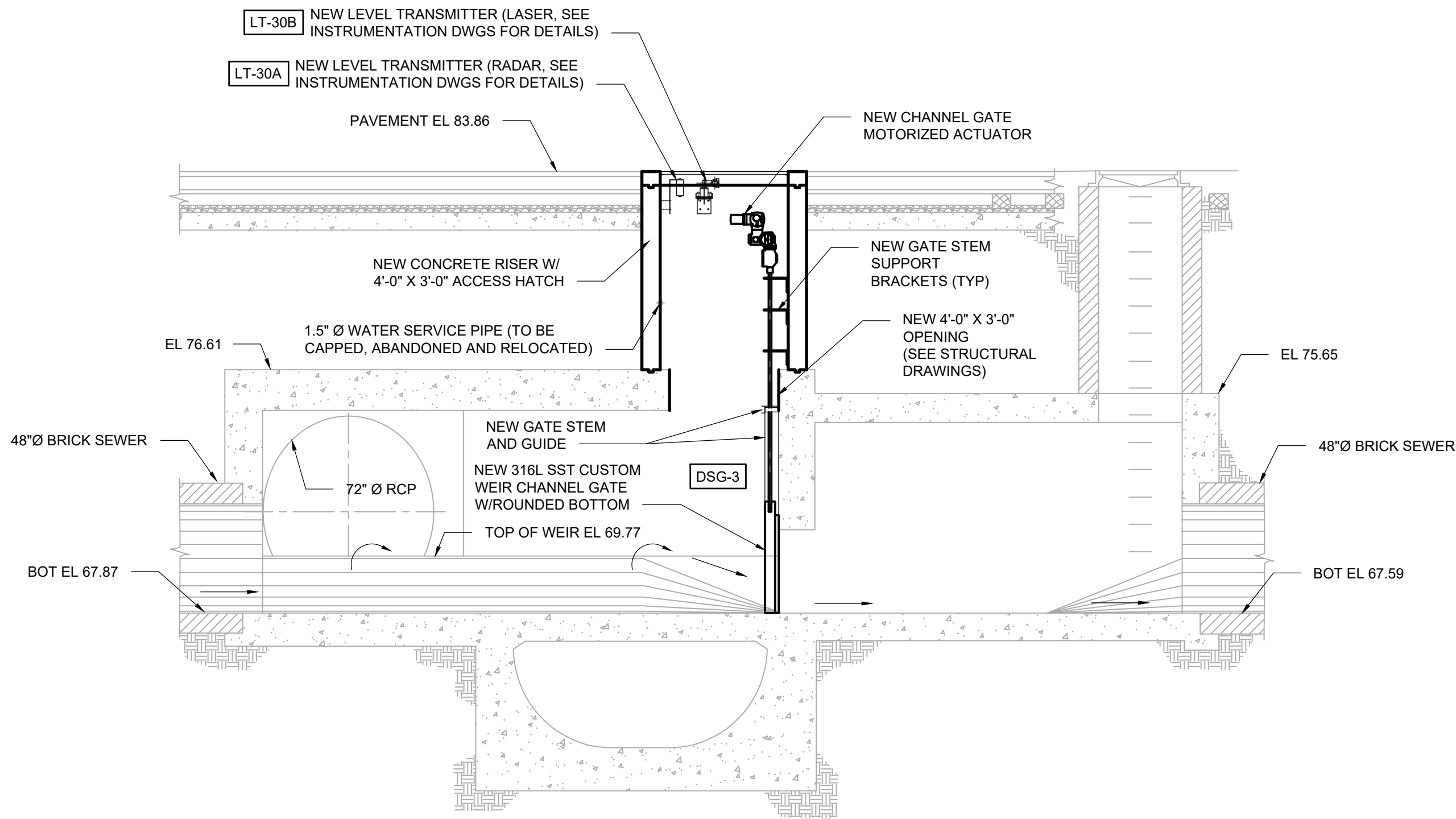
DATE: FEBRUARY 2023 REV: 0

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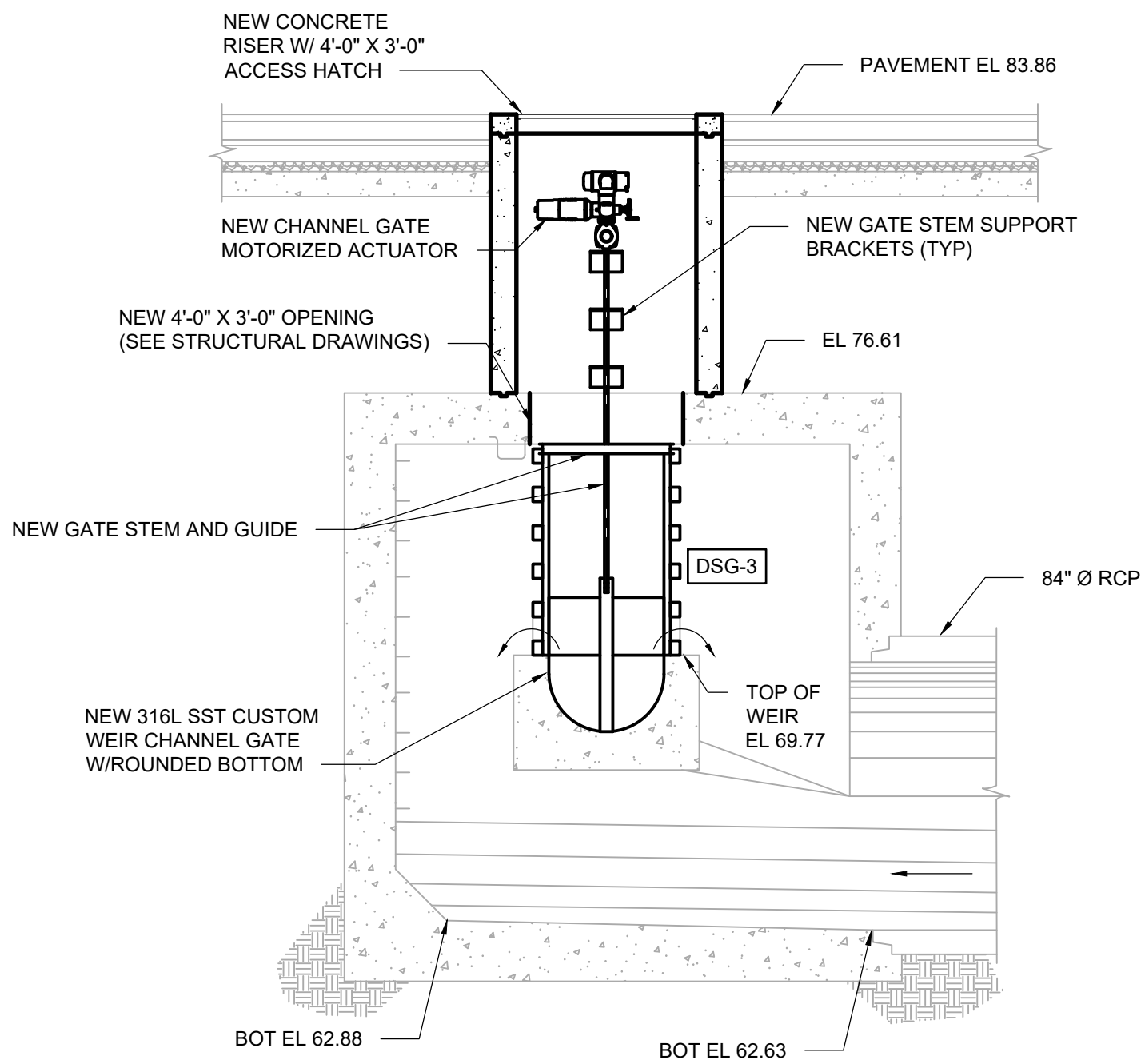


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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DC\14122\_M09 MORENO, ROBERTO



SECTION 1/M09  
SCALE: 1" = 4'-0"



SECTION 2/M09  
SCALE: 1" = 4'-0"

- NOTES:
- FOR STRUCTURAL MODIFICATIONS SEE DWG S06.

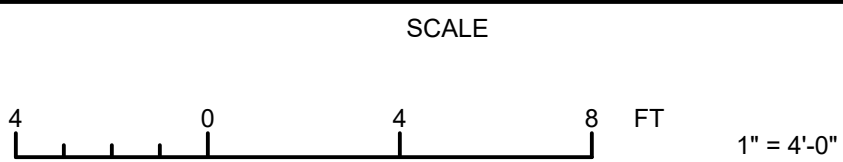
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL  
BAILEY AVE & E. AMHERST ST RTC

EXISTING CONTROL STRUCTURE (SPP255) - SECTIONS

BSA CONTRACT NO. 82000041

DWG: **M09**

SHEET: 52 OF 85

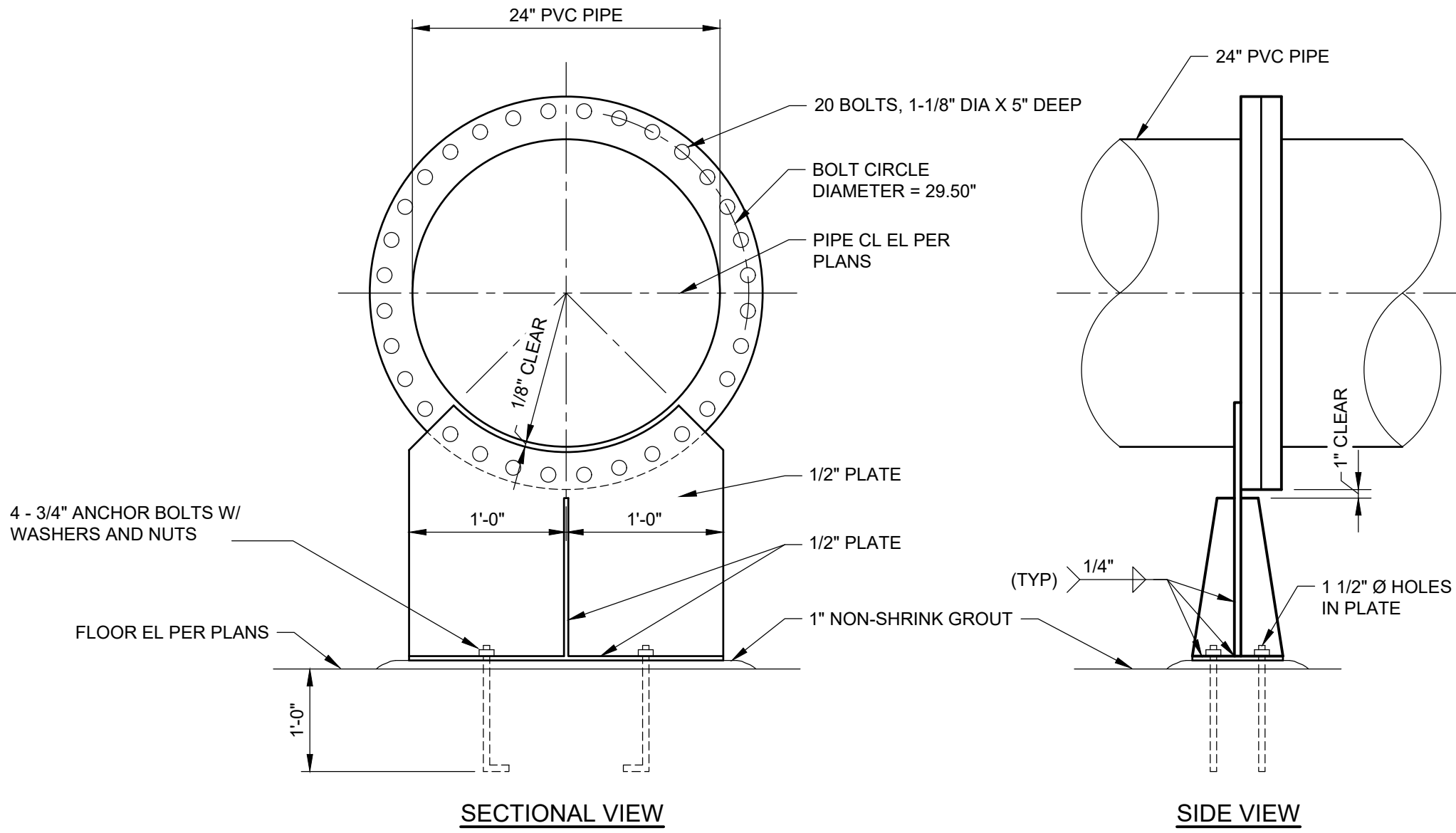
DATE: FEBRUARY 2023 REV: 0

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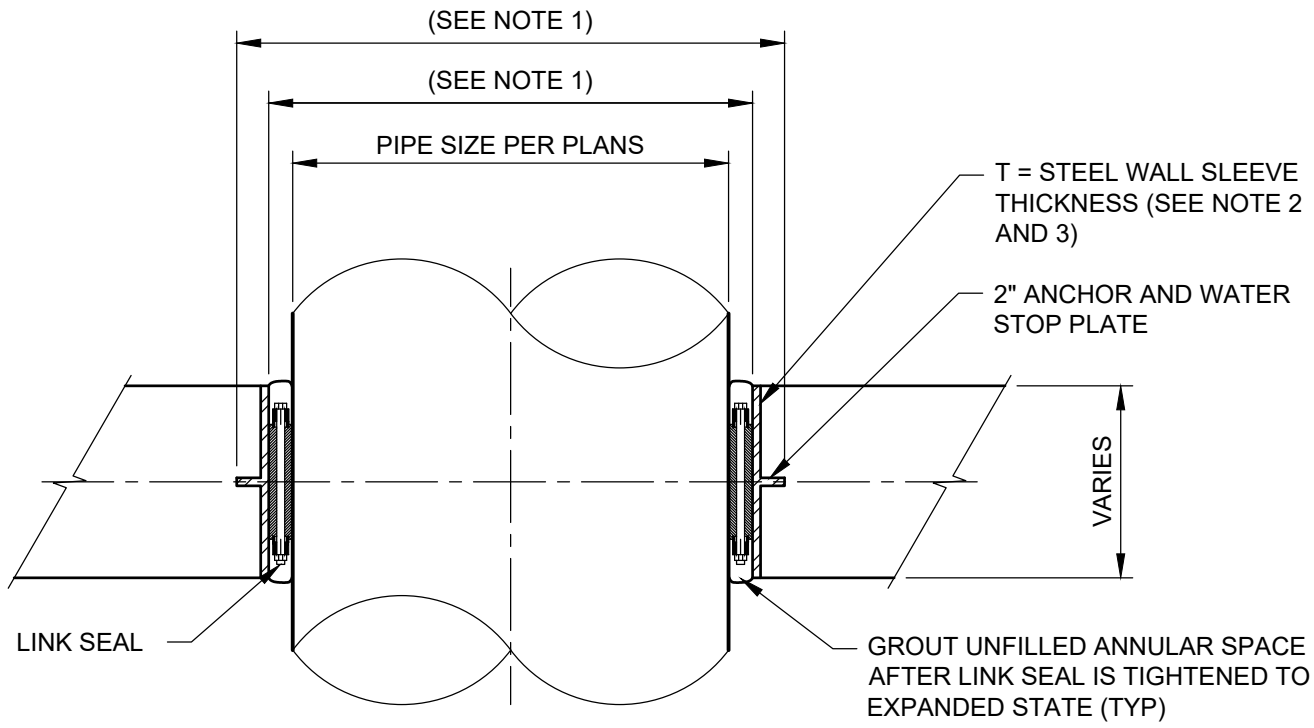


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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_M10 MORENO, ROBERTO



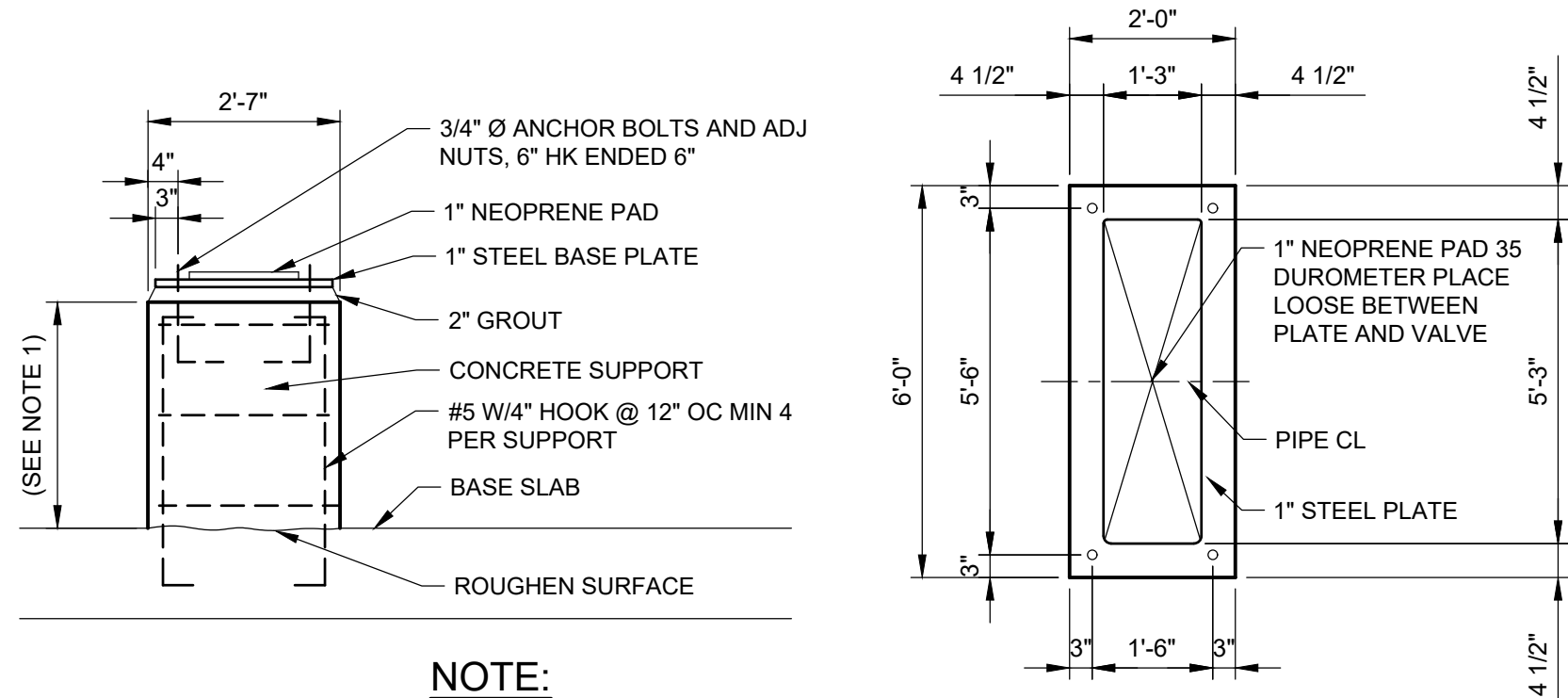
DETAIL 1/M10 - PIPE SUPPORTS  
SCALE: NOT TO SCALE



NOTES:

1. ACTUAL PIPE OD MAY VARY. MODULAR SEAL AND WALL SLEEVE DESIGN SHALL BE ADJUSTED ACCORDINGLY AS RECOMMENDED BY THE MODULAR SEAL MANUFACTURER.
2. WALL SLEEVE SHALL EXTEND THE FULL DEPTH OF THE WALL.
3. SLEEVES MAY BE SPLIT FOR INSTALLATION AROUND PIPE. WELD SPLIT HALVES TOGETHER USING 3/8\"/>

DETAIL 2/M10 - MODULAR SEAL AND WALL SLEEVE  
SCALE: NOT TO SCALE



NOTE:

1. TO BE DETERMINED BY THE CONTRACTOR UPON FINAL EQUIPMENT SELECTION.

\* CENTERLINE ELEVATION OF THE EXISTING 24\"/>

DETAIL 3/M10 - CONCRETE VALVE SUPPORT  
SCALE: NOT TO SCALE

**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
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NEW YORK, NY 10006

DESIGNED DH  
DRAWN RAM  
CHECKED MS

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SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

MECHANICAL

TYPICAL DETAILS

BSA CONTRACT NO. 82000041

DWG: **M10**

SHEET: 53 OF 85

DATE: FEBRUARY 2023 REV: 0

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
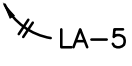





























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ELECTRICAL SYMBOLS

(NOT ALL APPLICABLE)

|                                                                                     |                                                              |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------|
|    | LIGHTING SWITCH                                              |
|    | LIGHTING SWITCH 3 WAY                                        |
|    | HOME--RUN TO CIRCUIT BREAKER #5 OF PANEL LA (2#12, & GND)    |
|    | SINGLE RECEPTACLE, 120V, 15A 1Ø                              |
|    | NEW DUPLEX RECEPTACLE, 120V, 20A 1Ø 18" A.F.F.               |
|    | EXISTING DUPLEX RECEPTACLE, 120V, 20A 1Ø 18" A.F.F.          |
|    | G.F.C.I. TYPE DUPLEX RECEPTACLE, 120V, 20A 1Ø 48"A.F.F. UNO. |
|    | JUNCTION BOX                                                 |
|    | 120V/208V LIGHTING & RECEPTACLE PANEL                        |
|    | COMBINATION MOTOR STARTER W/DISCONNECT.                      |
|    | TRANSFORMER                                                  |
|    | SURGE PROTECTIVE DEVICE                                      |
|    | DISCONNECT                                                   |
|    | DISCONNECT SWITCH RATING/PHASE AS INDICATED                  |
|    | HORN & LAMP                                                  |
|    | 480V, 3Ø SWITCH W/ LOCKOUT                                   |
|    | COPPER GROUND ROD 1" DIA.                                    |
|    | ANTENNA                                                      |
|    | THERMOSTAT                                                   |
|  | PUMP W/MOTOR                                                 |
|  | MAN DOWN                                                     |
|  | EXIT LIGHT                                                   |
|  | MOTOR                                                        |
|  | 1027.15 SPOT ELEVATION                                       |
|  | CONTROL PANEL                                                |
|  | E--STOP WP                                                   |
|  | GROUND ROD                                                   |
|  | AIR TERMINAL (PLAN)                                          |
|  | AIR TERMINAL (SECTION)                                       |
|  | UE UNDERGROUND CONDUIT                                       |

ABBREVIATIONS

(NOT ALL APPLICABLE)

|        |                                         |
|--------|-----------------------------------------|
| AFS    | AIR FLOW SWITCH                         |
| AI/ASH | ANALYSIS INDICATOR/ANALYSIS SAFETY HIGH |
| ATS    | AUTOMATIC TRANSFER SWITCH               |
| CP     | CONTROL PANEL                           |
| FI     | FLOW INDICATOR                          |
| FSL    | FLOW SWITCH LOW                         |
| G      | GROUND                                  |
| H      | HORN                                    |
| L      | LEVEL INDICATOR                         |
| LSH    | LEVEL SAFETY/SWITCH HIGH                |
| LSLL   | LEVEL SWITCH LOW LOW                    |
| M      | MOTOR                                   |
| MCP    | MAIN CONTROL PANEL                      |
| N      | NEUTRAL                                 |
| P      | PUMP                                    |
| PMM    | POWER MONITOR & METER                   |
| R      | RED                                     |
| RTU    | REMOTE TERMINAL UNIT                    |
| SH     | SHIELD                                  |
| SPD    | SURGE PROTECTION DEVICE                 |
| TJB    | TERMINAL JUNCTION BOX                   |
| VFD    | VARIABLE FREQUENCY DRIVE                |
| SPCP   | SUMP PUMP CONTROL PANEL                 |
| WP     | WEATHER PROOF                           |

GENERAL NOTES

1. MINIMUM POWER CIRCUIT WIRE SIZE SHALL BE #12 AND MINIMUM CONDUIT SIZE SHALL BE 3/4" RIGID STEEL GALVANIZED CONDUIT UNLESS OTHERWISE SHOWN. CONDUCTORS SHALL BE 90% CONDUCTIVITY COPPER. SEE SPECIFICATIONS FOR TYPE OF INSULATION.
2. THE CONTRACTOR SHALL CHECK ALL LIGHTING LUMINARIES FOR EXACT TYPE MOUNTING AND SPACE REQUIRED BEFORE ROUGHING IN.
3. SHOULD ANY ELECTRICAL POWER LIGHT OR AUXILIARY CIRCUIT BE SEVERED OR DISCONNECTED IN THE INSTALLATION PROCESS, THE ELECTRICAL CONTRACTOR SHALL RESTORE IN TO ITS ORIGINAL STATE WITHOUT ANY ADDITIONAL COST.
4. VERIFY THE EXACT LOCATION OF ALL MOTORS AND EQUIPMENT BEFORE ROUGHING IN.
5. ALL BRANCH CIRCUITS SHALL INCLUDE A GREEN COVERED GROUND WIRE SIZE PER N.E.C. ARTICLE 250 (GROUNDING) OR AS SHOWN ON DWGS. MULTIPLE WIRE BRANCH CIRCUITS WITH COMMON NEUTRAL AND NON ISOLATED GROUND REQUIRE ONLY ONE GROUND WIRE. ISOLATED GROUND WIRE FOR EACH BRANCH CIRCUIT SHALL BE INITIATED FROM ISOLATED GROUND BUS IN THE PANELBOARD.
6. ELECTRICAL CONTRACTOR SHALL WORK CLOSELY WITH GENERAL CONTRACTOR AND VERIFY EXACT TYPE OF EQUIPMENT TO BE INSTALLED AND THE DIMENSIONS WHICH MAY AFFECT THE EXACT PLACEMENT OF EQUIPMENT. WORK CLOSELY WITH MECHANICAL DWGS. FOR LOCATION OF PUMPS, AS SHOWN ON DRAWINGS.
7. DARK LINES REPRESENTS NEW ITEMS WHILE SCREENED LINES REPRESENTS EXISTING ITEMS UNLESS NOTED OTHERWISE.
8. CONTRACTOR TO CHECK CIRCUITRY, SWITCH DEVICE BALLAST'S, LAMPS, LENSES OF FIXTURES THAT ARE NOT WORKING. REPLACE FIXTURES, SWITCH DEVICES CONDUIT WITH NEW RGS CONDUIT/FITTINGS AND ENCLOSED TYPE INDUSTRIAL GASKETED FIXTURES AS SHOWN. MAINTAIN FIXTURE SIMILARITY WHILE REPLACING FIXTURES.
9. CONTRACTOR TO INSTALL NEW RECEPTACLES AND LIGHT FIXTURES AND RELOCATE RECEPTACLES AS SHOWN ON DRAWINGS.
10. CONTRACTOR TO REPLACE SUMP PUMP AND SUMP CONTROL PANEL.
11. CONTRACTOR SHALL REPORT ANY CODE VIOLATIONS UNCOVERED OR OBSERVED DURING CONSTRUCTION TO ENGINEER FOR CORRECTIVE ACTION.
12. \* BEFORE CLOSEOUT RE--LAMP ALL INTERIOR AND EXTERIOR LIGHT FIXTURES THAT ARE NOT IN PROPER WORKING ORDER. REPLACE ALL LIGHT FIXTURES THAT ARE NOT WORKING. MAINTAIN FIXTURES AESTHETIC LOOK AND APPEARANCE.

BUFFALO  
SEWER AUTHORITY



GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

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|----------|-----|
| DESIGNED | CB  |
| DRAWN    | HNB |
| CHECKED  | WEJ |

APPROVED

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| NO. | DATE | APPD | REVISION |

SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL

ELECTRICAL SYMBOLS LEGEND

BSA CONTRACT NO. 82000041

DWG: E01

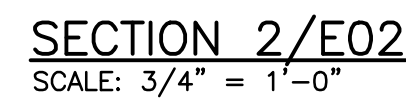
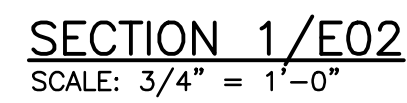
SHEET: 54 OF 85

DATE: FEBRUARY 2023 REV: .

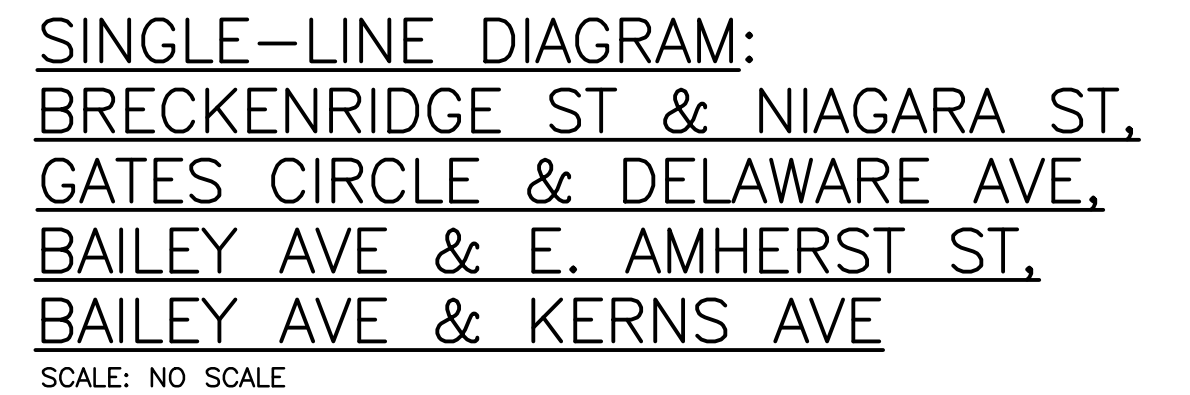
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1. MINIMUM POWER CIRCUIT CONDUCTOR SIZE SHALL BE NO. 12 AND MINIMUM CONDUIT SIZE SHALL BE 3/4". CONDUIT SHALL BE SCHEDULE 40 PVC, PVC COATED RIGID STEEL, IMC, OR EMT AS DEFINED IN SPECIFICATIONS. CONDUCTORS SHALL BE COPPER. BELOW GRADE CONDUIT SHALL BE PVC COATED RIGID STEEL MINIMUM 2" SIZE. SERVICE ENTRANCE CONDUITS SHALL BE PVC COATED RIGID STEEL.
2. SHOULD ANY ELECTRICAL POWER, LIGHT, OR AUXILIARY CIRCUIT BE DAMAGED OR DISCONNECTED DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL RESTORE THE CIRCUIT TO ITS ORIGINAL STATE WITH NO ADDITIONAL COST TO THE OWNER.
3. VERIFY THE EXACT LOCATION, AMPACITY REQUIREMENTS, OVER CURRENT PROTECTION AND DIMENSIONS OF ALL MOTORS AND EQUIPMENT BEFORE ROUGHING IN.
4. ALL BRANCH CIRCUITS SHALL INCLUDE A GREEN INSULATED GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 (GROUNDING) OR AS SHOWN ON DRAWINGS, WHICHEVER IS LARGER.
5. ALL POWER RACEWAYS SHALL CONSIST OF A MINIMUM OF 3 NO. 12 THHN/THWN CONDUCTORS; ONE POWER, ONE NEUTRAL, AND ONE GROUND INSTALLED IN A 3/4" MINIMUM CONDUIT UNLESS OTHERWISE INDICATED ON DRAWINGS. BELOW GRADE CONDUCTORS MUST BE XHHW.
6. DO NOT UTILIZE A COMMON NEUTRAL CONDUCTOR ON POWER CIRCUITS IN COMMON CONDUITS. EACH CIRCUIT SHALL HAVE ITS OWN NEUTRAL CONDUIT EVEN WHEN DIFFERENT CIRCUITS ARE CONTAINED IN THE SAME CONDUIT.
7. ELECTRICAL INSTALLATION SHALL CONFORM TO NATIONAL ELECTRICAL CODE NEC 2017 OR AS INDICATED BY LOCAL AUTHORITY.
8. INSTALL FIRESTOPPING AT PENETRATIONS OF CONDUIT AND BOXES TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER BUILDING ELEMENTS.
9. ALL INSTALLATIONS TO FULLY CONFORM TO GROUNDING AND BONDING REQUIREMENTS OF NEC ARTICLE 250.
10. COORDINATE WITH OWNER AND NATIONAL GRID TO OBTAIN A NEW ELECTRIC SERVICE AT FOUR LOCATIONS, GATES CIRCLE, KERNS, BRECKENRIDGE AND AMHERST. AT ALL FOUR OF THESE LOCATIONS, SERVICE TO BE 30A PER SERVICE SIZE EXCEPTION IN NATIONAL GRID SPECIFICATIONS FOR ELECTRIC SERVICE SECTION 4.1.5 FOR NON-DWELLING TYPE INSTALLATIONS.
11. PROVIDE OWNER'S PART OF NEW ELECTRIC SERVICE INSTALLATIONS IN COMPLETE AND STRICT COMPLIANCE WITH NATIONAL GRID SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS 2022, ELECTRIC SYSTEM BULLETIN 750 INCLUDING FIGURE 7.3-7 SERVICE PEDESTAL SINGLE-PHASE SERVICE.



SCALE:  $3/4" = 1'-0"$



- ① ENCLOSED SWITCH AND PANELBOARD INSTALLED INSIDE STAINLESS STEEL ENCLOSURE TWO-SIDED WITH DOORS EACH SIDE. SWITCH AND PANELBOARD ON POWER SIDE. CONTROLS TO BE INSTALLED ON CONTROLS SIDE.
- ② METER TO BE INSTALLED ON SIDE OF STAINLESS STEEL TWO-SIDED ENCLOSURE WITH CONDUIT CONNECTION THROUGH POWER SIDE OF ENCLOSURE.

|          |     |          |     |      |      |          |
|----------|-----|----------|-----|------|------|----------|
| DESIGNED | CB  | APPROVED |     |      |      |          |
| DRAWN    | HNB |          |     |      |      |          |
| CHECKED  | WEJ |          |     |      |      |          |
|          |     |          | NO. | DATE | APPD | REVISION |



ELECTRICAL, NOTES, SINGLE-LINE DIAGRAM &amp; PLC PANEL

|                           |          |
|---------------------------|----------|
| BSA CONTRACT NO. 82000041 |          |
| DWG:                      | E02      |
| SHEET:                    | 55 OF 85 |
| DATE: FEBRUARY 2023       | REV: .   |

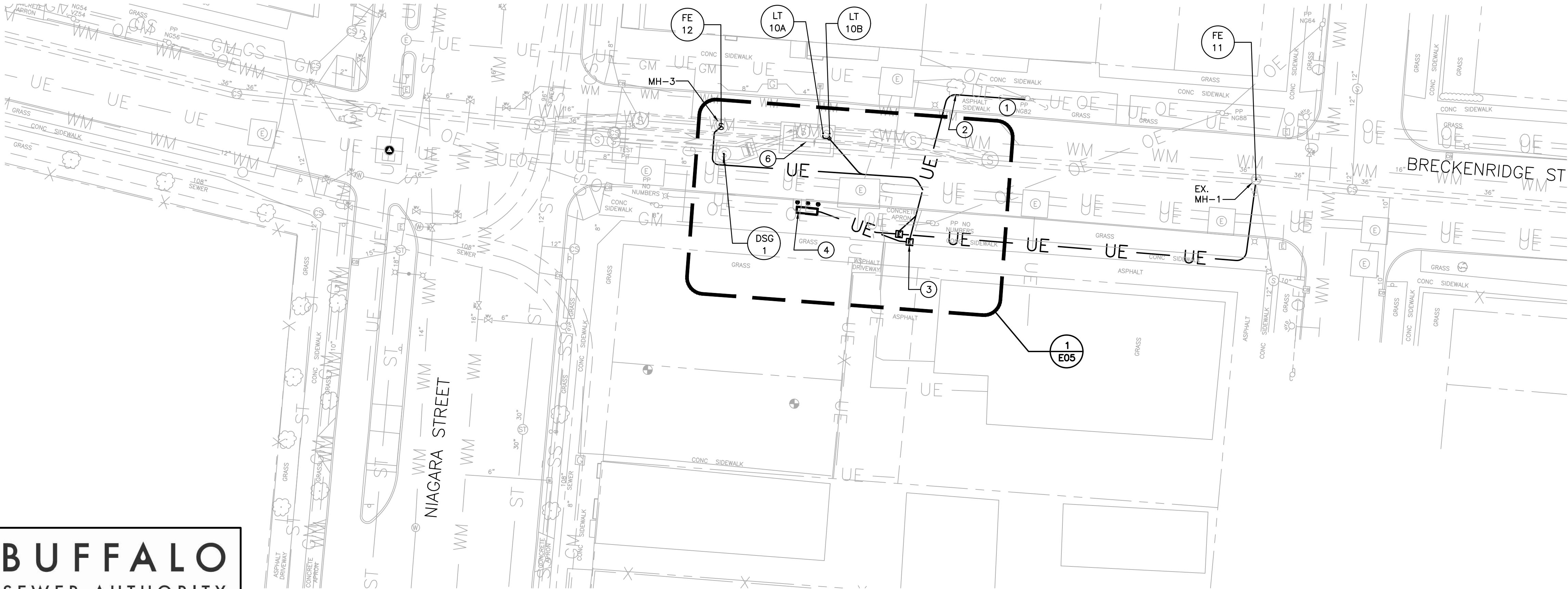
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| BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL CONDUIT AND CABLE SCHEDULE                      |                  |                      |                                                                      |                                                          |                                                                       |               |
|----------------------------------------------------------------------------------------------------|------------------|----------------------|----------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------|---------------|
| CONDUIT NO.                                                                                        | SIZE             | CONDUCTOR QTY & SIZE | FROM                                                                 | TO                                                       | REMARKS                                                               | CIRCUIT NO.   |
|                                                                                                    |                  |                      | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL SERVICE AND POWER |                                                          |                                                                       |               |
| 1P                                                                                                 | 2" SCH 80 PVC    | 3#6 AWG XHHW         | NATIONAL GRID UTILITY POLE                                           | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL METER | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 2 ON E02                         |               |
| 1PE                                                                                                | 2" SCH 80 PVC    |                      | NATIONAL GRID UTILITY POLE                                           | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL METER |                                                                       |               |
| 2P                                                                                                 | 3/4" RGS         | 3#6 AWG              | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL METER             | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                   | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 1 ON E02                         |               |
| 3P                                                                                                 | 3/4" RGS         | 3#6 AWG              | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                               | 240/120V SINGLE-PHASE PANELBOARD                         | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 1 ON E02                         |               |
| 4P                                                                                                 | 2#12 AWG & 1#12G |                      | 240/120V SINGLE-PHASE PANELBOARD                                     | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL       | INTERNAL WIRING IN BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL | CIRCUIT NO. 1 |
|                                                                                                    |                  |                      | INSTRUMENTATION                                                      |                                                          |                                                                       |               |
| 5P                                                                                                 |                  | 3#12 AWG             | 240V/120V SINGLE-PHASE PANELBOARD                                    | FIT 12                                                   | INTERNAL WIRING IN BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL | CIRCUIT NO. 2 |
| 1MFR                                                                                               | 3/4" RGS         | MFR CABLE            | FIT 12                                                               | FE 12                                                    | MANHOLE MH-3 FLOW                                                     |               |
| 1A                                                                                                 | 3/4" RGS         | 2#16, STP            | LT 10A                                                               | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL       | DIVERSION CHAMBER LEVEL (RADAR)                                       |               |
| 2A                                                                                                 | 3/4" RGS         | 2#16, STP            | LT 10B                                                               | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL       | DIVERSION CHAMBER LEVEL (LASER)                                       |               |
| 6P                                                                                                 | 3/4" RGS         | 2#12 AWG & 1#12G     | 240V/120V SINGLE-PHASE PANELBOARD                                    | FIT 11                                                   | BRECKENRIDGE ST & NIAGARA ST RTC PANEL POWER                          | CIRCUIT NO. 3 |
| 2MFR                                                                                               | 3/4" RGS         | MFR CABLE            | FIT 11                                                               | FE 11                                                    | EX. MANHOLE MH-1 FLOW                                                 |               |
| 2PE                                                                                                | 3/4" RGS         |                      | 240V/120V SINGLE-PHASE PANELBOARD                                    | MH-3                                                     |                                                                       |               |
| 3PE                                                                                                | 3/4" RGS         |                      | 240V/120V SINGLE-PHASE PANELBOARD                                    | MH-1                                                     |                                                                       |               |
| 4PE                                                                                                | 1" RGS           |                      | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL                   | MH-8                                                     |                                                                       |               |
| 5PE                                                                                                | 3/4" RGS         |                      | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL                   | MH-7                                                     |                                                                       |               |
| 3A                                                                                                 | 3/4" RGS         | 2#16, STP            | DSG 1                                                                | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL       |                                                                       |               |
| 1C                                                                                                 | 3/4" RGS         | 12#14, AWG           | DSG 1                                                                | BRECKENRIDGE ST & NIAGARA ST RTC PLC CONTROL PANEL       |                                                                       |               |
| 7P                                                                                                 | 3/4" RGS         | 2#12 AWG & 1#12G     | DSG 1                                                                | BRECKENRIDGE ST & NIAGARA ST RTC POWER PANEL             |                                                                       | CIRCUIT NO. 4 |
| A = ANALOG                      P = POWER                      PE = EMPTY CONDUIT WITH PULL STRING |                  |                      |                                                                      |                                                          |                                                                       |               |
| C = CONTROL                      MFR = MANUFACTURER SUPPLIED CABLE                                 |                  |                      |                                                                      |                                                          |                                                                       |               |



- GENERAL NOTES**
- UNDERGROUND EXISTING UTILITIES SHOWN BASED ON LAND SURVEY OF EXISTING SURFACE FEATURES. NO SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.
  - UNDERGROUND CONDUIT ROUTINGS SHOWN ARE DIAGMATIC ONLY. DUE TO EXISTING UNDERGROUND UTILITIES AND OBSTACLES NOT BEING FULLY DOCUMENTED, ACTUAL CONDUIT RUNS MAY EXCEED LENGTH SHOWN AND BIDDERS ARE TO TAKE THIS INTO ACCOUNT WHEN SUBMITTING BIDS.


- NEW CONSTRUCTION KEY NOTES**
- ELECTRIC SERVICE CONNECTION AT NATIONAL GRID POLE 82. PROVIDE CONDUIT UP POLE 82 TO HEIGHT REQUIRED BY NATIONAL GRID AND TERMINATE WITH WEATHERHEAD FOR SERVICE CONNECTION BY NATIONAL GRID. COORDINATE CLOSELY WITH OWNER AND NATIONAL GRID.
  - ROUTE SERVICE CONDUIT UNDERGROUND WITH MINIMUM COVER OF 3 FEET. ROUTE STREET CROSSING CLOSE TO EXISTING SANITARY SEWER VAULT TO TAKE ADVANTAGE OF STREET CLOSING TIMES FOR WORK WITHIN VAULT. ALL STREET CROSSING CONDUIT TO BE CONCRETE ENCASED.
  - PROVIDE HANDHOLE FOR PULLING SERVICE CONDUCTORS WITH COVER MARKED AS REQUIRED BY NATIONAL GRID AND CITY OF BUFFALO. CONTINUE ROUTING SERVICE CONDUIT UNDERGROUND WITH MINIMUM COVER OF 3 FEET.
  - TERMINATE SERVICE IN SERVICE METER AND EXTEND TO SERVICE ENTRANCE-RATED PANELBOARD WHICH IS INSTALLED WITHIN POWER & CONTROLS ENCLOSURE ABOVE GRADE. COORDINATE WITH NATIONAL GRID TO LOCATE METER AT BUT OUTSIDE POWER & CONTROLS ENCLOSURE.
  - REFER TO GENERAL NOTES ON SHEET E02 FOR NATIONAL GRID SERVICE INSTALLATION REQUIREMENTS.
  - REFER TO DRAWING G06 FOR AREA CLASS 1, GROUP D, AND DIVISION 1 OR 2 HAZARDOUS LOCATION. ALL ELECTRICAL EQUIPMENT APPURTENANCES THAT ARE UL, INC. APPROVED FOR USE IN SUCH AREA.

BUFFALO

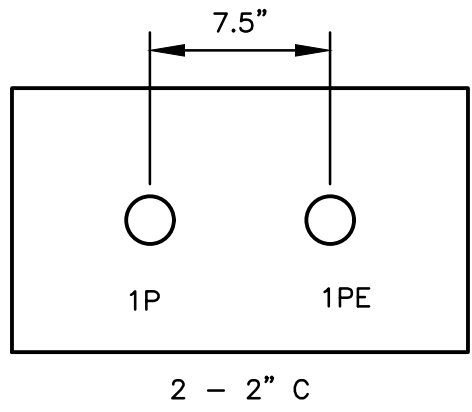
SEWER AUTHORITY

KHEOPS

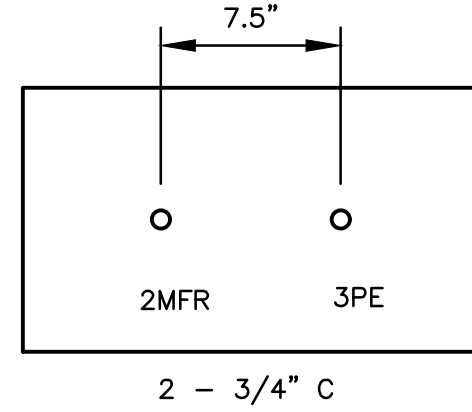
Architecture, Engineering & Survey, DPC

|                                                                                                                                       |          |     |          |     |      |      |          |                                  |                                                              |                                                                                             |                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------|----------|-----|----------|-----|------|------|----------|----------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 | DESIGNED | CB  | APPROVED |     |      |      |          | SCALE<br>20 0 20 40 FT<br>1"=20' | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | ELECTRICAL<br>BRECKENRIDGE ST & NIAGARA ST (RTC)<br><br>SITE PLAN – ELECTRICAL IMPROVEMENTS | BSA CONTRACT NO. 82000041<br>DWG: <b>E04</b><br>SHEET: 56 OF 85<br>DATE: FEBRUARY 2023 REV: . |
|                                                                                                                                       | DRAWN    | HNB |          |     |      |      |          |                                  |                                                              |                                                                                             |                                                                                               |
|                                                                                                                                       | CHECKED  | WEJ |          | NO. | DATE | APPD | REVISION |                                  |                                                              |                                                                                             |                                                                                               |

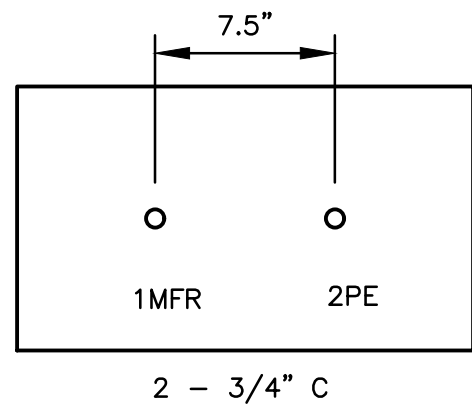




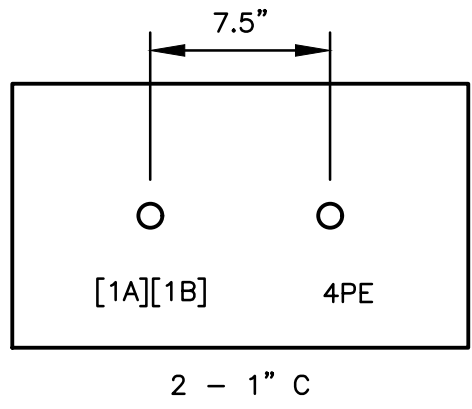
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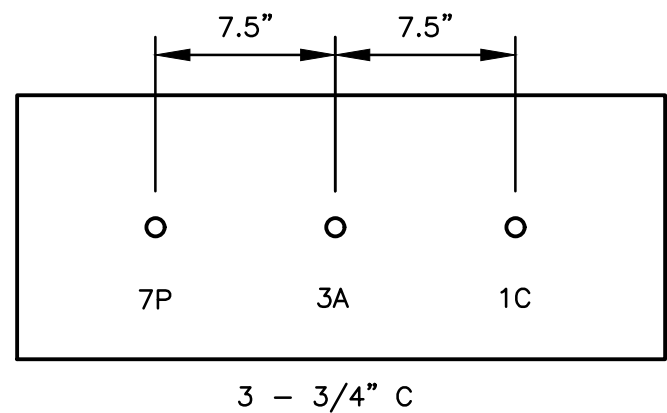
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DUCTBANK SECTION 3/E05  
SCALE 1 1/2" = 1'-0" 18"x11" CONCRETE ENCASED



DUCTBANK SECTION 4/E05  
SCALE 1 1/2" = 1'-0" 19"x11" CONCRETE ENCASED



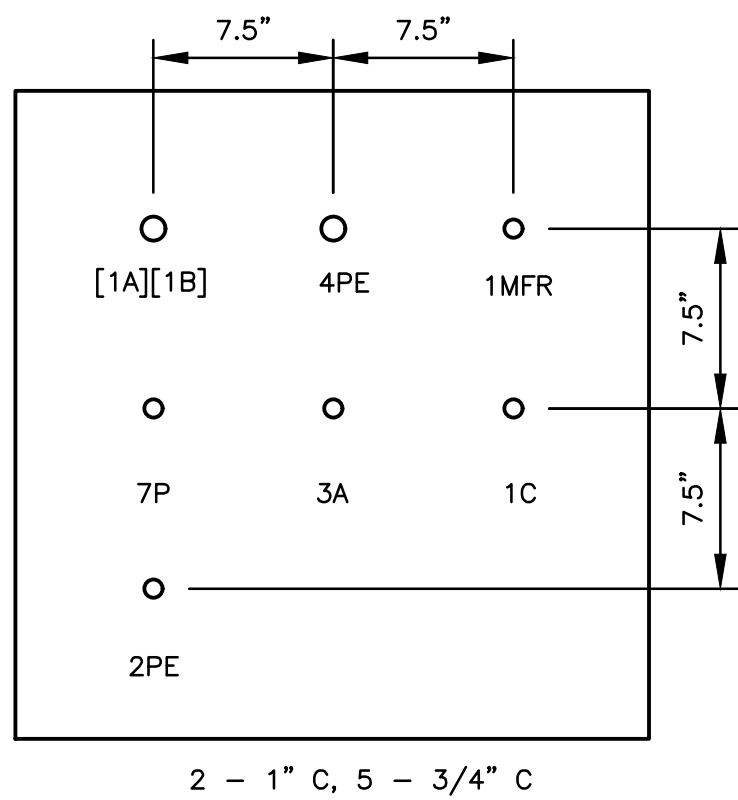
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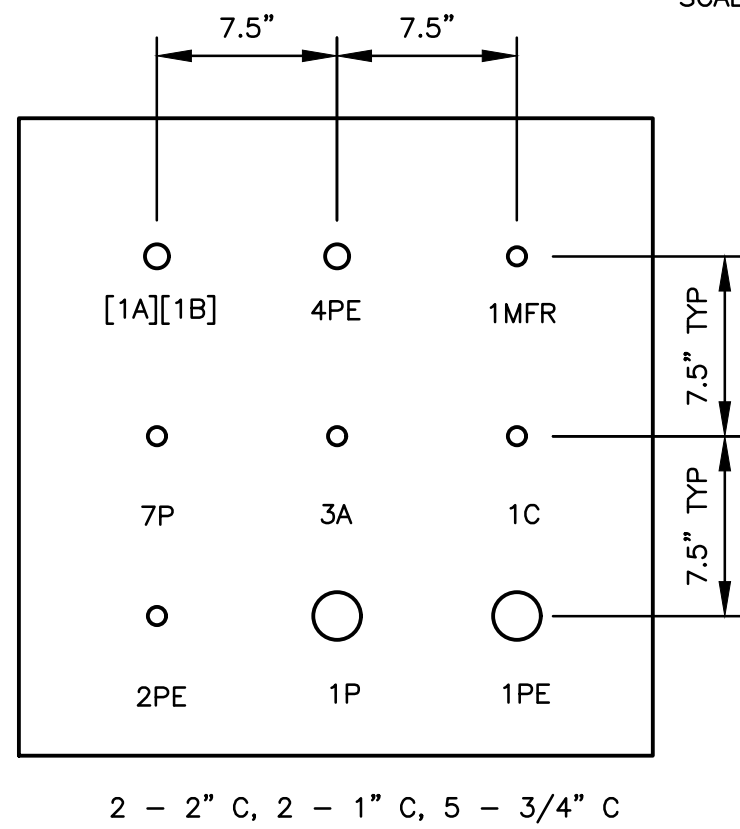
**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED CB  
DRAWN CB  
CHECKED WEJ

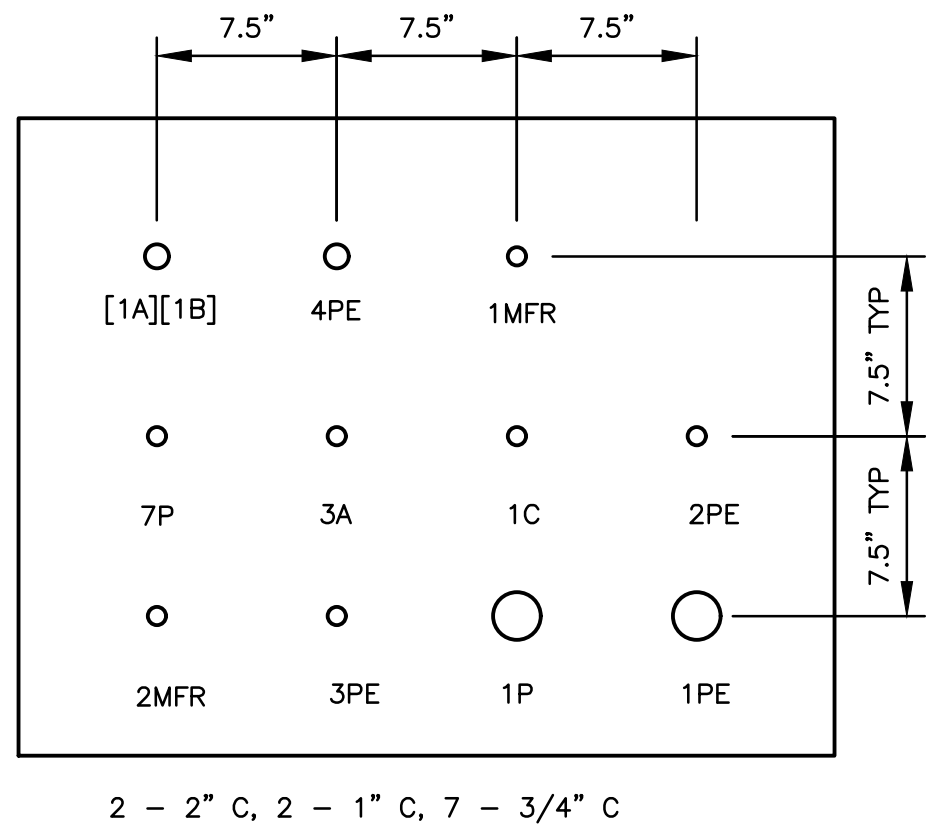
APPROVED  
NO. DATE APPD REVISION



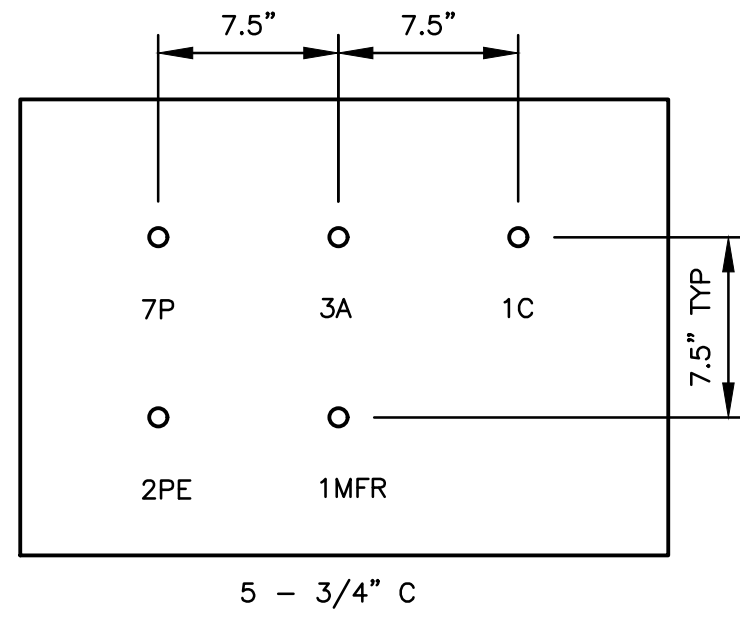
DUCTBANK SECTION 6/E05  
SCALE 1 1/2" = 1'-0" 27"x27" CONCRETE ENCASED



DUCTBANK SECTION 7/E05  
SCALE 1 1/2" = 1'-0" 27"x27" CONCRETE ENCASED

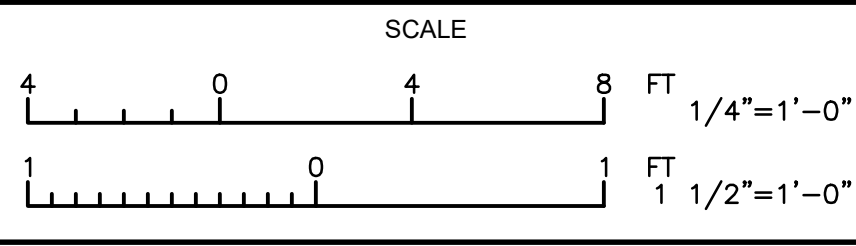


DUCTBANK SECTION 8/E05  
SCALE 1 1/2" = 1'-0" 34"x27" CONCRETE ENCASED



DUCTBANK SECTION 9/E05  
SCALE 1 1/2" = 1'-0" 27"x19" CONCRETE ENCASED

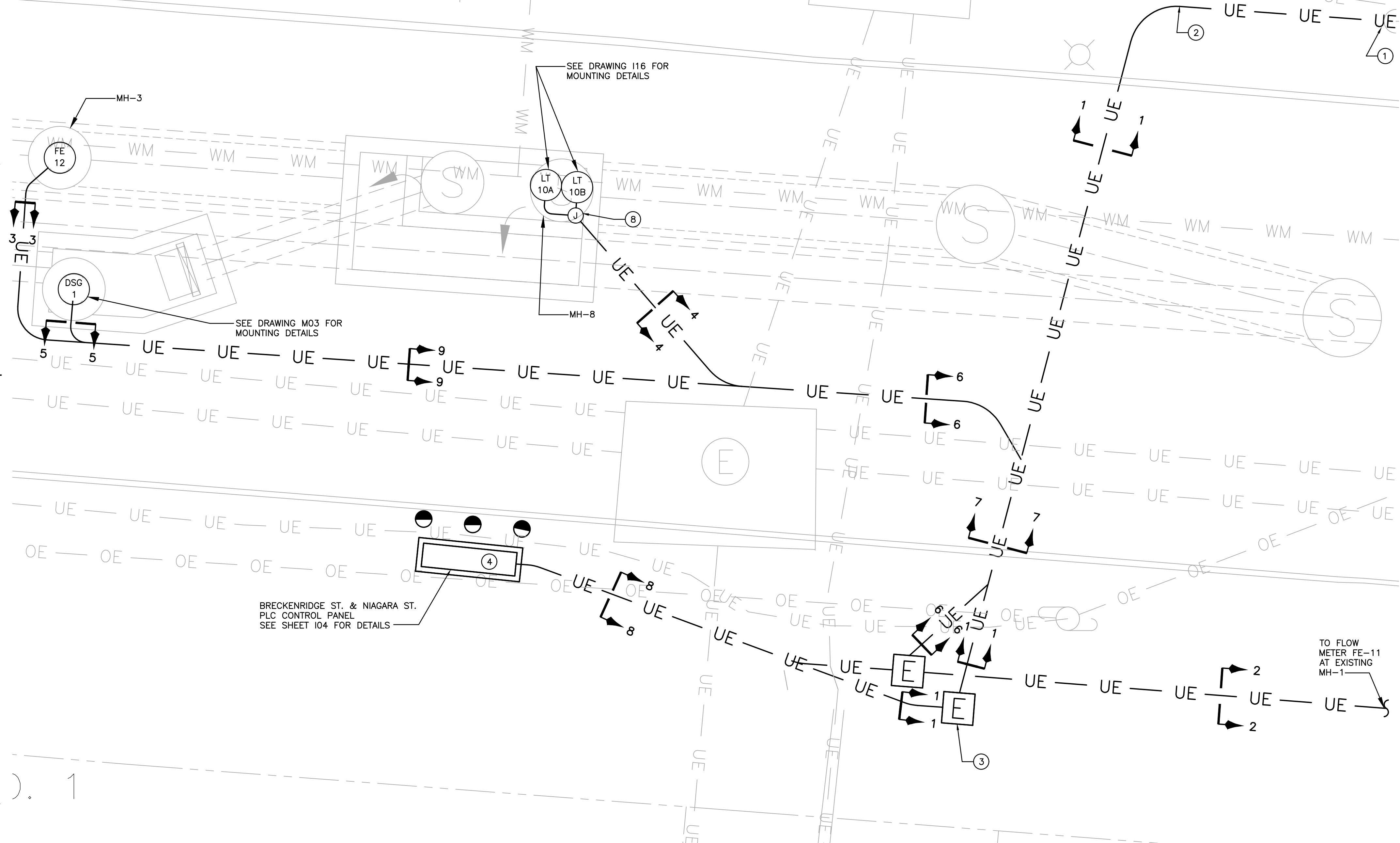
DETAIL 1/E05  
SCALE 1/4" = 1'-0"



SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
BRECKENRIDGE ST & NIAGARA ST (RTC)  
ELECTRICAL DIAGRAMS AND DETAILS

BSA CONTRACT NO. 82000041  
DWG: E05  
SHEET: 57 OF 85  
DATE: FEBRUARY 2023 REV: .



GENERAL NOTES

- UNDERGROUND EXISTING UTILITIES SHOWN BASED ON LAND SURVEY OF EXISTING SURFACE FEATURES. LIMITED SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.
- UNDERGROUND CONDUIT ROUTINGS SHOWN ARE DIAGRAMMATIC ONLY, DUE TO EXISTING UNDERGROUND UTILITIES AND OBSTACLES NOT BEING FULLY DOCUMENTED. ACTUAL CONDUIT RUNS MAY EXCEED LENGTH SHOWN AND BIDDERS ARE TO TAKE THIS INTO ACCOUNT WHEN SUBMITTING BIDS.
- UTILIZE WIDE SWEEP BENDS FOR ELECTRICAL CONDUIT ELBOWS.
- WHERE DUCTBANK CROSSINGS OVER EXISTING UTILITY GRID DUCTBANKS WILL COMPROMISE REQUIRED BURIAL DEPTH, THEN COORDINATE WITH NATIONAL GRID TO FAN-OUT SAID DUCTBANK HORIZANTALLY.

NEW CONSTRUCTION KEY NOTES

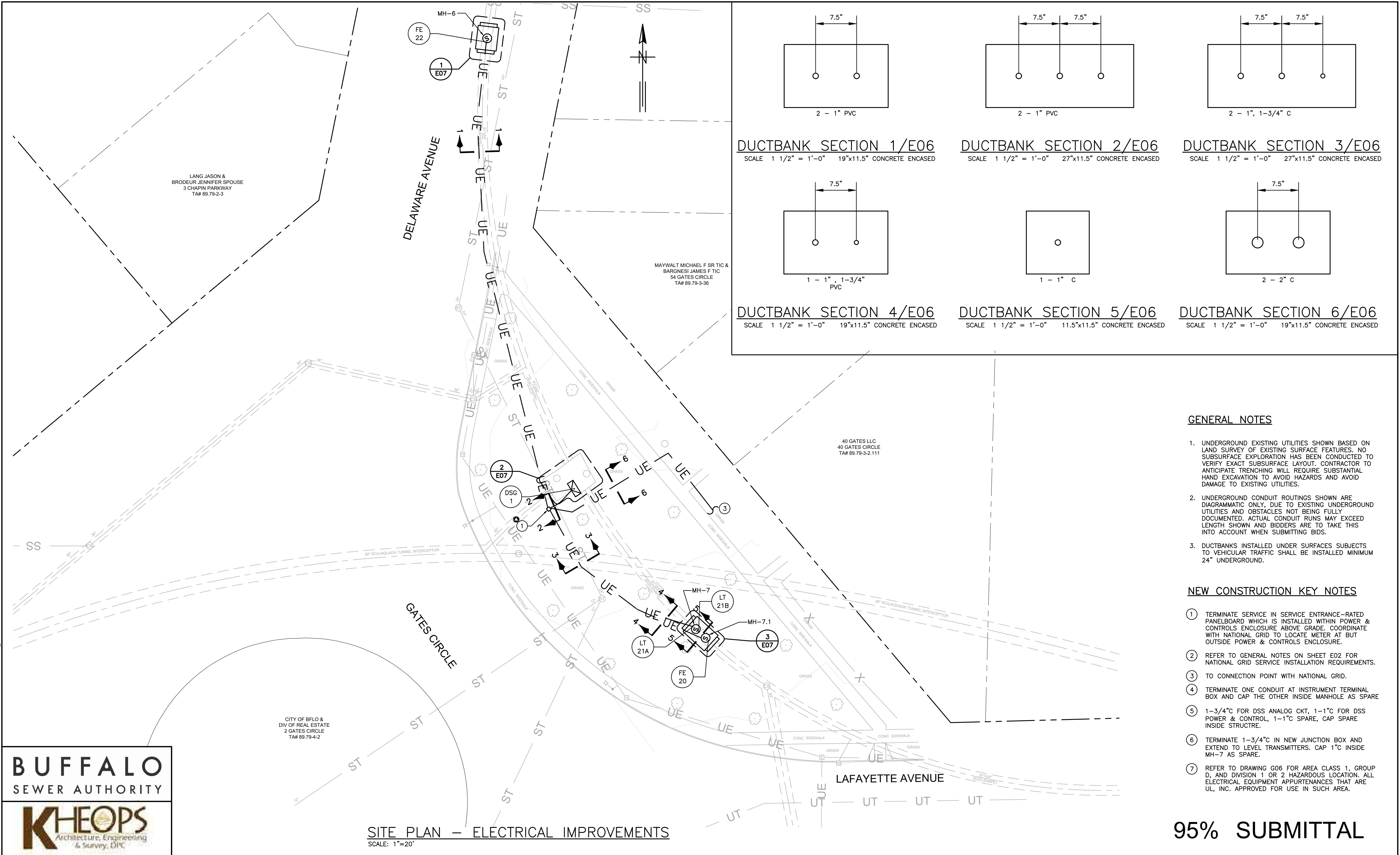
- ELECTRIC SERVICE CONNECTION AT NATIONAL GRID POLE 82. PROVIDE CONDUIT UP POLE 82 TO HEIGHT REQUIRED BY NATIONAL GRID AND TERMINATE WITH WEATHERHEAD FOR SERVICE CONNECTION BY NATIONAL GRID. COORDINATE CLOSELY WITH OWNER AND NATIONAL GRID.
- ROUTE SERVICE CONDUIT UNDERGROUND WITH MINIMUM COVER OF 3 FEET. ROUTE STREET CROSSING CLOSE TO EXISTING SANITARY SEWER VAULT TO TAKE ADVANTAGE OF STREET CLOSING TIMES FOR WORK WITHIN VAULT. ALL STREET CROSSING CONDUIT TO BE CONCRETE ENCASED.
- PROVIDE HANDHOLE FOR PULLING SERVICE CONDUCTORS WITH COVER MARKED AS REQUIRED BY NATIONAL GRID AND CITY OF BUFFALO. CONTINUE ROUTING SERVICE CONDUIT UNDERGROUND WITH MINIMUM COVER OF 3 FEET.
- TERMINATE SERVICE IN SERVICE METER AND EXTEND TO SERVICE ENTRANCE-RATED PANELBOARD WHICH IS INSTALLED WITHIN POWER & CONTROLS ENCLOSURE ABOVE GRADE. COORDINATE WITH NATIONAL GRID TO LOCATE METER AT BUT OUTSIDE POWER & CONTROLS ENCLOSURE.
- REFER TO GENERAL NOTES ON SHEET E02 FOR NATIONAL GRID SERVICE INSTALLATION REQUIREMENTS.
- DUCT BANK INSTALLED UNDER SURFACES SUBJECT TO VEHICULAR TRAFFIC SHALL BE INSTALL MINIMUM 24" BELOW GRADE AND IN ACCORDANCE WITH NEC 300-5.
- REFER TO DRAWING G06 FOR AREA CLASS 1, GROUP D, AND DIVISION 1 OR 2 HAZARDOUS LOCATION. ALL ELECTRICAL EQUIPMENT APPURTENANCES THAT ARE UL, INC. APPROVED FOR USE IN SUCH AREA.
- PROVIDE WALL MOUNTED J.BOX INSIDE MANHOLE AND CLOSE TO SENSOR DEVICES SHOWN. ROUTE ASSOCIATED CIRCUITS FROM SAID J.BOX TO DEVICES VIA LIQUIDTIGHT FLEXIBLE CONDUIT AND TERMINATE. SEE DRAWING SHEET M-02 FOR DEVICE LOCATIONS AND CORDINATE INSTALLATION WITH GENERAL CONTRACTOR.

95% SUBMITTAL



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**BUFFALO**  
SEWER AUTHORITY

**KHEOPS**  
Architecture, Engineering  
& Survey, DPC

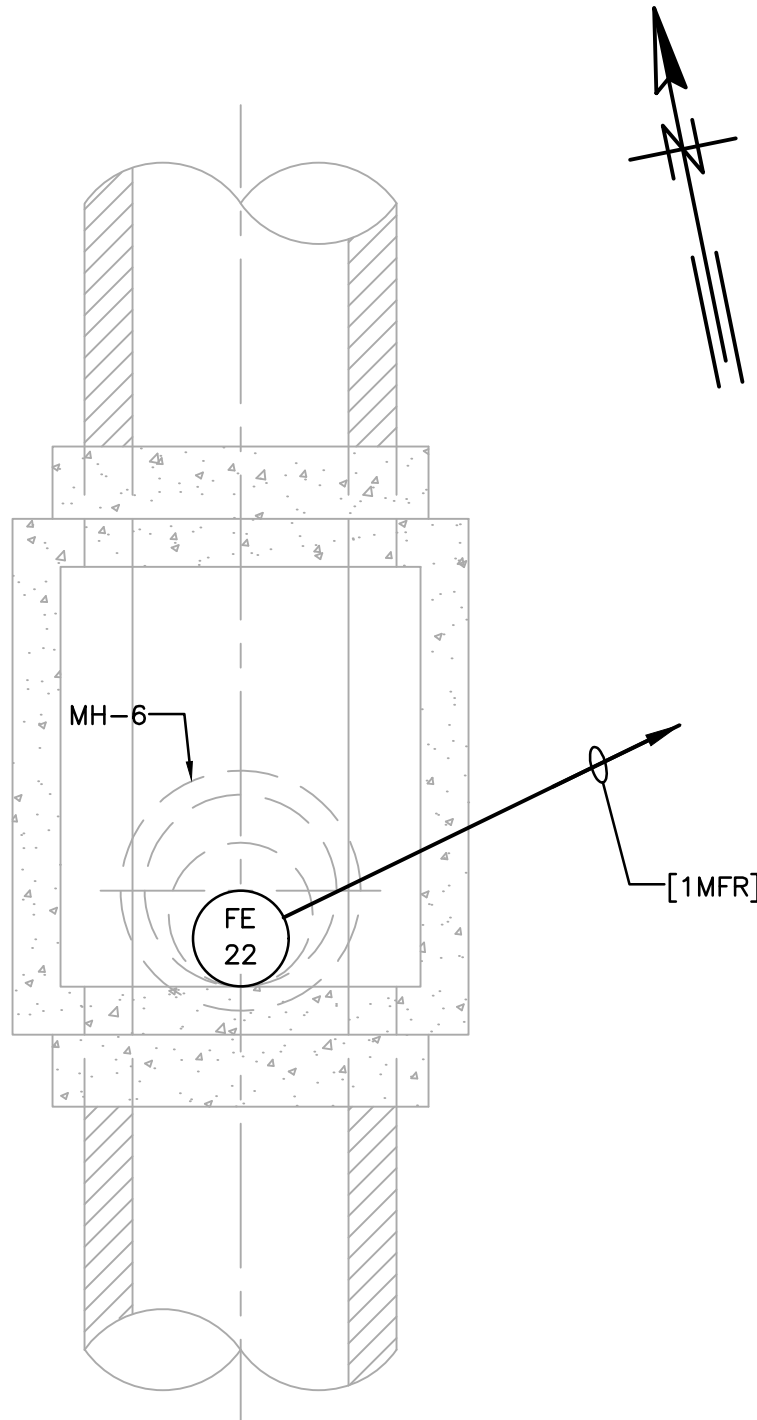
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| <div><div><b>GREELEY AND HANSEN</b></div><div>111 BROADWAY, SUITE 2101<br/>NEW YORK, NY 10006</div></div> | DESIGNED CB   | APPROVED |  |  |  |  | SCALE<br>20 0 20 40 FT 1"=20'<br>1 0 1 FT 1 1/2"=1'-0" | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | ELECTRICAL<br>GATES CIRCLE & DELAWARE AVE (RTC)<br><br>SITE PLAN - ELECTRICAL IMPROVEMENTS | BSA CONTRACT NO. 82000041                     |  |
|                                                                                                           | DRAWN HNB/DMM |          |  |  |  |  |                                                        |                                                              |                                                                                            | DWG: <b>E06</b>                               |  |
|                                                                                                           | CHECKED WEJ   |          |  |  |  |  |                                                        |                                                              |                                                                                            | SHEET: 58 OF 85<br>DATE: FEBRUARY 2023 REV: . |  |



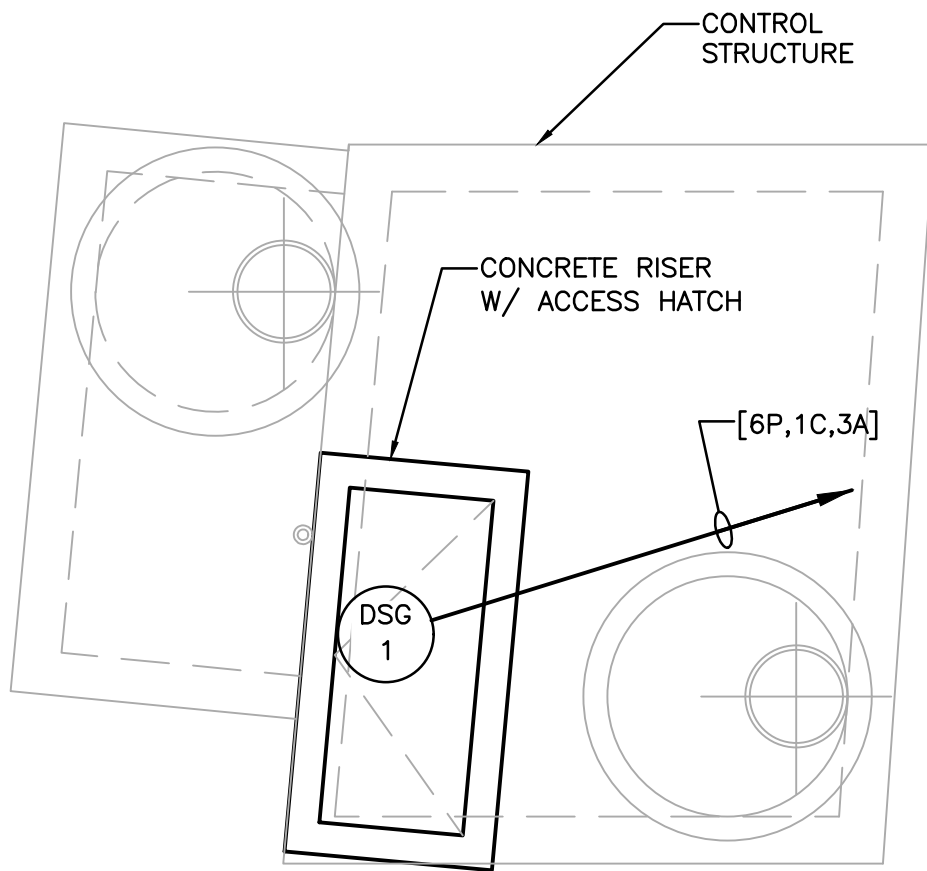
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\\ATLFS01\ENGINEERING\G22\NY063 BSA REAL TIME CONTROLDRAWINGS\ELECTRICAL\22\NY063\_E07 HAROLD BROWN

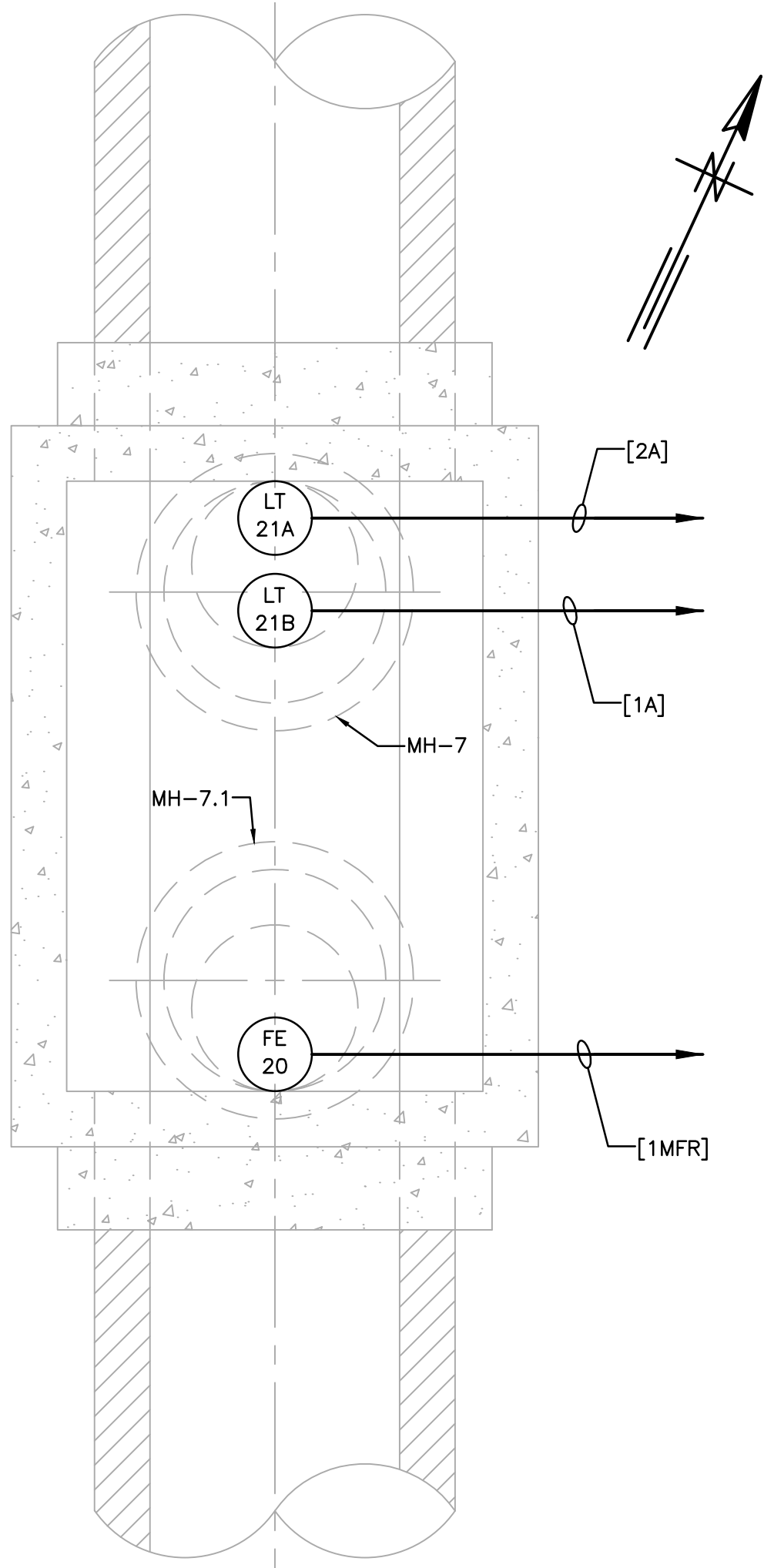
| GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL CONDUIT AND CABLE SCHEDULE                                                                             |               |                      |                                                                     |                                                         |                                                                      |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|---------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------|---------------|
| CONDUIT NO.                                                                                                                                              | SIZE          | CONDUCTOR QTY & SIZE | FROM                                                                | TO                                                      | REMARKS                                                              | CIRCUIT NO.   |
|                                                                                                                                                          |               |                      | GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL SERVICE AND POWER |                                                         |                                                                      |               |
| 1P                                                                                                                                                       | 2" SCH 80 PVC | 3#6 AWG XHHW         | NATIONAL GRID UTILITY POLE                                          | GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL METER | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 2 ON E02                        |               |
| 1PE                                                                                                                                                      | 2" SCH 80 PVC | EMPTY                |                                                                     |                                                         |                                                                      |               |
| 2P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG              | GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL METER             | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                  | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 1 ON E02                        |               |
| 3P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG              | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                              | 240/120V SINGLE-PHASE PANELBOARD                        | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 1 ON E02                        |               |
| 4P                                                                                                                                                       |               | 2#12 AWG & 1#12G     | 240/120V SINGLE-PHASE PANELBOARD                                    | GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL       | INTERNAL WIRING IN GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL | CIRCUIT NO. 1 |
|                                                                                                                                                          |               |                      | INSTRUMENTATION                                                     |                                                         |                                                                      |               |
| 5P                                                                                                                                                       |               | 3#12 AWG             | 240V/120V SINGLE-PHASE PANELBOARD                                   | FIT 20                                                  | INTERNAL WIRING IN GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL | CIRCUIT NO. 2 |
| 1MFR                                                                                                                                                     | 3/4" RGS      | MFR CABLE            | FIT 20                                                              | FE 20                                                   | MANHOLE MH-7-1 FLOW                                                  |               |
| 6P                                                                                                                                                       | 3/4" RGS      | 3#12 AWG             | 240/120V SINGLE-PHASE PANELBOARD                                    | FIT 22                                                  | INTERNAL WIRING IN GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL | CIRCUIT NO. 3 |
| 1MFR                                                                                                                                                     | 3/4" RGS      | MFR CABLE            | FIT 22                                                              | FIT 22                                                  | MANHOLE MH-6 FLOW                                                    |               |
| 1A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | LT21A                                                               | GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL       | MH-7 LEVEL (RADAR)                                                   |               |
| 2A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | LT21B                                                               | GATES CIRCLE & DELAWARE AVE RTC PLC CONTROL PANEL       | MH-7 LEVEL (LASER)                                                   |               |
| 6P                                                                                                                                                       | 3/4" RGS      | 2#12 AWG & 1#12G     | DSG-1                                                               | DSG-1 ACTUATOR REMOTE CONTROL STATION                   | GATES CIRCLE & DELAWARE AVE RTC POWER                                | CIRCUIT NO. 4 |
| 1C                                                                                                                                                       | 3/4" RGS      | 12#14 AWG CABLE      | DSG-1                                                               | DSG-1 ACTUATOR REMOTE CONTROL STATION                   | GATES CIRCLE & DELAWARE AVE RTC CONTROL PANEL                        |               |
| 3A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | DSG-1                                                               | DSG-1 ACTUATOR REMOTE CONTROL STATION                   | GATES CIRCLE & DELAWARE AVE RTC CONTROL PANEL                        |               |
| A = ANALOG                      P = POWER                      1PE = EMPTY CONDUIT<br>C = CONTROL                      MFR = MANUFACTURER SUPPLIED CABLE |               |                      |                                                                     |                                                         |                                                                      |               |



DETAIL 1/E07  
SCALE: 1/4"=1'-0"



DETAIL 2/E07  
SCALE: 1/4"=1'-0"



DETAIL 3/E07  
SCALE: 3/8"=1'-0"

95% SUBMITTAL

BUFFALO  
SEWER AUTHORITY

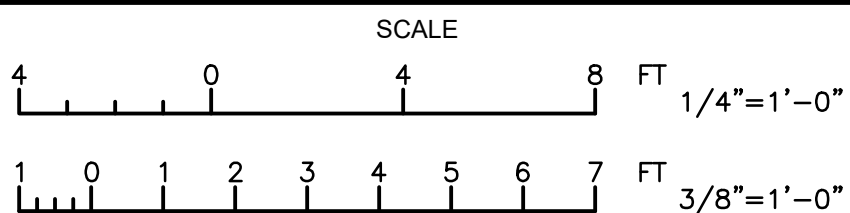


GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED CB  
DRAWN HNB  
CHECKED WEJ

APPROVED

|     |      |      |          |
|-----|------|------|----------|
| NO. | DATE | APPD | REVISION |
|     |      |      |          |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
GATES CIRCLE & DELAWARE AVE (RTC)

ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES

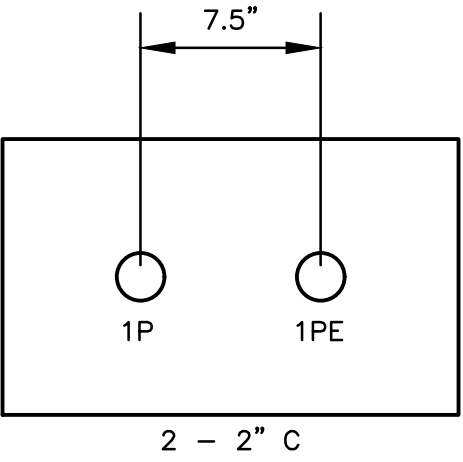
BSA CONTRACT NO. 82000041

DWG: E07

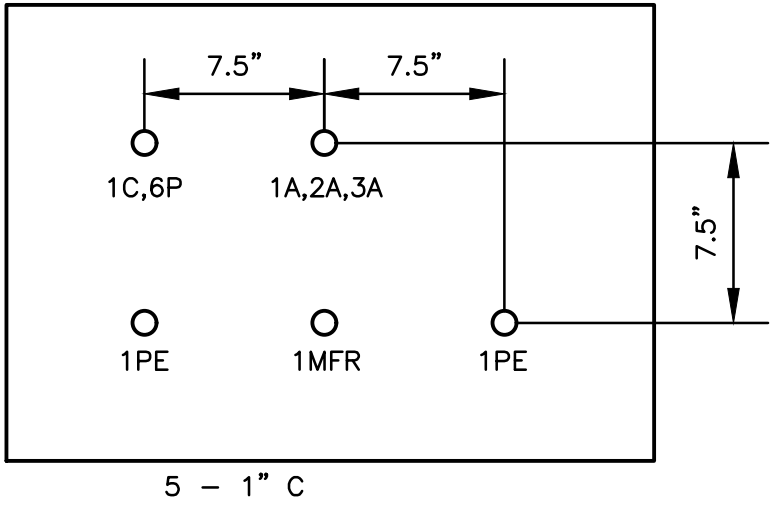
SHEET: 59 OF 85  
DATE: FEBRUARY 2023 REV: .



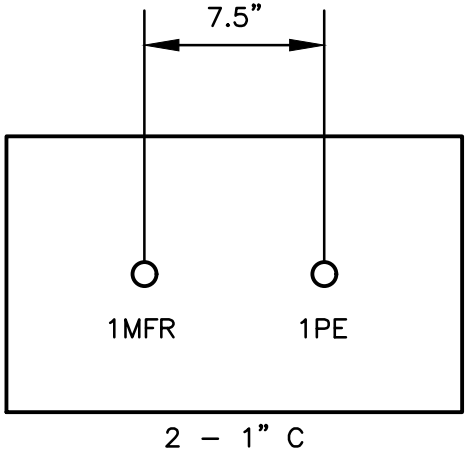
| LP-A                                                                            |       |                               |      |             |          |       |          |      |             |         |     |       |      |
|---------------------------------------------------------------------------------|-------|-------------------------------|------|-------------|----------|-------|----------|------|-------------|---------|-----|-------|------|
| LOCATION                                                                        |       | EAST AMHERST ST. & BAILEY AVE |      |             |          |       | PHASE    |      | 1           |         |     |       |      |
| RATING                                                                          |       | 60A MLO                       |      |             |          |       | WIRE     |      | 3           |         |     |       |      |
| VOLTAGE (L-L)                                                                   |       | 240                           |      |             |          |       | MOUNTING |      | WALL        |         |     |       |      |
| VOLTAGE (L-N)                                                                   |       | 120                           |      |             |          |       |          |      |             |         |     |       |      |
| CODE                                                                            | CKT # | BKR                           | POLE | DESCRIPTION | LOAD     | PHASE | PHASE    | LOAD | DESCRIPTION | POLE    | BKR | CKT # | CODE |
|                                                                                 |       |                               |      |             | (VA)     | A     | B        | (VA) |             |         |     |       |      |
| O                                                                               | 1     | 20                            | 1    | PLC         | 300      | 300   |          | 0    | SPARE       | 1       | 15  | 2     | S    |
| M                                                                               | 3     | 15                            | 2    | DGS 1/4HP   | 370      |       | 853      | 483  | HVAC        | 1       | 15  | 4     | H    |
| S                                                                               | 5     | 15                            | '    |             | 370      | 853   |          | 483  | HVAC        | 1       | 15  | 6     | H    |
| S                                                                               | 7     | 15                            | 1    | SPARE       | —        |       | 120      | 120  | FIT31       | 1       | 15  | 8     | O    |
|                                                                                 |       |                               |      |             | VA TOTAL | 1153  | 973      |      |             |         |     |       |      |
|                                                                                 |       |                               |      |             | AMPERES  | 9.6   | 8.1      |      |             |         |     |       |      |
| NOTES:                                                                          |       |                               |      |             |          |       |          |      |             | CODE:   |     |       |      |
| 1. MINIMUM AIC RATING SHALL MATCH AVAILABLE ISC AT UTILITY SERVICE CONNECTION.  |       |                               |      |             |          |       |          |      |             | M MOTOR |     |       |      |
| 2. PANEL TO BE PROVIDED WITH MANUFACTURER'S STANDARD INTERNAL SURGE SUPPRESSION |       |                               |      |             |          |       |          |      |             | O OTHER |     |       |      |
| 3. FULLY RATED, NOT SERIES RATED.                                               |       |                               |      |             |          |       |          |      |             | S SPARE |     |       |      |
| 4. DOOR-IN-DOOR HINGED COVER.                                                   |       |                               |      |             |          |       |          |      |             | H HEAT  |     |       |      |



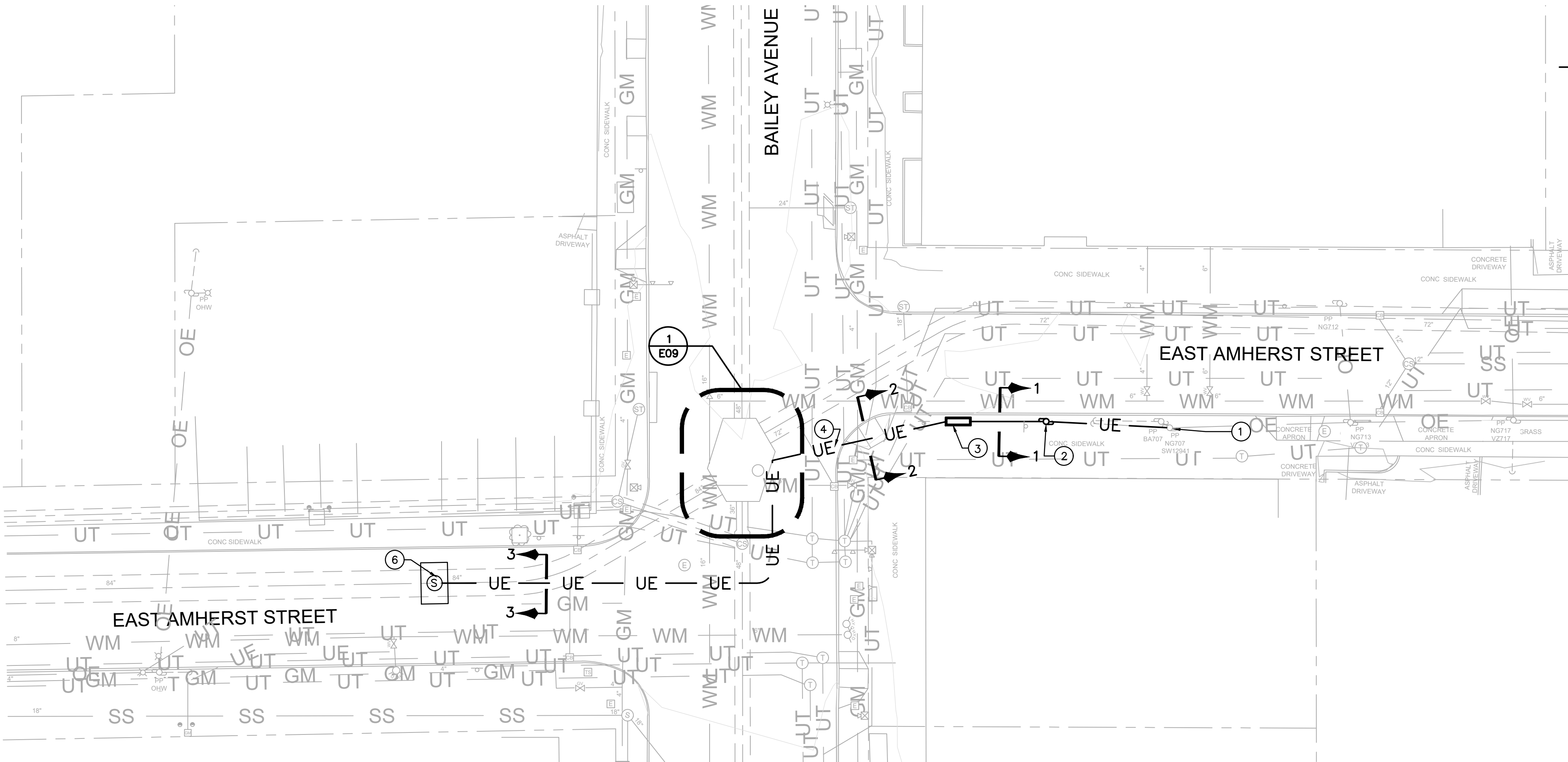
DUCTBANK SECTION 1/E08  
SCALE 1 1/2" = 1'-0" 19"x11.5" CONCRETE ENCASED



DUCTBANK SECTION 2/E08  
SCALE 1 1/2" = 1'-0" 27"x19" CONCRETE ENCASED



DUCTBANK SECTION 3/E08  
SCALE 1 1/2" = 1'-0" 19"x11.5" CONCRETE ENCASED



GENERAL NOTES

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NEW CONSTRUCTION KEY NOTES

- ADJACENT EXISTING NATIONAL GRID POLE 707.
- COORDINATE WITH OWNER AND NATIONAL GRID TO REQUEST NATIONAL GRID PROVIDE NEW POLE AT THIS LOCATION WHICH IS MINIMUM OF 30 FEET FROM ADJACENT EXISTING POLE. NEW POLE IS POINT OF SERVICE CONNECTION. PROVIDE CONDUIT UP POLE TO HEIGHT REQUIRED BY NATIONAL GRID AND TERMINATE WITH WEATHERHEAD FOR SERVICE CONNECTION BY NATIONAL GRID.
- ROUTE SERVICE CONDUIT UNDERGROUND WITH MINIMUM COVER OF 3 FEET. TERMINATE SERVICE IN SERVICE ENTRANCE-RATED PANELBOARD WHICH IS INSTALLED WITHIN POWER & CONTROLS ENCLOSURE ABOVE GRADE. COORDINATE WITH NATIONAL GRID TO LOCATE METER AT BUT OUTSIDE POWER & CONTROLS ENCLOSURE.
- ROUTE BRANCH CIRCUITS AND INSTRUMENTATION WIRING FROM CONTROL ENCLOSURE UNDERGROUND WITH MINIMUM OF 3 FEET COVER TO SANITARY SEWER VAULT. COORDINATE CLOSELY WITH OWNER FOR NEW OPENING INTO VAULT FOR BRANCH CIRCUITS. ALL CONDUITS WITHIN STREETS TO BE CONCRETE ENCASED.
- REFER TO GENERAL NOTES ON SHEET E02 FOR NATIONAL GRID SERVICE INSTALLATION REQUIREMENTS.
- INSTALL FLOW METER.
- REFER TO DRAWING G06 FOR AREA CLASS 1, GROUP D, AND DIVISION 1 OR 2 HAZARDOUS LOCATION. ALL ELECTRICAL EQUIPMENT APPURTENANCES THAT ARE UL, INC. APPROVED FOR USE IN SUCH AREA.

95% SUBMITTAL

BUFFALO

SEWER AUTHORITY

KHEOPS

Architecture, Engineering  
& Survey, OPC

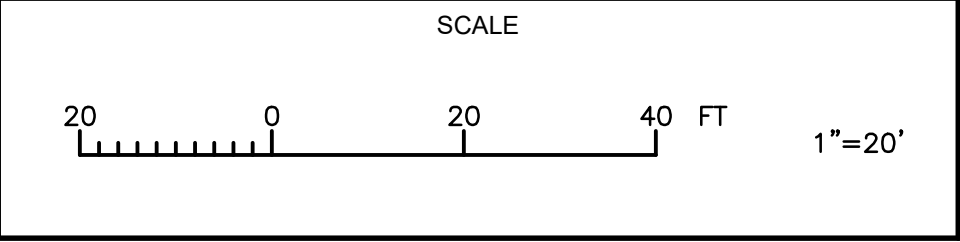
GREELEY AND HANSEN

111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

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| DESIGNED | CB  |
| DRAWN    | HNB |
| CHECKED  | WEJ |

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
EAST AMHERT ST & BAILEY AVE (RTC)

SITE PLAN - ELECTRICAL IMPROVEMENTS

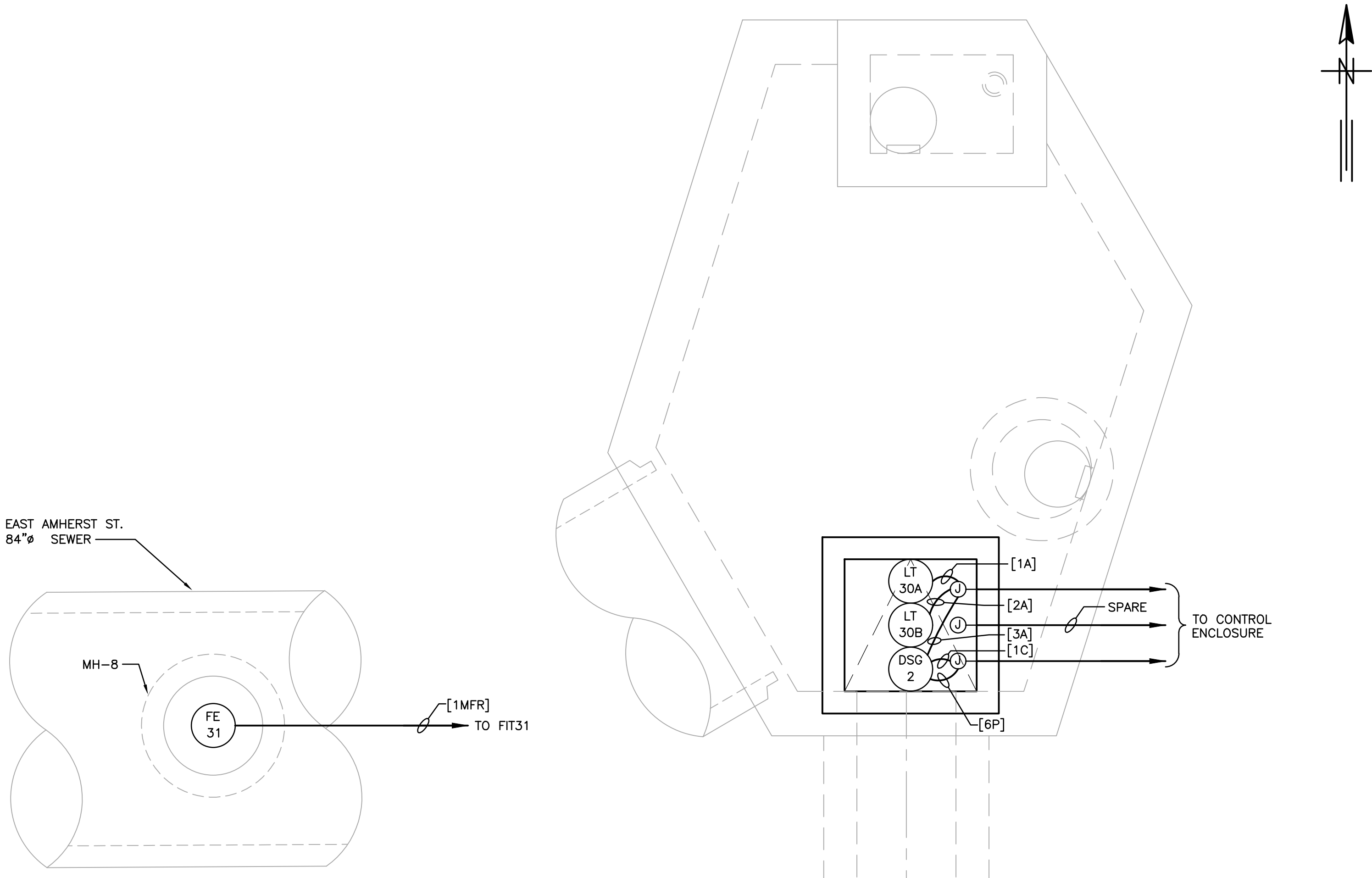
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|---------------------------|---------------|
| BSA CONTRACT NO. 82000041 |               |
| DWG:                      | E08           |
| SHEET:                    | 60 OF 85      |
| DATE:                     | FEBRUARY 2023 |
| REV:                      | .             |



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\\ATLFS01\ENGINEERING\G22\NY063 BSA REAL TIME CONTROL\DRAWINGS\ELECTRICAL\22NY063\_E09 HAROLD BROWN

| EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL CONDUIT AND CABLE SCHEDULE                                                                           |               |                      |                                                           |                                                           |                                                                        |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-----------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|---------------|
| CONDUIT NO.                                                                                                                                              | SIZE          | CONDUCTOR QTY & SIZE | FROM                                                      | TO                                                        | REMARKS                                                                | CIRCUIT NO.   |
| EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL SERVICE AND POWER                                                                                    |               |                      |                                                           |                                                           |                                                                        |               |
| 1P                                                                                                                                                       | 2" SCH 80 PVC | 3#6 AWG XHHW         | NATIONAL GRID UTILITY POLE                                | EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL METER | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 2 ON E02                          |               |
| 1PE                                                                                                                                                      | 2" SCH 80 PVC | EMPTY                |                                                           |                                                           |                                                                        |               |
| 2P                                                                                                                                                       | 1" RGS        | 3#6 AWG              | EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL METER | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                    | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 1 ON E02                          |               |
| 3P                                                                                                                                                       | 1" RGS        | 3#6 AWG              | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                    | 240/120V SINGLE-PHASE PANELBOARD                          | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 1 ON E02                          |               |
| 4P                                                                                                                                                       |               | 2#12 AWG & 1#12G     | 240/120V SINGLE-PHASE PANELBOARD                          | EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL       | INTERNAL WIRING IN EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL | CIRCUIT NO. 1 |
| INSTRUMENTATION                                                                                                                                          |               |                      |                                                           |                                                           |                                                                        |               |
| 5P                                                                                                                                                       |               | 2#12 AWG & 1#12G     | 240V/120V SINGLE-PHASE PANELBOARD                         | FIT 31                                                    | INTERNAL WIRING IN EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL | CIRCUIT NO. 2 |
| 1MFR                                                                                                                                                     | 3/4" RGS      | MFR CABLE            | FIT 31                                                    | FE 31                                                     | MANHOLE MH-8 FLOW                                                      |               |
| 1A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | LT21A                                                     | EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL       | MH-7 LEVEL (RADAR)                                                     |               |
| 2A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | LT21B                                                     | EAST AMHERST ST. & BAILEY AVE RTC PLC CONTROL PANEL       | MH-7 LEVEL (LASER)                                                     |               |
| 6P                                                                                                                                                       | 3/4" RGS      | 2#12 AWG & 1#12G     | PANELBOARD                                                | DSG-1 ACTUATOR REMOTE CONTROL STATION                     | EAST AMHERST ST. & BAILEY AVE RTC POWER                                | CIRCUIT NO. 3 |
| 1C                                                                                                                                                       | 3/4" RGS      | 12#14 AWG CABLE      | DSG-1                                                     | DSG-1 ACTUATOR REMOTE CONTROL STATION                     | EAST AMHERST ST. & BAILEY AVE RTC CONTROL PANEL                        |               |
| 3A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | DSG-1                                                     | DSG-1 ACTUATOR REMOTE CONTROL STATION                     | EAST AMHERST ST. & BAILEY AVE RTC CONTROL PANEL                        |               |
|                                                                                                                                                          |               |                      |                                                           |                                                           |                                                                        |               |
|                                                                                                                                                          |               |                      |                                                           |                                                           |                                                                        |               |
| A = ANALOG                      P = POWER                      1PE = EMPTY CONDUIT<br>C = CONTROL                      MFR = MANUFACTURER SUPPLIED CABLE |               |                      |                                                           |                                                           |                                                                        |               |



GENERAL NOTES

- UNDERGROUND EXISTING UTILITIES SHOWN BASED ON LAND SURVEY OF EXISTING SURFACE FEATURES. NO SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.
- UNDERGROUND CONDUIT ROUTINGS SHOWN ARE DIAGRAMMATIC ONLY, DUE TO EXISTING UNDERGROUND UTILITIES AND OBSTACLES NOT BEING FULLY DOCUMENTED. ACTUAL CONDUIT RUNS MAY EXCEED LENGTH SHOWN AND BIDDERS ARE TO TAKE THIS INTO ACCOUNT WHEN SUBMITTING BIDS.
- PROVIDE APPROVED SEALANT, PER THE MANUFACTURER'S RECOMMENDATIONS, WHERE ELECTRICAL CONDUITS PENETRATE UNDERGROUND STRUCTURES.

DETAIL 1/E09  
SCALE: 3/8"=1'-0"

95% SUBMITTAL

BUFFALO  
SEWER AUTHORITY

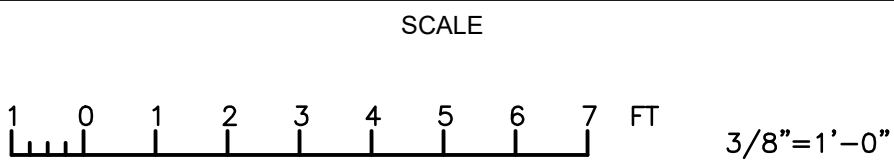


GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED CB  
DRAWN HNB  
CHECKED WEJ

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
EAST AMHERST & BAILEY AVE (RTC)

ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES

BSA CONTRACT NO. 82000041

DWG: E09

SHEET: 61 OF 85

DATE: FEBRUARY 2023 REV: .



BUFFALO

SEWER AUTHORITY

KHEOPS

Architecture, Engineering  
& Survey, DPC

GREELEY AND HANSEN

111 BROADWAY, SUITE 2101

NEW YORK, NY 10006

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| DESIGNED | CB   | APPROVED |          |  |  |  |  |
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| NO.      | DATE | APPD     | REVISION |  |  |  |  |

SCALE

10 0 10 20 FT

1"=10'

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
BAILEY AVE & KERNS AVE (RTC)

SITE PLAN – ELECTRICAL IMPROVEMENTS

|                           |        |
|---------------------------|--------|
| BSA CONTRACT NO. 82000041 |        |
| DWG: E10                  |        |
| SHEET: 62 OF 85           |        |
| DATE: FEBRUARY 2023       | REV: . |

| LP-A                                                                                                                                                                                                                                                                                          |       |                        |      |             |          |          |       |      |      |             |      |     |       |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------|------|-------------|----------|----------|-------|------|------|-------------|------|-----|-------|------|
| LOCATION                                                                                                                                                                                                                                                                                      |       | BAILEY AVE & KERNS AVE |      |             |          |          |       |      |      |             |      |     |       |      |
| RATING                                                                                                                                                                                                                                                                                        |       | 60A MLO                |      |             |          | PHASE    |       | 1    |      |             |      |     |       |      |
| VOLTAGE (L-L)                                                                                                                                                                                                                                                                                 |       | 240                    |      |             |          | WIRE     |       | 3    |      |             |      |     |       |      |
| VOLTAGE (L-N)                                                                                                                                                                                                                                                                                 |       | 120                    |      |             |          | MOUNTING |       | WALL |      |             |      |     |       |      |
| CODE                                                                                                                                                                                                                                                                                          | CKT # | BKR                    | POLE | DESCRIPTION | LOAD     | PHASE    | PHASE |      | LOAD | DESCRIPTION | POLE | BKR | CKT # | CODE |
|                                                                                                                                                                                                                                                                                               |       |                        |      |             | (VA)     |          | B     |      | (VA) |             |      |     |       |      |
| R                                                                                                                                                                                                                                                                                             | 1     | 20                     | 1    | PLC         | 120      | 300      |       |      | 180  | SPARE       | 1    | 15  | 2     | S    |
| M                                                                                                                                                                                                                                                                                             | 3     | 15                     | 1    | HVAC        | 483      |          | 663   |      | 180  | SPARE       | 1    | 15  | 4     | S    |
| M                                                                                                                                                                                                                                                                                             | 5     | 15                     | 1    | HVAC        | 483      | 483      |       |      | -    | SPACE       | 1    | -   | 6     | S    |
| S                                                                                                                                                                                                                                                                                             | 7     | -                      | 1    | SPACE       | -        |          |       |      | -    | SPACE       | 1    | -   | 8     | S    |
|                                                                                                                                                                                                                                                                                               |       |                        |      |             | VA TOTAL | 783      | 663   |      |      |             |      |     |       |      |
|                                                                                                                                                                                                                                                                                               |       |                        |      |             | AMPERES  | 6.5      | 5.5   |      |      |             |      |     |       |      |
| <div>NOTES:</div> <div>1. MINIMUM AIC RATING SHALL MATCH AVAILABLE ISC AT UTILITY SERVICE CONNECTION.</div> <div>2. PANEL TO BE PROVIDED WITH MANUFACTURER'S STANDARD INTERNAL SURGE SUPPRESSION.</div> <div>3. FULLY RATED, NOT SERIES RATED.</div> <div>4. DOOR-IN-DOOR HINGED COVER.</div> |       |                        |      |             |          |          |       |      |      |             |      |     |       |      |

**GENERAL NOTES**

- UNDERGROUND EXISTING UTILITIES SHOWN BASED ON LAND SURVEY OF EXISTING SURFACE FEATURES. NO SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.
- PROVIDE MANHOLES AND HANDHOLES WITHIN DISTANCE LIMITS PER NEC FOR PULLING SERVICE CONDUCTORS WITH COVER MARKED AS REQUIRED BY NATIONAL GRID AND CITY OF BUFFALO. CONTINUE ROUTING SERVICE CONDUIT UNDERGROUND WITH MINIMUM COVER OF 2 FEET.

**NEW CONSTRUCTION KEY NOTES**

- TERMINATE SERVICE IN SERVICE ENTRANCE-RATED PANELBOARD WHICH IS INSTALLED WITHIN POWER & CONTROLS ENCLOSURE ABOVE GRADE. COORDINATE WITH NATIONAL GRID TO LOCATE METER AT BUT OUTSIDE POWER & CONTROLS ENCLOSURE.
- LOCATION OF SERVICE CONNECTION ON POLE TO BE PROVIDED BY NATIONAL GRID. PROVIDE CONDUIT UP POLE TO HEIGHT REQUIRED BY NATIONAL GRID AND TERMINATE WITH WEATHERHEAD FOR SERVICE CONNECTION BY NATIONAL GRID.
- TERMINATE 1-3/4"C IN NEW JUNCTION BOX INSIDE MH AND EXTEND TO LEVEL TRANSMITTERS. CAP OTHER 3/4" CONDUIT INSIDE MH AND LABEL AS SPARE.
- DUCT BANK INSTALLED UNDER SURFACES SUBJECT TO VEHICULAR TRAFFIC SHALL BE INSTALL MINIMUM 24" BELOW GRADE AND IN ACCORDANCE WITH NEC 300-5.
- REFER TO DRAWING G06 FOR AREA CLASS 1, GROUP D, AND DIVISION 1 OR 2 HAZARDOUS LOCATION. ALL ELECTRICAL EQUIPMENT APPURTENANCES THAT ARE UL, INC. APPROVED FOR USE IN SUCH AREA.

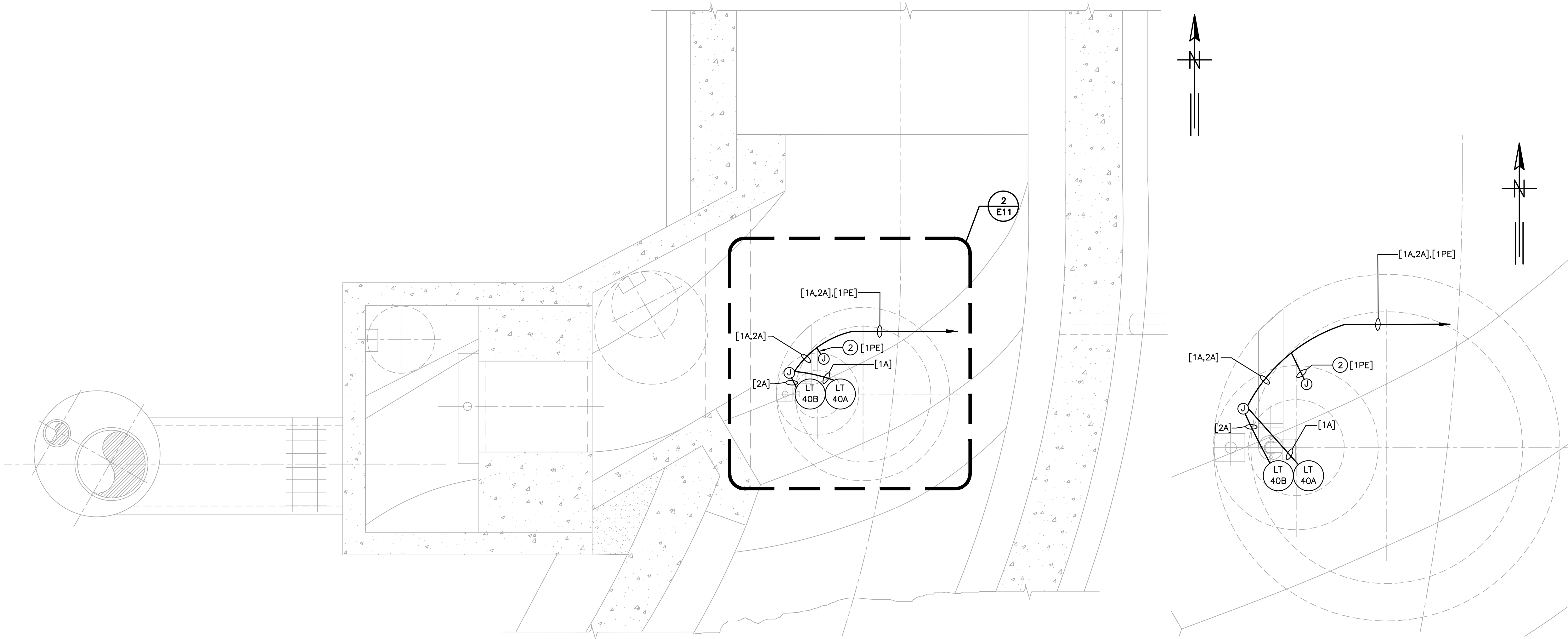
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| BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL CONDUIT AND CABLE SCHEDULE                                                                                  |               |                      |                                                    |                                                                              |                                               |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|----------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|---------------|
| CONDUIT NO.                                                                                                                                              | SIZE          | CONDUCTOR QTY & SIZE | FROM                                               | TO                                                                           | REMARKS                                       | CIRCUIT NO.   |
| BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL SERVICE AND POWER                                                                                           |               |                      |                                                    |                                                                              |                                               |               |
| 1P                                                                                                                                                       | 2" SCH 80 PVC | 3#6 AWG XHHW         | NATIONAL GRID UTILITY POLE                         | BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL METER                           | SEE ONE-LINE DIAGRAM ON E02 AND NOTE 2 ON E02 |               |
| 1PE                                                                                                                                                      | 2" SCH 80 PVC | EMPTY                | NATIONAL GRID UTILITY POLE                         | STUBBED UP AND SEALED ADJACENT TO BAILEY AVE & KERNS AVE RTC SERVICE CONDUIT | SEE ONE-LINE DIAGRAM ON E02                   |               |
| 2P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG              | BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL METER | SERVICE-ENTRANCE RATED ENCLOSED SWITCH                                       | SEE ONE-LINE DIAGRAM ON E02                   |               |
| 3P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG & 1#6G       | SERVICE-ENTRANCE RATED ENCLOSED SWITCH             | MTS                                                                          | SEE ONE-LINE DIAGRAM ON E02                   |               |
| 4P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG & 1#6G       | ROLL-UP GENSET FEEDER                              | MTS                                                                          | SEE ONE-LINE DIAGRAM ON E02                   | CIRCUIT NO. 1 |
| 5P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG & 1#6G       | MTS                                                | UPS                                                                          | SEE ONE-LINE DIAGRAM ON E02                   |               |
| 6P                                                                                                                                                       | 3/4" RGS      | 3#6 AWG & 1#6G       | UPS                                                | 240/120V SINGLE-PHASE PANELBOARD                                             | SEE ONE-LINE DIAGRAM ON E02                   |               |
| 7P                                                                                                                                                       | 3/4" RGS      | 2#12 AWG & 1#12G     | 240/120V SINGLE-PHASE PANELBOARD                   | BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL                                 | SEE ONE-LINE DIAGRAM ON E02                   |               |
| INSTRUMENTATION                                                                                                                                          |               |                      |                                                    |                                                                              |                                               |               |
| 1A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | LT40A                                              | BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL                                 | MH-7 LEVEL (RADAR)                            |               |
| 2A                                                                                                                                                       | 3/4" RGS      | 2#16 TSP             | LT40B                                              | BAILEY AVE & KERNS AVE RTC PLC CONTROL PANEL                                 | MH-7 LEVEL (LASER)                            |               |
| A = ANALOG                      P = POWER                      1PE = EMPTY CONDUIT<br>C = CONTROL                      MFR = MANUFACTURER SUPPLIED CABLE |               |                      |                                                    |                                                                              |                                               |               |



GENERAL NOTES

1. UNDERGROUND EXISTING UTILITIES SHOWN BASED ON LAND SURVEY OF EXISTING SURFACE FEATURES. NO SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.

NEW CONSTRUCTION KEY NOTES

- ① TERMINATE SERVICE IN SERVICE ENTRANCE-RATED PANELBOARD WHICH IS INSTALLED WITHIN POWER & CONTROLS ENCLOSURE ABOVE GRADE. COORDINATE WITH NATIONAL GRID TO LOCATE METER AT BUT OUTSIDE POWER & CONTROLS ENCLOSURE.
- ② SPARE 3/4" CONDUIT. TERMINATE IN J.BOX AND SEAL CONDUIT. TAG CONDUIT AS SPARE.

BUFFALO  
SEWER AUTHORITY

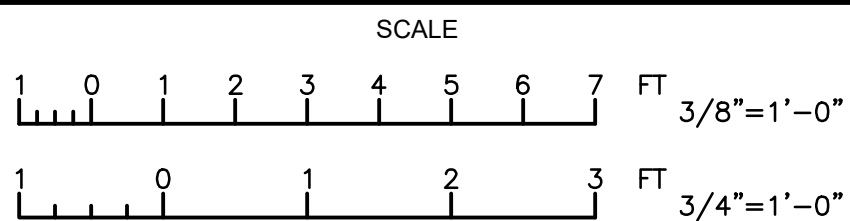


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111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED CB  
DRAWN HNB  
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APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
BAILEY AVE & KERNS AV (RTC)

ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES

BSA CONTRACT NO. 82000041

DWG: E11

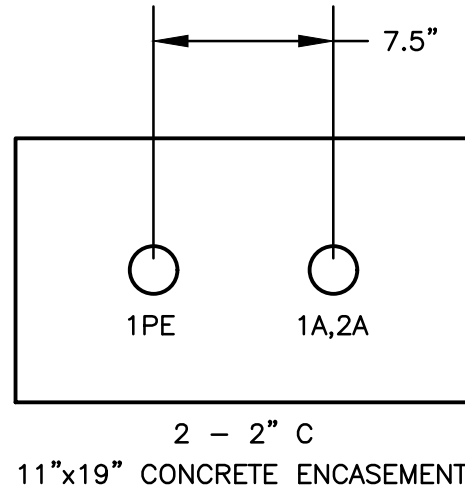
SHEET: 63 OF 85

DATE: FEBRUARY 2023 REV: .

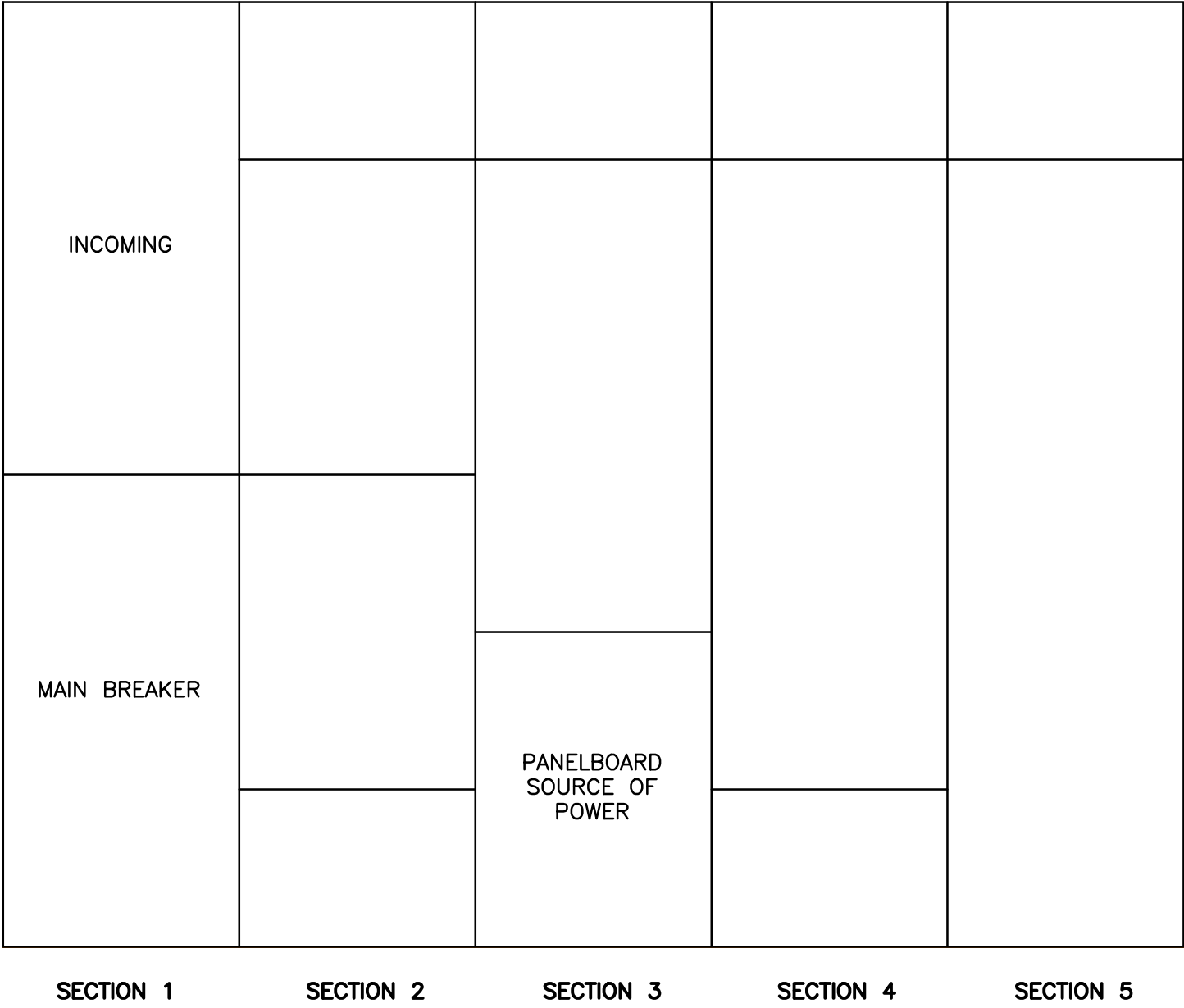
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DUCTBANK SECTION 1/E12  
SCALE: 1/8" = 1'-0"



MCC SECTION 2/12  
SCALE: NO SCALE



SITE PLAN  
SCALE: 1"=20'

GENERAL NOTES

1. NO SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.
2. UNDERGROUND CONDUIT ROUTINGS SHOWN ARE DIAGRAMMATIC ONLY, DUE TO EXISTING UNDERGROUND UTILITIES AND OBSTACLES NOT BEING FULLY DOCUMENTED. ACTUAL CONDUIT RUNS MAY EXCEED LENGTH SHOWN AND BIDDERS ARE TO TAKE THIS INTO ACCOUNT WHEN SUBMITTING BIDS.

NEW CONSTRUCTION KEY NOTES

1. PROVIDE HANDHOLES WITH TRAFFIC RATED COVER.
2. LOCATE EXISTING CONDUITS BETWEEN CONTROL BUILDING AND PUMP STATION BUILDING. CAREFULLY EXCAVATE AS NEEDED TO DETERMINE DEPTH OF BURY OF EXISTING CONDUITS. ROUTE NEW CONDUITS PARALLEL TO EXISTING AND AT SAME DEPTH OF BURY.

BUFFALO  
SEWER AUTHORITY

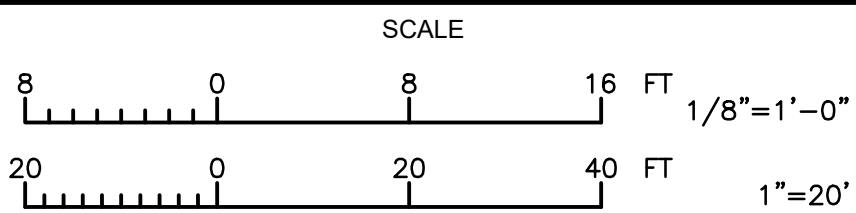
**KHEOPS**  
Architecture, Engineering  
& Survey, OPC

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED CB  
DRAWN HNB  
CHECKED WEJ

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
QUARRY PUMP STATION ROOF & CONTROL BUILDING (RTC)

SITE PLAN — ELECTRICAL IMPROVEMENTS

BSA CONTRACT NO. 82000041

DWG: **E12**

SHEET: 64 OF 85

DATE: FEBRUARY 2023 REV: .

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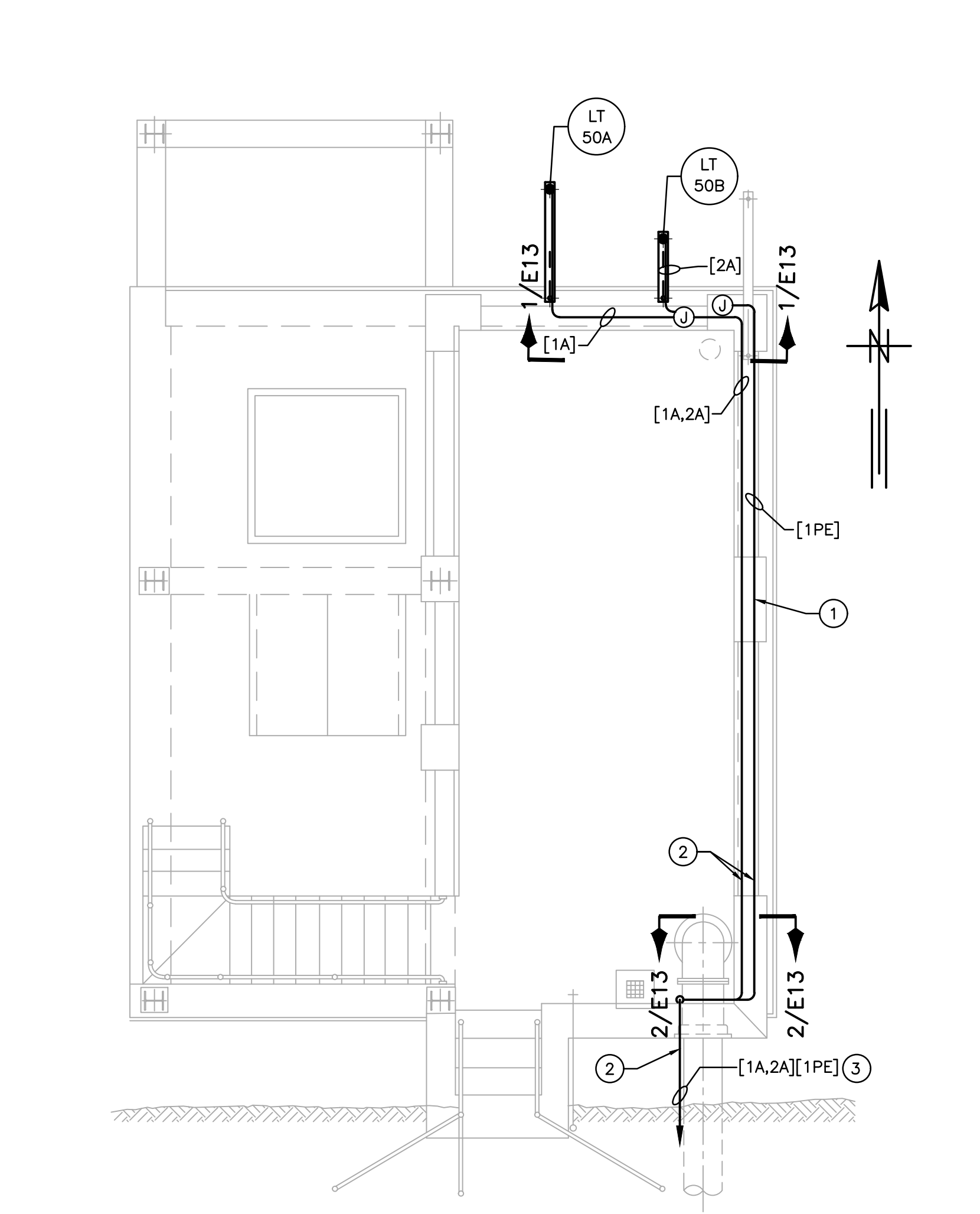
\\ATLFS01\ENGINEERING\22\NY063 BSA REAL TIME CONTROL\DRAWINGS\ELECTRICAL\22\NY063 E12 - QUARRY HAROLD BROWN



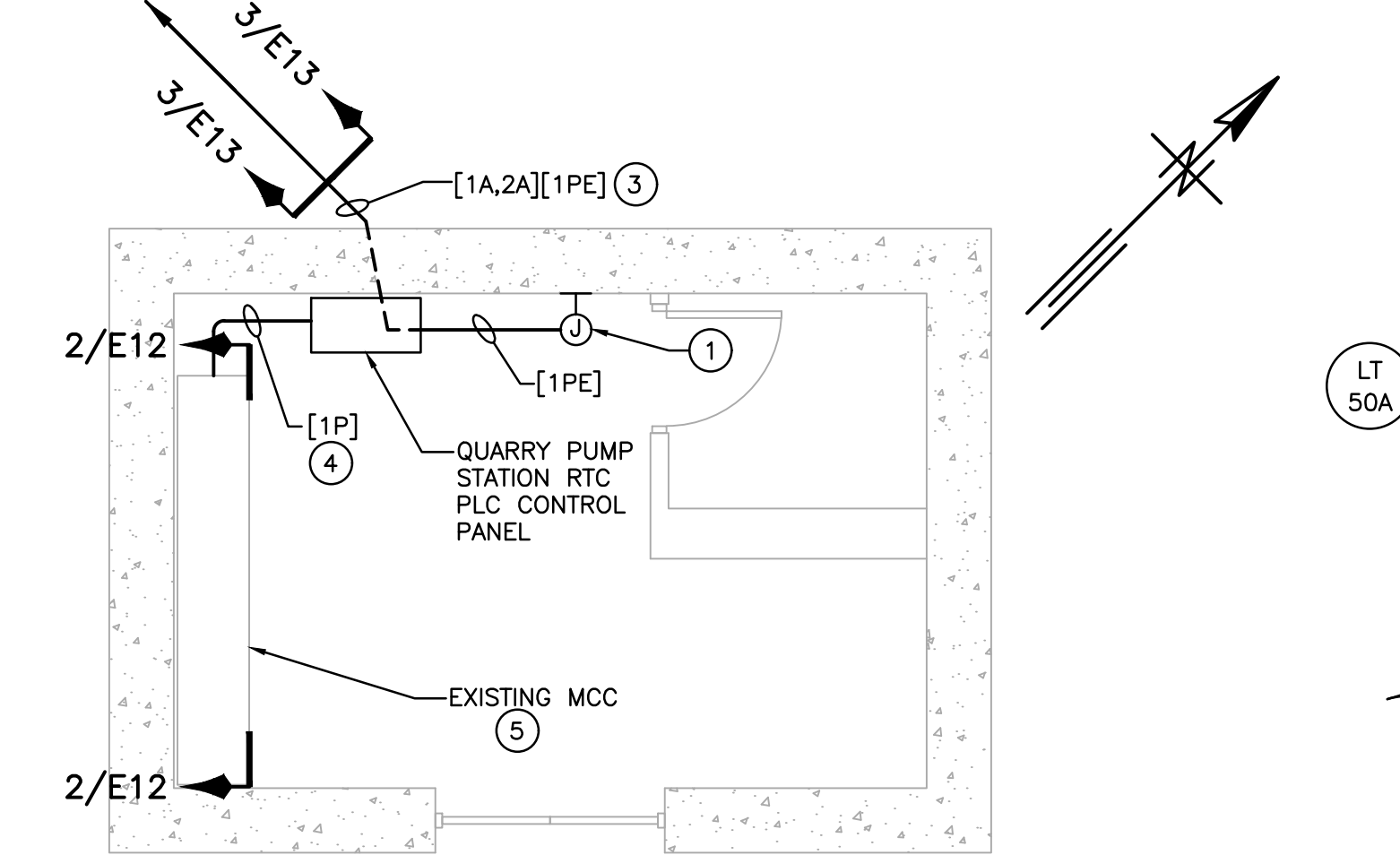
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\\ATLFS01\ENGINEERING\G22\NY063 BSA REAL TIME CONTROLDRAWINGS\ELECTRICAL\22\NY063\_E13 - QUARRY PUMP HAROLD BROWN

| QUARRY PUMP STATION RTC PLC CONTROL PANEL CONDUIT AND CABLE SCHEDULE |          |                      |                                           |                                                           |                        |             |
|----------------------------------------------------------------------|----------|----------------------|-------------------------------------------|-----------------------------------------------------------|------------------------|-------------|
| CONDUIT NO.                                                          | SIZE     | CONDUCTOR QTY & SIZE | FROM                                      | TO                                                        | REMARKS                | CIRCUIT NO. |
| QUARRY PUMP STATION RTC PLC CONTROL PANEL                            |          |                      |                                           |                                                           |                        |             |
| 1P                                                                   | 3/4" RGS | 2#12 AWG & 1#12G     | QUARRY PUMP STATION RTC PLC CONTROL PANEL | EXISTING 240/120V SINGLE-PHASE PANELBOARD INTERNAL TO MCC | SPARE BREAKER IN PANEL | TBD         |
| 1PE                                                                  | 2" PVC   | NONE                 | CONTROL BLDG                              | PUMP STATION                                              | SPARE CONDUIT          | TBD         |
| 1A,2A                                                                | 2" RGS   | 4#16 TSP             | 50A, 50B J.BOX                            | PUMP STATION RTC PLC CONTROL PANEL                        | SPARE BREAKER IN PANEL | TBD         |
| INSTRUMENTATION                                                      |          |                      |                                           |                                                           |                        |             |
| 1A                                                                   | 3/4" RGS | 2#16 TSP             | LT50A                                     | QUARRY PUMP STATION RTC PLC CONTROL PANEL                 | LEVEL (RADAR)          |             |
| 2A                                                                   | 3/4" RGS | 2#16 TSP             | LT50B                                     | QUARRY PUMP STATION RTC PLC CONTROL PANEL                 | LEVEL (LASER)          |             |
| A = ANALOG      P = POWER                                            |          |                      |                                           |                                                           |                        |             |



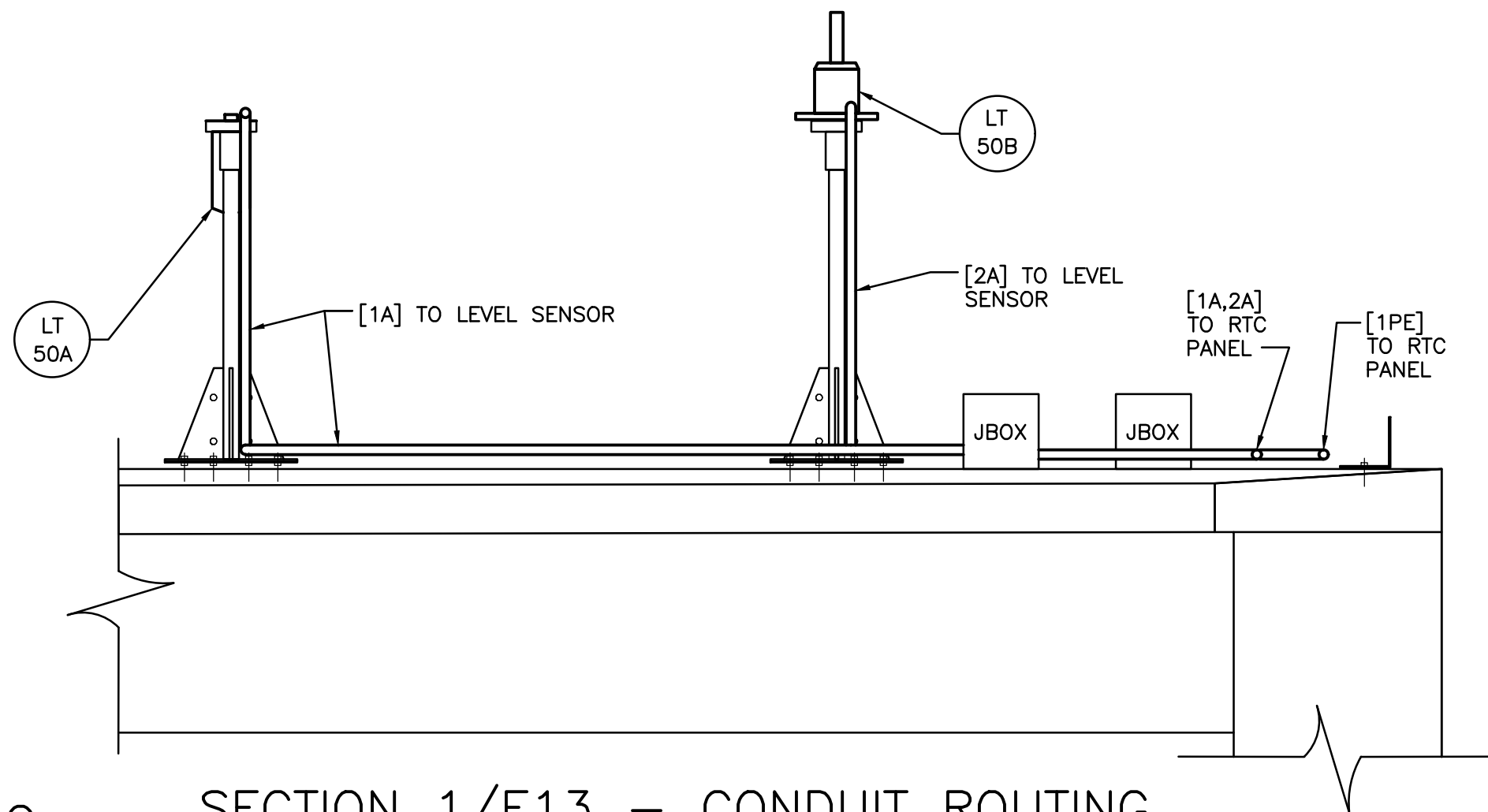
DETAIL 1/E13 – QUARRY PUMP STATION ROOFTOP  
SCALE: 1/4"=1'-0"



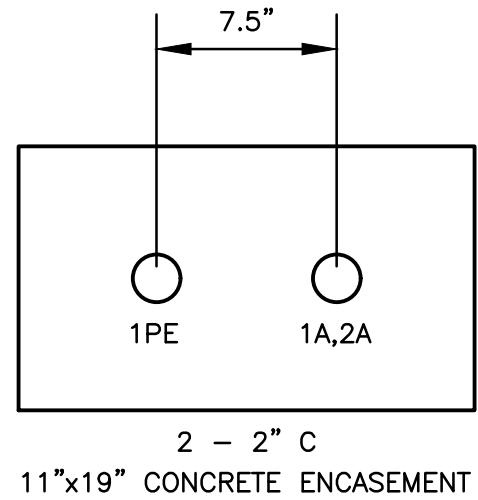
DETAIL 2/E13 – QUARRY CONTROL BUILDING  
SCALE: 1/4"=1'-0"



SECTION 2/E13 – CONDUIT ROUTING  
QUARRY PUMP STATION ROOFTOP AT EL 84.00  
SCALE: NO SCALE



SECTION 1/E13 – CONDUIT ROUTING  
QUARRY PUMP STATION ROOFTOP AT EL 84.00  
SCALE: 1"=1'-0"



DUCTBANK SECTION 3/E13  
SCALE 1/8" = 1'-0"

#### GENERAL NOTES

- DUCT BANK INSTALLED UNDER SURFACES SUBJECT TO VEHICULAR TRAFFIC SHALL BE INSTALL MINIMUM 24" BELOW GRADE AND IN ACCORDANCE WITH NEC 300-5.
- REFER TO DRAWING G06 FOR AREA CLASS I, GROUP D, AND DIVISION 1 OR 2 HAZARDOUS LOCATION. PROVIDE ELECTRICAL EQUIPMENT AND APPURTENANCES THAT ARE UL, APPROVED FOR USE IN SUCH AREA.
- PROVIDE APPROVED SEALANT, PER THE MANUFACTURER'S RECOMMENDATIONS, WHERE ELECTRICAL CONDUITS PENETRATE UNDERGROUND STRUCTURES.

#### NEW CONSTRUCTION KEY NOTES

- TERMINATE 1-2"C IN NEW JUNCTION BOX INSIDE CONTROL BUILDING AND EXTEND TO J.BOX IN PUMP STATION AS INDICATED. LABEL AS SPARE AT BOTH ENDS AND PROVIDE PULL STRING.
- ROUTE NEW CONDUITS, ELEVATED ON CORROSION RESISTANT CONDUIT SUPPORTS, ALONG ROOFTOP AS INDICATED. CONTINUE ALONG EXTERIOR OF EXISTING PIPE SUPPORT ACROSS GAP, PARALLEL TO EXISTING CONDUITS.
- LOCATE EXISTING ELECTRICAL DUCTBANK BETWEEN CONTROL BUILDING AND PUMP STATION BUILDING. CAREFULLY EXCAVATE AS NEEDED TO DETERMINE DEPTH OF EXISTING CONDUITS. ROUTE NEW DUCTBANK PARALLEL TO THE EXISTING AND AT SAME DEPTH OF BURY.
- ROUTE CONDUIT FROM MCC WIRING COMPARTMENT OVER TO RTC PANEL AND TERMINATE.
- CONTRACTOR SHALL PROVIDE A NEW 20A 1P BREAKER AT EXISTING 240/120V SINGLE-PHASE PANEL THAT IS INTEGRATED IN EXISTING MCC. SHORT CIRCUIT RATING OF BREAKER AND PANEL SHALL MATCH. UPDATE PANEL SCHEDULE.

95% SUBMITTAL

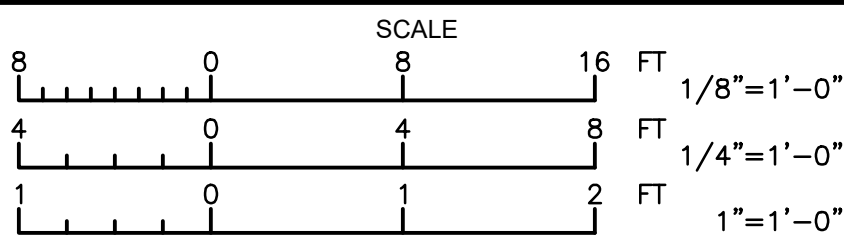


GREELEY AND HANSEN  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED CB  
DRAWN HNB  
CHECKED WEJ

APPROVED

| NO. | DATE | APPD | REVISION |
|-----|------|------|----------|
|     |      |      |          |
|     |      |      |          |
|     |      |      |          |



SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

ELECTRICAL  
QUARRY PUMP STATION ROOF & CONTROL BUILDING (RTC)

ELECTRICAL DETAILS, CONDUIT AND CABLE SCHEDULES

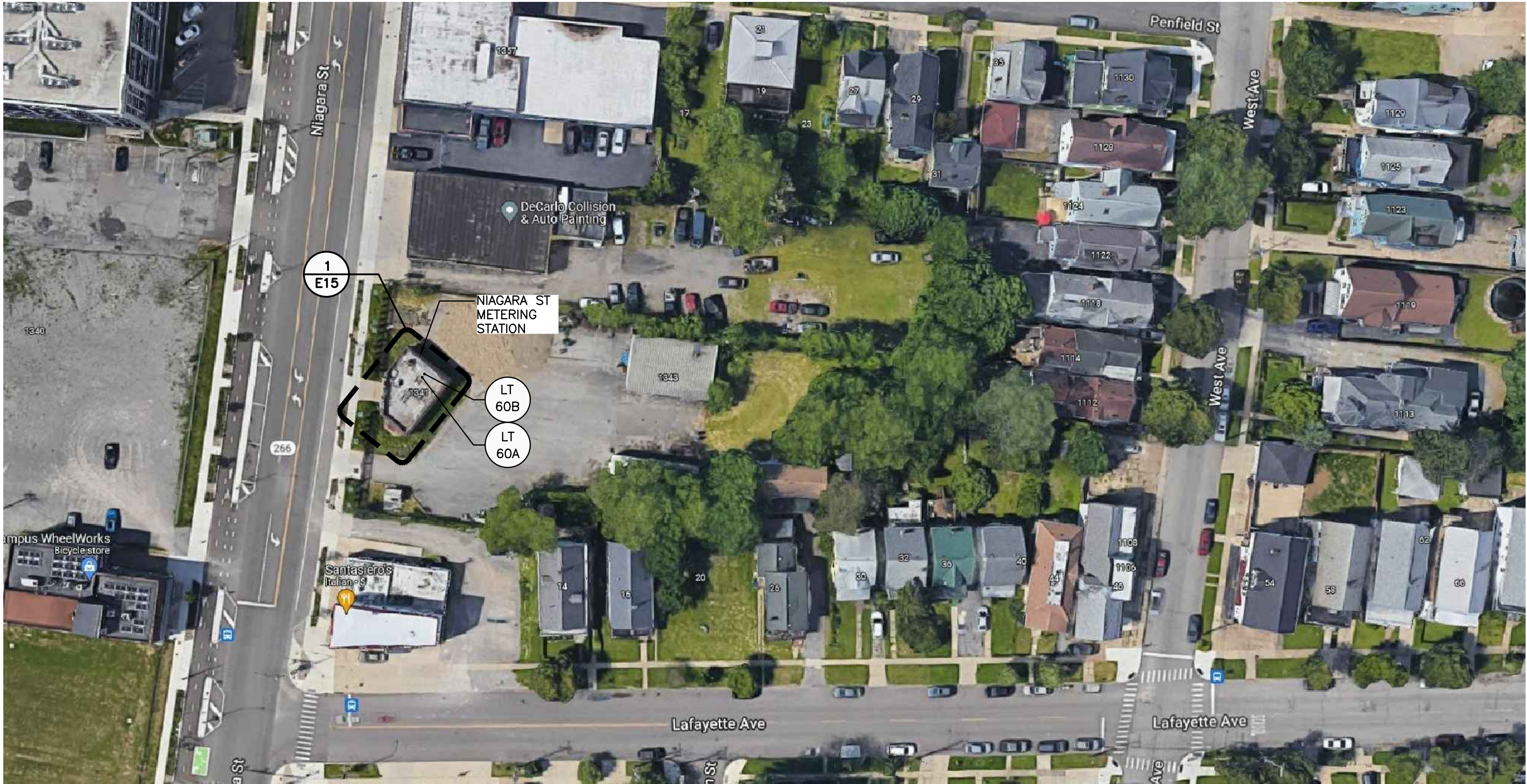
BSA CONTRACT NO. 82000041

DWG: E13

SHEET: 65 OF 85

DATE: FEBRUARY 2023 REV: .





- GENERAL NOTES**
- 1. UNDERGROUND EXISTING UTILITIES, IF SHOWN, ARE BASED ON LAND SURVEY OF EXISTING SURFACE FEATURES. NO SUBSURFACE EXPLORATION HAS BEEN CONDUCTED TO VERIFY EXACT SUBSURFACE LAYOUT. CONTRACTOR TO ANTICIPATE TRENCHING WILL REQUIRE SUBSTANTIAL HAND EXCAVATION TO AVOID HAZARDS AND AVOID DAMAGE TO EXISTING UTILITIES.
  - 2. UNDERGROUND CONDUIT ROUTINGS, IF SHOWN, ARE DIAGRAMMATIC ONLY DUE TO EXISTING UNDERGROUND UTILITIES AND OBSTACLES NOT BEING FULLY DOCUMENTED. ACTUAL CONDUIT RUNS MAY EXCEED LENGTH SHOWN AND BIDDERS ARE TO TAKE THIS INTO ACCOUNT WHEN SUBMITTING BIDS.

BUFFALO

SEWER AUTHORITY

KHEOPS

Architecture, Engineering  
& Survey, DPC

GREELEY AND HANSEN

111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED

CB

APPROVED

DRAWN

HNB


CHECKED

WEJ

| NO. | DATE | APPD | REVISION |
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NIAGARA STREET METERING STATION (RTC)  
SITE PLAN – ELECTRICAL IMPROVEMENTS  
SCALE: 1"=60'

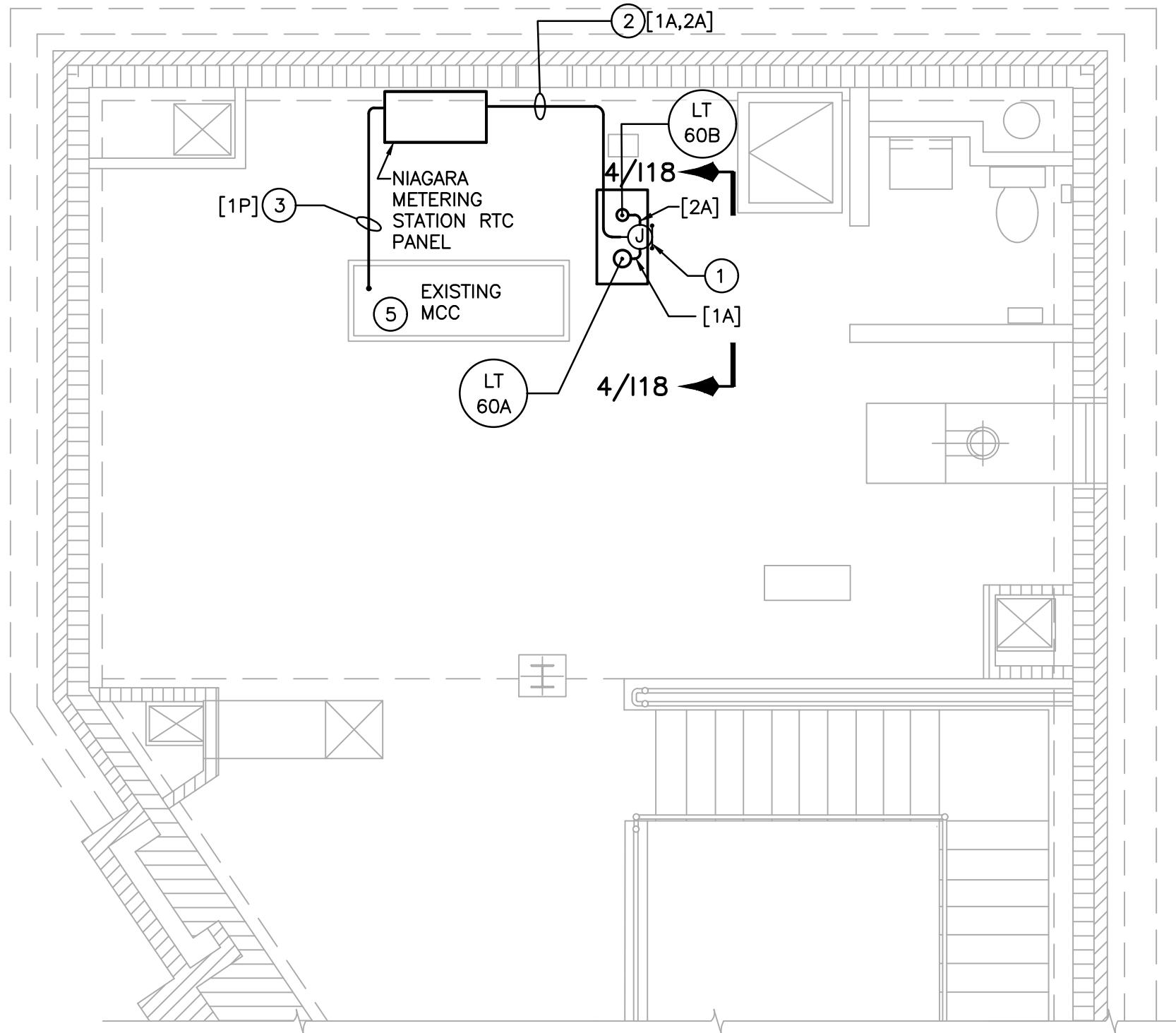
95% SUBMITTAL

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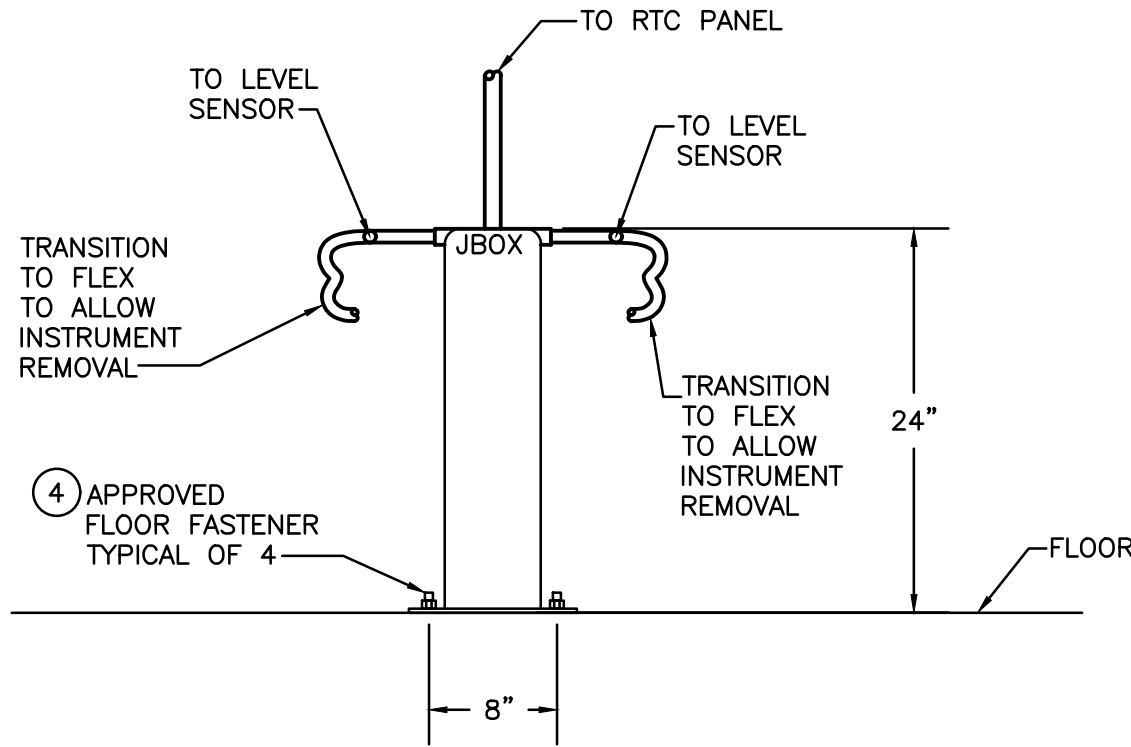


2023/02/16 3:42 PM  
\\ATLFS01\ENGINEERING\22NY063\_BSA\_REAL\_TIME\_CONTROL\DRAWINGS\ELECTRICAL\22NY063\_E15 - NIAGARA METERING HAROLD BROWN

| NIAGARA METERING STATION RTC PLC CONTROL PANEL CONDUIT AND CABLE SCHEDULE |          |                      |           |                                                |               |             |
|---------------------------------------------------------------------------|----------|----------------------|-----------|------------------------------------------------|---------------|-------------|
| CONDUIT NO.                                                               | SIZE     | CONDUCTOR QTY & SIZE | FROM      | TO                                             | REMARKS       | CIRCUIT NO. |
| NIAGARA METERING STATION RTC PLC CONTROL PANEL                            |          |                      |           |                                                |               |             |
| 1A,2A                                                                     | 1" RGS   | 4#16 TSP             | RTC PANEL | JBOX                                           |               |             |
| INSTRUMENTATION                                                           |          |                      |           |                                                |               |             |
| 1A                                                                        | 3/4" RGS | 2#16 TSP             | LT60A     | NIAGARA METERING STATION RTC PLC CONTROL PANEL | LEVEL (RADAR) |             |
| 2A                                                                        | 3/4" RGS | 2#16 TSP             | LT60B     | NIAGARA METERING STATION RTC PLC CONTROL PANEL | LEVEL (LASER) |             |
| 1P                                                                        | 3/4" RGS | 2#12 & 1#12G         | MCC       | NIAGARA METERING STATION RTC PLC CONTROL PANEL |               |             |
| A = ANALOG      P = POWER                                                 |          |                      |           |                                                |               |             |



DETAIL 1/E15  
SCALE: 1/4"=1'-0"



DETAIL 2/E15  
SCALE: 1"=1'-0"

GENERAL NOTES

- COORDINATE INSTALLATIONS WITH GENERAL CONTRACTOR PRIOR TO BEGINNING WORK.
- REFER TO DRAWING G06 FOR AREA CLASS 1, GROUP D, AND DIVISION 1 OR 2 HAZARDOUS LOCATION. ALL ELECTRICAL EQUIPMENT APPURTENANCES THAT ARE UL, INC. APPROVED FOR USE IN SUCH AREA.
- PROVIDE APPROVED SEALANT, PER THE MANUFACTURER'S RECOMMENDATIONS, WHERE ELECTRICAL CONDUITS PENETRATE UNDERGROUND STRUCTURES.

NEW CONSTRUCTION KEY NOTES

- MOUNT JBOX ON GALVANIZED STEEL STRUT SYSTEM. SEE DETAIL 2/E15. STRUT SYSTEM SHALL BE MOUNTED UPON STEEL BASEPLATE THAT IS PROVIDED FOR INSTRUMENTATION DEVICE INSTALLATION.
- ROUTE CONDUIT FROM JBOX UP TO STRUCTURAL CEILING AND OVER TO RTC PANEL AND TERMINATE.
- ROUTE CONDUIT FROM MCC WIRING COMPARTMENT UP TO STRUCTURAL CEILING AND OVER TO RTC PANEL AND TERMINATE.
- STRUT SUPPORT SYSTEM SHALL BE PER THE APPROVAL OF THE PROJECT STRUCTURAL ENGINEER.
- CONTRACTOR SHALL USE SPARE 20A 1P BREAKER FROM EXISTING 240/120V SINGLE-PHASE PANEL THAT IS INTEGRATED IN EXISTING MCC, UPDATE THE PANEL SCHEDULE.

95% SUBMITTAL

BUFFALO

SEWER AUTHORITY

KHEOPS

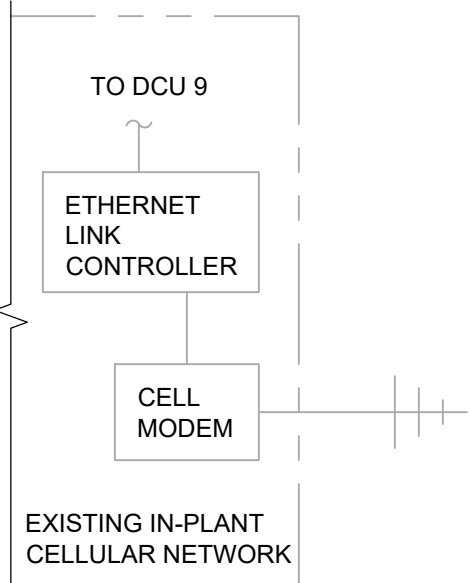
Architecture, Engineering  
& Survey, DPC

|                                                                                                               |          |    |          |  |  |  |                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------|----------|----|----------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div><div>GREELEY AND HANSEN</div><div>111 BROADWAY, SUITE 2101<br/>NEW YORK, NY 10006</div></div></div> | DESIGNED | CB | APPROVED |  |  |  | <div>SCALE</div> <div><div><div>4</div><div>0</div><div>8</div></div><div>FT</div><div>1/4"=1'-0"</div></div> <div><div><div>1</div><div>0</div><div>1</div><div>2</div></div><div>FT</div><div>1"=1'-0"</div></div> |
|---------------------------------------------------------------------------------------------------------------|----------|----|----------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

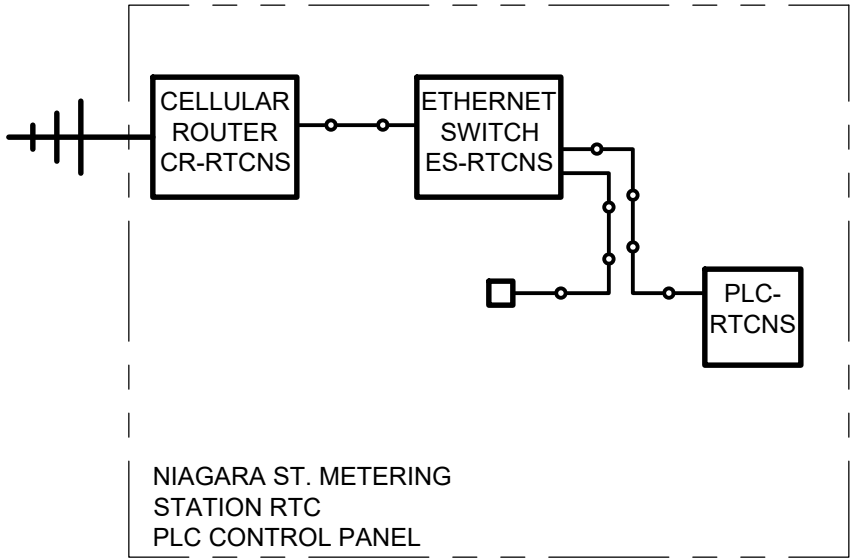
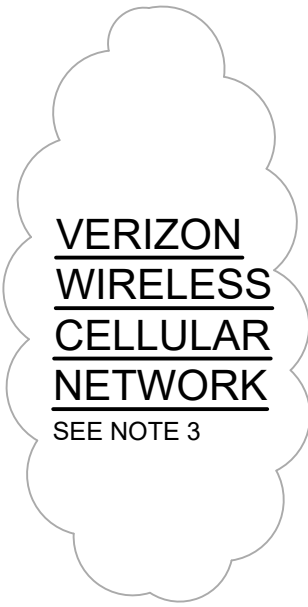




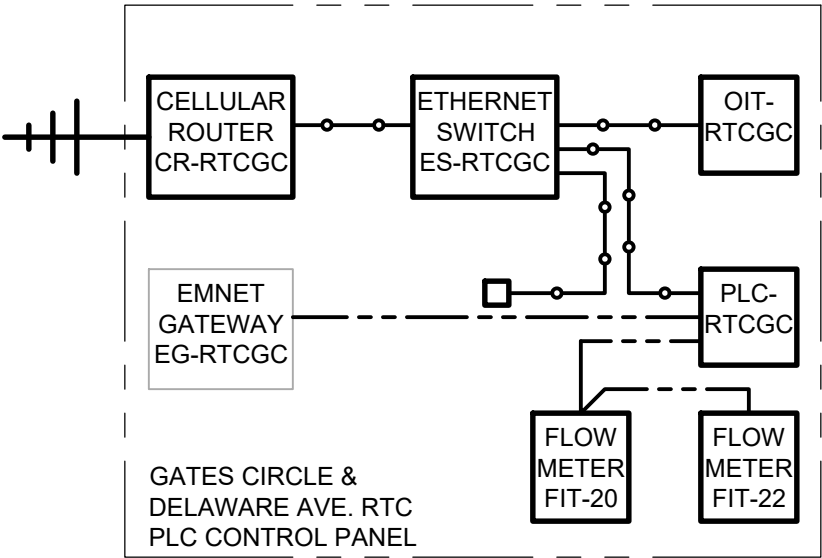




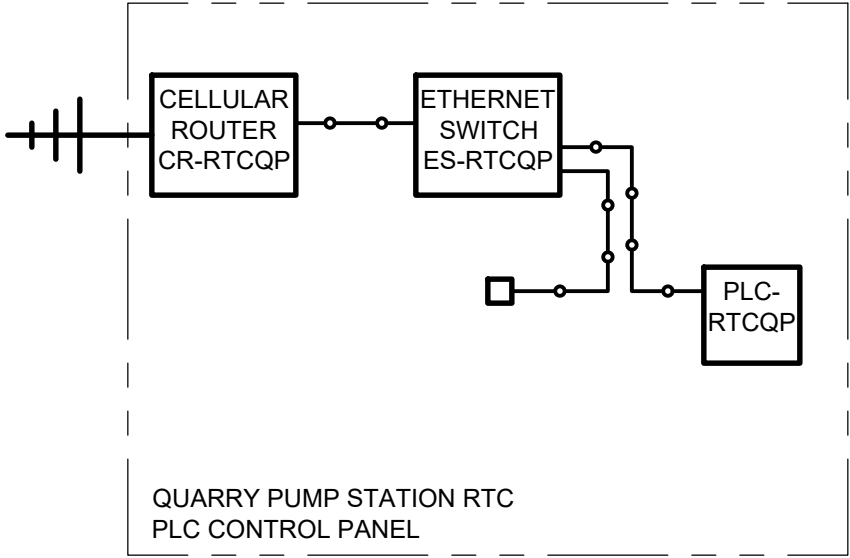
**BIRD ISLAND WWTP**  
SEE NOTE 4



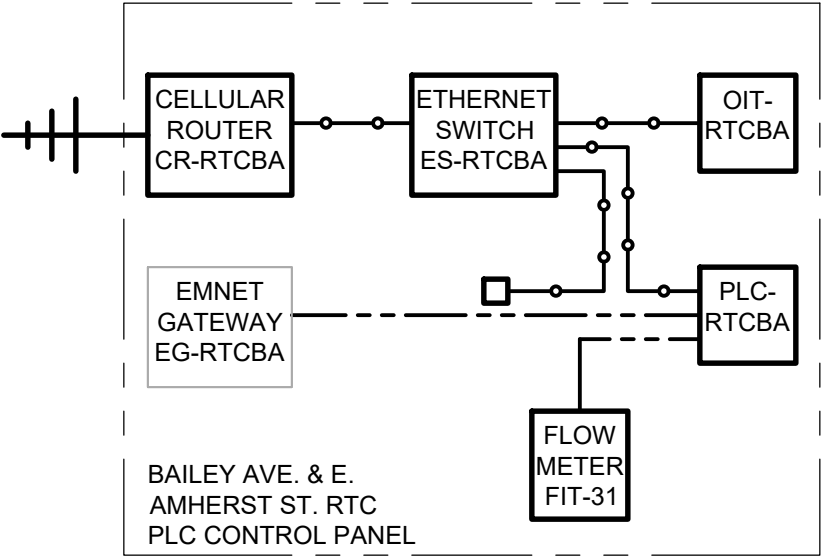
**NIAGARA ST. METERING STATION RTC**



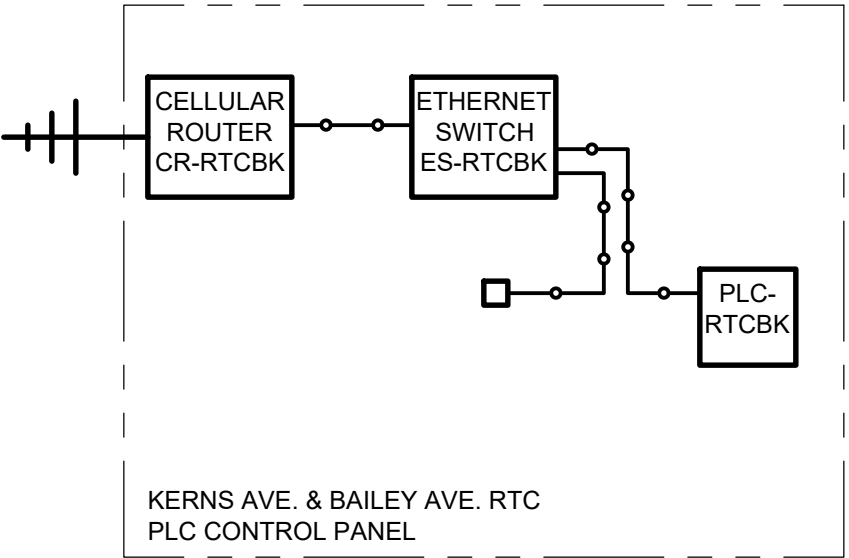
**GATES CIRCLE & DELAWARE AVE. RTC**



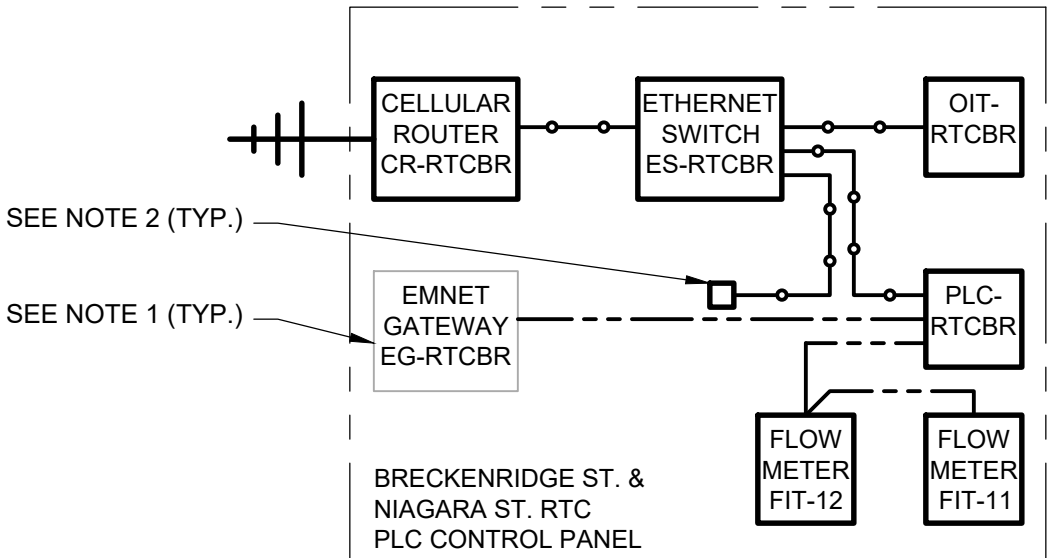
**QUARRY PUMP STATION RTC**



**BAILEY AVE. & E. AMHERST ST. RTC**



**KERNS AVE. & BAILEY AVE. RTC**



**BRECKENRIDGE ST. & NIAGARA ST. RTC**

- NOTES:**
- 1. EMNET GATEWAY FURNISHED BY OWNER, INSTALLED AND PUT IN SERVICE BY CONTRACTOR.
  - 2. RJ-45 ETHERNET JACK ON SWING-OUT PANEL FRONT.
  - 3. COORDINATE WITH VERIZON FOR NEW CELLULAR SERVICE AT NEW RTC SITES.
  - 4. MODIFY DCU 9 AND CORRESPONDING ETHERNET LINK CONTROLLER TO COMMUNICATE WITH NEW RTC SITES.

BUFFALO

SEWER AUTHORITY

GREELEY AND HANSEN

111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |      |          |          |  |  |  |
|----------|------|----------|----------|--|--|--|
| DESIGNED | XXX  | APPROVED |          |  |  |  |
| DRAWN    | RAM  |          |          |  |  |  |
| CHECKED  | XXX  |          |          |  |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |  |

SCALE

NO SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

INSTRUMENTATION

SCADA NETWORK ARCHITECTURE

BSA CONTRACT NO. 82000041

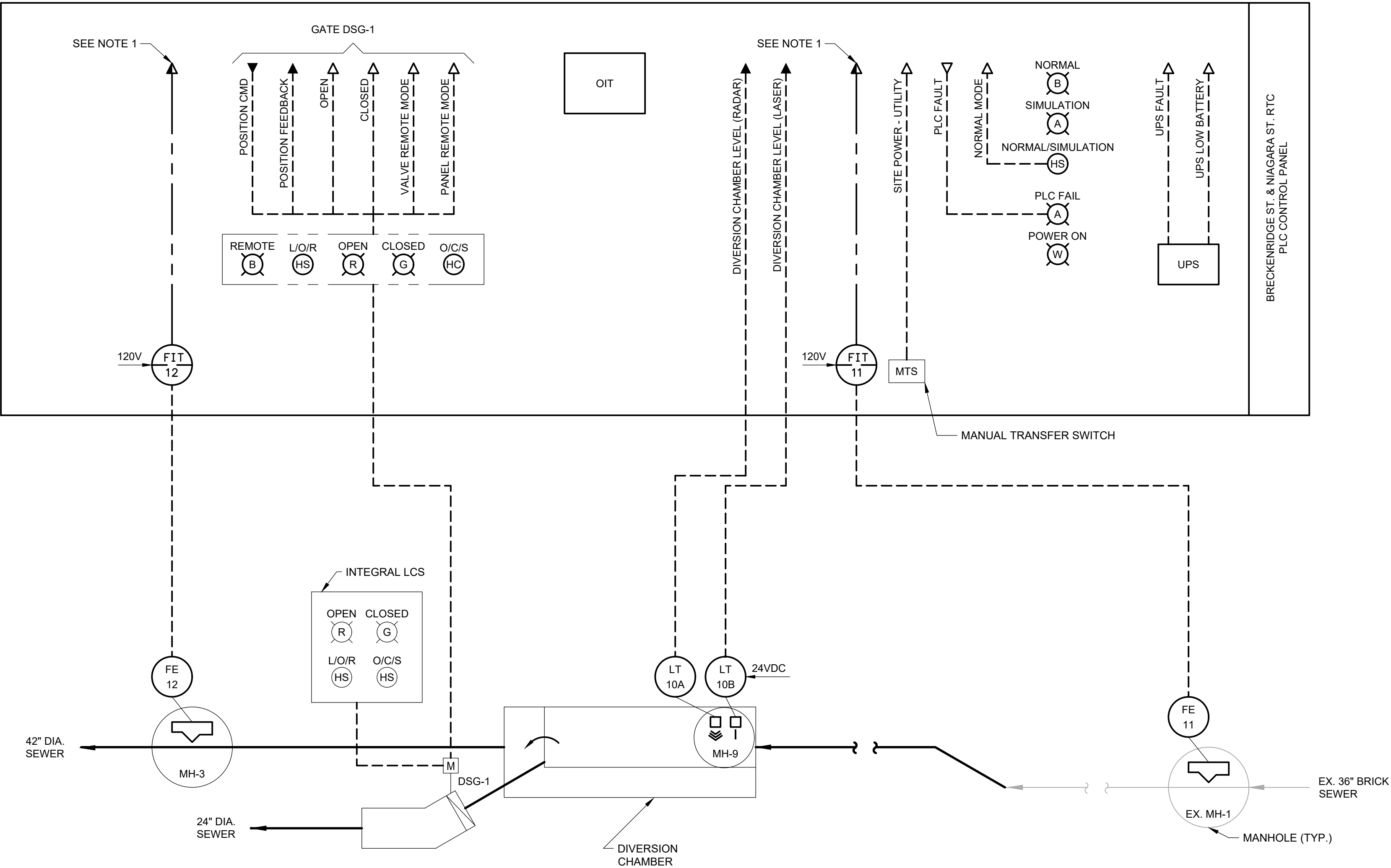
DWG: 102

SHEET: 69 OF 85

DATE: FEBRUARY 2023 REV: 0

95% SUBMITTAL





**PROCESS AND INSTRUMENTATION DIAGRAM**  
**BRECKENRIDGE ST. & NIAGARA ST.**  
NO SCALE

- NOTES:**
- MODBUS RTU COMMUNICATION TO PLC. SIGNALS INCLUDE, AS A MINIMUM, FLOW RATE, DEPTH, VELOCITY, INSTRUMENT FAULT.

**BUFFALO**

SEWER AUTHORITY

**GREELEY AND HANSEN**

111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |      |          |          |  |  |  |
|----------|------|----------|----------|--|--|--|
| DESIGNED | XXX  | APPROVED |          |  |  |  |
| DRAWN    | RAM  |          |          |  |  |  |
| CHECKED  | XXX  |          |          |  |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |  |

|          |
|----------|
| SCALE    |
| NO SCALE |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

INSTRUMENTATION  
BRECKENRIDGE ST & NIAGARA ST RTC

P&ID

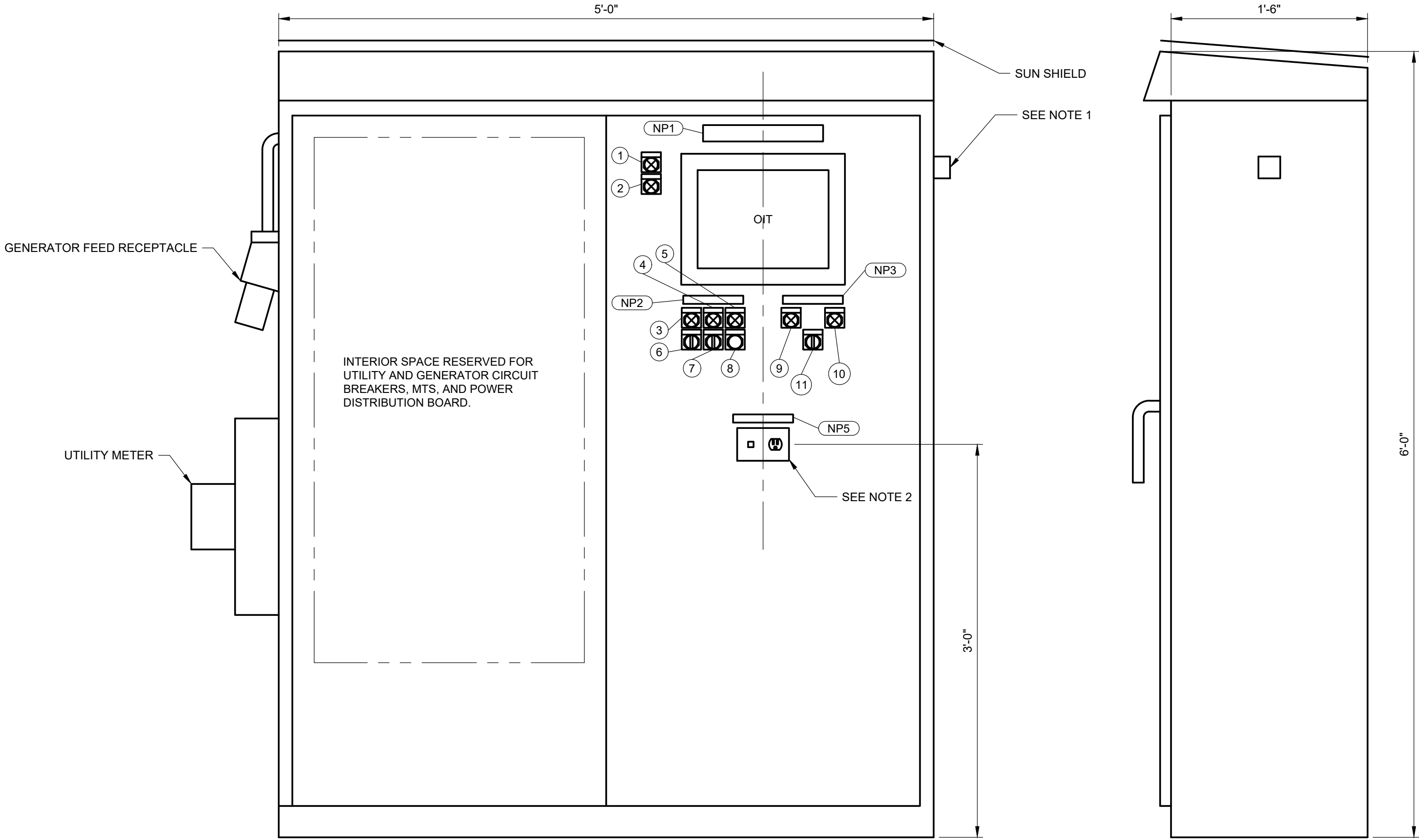
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|---------------------------|---------------|--------|
| BSA CONTRACT NO. 82000041 |               |        |
| DWG:                      | 103           |        |
| SHEET:                    | 70            | OF 85  |
| DATE:                     | FEBRUARY 2023 | REV: 0 |

95% SUBMITTAL



2023/02/15 4:28 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3D\CDD\14122\_104 MORENO, ROBERTO



**FRONT ELEVATION - SWINGOUT PANEL**  
DEAD-FRONT PANEL DOOR NOT SHOWN FOR CLARITY.

**SIDE ELEVATION**

**BRECKENRIDGE ST. & NIAGARA ST. RTC PLC CONTROL PANEL**  
SCALE: 1-1/2" = 1'-0"

| NAMEPLATE ENGRAVING TABLE |                |                                                         |
|---------------------------|----------------|---------------------------------------------------------|
| NO.                       | LETTERING SIZE | ENGRAVING                                               |
| NP1                       | 0'-0 1/2"      | BRECKENRIDGE ST. & NIAGARA ST. RTC<br>PLC CONTROL PANEL |
| NP2                       | 0'-0 3/8"      | GATE DSG-1                                              |
| NP3                       | 0'-0 3/8"      | MODE SELECTION                                          |
| NP4                       | 0'-0 3/8"      | RECEPTABLE FOR PROGRAMMING USE ONLY                     |

| PANEL FRONT OPERATORS TABLE |                                              |       |                    |
|-----------------------------|----------------------------------------------|-------|--------------------|
| NO.                         | DEVICE                                       | COLOR | ENGRAVING          |
| 1                           | INDICATING LIGHT                             | WHITE | POWER ON           |
| 2                           | INDICATING LIGHT                             | AMBER | PLC FAIL           |
| 3                           | INDICATING LIGHT                             | GREEN | OPEN               |
| 4                           | INDICATING LIGHT                             | RED   | CLOSED             |
| 5                           | INDICATING LIGHT                             | BLUE  | ACTUATOR IN REMOTE |
| 6                           | SELECTOR SWITCH                              | BLACK | LOCAL-OFF-REMOTE   |
| 7                           | SELECTOR SWITCH<br>(SPRING RETURN TO CENTER) | BLACK | OPEN-CLOSE         |
| 8                           | PUSH BUTTON                                  | RED   | STOP               |
| 9                           | INDICATING LIGHT                             | BLUE  | NORMAL             |
| 10                          | INDICATING LIGHT                             | AMBER | SIMULATION         |
| 11                          | SELECTOR SWITCH<br>(KEYED)                   | BLACK | NORMAL-SIMULATION  |

**NOTES**

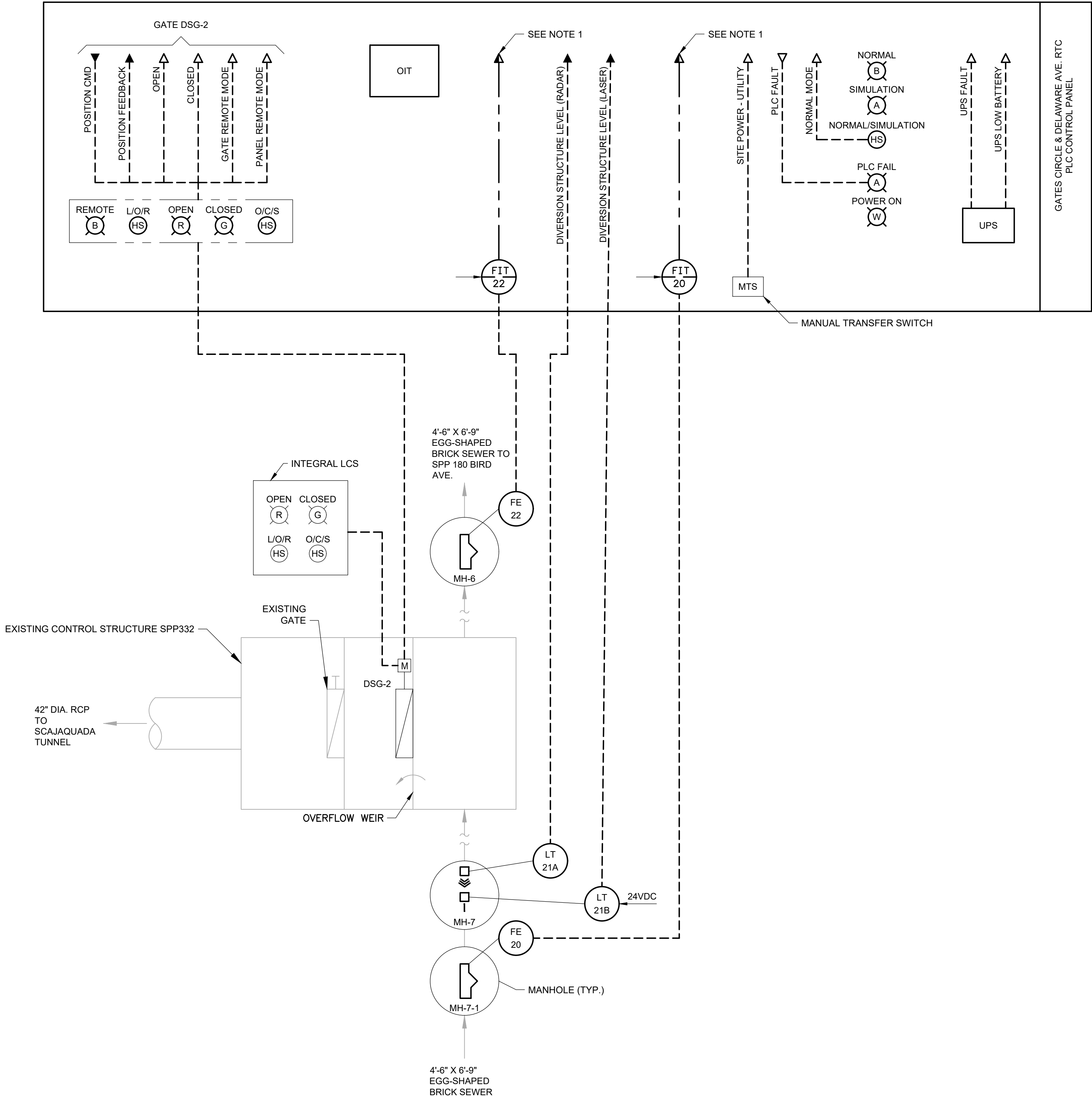
1. MOUNT CELLULAR ANTENNA ON SIDE OF ENCLOSURE BASED ON SITE FIELD REVIEW.
2. FRONT PANEL RECEPTACLE FOR PROGRAMMING USE.
3. PANEL SIZE SHOWN IS ESTIMATE; PROVIDE CUSTOM-SIZED PANEL SIZED FOR ALL INTERNAL DEVICES, MOUNTED FOR EASE OF MAINTENANCE AS SPECIFIED.
4. SEAL SEAM BETWEEN PANEL AND CONCRETE HOUSEKEEPING PAD WITH ELASTOMERIC WATERPROOFING MATERIAL TO PREVENT MOISTURE INTRUSION (SOUNDASEAL OR EQUAL).

95% SUBMITTAL



|                                                    |          |     |          |     |      |      |                       |                                                              |                                                                                   |                           |                      |
|----------------------------------------------------|----------|-----|----------|-----|------|------|-----------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|----------------------|
| <br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 | DESIGNED | XXX | APPROVED |     |      |      | SCALE<br><br>NO SCALE | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | INSTRUMENTATION<br>BRECKENRIDGE ST & NIAGARA ST RTC<br><br>CONTROL PANEL DIAGRAMS | BSA CONTRACT NO. 82000041 |                      |
|                                                    | DRAWN    | RAM |          |     |      |      |                       |                                                              |                                                                                   | DWG:                      | 104                  |
|                                                    | CHECKED  | XXX |          |     |      |      |                       |                                                              |                                                                                   | SHEET:                    | 71 OF 85             |
|                                                    |          |     |          | NO. | DATE | APPD | REVISION              |                                                              |                                                                                   | DATE:                     | FEBRUARY 2023 REV: 0 |





**PROCESS AND INSTRUMENTATION DIAGRAM**  
**GATES CIRCLE & DELAWARE AVE.**

NO SCALE

**NOTES:**

1. MODBUS RTU COMMUNICATION TO PLC. SIGNALS INCLUDE, AS A MINIMUM, FLOW RATE, DEPTH, VELOCITY, INSTRUMENT FAULT.

**95% SUBMITTAL**

**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |      |          |          |  |  |  |
|----------|------|----------|----------|--|--|--|
| DESIGNED | XXX  | APPROVED |          |  |  |  |
| DRAWN    | RAM  |          |          |  |  |  |
| CHECKED  | XXX  |          |          |  |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |  |

|          |
|----------|
| SCALE    |
| NO SCALE |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

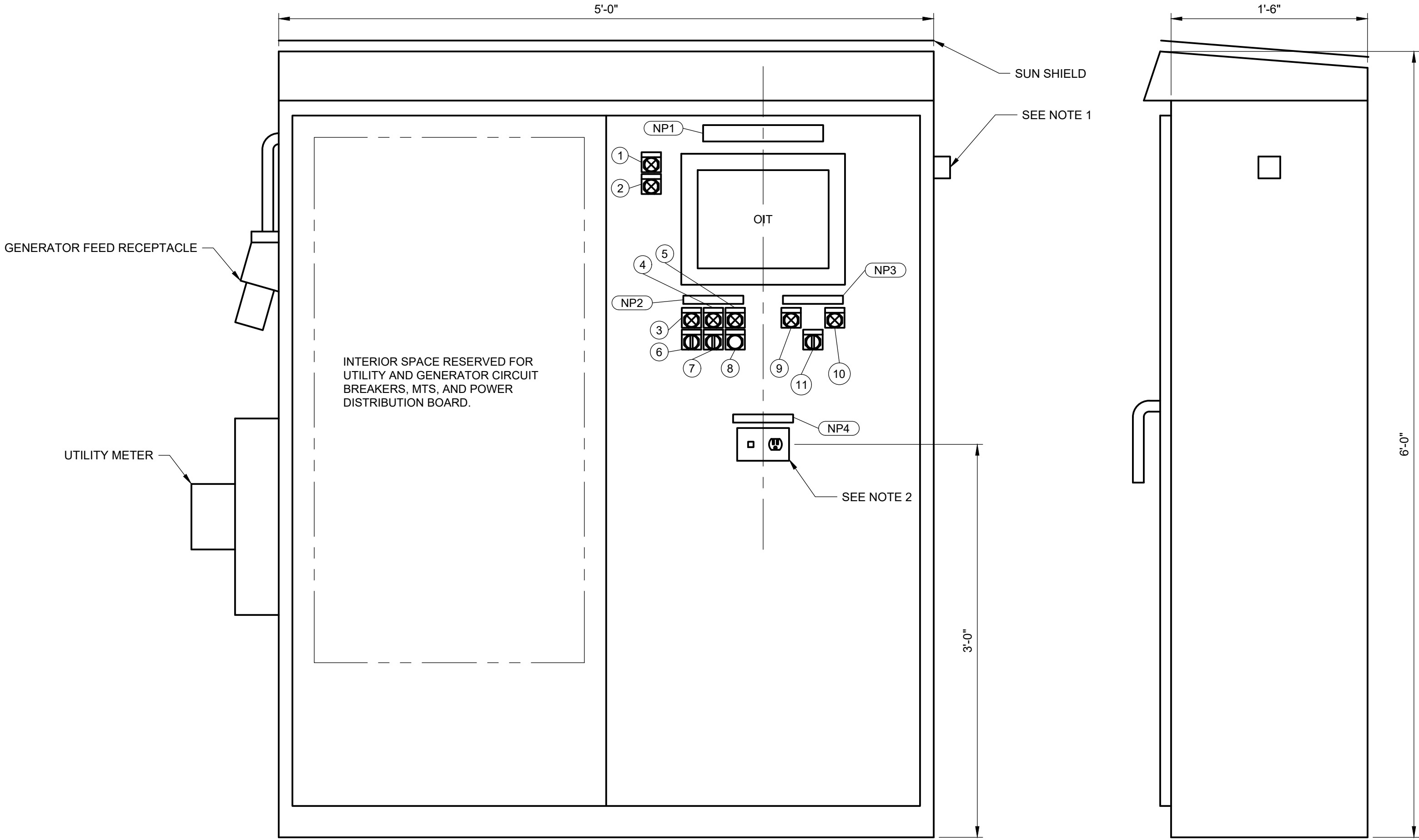
INSTRUMENTATION  
GATES CIRCLE & DELAWARE AVE RTC  
  
P&ID

|                           |               |      |    |
|---------------------------|---------------|------|----|
| BSA CONTRACT NO. 82000041 |               |      |    |
| DWG:                      | 105           |      |    |
| SHEET:                    | 72            | OF   | 85 |
| DATE:                     | FEBRUARY 2023 | REV: | 0  |



2023/02/15 4:29 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_106 MORENO, ROBERTO



**FRONT ELEVATION - SWINGOUT PANEL**  
DEAD-FRONT PANEL DOOR NOT SHOWN FOR CLARITY.

**SIDE ELEVATION**

**GATES CIRCLE & DELAWARE AVE. RTC PLC CONTROL PANEL**

SCALE: 1-1/2" = 1'-0"

| NAMEPLATE ENGRAVING TABLE |                |                                                       |
|---------------------------|----------------|-------------------------------------------------------|
| NO.                       | LETTERING SIZE | ENGRAVING                                             |
| NP1                       | 0'-0 1/2"      | GATES CIRCLE & DELAWARE AVE. RTC<br>PLC CONTROL PANEL |
| NP2                       | 0'-0 3/8"      | GATE DSG-2                                            |
| NP3                       | 0'-0 3/8"      | MODE SELECTION                                        |
| NP4                       | 0'-0 3/8"      | RECEPTABLE FOR PROGRAMMING USE ONLY                   |

| PANEL FRONT OPERATORS TABLE |                                              |       |                    |
|-----------------------------|----------------------------------------------|-------|--------------------|
| NO.                         | DEVICE                                       | COLOR | ENGRAVING          |
| 1                           | INDICATING LIGHT                             | WHITE | POWER ON           |
| 2                           | INDICATING LIGHT                             | AMBER | PLC FAIL           |
| 3                           | INDICATING LIGHT                             | GREEN | OPEN               |
| 4                           | INDICATING LIGHT                             | RED   | CLOSED             |
| 5                           | INDICATING LIGHT                             | BLUE  | ACTUATOR IN REMOTE |
| 6                           | SELECTOR SWITCH                              | BLACK | LOCAL-OFF-REMOTE   |
| 7                           | SELECTOR SWITCH<br>(SPRING RETURN TO CENTER) | BLACK | OPEN-CLOSE         |
| 8                           | PUSH BUTTON                                  | RED   | STOP               |
| 9                           | INDICATING LIGHT                             | BLUE  | NORMAL             |
| 10                          | INDICATING LIGHT                             | AMBER | SIMULATION         |
| 11                          | SELECTOR SWITCH<br>(KEYED)                   | BLACK | NORMAL-SIMULATION  |

**NOTES**

1. MOUNT CELLULAR ANTENNA ON SIDE OF ENCLOSURE BASED ON SITE FIELD REVIEW.
2. FRONT PANEL RECEPTACLE FOR PROGRAMMING USE.
3. PANEL SIZE SHOWN IS ESTIMATE; PROVIDE CUSTOM-SIZED PANEL SIZED FOR ALL INTERNAL DEVICES, MOUNTED FOR EASE OF MAINTENANCE AS SPECIFIED.
4. SEAL SEAM BETWEEN PANEL AND CONCRETE HOUSEKEEPING PAD WITH ELASTOMERIC WATERPROOFING MATERIAL TO PREVENT MOISTURE INTRUSION (SOUNDASEAL OR EQUAL).

95% SUBMITTAL



|                                                    |          |     |          |     |      |      |                       |                                                              |                                                                                  |                           |                      |
|----------------------------------------------------|----------|-----|----------|-----|------|------|-----------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------|----------------------|
| <br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 | DESIGNED | XXX | APPROVED |     |      |      | SCALE<br><br>NO SCALE | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | INSTRUMENTATION<br>GATES CIRCLE & DELAWARE AVE RTC<br><br>CONTROL PANEL DIAGRAMS | BSA CONTRACT NO. 82000041 |                      |
|                                                    | DRAWN    | RAM |          |     |      |      |                       |                                                              |                                                                                  | DWG:                      | 106                  |
|                                                    | CHECKED  | XXX |          |     |      |      |                       |                                                              |                                                                                  | SHEET:                    | 73 OF 85             |
|                                                    |          |     |          | NO. | DATE | APPD | REVISION              |                                                              |                                                                                  | DATE:                     | FEBRUARY 2023 REV: 0 |





1. MODBUS RTU COMMUNICATION TO PLC. SIGNALS INCLUDE, AS A MINIMUM, FLOW RATE, DEPTH, VELOCITY, INSTRUMENT FAULT.

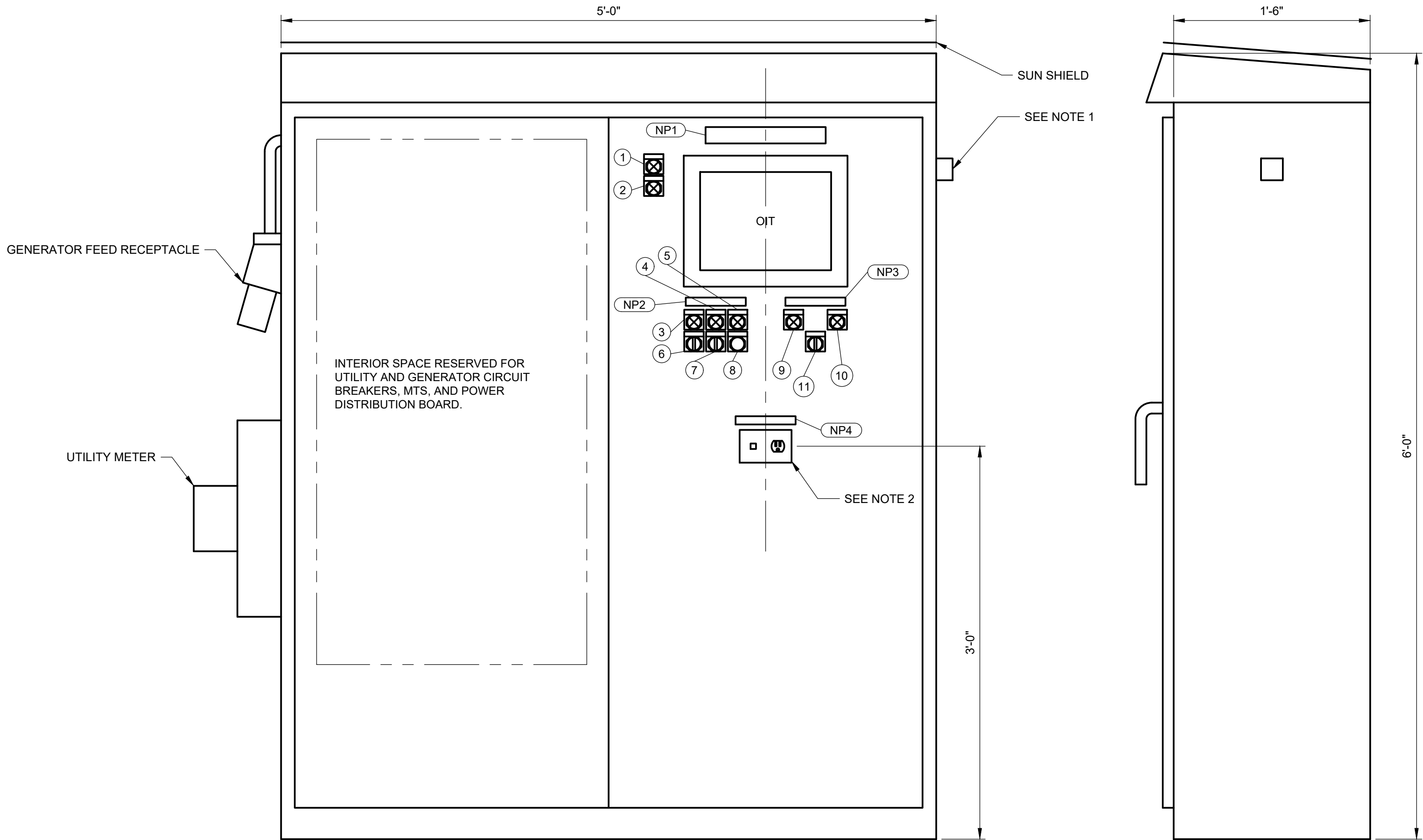
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| SHEET: | 74            | OF   | 85 |
| DATE:  | FEBRUARY 2023 | REV: | 0  |

95% SUBMITTAL



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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_108 MORENO, ROBERTO



FRONT ELEVATION - SWINGOUT PANEL  
DEAD-FRONT PANEL DOOR NOT SHOWN FOR CLARITY.

SIDE ELEVATION

BAILEY AVE. & E. AMHERST ST. RTC PLC CONTROL PANEL

SCALE: 1-1/2" = 1'-0"

| NAMEPLATE ENGRAVING TABLE |                |                                                       |
|---------------------------|----------------|-------------------------------------------------------|
| NO.                       | LETTERING SIZE | ENGRAVING                                             |
| NP1                       | 0'-0 1/2"      | BAILEY AVE. & E. AMHERST ST. RTC<br>PLC CONTROL PANEL |
| NP2                       | 0'-0 3/8"      | GATE DSG-3                                            |
| NP3                       | 0'-0 3/8"      | MODE SELECTION                                        |
| NP4                       | 0'-0 3/8"      | RECEPTACLE FOR PROGRAMMING USE ONLY                   |

| PANEL FRONT OPERATORS TABLE |                                                 |       |                    |
|-----------------------------|-------------------------------------------------|-------|--------------------|
| NO.                         | DEVICE                                          | COLOR | ENGRAVING          |
| 1                           | INDICATING LIGHT                                | WHITE | POWER ON           |
| 2                           | INDICATING LIGHT                                | AMBER | PLC FAIL           |
| 3                           | INDICATING LIGHT                                | GREEN | OPEN               |
| 4                           | INDICATING LIGHT                                | RED   | CLOSED             |
| 5                           | INDICATING LIGHT                                | BLUE  | ACTUATOR IN REMOTE |
| 6                           | SELECTOR SWITCH                                 | BLACK | LOCAL-OFF-REMOTE   |
| 7                           | SELECTOR SWITCH<br>(SPRING RETURN TO<br>CENTER) | BLACK | OPEN-CLOSE         |
| 8                           | PUSH BUTTON                                     | RED   | STOP               |
| 9                           | INDICATING LIGHT                                | BLUE  | NORMAL             |
| 10                          | INDICATING LIGHT                                | AMBER | SIMULATION         |
| 11                          | SELECTOR SWITCH<br>(KEYED)                      | BLACK | NORMAL-SIMULATION  |

NOTES

1. MOUNT CELLULAR ANTENNA ON SIDE OF ENCLOSURE BASED ON SITE FIELD REVIEW.
2. FRONT PANEL RECEPTACLE FOR PROGRAMMING USE.
3. PANEL SIZE SHOWN IS ESTIMATE; PROVIDE CUSTOM-SIZED PANEL SIZED FOR ALL INTERNAL DEVICES, MOUNTED FOR EASE OF MAINTENANCE AS SPECIFIED.
4. SEAL SEAM BETWEEN PANEL AND CONCRETE HOUSEKEEPING PAD WITH ELASTOMERIC WATERPROOFING MATERIAL TO PREVENT MOISTURE INTRUSION (SOUNDASEAL OR EQUAL).

95% SUBMITTAL




|                                                                                                                                                                                   |          |     |          |     |      |      |          |                       |                                                              |                                                                                 |                           |               |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----|----------|-----|------|------|----------|-----------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------|--------|
|  <div><b>GREELEY AND HANSEN</b><br/><br/>111 BROADWAY, SUITE 2101<br/>NEW YORK, NY 10006</div> | DESIGNED | XXX | APPROVED |     |      |      |          | SCALE<br><br>NO SCALE | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | INSTRUMENTATION<br>BAILEY AVE & E. AMHERST ST RTC<br><br>CONTROL PANEL DIAGRAMS | BSA CONTRACT NO. 82000041 |               |        |
|                                                                                                                                                                                   | DRAWN    | RAM |          |     |      |      |          |                       |                                                              |                                                                                 | DWG:                      | 108           |        |
|                                                                                                                                                                                   | CHECKED  | XXX |          |     |      |      |          |                       |                                                              |                                                                                 | SHEET:                    | 75 OF 85      |        |
|                                                                                                                                                                                   |          |     |          |     |      |      |          |                       |                                                              |                                                                                 | DATE:                     | FEBRUARY 2023 | REV: 0 |
|                                                                                                                                                                                   |          |     |          | NO. | DATE | APPD | REVISION |                       |                                                              |                                                                                 |                           |               |        |





1. EXISTING SEAMETRICS PS98i SUBMERSIBLE PRESSURE TRANSDUCER. REMOVE ENTIRE LEVEL MONITORING SYSTEM AND RETURN TO BSA.

 **GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

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|     |      |      |          |
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|     |      |      |          |
| NO. | DATE | APPD | REVISION |

NO SCALE

P&amp;ID

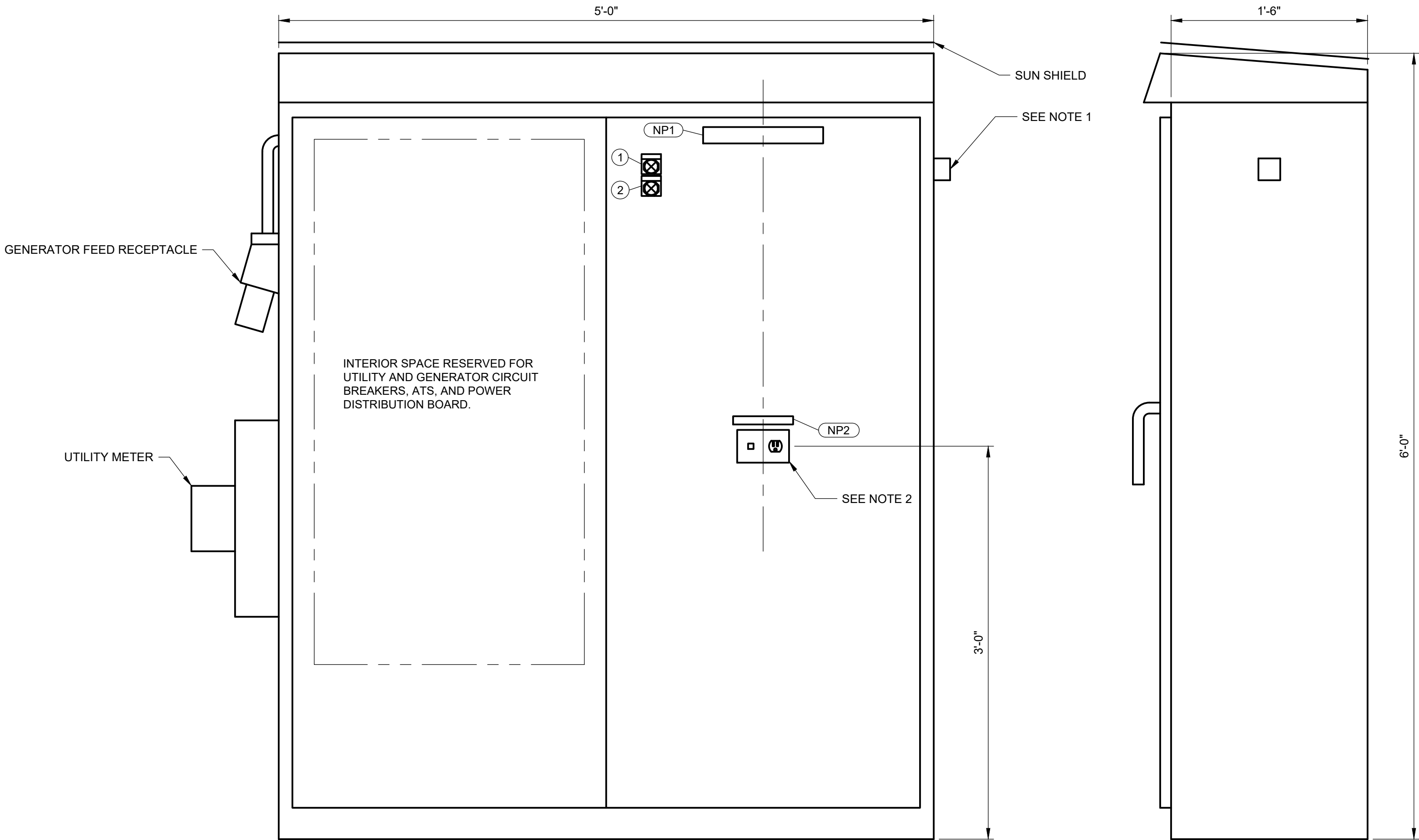
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| SHEET: 76           | OF 85  |
| DATE: FEBRUARY 2023 | REV: 0 |

## 95% SUBMITTAL



2023/02/15 4:32 PM

\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\141222.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3D\CDD\14122\_110 MORENO, ROBERTO



**FRONT ELEVATION - SWINGOUT PANEL**  
DEAD-FRONT PANEL DOOR NOT SHOWN FOR CLARITY.

**SIDE ELEVATION**

**BAILEY AVE. & KERNS AVE. RTC PLC CONTROL PANEL**

SCALE: 1'-1/2" = 1'-0"

| NAMEPLATE ENGRAVING TABLE |                |                                                   |
|---------------------------|----------------|---------------------------------------------------|
| NO.                       | LETTERING SIZE | ENGRAVING                                         |
| NP1                       | 0'-0 1/2"      | BAILEY AVE. & KERNS AVE.<br>RTC PLC CONTROL PANEL |
| NP2                       | 0'-0 3/8"      | RECEPTACLE FOR PROGRAMMING USE ONLY               |

| PANEL FRONT OPERATORS TABLE |                  |       |           |
|-----------------------------|------------------|-------|-----------|
| NO.                         | DEVICE           | COLOR | ENGRAVING |
| 1                           | INDICATING LIGHT | WHITE | POWER ON  |
| 2                           | INDICATING LIGHT | AMBER | PLC FAIL  |

**NOTES**

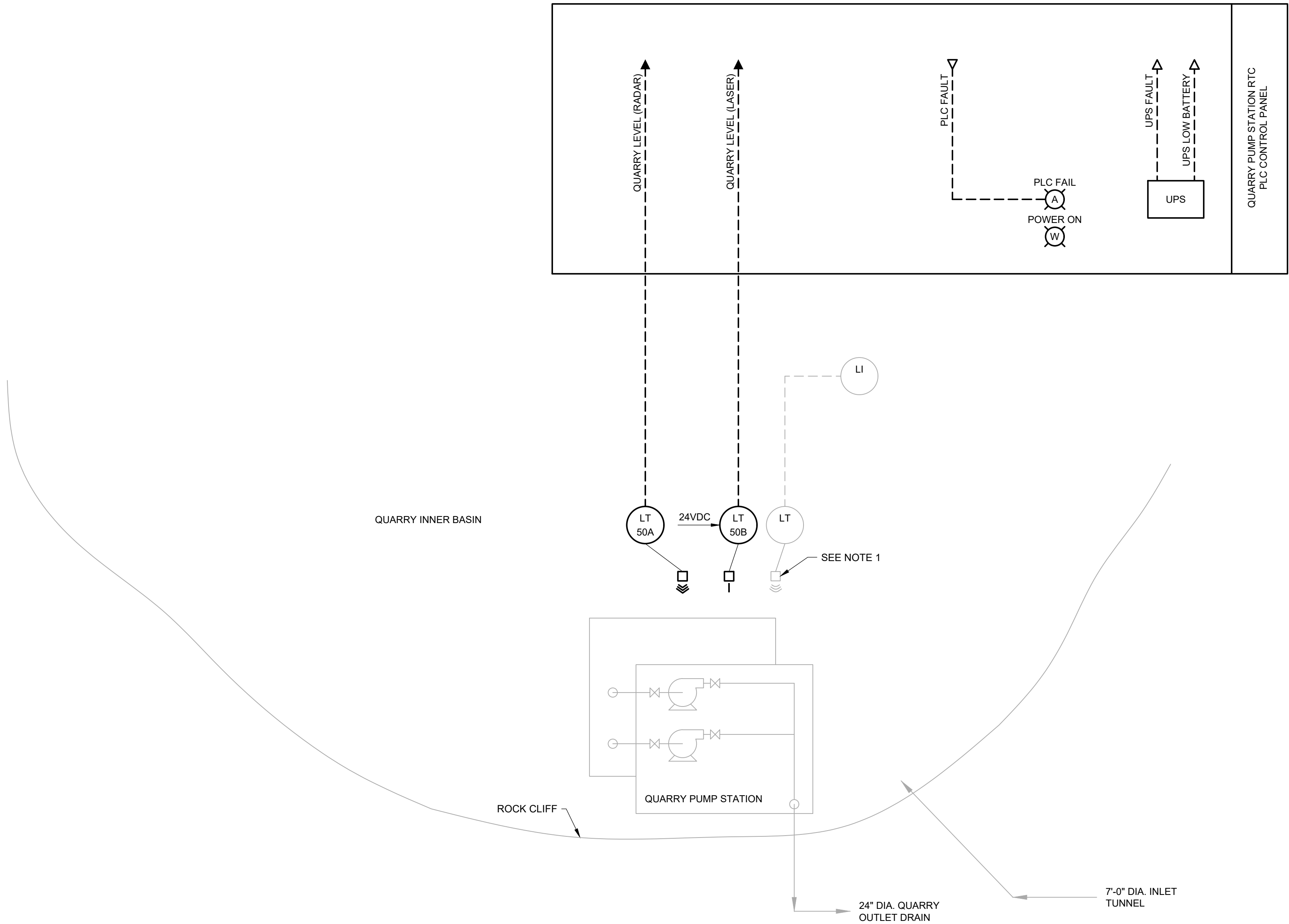
1. MOUNT CELLULAR ANTENNA ON SIDE OF ENCLOSURE BASED ON SITE FIELD REVIEW.
2. FRONT PANEL RECEPTACLE FOR PROGRAMMING USE.
3. PANEL SIZE SHOWN IS ESTIMATE; PROVIDE CUSTOM-SIZED PANEL SIZED FOR ALL INTERNAL DEVICES, MOUNTED FOR EASE OF MAINTENANCE AS SPECIFIED.
4. SEAL SEAM BETWEEN PANEL AND CONCRETE HOUSEKEEPING PAD WITH ELASTOMERIC WATERPROOFING MATERIAL TO PREVENT MOISTURE INTRUSION (SOUNDASEAL OR EQUAL).

95% SUBMITTAL



|                                                    |          |     |          |     |      |      |          |                       |                                                              |                                                                                   |                           |                      |
|----------------------------------------------------|----------|-----|----------|-----|------|------|----------|-----------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|----------------------|
| <br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 | DESIGNED | XXX | APPROVED |     |      |      |          | SCALE<br><br>NO SCALE | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | INSTRUMENTATION<br>BAILEY AVE & KERNS AVE (SPP 338)<br><br>CONTROL PANEL DIAGRAMS | BSA CONTRACT NO. 82000041 |                      |
|                                                    | DRAWN    | RAM |          |     |      |      |          |                       |                                                              |                                                                                   | DWG:                      | 110                  |
|                                                    | CHECKED  | XXX |          |     |      |      |          |                       |                                                              |                                                                                   | SHEET:                    | 77 OF 85             |
|                                                    |          |     |          | NO. | DATE | APPD | REVISION |                       |                                                              |                                                                                   | DATE:                     | FEBRUARY 2023 REV: 0 |





PROCESS AND INSTRUMENTATION DIAGRAM  
QUARRY PUMP STATION  
NO SCALE

NOTES:  
1. EXISTING ULTRASONIC LEVEL SYSTEM TO REMAIN.

BUFFALO

SEWER AUTHORITY

GREELEY AND HANSEN

111 BROADWAY, SUITE 2101

NEW YORK, NY 10006

DESIGNEDXXX

DRAWNRAM

CHECKEDXXX

APPROVED

|     |      |      |          |
|-----|------|------|----------|
| NO. | DATE | APPD | REVISION |
|     |      |      |          |
|     |      |      |          |
|     |      |      |          |

SCALE  
NO SCALE

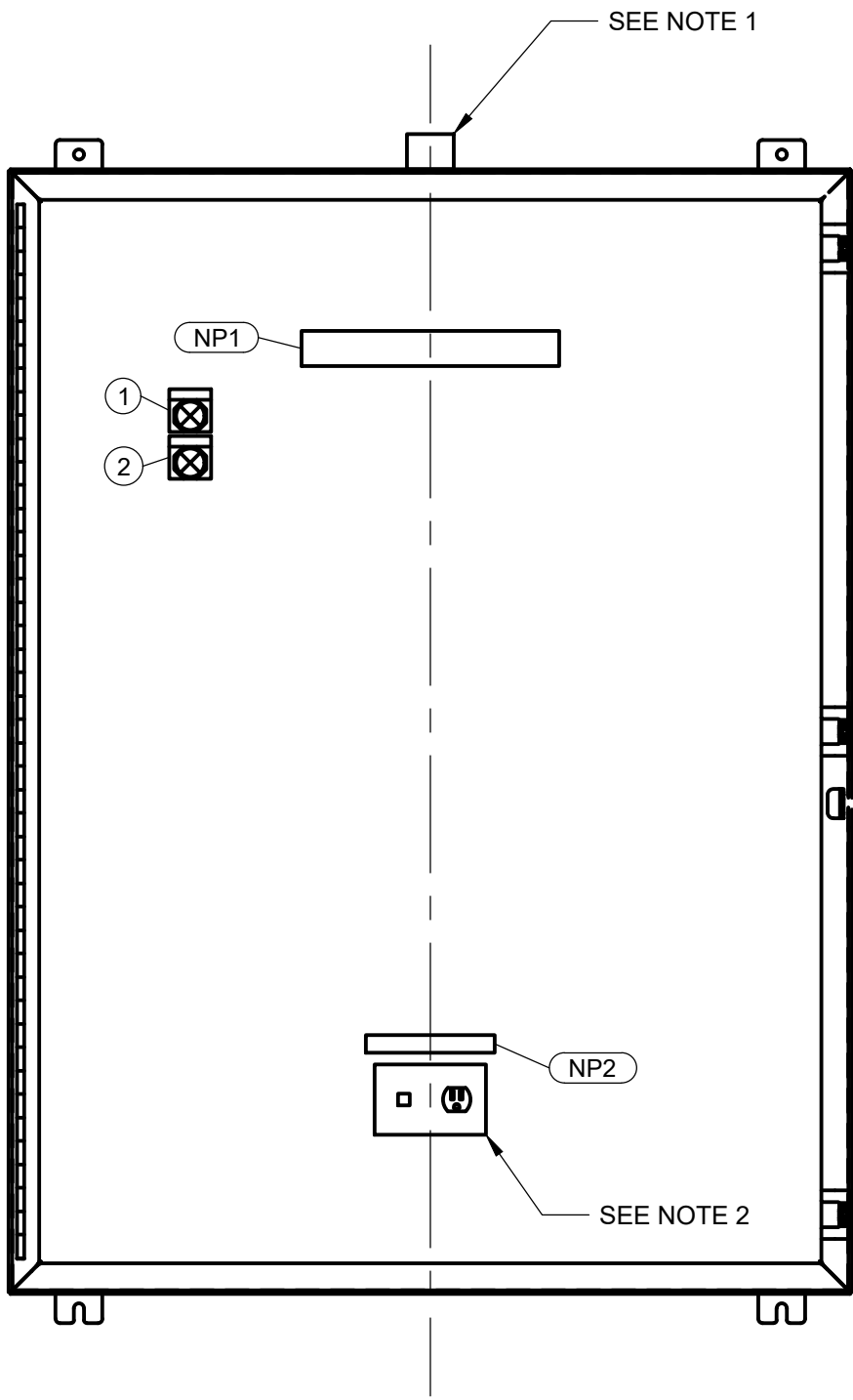
SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

INSTRUMENTATION  
QUARRY PUMP STATION  
P&ID

|                           |               |      |    |
|---------------------------|---------------|------|----|
| BSA CONTRACT NO. 82000041 |               |      |    |
| DWG:                      | 111           |      |    |
| SHEET:                    | 78            | OF   | 85 |
| DATE:                     | FEBRUARY 2023 | REV: | 0  |

95% SUBMITTAL





QUARRY PUMP STATION RTC  
PLC CONTROL PANEL

SCALE: 1'-1/2" = 1'-0"

| NAMEPLATE ENGRAVING TABLE |                |                                     |
|---------------------------|----------------|-------------------------------------|
| NO.                       | LETTERING SIZE | ENGRAVING                           |
| NP1                       | 0'-0 1/2"      | QUARRY RTC<br>PLC CONTROL PANEL     |
| NP2                       | 0'-0 3/8"      | RECEPTACLE FOR PROGRAMMING USE ONLY |

| PANEL FRONT OPERATORS TABLE |                  |       |           |
|-----------------------------|------------------|-------|-----------|
| NO.                         | DEVICE           | COLOR | ENGRAVING |
| 1                           | INDICATING LIGHT | WHITE | POWER ON  |
| 2                           | INDICATING LIGHT | AMBER | PLC FAIL  |

NOTES

1. MOUNT CELLULAR ANTENNA ON TOP OF ENCLOSURE BASED ON SITE FIELD REVIEW.
2. FRONT PANEL RECEPTACLE FOR PROGRAMMING USE.
3. PANEL SIZE SHOWN IS ESTIMATE; PROVIDE CUSTOM-SIZED PANEL SIZED FOR ALL INTERNAL DEVICES, MOUNTED FOR EASE OF MAINTENANCE AS SPECIFIED.

95% SUBMITTAL





**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |     |
|----------|-----|
| DESIGNED | XXX |
| DRAWN    | RAM |
| CHECKED  | XXX |

|          |  |
|----------|--|
| APPROVED |  |
|----------|--|

|     |      |      |          |
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|     |      |      |          |
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| NO. | DATE | APPD | REVISION |

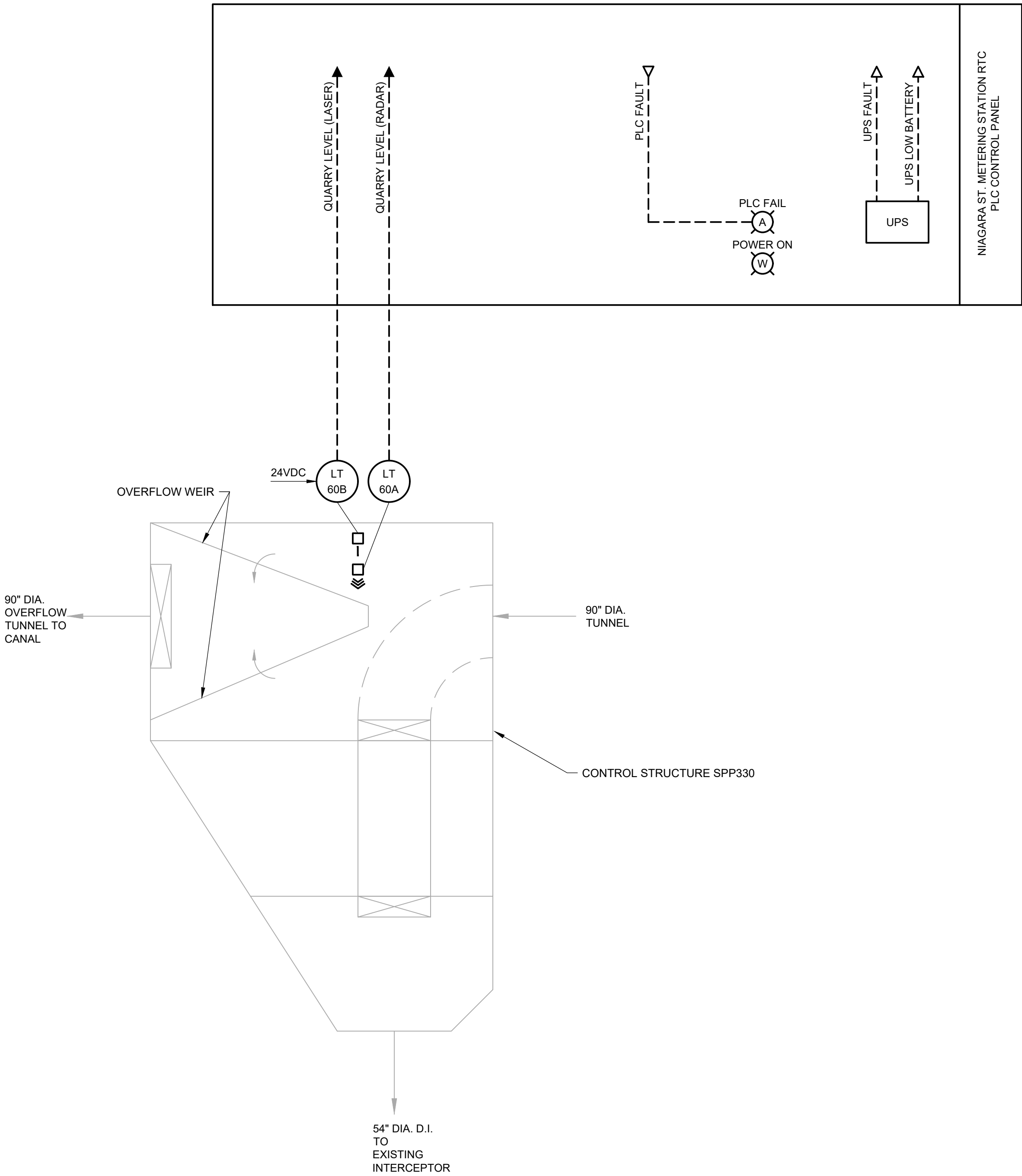
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| SCALE    |
| NO SCALE |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

|                                        |
|----------------------------------------|
| INSTRUMENTATION<br>QUARRY PUMP STATION |
| CONTROL PANEL DIAGRAMS                 |

|                           |        |
|---------------------------|--------|
| BSA CONTRACT NO. 82000041 |        |
| DWG:                      | 112    |
| SHEET: 79                 | OF 85  |
| DATE: FEBRUARY 2023       | REV: 0 |





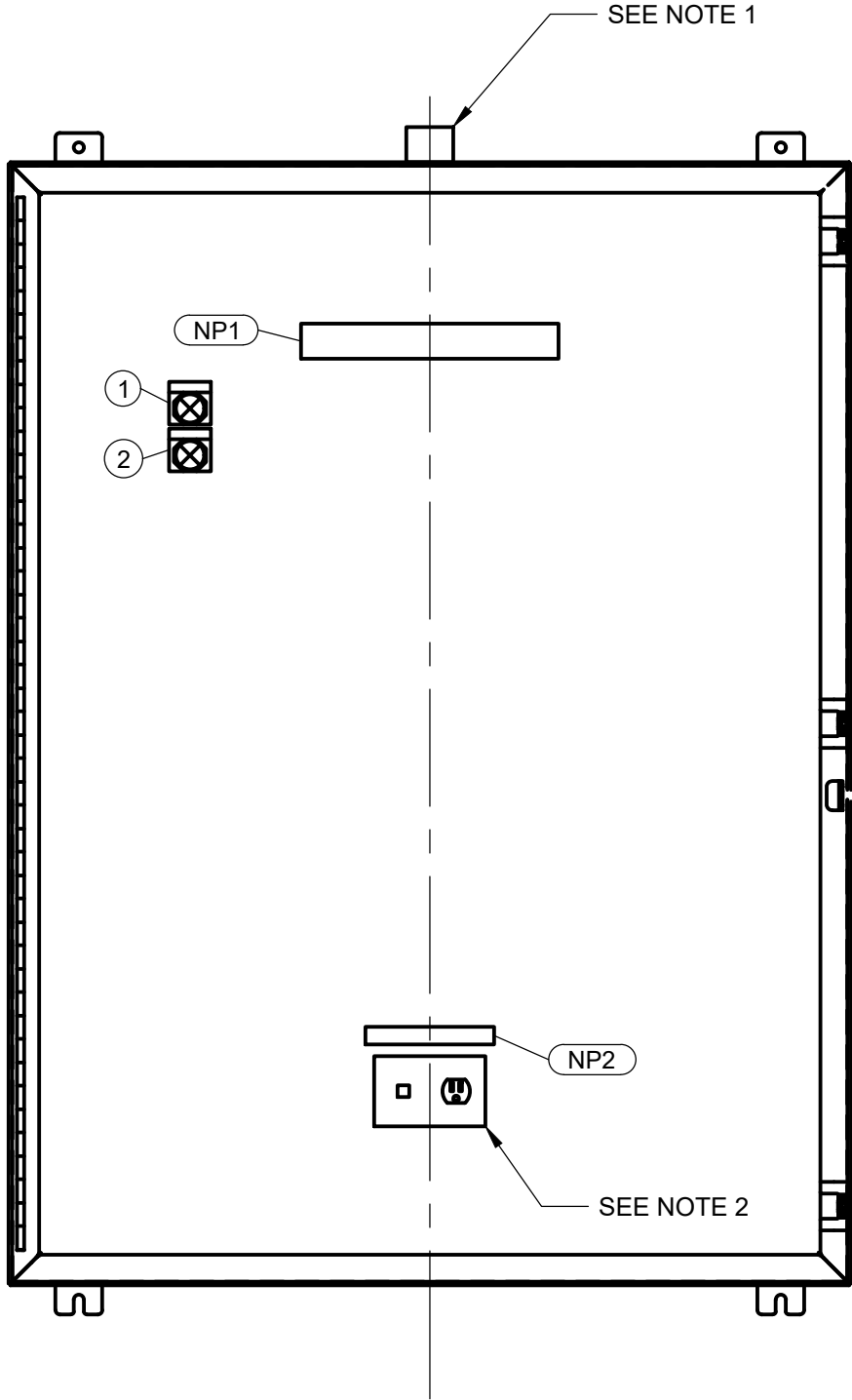
PROCESS AND INSTRUMENTATION DIAGRAM  
NIAGARA ST. METERING STATION  
NO SCALE



|                                                    |          |     |          |     |      |      |          |                       |                                                              |                                                             |                            |  |  |
|----------------------------------------------------|----------|-----|----------|-----|------|------|----------|-----------------------|--------------------------------------------------------------|-------------------------------------------------------------|----------------------------|--|--|
| <br>111 BROADWAY, SUITE 2101<br>NEW YORK, NY 10006 | DESIGNED | XXX | APPROVED |     |      |      |          | SCALE<br><br>NO SCALE | SCAJAQUADA CREEK AND BLACK ROCK CANAL<br>SMART SEWER PROJECT | INSTRUMENTATION<br>NIAGARA ST. METERING STATION<br><br>P&ID | BSA CONTRACT NO. 82000041  |  |  |
|                                                    | DRAWN    | RAM |          |     |      |      |          |                       |                                                              |                                                             | DWG: 113                   |  |  |
|                                                    | CHECKED  | XXX |          |     |      |      |          |                       |                                                              |                                                             | SHEET: 80 OF 85            |  |  |
|                                                    |          |     |          | NO. | DATE | APPD | REVISION |                       |                                                              |                                                             | DATE: FEBRUARY 2023 REV: 0 |  |  |

95% SUBMITTAL





NIAGARA ST. METERING STATION RTC  
PLC CONTROL PANEL

SCALE: 1-1/2" - 1'-0"

| NAMEPLATE ENGRAVING TABLE |                |                                                       |
|---------------------------|----------------|-------------------------------------------------------|
| NO.                       | LETTERING SIZE | ENGRAVING                                             |
| NP1                       | 0'-0 1/2"      | NIAGARA ST. METERING STATION<br>RTC PLC CONTROL PANEL |
| NP2                       | 0'-0 3/8"      | RECEPTACLE FOR PROGRAMMING USE ONLY                   |

| PANEL FRONT OPERATORS TABLE |                  |       |           |
|-----------------------------|------------------|-------|-----------|
| NO.                         | DEVICE           | COLOR | ENGRAVING |
| 1                           | INDICATING LIGHT | WHITE | POWER ON  |
| 2                           | INDICATING LIGHT | AMBER | PLC FAIL  |

NOTES

1. MOUNT CELLULAR ANTENNA ON TOP OF ENCLOSURE BASED ON SITE FIELD REVIEW.
2. FRONT PANEL RECEPTACLE FOR PROGRAMMING USE.
3. PANEL SIZE SHOWN IS ESTIMATE; PROVIDE CUSTOM-SIZED PANEL SIZED FOR ALL INTERNAL DEVICES, MOUNTED FOR EASE OF MAINTENANCE AS SPECIFIED.

95% SUBMITTAL





**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

|          |      |          |          |  |  |  |
|----------|------|----------|----------|--|--|--|
| DESIGNED | XXX  | APPROVED |          |  |  |  |
| DRAWN    | RAM  |          |          |  |  |  |
| CHECKED  | XXX  |          |          |  |  |  |
| NO.      | DATE | APPD     | REVISION |  |  |  |

|          |
|----------|
| SCALE    |
| NO SCALE |

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

INSTRUMENTATION  
NIAGRA ST. METERING STATION

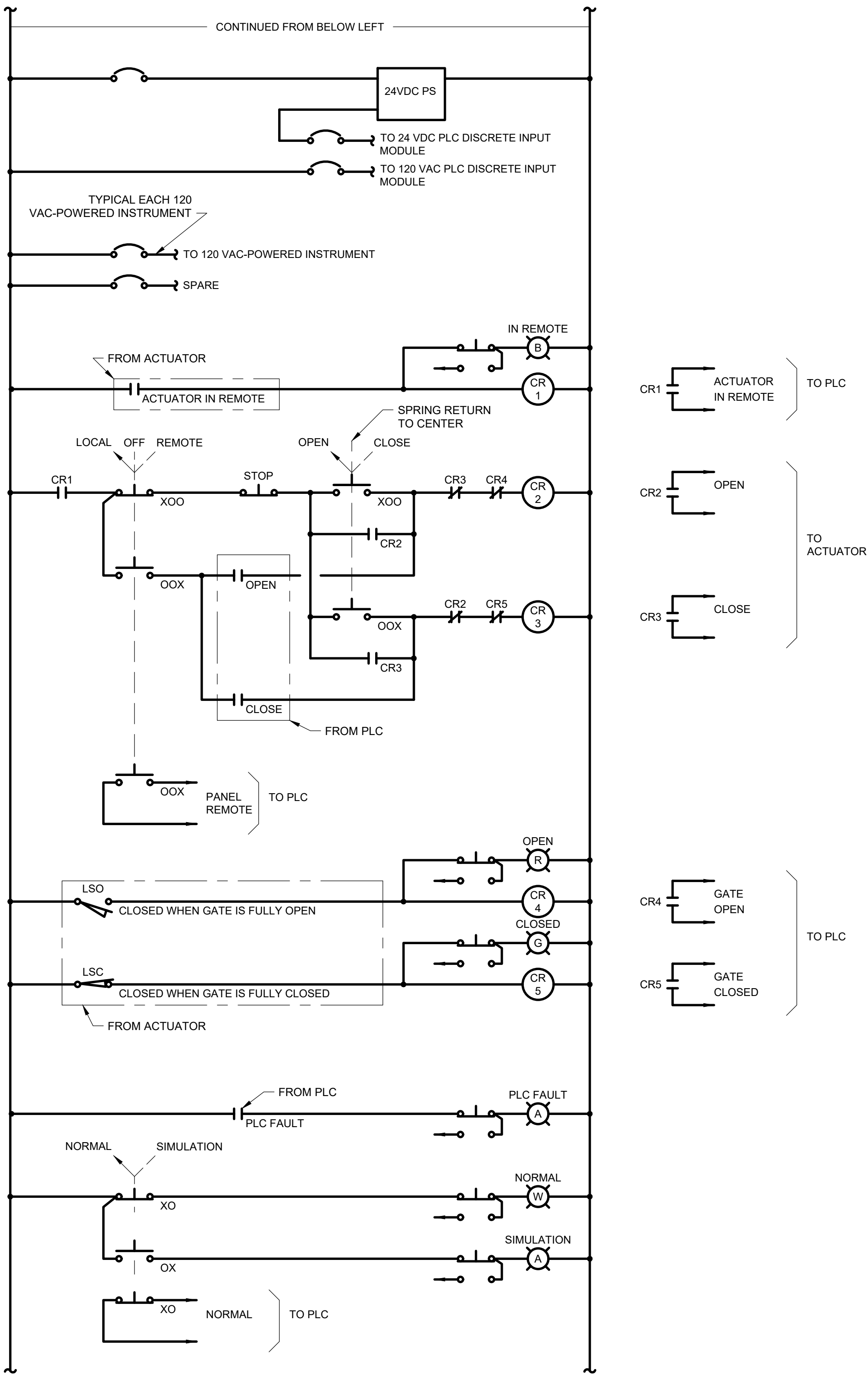
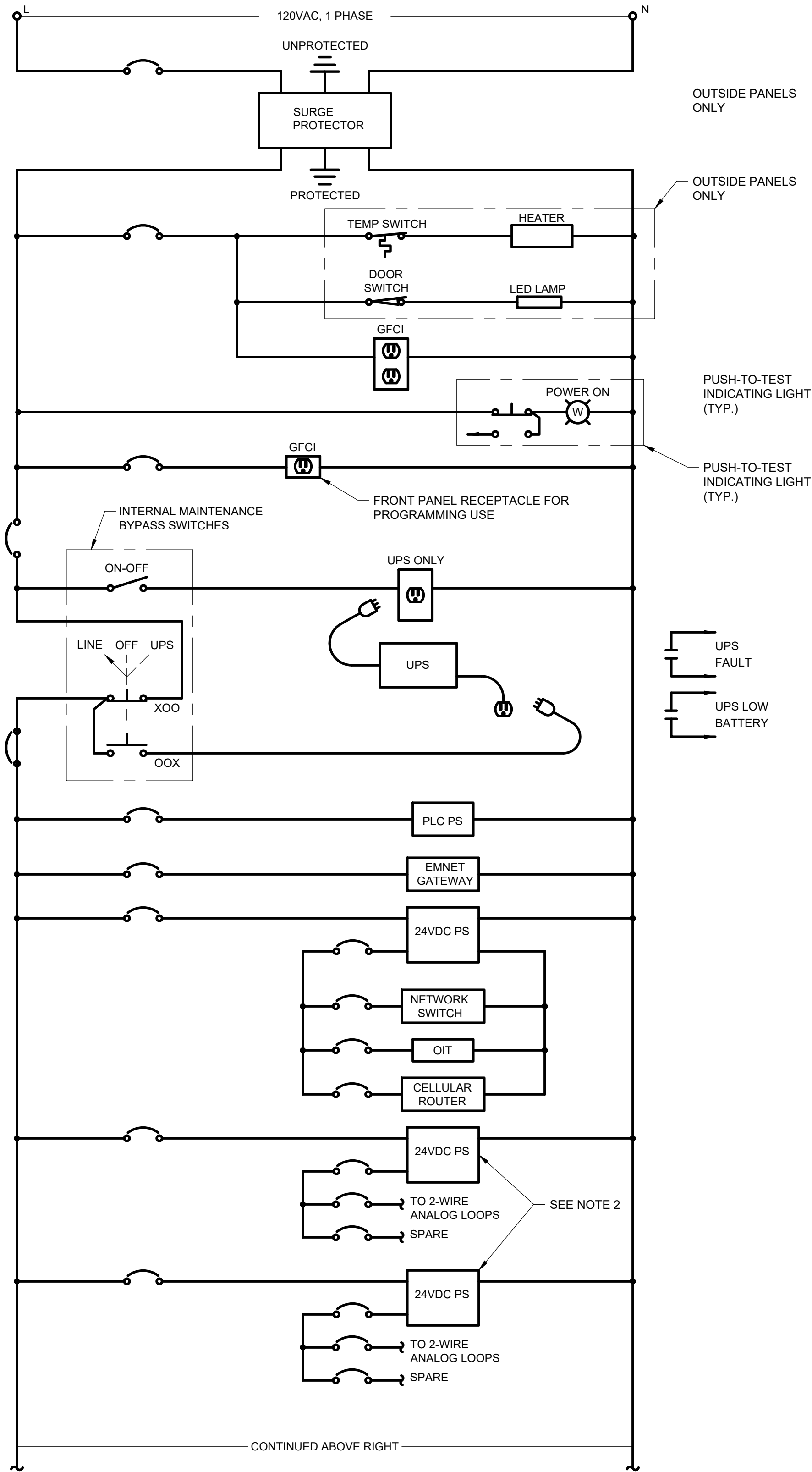
CONTROL PANEL DIAGRAMS

|                           |               |      |    |
|---------------------------|---------------|------|----|
| BSA CONTRACT NO. 82000041 |               |      |    |
| DWG:                      | 114           |      |    |
| SHEET:                    | 81            | OF   | 85 |
| DATE:                     | FEBRUARY 2023 | REV: | 0  |



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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_115 MORENO, ROBERTO



### CONTROL PANEL PARTIAL WIRING DIAGRAM

SEE NOTE 1:  
TYPICAL FOR BRECKENRIDGE ST. & NIAGARA ST RTC PLC CONTROL PANEL, GATES CIRCLE & DELAWARE AVE. RTC PLC CONTROL PANEL, BAILEY AVE. & E. AMHERST ST. RTC PLC CONTROL PANEL, BAILEY AVE. & KERNS AVE. RTC PLC CONTROL PANEL, QUARRY PUMP STATION RTC PLC CONTROL PANEL, AND NIAGARA ST. METERING STATION RTC PLC CONTROL PANEL. NOT ALL ITEMS REQUIRED AT EACH CONTROL PANEL.

#### NOTES:

- ONLY A PARTIAL CONTROL PANEL WIRING DIAGRAM HAS BEEN PROVIDED TO DEPICT CONTROL WIRING FOR HARDWIRED/MANUAL PANEL-MOUNTED CONTROLS. SYSTEM INTEGRATOR IS RESPONSIBLE FOR DEVELOPING COMPLETE AND DETAILED CONTROL PANEL DRAWINGS AND WIRING DIAGRAMS IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- PRIMARY AND SECONDARY REDUNDANT INSTRUMENTS SHALL BE POWERED FROM SEPARATE POWER SUPPLIES.
- PROVIDE SURGE SUPPRESSOR ON INPUT POWER.

## 95% SUBMITTAL

**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED XXX  
DRAWN RAM  
CHECKED XXX

APPROVED

| NO. | DATE | APPD | REVISION |
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SCALE

NO SCALE

SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

INSTRUMENTATION

CONTROL PANEL WIRING DIAGRAM

BSA CONTRACT NO. 82000041

DWG: **115**

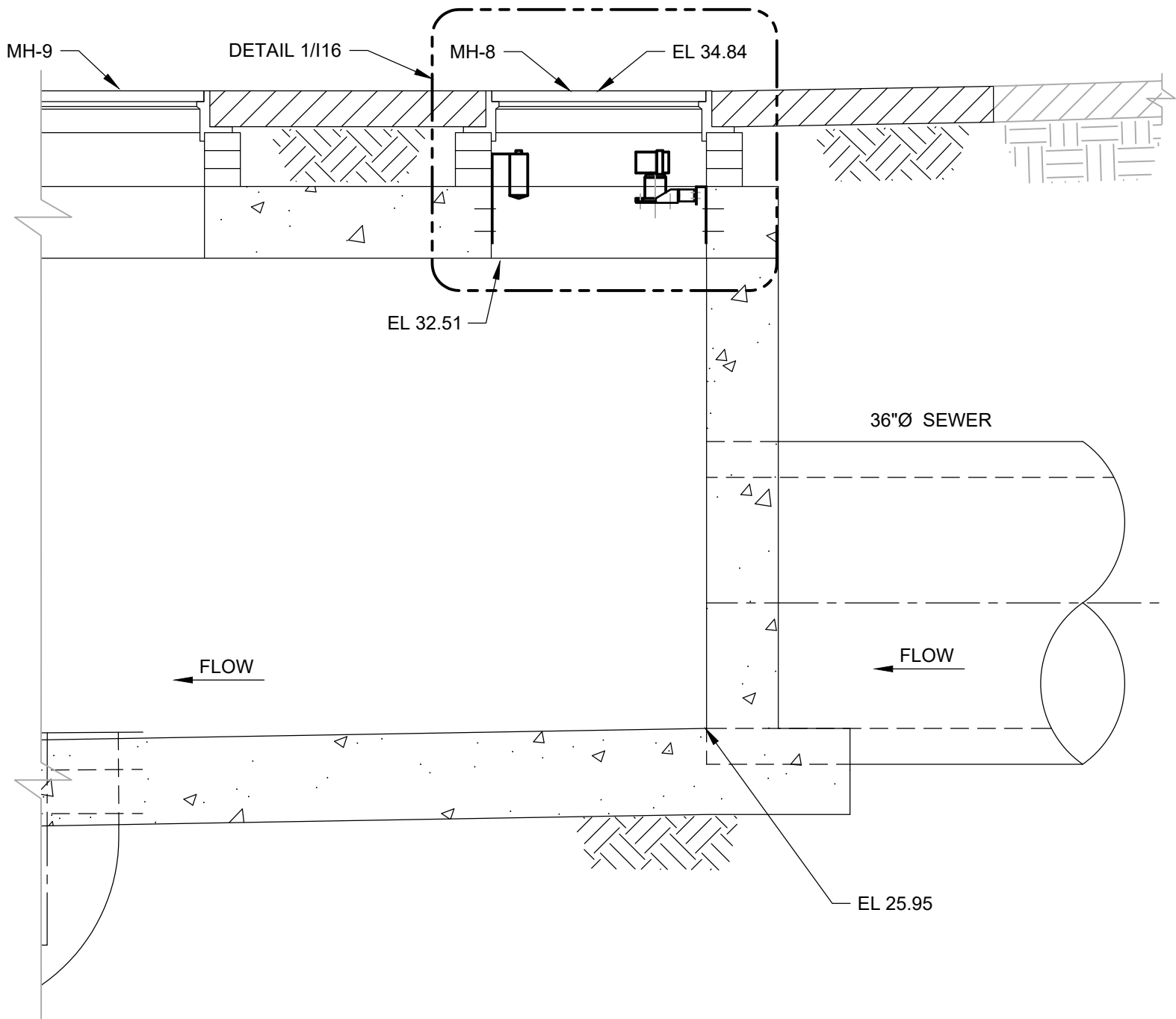
SHEET: 82 OF 85

DATE: FEBRUARY 2023 REV: 0

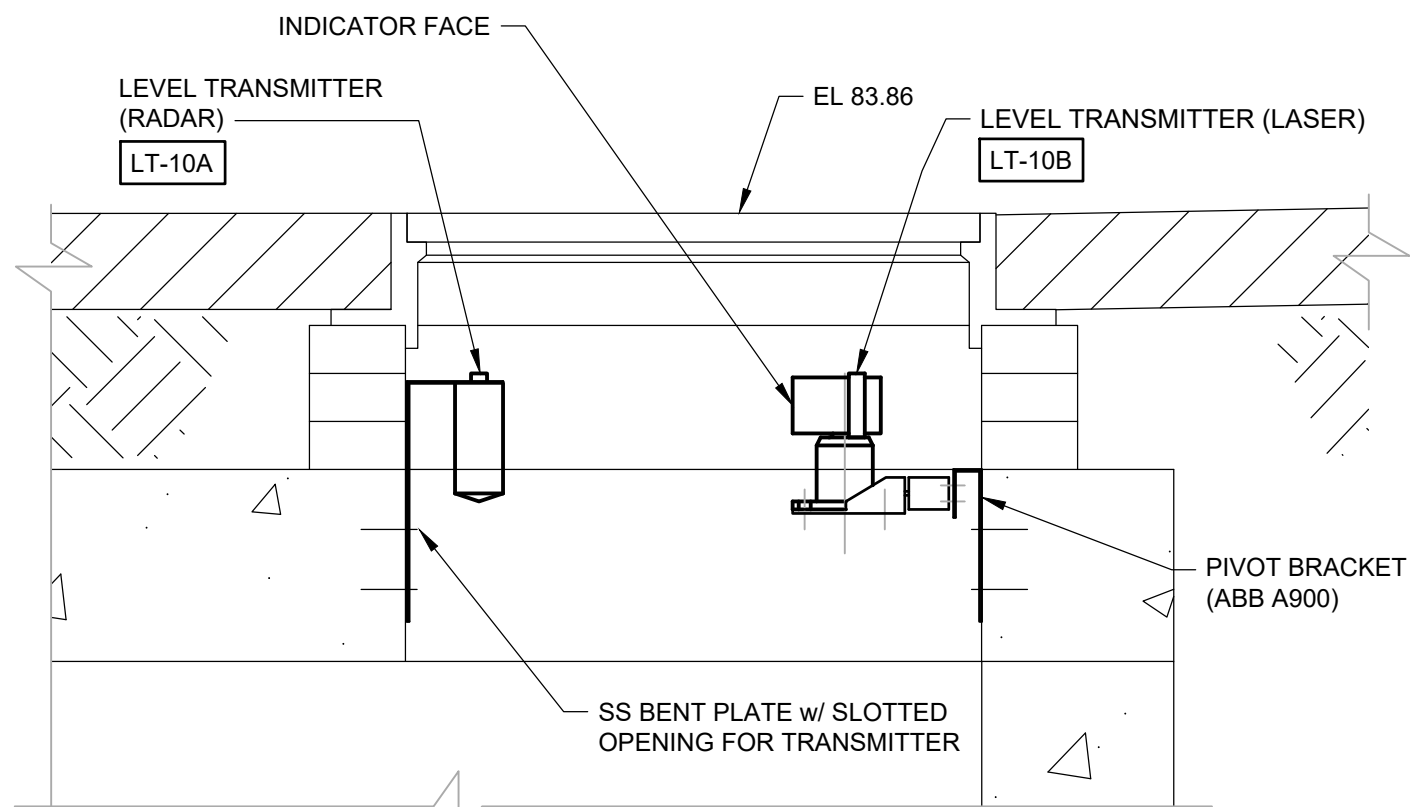


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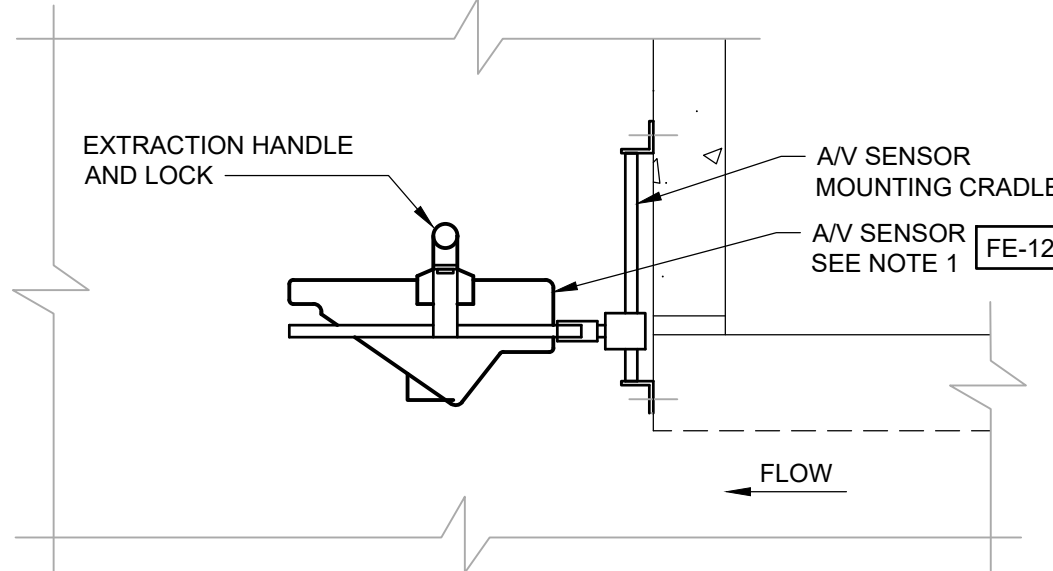
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\14122.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_116 MORENO, ROBERTO



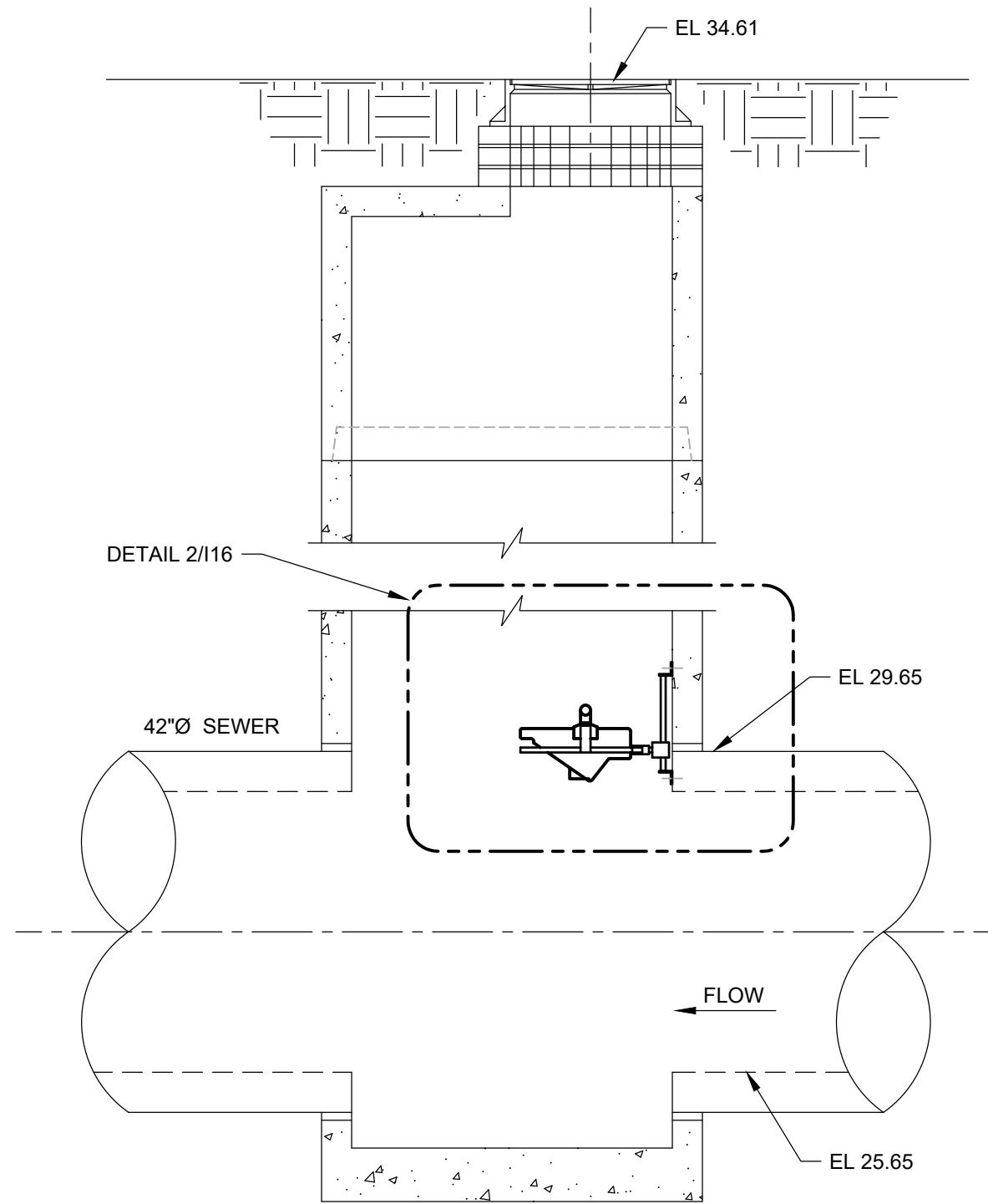
BRECKENRIDGE ST. & NIAGARA ST.  
NEW DIVERSION CHAMBER  
SCALE 1" = 2'-0"



DETAIL 1/16  
SCALE 1" = 1'-0"



DETAIL 2/16  
SCALE 1" = 1'-0"



BRECKENRIDGE AND NIAGARA MH-3  
SCALE: 1" = 2'-0"

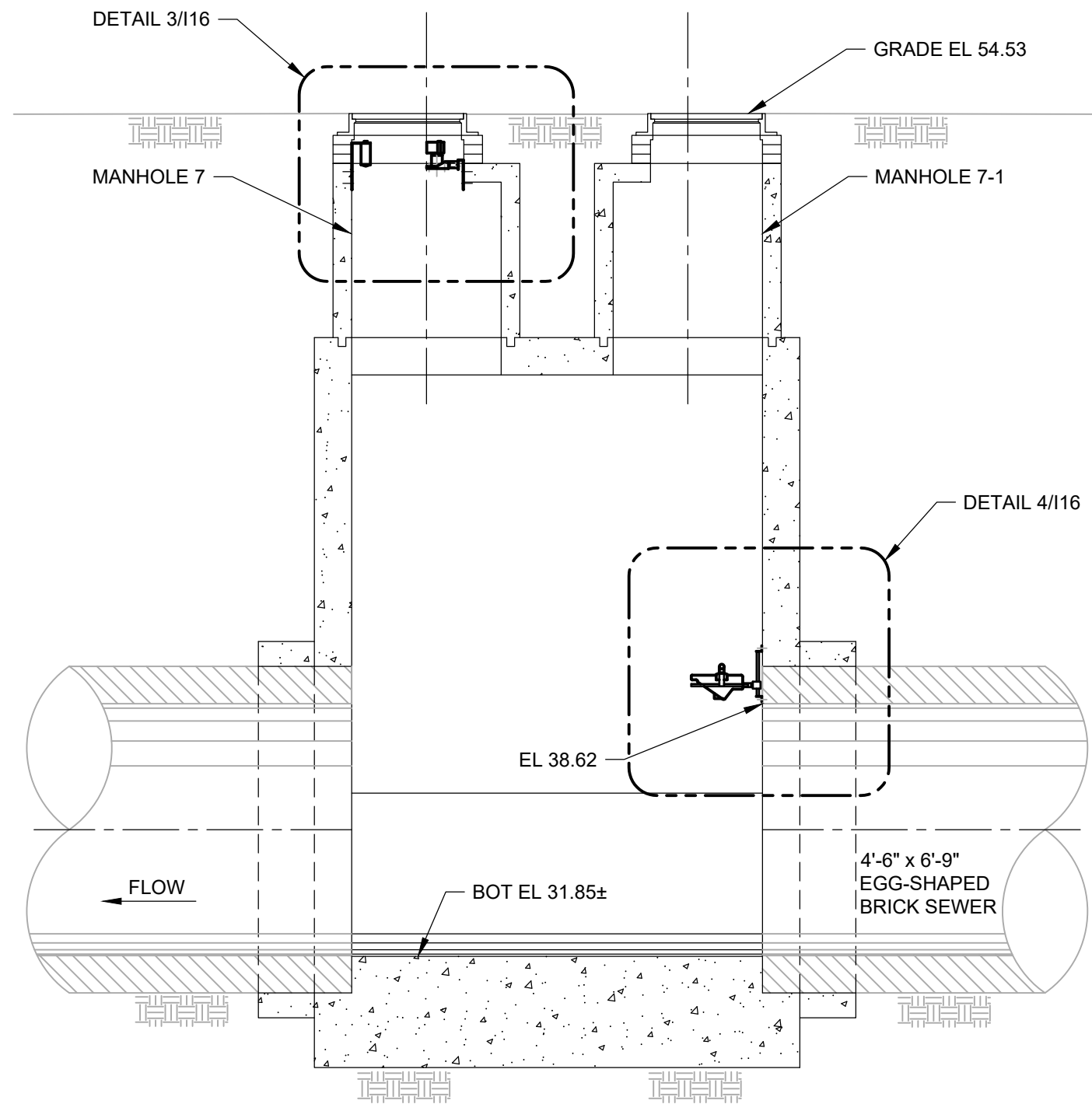
Z:\PROJECTS\Buffalo Sewer\Eastward Channel Opening.JPG

( LOOKING EAST ON BRECKENRIDGE FROM NEAR GELSTON STREET )

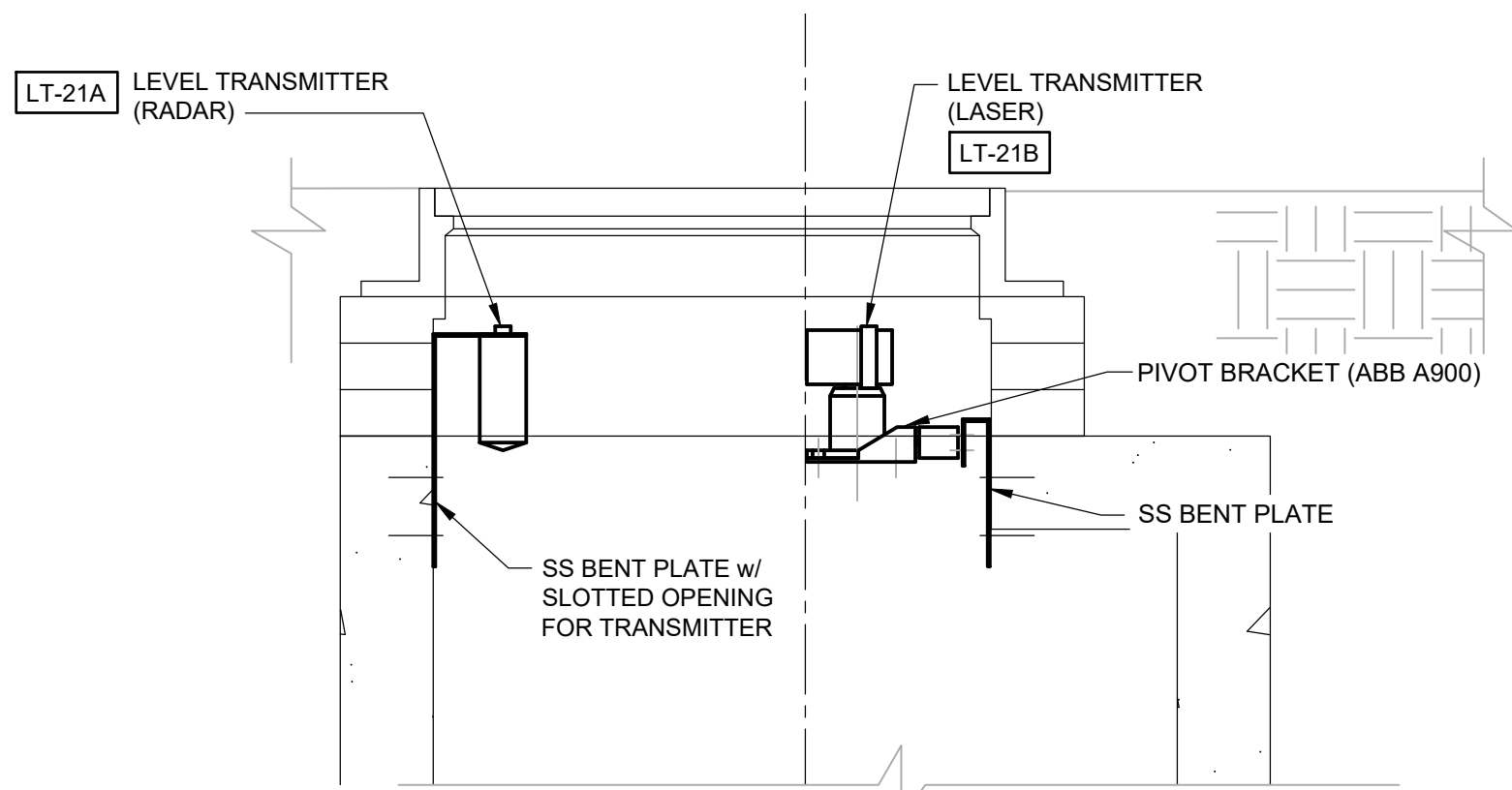
NOTES:

1. PROVIDE STAINLESS STEEL SUPPORT SYSTEM TO MOUNT FLOW SENSOR IN MANHOLE WITHOUT DAMAGING BRICK SEWER.
2. SUPPORT SYSTEM SHALL NOT EXTEND WITHIN THE CIRCUMFERENCE OF THE SEWER CROSS-SECTIONAL AREA.
3. ATTACH SUPPORT SYSTEM BY ANCHORING TO BENCH ON EACH SIDE OF SEWER.
4. ATTACH FLOW SENSOR AND ADJUSTABLE SENSOR MOUNTING HARDWARE TO SUPPORT SYSTEM.
5. FLOW SENSOR TO FACE UPSTREAM (EAST).
6. CONTRACTOR TO SURVEY EXISTING MANHOLE AND RISER, AND SUBMIT DETAILED DIMENSIONED DRAWINGS OF THE MANHOLE, RISER, SUPPORT SYSTEM, FLOW SENSOR AND MOUNTING HARDWARE.

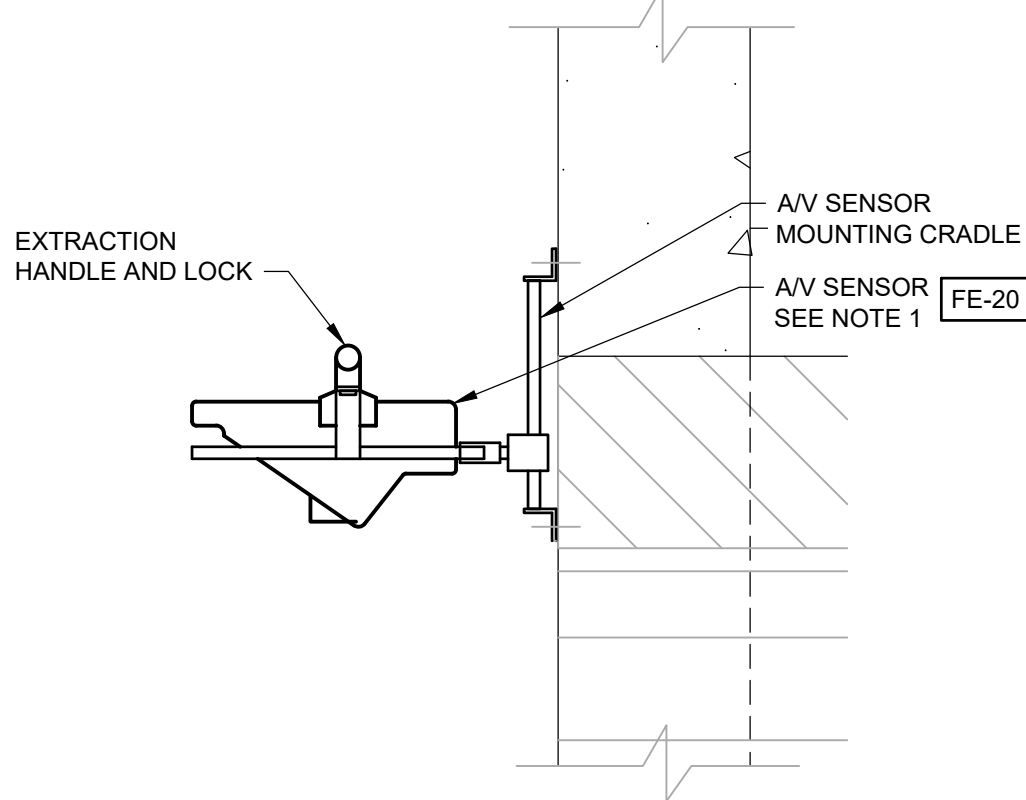
EXISTING MH-1 REFERENCE VIEW  
NO SCALE



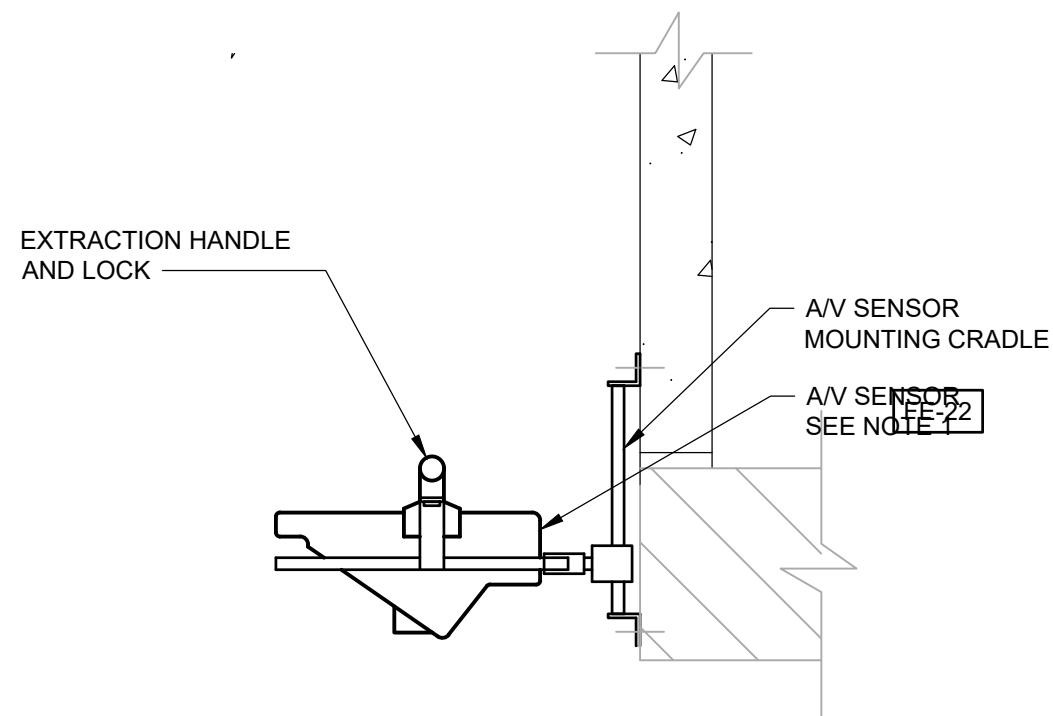
GATES CIRCLE AND DELAWARE AVENUE  
MANHOLE MH-7 & MH-7-1  
SCALE: 1" = 4'-0"



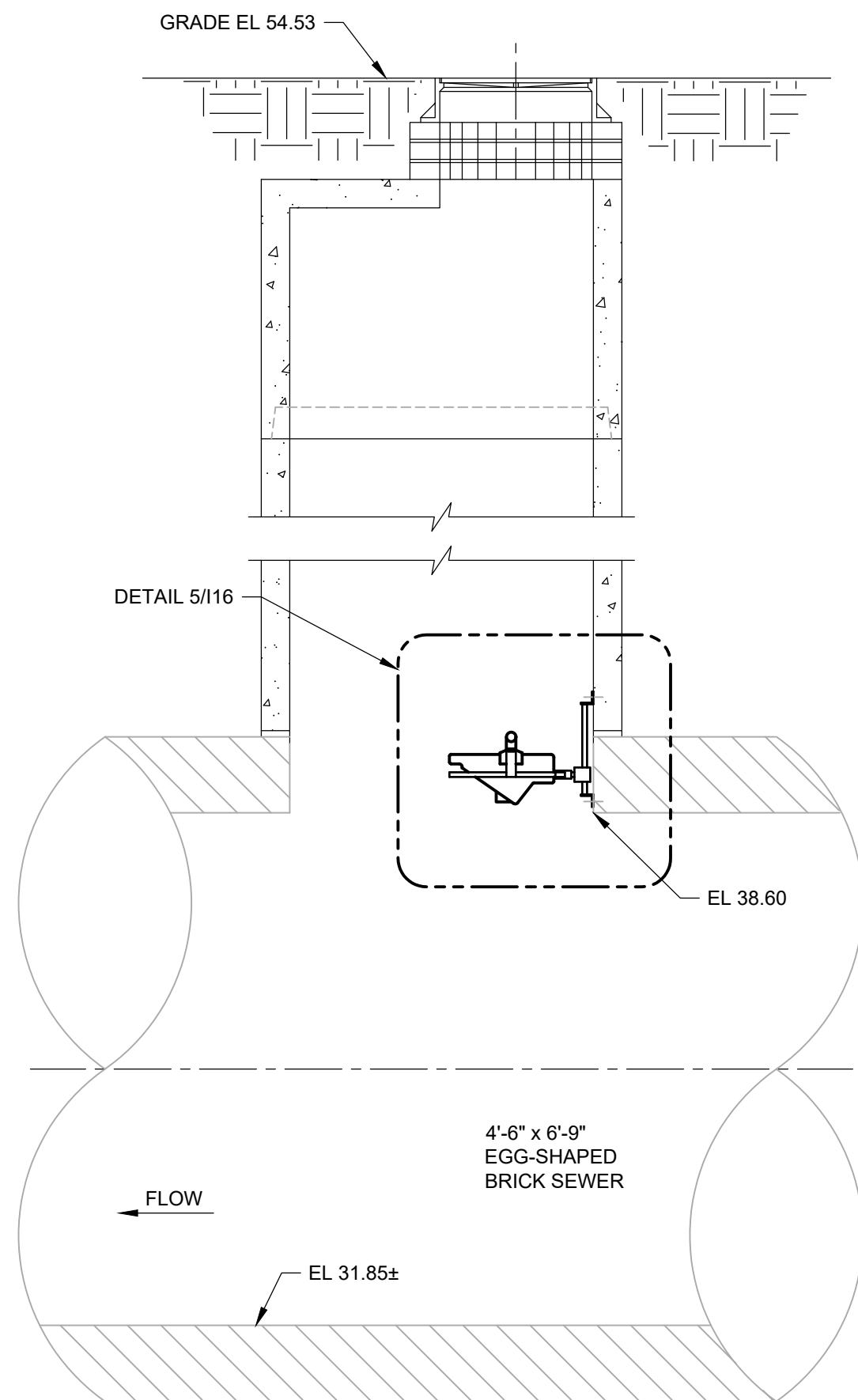
DETAIL 3/16  
SCALE 1" = 1'-0"



DETAIL 4/16  
SCALE 1" = 1'-0"



DETAIL 5/16  
SCALE 1" = 1'-0"



GATES CIRCLE AND DELAWARE AVENUE  
MANHOLE MH-6  
SCALE: 1" = 2'-0"

NOTES:

1. MOUNTING HEIGHT TO BE DETERMINED BY SENSOR MFR.
2. EXCEPT WHERE OTHERWISE SHOWN, MOUNT ALL LEVEL AND FLOW SENSORS ABOVE FLOW CENTERLINE.
3. CONTRACTOR TO COORDINATE MOUNTING LOCATION OF ALL LEVEL INSTRUMENTS TO AVOID OBSTRUCTIONS WITH BEAM ANGLE WITHIN THE DESIRED MEASURING RANGE

95% SUBMITTAL

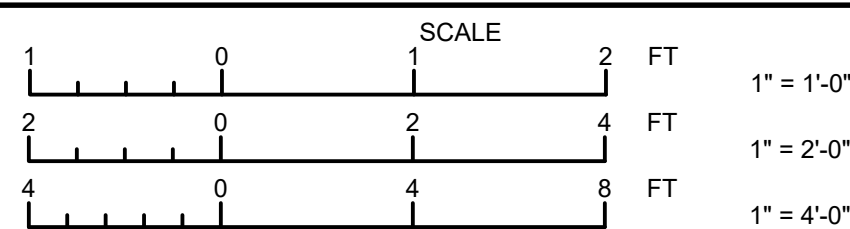
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED XXX  
DRAWN RAM  
CHECKED XXX

APPROVED

| NO. | DATE | APPD | REVISION |
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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

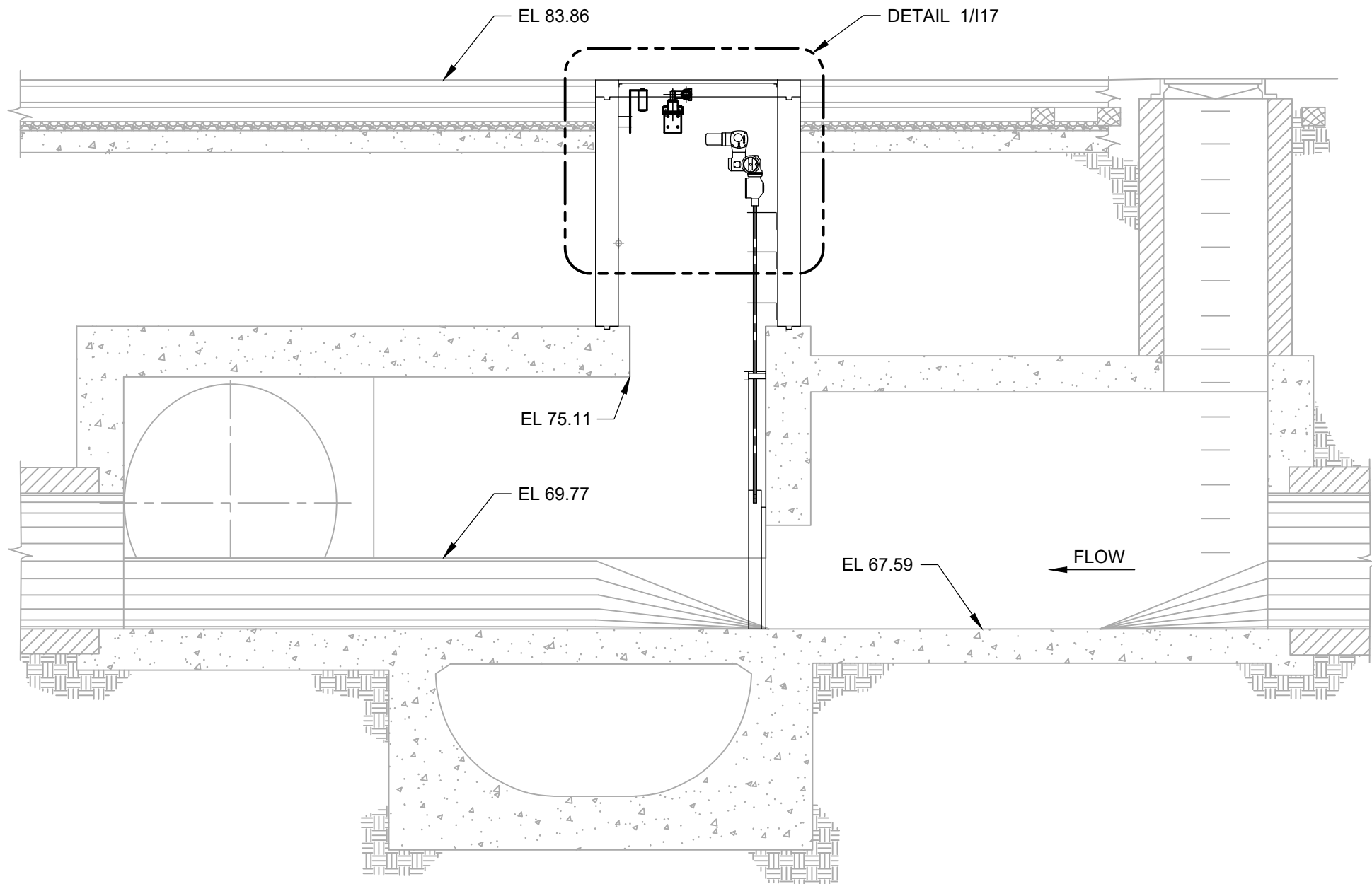
INSTRUMENTATION  
  
MANHOLE AND INSTRUMENT DETAILS

BSA CONTRACT NO. 82000041  
DWG: **116**  
SHEET: 83 OF 85  
DATE: FEBRUARY 2023 REV: 0

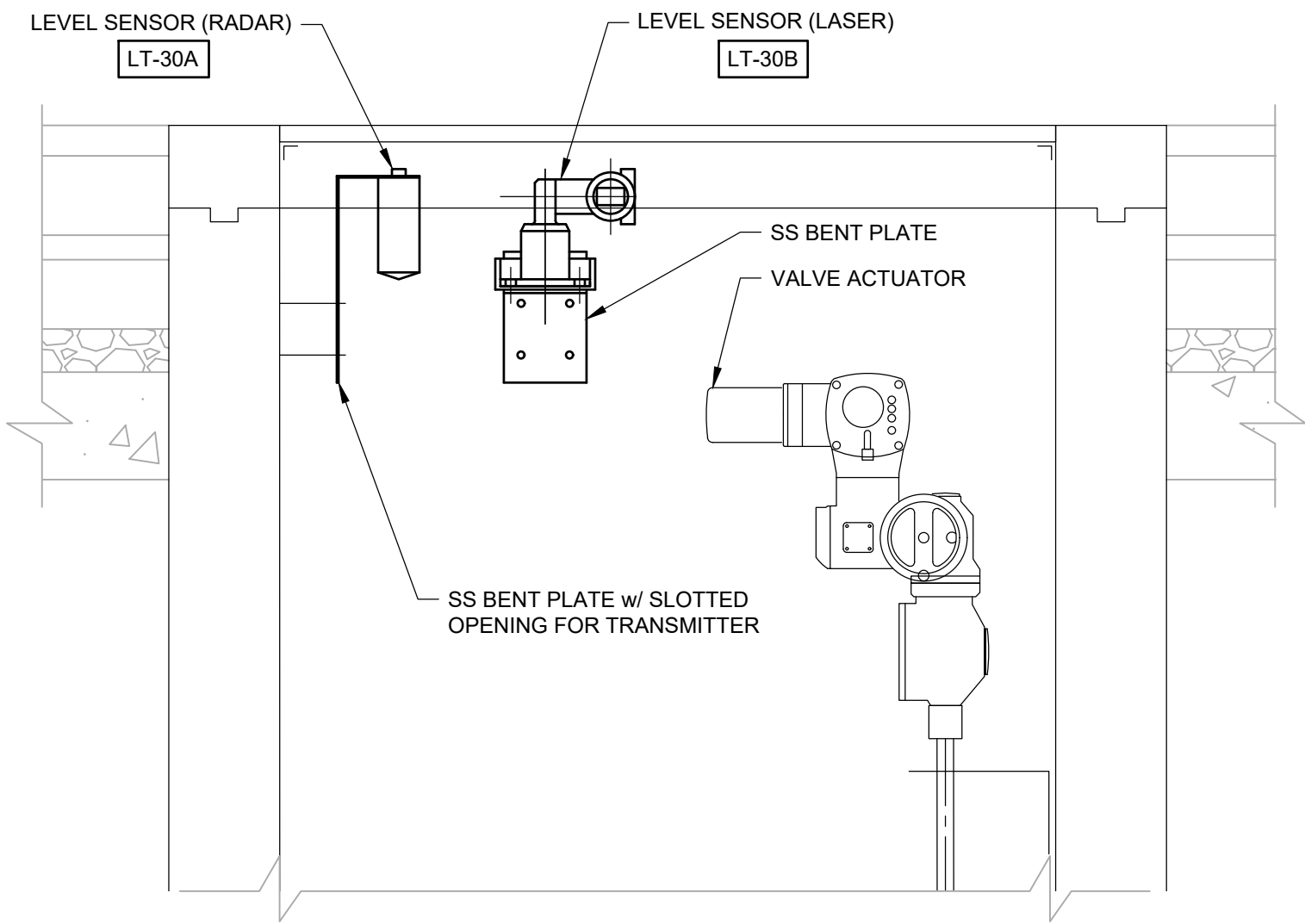


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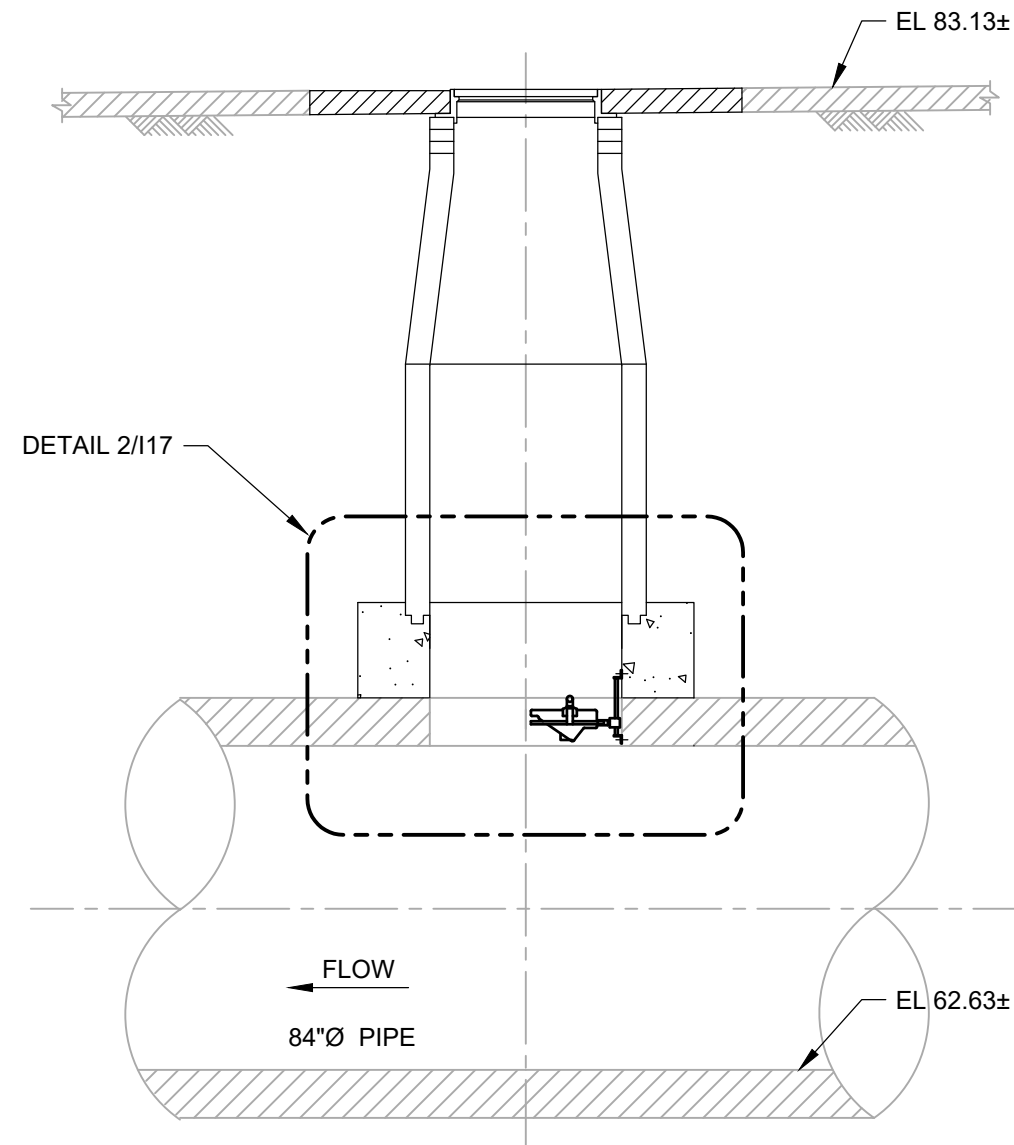
\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\141222.01 RTC-SMART SEWERS\_BRECKENRIDGE\04.DESIGN\CIVIL\3DC\14122\_117 MORENO, ROBERTO



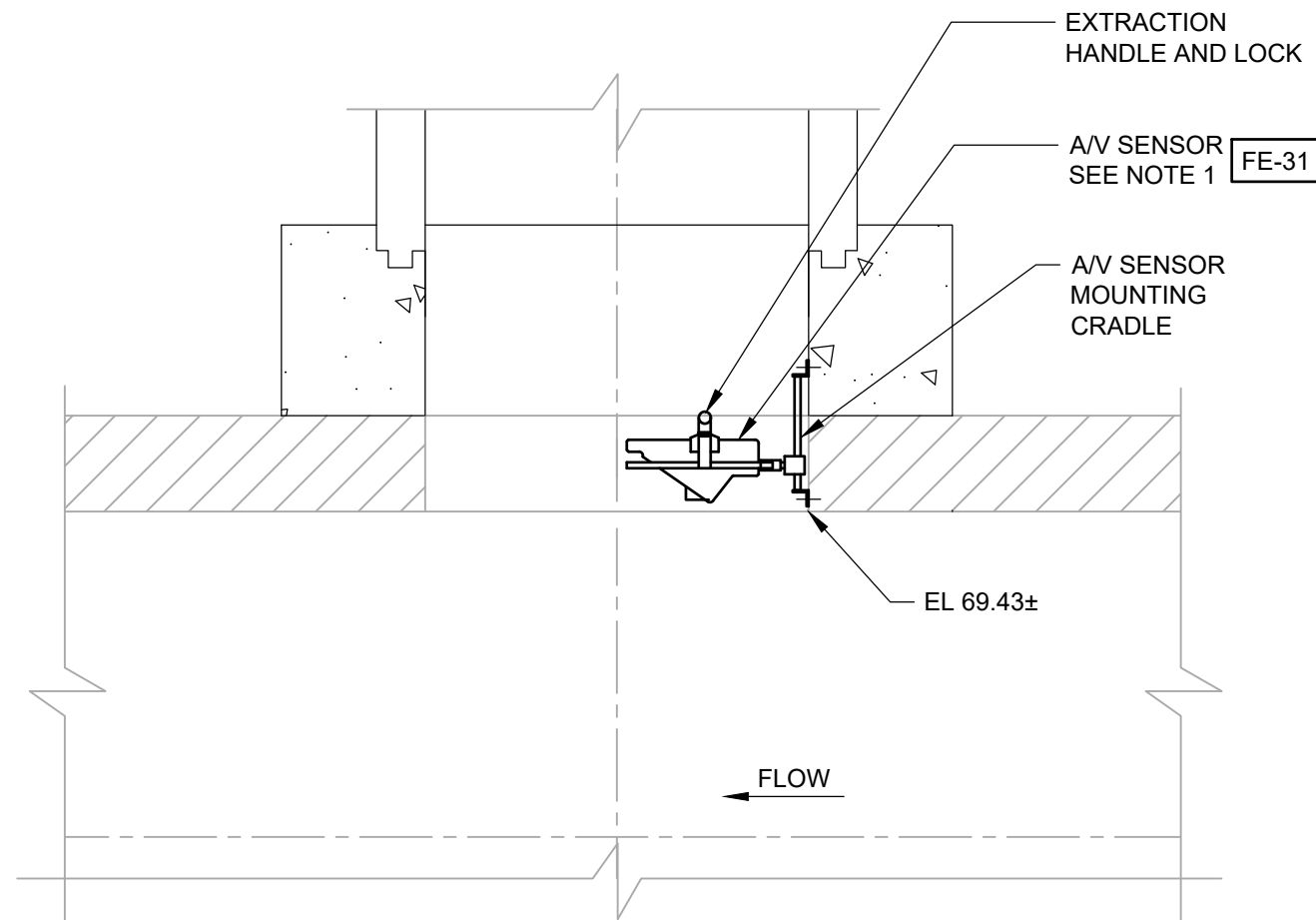
**BAILEY AVE. & E. AMHERST ST. SPP225**  
SCALE 1" = 4'-0"



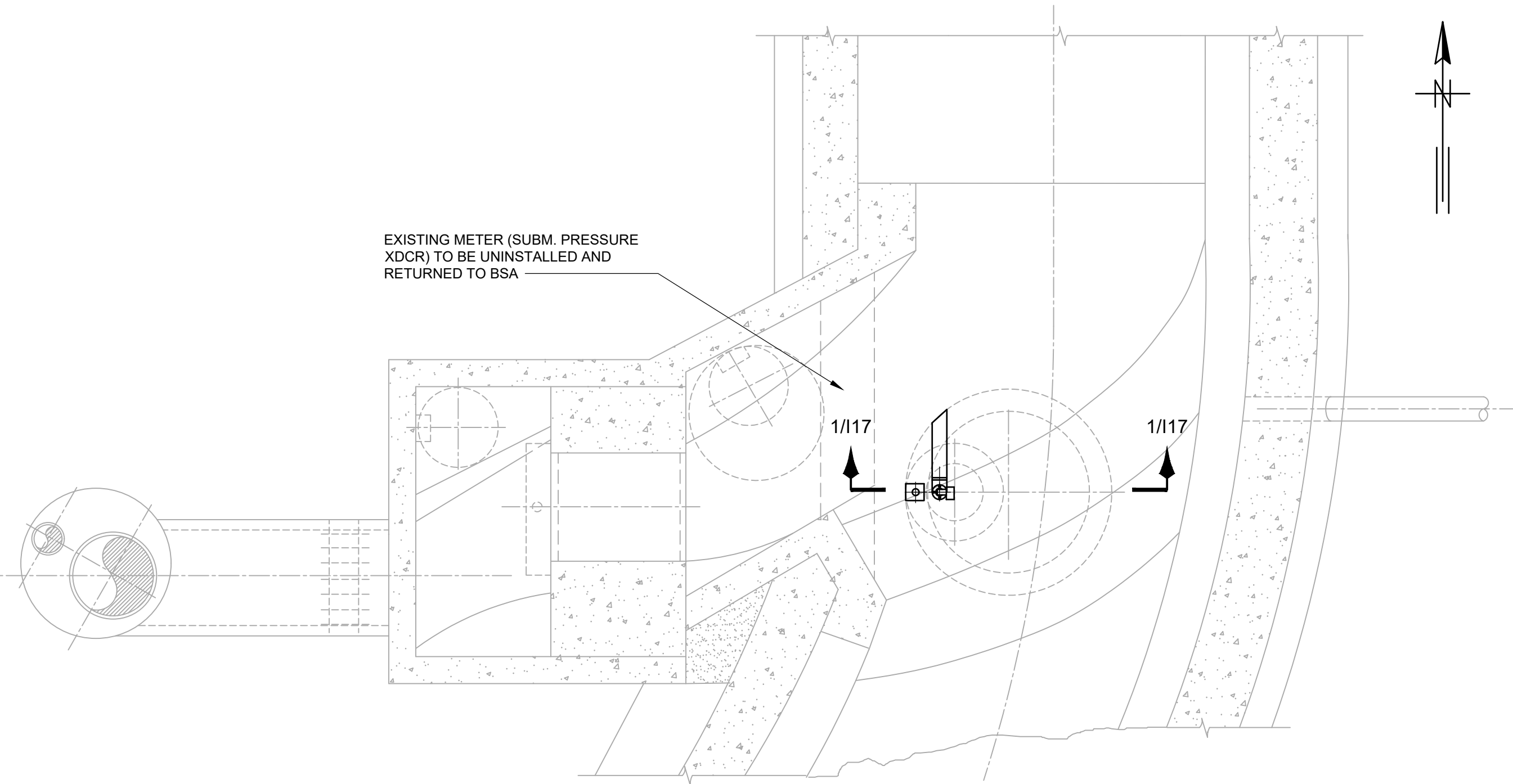
**DETAIL 1/17**  
SCALE 1" = 1'-0"



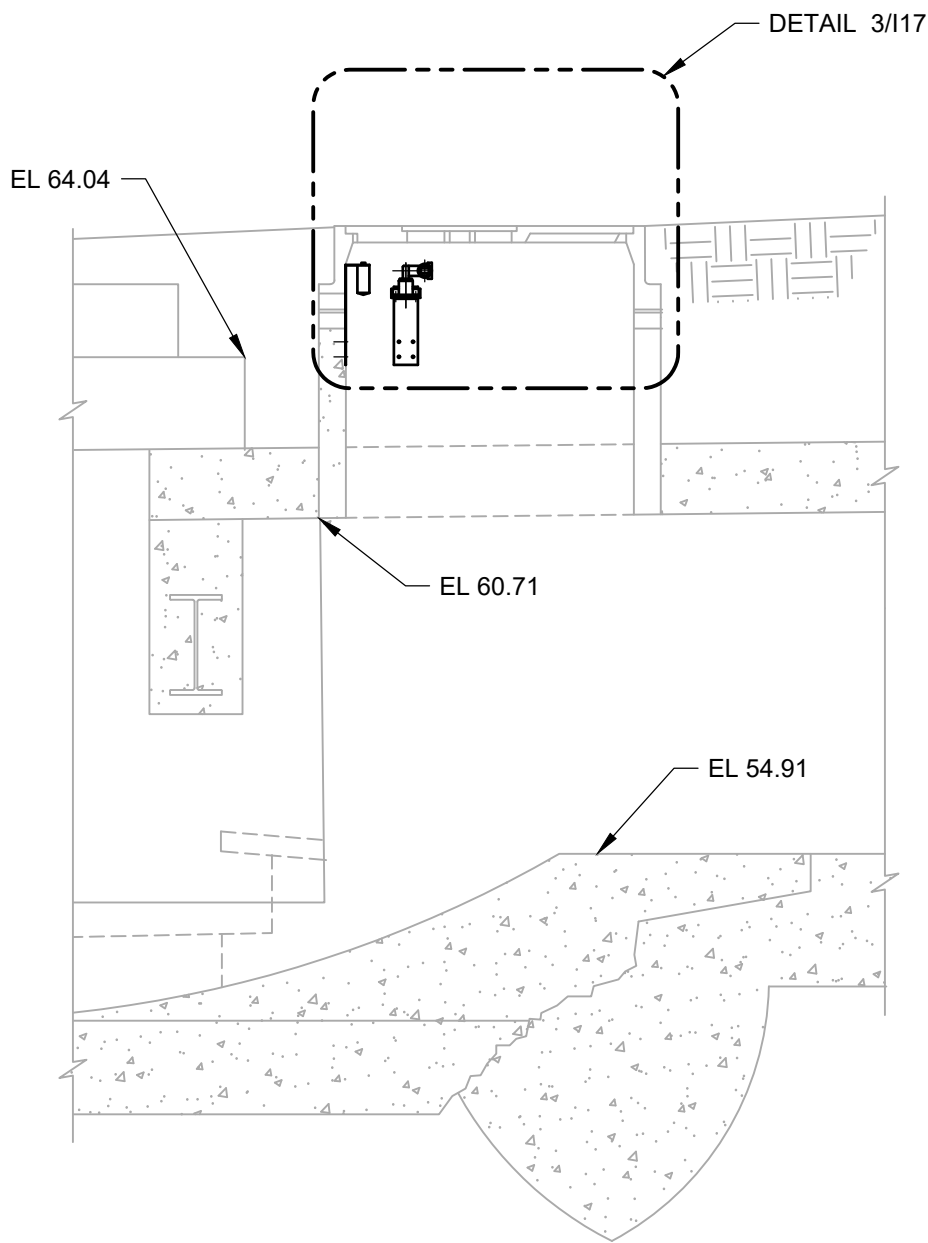
**BAILEY AVE AND AMHERST  
NEW MH-8**  
SCALE 1" = 4'-0"



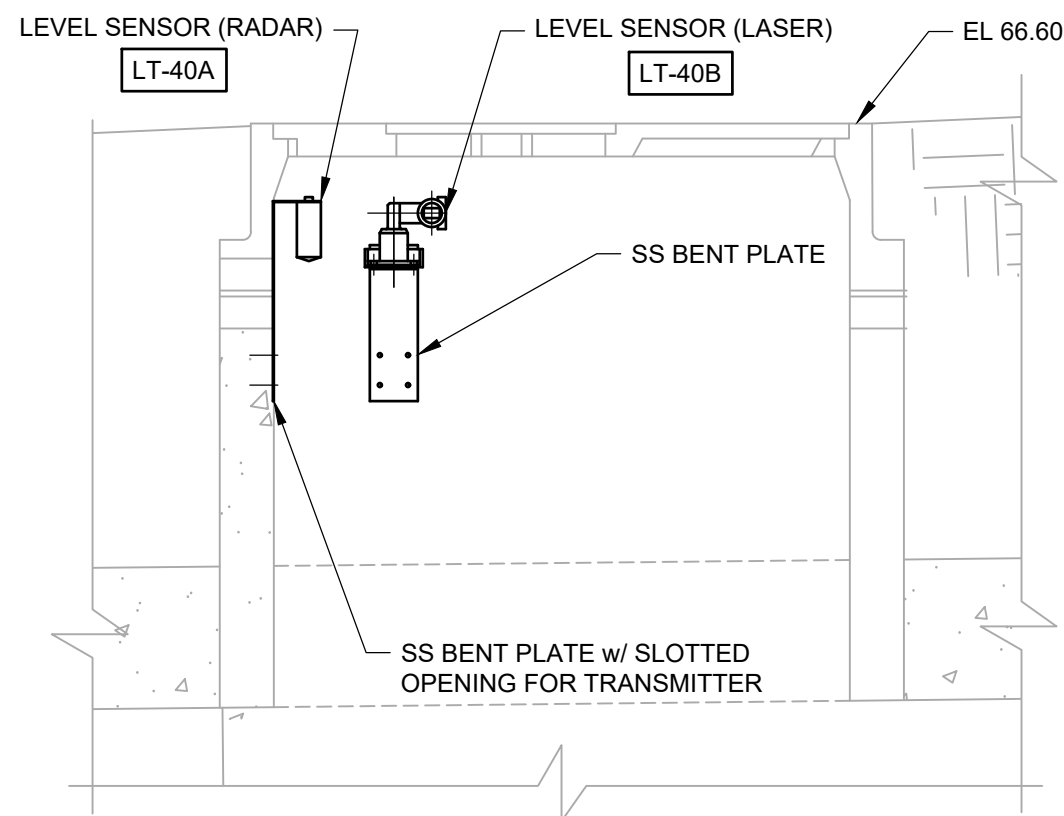
**DETAIL 2/17**  
SCALE 1" = 1'-0"



**BAILEY AVE & KERNS AVE SPP338**  
SCALE 1" = 4'-0"



**SECTION 1/17**  
SCALE 1" = 4'-0"



**SECTION 3/17**  
SCALE 1" = 1'-0"

**NOTES:**

1. MOUNTING HEIGHT TO BE DETERMINED BY SENSOR MFR.
2. EXCEPT WHERE OTHERWISE SHOWN, MOUNT ALL LEVEL AND FLOW SENSORS ABOVE FLOW CENTERLINE.
3. CONTRACTOR TO COORDINATE MOUNTING LOCATION OF ALL LEVEL INSTRUMENTS TO AVOID OBSTRUCTIONS WITH BEAM ANGLE WITHIN THE DESIRED MEASURING RANGE.

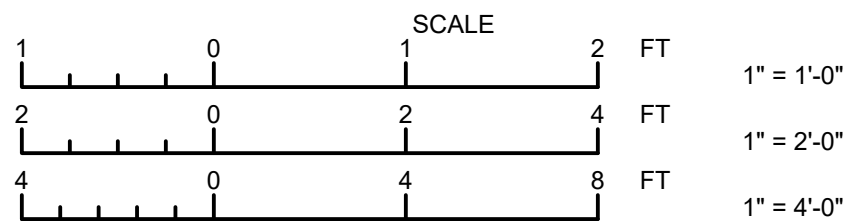
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED XXX  
DRAWN RAM  
CHECKED XXX

APPROVED

NO. DATE APPD REVISION



**SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT**

**INSTRUMENTATION**

**MANHOLE AND INSTRUMENT DETAILS**

BSA CONTRACT NO. 82000041

DWG: **117**

SHEET: 84 OF 85

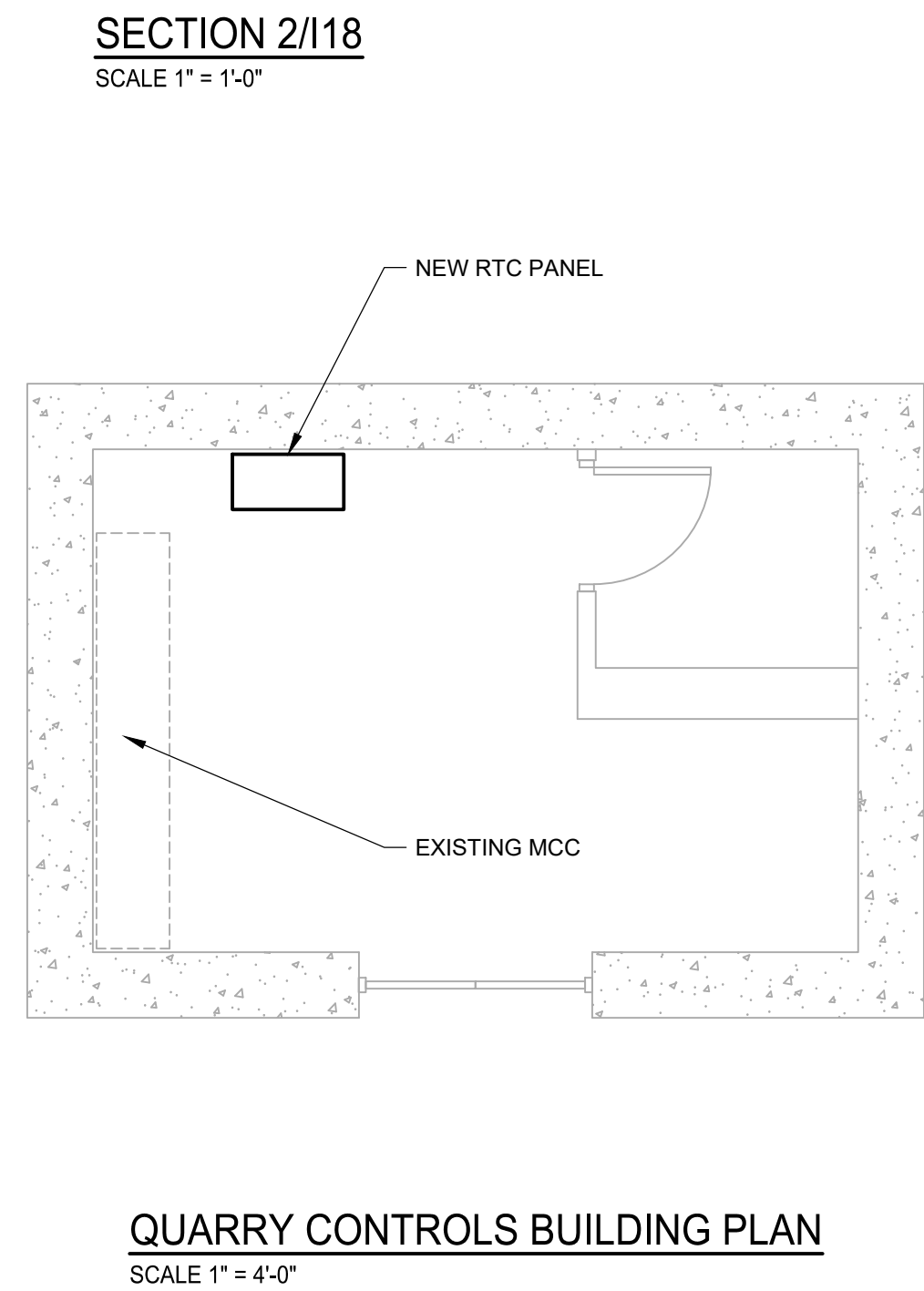
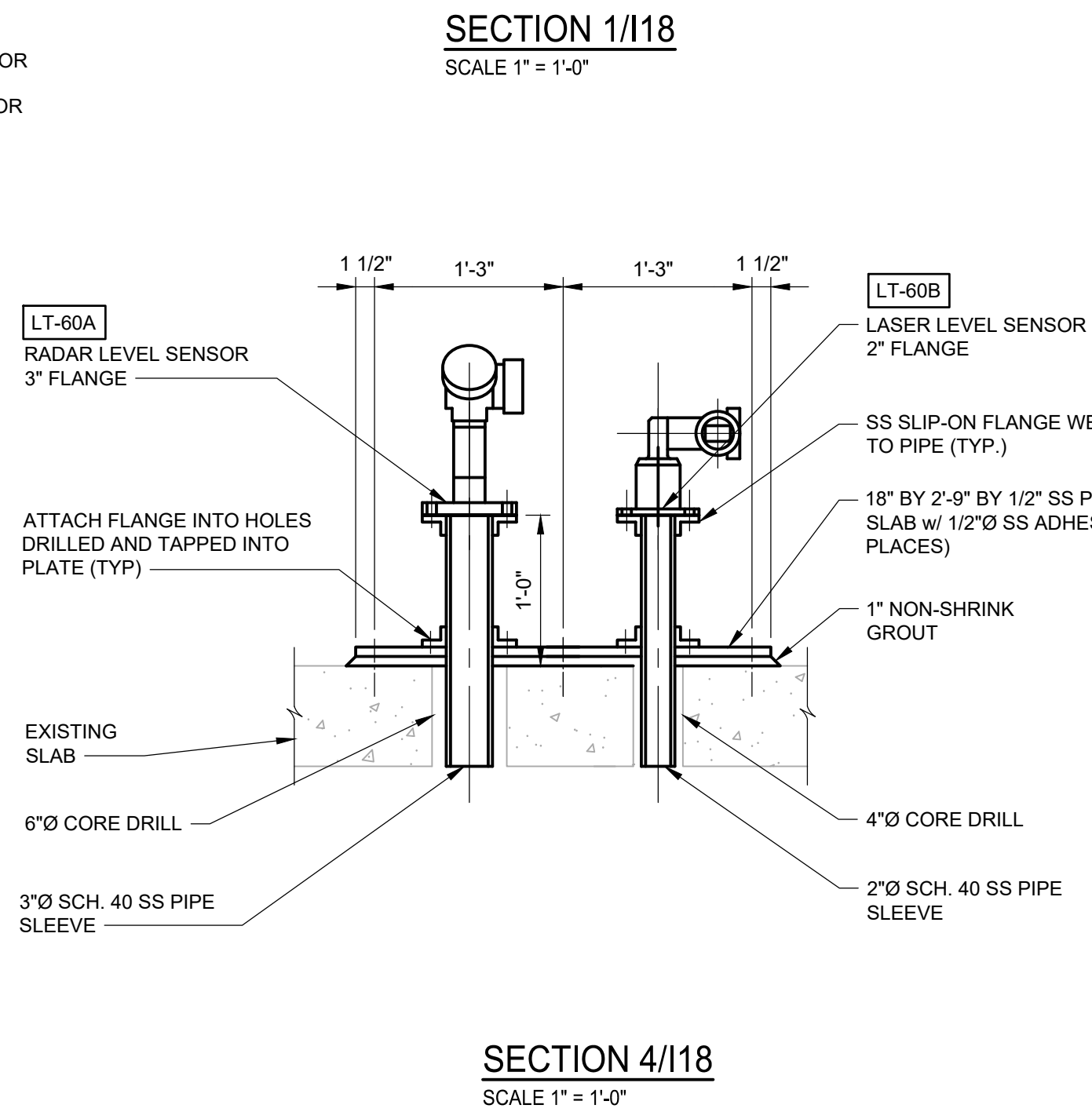
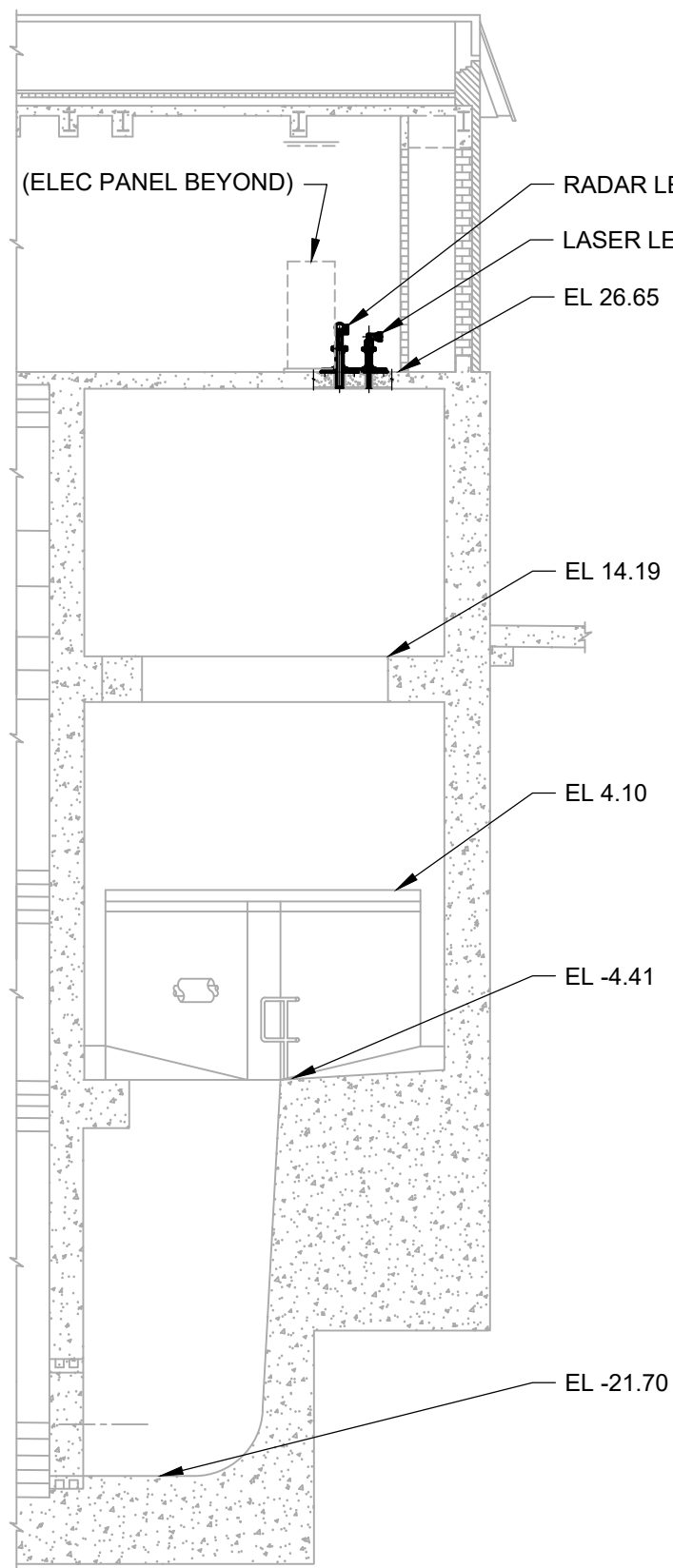
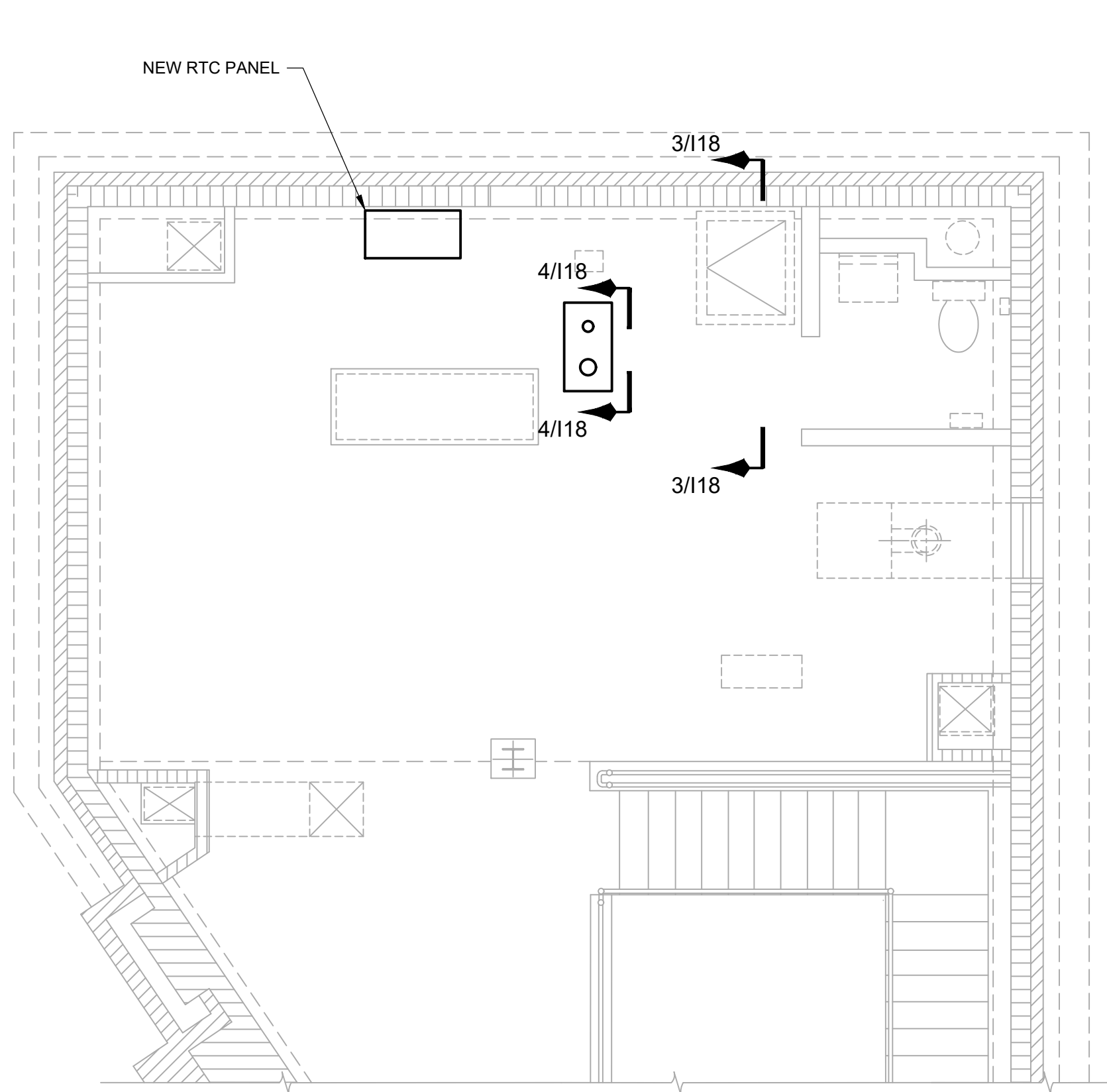
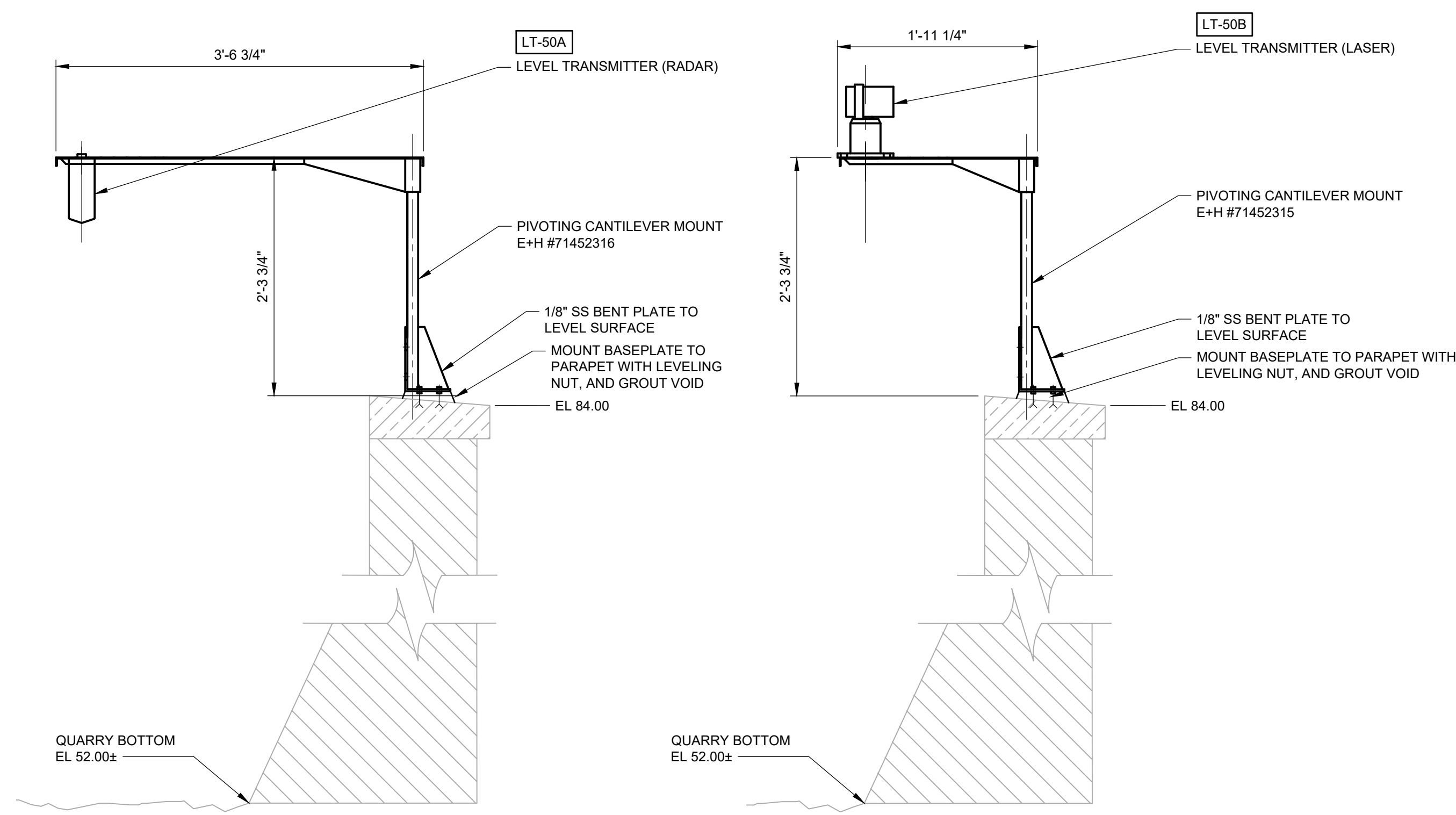
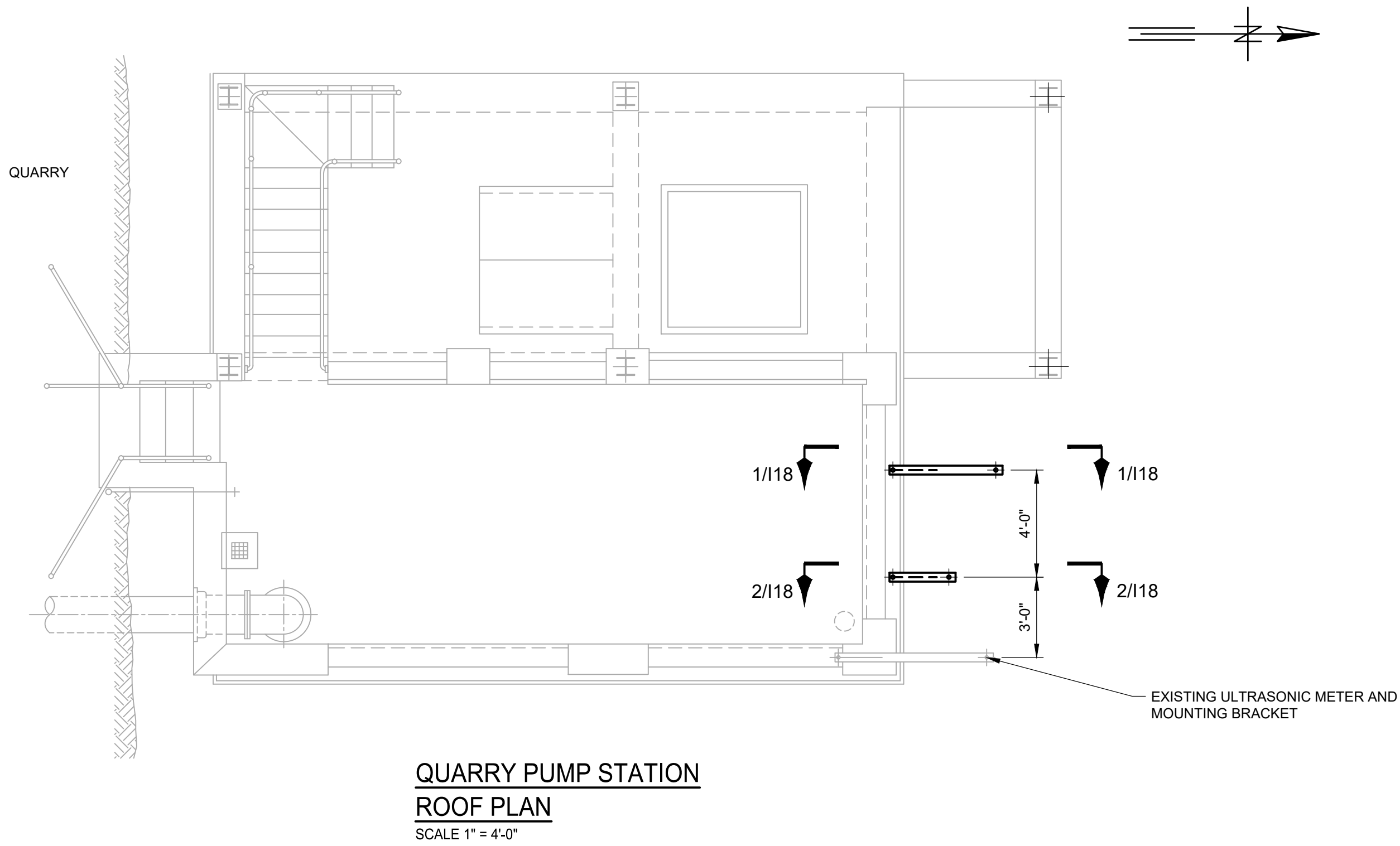
DATE: FEBRUARY 2023 REV: 0

**95% SUBMITTAL**



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\\GH-NEWYORK\PROJECTS\1412\_BUFFALO SEWER AUTHORITY\141221.01 RTC-SMART SEWERS\_BRECKENRIDGE\04-DESIGN\CIVIL\3DCD\14122\_118 MORENO, ROBERTO



- NOTES:
- CONTRACTOR TO COORDINATE MOUNTING LOCATION OF ALL LEVEL INSTRUMENTS TO AVOID OBSTRUCTIONS WITH BEAM ANGLE WITHIN THE DESIRED MEASURING RANGE.

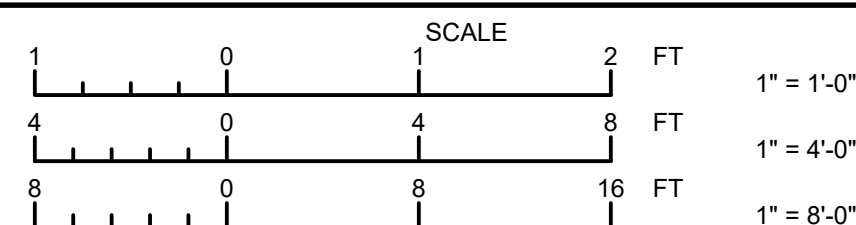
**BUFFALO**  
SEWER AUTHORITY

**GREELEY AND HANSEN**  
111 BROADWAY, SUITE 2101  
NEW YORK, NY 10006

DESIGNED XXX  
DRAWN RAM  
CHECKED XXX

APPROVED

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SCAJAQUADA CREEK AND BLACK ROCK CANAL  
SMART SEWER PROJECT

INSTRUMENTATION

MANHOLE AND INSTRUMENT DETAILS

BSA CONTRACT NO. 82000041

DWG: **118**

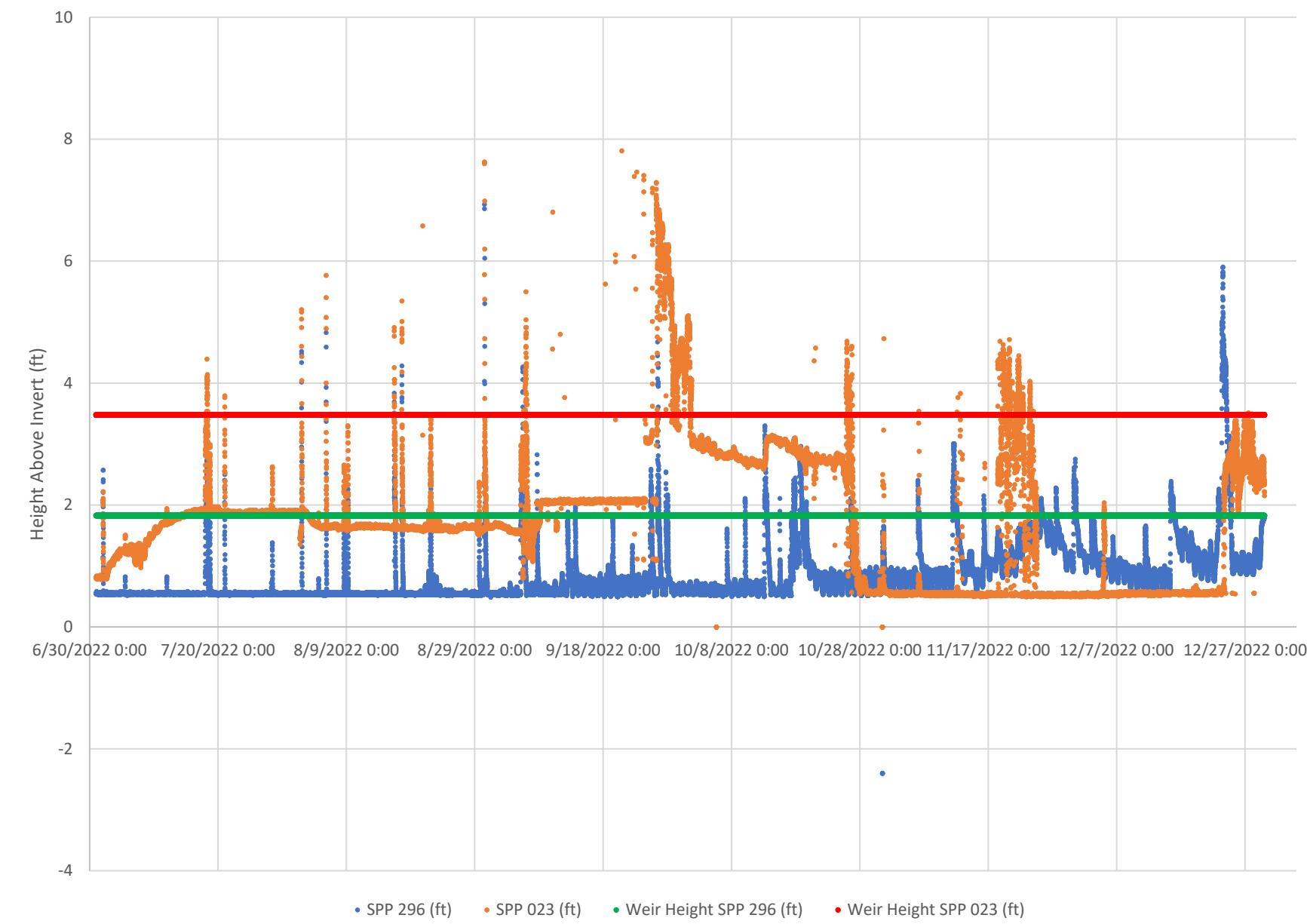
SHEET: 85 OF 85

DATE: FEBRUARY 2023 REV: 0

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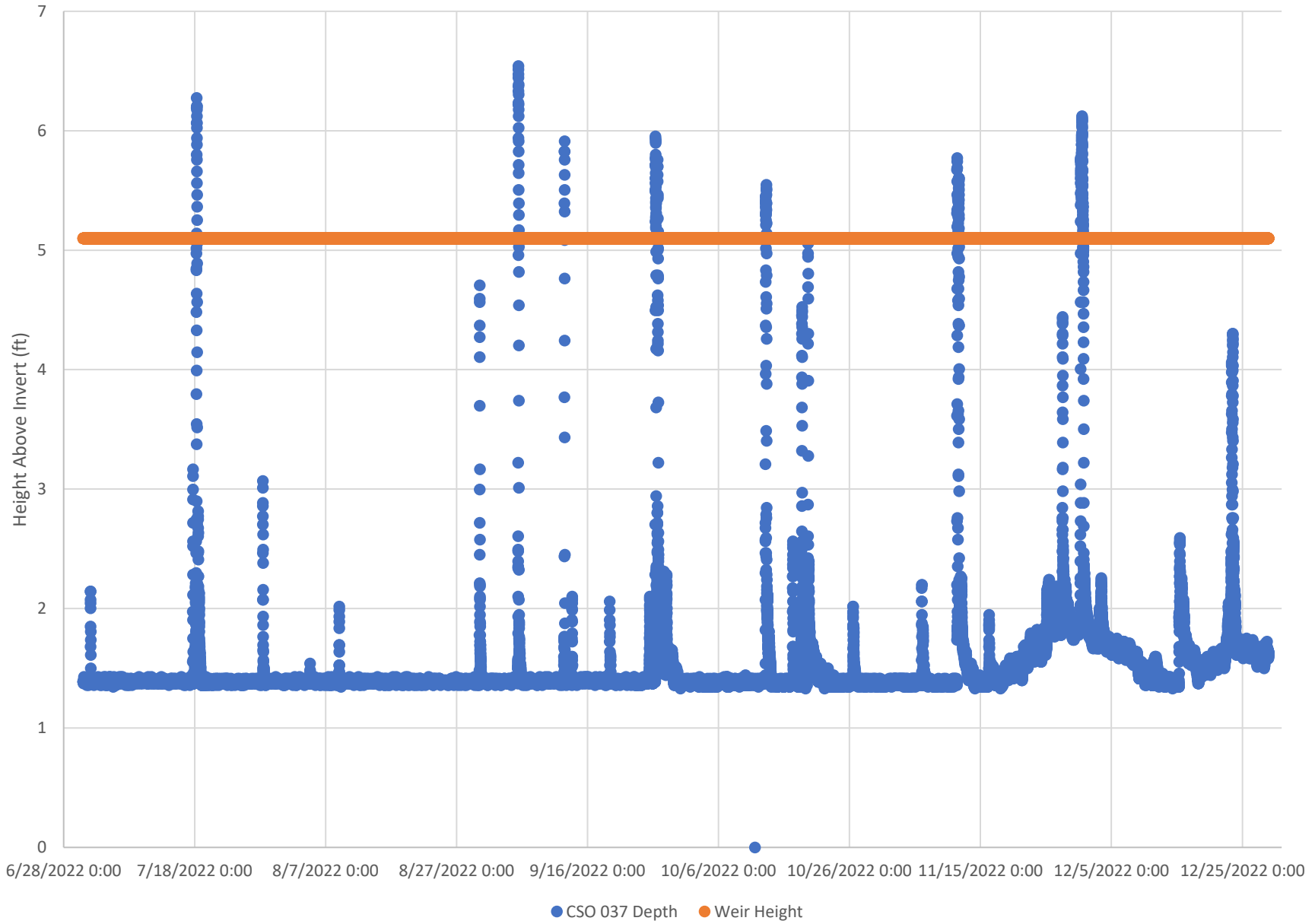


CSO 012 Metering Data 7/1/2022-12/31/2022





CSO 037 Metering Data 7/1/2022-12/31/2022





# SPP 001/CSO 055 METERING DATA 7/1/2022-12/31/2022

