

SEWER ENGINEER'S REPORT

25 Delaware Avenue Apartments

25 Delaware Avenue

CITY OF ALBANY
COUNTY OF ALBANY
STATE OF NEW YORK

Applicant: 25 Delaware, LLC

Prepared by:

Hershberg & Hershberg
Consulting Engineers and Land Surveyors

18 Locust Street
Albany, NY 12203-2908
(518) 459-3096
Fax (518) 459-5683
hhershberg@aol.com

May 2, 2019
Revised January 13, 2021
Revised March 15, 2021
Revised June 21, 2021

INTRODUCTION:

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by 25 Delaware, LLC (hereinafter the "Applicant") with an address of 1000 University Avenue, Suite 500, Rochester, NY 14607 as site engineer for the development plan to be known as 25 Delaware Avenue Apartments. This report is for the consideration of the Department of Water & Water Supply and the City of Albany Planning Board.

DESCRIPTION OF EXISTING SITE:

PARCEL AREA

The existing site has an address of 25 Delaware Avenue with an area of 33,877 SF or 0.78 acres. The existing site contains a two-story building that is currently vacant. The current zoning is MU-CU: Mixed Use-Community Urban.



Fig. No. 1 - Aerial Photo of Site

DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE

Under the current applications the Applicant is proposing to construct a 4-story apartment consisting of 51 units above a garage floor with 30 parking spaces. The existing two-story building on site will be rehabilitated and will be available for tenant use. The site will also feature new landscaping, lighting and a stormwater management system.

SEWER GENERATION

To determine sewage generation after construction, the *New York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014)*¹ is used to compute the Average Daily Flow. Based upon 110 GPD per bed and 5 GPD per toilet, 62 beds in the apartment and 4 toilets in the rehabilitated two-story building will generate an estimated 7,020 GPD or 4.88 GPM. See Fig. No.2 below. Peak sewage flow generation is estimated at 450% of average flow or 21.96 GPM. This is equivalent to 0.05 CFS.

¹*New York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014)*

² *Ibid.* Page B-16

Sewage Generation
25 Delaware Avenue

Floor/Use	Unit	Value	Water Use Per		Water Use (GPD)
			Unit per day(GPD) See	Note 1	
Residential	Bedroom	62	110		6820
Residential	Toilet	4	50		200
TOTAL					7,020

1) Source: New York State Design Standards for Intermediate Sized Wastewater Treatment Works, NYSDEC, March 5, 2014

Fig. No. 2 – Sewage Generation

The proposed connection is to a 12" VCP combined sewer on Lark Street via a 6" PVC sanitary sewer lateral. The 12" VCP combined sewer has an assumed grade of 5.0% and a full flowing capacity of 7.46 CFS. The peak flow of 0.5 CFS represents 0.7% of the 12" VCP combined sewer pipe capacity. A portion of Sewer Atlas Sheet 44 is reproduced below.

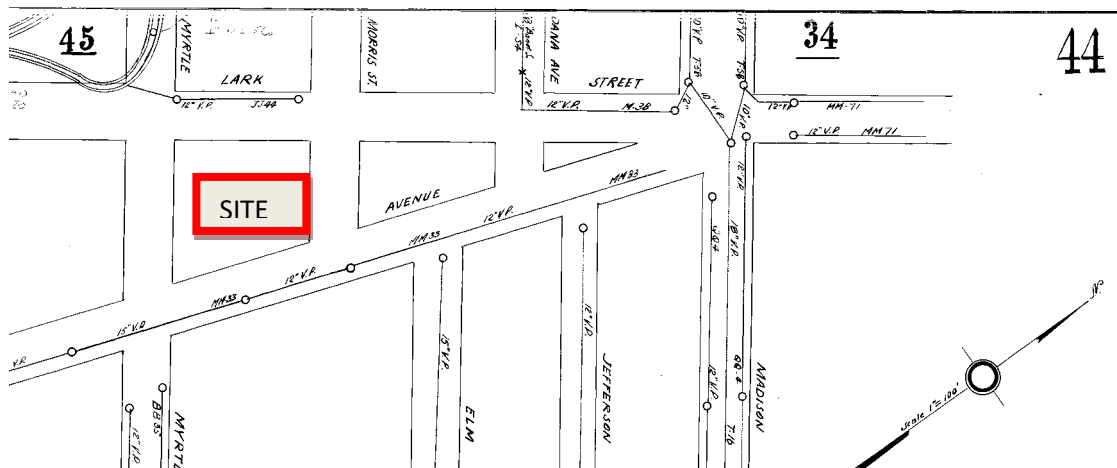
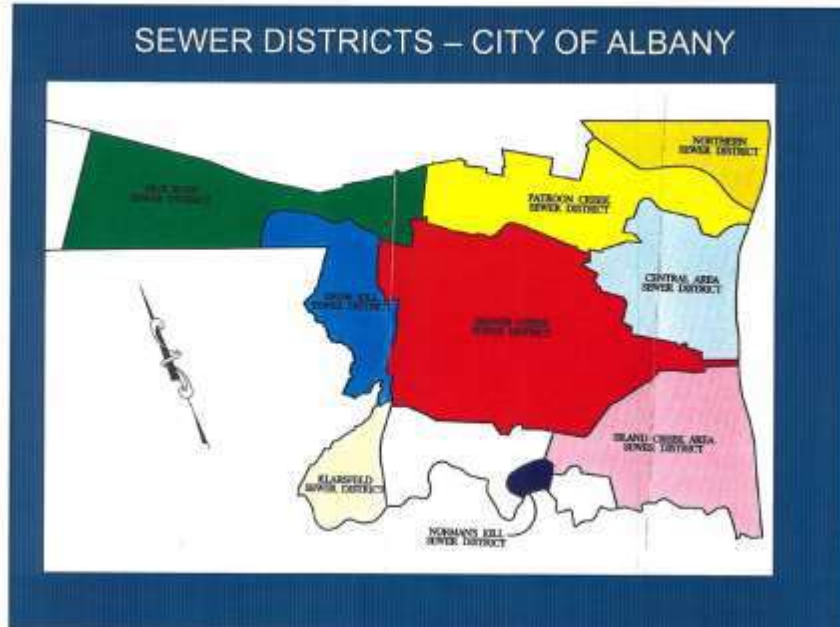


Fig. No. 3 –Excerpt from Sewer Atlas Sheet 44

The existing site is tributary to the Beaver Creek Sewer District. (See map below)



COMBINED SEWER OVERFLOW BEST MANAGEMENT PRACTICES

NYSDEC issued a City of Albany Combined Sewer Overflow SPDES Permit, DEC ID#s 4-0101-00012/00001 SPDES #s NY0025747 on November 30, 2018. It included fifteen Best Management Practices which are reviewed below:

1. CSO Operation/Maintenance/Inspection – Not Applicable to this project although maintenance and inspection of Storm Water Management System is covered by maintenance agreement.
2. Maximum Use of Collection System for Storage – Not Applicable

3. Industrial Pretreatment — There are industrial discharges and no toxic substances which will be discharged to the combined sewer.
4. Maximize Flow to POTW_-Not applicable.
5. Wet Weather Operating Plan -Not applicable
6. Prohibition of Dry Weather Overflow – Dry weather overflows from the combined sewer system (CSS) are prohibited. Sewer outfalls from the site are separated into storm and sanitary sewer laterals. Dry weather flow can be accommodated from the site as there are no dry weather overflows currently existing at the Beaver Creek (Big C) interceptor chamber. Combined flow to the combined sewer is reduced for all storms from the 1 year storm to the 100 year storm.
7. Control of Floatable and Settleable Solids - The Applicant will provide a notice with leases that deposition of oil/grease or toilet litter is not allowed.
8. Combined Sewer System Replacement – Not applicable.
9. Sewer/Extension – Sewer/extension, when approved by the Department, should be accomplished using separate sewers. Sewer outfalls from the site are separated into storm and sanitary sewer laterals without interconnections. No new source of storm water shall be connected to any separate sanitary sewer in the collection system. The reduction in flow to the combined sewer is reduced by an amount at least equal to the estimated increased peak hourly dry-weather flow or four (4) times the average daily dry-weather flow, whichever is greater. The peak flow is estimated as

0.05 CFS. The amount of storm water at the 1-year storm is from the existing site is 5.04 CFS which is reduced to 2.48 CFS, a reduction of 2.56 CFS or 51 times the dry weather flow.

10. Sewage Backups - There have been documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes in this area. Since the combined flow to the combined sewer is reduced for all storms from the 1 year to the 100-year storm frequencies this project will not make potential surcharging/back-up problems worse.
11. Septage and Hauled Waste - Not Applicable.
12. Control of Run-off - The impacts of run-off from development and re-development in areas served by combined sewers shall be reduced by requiring compliance with the New York Standards for Erosion and Sediment Control and the quantity control requirements included in the New York State Stormwater Management Design Manual. The combined flow to the combined sewer system is reduced for all storms from the 1 year to the 100-year storm frequencies for this project.
13. The site was entirely in fill so infiltration practices were not practical to use on the site. Also, solutions such as bio-retention basins, extended detention basin, etc. were not feasible solutions on the site due to the lack of significant level areas which could be utilized for basin solutions. Because even the fill soil has no infiltration rate, the Applicant considered using a green roof. It was found to be too expensive for inclusion in the affordable housing program from both the installation and maintenance standpoint.

A storm water planter is utilized to treat some of the drainage to the east side of the building. Also, a hydrodynamic separator is employed to treat the outfall from the pipe storage gallery beneath the garage floor. The total outflow from the site is controlled as required by USDO. The discharge from the fully developed site during a 100 year frequency storm (2.40 CFS) is less than the discharge from the undeveloped site taken as entirely pervious surface at the 10 year frequency storm (2.48 CFS). The table below is from the SWPPP.

CALCULATED FLOWS FROM UNDEVELOPED SITE AND FULLY DEVELOPED SITE			
Existing Site - Undeveloped 10 Yr. Storm	Fully Developed Site - 10 Yr. Storm	Existing Site - Undeveloped 100 Yr. Storm	Fully Developed Site - 100 Yr. Storm
2.48	1.59	5.04	2.40

Utilizing this method results in excess storage capacity than would have been required by the strict application of Redevelopment Standards as per Chapter 9 of the New York State Stormwater Management Design Manual.

- 14. Public Notification - Not Applicable.
- 15. Characterization and Monitoring -Not Applicable
- 16. Annual report - Not Applicable.

POTABLE WATER SERVICE

A 6" DIP CL 52 water service is proposed to connect to the 8" water main on Lark Street to serve Apartment building and a 6" DIP CL 52 water service is proposed to connect to the 6" water main on the southeast side of Delaware venue utilizing a directional bore to cross Delaware Avenue. to serve the Signal building. The Apartment Building will have a 4" Domestic and 6" fire protection service for main building. The rehabilitated Signal building will have a 1 1/2" Domestic and 4" fire protection service for Signal building. RPZ valves will be provided on both domestic water services and double check detector assemblies (DCDA) for both fire protection services. Water meter details and backflow preventer details will be provided with the plumbing plans.

CONCLUSION:

It is the Engineer's opinion that this project can be served by existing public sewer system with no negative impact on the existing system.



Prepared by:

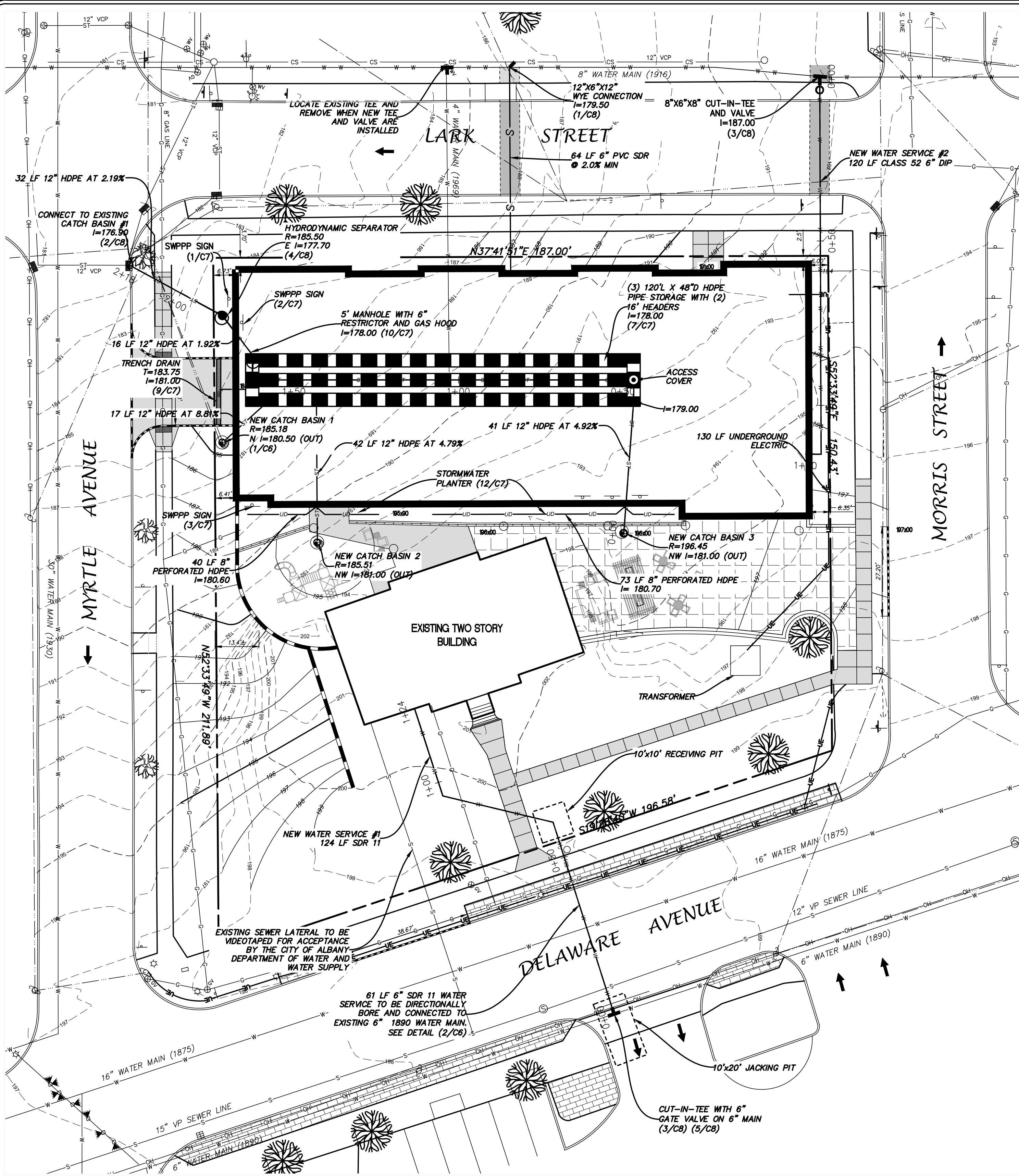
A handwritten signature in black ink, appearing to read "D. Hershberg", written over a horizontal line.

HERSHBERG & HERSHBERG
Daniel R. Hershberg, P.E. & L.S.

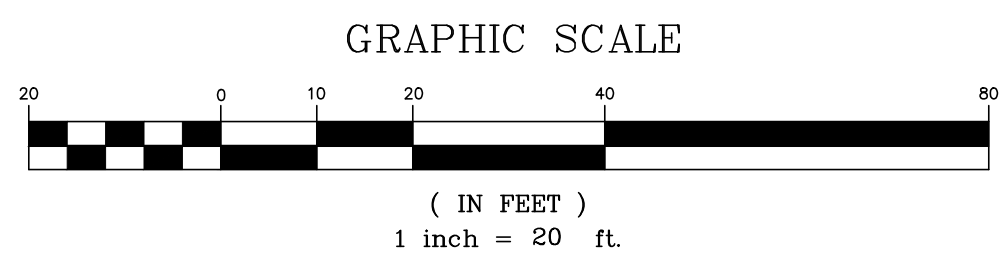
file/dan/ er20180244SEWER.doc

APPENDIX A

Sheet C6- UTILITY PLAN

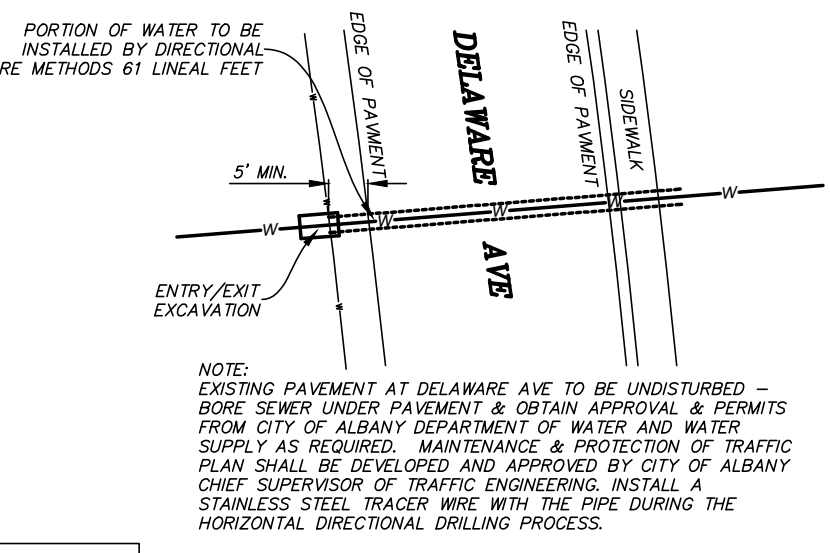


UTILITY PLAN
SCALE: 1"=20'

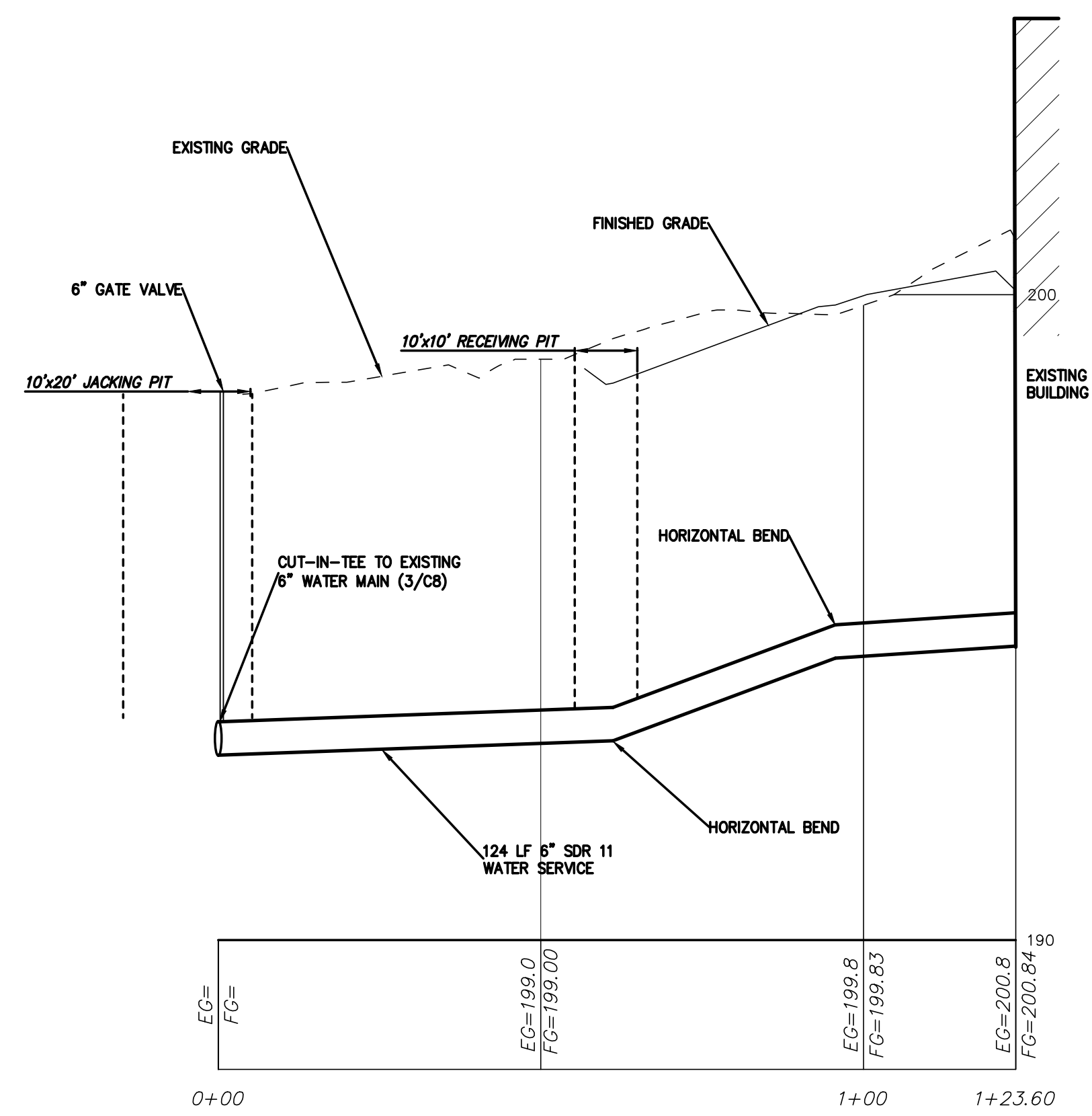


NOTES

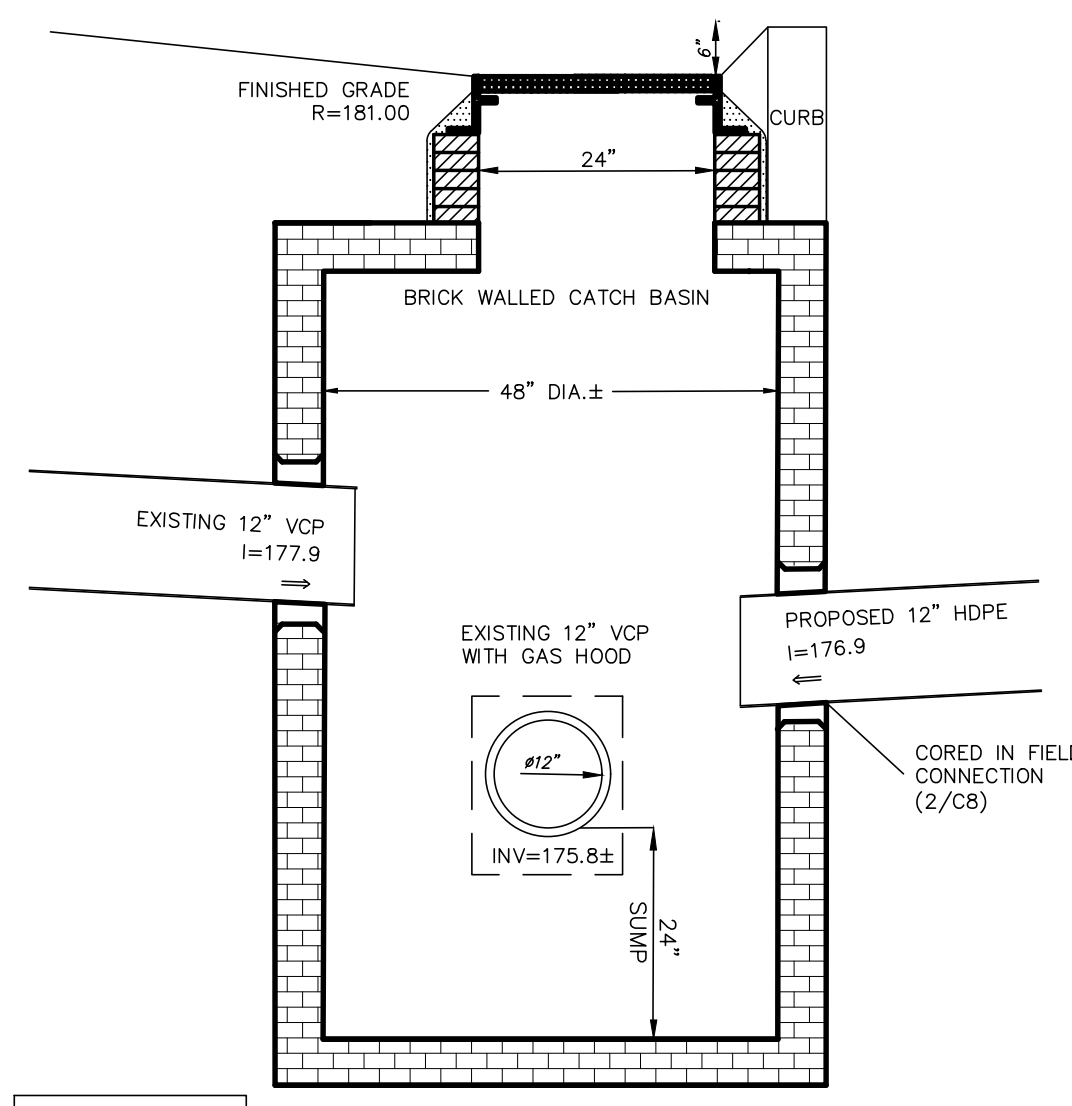
- 48 HOURS NOTICE MUST BE GIVEN TO DEPARTMENT OF WATER FOR INSPECTIONS FOR THE SANITARY, WATER AND STORMWATER UTILITIES.
- PRESSURE AND LEAKAGE TESTING OF THE WATER MAIN SHALL BE WITNESSED BY DEPARTMENT STAFF AND ACCEPTABLE BACTERIOLOGICAL TEST MUST BE SUBMITTED AND ACCEPTED BY THE DEPARTMENT PRIOR TO FINAL OF THE NEW WATER MAIN.
- PRIOR TO USE, ALL WATER LINES MUST BE CHLORINATED AND HAVE A BACTERIOLOGICAL TEST PERFORMED IN ACCORDANCE WITH CITY OF ALBANY STANDARDS.
- A SITE ASSESSMENT THAT CERTIFIES EROSION AND SEDIMENT CONTROLS DESCRIBED IN THE SWPPP ARE IN PLACE PRIOR TO CONSTRUCTION COMMENCEMENT MUST BE COMPLETED BY A QUALIFIED PROFESSIONAL AND SUBMITTED TO THE MS4 COORDINATOR AT DEPARTMENT OF WATER WITHIN 24 HOURS OF INSPECTION COMPLETION.
- THE WATER DEPARTMENT MUST BE NOTIFIED 1 WEEK IN ADVANCE OF ANTICIPATED WATER SERVICE WORK THAT WILL REQUIRE SHUTTING DOWN THE WATER MAIN.
- TWO SEPARATE WATER METERS WILL BE REQUIRED.



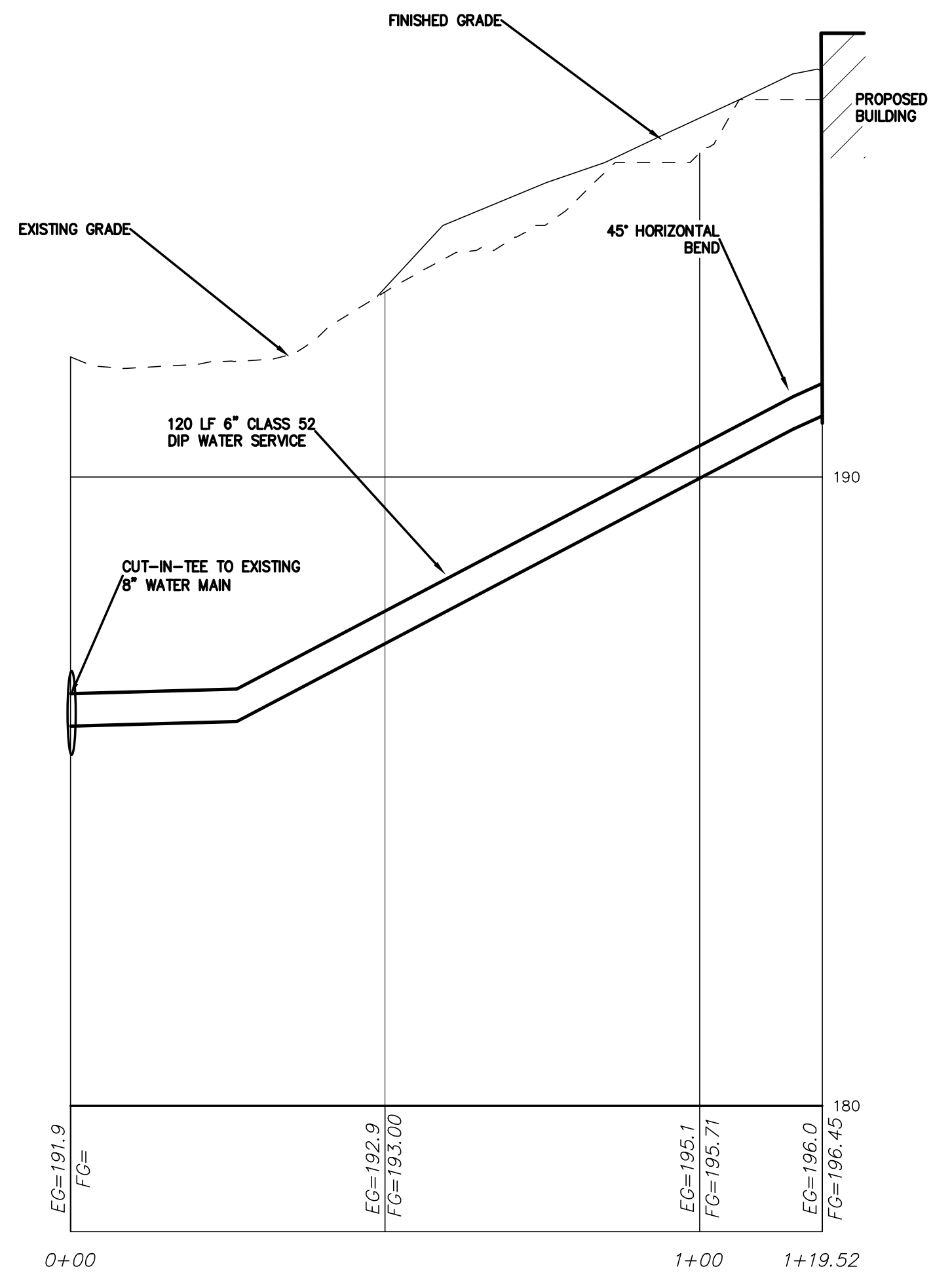
2/C6 DIRECTIONAL BORE DETAIL
NOT TO SCALE



WATER SERVICE PROFILE 1
SCALE: 1"=2' (H) 1"=20' (V)

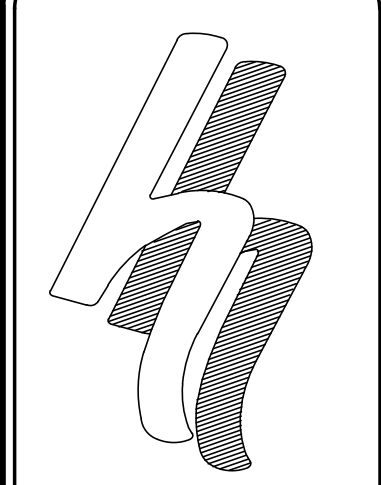


1/C6 CATCH BASIN #1
NOT TO SCALE



WATER SERVICE PROFILE 2
SCALE: 1"=2' (H) 1"=20' (V)

LEGEND			
R.O.W.	RIGHT OF WAY	○	MONUMENT
No.	NUMBER	○	IRON ROD
enc.	ENCROACHMENT	○	MANHOLE
P.O.B.	POINT OF BEGINNING	⊠	CATCHBASIN
S.F.	SQUARE FEET	—	SIGN
N/F	NOW OR FORMERLY	—	BOLLARD
Fl.	FEET	—	FENCE LINE
Deg.	DEGREE	—	GUARD RAIL
R	RECORD	—	OVERHEAD WIRE, UTILITY POLE & GUY WIRE
M	MEASURED	—	TRAFFIC FLOW ACCESS AREA
N	NORTH	—	WATER SHUT OFF
S	SOUTH	—	HYDRANT
E	EAST	—	WATER VALVE
W	WEST	—	GAS VALVE
tel.	TELEPHONE	—	GAS TEST
elec.	ELECTRIC	—	GAS DRIP
L	LIBER	—	STREET LIGHT
P	PAGE	—	LIGHT POLE
—	WATER LINE	—	CONCRETE
—	SEWER LINE	—	PAVEMENT
—	GAS LINE	—	TREE CONIFEROUS DIAMETER OF TREE
—	UNDERGROUND ELECTRIC	—	TREE DECIDUOUS DIAMETER OF TREE



HERSBERG & HERSBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, IS ILLEGAL.



DATE	REVISIONS
02/26/21	GENERAL UPDATES
03/17/21	GENERAL UPDATES
04/27/21	TRANSFORMER ADDED
05/17/21	GENERAL UPDATES

**UTILITY PLAN FOR
25 DELAWARE AVENUE
ALBANY, NY**

FILE: 180244
SCALE: 1"=20'
CHK: DRH
DATE: 11/10/20
BY: TMO
PROJECT: 180244-3.DWG

APPENDIX B

PIPE CAPACITY CALCULATIONS

**THE FOLLOWING, IS THE CALCULATION FOR PIPES FLOWING
FULL AS STATED IN THE CHEZY-MANNING FORMULA, WHERE:
TRIBUTARY AREA**

Qp = PROJECTED DISCHARGE IN C.F.S.
 Q MAX = DISCHARGE FOR PIPE FLOWING FULL IN C.F.S.
 n = COEFFICIENT OF ROUGHNESS
 A = CROSS SECTIONAL AREA OF FLOW IN SQUARE FEET
 R = HYDRAULIC RADIUS IN FT.

S = SLOPE IN FT./FT.
 Vm = VELOCITY OF PIPE FLOWING FULL IN FT./SEC.
 D = PIPE DIAMETER IN INCHES
 Vp = PROJECTED VELOCITY IN FT./SEC.

LOCATION	Qp	Q MAX	n	A	R	S	Vm	D
TOTAL	0.00	7.46	0.014	0.785	0.250	0.0500	9.5	12