



**TOWN OF NEWBURGH
PLANNING BOARD
TECHNICAL REVIEW COMMENTS**

PROJECT NAME: MATRIX LOGISTICS CENTER AT NEWBURGH
PROJECT NO.: 2020-17
PROJECT LOCATION: RT 300/84/I-87 INTERCHANGE (MULTIPLE LOTS)
REVIEW DATE: 20 OCTOBER 2021
MEETING DATE: 21 OCTOBER 2021
PROJECT REPRESENTATIVE: LANGAN ENGINEERING

The following items are outstanding and may be considered as conditions of approval by the Planning Board:

1. NYS DOT approval for access and utilities within the Route 300 corridor.
2. Health Department approval for watermain extension.
3. Town of Newburgh Water Department approval for potable water and fire flow connections.
4. Private Road Access and Maintenance Agreement including emergency access road.
5. Revised Developers Agreement between applicant and the Town of Newburgh Town Board.
6. Coverage under the NYSDEC Stormwater Permit.
7. 5-Acre Waiver from the Town of Newburgh Town Board.
8. NYS DOT recently suggested the applicant work with the Town of Newburgh to identify the possibility of roadway dedication in the vicinity of Meadow Avenue, Powder Mill Road, NYS Route 52. Resolution of this to the satisfaction of the NYS DOT and Town Board should be required.
9. Sign off from Town Engineer's office and Code and Building Departments regarding the design of fire protection systems.
10. Cross Easements for all utilities and access.
11. Landscaping security and inspection fees.
12. Stormwater securities and inspection fee.
13. Approval of language which will trigger the requirement for land banked parking proposed.

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14. Submission of the updated well monitoring program including complete package of responses to groundwater monitoring of nearby residential properties.
15. Coordination with jurisdictional emergency services for provisions of keys for emergency access gates.
16. Sign off from the Sewer Department for sewer force main connections.
17. Implementation of all previously identified SEQRA findings as applicable to the current plan.
18. It is noted that the NYSDOT identified concerns during a recent conference call regarding the project fair share contribution to the NYS Route 300/Route 52 intersection. Approval should be conditioned on agreement between the Town, NYSDOT, and the applicant regarding the fair share contribution as approved by the Town Board.
19. Private road security should be required for the subdivision portion of the project.
20. Complete set of fire protection/water storage/fire pump design drawings must be submitted and approved by Town of Newburgh representatives.
21. Status of the Orange County Planning Department review should be addressed.
22. A Stormwater Facilities Maintenance Agreement for each of the proposed lots must be executed and approved by the Town Board.
23. Standard Town of Newburgh water and sewer notes should be added to the plans. Sheet C-S002 contains some of the standard notes, however, water and sewer notes should be consistent with Town of Newburgh standard notes required.
24. All permits for any rock crushing processing equipment on the site must be obtained with copies provided to the Town of Newburgh's Code Enforcement Office.

The following technical comments must be addressed:

25. Modification to water plans to remove thrust blocks schedule detail. Thrust blocks are not permitted, restrained joint pipe chart must be added to watermain plans.
26. The applicant's representative is requested to provide an analysis of the drainage system under South Plank Road conveying water from the stormwater management facilities across the emergency access drive and NYS Route 52.

27. Bus drop-off/access point requested by Orange County Planning Department should be identified on the plans.
28. The guardhouse water service line identifies a 1.5" Type K copper water service. It is unclear how this line was sized.
29. All stormwater management facilities which contain standing water shall be fenced in compliance with Town of Newburgh stormwater management regulations.
30. It appears the sound barrier wall has been significantly reduced. Recently approved plans had a significantly longer sections of sound barrier between the residential properties and the project.
31. The sanitary sewer flows from the site are identified at approximately 2,500'-GPD revised City of Newburgh acceptance letter should be addressed regarding the reduction in flow from the previously proposed retail establishments to the current proposal.
32. Final comments from jurisdictional emergency services should be received coordinated through the Code Enforcement Office. Any comments requiring plan changes must be addressed prior to stamping of the plans.
33. Fire protection system plans must identify metering of the fire flow water into the tank.
34. Confirmation from the Water Department/Town Engineer's Department regarding the use of PVC water line should be provided. Current Town of Newburgh requirements identify Class 52 Ductile Iron Pipe.
35. Water system pipe size at Meadow Avenue must be confirmed.

Respectfully submitted,

MHE Engineering, D.P.C.



Patrick J. Hines
Principal
PJH/dns

October 14, 2021

Hand Delivered

John Ewasutyn, Chairman of the Planning Board and
Members of the Planning Board
Town of Newburgh Town Hall
1496 Route 300
Newburgh NY 12550

**Re: Matrix Logistics Center at Newburgh
Route 300, Newburgh, New York
Langan Project No.: 190063301**

Dear Chairman Ewasutyn & Members of Board:

As directed, on behalf of Matrix Companies we are resubmitting the following items in support of our request that the Board consider granting Site Plan Approval (SPA) for this project. The items included in this submission are as follows:

- Fourteen copies of this letter which describes the minor changes made to the Site Plan Approval Drawings;
- Electronic version of the revised drawings which were submitted to your consultants. Hard copies of the drawings were also sent to each of the consultants for delivery on Friday 10/15/21; and
- An electronic version of the plans was submitted to the Planning Board.

The plan changes that were made are very minor in nature and were responsive to comments we received from Pat Hines. These changes included a minor adjustment in the lot line to Lot B to ensure we were compliant with the Town's private road specification and a minor adjustment in the design of the sanitary sewer system to provide individual pump stations and service lines to each of the two buildings.

We respectfully request this application be placed on your 10/21 agenda for the Board to consider granting Site Plan Approval for this project.

Should you have any questions or require any additional information, please do not hesitate to contact this office

Sincerely,

**Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.**



W. Charles Utschig, PE
Associate

CU/mc

Enclosure(s): Site Plan Approval drawings latest revision date 10-14-21

cc:

Gerald Canfield - Zoning Compliance Supervisor
Kenneth Griffin - Matrix Companies
Arthur Bifulco – Matrix Companies
David Everett - Whiteman Osterman & Hanna LLP
Dominic Cordisco - Drake Loeb PLLC
Pat Hines – MHE
Ken Wersted – Creighton Manning

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SANITARY SEWER SYSTEM AND PUMP STATION ENGINEER'S REPORT

for

**Matrix Logistics Center at Newburgh
NYS Route 300
Town Newburgh, NY**

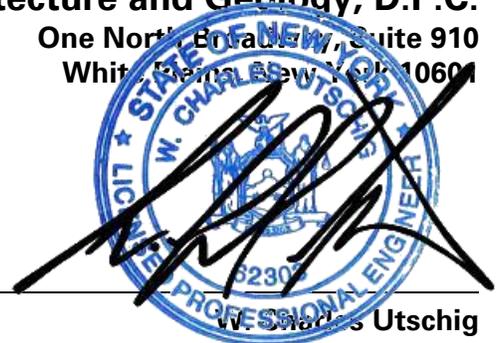
Prepared For:

**Matrix Newburgh Route 300, LLC
Forsgate Drive CN 4000
Cranbury, NJ 08512**

Prepared By:

**Langan Engineering, Environmental, Surveying
Landscape Architecture and Geology, D.P.C.**

One North Broadway, Suite 910
White Plains, New York 10601



**W. Charles Utschig
Professional Engineer License No. 062303**

**September 02, 2021
Revised October 14, 2021**

LANGAN

Project No.: 19063301

Table of Contents

1	Executive Summary.....	1
2	Existing Conditions	1
3	Soils.....	2
4	Sanitary Sewer System.....	2
	4.1 Projected Wastewater Flow Building A.....	2
	4.2 Projected Wastewater Flow Building B.....	3
	4.3 Proposed Collection System	3
	4.4 Sewer Mains.....	4
	4.5 Wastewater Pump Station	5
	4.5.1 General.....	5
	4.5.2 Existing Forcemain	5
	4.5.3 Pumps.....	5
5	System Testing.....	5
6	Conclusion	6

Tables

Table 3-1: USDA Soil Data.....	2
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Figures

- Figure 1: Site Location Map
- Figure 2: Soils Map
- Figure 3: Existing Sanitary Sewer System
- Figure 4: Proposed Sewer System

Appendices

- Appendix A: Existing Force Main Information

1 Executive Summary

The Applicant, Matrix Newburgh Route 300, LLC, is proposing to develop a ±115.6 acre parcel located along NYS Route 300 in the Town of Newburgh, New York. The project, Matrix Logistics Center at Newburgh, is a commercial development that consists of two single-story warehouse facilities – one ±927,000 square foot building located in the middle of the site (Building “A”) and one ±212,200 square foot building located along NYS Route 300 (Building “B”), with associated car and trailer parking spaces. A private access road from NYS Route 300 will provide access to the building. An emergency vehicle access connection from the cul-de-sac of the private road to NYS Route 52 will also be provided. The property is in the Town of Newburgh Sewer District. Wastewater treatment is provided by City of Newburgh – Renwick Street Wastewater Treatment Plant. Each building will have gravity sewer that directs sewage to a pump station. Each lot will have forcemain running from the pump station to Route 300. There will be two proposed hot taps into the existing forcemain in Route 300.

The sanitary sewer portion of the project for Building “A” involves:

- ±2,230 linear feet of 8-inch diameter SDR 35 PVC gravity mains;
- ±1,390 linear feet of 1 ½-inch diameter SDR 21 PVC force main;
- 1 sanitary pump station;
- 2 forcemain cleanout manholes;
- 1 forcemain property line manholes; and
- 9 sanitary manholes.

The sanitary sewer portion of the project for Building “B” involves:

- ±213 linear feet of 8-inch diameter SDR 35 PVC gravity main;
- ±630 linear feet of 1 ¼-inch diameter SDR 21 PVC force main;
- 1 sanitary pump station;
- 1 forcemain cleanout manholes;
- 1 forcemain property line manhole; and
- 1 sanitary manhole.

2 Existing Conditions

The Site is bounded by South Plank Road to the north, Union Avenue (NYS Route 300) to the west, Interstate I-84 to the south, and Quassaic Creek and residential properties to the east. The site is currently undeveloped.

A wetland delineation was conducted in April 2004 by The Chazen Companies. Four wetlands were identified within the total property area and are USACE jurisdictional wetlands. Wetland mitigation was performed and completed under the previously issued Nationwide Permit from the USACE as part of the “The Marketplace at Newburgh” project. In April 2021, the wetland boundaries were redelineated by a wetland scientist from Langan. No wetland disturbance is proposed as part of this project.

There is a 10-inch sanitary sewer force main line along Union Avenue (NYS Route 300).

3 Soils

The United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey for Orange County has been reviewed. The surficial soil conditions are shown in [Figure 2](#) and are summarized in the table below.

Table 3-1: USDA Soil Data

Map Symbol	Description	Depth to Groundwater (ft.)	Depth to Bedrock (in)
BnB	Bath-Nassau channery silt loams, 3 to 8 percent slopes	2 to 4 (Nov. – March)	48 to 60
Ca	Canandaigua silt loam	0 to 0.5 (Nov. – June)	>60
FAC	Farmington silt loam sloping	>6	10 to 20
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	1.5 to 2 (March – May)	>60
MdC	Mardin gravelly sil loam, 8 to 15 percent slopes	1.5 to 2 (March – May)	>60
RKD	Rock outcrop-Arnot complex, 15 to 25 percent slopes	1 to 1.5 (April – May)	10 to 20
RMD	Rock outcrop-Farmington complex, hilly	>6	10 to 20
RSB	Rock outcrop-Nassau complex, undulating	>6	10 to 20

Geotechnical field investigations were performed in December 2005, October 2006, April 2007, September 2007, September 2008, September 2014, and April-May 2015 by Tectonic. A total of 38 test pits and 4 boring tests were performed in December 2005; 21 test pits were performed in October 2006; 10 borings were performed in April 2007; 34 borings and 13 tests pits were performed in September 2008; 2 borings and 4 rock probes were performed in September 2014; and 28 borings, 3 rock probes and 27 test pits were performed in April-May 2015. Bedrock was encountered from a depth of approximately 6 to greater than 14 feet. Groundwater was encountered approximately 3 to greater than 13 feet below existing grade. Refer to the “Geotechnical Evaluation “The Loop” Shopping Center, Newburgh, NY” prepared by Tectonic dated October 1, 2015 for additional information.

4 Sanitary Sewer System

4.1 Projected Wastewater Flow Building A

Building “A” is anticipated to have 798 employees per shift at full capacity and there will be two shifts.

The New York State Department of Environmental Conservation’s (NYSDEC) *New York State Design Standards for Intermediate Sized Wastewater Treatment Systems*, 2014 per-unit hydraulic loading rates in Table B-3 starting on page B-16, were used to estimate the project water demand and wastewater flow from the Project. Given the Facility is new construction, water saving plumbing fixtures will be used. The per-unit hydraulic loading rate is 15 gpd/employee/shift, or 12 gpd/employee/shift with water saving plumbing fixtures.

The projected wastewater generation (or average daily flow) for Building "A" is:

$798 \text{ employees/shift} \times 2 \text{ shifts} \times 12 \text{ gpd/employee} = 19,152 \text{ gpd}$ (**13.3 gpm**).

Ten States Standards for Wastewater indicates that a peaking factor of 2 should be used to determine the peak hourly flow. Therefore, the peak hourly flow rate based on a 24-hour day is:

$\text{Peak Hourly Flow} = 19,152 \text{ gpd} \div 24 \text{ hr/day} \div 60 \text{ min/hr} = 13.3 \text{ gpm} \times 2.0 =$ **26.6 gpm**.

Ten States Standards for Wastewater indicates that a peaking factor of 4 should be used to determine the maximum daily flow. Therefore, the maximum daily flow rate based on a 24-hour day is:

$\text{Maximum Daily Flow} = 19,152 \text{ gpd} \div 24 \text{ hr/day} \div 60 \text{ min/hr} = 13.3 \text{ gpm} \times 4.0 =$ **53.2 gpm**.

4.2 Projected Wastewater Flow Building B

Building "B" is anticipated to have 208 employees per shift at full capacity and there will be two shifts.

The New York State Department of Environmental Conservation's (NYSDEC) *New York State Design Standards for Intermediate Sized Wastewater Treatment Systems, 2014* per-unit hydraulic loading rates in Table B-3 starting on page B-16, were used to estimate the project water demand and wastewater flow from the Project. Given the Facility is new construction, water saving plumbing fixtures will be used. The per-unit hydraulic loading rate is 15 gpd/employee/shift, or 12 gpd/employee/shift with water saving plumbing fixtures.

The projected wastewater generation (or average daily flow) for Building "B" is:

$208 \text{ employees/shift} \times 2 \text{ shifts} \times 12 \text{ gpd/employee} = 4,992 \text{ gpd}$ (**3.47 gpm**).

Ten States Standards for Wastewater indicates that a peaking factor of 2 should be used to determine the peak hourly flow. Therefore, the peak hourly flow rate based on a 24-hour day is:

$\text{Peak Hourly Flow} = 4,992 \text{ gpd} \div 24 \text{ hr/day} \div 60 \text{ min/hr} = 3.47 \text{ gpm} \times 2.0 =$ **6.9 gpm**.

Ten States Standards for Wastewater indicates that a peaking factor of 4 should be used to determine the maximum daily flow. Therefore, the maximum daily flow rate based on a 24-hour day is:

$\text{Maximum Daily Flow} = 4,992 \text{ gpd} \div 24 \text{ hr/day} \div 60 \text{ min/hr} = 3.47 \text{ gpm} \times 4.0 =$ **13.9 gpm**.

4.3 Proposed Collection System

The sanitary sewer system for Building "A" and Building "B" will be designed separately. Each system is designed to collect the wastewater generated from the proposed buildings and convey it by gravity to onsite pump stations. Forcemain from the onsite pump stations will connect into

the existing force main located on Route 300 using a hot tap. There will be two separate hot tap made; one for each building.

The sanitary sewer system will be designed in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) and the *Ten States Recommended Standards for Wastewater Facilities*, latest edition. Where the proposed sanitary sewer line or force main will be parallel to the water main, minimum horizontal separation distance of 10 feet (wall-to-wall) will be maintained. Where the proposed sanitary sewer line or force main crosses the water line, a minimum vertical separation distance of 18-inches (wall-to-wall) will be maintained.

The sanitary manholes will be precast concrete and have a minimum inside diameter of 48-inches. Sanitary manholes will be provided at all changes of direction, both vertical and horizontal, at the terminus of all lines, and spaced not more than 400 feet apart. The sanitary manholes will be waterproofed on the exterior surface with two layers of bituminous paint.

4.4 Sewer Mains

The proposed sanitary sewer main for Building "A" has been analyzed to ensure that proper pipe capacity has been provided. The flattest proposed pipe was analyzed. This pipe condition is considered the "worst case scenario". All other proposed collection piping provide steeper sloped pipes.

The flattest pipe section is located between sanitary manhole SMH-A9 and the pump station. The pipe is 8-inches and sloped at 0.5%. The design flow is 19,152 gpd. The average design flow for a 24-hour day is:

$$\text{Average Design Flow for a 24-hour day} = 19,152 \text{ gpd} / (24 \text{ hr} \times 60 \text{ min/hr}) = 13.3 \text{ gpm}.$$

Using a factor of 4, the maximum daily design flow is:

$$\text{Maximum Daily Design Flow} = 13.3 \text{ gpm} \times 4 = 53.2 \text{ gpm (0.12 cfs)}.$$

Using the Manning's equation, the design capacity of the 8-inch pipe sloped at 0.5% flowing full is:

$$Q_{\text{full}} = (1.49/0.009) \times 0.35 \text{ sf} \times (0.17)^{2/3} \times (0.005)^{1/2} = 1.26 \text{ cfs}.$$

As can be seen, the peak design flow is approximately 10 percent ($0.12 \text{ cfs} \div 1.26 \text{ cfs} \times 100\%$) of the capacity of the proposed pipe. Given that this is the flattest pipe, all of the other proposed 8-inch gravity lines will be capable of transporting the anticipated peak hourly wastewater flow. Since Building "A" flows are significantly higher than Building "B" flows; and the pipe slopes at Building "B" are also a minimum of 0.5%, 8-inch gravity lines will be sufficient for the Building "B" system.

4.5 Wastewater Pump Station

4.5.1 General

Sanitary sewer flows from each warehouse facility will be directed to an onsite wastewater pump station. The wastewater pump stations are located to allow for safe means of access under all weather conditions. Each wastewater pump station will serve a single lot and they will be privately owned.

The proposed wastewater pump station will be a duplex submersible sewage grinder non-clog pump system. The pumping system will be provided for installation in a concrete wet well. The pumping system will be equipped with alternating controls. The wet well will be waterproofed on the exterior surface with two layers of bituminous paint.

4.5.2 Existing Forcemain

The proposed pump station will be designed so that it can overcome the existing force main pressure located in Route 300. Drawings for the Meadow Hill South Parallel Relief Sewer, last revised April 28, 2020, were reviewed to determine the existing force main pressure.

The differential in grade between the existing building connection (elev. 423 feet) and the lowest point of the sewer main (elev. 346 feet) is 77 feet. This equates to a pressure drop of:

$$\text{Pressure drop} = 77 \text{ ft} \times 62.4 \text{ lb/ft}^3 / 144 \text{ in}^2/\text{sf} = \mathbf{33.4 \text{ psi.}}$$

The proposed pump station onsite is designed to overcome the pressure in the existing system. Detailed design calculations have been provided in [Appendix B](#).

4.5.3 Pumps

Duplex submersible grinder pumps have been designed to convey sewage from the facility to the existing force main system. Building "A" pumps will be housed in a 8-foot diameter wet well with an internal depth of 17'-10". Building "B" pumps will be housed in a 5-foot diameter wet well with an internal depth of 14'-0". The submersible pumps will be controlled via a liquid level probe in the wet well that turns the pumps on or off depending on the sewage level within the wet well. The pump controller will also alternate the lead/lag designation of the pumps. Detailed design calculations have been provided in [Appendix B](#).

5 System Testing

Prior to being placed into service, the sanitary sewer system shall be tested in accordance with the testing procedures outlined on the project plans. A certification letter shall be provided to the Town and the Orange County Department of Health once testing has been completed. Perform the tests as follows:

- Gravity Line:
 - Low pressure test in accordance with ASTM F1417, latest revision and *Ten States Standards for Wastewater*.
 - Deflection test in accordance with *Ten States Standards for Wastewater*.
- Force Main: hydrostatically pressure test in accordance with AWWA C600, latest revision.
- Manholes: negative air pressure (vacuum) test in accordance with ASTM C1244, latest revision or hydrostatically pressure tested in accordance with *Ten States Standards for Wastewater*.
- Wet Well: hydrostatically pressure test in accordance with *Ten States Standards for Wastewater*.

Leaks and losses in test pressure constitute defects that must be repaired. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

Deflections greater than allowances specified constitute defect that must be repair. Replace piping using new materials, and repeat test until deflection is within allowances specified.

6 Conclusion

According to the foregoing, the pump station has been sized to adequately convey the wastewater flow from the facility into the Town of Newburgh force main.

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Matrix Logistics Center at Newburgh
NYS Route 300
Town Newburgh, NY

Figures

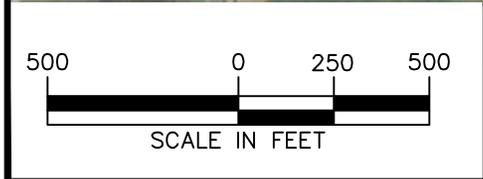
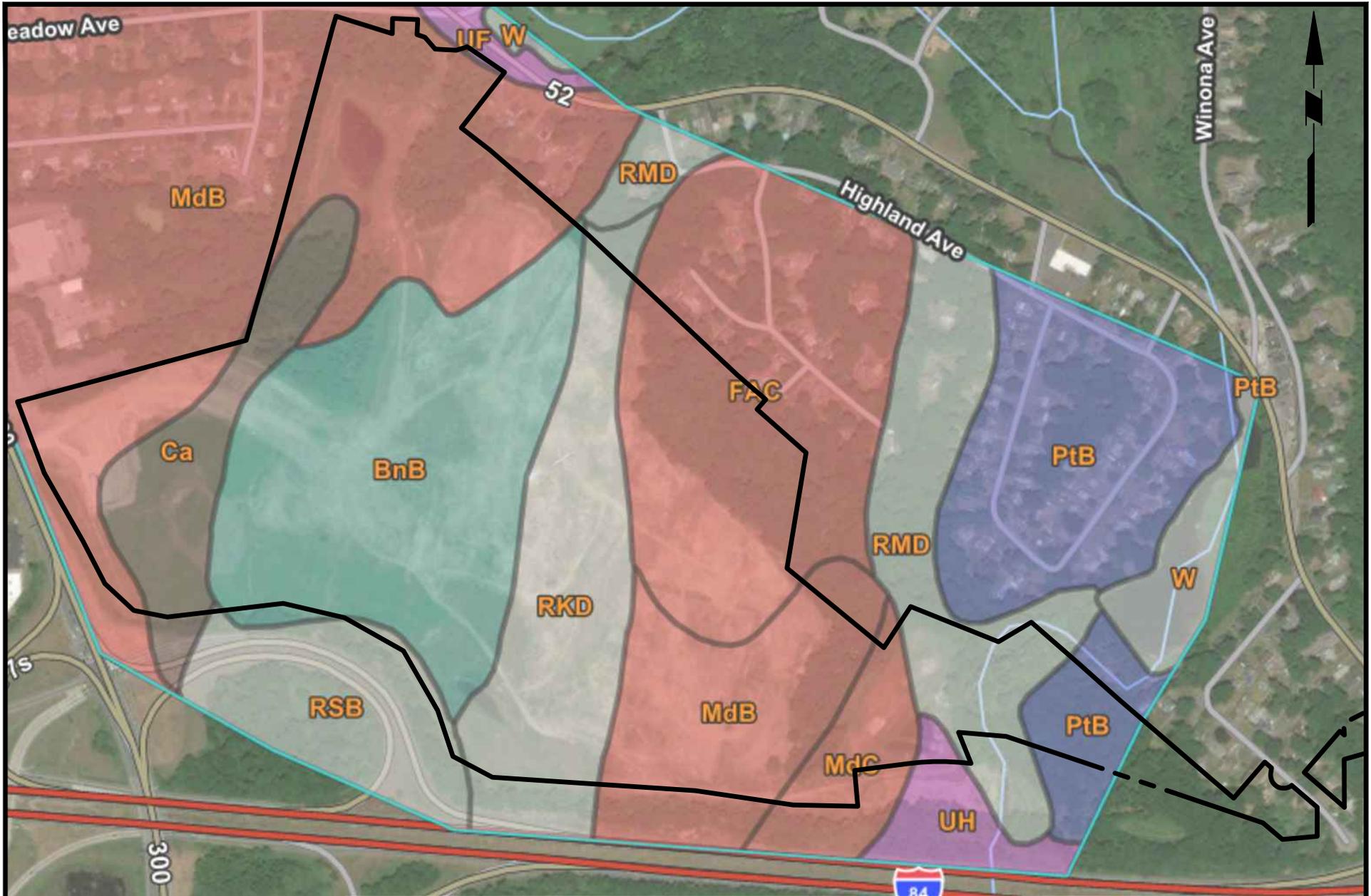


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<p>1 North Broadway Suite 910 White Plains, NY 10601 T: 914.323.7400 F: 914.323.7401 www.langan.com</p> <p>Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International Collectively known as Langan</p>	<p>Project</p> <p>MATRIX LOGISTICS CENTER AT NEWBURGH</p> <p>TOWN OF NEWBURGH</p> <p>ORANGE COUNTY NEW YORK</p>	<p>Drawing Title</p> <p>SITE LOCATION MAP</p>	<p>Project No. 190063301</p> <p>Date 3/30/2021</p> <p>Scale 1:1,000</p> <p>Drawn By Site Analyzer</p> <p>Submission Date 04/09/2021</p>	<p>Figure</p> <p>1</p> <p>Sheet 1 of 1</p>
	<p>© 2021 Langan</p>			

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Spatial Reference: NAD 1983 StatePlane New York East FIPS 3101 Feet

Warning: It is a violation of the NYS Education Law Article 145 for any person, unless acting under the direction of a licensed professional engineer, land surveyor or geologist, to alter this item in any way.



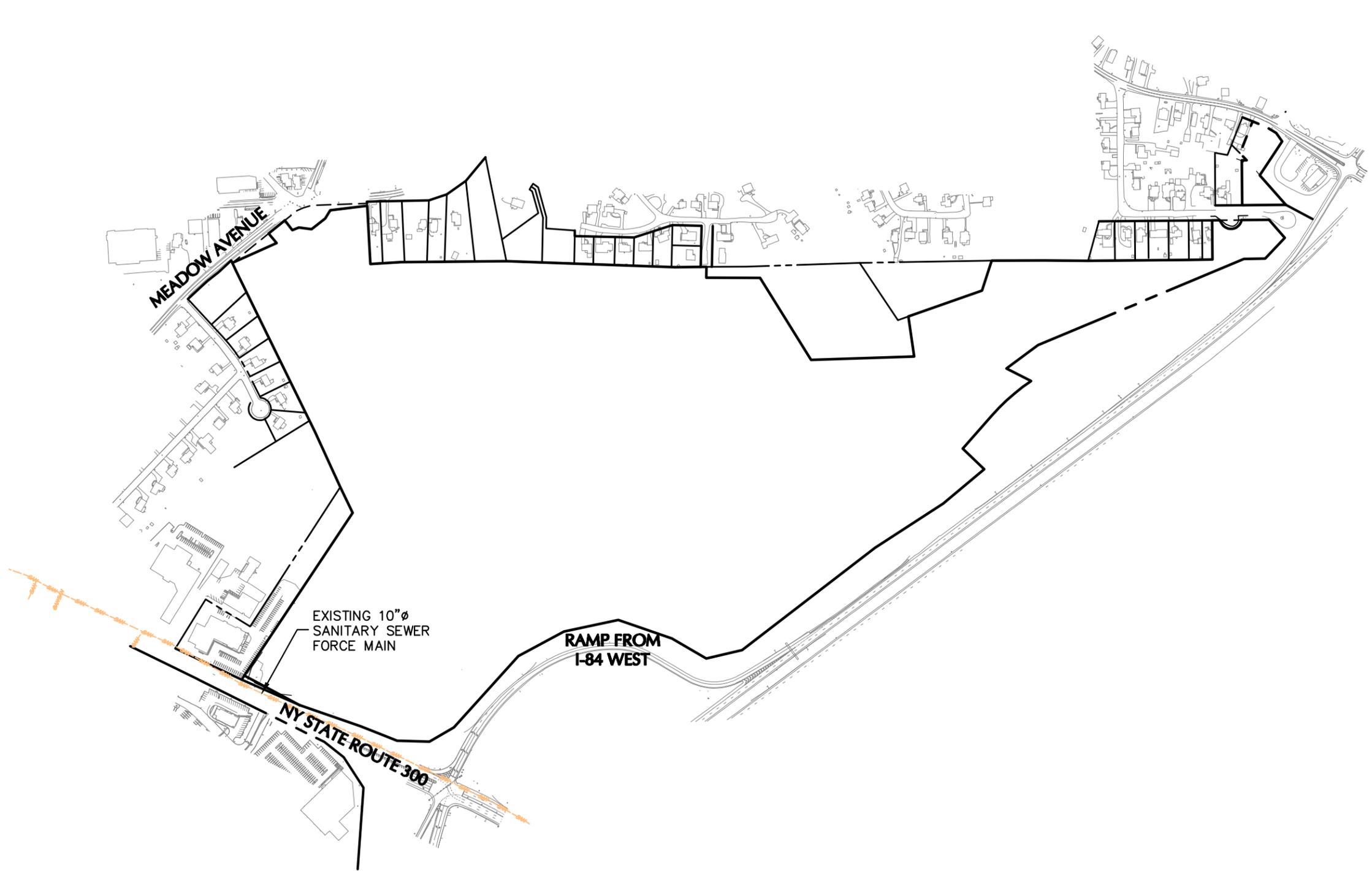
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Project
**MATRIX LOGISTICS
 CENTER AT NEWBURGH**
 TOWN OF NEWBURGH
 ORANGE COUNTY NEW YORK

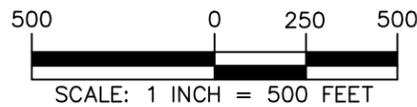
Drawing Title
SOILS MAP

Project No.
 190063301
 Date
 APRIL 9, 2021
 Drawn By
 CZ
 Checked By
 MF

Drawing No.
FG02
 Sheet 1 of 1



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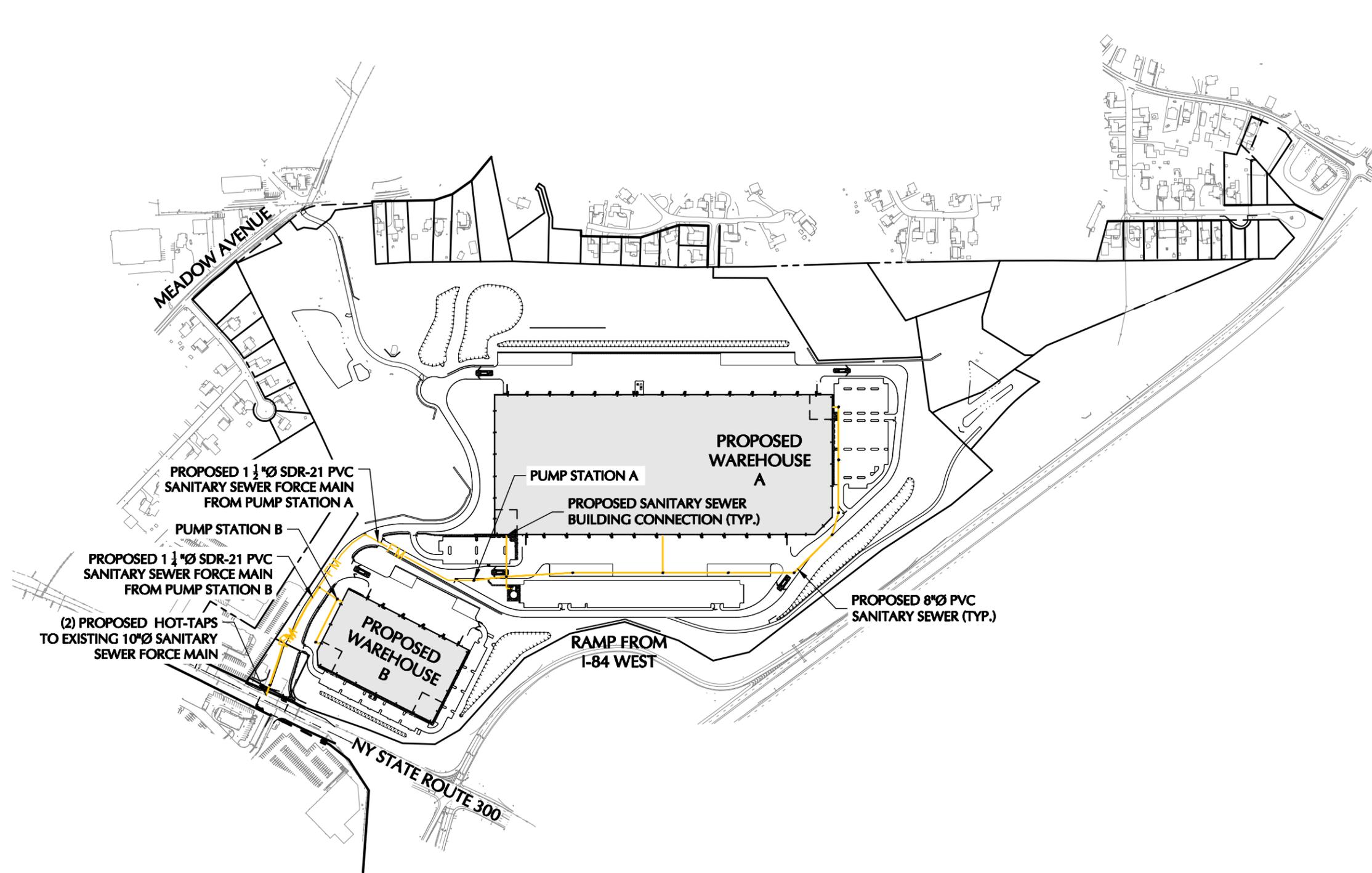
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Project
**MATRIX LOGISTICS
 CENTER AT NEWBURGH**
 TOWN OF NEWBURGH
 ORANGE COUNTY NEW YORK

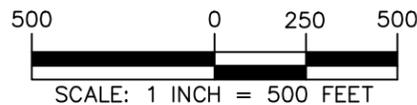
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**EXISTING SEWER
 SYSTEM**

Project No.
 190063301
 Date
 09/02/2021
 Drawn By
 AW/MC
 Checked By
 CZ/MF

Drawing No.
FG03
 Sheet 1 of 1



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Project
**MATRIX LOGISTICS
 CENTER AT NEWBURGH**
 TOWN OF NEWBURGH
 ORANGE COUNTY NEW YORK

Drawing Title
**PROPOSED SEWER
 SYSTEM**

Project No.
 190063301
 Date
 09/02/2021
 Drawn By
 AW/MC
 Checked By
 CZ/MF

Drawing No.
FG04
 Sheet 1 of 1

Matrix Logistics Center at Newburgh
NYS Route 300
Town Newburgh, NY

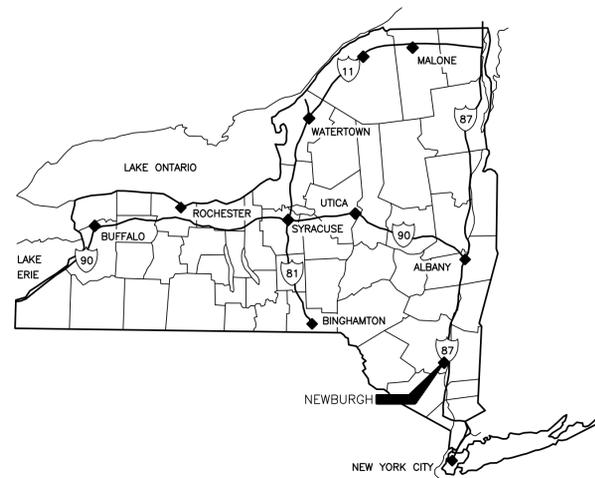
Appendix A: Existing Force Main Information

TOWN OF NEWBURGH, NEW YORK

MEADOW HILL SOUTH PARALLEL

RELIEF SEWER

GHD PROJECT No. 86-16478



TOWN LOCATION MAP
NOT TO SCALE

DRAWING LIST

DRG No.	DRAWING TITLE
86-16478-G00	COVER
86-16478-G01	GENERAL NOTES, ABBREVIATIONS AND SEDIMENT AND EROSION CONTROL DETAILS
86-16478-C01	PLAN AND PROFILE
86-16478-C02	PLAN AND PROFILE
86-16478-C03	MISCELLANEOUS DETAILS
86-16478-C04	MISCELLANEOUS DETAILS
86-16478-C05	NYS DOT TRAFFIC CONTROL NOTES
86-16478-C06	NYS DOT MISCELLANEOUS DETAILS

TOWN SUPERVISOR

GIL PIAQUADIO

TOWN BOARD

SCOTT MANLEY
ELIZABETH GREENE
JAMES PRESUITTI
PAUL RUGGIERO

TOWN ATTORNEY

MARK TAYLOR

TOWN ENGINEER

JAMES W. OSBORNE, P.E.



PROJECT LOCATION

PROJECT LOCATION PLAN
NOT TO SCALE

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
C		FOR CONSTRUCTION	JAD	JHD	KC	04/20
B		REVISED FOR REGULATORY APPROVAL	JAD	JHD	KC	01/20
A		FOR REGULATORY APPROVAL	TJD	JHD	KC	04/14

UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM ON THIS DRAWING IN ANY WAY. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



Drawn	TJD	Designer	TJD
Drafting Check	JHD	Design Check	JHD
Approved (Project Director)	K. CASTRO		
Date	JUNE 7, 2019		
Scale	AS SHOWN		

Client	TOWN OF NEWBURGH, NEW YORK		
Project	MEADOW HILL SOUTH PARALLEL RELIEF SEWER COVER		
Title	CONTRACT No.1		
Arch D	Drawing No:	86-16478-G00	
Rev:	B		

GENERAL NOTES:

- SEWER PLAN AND PROFILES BASED ON FIELD SURVEY PERFORMED BY D.W. HANNIG L.S., P.C. ON JANUARY 24, 2014 AND FIELD SURVEY PERFORMED BY GREVAS & HILDRETH, P.C. OF NEWBURGH, NY ON JUNE 24, 2004. ELEVATIONS SHOWN ARE BASED ON NAVD 1983. HORIZONTAL DATUM NAD 83 NEW YORK STATE PLANE EAST ZONE.
- AERIAL PHOTOGRAPHY SHOWN AS BACKGROUND IS DATED FROM 2007 AND IS FOR REFERENCE ONLY. CONTRACTOR SHALL NOT RELY ON OR INTERPRET ANY INFORMATION SHOWN FROM AERIAL PHOTOGRAPHY FOR ANY PURPOSE INCLUDING COMPLETION OF WORK OR BIDDING.
- DISTANCES SHOWN ON PROFILE ARE HORIZONTAL DISTANCES.
- NEW YORK STATE CODE RULE 753 OF NEW YORK STATE LAW REQUIRES EXCAVATION CONTRACTORS TO CALL DIG SAFELY NEW YORK (1-800-962-7962 or 811) TWO FULL WORKING DAYS PRIOR TO STARTING WORK, NOT COUNTING THE DAY OF CALL, WEEKENDS OR HOLIDAYS.
- THE INTENT OF THIS PROJECT IS TO INSTALL A NEW 8-INCH PRESSURE SEWER, PARALLEL TO AN EXISTING 6-INCH PRESSURE SEWER. THE LOCATION OF THE EXISTING 6-INCH PRESSURE SEWER SHOWN IS APPROXIMATE IN BETWEEN THE EXISTING SANITARY MANHOLES AND CLEANOUTS SHOWN ALONG THE SEWER. CONTRACTOR IS REQUIRED TO MAINTAIN MINIMUM OFFSET AND SEPARATION DISTANCES SHOWN FROM THE EXISTING SEWER.
- CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE LOCATION OF EXISTING UTILITIES IN ADVANCE OF HIS WORK. CONTRACTOR IS REQUIRED TO PERFORM EXPLORATORY EXCAVATIONS TO LOCATE EXISTING PARALLEL SEWER IN ORDER TO MAINTAIN MINIMUM OFFSET AND SEPARATION SHOWN ON DRAWINGS. CONTRACTOR WILL NOT BE ENTITLED TO ADDITIONAL PAYMENT FOR EXPLORATORY EXCAVATIONS AND SHALL INCLUDE COST FOR EXPLORATORY EXCAVATIONS, BACKFILL, AND COMPACTION IN APPLICABLE BID ITEMS AS OUTLINED IN THE SPECIFICATIONS.
- ALL DEPTHS OF EXISTING UTILITIES SHOWN IN PROFILES ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING DEPTHS PRIOR TO SEWER PIPE AND CASING PIPE INSTALLATION AND DIRECTIONAL DRILLING WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL APPLICABLE STATE AND FEDERAL SAFETY CONDITIONS FOR EXCAVATIONS AND ALONG TRENCH.
- CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION SIDE SLOPES. REFER TO SPECIFICATIONS FOR SHORING AND/OR A TRENCH SHIELD REQUIREMENTS.
- CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR DESIGN OF THE TEMPORARY EXCAVATION SUPPORT SYSTEMS OF PITS, ANY EXCAVATIONS AND TRENCHES ASSOCIATED WITH THE WORK UNDER THIS CONTRACT.
- ALL EXISTING ITEMS DISTURBED OR DAMAGED BY THE CONTRACTOR AND HIS OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR OFF-SITE STORAGE OF MATERIALS OR OCCUPANCY OF AREAS BEYOND EASEMENTS AND WORK LIMITS SHOWN.
- ALL SEWERS, INCLUDING HDPE CASING AND CARRIER PIPES, INSTALLED UNDER THIS CONTRACT SHALL BE TESTED AT THE CONCLUSION OF THE CONTRACT IN ACCORDANCE WITH SECTION 02741. LEAKAGE TESTING OF NEW SEWER SHALL BE PERFORMED AFTER PIPELINE IS BACKFILLED AND COMPACTED. HDPE CASING PIPES SHALL BE TESTED AFTER INSTALLATION (PRIOR TO INSTALLATION OF CARRIER PIPE) AND INNER FUSION WELD BEADS HAVE BEEN REMOVED.
- CONTRACTOR SHALL BE REQUIRED TO BACKFILL THE TRENCH EACH NIGHT AT THE CONCLUSION OF THE DAYS CONSTRUCTION WORK, AND RE-EXCAVATE THE SEWER PIPE AT THE START OF EACH DAY, IN ACCORDANCE WITH THE TOWN OF NEWBURGH SPECIAL CONDITIONS AND SPECIFICATIONS. NO STREET PLATING SHALL BE ALLOWED OUTSIDE OF NORMAL WORKING HOURS.
- CONTRACTOR IS RESPONSIBLE FOR KEEPING PAVED ROADWAYS CLEAN AT ALL TIMES, REFER TO SPECIFICATIONS.
- PIPE TRENCHING AND FOUNDATION: THE CONTRACTOR SHALL EXCAVATE TO REQUIRED DEPTH AND WIDTH NECESSARY TO CONSTRUCT PIPE FOUNDATION. REFER TO SPECIFICATIONS AND TRENCH SECTIONS SHOWN ON THE DETAIL SHEETS. BOTTOM OF TRENCH SHALL BE FIRM, DRY, AND UNDISTURBED AND INSPECTED BY OWNERS REPRESENTATIVE PRIOR TO PLACING ANY BEDDING MATERIALS.

LEGEND

	EXISTING STORM MANHOLE
	EXISTING SANITARY SEWER MANHOLE
	BORING
	UTILITY POLE
	SIGN
	WOODED AREA BOUNDARY
	WATER VALVE
	STATION LABEL
	EASEMENT
	EXISTING GAS MAIN
	EXISTING OVERHEAD WIRES
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING TELECOM
	EXISTING WATER MAIN
	PROPERTY LINE / RIGHT OF WAY
	PROPOSED SANITARY PRESSURE SEWER
	SWALE / WETLAND BOUNDARY

- CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY EXISTING FACILITIES, STRUCTURES AND UTILITIES DAMAGED DUE TO HIS OPERATIONS INCLUDING ASSOCIATED COST. ALL REPAIRS SHALL BE APPROVED BY UTILITY OWNER.
- ANY DAMAGE SUSTAINED BY THE EXISTING PARALLEL SEWER AS A RESULT OF CONTRACTOR'S ACTIVITIES DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT AT NO ADDITIONAL COST TO THE OWNER. PROPOSED REPAIR METHODS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL. CONTRACTOR WILL BE RESPONSIBLE TO FURNISH ALL LABOR, EQUIPMENT, MATERIALS, AND BYPASS PUMPING MEASURES NECESSARY TO PERFORM THE REPAIRS. ALL COST ASSOCIATED WITH REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL EXISTING SEWERS SHOWN ARE LIVE, IN SERVICE.
- CONTRACTOR TO SUPPORT/PROTECT WATER MAIN, GAS OR ANY OTHER EXISTING UTILITIES WHERE NECESSARY, IN ACCORDANCE WITH UTILITY OWNERS REQUIREMENTS.
- IF EXCAVATION OCCURS WITHIN THE THEORETICAL EMBANKMENT LINE OR ANGLE OF REPOSE FROM EDGE OF PAVED SHOULDER OR PAVEMENT FOR ANY ROAD, CONTRACTOR MUST SUBMIT A TRENCH OR EXCAVATION SHEETING AND BRACING PLAN PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK. SHEETING AND BRACING PLAN MUST BE SUBMITTED TO ENGINEER AND ROAD OWNER FOR APPROVAL.
- ALL CLEARING, GRUBBING, AND/OR TREE AND STUMP REMOVAL REQUIRED FOR INSTALLATION OF NEW SEWER AND COMPLETION OF WORK SHALL BE PAID FOR UNDER SEWER, CLEAN OUT VAULT, AND TRENCHLESS CROSSING BID ITEMS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR DETERMINING DEPTH OF GROUNDWATER AND FOR ALL COSTS ASSOCIATED WITH DEWATERING NECESSARY TO COMPLETE THE WORK. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- NEW SEWER SHALL BE ACCEPTED BY TOWN AND ENGINEER AND READY FOR COMMISSIONING PRIOR TO BEING PUT INTO OPERATION.
- CONTRACTOR SHALL MAINTAIN SEWER FLOWS AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT, INCLUDING FLOW THROUGH EXISTING 6-INCH PRESSURE SEWER AND EXISTING COMMUNITOR BUILDING AND UPSTREAM SEWERS AND MANHOLES, PER TOWN OF NEWBURGH SPECIAL CONDITIONS AND SPECIFICATIONS.
- SEWER FLOW MAY BE DIVERTED NORTH ON UNION AVENUE FROM EXISTING SANITARY VALVE MANHOLE, JUST NORTH OF PROPOSED UNION AVENUE INTERCONNECTION VAULT. CONTRACTOR MUST COORDINATE DIVERSION OF FLOW WITH TOWN TO FACILITATE WORK.

NYS THRUWAY AUTHORITY SPECIAL CONDITIONS:

- CONTRACTOR SHALL APPLY, OBTAIN, COMPLY WITH AND PAY FOR A WORK PERMIT (TA-WA1338) FROM NEW YORK STATE THRUWAY AUTHORITY (NYSTA) FOR WORKING WITHIN AND ADJACENT TO NYSTA PROPERTY AND 187, CONTACT GAIL WINTERS AT 845-918-2510 TO COORDINATE OBTAINING WORK PERMIT AND PERMIT REQUIREMENTS. (SEE APPENDIX C OF PROJECT MANUAL).
- WORK PERMIT MUST BE OBTAINED FROM NYSTA AUTHORITY BEFORE ENTERING NYSTA PROPERTY.
- CONTACT NYSTA 1-WEEK IN ADVANCE PRIOR TO PERFORMING ANY CONSTRUCTION ACTIVITIES ON NYSTA PROPERTY.
- NO EXCAVATION WILL BE ALLOWED WITHIN NYSTA ROADWAY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SHEETING, BORING OR TRENCHLESS CROSSING DESIGN PLANS REQUIRED BY NYSTA AS PART OF OBTAINING WORK PERMIT. DESIGN SHALL BE REVIEWED AND APPROVED BY NYSTA.
- CONTRACTOR WILL NOT BE ALLOWED TO SHUT DOWN TRAFFIC AT ANY TIME DURING CONSTRUCTION. ANY PROPOSED WORK WITHIN THE I-87 THOROUGHFARE WILL REQUIRE PRIOR REVIEW AND APPROVAL BY THE NYSTA.
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH NYSTA POLICY FOR UNDERGROUND WORK AS INDICATED IN TAP 421 A AND B. (SEE APPENDIX C OF PROJECT MANUAL).
- NYSTA SHALL ALSO PERFORM REVIEW AND ACCEPTANCE OF PROPOSED TRENCHLESS CROSSING PLAN, AND SHOP DRAWING SUBMITTALS PRIOR TO CONSTRUCTION.
- AS PART OBTAINING THE WORK PERMIT (TA-WA1338) CONTRACTOR WILL BE REQUIRED TO PROVIDE AND SUBMIT SUPPLEMENTAL INSURANCE CERTIFICATE (TA-W51343-9), CERTIFICATE OF LIABILITY INSURANCE (ACORD 25), AND NYSTA PERFORMANCE BOND (TA-4476). SEE APPENDIX C OF PROJECT MANUAL. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST VERSION OF REQUIRED FORMS FROM NYSTA.
- CONTRACTOR WILL ALSO BE REQUIRED TO SUBMIT A SITE/OPERATION PLAN AND PERMITTEE TRAFFIC CONTROL PLAN, BOTH OF WHICH STAMPED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER, WITH APPLICATION FOR THE WORK PERMIT. REFER TO THRUWAY AUTHORITY OCCUPANCY AND WORK PERMIT ACCOMMODATION GUIDELINES (TAP-401), INCLUDED IN APPENDIX C OF PROJECT MANUAL.

ABBREVIATIONS

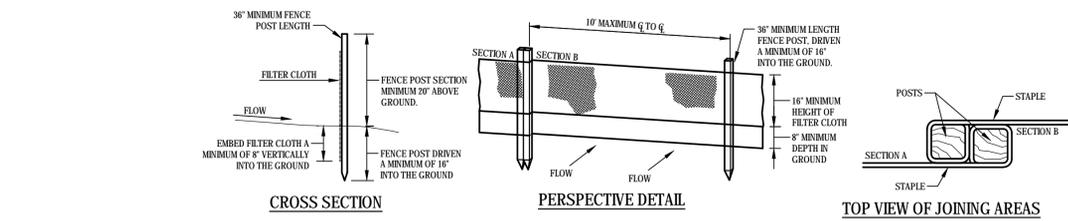
BM	-	BENCH MARK
CB	-	CATCH BASIN
CMP	-	CONCRETE MASONRY PIPE
CONC	-	CONCRETE
DIA	-	DIAMETER
DWG	-	DRAWING
DIPS	-	DUCTILE IRON PIPE SIZES
ø	-	DIAMETER
E	-	EAST/EASTING
EOP	-	EDGE OF PAVEMENT
HDPE	-	HIGH DENSITY POLYETHYLENE
ID	-	INSIDE DIAMETER
INV	-	INVERT
LF	-	LINEAR FEET/FOOT
MAX	-	MAXIMUM
MIN	-	MINIMUM
N	-	NORTH/NORTHING
NYSDOT	-	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
OD	-	OUTSIDE DIAMETER
PVC	-	POLYVINYL CHLORIDE PIPE
ROW	-	RIGHT OF WAY
S	-	SOUTH
SSMH	-	SANITARY SEWER MANHOLE
ST	-	STORM SEWER
STA	-	STATION
TEL	-	UNDERGROUND TELECOM
TYP	-	TYPICAL
UNON	-	UNLESS OTHERWISE NOTED
W	-	WEST
WTR	-	WATER

- CONSTRUCTION INSPECTION BY NYSTA: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH ROAD OWNER'S FEES FOR THEIR EMPLOYEES TO INSPECT WORK WITHIN ROAD OWNERS RIGHT-OF-WAY, SHOULD ROAD OWNER PERFORM INSPECTION OF CONTRACTOR'S WORK AS PART OF ROAD OWNER WORK PERMIT REQUIREMENTS.

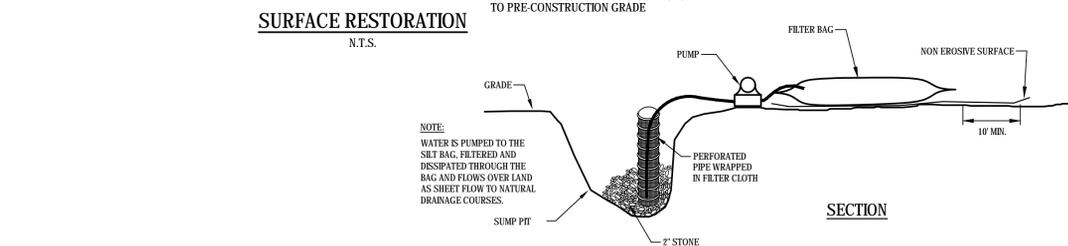
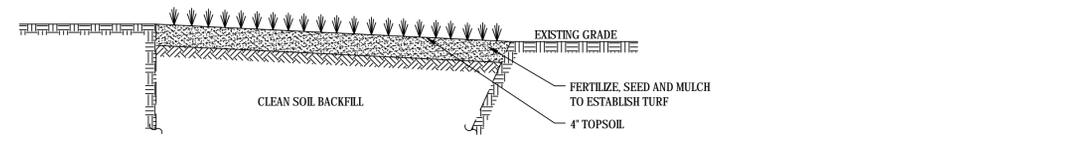
NYSDOT SPECIAL CONDITIONS:

- CONTRACTOR SHALL APPLY, OBTAIN, COMPLY WITH AND PAY FOR HIGHWAY WORK PERMIT (PERM 32) FROM NYSDOT. CONTACT SIBY ZACHARIAH - CARBONE AT (845) 562-8368 TO COORDINATE OBTAINING WORK PERMIT AND PERMIT REQUIREMENTS.
- CONTRACTOR IS REQUIRED TO PROVIDE AND SUBMIT ALL REQUIRED DOCUMENTS AND PLANS FOR OBTAINING PERMIT. REQUIRED DOCUMENTS AND SUBMITTALS INCLUDE, BUT ARE NOT LIMITED TO, CERTIFICATE OF INSURANCE FOR HIGHWAY WORK PERMIT (PERM 17), SURETY BOND (PERFORMANCE) (PERM 44), AND INSTRUCTIONS TO APPLICANTS FOR HIGHWAY WORK PERMITS (PERM 34), INCLUDED IN APPENDIX D OF PROJECT MANUAL (FOR REFERENCE ONLY). CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST VERSION OF REQUIRED FORMS AND OTHER REQUIREMENTS FROM NYSDOT.
- CONSTRUCTION INSPECTION BY NYSDOT: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ROAD OWNERS FEES FOR THEIR EMPLOYEES TO INSPECT WORK WITHIN ROAD OWNERS RIGHT-OF-WAY, SHOULD ROAD OWNER PERFORM INSPECTION OF CONTRACTOR'S WORK AS PART OF ROAD OWNER HIGHWAY WORK PERMIT REQUIREMENTS. REFER TO NYSDOT HIGHWAY WORK PERMIT APPLICATION AGREEMENTS (PERM 50), INCLUDED IN APPENDIX D OF PROJECT MANUAL (FOR REFERENCE ONLY).
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH NYSDOT BLUEBOOK, REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF UNDERGROUND UTILITY INSTALLATIONS WITHIN THE STATE HIGHWAY RIGHT-OF-WAY. (SEE APPENDIX D OF PROJECT MANUAL).
- FOR EXCAVATION WITHIN THE THEORETICAL EMBANKMENT LINE OR ANGLE OF REPOSE FROM EDGE OF PAVED SHOULDER OF UNION AVENUE, AND ALL EXCAVATIONS WITHIN THE NYSDOT R.O.W., CONTRACTOR MUST SUBMIT AN EXCAVATION SHEETING AND BRACING PLAN PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK. SHEETING AND BRACING PLAN MUST BE SUBMITTED TO ENGINEER AND NYSDOT FOR APPROVAL.
- STEEL SHEETING AND SHORING WILL BE REQUIRED ALONG UNION AVENUE FOR COMPLETION OF WORK, SHEETING DESIGN AND REQUIREMENT DEPENDANT UPON SHEETING AND BRACING PLAN PREPARED BY CONTRACTOR AND SUBMITTED TO NYSDOT FOR APPROVAL.
- DESIGN OF EARTH RESTRAINING SYSTEMS (SHEETING, SHORING, TRENCH BOXES, ETC.) PROPOSED FOR USE DURING THE EXCAVATION OF PITS OR TRENCHES IN THE NYSDOT RIGHT-OF-WAY MUST BE ENGINEERED, STAMPED AND SIGNED BY A NYS LICENSED PROFESSIONAL ENGINEER. DESIGN SHALL INCLUDE CALCULATIONS WHICH TAKE INTO ACCOUNT FACTORS INCLUDING, BUT NOT LIMITED TO: DEPTH OF EXCAVATION, SOILS CHARACTERISTICS (TYPE, COMPOSITION, COMPACTION, MOISTURE CONTENT, LOCATION IN CUT OR FILL AREA, ETC.), ELEVATION OF WATER TABLE, PRESENCE OF BEDROCK, PROXIMITY TO SHOULDER, TRAFFIC LOADING, AND IMPACT OF NEARBY FACILITIES AND/OR STRUCTURES, ETC. DESIGN SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE PRIOR TO ISSUANCE OF THE HIGHWAY WORK PERMIT.
- NO OPEN CUTTING IN PAVEMENT AREAS WILL BE PERMITTED WITHOUT PRIOR APPROVAL OF NYSDOT.
- IF ANY CHANGE IN THE PERMITTED SCOPE OF WORK IS REQUIRED, NYSDOT MUST BE NOTIFIED AND CONSULTED WITH PRIOR TO PERFORMING WORK.
- WORK ZONE TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE MOST RECENT NYSDOT STANDARD SPECIFICATIONS, SECTION 619 WORK ZONE TRAFFIC CONTROL, THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS 2009 EDITION AND THE NEW YORK STATE SUPPLEMENT.
- PARKING, STORAGE, LOADING, OR UNLOADING OF VEHICLES AND EQUIPMENT IS PROHIBITED ON STATE HIGHWAYS UNLESS SUFFICIENT WORK AREA IS OTHERWISE UNAVAILABLE. USE OF SHOULDERS AND TRAVEL LANES REQUIRES PRIOR NYSDOT APPROVAL.
- NO EXCAVATED MATERIAL SHALL BE STORED OR PILED ON THE SHOULDER OR TRAVEL LANES OF THE ROADWAY.
- THE CONTRACTOR IS REQUIRED TO CONSULT WITH NYSDOT LANDSCAPE ARCHITECTS. SOME TREES, SHRUBS, OR MISCELLANEOUS PLANT LIFE DESTROYED IN THE COURSE OF CONSTRUCTION MAY BE REQUIRED TO BE REPLACED. THE LANDSCAPE ARCHITECTS WILL IDENTIFY THOSE PLANTS, SHRUBS, OR TREES TO BE REPLACED, LOCATIONS, AND METHODS.
- ROADSIDE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
- MATERIALS, EQUIPMENT AND VEHICLES ARE NOT TO BE STORED OR PARKED WITHIN THE NYSDOT RIGHT-OF-WAY.
- CONTRACTOR SHALL NOTIFY NYSDOT RESIDENT ENGINEER, ONE (1) WEEK PRIOR TO WORKING IN THE NYSDOT RIGHT-OF-WAY.
- ALL MATERIALS USED WITHIN NYSDOT RIGHT-OF-WAY SHALL COMPLY WITH THE LATEST NYSDOT STANDARD SPECIFICATIONS AND CURRENT ADDENDA, ALONG WITH ANY APPROPRIATE CURRENT NYSDOT STANDARD SHEETS.

- THE TRAFFIC CONTROL DETAILS PROVIDED SERVE ONLY AS MINIMUM REQUIREMENTS OF THE NYSDOT AS A CONDITION OF THEIR DESIGN APPROVAL PROCESS. THE ABOVE MENTIONED DETAILS ARE NOT INTENDED AS FINAL DESIGN FOR CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR FINAL DESIGN AND DETAILS. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURE OF CONSTRUCTION AND SAFETY PRECAUTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MEET NYSDOT REQUIREMENTS AND OBTAIN NYSDOT WORK PERMIT.



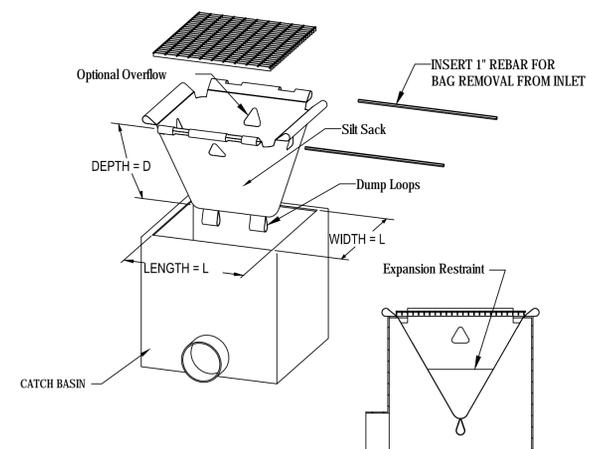
SILT FENCE DETAIL
NOT TO SCALE



SILT SACK DETAIL
NOT TO SCALE

EROSION & SEDIMENTATION CONTROL MEASURES

- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR DAILY AND IMMEDIATELY AFTER PERIODS OF RAINFALL. REPAIR AND/OR MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MADE AS SOON AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF ALL CONTROL MEASURES ON THIS SITE.
- SILT FENCES SHALL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ALL CONSTRUCTION ACTIVITIES.
- ANCHOR ALL TOPSOIL STOCK PILES WITH STRAW MULCH AND RING WITH SILT FENCE, OR STRAW BALE BARRIER.
- SEDIMENT REMOVAL FROM CONTROL STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEDIMENT SHALL BE DISPOSED OF IN A MANNER WHICH DOES NOT RESULT IN ADDITIONAL EROSION AND WHICH IS CONSISTENT WITH THE CONTRACT DOCUMENTS AND REGULATORY REQUIREMENTS.
- THE EROSION AND SEDIMENTATION CONTROL MEASURES DESCRIBED HEREIN ARE INTENDED AS A GENERAL GUIDE FOR THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANY AND ALL WORK NECESSARY TO PREVENT EROSION OF SOIL FROM THE CONSTRUCTION SITE. TO PREVENT EROSION, THE CONTRACTOR SHALL PROVIDE SILT FENCES OR OTHER CONTROL MEASURES AS THE NEED ARISES DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- PAVED ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.
- A TEMPORARY CRUSHED STONE PAD OR ROADWAY SHALL BE CONSTRUCTED AT ALL NON-PAVED PARKING AREAS, HEAVY USE AREAS, OR ROADWAYS WHERE THERE IS NO EXISTING PAVEMENT, OR WHERE PAVEMENT HAS BEEN REMOVED.
- FOLLOWING WORK, AREA SHALL BE RESTORED TO ORIGINAL GRADES, SEEDED AND PROTECTED WITH STRAW MULCH. DISTURBED SLOPES EXCEEDING 10% PITCH SHALL BE PROTECTED WITH BIODEGRADABLE EROSION CONTROL MATTING PER MANUFACTURERS INSTRUCTIONS.



EROSION CONTROL NARRATIVE

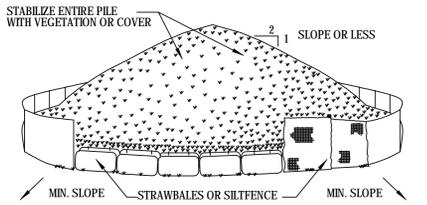
PRIOR TO COMMENCING WORK, CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION CONTROL MEASURES.

EROSION CONTROLS SHALL BE PERIODICALLY CHECKED AND MAINTAINED AT THE DOWNHILL EDGE OF DISTURBED AREAS AND SHALL BE PLACED AT THE BASE OF SLOPES. STRAW BALES OR SILT FENCES SHALL BE MAINTAINED AT THE POINTS OF RUNOFF PIPE AND DITCH OUTLETS.

WHEN CONSTRUCTION WORK IS COMPLETED AND STABLE SURFACES (VEGETATED OR PAVED) HAVE BEEN ACHIEVED, THE EROSION CONTROLS SHALL BE REMOVED.

GENERAL EROSION AND SEDIMENTATION NOTES

- DRAINAGE WILL BE SLOPED AWAY FROM THE EXCAVATION AREA.
- EXCAVATIONS WILL BE KEPT DRY USING SUMP PUMP SYSTEMS. THE SUMP WILL BE LOCATED AT THE LOW POINT OF THE TRENCH, AND WILL CONSIST OF A SUCTION HOSE DRAWING FROM A POCKET OF WASHED GRAVEL WRAPPED IN NON-WOVEN GEOTEXTILE. THE SUMP WILL DISCHARGE TO A SILT BAG AND FLOW OVERLAND TO NATURAL DRAINAGE COURSES. THE VOLUME OF WATER DISCHARGED WILL BE MONITORED BY CONTRACTOR TO PREVENT EROSION OR DAMAGE WITHIN THE NATURAL DRAINAGE COURSES.



INSTALLATION NOTES

- AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
- MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
- UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

SOIL STOCKPILING
NOT TO SCALE

C	FOR CONSTRUCTION	JAD	JHD	KC	04/20
B	REVISED FOR REGULATORY APPROVAL	JAD	JHD	KC	01/20
A	FOR REGULATORY APPROVAL	TJD	JHD	KC	04/14

UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.

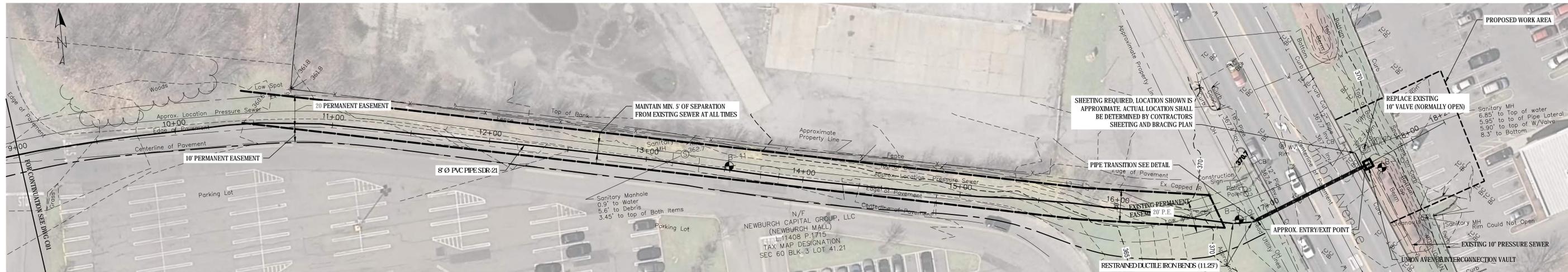
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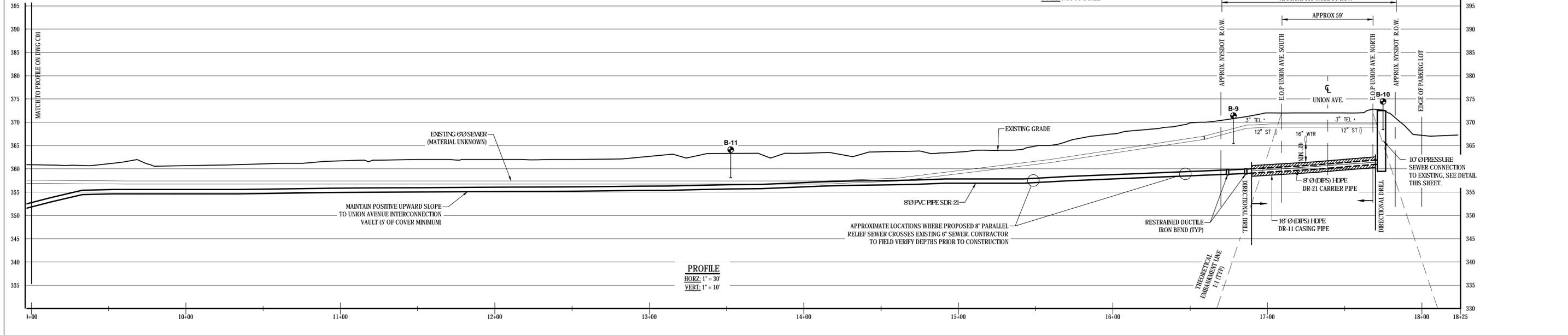
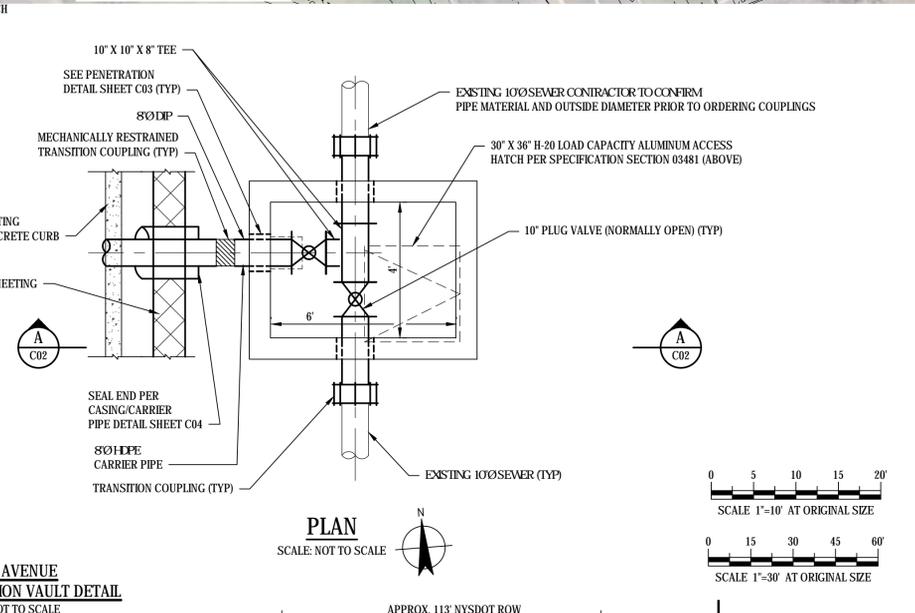
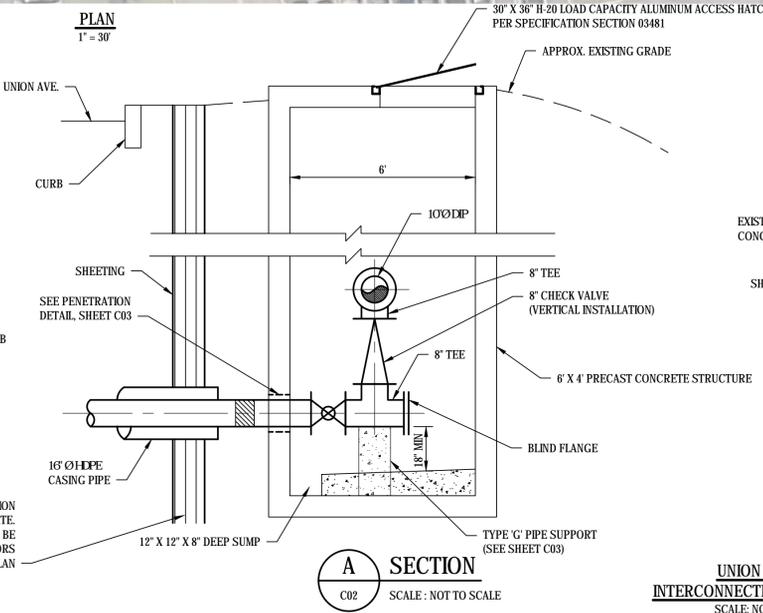
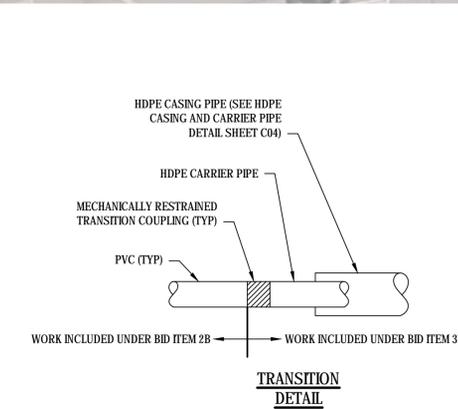
Drawn	TJD	Designer	TJD
Drafting Check	JHD	Design Check	JHD
Approved (Project Director)	K. CASTRO		
Date	JUNE 7, 2019		
Scale	AS SHOWN		

Client **TOWN OF NEWBURGH, NEW YORK**
 Project **MEADOW HILL SOUTH PARALLEL RELIEF SEWER**
 Title **GENERAL NOTES, ABBREVIATIONS AND EROSION AND SEDIMENTATION CONTROL DETAILS CONTRACT No.1**

Original Size **Arch D**
 Drawing No: **86-16478-G01**
 Rev: **B**



- NOTES:
- TRAFFIC CONTROL MEASURES ON UNION AVENUE TO FACILITATE THE WORK ASSOCIATED SHALL CONFORM WITH THE LATEST VERSION OF THE NYS DOT MUTCD. TRAFFIC CONTROL NOTES AND DETAILS SHOWN ON SHEETS C05 AND C06 ARE MINIMUM REQUIREMENTS AND MAY NOT REFLECT ALL NECESSARY REQUIREMENTS.
 - CONTRACTOR TO LOCATE EXISTING VAULT AND 10 INCH SANITARY SEWER PRIOR TO ORDERING THE INTERCONNECTION VAULT AND INSTALLING THE PROPOSED SEWER AND APPURTENANCES. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS TO THE FINAL PLACEMENT AND DIMENSIONS (REFERRING TO PENETRATION LOCATIONS) OF THE VAULT AND ALIGNMENT OF THE PROPOSED SEWER AT NO ADDITIONAL COST TO THE OWNER.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES IN UNION AVENUE BY VACUUM EXCAVATION (POT HOLING) OR OTHER APPROVED METHOD PRIOR TO COMMENCING DIRECTIONAL DRILLING.



C	FOR CONSTRUCTION	JAD	JHD	KC	04/20	
B	REVISED FOR REGULATORY APPROVAL	JAD	JHD	KC	01/20	
A	FOR REGULATORY APPROVAL	TJD	JHD	KC	04/14	
No	Revision	Note: * Indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
Plot Date: 18 June 2020 - 3:48 PM		Plotted by: Frank Ervin		Cad File No: G:\8616478\CADD\Drawings\Civil\86-16478-C02.dwg		

UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.

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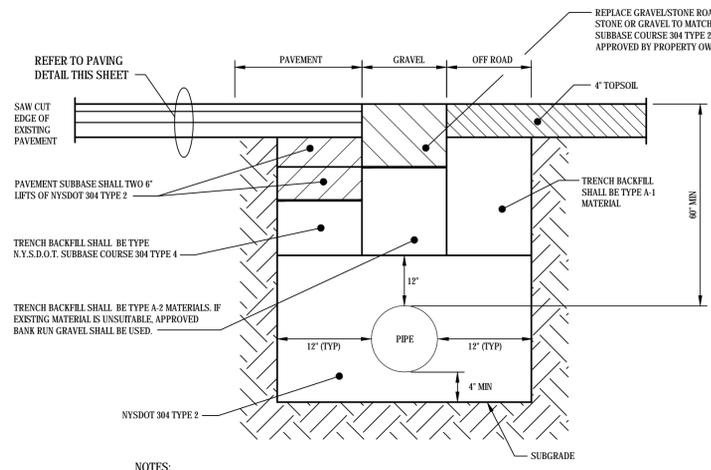
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Drawn	TJD	Designer	TJD
Drafting Check	JHD	Design Check	JHD
Approved (Project Director)	K. CASTRO		
Date	JUNE 7, 2019		
Scale	AS SHOWN		

Client: **TOWN OF NEWBURGH, NEW YORK**
 Project: **MEADOW HILL SOUTH PARALLEL RELIEF SEWER**
 Title: **PLAN AND PROFILE**

CONTRACT No.1
 Arch D Drawing No: **8616478-C02**

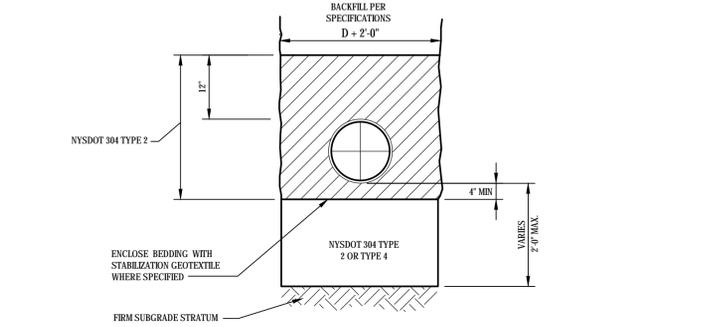
Original Size: **Rev: B**



- NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL APPLICABLE SAFETY CONDITIONS ALONG TRENCH.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING NECESSARY SIDE SLOPES, AND IF SHORING AND/OR A TRENCH SHIELD IS REQUIRED.
 - ALL ROAD PAVEMENT RESTORATION SHALL BE COMPLETED AFTER SEWER, WATER MAINS, AND SERVICES ARE INSTALLED.
 - CONTRACTOR SHALL DETERMINE ACTUAL TRENCH WIDTH ABOVE PIPE TO THE TOP OF TRENCH BASED ON MEANS AND METHODS OF PIPELINE CONSTRUCTION, AND SHEETING AND BRACING SYSTEM AND/OR NECESSARY SIDE SLOPES USED TO CONSTRUCT PIPELINE. MINIMUM WIDTH OF PIPE TRENCH SHALL BE AS SHOWN.

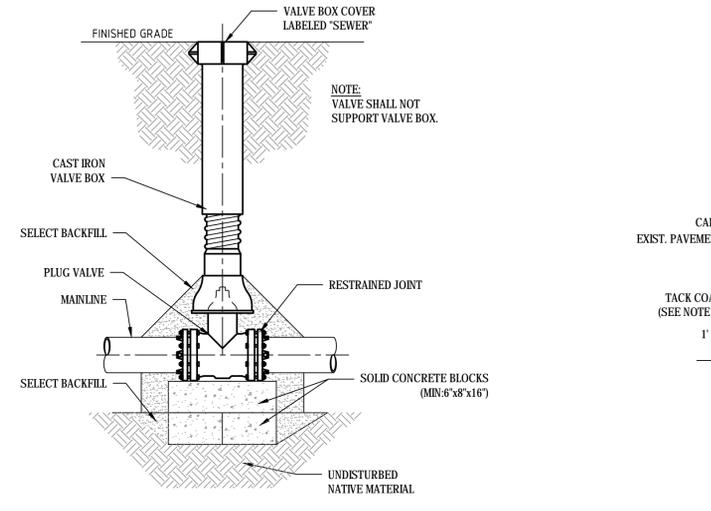
NORMAL SOIL CONDITIONS (TYPE I) AND TRENCH & PAVEMENT RESTORATION DETAIL

NOT TO SCALE



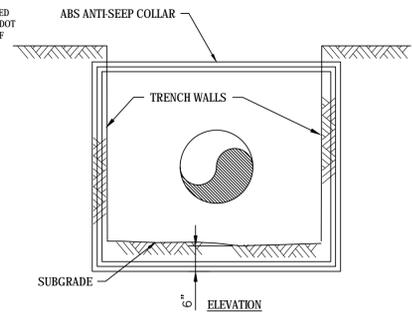
MODERATELY UNSTABLE SOIL CONDITIONS (TYPE II)

NOT TO SCALE



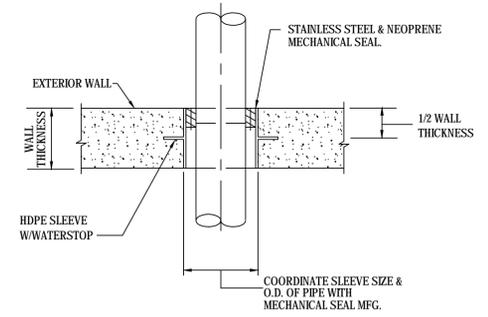
PLUG VALVE ASSEMBLY DETAIL

NOT TO SCALE



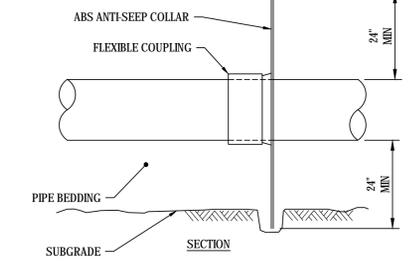
TYPE 'G' PIPE SUPPORT

NOT TO SCALE



PENETRATION DETAIL

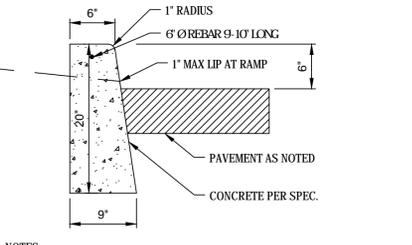
NOT TO SCALE



ANTI-SEEP COLLAR DETAIL

NOT TO SCALE

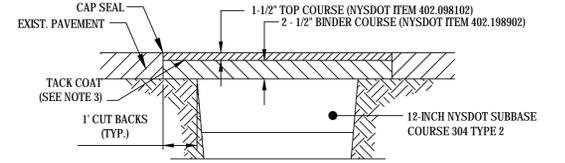
- NOTES:**
- BAFFLES WILL BE SELF SUPPORTING AND PROVIDE A WATER TIGHT SEAL AROUND THE PIPE BY USE OF AN APPROPRIATELY SIZED ELASTOMERIC PVC FLEXIBLE COUPLING. COLLARS SHALL FORM AN IMPENETRABLE BARRIER IN THE PIPE ENVELOPE TO THE FLOW OF WATER. COLLARS SHALL BE RIPLEY'S DAM OR APPROVED EQUAL.
 - ANTI-SEEP COLLARS SHALL BE INSTALLED ALONG PIPES WITH SLOPES WHICH ARE 12% OR GREATER OR AS SHOWN ON THE PLAN.
 - ANTI-SEEP COLLARS SHALL BE EQUAL TO THE TRENCH WIDTH BUT IN NO CASE SHALL BE LESS THAN THE WIDTH REQUIRED IN THE TRENCH SECTIONS DETAIL.



CONCRETE CURB DETAIL

N.T.S.

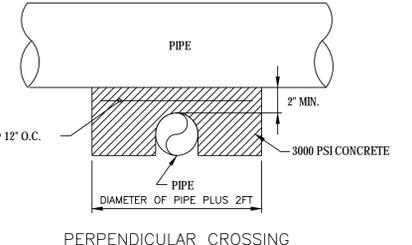
- NOTES:**
- CONCRETE SHALL BE PLACED AND RUB FINISHED PER SPECS.
 - CURB TO HAVE 6\"/>



PAVING FOR DRIVEWAYS AND PARKING AREAS

N.T.S.

- NOTES:**
- MAXIMUM PAYMENT WIDTH FOR BINDER AND TOP COURSE RESTORATION SHALL BE 8- FEET (INCLUDING 1- FOOT CUTBACKS).
 - ALL GRAVEL/STONE DRIVEWAYS SHALL BE REPLACED WITH MATCHING EXISTING MATERIAL TO A DEPTH OF 12- INCHES. MAXIMUM PAYMENT WIDTH SHALL BE 6\"/>



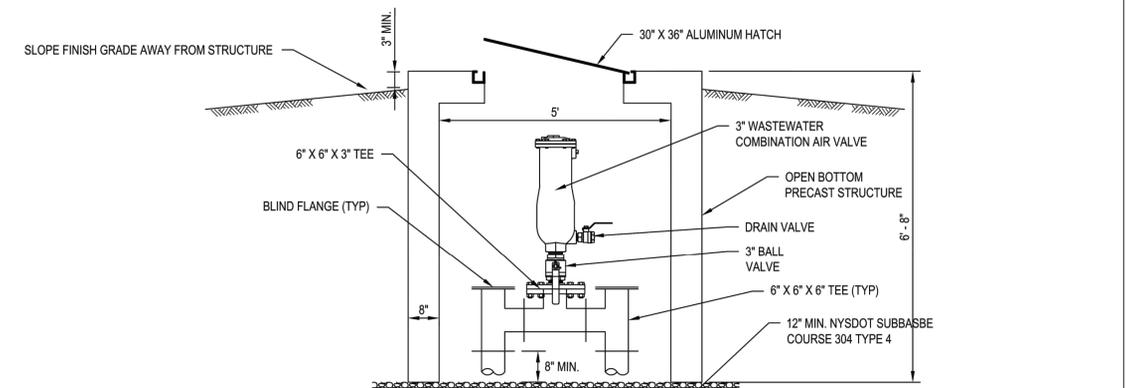
PERPENDICULAR CROSSING

NOT TO SCALE

- NOTES:**
- ABOVE DETAIL TO BE USED WHEN PROPOSED OR EXISTING PIPE IS NEAR AN EXISTING UTILITY PIPE, AND WITHIN 2'- 6\"/>

PIPE CRADLE SUPPORTS AT PIPE CROSSING

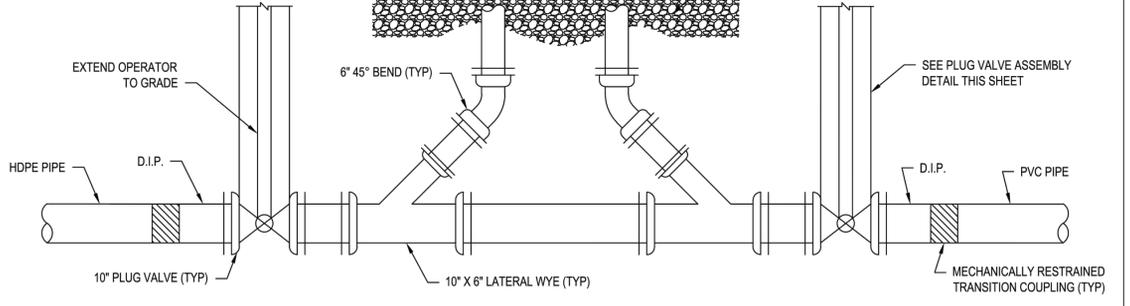
NOT TO SCALE



TYPICAL BURRED CLEANOUT ASSEMBLY

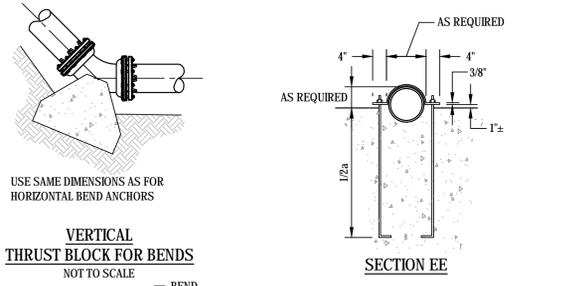
NOT TO SCALE

- NOTES:**
- ALL FITTINGS TO BE DIP PER SPECIFICATIONS
 - AIR / VACUUM VALVE NOT REQUIRED AT CLEAN OUT AT STATION 3+50

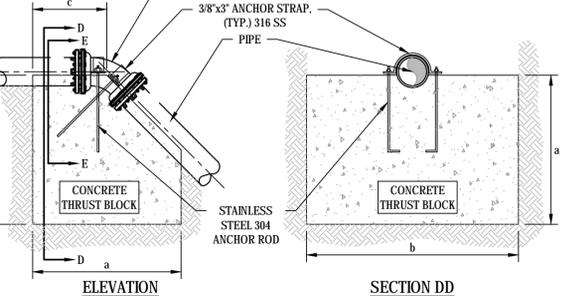


VERTICAL THRUST BLOCK FOR BENDS

NOT TO SCALE



SECTION EE



SECTION DD

- NOTES:**
- SIZES BASED ON 150 PSI PRESSURE IN PIPELINE AND 2,000 PSF SOIL BEARING STRENGTH.
 - ALL EXPOSED PORTIONS OF ANCHOR STRAPS TO RECEIVE A MINIMUM OF 2 FIELD COATS OF BITUMASTIC MATERIAL.
 - PRIOR TO PLACING CONCRETE WRAP ANCHORS & ALL FITTINGS IN 8 MIL THICK POLYTHENE.
 - ALL ANCHOR RODS SHALL BE TYPE 304 STAINLESS STEEL.

VERTICAL ANCHOR DIMENSIONS

PIPE SIZE	UP TO 150 P.S.I. WORKING PRESSURE											
	45° BEND				22 1/2° BEND				11 1/4° BEND			
	DIMENSION			ROD	DIMENSION			ROD	DIMENSION			ROD
6"	a	b	c	Ø	a	b	c	Ø	a	b	c	Ø
6"	3'-0"	3'-0"	2'-0"	3/4"	2'-6"	2'-3"	1'-6"	3/4"	2'-6"	2'-0"	1'-6"	3/4"
8"	3'-6"	3'-6"	2'-6"	3/4"	3'-0"	3'-0"	1'-9"	3/4"	2'-6"	2'-6"	1'-3"	3/4"
12"	4'-9"	4'-6"	3'-3"	3/4"	4'-0"	3'-9"	2'-6"	3/4"	3'-3"	3'-3"	1'-9"	3/4"
14"	5'-3"	5'-0"	3'-9"	3/4"	4'-3"	4'-3"	2'-6"	3/4"	3'-6"	3'-6"	2'-0"	3/4"
16"	5'-9"	5'-6"	4'-0"	3/4"	4'-9"	4'-6"	2'-9"	3/4"	3'-9"	3'-9"	2'-0"	3/4"

Revision	Note	Drawn	Job Manager	Project Director	Date
C	FOR CONSTRUCTION	JAD	JHD	KC	04/20
B	REVISED FOR REGULATORY APPROVAL	JAD	JHD	KC	01/20
A	FOR REGULATORY APPROVAL	TJD	JHD	KC	04/14

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STATE OF NEW YORK
SEAL OF THE PROFESSIONAL ENGINEER

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Drawn	TJD	Designer	TJD
Drafting Check	JHD	Design Check	JHD
Approved (Project Director)	K. CASTRO		
Date	JUNE 7, 2019		
Scale	AS SHOWN		

Client **TOWN OF NEWBURGH, NEW YORK**
Project **MEADOW HILL SOUTH PARALLEL RELIEF SEWER**
Title **MISCELLANEOUS DETAILS**

CONTRACT No. 1
Original Size Arch D
Drawing No: **86-16478-C03**

Scale AS SHOWN
This Drawing shall not be used for Construction unless Signed and Sealed For Construction

Rev: **B**

TABLE NY1-A BARRIER VEHICLE USE REQUIREMENTS (LONG TERM, INTERMEDIATE TERM, AND SHORT TERM STATIONARY CLOSURES)				
CLOSURE TYPE	EXPOSURE CONDITION ¹	USE REQUIREMENTS ^{4,5}		
		FREEWAY	NON-FREEWAY (PRECONSTRUCTION POSTED SPEED LIMIT)	
LANE CLOSURE	WORKERS ON FOOT OR IN VEHICLES EXPOSED TO TRAFFIC	REQUIRED ³	REQUIRED ³	OPTIONAL ²
	NON-TRANSVERSABLE HAZARD (IE. EQUIPMENT, MATERIALS, EXCAVATION) ONLY NO WORKERS EXPOSED	REQUIRED ³	REQUIRED ³	OPTIONAL ²
SHOULDER CLOSURE	WORKERS ON FOOT OR IN VEHICLES EXPOSED TO TRAFFIC	REQUIRED ³	REQUIRED ³	OPTIONAL ²
	NON-TRANSVERSABLE HAZARD (IE. EQUIPMENT, MATERIALS, EXCAVATION) ONLY NO WORKERS EXPOSED	REQUIRED ³	OPTIONAL ²	OPTIONAL ²

TABLE 6H-4 FORMULAS FOR DETERMINING TAPER LENGTHS						
SPEED LIMIT (S) (MPH)	TAPER LENGTH (L) (FT.)		L = TAPER LENGTH W = WIDTH OF OFFSET (FT.) S = RECONSTRUCTION POSTED SPEED LIMIT (MPH)	L = WS ² /80	L = WS	STANDARD TAPER LENGTHS
	(40 MPH) OR LESS	(45 MPH) OR MORE				
	4	45	60	85	110	180
	5	55	75	105	135	225
	6	65	90	125	160	270
	7	75	105	145	190	315
	8	85	120	165	215	360
	9	95	135	185	240	425
	10	105	150	205	270	450
	11	115	165	225	295	495
	12	125	180	245	320	540

TABLE 619-4 FLARE RATES FOR POSITIVE BARRIER				
TYPE OF POSITIVE BARRIER	POSTED SPEED LIMIT			
	30 MPH	35 MPH	40 MPH	45 MPH
TEMPORARY CONCRETE BARRIER	8:1	11:1	14:1	16:1
BOX BEAM OR HEAVY POST CORRUGATED BEAM	7:1	9:1	11:1	12:1

TABLE NYH-3 ADVANCE WARNING SIGN SPACING				
ROAD TYPE	A (FT.)	B (FT.)	C (FT.)	XX YY
URBAN (1-30 MPH)	100	100	100	AHEAD AHEAD
URBAN (35-40 MPH)	200	200	200	AHEAD AHEAD
URBAN (45 MPH)	300	350	350	1000 FT. AHEAD
RURAL	500	500	500	1500 FT. AHEAD
EXPRESSWAY / FREEWAY	1000	1500	2640	1 MILE 1/2 MILE

TABLE 6C-3 TAPER LENGTH FOR TEMPORARY TRAFFIC CONTROL ZONES	
TYPE OF TAPER	TAPER LENGTH (L)
MERGING TAPER	L
SHIFTING TAPER	L/2
SHOULDER TAPER	L/3
ONE-LANE, TWO-WAY TRAFFIC TAPER	100 FT. MAXIMUM
DOWNSTREAM TAPER	100 FT. PER LANE

URBAN: (MEETS MORE THAN 1 OF THE FOLLOWING CRITERIA)
SIDEWALKS, BICYCLE USAGE, CURBING, CLOSED DRAINAGE SYSTEMS, SIDEWALK LENGTHS GREATER THAN 24 DRIVEWAYS PER MILE, MAJOR COMMERCIAL DISTRICTS (IE. 10 DRIVEWAYS PER MILE) OR GREATER, MAJOR COMMERCIAL DRIVEWAYS, NUMEROUS RIGHT OF WAY CONSTRAINTS, HIGH DENSITY OF CROSS STREETS, BOTH PERCENTAGE SPEEDS OF 45 MPH OR LESS.

RURAL: ANY AREA NOT EXHIBITING MORE THAN ONE OF THE ABOVE CHARACTERISTICS.

EXPRESSWAY: DIVIDED HIGHWAYS FOR TRAFFIC WITH FULL OR PARTIAL CONTROL OF ACCESS AND GENERALLY WITH GRADE SEPARATIONS AT MAJOR CROSSINGS.

FREEWAYS/INTERSTATE: LOCAL OR INTER REGIONAL HIGH-SPEED DIVIDED, HIGH-VOLUME FACILITIES WITH FULL OR PARTIAL CONTROL OF ACCESS.

WORK DURATION DEFINITIONS	
LONG-TERM STATIONARY	IS WORK THAT OCCUPIES A LOCATION MORE THAN 3 CONSECUTIVE DAYS.
INTERMEDIATE-TERM STATIONARY	IS WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 CONSECUTIVE DAYS, OR NIGHTTIME WORK LASTING MORE THAN 1 HOUR.
SHORT-TERM STATIONARY	IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITH A SINGLE DAYLIGHT PERIOD.
SHORT DURATION	IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
MOBILE	IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

WORK ZONE TRAFFIC CONTROL LEGEND	
SYMBOL	DESCRIPTION
	ARROW PANEL
	ARROW PANEL, CAUTION MODE
	ARROW PANEL TRAILER OR SUPPORT
	CHANGEABLE MESSAGE SIGN (PMS)
	CHANNELIZING DEVICE
	CRASH CUSHION/TEMPORARY IMPACT ATTENUATOR
	DIRECTION OF TEMPORARY TRAFFIC DETOUR
	DIRECTION OF TRAFFIC
	FLAGGER
	FLAG TREE
	LUMINAIRE
	PAVEMENT MARKINGS THAT SHALL BE REMOVED FOR A LONG TERM PROJECT
	SIGN, TEMPORARY
	TEMPORARY BARRIER
	TEMPORARY BARRIER WITH WARNING LIGHTS
	TRAFFIC OR PEDESTRIAN SIGNAL
	TYPE III BARRICADE
	WARNING LIGHTS
	WORK SPACE
	WORK VEHICLE
	WORK VEHICLE WITH TRUCK MOUNTED ATTENUATOR

GENERAL NOTES

- THE TYPICAL DETAILS DEPICTED ON THE STANDARD SHEETS AND IN THE MUTCD, REFLECT THE MINIMUM REQUIREMENTS.
- THE CONTRACTOR MUST SUBMIT TO THE ENGINEER, IN WRITING, PROPOSED REVISIONS TO THE TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE REGIONAL DIRECTOR OR HIS/HER DESIGNEE FIVE (5) WORK 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 REGIONAL DIRECTOR OR HIS/HER DESIGNEE THIRTY (30) WORKING DAYS PRIOR TO IMPLEMENTATION OF SUCH REVISIONS.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER, IN WRITING, WITH THE NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF STAFF WHO ARE AUTHORIZED TO SECURE LABOR, MATERIALS, AND EQUIPMENT FOR EMERGENCY REPAIRS OUTSIDE NORMAL WORKING HOURS. THE ENGINEER WILL PROVIDE THE SUBMITTED INFORMATION TO REGIONAL MANAGEMENT, THE NEW YORK STATE POLICE, THE RESIDENT ENGINEER, AND THE LOCAL POLICE.

ACTIVITY AREA

- THE CONTRACTOR SHALL MAINTAIN A MINIMUM 500' LONGITUDINAL DISTANCE BETWEEN CONSTRUCTION OPERATIONS ON ALTERNATE SIDES OF THE ROADWAY, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- WHEN TWO OR MORE ARE ADJACENT, OVERLAP, OR ARE IN CLOSE PROXIMITY, THE CONTRACTOR SHALL ENSURE THERE ARE NO CONFLICTING SIGNS AND THAT LANE CONTINUITY IS MAINTAINED THROUGHOUT ALL WORK AREAS.

SIGNS

- THE LOCATIONS OF THE SIGNS SHOWN ON THE WORK ZONE TRAFFIC CONTROL PLANS AND DETAILS MAY BE ADJUSTED BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS. THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.
- ANY 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 REPLACED IN THIS CONTRACT.
- SIGNS AT OR NEAR INTERSECTIONS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT A MOTORIST'S LINE OF SIGHT.
- ALL WARNING AND REGULATORY SIGNS SHALL BE POSTED ON BOTH SIDES OF MULTI-LANE DIVIDED HIGHWAYS, MULTI-LANE RAMPS, AND ONE-WAY STREETS. IN CASES WHERE LANE RESTRICTIONS REDUCE THE TRAVEL LANE TO ONE LANE, SIGNS SHALL BE POSTED ON THE E
- RIGHT SIDE OF THE ACTIVE TRAVEL LANE, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

- SIGNS MOUNTED ON THE MEDIAN OF DIVIDED HIGHWAYS WHERE MEDIAN BARRIER IS IN PLACE MAY BE MOUNTED ON THE BARRIER WITH A SADDLE TYPE BRACKET, LAYING THE SIGN DOWN IN A HORIZONTAL POSITION IS NOT PERMITTED.
- THE DIMENSIONS OF WORK ZONE TRAFFIC CONTROL SIGNS SHALL BE DESCRIBED IN THE MUTCD. ANY CHANGES TO THE DIMENSIONS SHALL BE APPROVED BY THE REGIONAL DIRECTOR OR BY HIS/HER DESIGNEE. NYR9-12 MAY BE USED IN PLACE OF NYR9-11.

CHANNELIZING DEVICES

- WHERE POSSIBLE ALL CHANNELIZING AND GUIDING DEVICES ARE TO BE PLACED SO AS TO PROVIDE A MINIMUM 2' LATERAL CLEARANCE TO THE TRAVELED WAY.
- PROPERTY OWNERS WHOSE DRIVEWAYS WILL BE MADE INACCESSIBLE SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 24 HOURS PRIOR TO RESTRICTING USE OF THE DRIVEWAY. FOR MULTIPLE ACCESS PROPERTIES, AT LEAST ONE DRIVEWAY SHALL BE OPEN AT ALL TIMES. ACCESS SHALL BE RESTORED TO ALL DRIVEWAYS AS SOON AS POSSIBLE.

- SUITABLE RAMPS SHALL BE INSTALLED TO MAINTAIN SMOOTH TRANSITIONS FROM RESIDENTIAL AND COMMERCIAL DRIVEWAYS TO AND FROM THE WORK AREA.

LANE CLOSURES

- THE CONTRACTOR SHALL LOCATE LANE CLOSURES TO PROVIDE OPTIMUM VISIBILITY, I.E. BEFORE CURVES AND CRESTS, TO THE EXTENT CONDITIONS PERMIT.
- THE ENGINEER MAY REQUIRE THAT ALL LANES BE RE-OPENED AT ANY TIME IF THE ROUTE IS NEEDED FOR EMERGENCY PURPOSES. THIS COULD INCLUDE INCIDENTS AT LOCATIONS OUTSIDE THE CONTRACT LIMITS.

LANE WIDTHS

- UNLESS AUTHORIZED BY THE ENGINEER, THE MINIMUM LANE WIDTHS FOR WORK ZONE TRAVEL LANES SHALL BE AS FOLLOWS: FREEWAYS AND/OR EXPRESSWAYS IS 11'; THE MINIMUM LANE WIDTH FOR ALL OTHER TYPES OF ROADWAYS IS 10'.
- THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE TO THE ENGINEER, A MINIMUM OF 21 CALENDAR DAYS IN ADVANCE OF PERFORMING ANY WORK THAT RESULTS IN THE REDUCED WIDTH OF AN EXISTING ROADWAY, SO THAT THE ENGINEER MAY NOTIFY THE REGIONAL PERMIT ENGINEER IN A TIMELY MANNER.

BARRIER/SHADOW VEHICLES

- BARRIER AND SHADOW VEHICLES SHALL BE REQUIRED AS PER STANDARD SHEET TITLED "WORK ZONE TRAFFIC CONTROL LEGENDS AND NOTES".
- NO WORK ACTIVITY, EQUIPMENT, VEHICLES AND/OR MATERIALS SHALL BE LOCATED BETWEEN THE BARRIER OR SHADOW VEHICLE AND THE ACTIVE WORK AREA (ROLL AHEAD DISTANCE).
- THE CONTRACTOR MAY BE REQUIRED TO PROVIDE A BARRIER VEHICLE IN CONJUNCTION WITH POLICE PRESENCE IN THE WORK ZONE, TO BE INCLUDED IN THE UNIT BID PRICE FOR BASIC WORK ZONE TRAFFIC CONTROL.

WORK ZONE TRAFFIC CONTROL NOTES:

- THE PERMITTEE SHALL BE AWARE THAT WORK ZONE TRAFFIC CONTROL IS A VERY CRITICAL ITEM OF THE PERMIT AND SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 619 "WORK ZONE TRAFFIC CONTROL" OF THE STANDARD SPECIFICATIONS, THE 2009 EDITION OF THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE NEW YORK STATE SUPPLEMENT. THE PERMITTEE SHALL BE RESPONSIBLE FOR WORK ZONE TRAFFIC CONTROL AT ALL TIMES FOR THE DURATION OF THE PERMITTED WORK.
- ACTUAL FIELD CONDITIONS MAY REQUIRE OTHER SIGNS AND OTHER ARRANGEMENTS OF SIGNS. DISTANCES SHALL BE ADAPTED TO PREVAILING CONDITIONS. SIGNS SHALL BE LOCATED TO PROVIDE OPTIMUM VISIBILITY. SIGNS THAT ARE NOT APPLICABLE SHALL BE COVERED OR OBFUSCATED FROM SIGHT. ALL SIGN NUMBERS REFER TO THE 2009 EDITION OF THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE NEW YORK STATE SUPPLEMENT.
- PEDESTRIAN ACCOMMODATIONS SHALL BE MAINTAINED FOR THE DURATION OF THE PROPOSED WORK. ANY DISTURBED AREAS WITHIN THE STATE RIGHT-OF-WAY SHALL BE ADEQUATELY FENCED TO PREVENT PEDESTRIAN ACCESS WHEN THE CONTRACTORS OPERATIONS ARE SHUT DOWN.
- NO LANE OR SHOULDER CLOSURES SHALL BE PERMITTED BETWEEN THE HOURS OF 7:00 AM UNTIL 9:00 AM AND BETWEEN THE HOURS OF 4:00 PM UNTIL 6:00 PM.
- MATERIALS, EQUIPMENT AND VEHICLES SHALL NOT BE STORED OR PARKED WITHIN THE STATE RIGHT-OF-WAY BEFORE WORK BEGINS OR AFTER CONTRACTOR'S OPERATIONS ARE SHUT DOWN. STAGING AREAS OUTSIDE THE RIGHT-OF-WAY SHALL BE USED TO STOCKPILE ALL CONSTRUCTION MATERIALS.
- DURING WORKING HOURS, NO CONSTRUCTION MATERIAL MAY BE STORED OR PLACED ON THE ROADWAY OR ROADBED EXCEPT WITHIN A PROTECTED WORK AREA.
- VEHICLES BELONGING TO THE PERMITTEE OR WORKERS SHALL NOT BE PARKED WITHIN 30 FEET OF THE EDGE OF PAVEMENT ALONG A ROADWAY BEING USED BY THE GENERAL PUBLIC, UNLESS THEY ARE PARKED WITHIN A PROTECTED WORK AREA.
- DURING NON-WORKING HOURS, CONSTRUCTION EQUIPMENT AND MATERIALS SHALL NOT BE STORED WITHIN 30 FEET OF THE EDGE OF PAVEMENT.
- W20-7A "FLAGGER" SIGNS SHALL BE USED WHENEVER FLAGGING OCCURS FOR MORE THAN A BRIEF PERIOD OF TIME. THE SIGNS SHALL BE PROMPTLY REMOVED, COVERED, OR FACED AWAY FROM TRAFFIC WHEN THE FLAGGING OPERATION CEASES.
- ALL FLAGGING STATIONS AND LANE CLOSURES SHOULD BE LOCATED TO ENSURE MAXIMUM VISIBILITY.
- NO DROP-OFF GREATER THAN SIX INCHES SHALL BE LEFT OVERNIGHT WITHIN 30 FEET OF THE EDGE OF PAVEMENT. DROP-OFFS LESS THAN SIX INCHES WILL BE PERMITTED IF PROPER DELINEATION AND SIGNING IS PROVIDED, AND PRIOR PERMISSION IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT. A DROP-OFF IS CONSIDERED ELIMINATED IF TAPERED AWAY BY A 1 ON 6 SLOPE OR FLATTER.
- CARE SHALL BE TAKEN TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING PAVEMENT/SHOULDER/CURB AREAS AS A RESULT OF CONSTRUCTION EQUIPMENT MOVEMENT.
- THE PERMITTEE MAY SUBMIT REVISIONS TO THIS PLAN FOR APPROVAL, BUT ANY CHANGE THAT ALTERS THE BASIC CONCEPTS OF THE PLAN MUST BE APPROVED BY THE REGIONAL DIRECTOR OR HIS DESIGNEE.

NYSDOT STANDARD GENERAL PLAN NOTES:

- NO SIGNS SHALL BE REMOVED FROM THE STATE RIGHT-OF-WAY.
- THE ROADWAY SHALL BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES.
- ROADSIDE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
- MATERIALS, EQUIPMENT AND VEHICLES SHALL NOT BE STORED OR PARKED WITHIN THE NEW YORK STATE RIGHT-OF-WAY.
- WORK ZONE TRAFFIC CONTROL SHALL COMPLY WITH THE 2009 EDITION OF THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE NEW YORK STATE SUPPLEMENT, AND SHALL BE IN ACCORDANCE WITH THE NYSDOT CONTRACT OR HIGHWAY WORK PERMIT DOCUMENTS AND AS DEEMED NECESSARY BY THE NYS ENGINEER IN CHARGE.
- NOTIFY NEW YORK STATE DEPARTMENT OF TRANSPORTATION RESIDENT ENGINEER AT THE OSWEGO RESIDENCY, (315) 963-3730, THREE WORKING DAYS PRIOR TO WORKING IN THE STATE RIGHT-OF-WAY.
- NOTIFY DIG SAFELY NEW YORK THREE WORKING DAYS PRIOR TO DIGGING, DRILLING OR BLASTING AT 1-800-962-7962. FOR A UTILITY STAKE-OUT.
- ALL WORK CONTEMPLATED AND MATERIALS USED WITHIN THE NYS RIGHT-OF-WAY SHALL BE COVERED BY, AND IN CONFORMITY WITH, THE NYS DEPARTMENT OF TRANSPORTATION MAY 1, 2008 SPECIFICATIONS BOOK AND ANY SUBSEQUENT ADDENDA ALONG WITH ANY APPROPRIATE CURRENT NYS DEPARTMENT OF TRANSPORTATION STANDARD SHEETS, EXCEPT AS MODIFIED IN THESE PLANS AND IN THE ITEMIZED PROPOSAL.
- QUALITY CONTROL OF ASPHALT CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 402 OF THE STANDARD SPECIFICATIONS. ASPHALT COURSE DEPTHS SHOWN ON THE PLANS ARE COMPACTED DEPTHS.
- NO NIGHT WORK WILL BE ALLOWED UNLESS PRIOR APPROVAL IS GIVEN BY THE DEPARTMENT. ADDITIONAL WORK ZONE TRAFFIC CONTROL WILL BE REQUIRED INCLUDING THE ADDITION OF REFLECTIVE MATERIALS AND LIGHTING.
- HAZARDOUS WASTE NOTIFICATION - THE PERMITTEE ACCEPTS THE RIGHT-OF-WAY OF THE STATE HIGHWAY IN ITS AS IS CONDITION. THE DEPARTMENT OF TRANSPORTATION MAKES NO REPRESENTATION AS TO THE ABSENCE OF UNDERGROUND TANKS, STRUCTURES, FEATURES OR SIMILAR IMPEDIMENTS TO THE COMPLETION OF THE WORK PERMITTED HEREUNDER. SHOULD PERMITTEE FIND SOME PREVIOUSLY UNKNOWN UNDERGROUND IMPEDIMENTS TO ITS WORK, THE DEPARTMENT OF TRANSPORTATION SHALL HAVE NO OBLIGATION TO CURE, REMOVE, REMEDY OR OTHERWISE DEAL WITH SUCH PREVIOUSLY UNKNOWN UNDERGROUND IMPEDIMENTS. THE DEPARTMENT WILL PERMIT THE PERMITTEE TO REMOVE, MODIFY OR OTHERWISE DEAL WITH SUCH UNDERGROUND TANKS, STRUCTURE FEATURE OR IMPEDIMENT IF SUCH IS DONE IN A MANNER WHICH MEETS ACCEPTABLE ENGINEERING PRACTICE AND IS PRE-APPROVED BY THE DEPARTMENT OF TRANSPORTATION. SHOULD PERMITTEE DETERMINE THAT SUCH UNFORESEEN UNDERGROUND IMPEDIMENT RENDERS PERMITTEES WORK AS AUTHORIZED BY THIS PERMIT UNFEASIBLE, PERMITTEE SHALL HAVE THE OPTION OF RESTORING THE HIGHWAY TO ITS ORIGINAL CONDITION AND NOT PERFORMING SUCH WORK.
- OPEN CUTTING OF THE ROADWAY SHALL NOT BE ALLOWED UNLESS PERMISSION IS GRANTED, IN WRITING, BY THE REGIONAL TRAFFIC ENGINEER.

TABLE NY1-B SHADOW VEHICLE USE REQUIREMENTS (MOBILE CLOSURES)				
CLOSURE TYPE	EXPOSURE CONDITION	USE REQUIREMENTS		
		FREEWAY	NON-FREEWAY (PRECONSTRUCTION POSTED SPEED LIMIT)	
LANE CLOSURE	WHEN ANY WORKER, VEHICLE, OR OTHER HAZARD IS EXPOSED TO TRAFFIC	REQUIRED ^{2,4}	REQUIRED ^{2,4}	REQUIRED ^{2,4}
	WHEN ANY WORKER, VEHICLE, OR OTHER HAZARD IS EXPOSED TO TRAFFIC	REQUIRED ^{2,4}	REQUIRED ^{2,4}	REQUIRED ^{2,4}

- A MOBILE CLOSURE SHALL BE USED FOR ANY WORK ACTIVITY THAT MOVES CONTINUOUSLY OR INTERMITTENTLY ALONG THE TRAVELED WAY OR SHOULDER SLOWER THAN THE PREVAILING SPEED OF TRAFFIC. CHANNELIZING DEVICES ARE NOT USED FOR MOBILE CLOSURES.
- SHADOW VEHICLES SHALL BE EQUIPPED WITH AN APPROVED REAR MOUNTED ATTENUATOR (TRUCK MOUNTED OR TRAILER MOUNTED) FOR THE FOLLOWING MOBILE CLOSURES: LANE CLOSURES ON FREEWAYS, LANE CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION POSTED SPEED LIMIT OF 35 MPH OR MORE, SHOULDER CLOSURES ON FREEWAYS, AND SHOULDER CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE.
- FOR MOBILE LANE CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION POSTED SPEED LIMIT OF 30 MPH OR LESS AND MOBILE SHOULDER CLOSURES ON NON-FREEWAY ROADWAYS HAVING A PRE-CONSTRUCTION SPEED LIMIT OF 40 MPH OR LESS, SHADOW VEHICLES ARE NOT REQUIRED TO BE EQUIPPED WITH A REAR MOUNTED ATTENUATOR.
- A SHADOW VEHICLE IS USED TO PROTECT EXPOSED WORKERS (ON FOOT OR IN A VEHICLE) AND SHALL BE REQUIRED FOR ALL MOBILE CLOSURES. SHADOW VEHICLE REQUIREMENTS SHALL INCLUDE PROVIDING A SEPARATE SHADOW VEHICLE FOR EACH CLOSED LANE AND EACH CLOSED PAVED SHOULDER 8' OR GREATER IN WIDTH. ADDITIONAL SHADOW VEHICLES MAY BE REQUIRED TO PROMOTE THE SAFE OPERATION OF TRAFFIC AND THE UNEXPECTED PROTECTION OF EXPOSED WORKERS, AS DIRECTED BY THE REGIONAL DIRECTOR OR HIS/HER DESIGNEE.

TABLE 6C-2 LONGITUDINAL BUFFER SPACE		
PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	DISTANCE	
30	156 FT.	
35	200 FT.	
40	252 FT.	
45	304 FT.	
50	356 FT.	
55	408 FT.	
60	460 FT.	
65	512 FT.	

TABLE NY2-B PLACEMENT DISTANCE FOR SHADOW VEHICLES				
PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	PLACEMENT DISTANCE (FT.)			
	SHADOW VEHICLES**		SHADOW VEHICLES**	
> 55	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
	230 FT.	330 FT.	180 FT.	280 FT.
45 - 55	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
	180 FT.	280 FT.	150 FT.	250 FT.
< 45	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
	100 FT.	200 FT.	100 FT.	200 FT.

* AS DEFINED IN NYSDOT STANDARD SPECIFICATION 619.

SHADOW VEHICLE - VEHICLE USED FOR MOBILE OR SHORT DURATION WORK OPERATIONS.

MINIMUM DISTANCE SHOWN REFLECTS THE ACTUAL ROLL AHEAD DISTANCE FROM MANUFACTURER.

TABLE NY2-A PLACEMENT DISTANCE FOR BARRIER VEHICLES				
PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	PLACEMENT DISTANCE (FT.)			
	BARRIER VEHICLES*		BARRIER VEHICLES*	
> 55	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
	100 FT.	200 FT.	100 FT.	200 FT.
45 - 55	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
	100 FT.	200 FT.	85 FT.	165 FT.
< 45	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
	85 FT.	165 FT.	50 FT.	100 FT.

* AS DEFINED IN NYSDOT STANDARD SPECIFICATION 619.

BARRIER VEHICLE - VEHICLE USED FOR STATIONARY SHOULDER CLOSURES, LANE CLOSURES, AND OTHER STATIONARY WORK ZONES.

MINIMUM DISTANCE SHOWN REFLECTS THE ACTUAL ROLL AHEAD DISTANCE FROM MANUFACTURER.

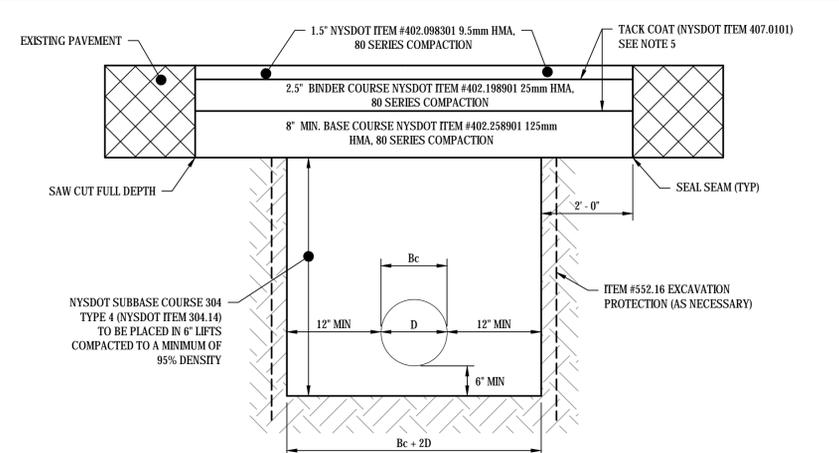
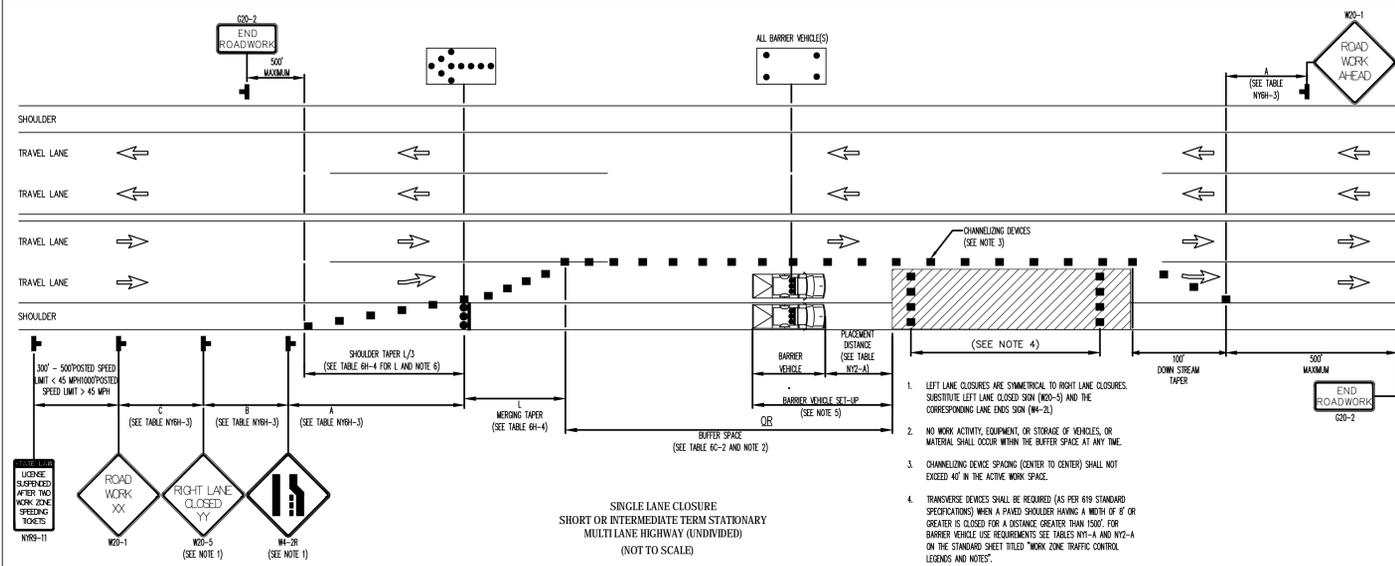
UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM ON THIS DRAWING IN ANY WAY. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

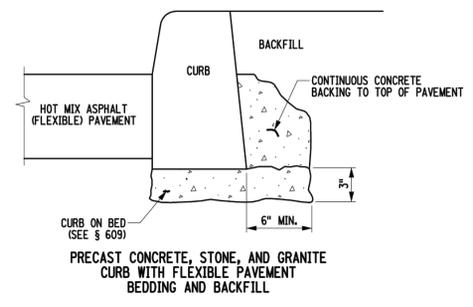


Drawn TJD	Designer TJD
Drafting Check JHD	Design Check JHD
Approved (Project Director) K. CASTRO	Date JUNE 7, 2019
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction

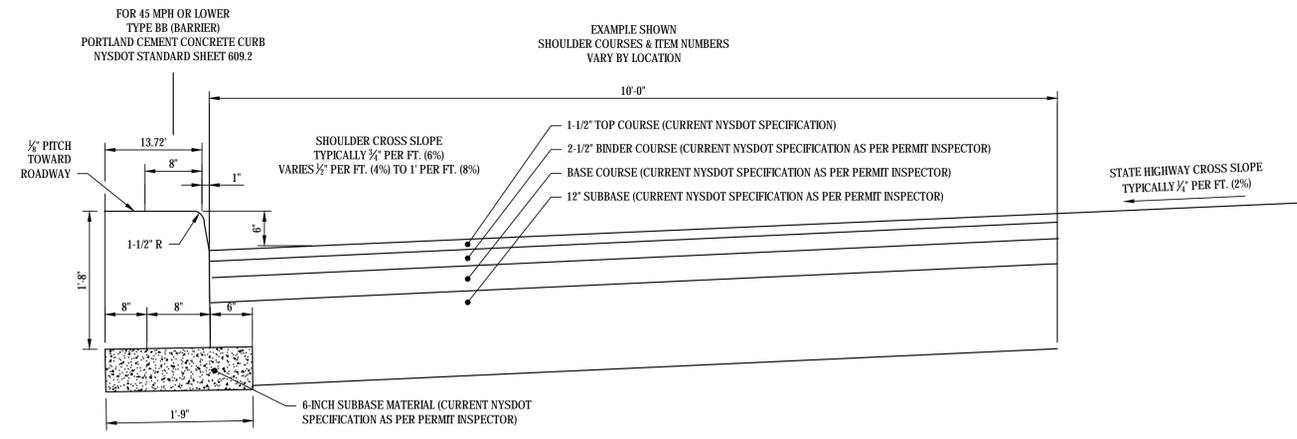
Client	TOWN OF NEWBURGH, NEW YORK MEADOW HILL SOUTH PARALLEL RELIEF SEWER NYSDOT TRAFFIC CONTROL NOTES
Project	
Title	
Original Size	CONTRACT No.1
Arch D	Drawing No: 86-16478-C05
Rev: B	



- NOTES:
- USE FOR ALL AREAS WITHIN STATE ROAD RIGHT OF WAY
 - CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL APPLICABLE SAFETY CONDITIONS ALONG TRENCH.
 - NO TREES OVER 6" IN DIA. SHALL BE REMOVED FROM SITE R.O.W. WITHOUT PRIOR PERMISSION FROM THE REGIONAL LANDSCAPE ARCHITECTS.
 - ALL DISTURBED AREAS ARE TO BE TOP SOILED AND SEEDED WITH A SUITABLE STAND OF GRASS. 1:2 SLOPES SHALL REQUIRE APPROPRIATE EROSION CONTROL MEASURES.
 - TACK COAT SHALL BE APPLIED TO ALL EXPOSED EDGES AND BETWEEN COURSES IN ACCORDANCE WITH THE LATEST EDITION OF NYSDOT STANDARDS.
 - PRIOR TO INSTALLATION OF PAVEMENT MARKINGS CONTRACTOR SHALL CLEAN AND PREPARE PAVEMENT IN ACCORDANCE WITH SECTION 635 OF THE NYSDOT STANDARD SPECIFICATION.
 - CONTRACTOR SHALL INSTALL PAVEMENT IN ACCORDANCE WITH THE LATEST EDITION OF NYSDOT SPECIFICATIONS
- ** NO LANE CLOSURES ARE TO BE LEFT OVERNIGHT. ALL EXCAVATIONS IN NYS ROUTE 104 MUST BE TEMPORARILY PAVED AT THE END OF EACH WORKING DAY UNTIL FINAL PAVING TAKES PLACE. EXCAVATIONS WILL BE BACKFILLED PER THE DETAIL ABOVE TO WITHIN 4" OF THE SURFACE AND THEN TEMPORARILY PAVED WITH NYSDOT TYPE 2 COLD MIX BITUMINOUS (REFER TO TEMPORARY PAVING SPEC)



- NOTES:
- USE CURB AND CURB AND GUTTER MEETING THE MATERIAL AND CONSTRUCTION REQUIREMENTS OF SECTION 609 OF THE STANDARD SPECIFICATIONS.
 - CURB ANCHOR (NEW CONSTRUCTION, THIS DETAIL SHOWS PLACEMENT OF CURB ANCHORS. PUSH-IN TYPE ANCHORS MAY BE USED (SHOWN ON THE STANDARD SHEET FOR LONGITUDINAL TIES).
 - CURB TYPES M150A, VF150A AND M100A REQUIRE CURB ANCHOR. CURB AND GUTTER TYPES VF150G AND M100G REQUIRE ANCHORS WHEN PLACED ADJACENT TO CONCRETE PAVEMENT OR SHOULDER.
 - WHEN VERTICAL FACED CURB LESS THAN 9" WIDE IS USED WITH CURB BOXES CU1, CU2, AND CU3 AND CONCRETE SIDEWALK IS PLACED ADJACENT TO THIS CURB, SEE STANDARD SHEET MISCELLANEOUS CURB DETAILS FOR CURB BOX JOINTS.
 - USE WITH CURB BOXES, CM1, CM2, AND CM3.



NYSDOT CURB AND SHOULDER DETAIL
NOT TO SCALE

NYSDOT TRENCH & PAVEMENT RESTORATION DETAIL
NOT TO SCALE

				UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.		<p>GHD CONSULTING SERVICES, INC</p> <p>5788 Widewaters Pkwy Syracuse NY 13214 USA T 1 315 802 0260 F 1 315 802 0450 W www.ghd.com</p>	Drawn TJD	Designer TJD	Client TOWN OF NEWBURGH, NEW YORK Project MEADOW HILL SOUTH PARALLEL RELIEF SEWER Title NYSDOT MISCELLANEOUS DETAILS CONTRACT No.1 Arch D Drawing No: 86-16478-C06
C	FOR CONSTRUCTION	JAD	JHD	KC			04/20	Drafting Check JHD	
B	REVISED FOR REGULATORY APPROVAL	JAD	JHD	KC	01/20	Approved (Project Director) K. CASTRO Date JUNE 7, 2019			
A	FOR REGULATORY APPROVAL	TJD	JHD	KC	04/14	Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	Original Size	
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date	Arch D Drawing No: 86-16478-C06		

Plot Date: 28 April 2020 - 10:36 AM Plotted by: Frank Erwin Cad File No: G:\8616478\CADD\Drawings\Civil\86-16478-DETS.dwg

Matrix Logistics Center at Newburgh
NYS Route 300
Town Newburgh, NY

Appendix B: Pump Station Calculations

Job No.:	<u>190063301</u>	Prepared By:	<u>LM</u>	Revised By:	<u> </u>
Job Name:	<u>The Ridge</u>	Date:	<u>10/14/2021</u>	Date:	<u> </u>
Municipality:	<u>Town of Newburgh</u>	Reviewed By:	<u>CU</u>	Reviewed By:	<u> </u>

Sanitary Pump Station Calculations - Building A

1) Design Flows

- No. Employees = 798 employees
- No. Employees (2 Shifts)= 1,596 employees
- Loading Rate = 15 gpd/employee
- Flow, Q_{flow} = 19,152 gpd (with 20% reduction)
- 13.3 gpm (based on a 24-hour day)

- Peak Hourly Flow
- Factor = 2.0
- Peak Hourly Flow, $Q_{peakhourly}$ = 26.6 gpm

- Max. Daily Flows
- Factor = 4.0
- Max. Daily Flow, $Q_{maxdaily}$ = 53.2 gpm

2) Pump Station Design

- Pump Station Internal Dimensions = 8 ft. diameter
- Internal Area of Wet Well = $\frac{1}{4}\pi d^2$ = 50.27 sf
- Volume Per Foot of Wet Well = 50.27 cf or 376.1 gal.

- Maximum Dose Volume for 30 Minute Maximum Fill Time
- $Q_{flow} \times 30 \text{ min.} =$ 399 gal. (max. design dose vol. in wet well)

- Draw Down
- Vol. Req./Vol. per Ft. of Manhole = 1.06 ft. = 12.73 in.
- use 1.00 ft. = 12.00 in.

- Check:
- Draw Down x Internal Area = 50.3 cf or 376.1 gal. ($\leq Q_{design}$ @ 30 min.)
- Approximate Filling time = 28.3 min. (< 30 min. max.)

3) Pump Station Elevations

Component	Elevation	
Grade at Pump Station =	<u>376.9</u> ft.	
Top of Slab =	<u>377.1</u> ft.	
Top of Wet Well =	<u>376.6</u> ft.	
Inv. In (from SMH A9) =	<u>362.8</u> ft.	
Inv. Out (Force Main) =	<u>372.1</u> ft.	
HW Alarm =	<u>361.8</u> ft.	
Lag Pump On =	<u>361.3</u> ft.	
Lead Pump On =	<u>360.8</u> ft.	
Pump Off =	<u>359.8</u> ft.	
Internal Bottom of Wet Well =	<u>358.8</u> ft.	
Internal Depth of Wet Well =	<u>17.8</u> ft.	(Top of Wet Well - Internal Bottom of Wet Well)

Job No.:	<u>190063301</u>	Prepared By:	<u>LM</u>	Revised By:	<u> </u>
Job Name:	<u>The Ridge</u>	Date:	<u>10/14/2021</u>	Date:	<u> </u>
Municipality:	<u>Town of Newburgh</u>	Reviewed By:	<u>CU</u>	Reviewed By:	<u> </u>

Sanitary Pump Station Calculations - Building A

4) Total Dynamic Head

- Static Head

Invert at High Point =	<u>368.8 ft.</u>	(approx. at connection point)
Pump Off =	<u>359.8 ft.</u>	
Static Head =	<u>9.0 ft.</u>	

- Total Length (including equivalent length for fittings)

Force main length =	<u>1,390 ft.</u>	
Station Depth =	<u>17.8 ft.</u>	
Check Valve =	<u>1 ea. X 19 ft./ea. =</u>	<u>19 ft.</u>
Gate Valve =	<u>3 ea. X 1.5 ft./ea. =</u>	<u>4.5 ft.</u>
Total Equivalent Length =	<u>1,431 ft.</u>	

- Friction Head Loss

Roughness Coefficient, C =	<u>130</u>	
Diameter Force Main, d =	<u>1.5 in.</u>	
Area of Force Main, A =	<u>0.01 sf.</u>	
Total Equivalent Length, L =	<u>1,431 ft.</u>	
Flow Rate, Q =	<u>13.3 gpm</u>	
Velocity, V =	<u>2.4 fps</u>	
Friction Head Loss, HL =	<u>30.6 ft.</u>	

- Total Dynamic Head = 39.6 ft. = 17.1 psi
- Pressure in Existing Forcemain = 77 ft. = 33.4 psi
- **Overall Total Dynamic Head = 116.6 ft. = 50.5 psi**

5) Pump Cycles

- Pump Cycle:

Draw Down Height x Wet Well Area =	<u>376.1 gal</u>	
Wet Well Volume / ft. =	<u>376.1 gal</u>	
Pumping Rate =	<u>30.0 gpm</u>	(minimum)

Pump Running Time =	<u>12.5 min.</u>	use	<u>13 min.</u>
Time for Q _{flow} to fill Dose Volume =	<u>28.3 min.</u>	use	<u>28 min</u> (time between starts > 5 min)

- For Max Day Flow:

Number of Pump Starts per hour =	<u>1</u>	TO	<u>2</u>	for duplex pump system
Number of Pump Starts per hour =	<u>1</u>	TO	<u>2</u>	for each pump

Notes:

- Provide 10-30 minutes retention at max design flow
- No. Starts = 60 min / (Time for Q_{peak} to Fill Dose Vol.+ Pump Running Time to Pump Out Dose)
- No. Start/Stops per hour: Maximum of 10 to 12 starts per hour
- Maximum = 6 starts per hour for one pump
Maximum = 12 starts per hour for duplex (2) pump system
- Roughness Coefficient, C and equivalent length values taken from the Civil Engineering Reference Manual for the PE Exam, Eleventh Edition

Job No.:	<u>190063301</u>	Prepared By:	<u>LM</u>	Revised By:	<u> </u>
Job Name:	<u>The Ridge</u>	Date:	<u>10/14/2021</u>	Date:	<u> </u>
Municipality:	<u>Town of Newburgh</u>	Reviewed By:	<u>CU</u>	Reviewed By:	<u> </u>

Sanitary Pump Station Calculations - Building B

4) Total Dynamic Head

- Static Head

Invert at High Point =	<u>368.8</u> ft.	(approx. at connection point)
Pump Off =	<u>355.1</u> ft.	
Static Head =	<u>13.7</u> ft.	

- Total Length (including equivalent length for fittings)

Force main length =	<u>630</u> ft.	
Station Depth =	<u>14.0</u> ft.	
Check Valve =	<u>1</u> ea. X <u>15</u> ft./ea. =	<u>15</u> ft.
Gate Valve =	<u>2</u> ea. X <u>1.2</u> ft./ea. =	<u>2.4</u> ft.
Total Equivalent Length =	<u>661.38</u> ft.	

- Friction Head Loss

Roughness Coefficient, C =	<u>130</u>	
Diameter Force Main, d =	<u>1.25</u> in.	
Area of Force Main, A =	<u>0.01</u> sf.	
Total Equivalent Length, L =	<u>661.38</u> ft.	
Flow Rate, Q =	<u>3.5</u> gpm	
Velocity, V =	<u>0.9</u> fps	
Friction Head Loss, HL =	<u>2.9</u> ft.	

- Total Dynamic Head = 16.6 ft. = 7.2 psi
- Pressure in Existing Forcemain = 77.0 ft. = 33.4 psi
- **Overall Total Dynamic Head = 93.6 ft. = 40.5 psi**

5) Pump Cycles

- Pump Cycle:

Draw Down Height x Wet Well Area =	<u>98.4</u> gal	
Wet Well Volume / ft. =	<u>146.9</u> gal	
Pumping Rate =	<u>7.0</u> gpm	(minimum)

Pump Running Time =	<u>14.1</u> min.	use	<u>14</u> min.
Time for Q _{avg} to fill Dose Volume =	<u>28.4</u> min.	use	<u>28</u> min (time between starts > 5 min)

- For Max Day Flow:

Number of Pump Starts per hour =	<u>1</u>	TO	<u>2</u>	for duplex pump system
Number of Pump Starts per hour =	<u>1</u>	TO	<u>2</u>	for each pump

Notes:

- Provide 10-30 minutes retention at max design flow
- No. Starts = 60 min / (Time for Q_{peak} to Fill Dose Vol.+ Pump Running Time to Pump Out Dose)
- No. Start/Stops per hour: Maximum of 10 to 12 starts per hour
- Maximum = 6 starts per hour for one pump
Maximum = 12 starts per hour for duplex (2) pump system
- Roughness Coefficient, C and equivalent length values taken from the Civil Engineering Reference Manual for the PE Exam, Eleventh Edition

Matrix Logistics Center at Newburgh
NYS Route 300
Town Newburgh, NY

Appendix C: Pump Station Specs

Submersible Grinder Pump

Model DGUII, DGFU



drainage | small scale sewage transfer systems



EBARA Fluid Handling

an EBARA International Corporation company

Model DGUI, DGFU

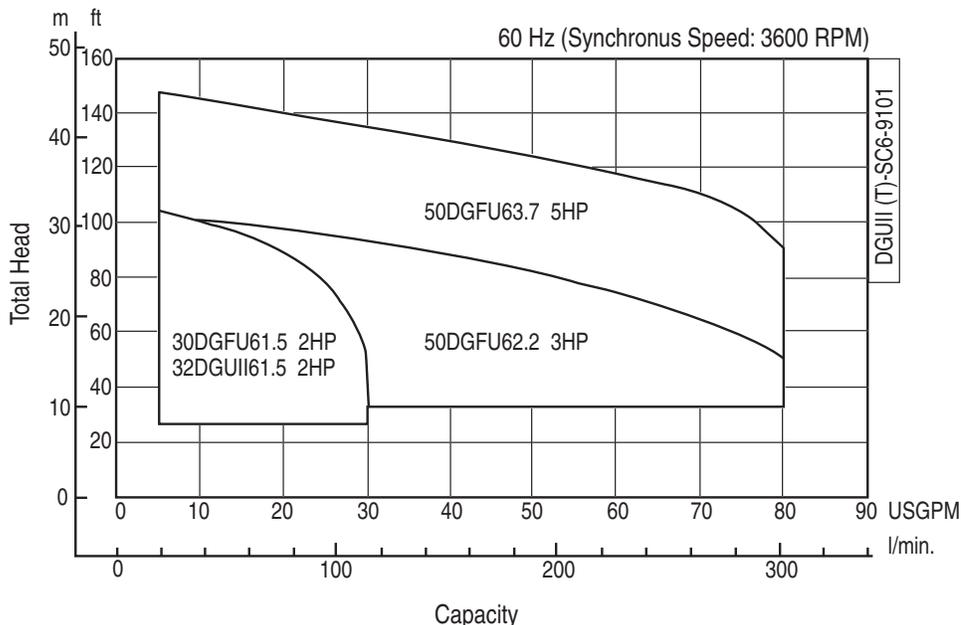
Features

- **Heavy duty high chrome iron grinder system** - powerful blades reduce solids size for smooth, non-clogging flow
- **Reversible grinder ring** provides longer service life and less maintenance
- **Air filled, Class F insulated, heavy duty motor, rated for 20 starts/hour**, dissipates heat easily, operates cooler with higher efficiencies; longer service life with lower operating costs
- **Built-in motor protection**; (DGUI models) protects motor against overheating, out-of-phase, single phasing, and no load; (DGFU models) provide overtemp and seal fail protection; saving money on costly motor replacement
- **Sealed cable entry system** prevents capillary action and protects against moisture; reduces maintenance costs
- **60,000 hour bearings** ensures long dependable operation; lower maintenance costs
- **Semi-open vortex type recessed impeller**; vortex action prevents clogging and handles stringy material better vs moving pumpage through impeller vanes; provides durability, high reliability, and lowers maintenance costs
- **Double mechanical seals** – upper and lower seals operate in an oil bath; providing longer service life and lower maintenance costs
- **Small and light weight portability**; easy to transport for temporary installations
- **Available for slide rail installations** provides ease of maintenance for small sump type installations

Standard Specifications

		DGUI	DGFU
Design	Discharge	1 1/4 inch	1 1/4, 2 inch
	Horsepower	2HP (<i>single phase</i>)	2 to 5HP
	Capacity	5 to 30 GPM	5 to 80 GPM
	Total head	27 to 112 feet	27 to 148 feet
	Max.Liquid temp.	104°F/40°C	
Speed		3600 RPM	
Materials	Casing	Cast Iron	
	Impeller	Cast Iron	
	Grinder Impeller	High Chrome Cast Iron HRC 60	
	Grinder Disk	High Chrome Cast Iron HRC 60	
	Shaft	403 Stainless Steel	
	Motor Frame	Cast Iron	
Construction	Fastener	304 Stainless Steel	
	Mechanical Seal	Double Mechanical Seal	
	Material – Upper	Carbon/Ceramic	
	Material – Lower	Silicon Carbide/Silicon Carbide Silicon	
	Impeller Type	Vortex	
	Bearing		
	Upper/Lower	Prelubricated Ball Bearing	
	Motor	Air-filled, Insulation Class F	Insulation Class F
			Optional: FM Explosion Proof Class 1, Division 1, Group C, D
		Single Phase	208/230V
	Three Phase		208/230V/460V
	Motor Protection	Built-in Auto Cut - overload no load, out of phase, and single phasing protection	Built-in Thermal Detector - Klaxon Built-in Mechanical Seal Leakage
Submersible Cable		33 ft. standard cable length, Optional 66 ft.	
Accessories		Optional QDC System	

DGUI, DGFU selection chart



* All specifications subject to change without notice.



EBARA Fluid Handling

1651 Cedar Line Drive • Rock Hill, SC 29730 • t (803) 327 - 5005 • f (803) 327 - 5097

www.pumpsebara.com

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