

Table 7.4. Permeable Pavement Design Criteria

Table with 2 columns: Level 1 Design, Level 2 Design. Includes criteria for TV, soil infiltration, and underdrain requirements.

Table 7.7. Different Permeable Pavement Specifications

Table with 3 columns: Material, Specification, Notes. Lists materials like Permeable Interlocking Concrete Pavers, Concrete Grid Pavers, etc.

VA DEQ STORMWATER DESIGN SPECIFICATION NO. 7 PERMEABLE PAVEMENT

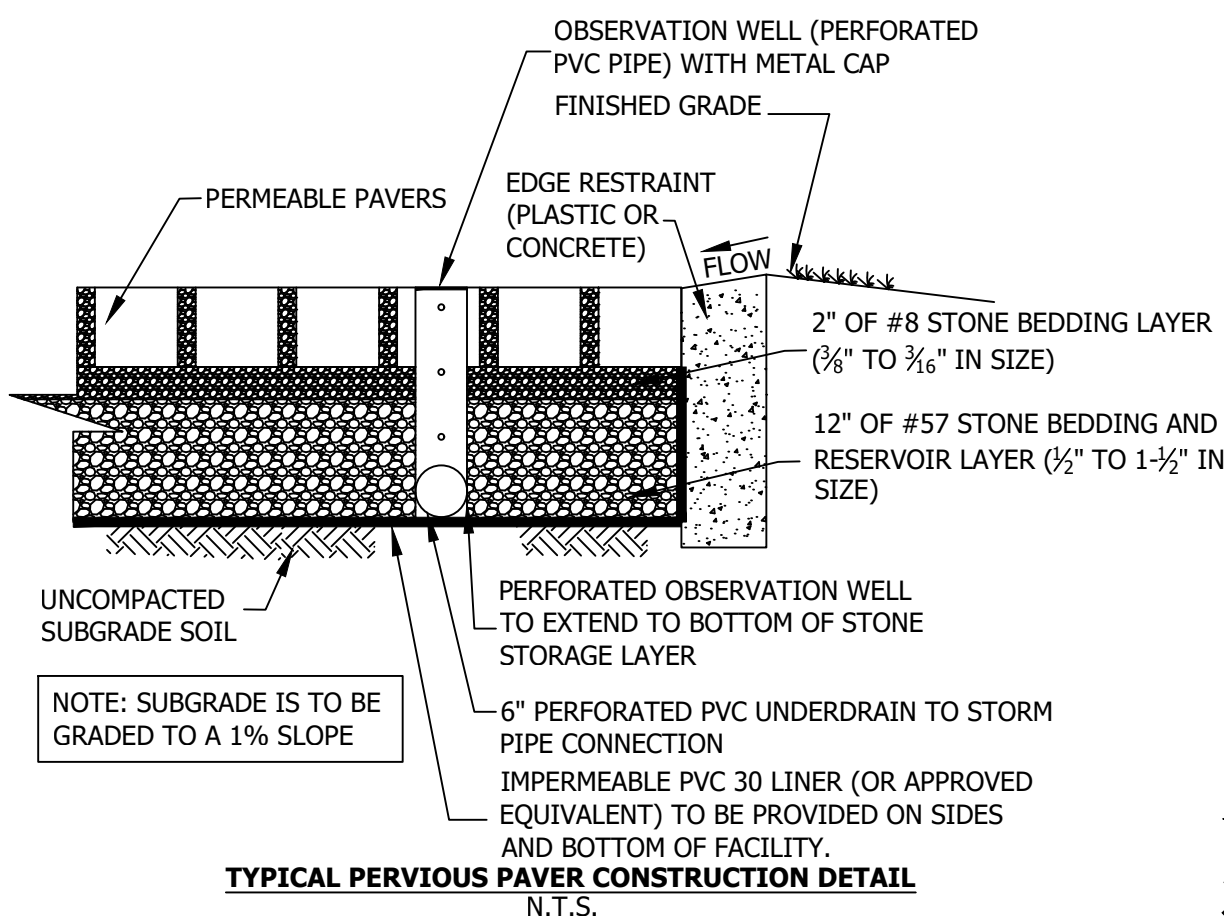
- Micro-scale and small-scale permeable pavement installations are acceptable if they are designed according to the Level 1 criteria...

Table 7.6. Material Specifications for Underneath the Pavement Surface

Table with 3 columns: Material, Specification, Notes. Details specifications for Bedding Layer, Reservoir Layer, Underdrain, etc.

CONSTRUCTION NOTES:

THE PERMEABLE PAVEMENT HAS BEEN DESIGNED IN ACCORDANCE WITH VIRGINIA DEQ/DCR STORMWATER DESIGN SPECIFICATION No. 7, VERSION 2.0 DATED JAN. 1, 2013 AND FAIRFAX COUNTY PM SECTION 6-1304.



MAINTENANCE NOTES:

THE OWNER SHOULD BE AWARE THAT A MAINTENANCE AGREEMENT IS REQUIRED TO BE EXECUTED AND RECORDED IN LAND RECORDS BETWEEN THE OWNER AND THE LOCAL JURISDICTION.

NOTE:

- 1. PERMEABLE PAVEMENT FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED
2. IF BEDROCK IS ENCOUNTERED, THE EXCAVATION FOR THE FACILITY SHALL EXTEND A MINIMUM OF 2' DOWN BELOW THE BMP SYSTEM INTO UNDERLYING BEDROCK.

NOTE:

- 1. SEASONALLY HIGH GROUNDWATER FOUND WITHIN PAVER SECTION DEPTH. SECTION TO BE WRAPPED IN IMPERMEABLE LINING

Table with 7 columns: Certified properties, ASTM, PVC 10, PVC 20, PVC 30, PVC 40, PVC 50, PVC 60. Lists various material properties like thickness, tensile, elongation, etc.

Table 2. PGI-1104, Material Specification for Flexible PVC Geomembranes for Containment. Lists properties like thickness, tensile, etc.

Plasticizer migration from plasticized PVC into other polymeric materials has not been studied as extensively as plasticizer migration into air or liquid because of the small potential for this phenomenon.

PERMEABLE PAVER DESIGN SCHEDULE table for PARKING BAY 'A' with columns for Facility, Design Level, Impervious Drainage Area, etc.

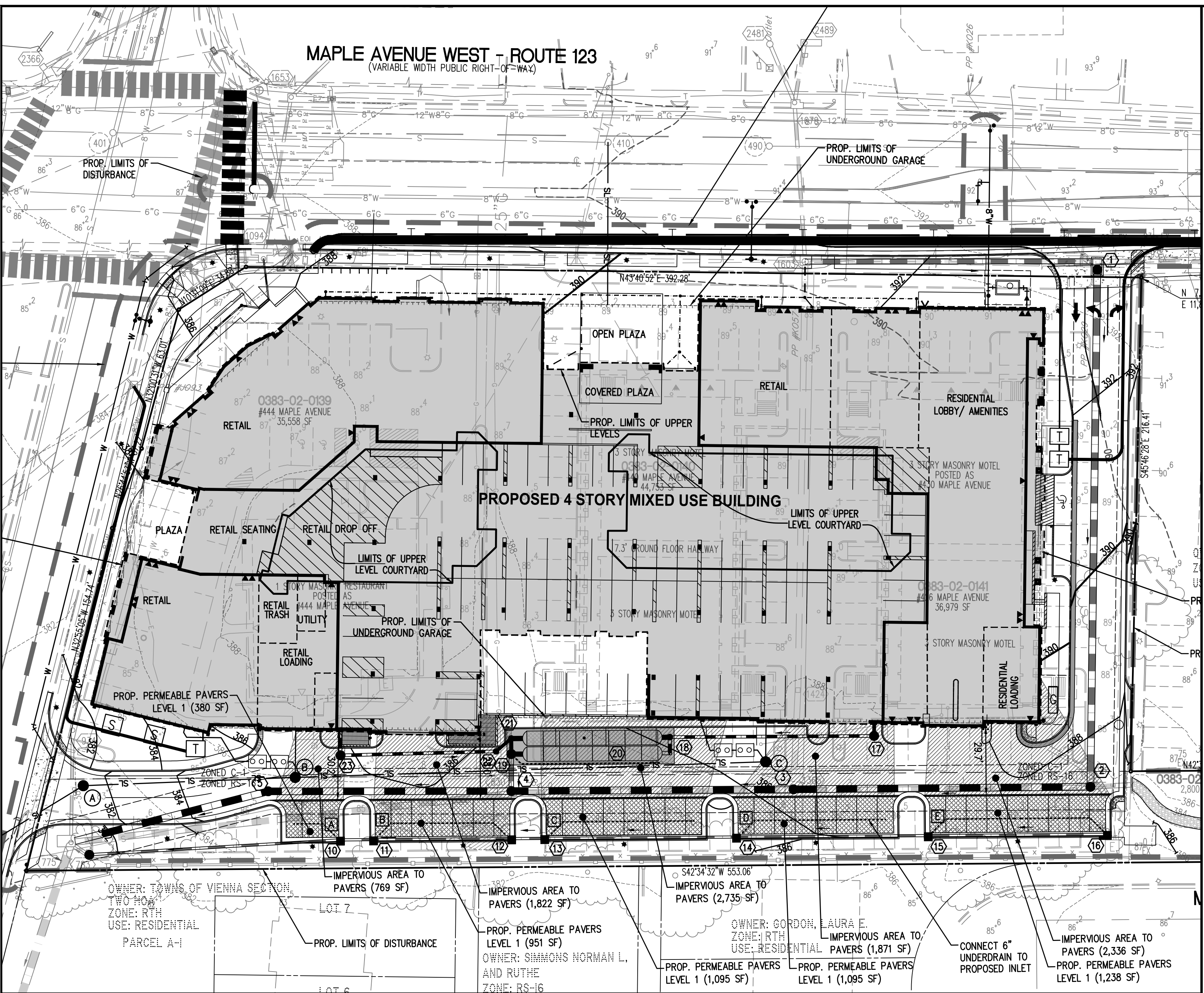
PERMEABLE PAVER DESIGN SCHEDULE table for PARKING BAY 'B' with columns for Facility, Design Level, Impervious Drainage Area, etc.

PERMEABLE PAVER DESIGN SCHEDULE table for PARKING BAY 'C' with columns for Facility, Design Level, Impervious Drainage Area, etc.

PERMEABLE PAVER DESIGN SCHEDULE table for PARKING BAY 'D' with columns for Facility, Design Level, Impervious Drainage Area, etc.

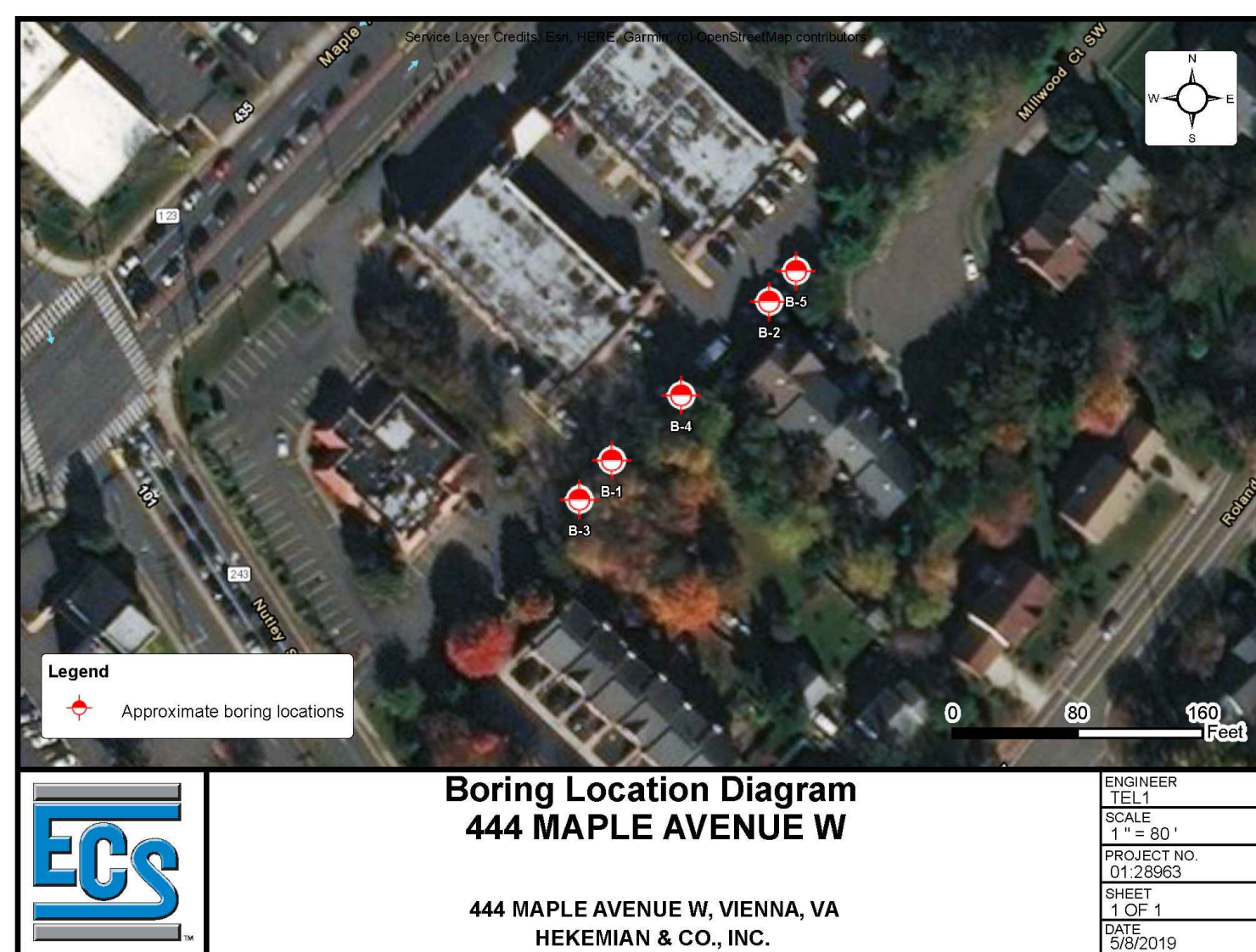
PERMEABLE PAVER DESIGN SCHEDULE table for PARKING BAY 'E' with columns for Facility, Design Level, Impervious Drainage Area, etc.

NOTES: DESIGN INFILTRATION RATE = 0.50 IN/HR GRAVEL POROSITY = 0.40 LEVEL 1 Tv = 1 inch depth



PERMEABLE PAVEMENT PLAN

INFILTRATION TESTING:



INFILTRATION TEST RECORD/RECALCULATION SHEET. Includes data for Job No. 28963, Boring No. B-3, B-4, B-5, and test results for infiltration rate and depth.

Town of Vienna Approved 06/09/2021

PERMEABLE PAVEMENT PLAN, COMPUTATIONS AND DETAILS

444 MAPLE AVENUE WEST SITE PLAN

TOWN OF VIENNA, VIRGINIA

Professional seal and contact information for Walter L. Phillips, Landscape Architect, No. 04-0850, dated 05/25/21.

Revision table with columns for No., Description, Date, Rev., Approved By.

3rd Party Construction Inspection Checklist and Certification: Permeable Pavement DEQ Spac. No. 7 & PFM 6-1304

Project Name, Construction Firm, Co. Plan Number, 3rd Party Inspector Name, Site Address, Contact Info / Phone Number, Latitude / Longitude, BMP ID Number as shown on plan and general location on the site.

- A certification is required for all SWM/BMP facilities under PFM 6-1304 et. seq.
A Virginia licensed professional engineer or licensed professional meeting the exemption requirements of the Code of Virginia §54.1-401 must sign this certification at the end of this checklist.

Instructions:
Check each item as complete, or write in "N/A" for those items that are not applicable.
Fill in blanks for requested information on dimensions, materials, etc.
Provide one or more photos for applicable items; checkboxes indicate items that require photos.

Pre-Installation Meeting and Site Preparation

Table with columns: CHECK, PHOTO, DESCRIPTION, DATE OF INSPECTION / COMMENTS. Includes pre-installation meeting and stormwater runoff diversion.

Excavation

Table with columns: CHECK, PHOTO, DESCRIPTION, DATE OF INSPECTION / COMMENTS. Includes excavation for BMP location and subgrade preparation.

Filter Layer and Underdrain Placement

Table with columns: CHECK, PHOTO, DESCRIPTION, DATE OF INSPECTION / COMMENTS. Includes aggregate preparation, underdrain installation, and filter layer placement.

Stone Reservoir Aggregate Placement

Table with columns: CHECK, PHOTO, DESCRIPTION, DATE OF INSPECTION / COMMENTS. Includes stone reservoir aggregate placement and thickness.

Bedding Layer and Pavement Installation

Table with columns: CHECK, PHOTO, DESCRIPTION, DATE OF INSPECTION / COMMENTS. Includes pre-treatment structures, flow concentration, pavement surface, and aggregate placement.

Final Certification

I do hereby certify that this as-built information for the stormwater management/BMP facility was inspected by me (or by an individual under my responsible charge) and conforms to the approved plans, except as indicated.

Signature: Date: License Number (Seal):

(*Certify* means to state or declare a professional opinion based on sufficient and appropriate on-site inspections and material tests conducted during construction)

VA DEQ STORMWATER DESIGN SPECIFICATION NO. 7 PERMEABLE PAVEMENT

SECTION 8: CONSTRUCTION

Experience has shown that proper installation is absolutely critical to the effective operation of a permeable pavement system.

8.1 Necessary Erosion & Sediment Controls

- All permeable pavement areas should be fully protected from sediment intrusion by silt fence or construction fencing, particularly if they are intended to infiltrate runoff.
Permeable pavement areas should remain outside the limit of disturbance during construction to prevent soil compaction by heavy equipment.

8.2. Permeable Pavement Construction Sequence

The following is a typical construction sequence to properly install permeable pavement, which may need to be modified to depending on whether Porous Asphalt (PA), Pervious Concrete (PC) or Interlocking Paver (IP) designs are employed.

Step 1. Construction of the permeable pavement shall only begin after the entire contributing drainage area has been stabilized. The proposed site should be checked for existing utilities prior to any excavation.

Step 2. As noted above, temporary erosion and sediment (E&S) controls are needed during installation to divert stormwater away from the permeable pavement area until it is completed.

Step 3. Where possible, excavators or backhoes should work from the sides to excavate the reservoir layer to its appropriate design depth and dimensions. For micro-scale and small-scale pavement applications, excavating equipment should have arms with adequate extension so they do not have to work inside the footprint of the permeable pavement area.

Step 4. The native soils along the bottom and sides of the permeable pavement system should be scarified or tilled to a depth of 3 to 4 inches prior to the placement of the filter layer or filter fabric.

Step 5. The filter layer should be installed on the bottom of the reservoir layer and, where appropriate, filter fabric can be placed on the sides.

Step 6. Provide a minimum of 2 inches of aggregate above and below the underdrains. The underdrains should slope down towards the outlet at a grade of 0.5% or steeper.

Step 7. Spread 6-inch lifts of the appropriate clean, washed stone aggregate. Place at least 4 inches of additional aggregate above the underdrain, and then compact it using a vibratory roller in static mode until there is no visible movement of the aggregate.

Step 8. Install over-drain if required and connect into outlet conveyance system.

Step 9. Install the desired depth of the bedding layer, depending on the type of pavement, as follows:

- Pervious Concrete: No bedding layer is used.
Porous Asphalt: The bedding layer for porous asphalt pavement consists of 1 to 2 inches of clean, washed ASTM D 448 No.57 stone.
Interlocking Pavers: The bedding layer for open-jointed pavement blocks should consist of 2 inches of washed ASTM D 448 No.8 stone.

Step 10. Install paving materials in accordance with manufacturer or industry specifications for the particular type of pavement.

- Installation of Porous Asphalt. The following has been excerpted from various documents, most notably Jackson (2007).
1. Install porous asphalt pavement similarly to regular asphalt pavement.
2. Complete compaction of the surface course when the surface is cool enough to resist a 10-ton roller.
3. The mixing plant must provide certification of the aggregate mix, abrasion loss factor, and asphalt content in the mix.
4. Transport the mix to the site in a clean vehicle with smooth dump beds sprayed with a non-petroleum release agent.
5. Test the full permeability of the pavement surface by application of clean water at a rate of at least five gallons per minute over the entire surface.
6. Inspect the facility 18 to 30 hours after a significant rainfall (greater than 1/2 inch) or artificial flooding, to determine that the facility is draining properly.

- Installation of Pervious Concrete. The basic installation sequence for pervious concrete is outlined by the American Concrete Institute (2008).
1. Drive the concrete truck as close to the project site as possible.
2. Water the underlying aggregate (reservoir layer) before the concrete is placed.
3. After the concrete is placed, approximately 3/8 to 1/2-inch is struck off, using a vibratory screed.
4. Compact the pavement with a steel pipe roller.
5. Cut joints for the concrete to a depth of 1/4 inch.
6. The curing process is very important for pervious concrete.

Installation of Interlocking Pavers. The basic installation process is described in greater detail by Smith (2006). The basic installation process is described in greater detail by Smith (Smith 2011). Permeable paver job foremen should successfully complete the P/CP Installer Technician Course training program offered by the Interlocking Concrete Pavement Institute.

VA DEQ STORMWATER DESIGN SPECIFICATION NO. 7 PERMEABLE PAVEMENT

- Moisten, place and level the No. 57 base stone in a single lift (4 inches thick). Compact it into the reservoir course beneath with at least four (4) passes of a 10-ton steel drum static roller until there is no visible movement.
Place and screed the bedding course material (typically No. 8 stone, 2 inches thick).
Pavers may be placed by hand or with mechanical installers.
Fill gaps at the edge of the paved areas with cut pavers or edge units.
Fill the joints and openings with stone. Joint openings must be filled with No. 8, 89 or 9 stone per the paver manufacturer's recommendation.

8.3. Construction Inspection

Inspections before, during and after construction are needed to ensure that permeable pavement is built in accordance with these specifications. Use a detailed inspection checklist that requires sign-offs by qualified individuals at critical stages of construction.

Once the final construction inspection has been completed, log the GPS coordinates for each facility and submit them for entry into the local BMP maintenance tracking database.

It may be advisable to divert the runoff from the first few runoff-producing storms away from larger permeable pavement applications, particularly when up-gradient conventional asphalt areas drain to the permeable pavement.

SECTION 9: MAINTENANCE

9.1. Maintenance Agreements

The Virginia Stormwater Management regulations (9 VAC 25-870) specify the circumstances under which a maintenance agreement must be executed between the owner and the VSPM authority.

VA DEQ STORMWATER DESIGN SPECIFICATION NO. 7 PERMEABLE PAVEMENT

neglected, notification to the local program upon transfer of ownership, and right-of-entry for local program personnel.

- The regulations require that all post-construction BMPs, including Permeable Pavement installations, must be covered by a long term maintenance agreement and drainage easement to allow inspection and maintenance.
The maintenance agreements should note which conventional parking lot maintenance tasks must be avoided (see Section 9.2 below).

9.2. Maintenance Tasks

It is difficult to prescribe the specific types or frequency of maintenance tasks that are needed to maintain the hydrologic function of permeable pavement systems over time.

The following tasks must be avoided on all permeable pavements:

- sanding
re-sealing
re-surfacing
power washing
storage of snow piles containing sand
storage of mulch or soil materials
construction staging on unprotected pavement

A preventative maintenance task for large-scale applications involves regenerative air vacuum sweeping on a frequency consistent with the use and loadings encountered in the parking lot. Many consider an annual, dry-weather sweeping in the spring months to be important.

Table 7.8. Recommended Maintenance Tasks for Permeable Pavement Practices

Table with columns: Maintenance Task, Frequency. For first 6 months following construction, practice and contributing drainage area should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.

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Table with columns: Maintenance Task, Frequency. Includes mowing grass, stabilizing CDA, vacuuming pavement, and spot weeding.

9.3. Maintenance Inspections

It is highly recommended that a spring maintenance inspection and cleanup be conducted at each permeable pavement site, particularly at large-scale applications.

Maintenance of permeable pavement is driven by annual inspections that evaluate the condition and performance of the practice. Any permeable pavement installation that captures external drainage area (run-on) should be inspected more frequently during the first year (four seasons).

The following are suggested routine annual maintenance inspection points for permeable pavements:

- The drawdown rate should be measured at the observation well for three (3) days following a storm event in excess of 1/2-inch in depth.
Inspect the surface of the permeable pavement for evidence of sediment deposition, organic debris, staining or ponding that may indicate surface clogging.
Inspect the structural integrity of the pavement surface, looking for signs of surface deterioration, such as slumping, cracking, spalling or broken pavers.

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- Generally inspect any contributing drainage area for any controllable sources of sediment or erosion.

An example maintenance inspection checklist for permeable pavement can be accessed in Appendix 9-C of Chapter 9 of the Virginia Stormwater Management Handbook (2nd edition, 2013).

SECTION 10: COMMUNITY & ENVIRONMENTAL CONCERNS

Compliance with the Americans with Disabilities Act (ADA). Porous concrete and porous asphalt are generally considered to be ADA compliant.

Groundwater Protection. While well-drained soils enhance the ability of permeable pavement to reduce stormwater runoff volumes, they may also increase the risk that stormwater pollutants might migrate into groundwater aquifers.

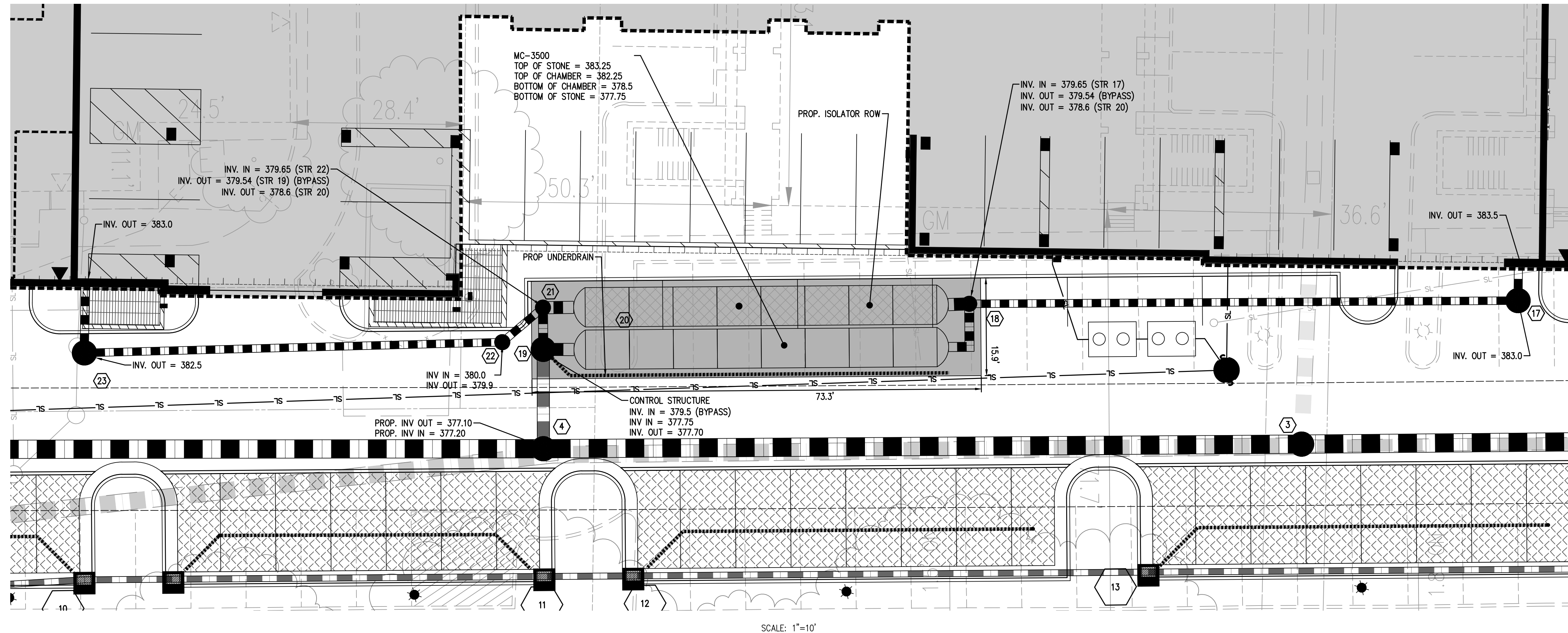
Stormwater Hotspots. Designers should also certify that the proposed permeable pavement area will not accept any runoff from a severe stormwater hotspot. Stormwater hotspots are operations or activities that are known to produce higher concentrations of stormwater pollutants and/or have a greater risk of spills, leaks or illicit discharges.

Underground Injection Control Permits. The Safe Drinking Water Act regulates the infiltration of stormwater in certain situations pursuant to the Underground Injection Control (UIC) Program, which is administered either by the EPA or a delegated state groundwater protection agency.

Vertical text and graphics including: PERMEABLE PAVEMENT SPECIFICATIONS, 444 MAPLE AVENUE WEST, SITE PLAN, TOWN OF VIENNA, VIRGINIA, WALTER L. PHILLIPS LANDSCAPE ARCHITECTS & PLANNERS, and a circular seal for Charles White, Professional Engineer, License No. 041850, dated 05/25/21.

Town of Vienna Approved 06/09/2021

- NOTES:
1. THIS SHEET PROVIDES SOME GENERAL RECOMMENDATIONS FROM THE VIRGINIA DEQ THAT SHALL BE FOLLOWED FOR PROPER CONSTRUCTION OF THE PERMEABLE PAVEMENT.
2. THIS SHEET ALSO PROVIDES A COPY OF THE THIRD PARTY INSPECTION CHECKLIST THAT MUST BE COMPLETED AND SUBMITTED TO THE OWNER.
3. THIS SHEET ALSO PROVIDES SOME GENERAL RECOMMENDATIONS FOR MAINTENANCE AND INSPECTION REQUIREMENTS OF THESE FACILITIES. NOTE THAT THE PROPERTY OWNER IS REQUIRED TO EXECUTE A STORMWATER MANAGEMENT FACILITY MAINTENANCE AGREEMENT WITH THE TOWN OF VIENNA WHICH CONTAINS FURTHER CONSTRUCTION, MAINTENANCE, AND INSPECTION REQUIREMENTS



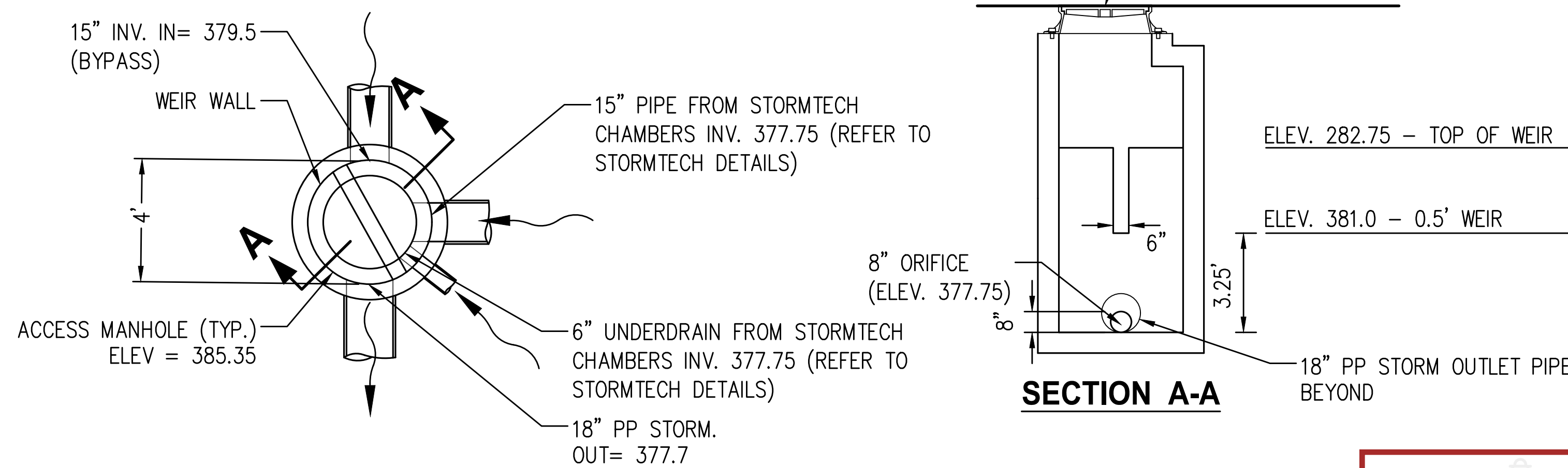
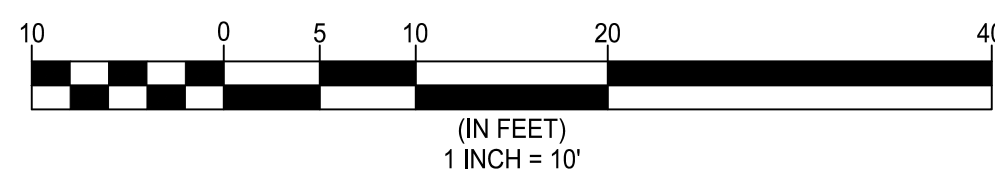
SCALE: 1"=10'

STORMWATER FACILITY CONSTRUCTION NOTES:

1. ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
2. ALL STORMWATER FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE VIRGINIA DEQ SPECIFICATIONS AND LOCAL JURISDICTION'S REGULATIONS AND MANUALS. THIS INCLUDES MATERIALS, CONSTRUCTION METHODS AND SEQUENCE. IN THE EVENT OF A CONFLICT BETWEEN THE PLANS, DEQ OR LOCAL JURISDICTION, THE LOCAL JURISDICTION'S REQUIREMENTS SHALL GOVERN.
3. THE DETAILS FROM THE MANUFACTURER OF THE STORMWATER FACILITIES SHOWN ARE CURRENT AT THE TIME OF PLAN PREPARATION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST DETAILS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONSTRUCT THE FACILITIES IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. ALL STORMWATER STRUCTURES, INCLUDING ACCESS MANHOLES, SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER FOR HS-20 LOADING UNLESS OTHERWISE NOTED.
5. A PRE-CONSTRUCTION MEETING IS REQUIRED BETWEEN THE CONTRACTOR, STORMWATER FACILITY MANUFACTURER IF ANY, AND GEOTECHNICAL ENGINEER OF RECORD.
6. THE CONTRACTOR SHALL PROVIDE MATERIAL CERTIFICATIONS AND DELIVERY SLIPS AND A SIGNED CERTIFICATION THAT THE FACILITY WAS CONSTRUCTED IN ACCORDANCE WITH THESE PLANS.
7. THE INSTALLATION OF ALL STORMWATER DETENTION AND WATER QUALITY FACILITIES SHALL BE INSPECTED BY A LICENSED PROFESSIONAL IN ACCORDANCE WITH THE DEQ SPECIFICATIONS IF APPLICABLE AS WELL AS THE JURISDICTION'S REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE LICENSED PROFESSIONAL SELECTED BY THE OWNER TO ARRANGE FOR THE NECESSARY INSPECTIONS.
8. IF BEDROCK IS ENCOUNTERED, THE EXCAVATION FOR THE FACILITY SHALL EXTEND A MINIMUM OF 2' BELOW THE STORMWATER FACILITY INTO UNDERLYING BEDROCK OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER OF RECORD.
9. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT GEOTECHNICAL ENGINEER OF RECORD TO HAVE HIM VERIFY THE ALLOWABLE BEARING PRESSURE FOR THE STORMWATER FACILITY SUBGRADE UNDER SATURATED CONDITIONS ONCE THE SUBGRADE HAS BEEN EXPOSED DURING CONSTRUCTION. THE CONTRACTOR SHALL UNDERCUT UNSUITABLE SUBGRADE SOILS IF ANY AND INSTALL GRAVEL BEDDING AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER OF RECORD BASED ON THE SUBGRADE BEARING PRESSURE AND DEPTH OF COVER OVER THE FACILITY.
10. STORMWATER FACILITIES SHALL NOT BE PLACED INTO OPERATION UNTIL ALL AREAS DRAINING TO THE FACILITY HAVE BEEN STABILIZED TO PREVENT SOIL INTRUSION INTO THE FACILITY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF THE STORMWATER FACILITIES AT LEAST UNTIL THE PROJECT IS SUBSTANTIALLY COMPLETE (UNLESS OTHERWISE SPECIFIED BY THE CONTRACTOR'S CONTRACT WITH THE OWNER).

STORMWATER FACILITY INSPECTION AND MAINTENANCE NOTES

1. THE OWNER SHOULD BE AWARE THAT THE STORMWATER DETENTION AND WATER QUALITY FACILITIES ARE SUBJECT TO A MAINTENANCE AGREEMENT WITH THE LOCAL JURISDICTION COMMITTING THE OWNER TO PROPERLY CONSTRUCTING, INSPECTING, AND MAINTAINING THE FACILITIES. THE AGREEMENT DETAILS THE SPECIFIC INSPECTION AND MAINTENANCE REQUIREMENTS WHICH THE OWNER SHOULD BECOME FAMILIAR WITH.
2. THE OWNER IS REQUIRED TO OR SHOULD HAVE THE FACILITIES INSPECTED AND MAINTAINED ON AN ANNUAL BASIS. THE JURISDICTION MAY REQUIRE THE SUBMISSION OF REPORTS ON ALL INSPECTIONS AND MAINTENANCE ACTIVITIES.
3. THE LOCAL JURISDICTION IS REQUIRED UNDER VIRGINIA REGULATIONS TO PERFORM THEIR OWN INSPECTION OF STORMWATER FACILITIES AT LEAST ONCE EVERY FIVE YEARS. THE JURISDICTION WILL NOTIFY THE OWNER OF ANY NOTED DEFICIENCIES, WHAT ACTIONS ARE REQUIRED, AND BY WHEN. THE MAINTENANCE AGREEMENT ALLOWS THE JURISDICTION TO CORRECT DEFICIENCIES, AT THE OWNER'S EXPENSE, IF THE OWNER FAILS TO DO SO WITHIN THE SPECIFIED TIMEFRAME.
4. THE OWNER SHOULD BE AWARE THAT NO ALTERATIONS ARE ALLOWED TO THE FACILITY WITHOUT PROCESSING A PLAN AND CONSTRUCTION PERMIT THROUGH THE JURISDICTION.



DETENTION CONTROL STRUCTURE 19

SCALE: NA

NOTE: THIS PLAN IS FOR DIMENSION PURPOSES ONLY. STRUCTURE TO BE DESIGNED BY A STRUCTURAL ENGINEER

Town of Vienna
Approved
06/09/2021

WALTER L. PHILLIPS
INCORPORATED
ESTABLISHED 1945
DATE SUBMITTED: 05/25/2021
SUBMIT: 05/07/2020, SUB03: 4/19/2021
DRAWN: DL
CHECKED: KW

Engineers • Surveyors • Planners
Landscape Architects • Arborists
207 PARK AVENUE
FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 Fax (703) 533-1301
www.WLPINC.com

Professional Engineer
KAREN L. S. WHITE
Lic. No. 04-1850
05/25/21
PROFESSIONAL SEAL

NO.	DESCRIPTION	REVISION APPROVED BY		DATE	APPROVED
		DATE	BY		

STORMWATER DETAILS

444 MAPLE AVENUE WEST
SITE PLAN
TOWN OF VIENNA, VIRGINIA

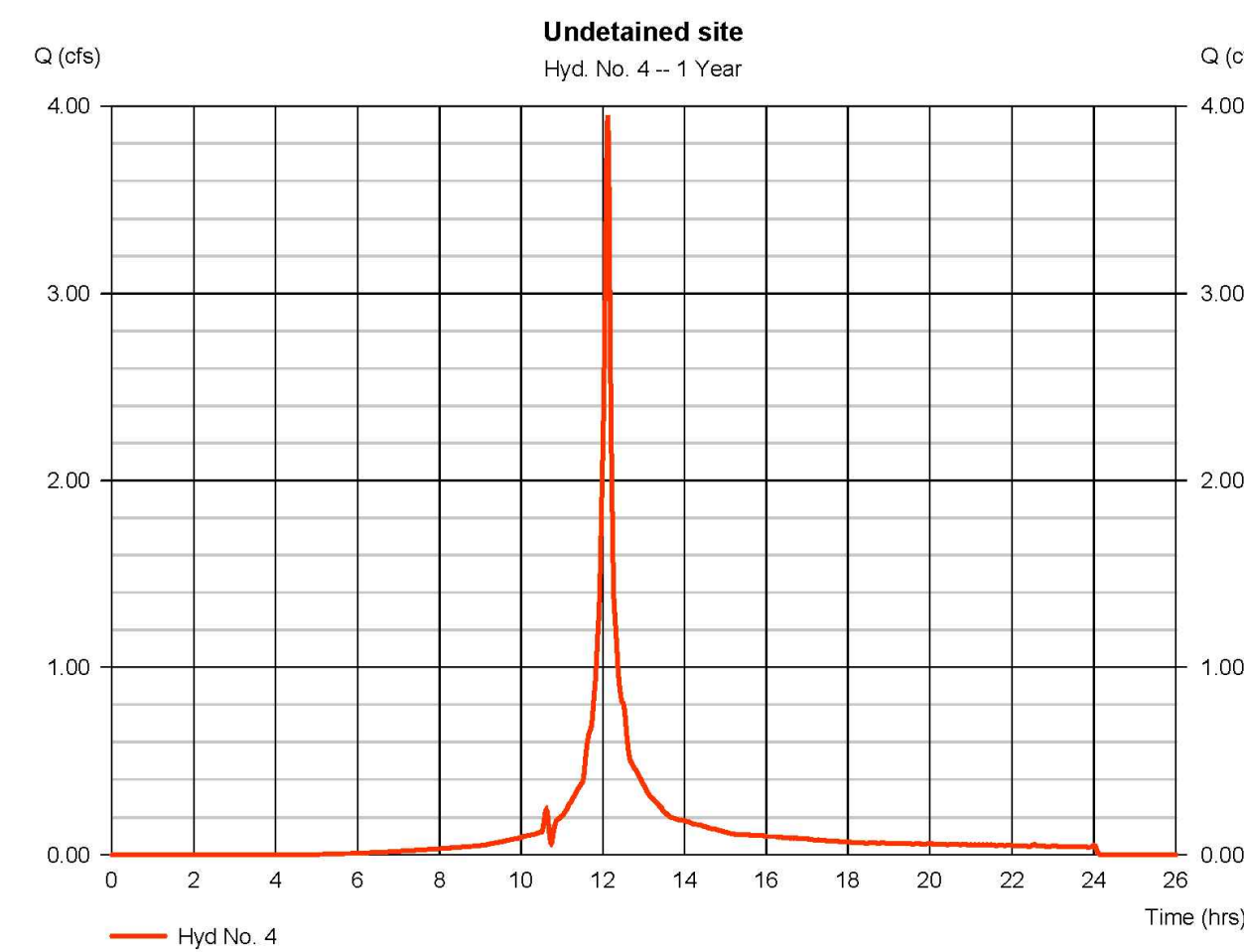
DRAINAGE AREA A 1-YR DISCHARGE RATE

Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 04 / 20 / 2020

Hyd. No. 4
Undetained site

Hydrograph type = SCS Runoff	Peak discharge = 3.950 cfs
Storm frequency = 1 yrs	Time to peak = 12.12 hrs
Time interval = 1 min	Hyd. volume = 11,336 cuft
Drainage area = 1,600 ac	Curve number = 93
Basin Slope = 0.0 %	Hydraulic length = 0 ft
Tc method = User	Time of conc. (Tc) = 6.00 min
Total precip. = 2.62 in	Distribution = Custom
Storm duration = NOAA Type C Rainfall 1 Min in 1 hr	Storage indicator = 484



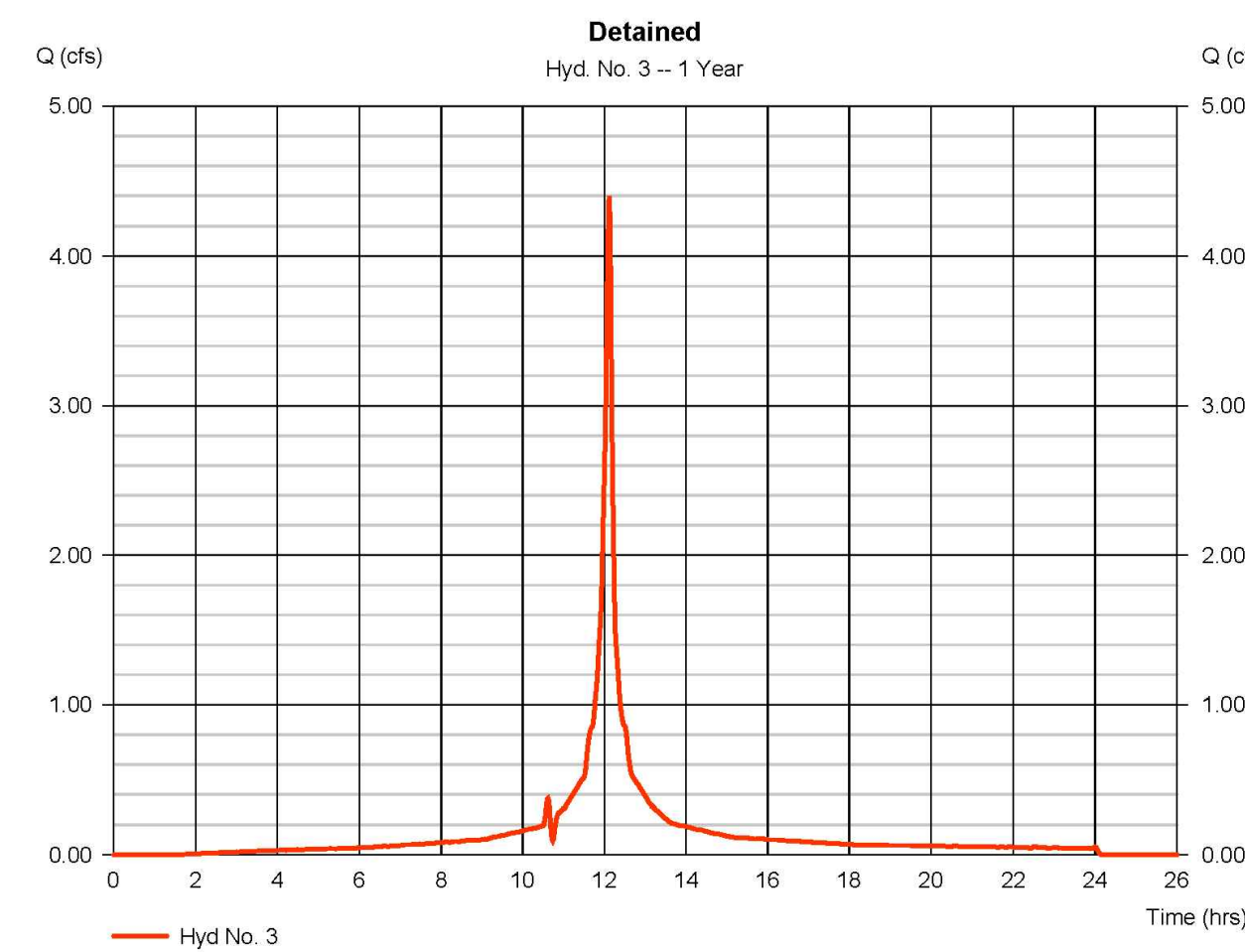
DRAINAGE AREA B 1-YR DISCHARGE RATE

Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 04 / 20 / 2020

Hyd. No. 3
Detained

Hydrograph type = SCS Runoff	Peak discharge = 4.395 cfs
Storm frequency = 1 yrs	Time to peak = 12.12 hrs
Time interval = 1 min	Hyd. volume = 13,866 cuft
Drainage area = 1,550 ac	Curve number = 98
Basin Slope = 0.0 %	Hydraulic length = 0 ft
Tc method = User	Time of conc. (Tc) = 6.00 min
Total precip. = 2.62 in	Distribution = Custom
Storm duration = NOAA Type C Rainfall 1 Min in 1 hr	Storage indicator = 484



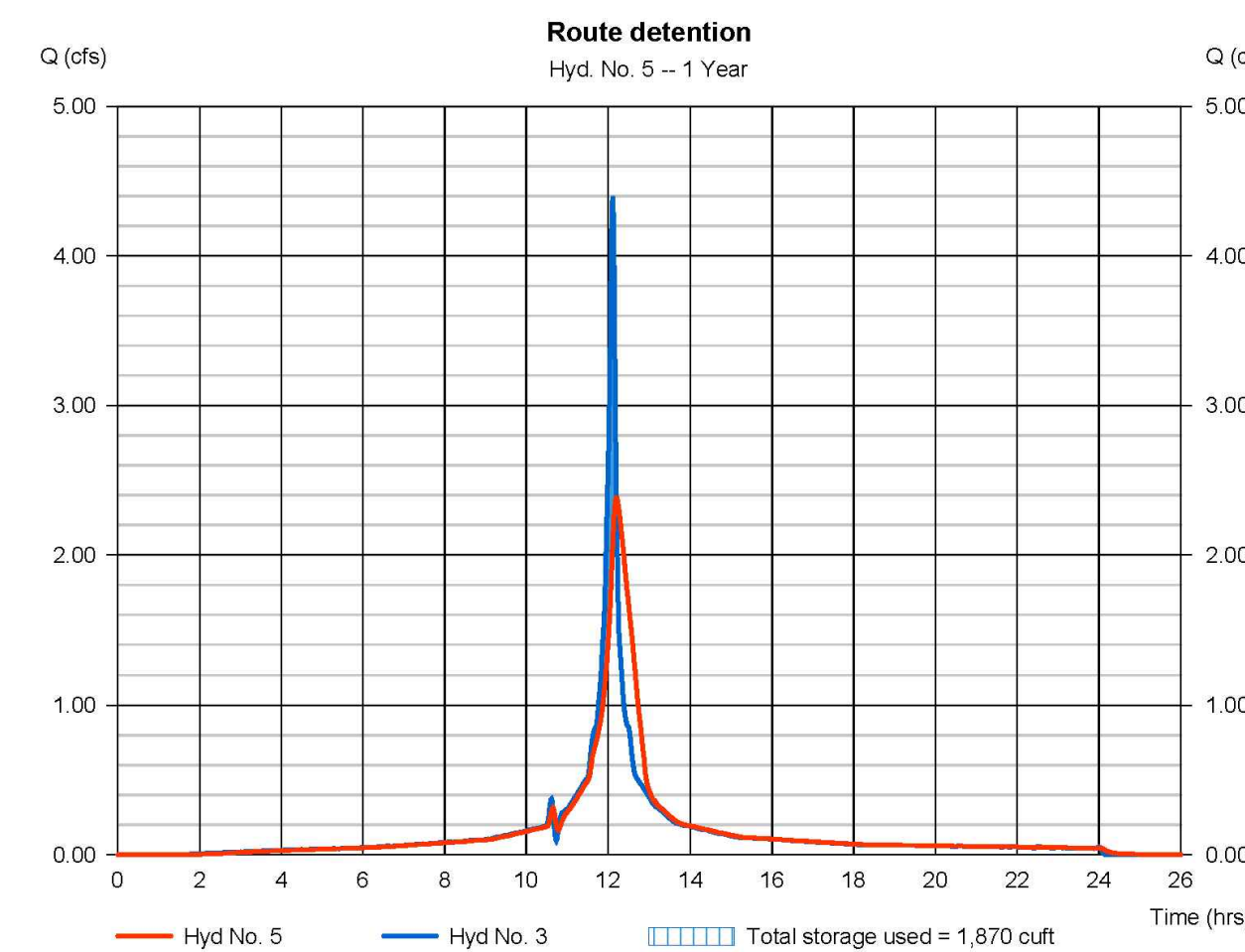
DRAINAGE AREA A 1-YR ROUTING

Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 04 / 20 / 2020

Hyd. No. 5
Route detention

Hydrograph type = Reservoir	Peak discharge = 2.381 cfs
Storm frequency = 1 yrs	Time to peak = 12.20 hrs
Time interval = 1 min	Hyd. volume = 13,866 cuft
Inflow hyd. No. = 3 - Detained	Max. Elevation = 380.71 ft
Reservoir name = MC-3500	Max. Storage = 1,870 cuft



NOTES

- SEE SHEET C-0708 AND C-0708A FOR STORMTECH DETAILS.
- SEE SHEET C-0703 FOR SITE STORMWATER QUANTITY COMPUTATIONS.

STORMWATER DETENTION SUMMARY

POST-DEVELOPMENT DRAINAGE AREA A 1-YR DISCHARGE = 3.95 CFS (AFTER RUNOFF REDUCTION)

POST-DEVELOPMENT DRAINAGE AREA B 1-YEAR DISCHARGE = 4.40 CFS (AFTER DETENTION ROUTING)

POST-DEVELOPMENT DRAINAGE AREA B 1-YR DISCHARGE = 2.38 CFS (AFTER DETENTION ROUTING)

TOTAL 1-YEAR DISCHARGE FROM SITE (AFTER RUNOFF REDUCTION & ROUTING) = 6.33 CFS

TOTAL ALLOWABLE DISCHARGE FROM SITE = 6.49 CFS (FROM ENERGY BALANCE EQUATION SEE C-0702)

SINCE THE 1-YEAR POST DEVELOPMENT FLOW FROM THE SITE HAS BEEN REDUCED TO 6.33 CFS, WHICH IS LESS THAN THE MAXIMUM ALLOWABLE DISCHARGE FROM THE SITE OF 6.49 CFS (SEE SHEET C-0702), IT IS THE OPINION OF THE SUBMITTING ENGINEER THAT THE CHANNEL PROTECTION CONTROL REQUIREMENTS SET FORTH IN THE STATE AND COUNTY STORMWATER REGULATIONS HAVE BEEN SATISFIED. SEE THE NARRATIVE ON SHEET C-0702 FOR ADDITIONAL INFORMATION.

STORMWATER DETENTION SUMMARY

POST-DEVELOPMENT DRAINAGE AREA A 10-YR DISCHARGE = 8.10 CFS (AFTER RUNOFF REDUCTION)

POST-DEVELOPMENT DRAINAGE AREA B 10-YEAR DISCHARGE = 8.27 CFS (AFTER DETENTION ROUTING)

POST-DEVELOPMENT DRAINAGE AREA B 10-YR DISCHARGE = 7.99 CFS (AFTER DETENTION ROUTING)

TOTAL 10-YEAR DISCHARGE FROM SITE (AFTER RUNOFF REDUCTION & ROUTING) = 16.09 CFS

TOTAL ALLOWABLE DISCHARGE FROM SITE = 16.11 CFS (FROM ENERGY BALANCE EQUATION SEE C-0702)

SINCE THE PROVIDED DETENTION REDUCES THE 10-YEAR POST DEVELOPMENT FLOW FROM THE SITE TO 16.09 CFS, WHICH IS LESS THAN THE MAXIMUM ALLOWABLE DISCHARGE FROM THE SITE OF 16.11 CFS (SEE SHEET C-0702), IT IS THE OPINION OF THE SUBMITTING ENGINEER THAT THE FLOOD CONTROL REQUIREMENTS SET FORTH IN THE STATE AND COUNTY STORMWATER REGULATIONS HAVE BEEN SATISFIED. SEE THE NARRATIVE ON SHEET C-0702 FOR ADDITIONAL INFORMATION.

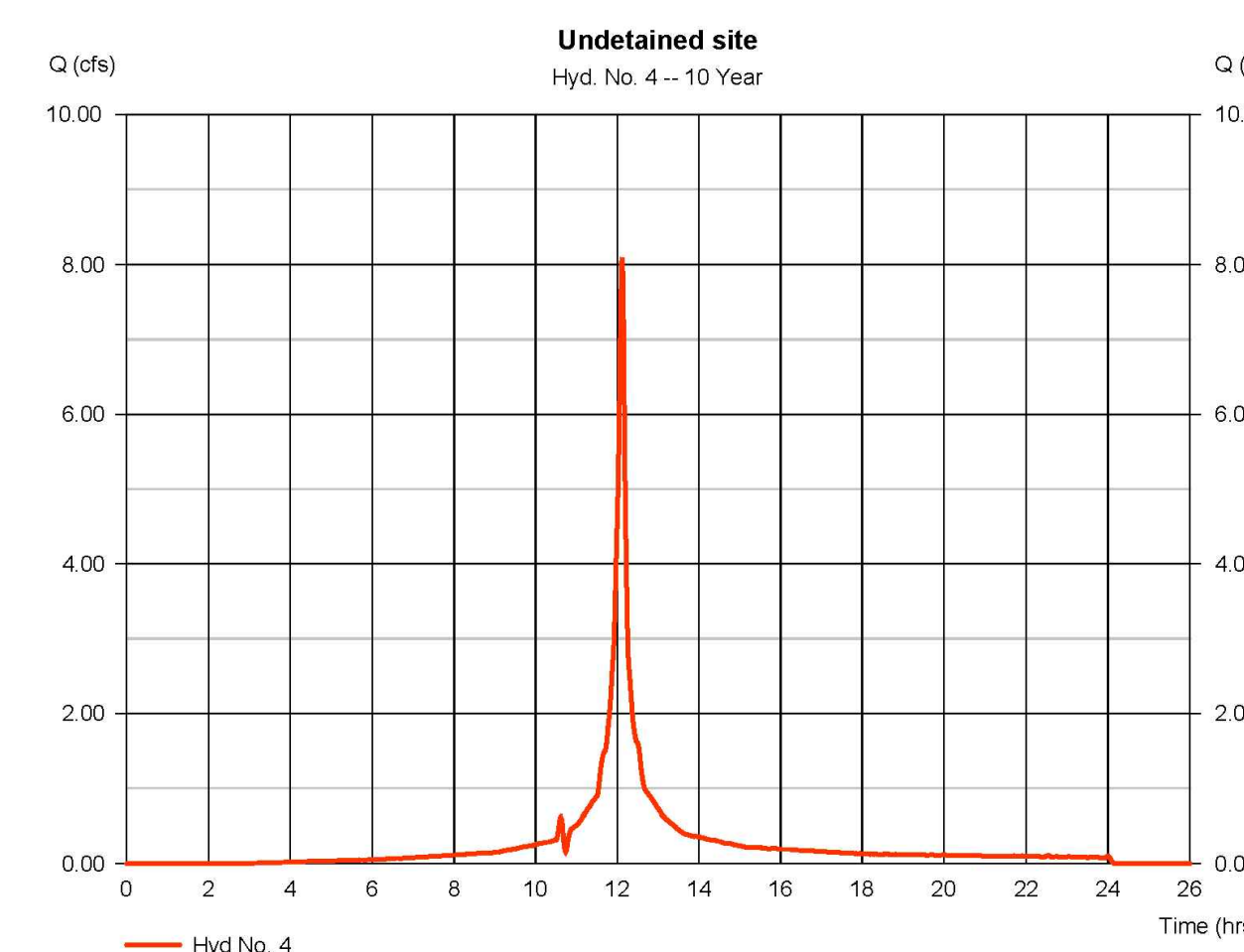
DRAINAGE AREA A 10-YR DISCHARGE RATE

Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 04 / 20 / 2020

Hyd. No. 4
Undetained site

Hydrograph type = SCS Runoff	Peak discharge = 8.097 cfs
Storm frequency = 10 yrs	Time to peak = 12.12 hrs
Time interval = 1 min	Hyd. volume = 24,379 cuft
Drainage area = 1,600 ac	Curve number = 93
Basin Slope = 0.0 %	Hydraulic length = 0 ft
Tc method = User	Time of conc. (Tc) = 6.00 min
Total precip. = 4.87 in	Distribution = Custom
Storm duration = NOAA Type C Rainfall 1 Min in 1 hr	Storage indicator = 484



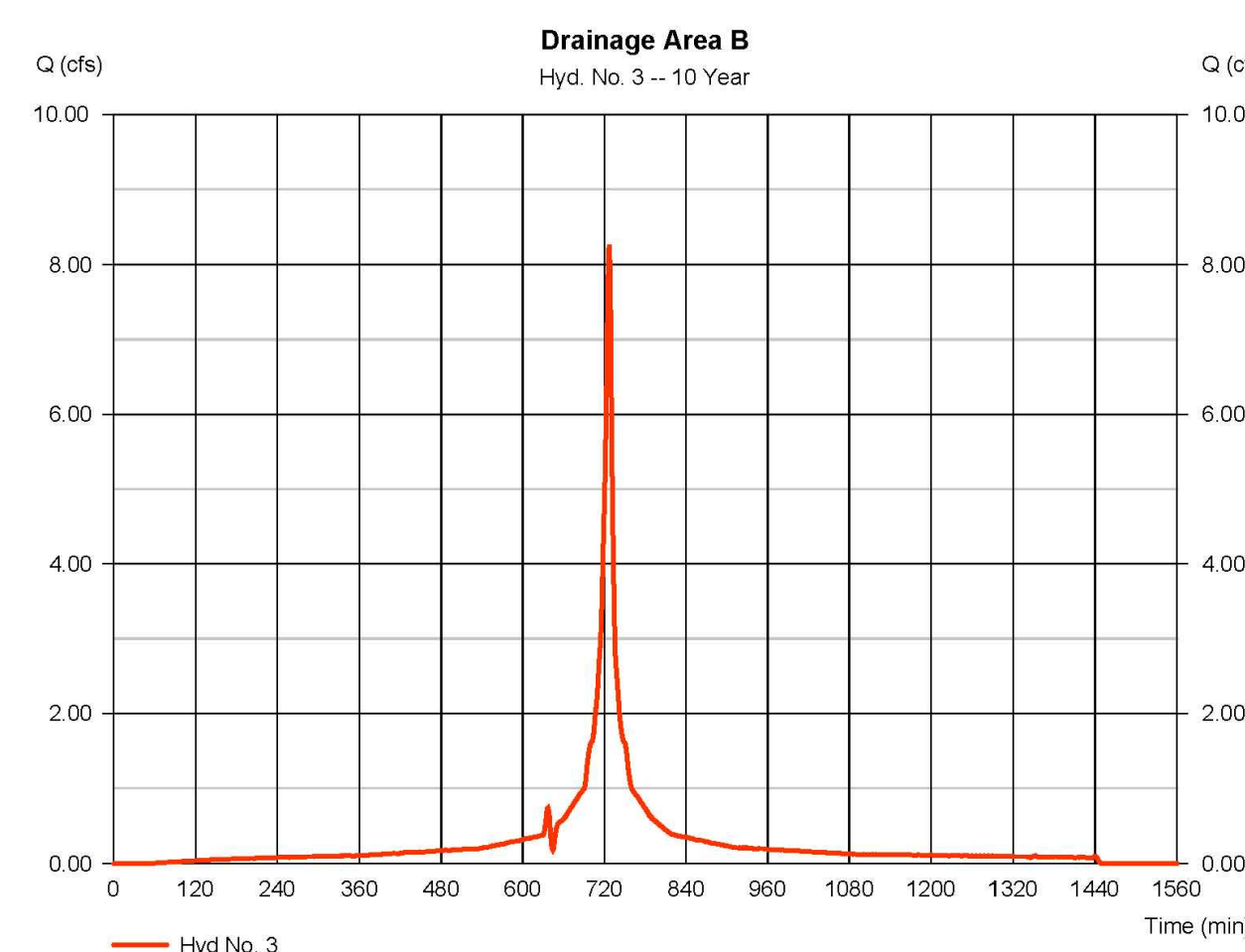
DRAINAGE AREA B 10-YR DISCHARGE RATE

Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Wednesday, 08 / 28 / 2019

Hyd. No. 3
Drainage Area B

Hydrograph type = SCS Runoff	Peak discharge = 8.269 cfs
Storm frequency = 10 yrs	Time to peak = 7.27 min
Time interval = 1 min	Hyd. volume = 26,884 cuft
Drainage area = 1,550 ac	Curve number = 98
Basin Slope = 0.0 %	Hydraulic length = 0 ft
Tc method = User	Time of conc. (Tc) = 6.00 min
Total precip. = 4.87 in	Distribution = Custom
Storm duration = NOAA Type C Rainfall 1 Min in 1 hr	Storage indicator = 484



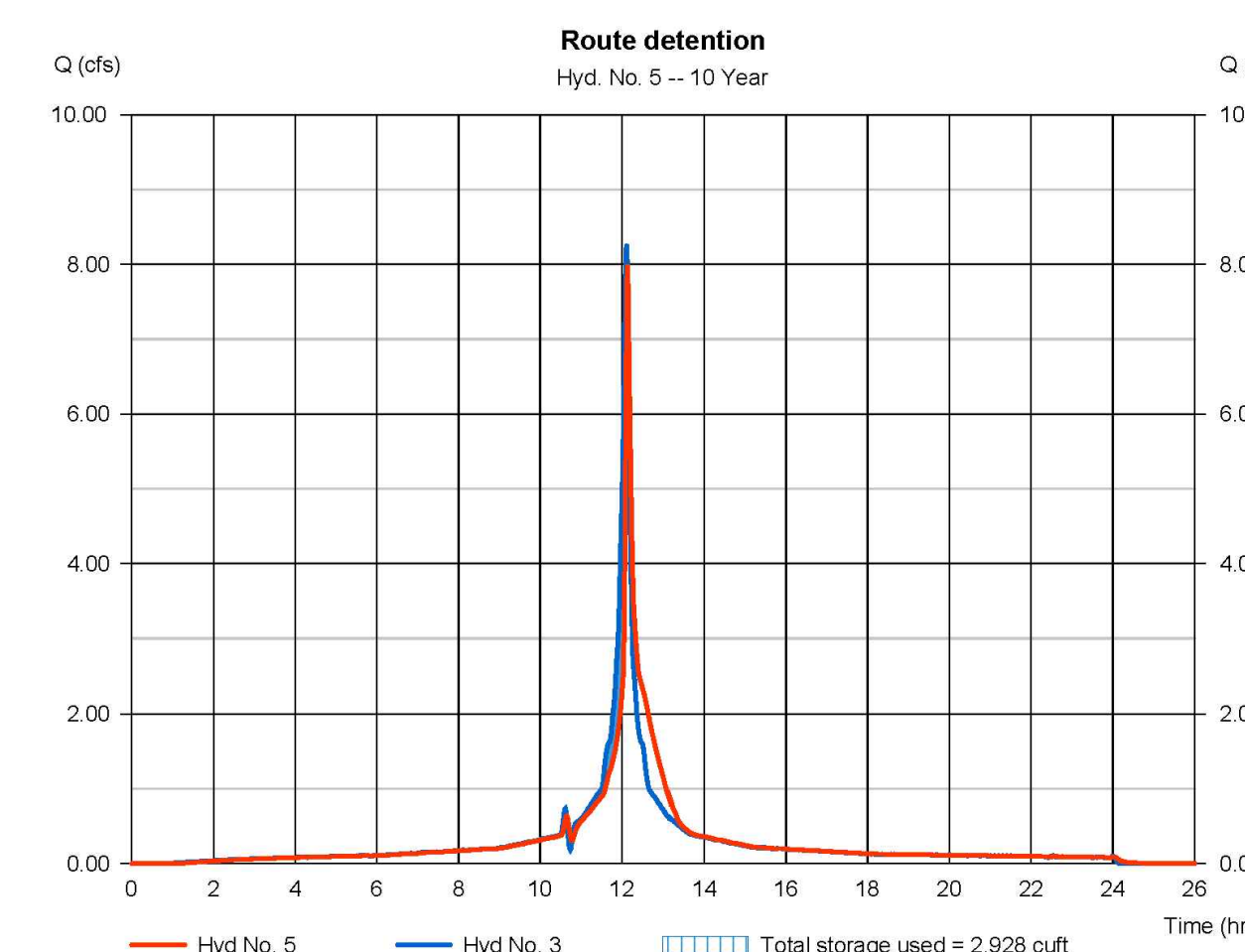
DRAINAGE AREA A 10-YR ROUTING

Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 04 / 20 / 2020

Hyd. No. 5
Route detention

Hydrograph type = Reservoir	Peak discharge = 7.990 cfs
Storm frequency = 10 yrs	Time to peak = 12.13 hrs
Time interval = 1 min	Hyd. volume = 26,883 cuft
Inflow hyd. No. = 3 - Detained	Max. Elevation = 382.90 ft
Reservoir name = MC-3500	Max. Storage = 2,928 cuft



Pond Report

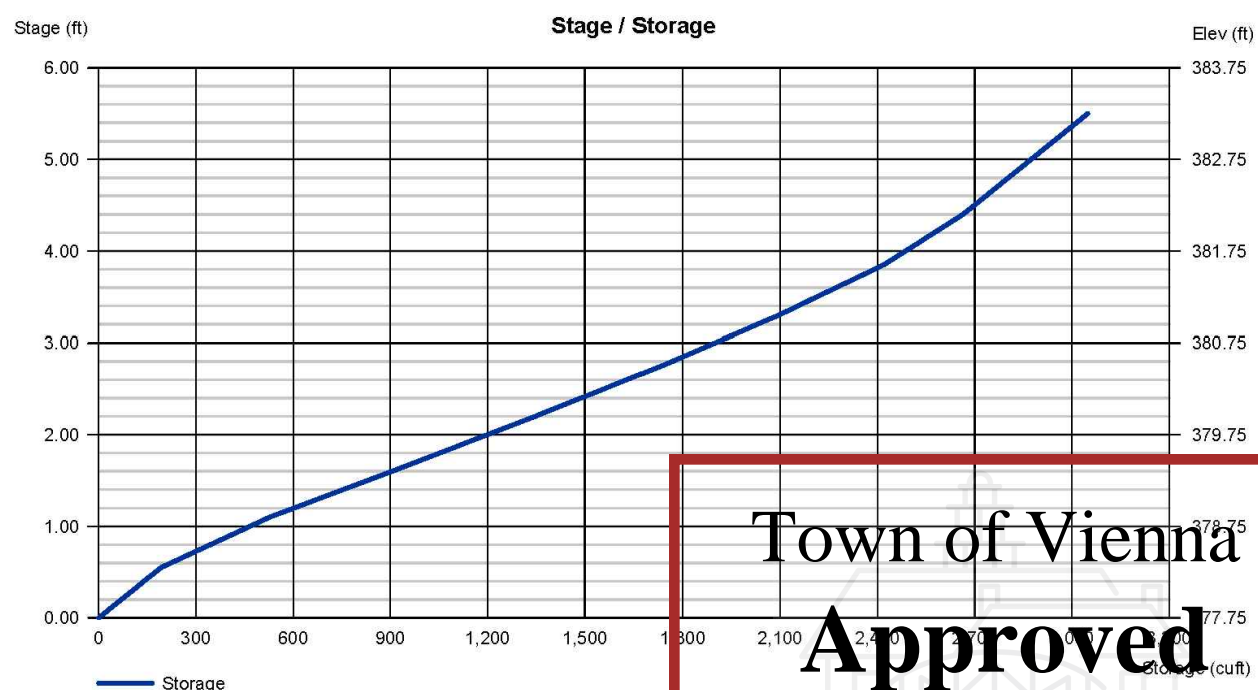
Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 04 / 20 / 2020

Pond No. 3 - MC-3500

Pond Data
US Chamber - invert elev. = 378.50 ft, Rise x Span = 3.50 x 5.50 ft, Barrel Len = 121.88 ft, No. Barrels = 1, Slope = 0.00%, Headers = No Encasement - invert elev. = 377.75 ft, Width = 7.17 ft, Height = 5.50 ft, Voids = 40.00%

Stage / Storage Table	Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
	0.00	377.75	n/a	0	0
	0.25	378.50	n/a	192	192
	1.00	378.85	n/a	335	528
	1.65	379.40	n/a	414	941
	2.20	379.95	n/a	404	1,346
	2.75	380.50	n/a	388	1,734
	3.30	381.05	n/a	359	2,093
	3.85	381.60	n/a	324	2,417
	4.40	382.15	n/a	284	2,699
	4.95	382.70	n/a	192	2,891
	5.50	383.25	n/a	192	3,083

Culvert / Orifice Structures	Weir Structures			
	[A]	[B]	[C]	[D]
Rise (in)	= 18.00	8.00	0.00	0.00
Span (in)	= 18.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 377.74	377.75	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
R-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No



Town of Vienna
Approved
06/09/2021

STORMWATER MANAGEMENT HYDROGRAPHS

444 MAPLE AVENUE WEST
SITE PLAN
TOWN OF VIENNA, VIRGINIA

Engineers • Surveyors • Planners
Landscape Architects • Arborists
WALTER L. PHILLIPS
FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 Fax (703) 533-1301
www.WLPINC.com

ESTABLISHED 1945
INCORPORATED
DATE SUBMITTED: 05/19/2021
SUBJECT: SUB01: 01/19/2019; SUB02: 05/07/2020; SUB03: 4/19/2021
SCALE: NONE
DRAWN: DL
CHECKED: KW

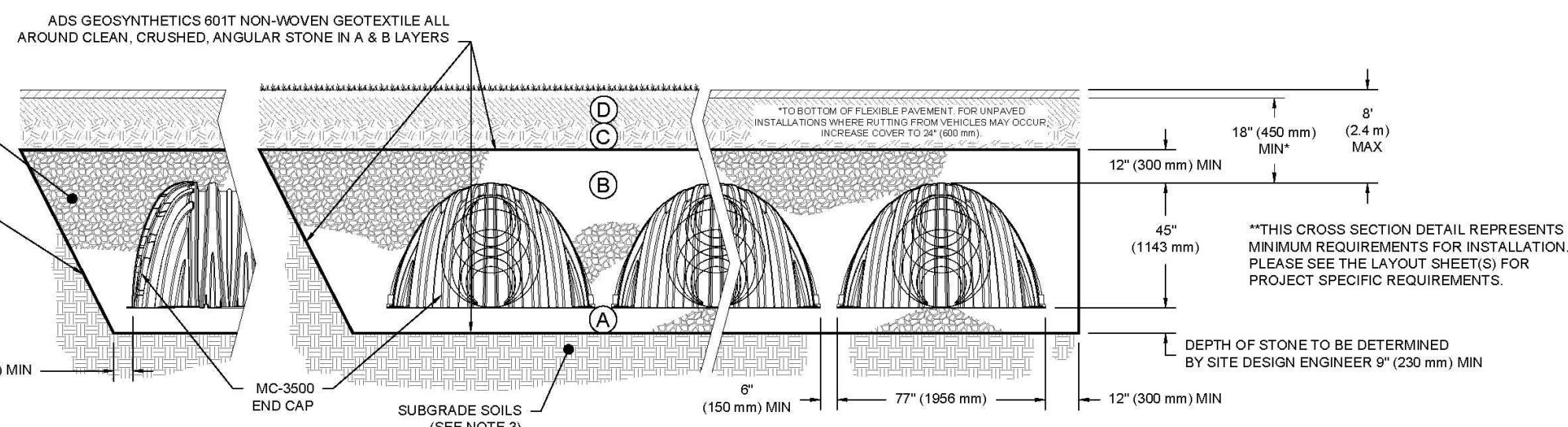
REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV.	APPROVED

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	AASHTO M44 ¹ A-1, A-2, A-3 OR AASHTO M43 ¹ 3, 3S7, 4, 4S7, 5, 5S, 57, 6, 67, 68, 7, 7S, 8, 8S, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 90% PROCTOR DENSITY FOR WELL GRADED MATERIAL, AND 90% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:
 1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE."
 2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (230 mm) MAX LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
 3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY PAVEMENT, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNERS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



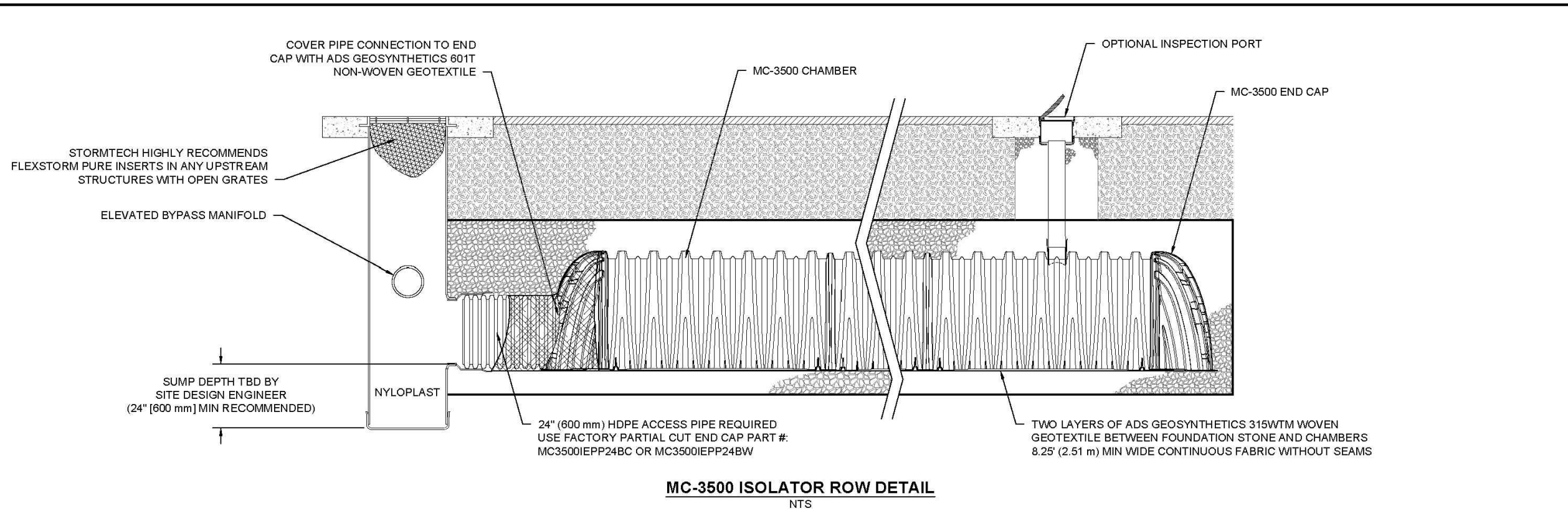
NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 450/90 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING JOGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN³ AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

444 MAPLE AVENUE
VIENNA, VA
DATE: 4-15-19
DRAWN: R/W
CHECKED: A/S
PROJECT # : S12812

6460 TREHURN BLVD
MILLERSBURG, OH 43030
DATE: 4-15-19
DRAWN: R/W
CHECKED: A/S
PROJECT # : S12812

4 SHEET OF 7

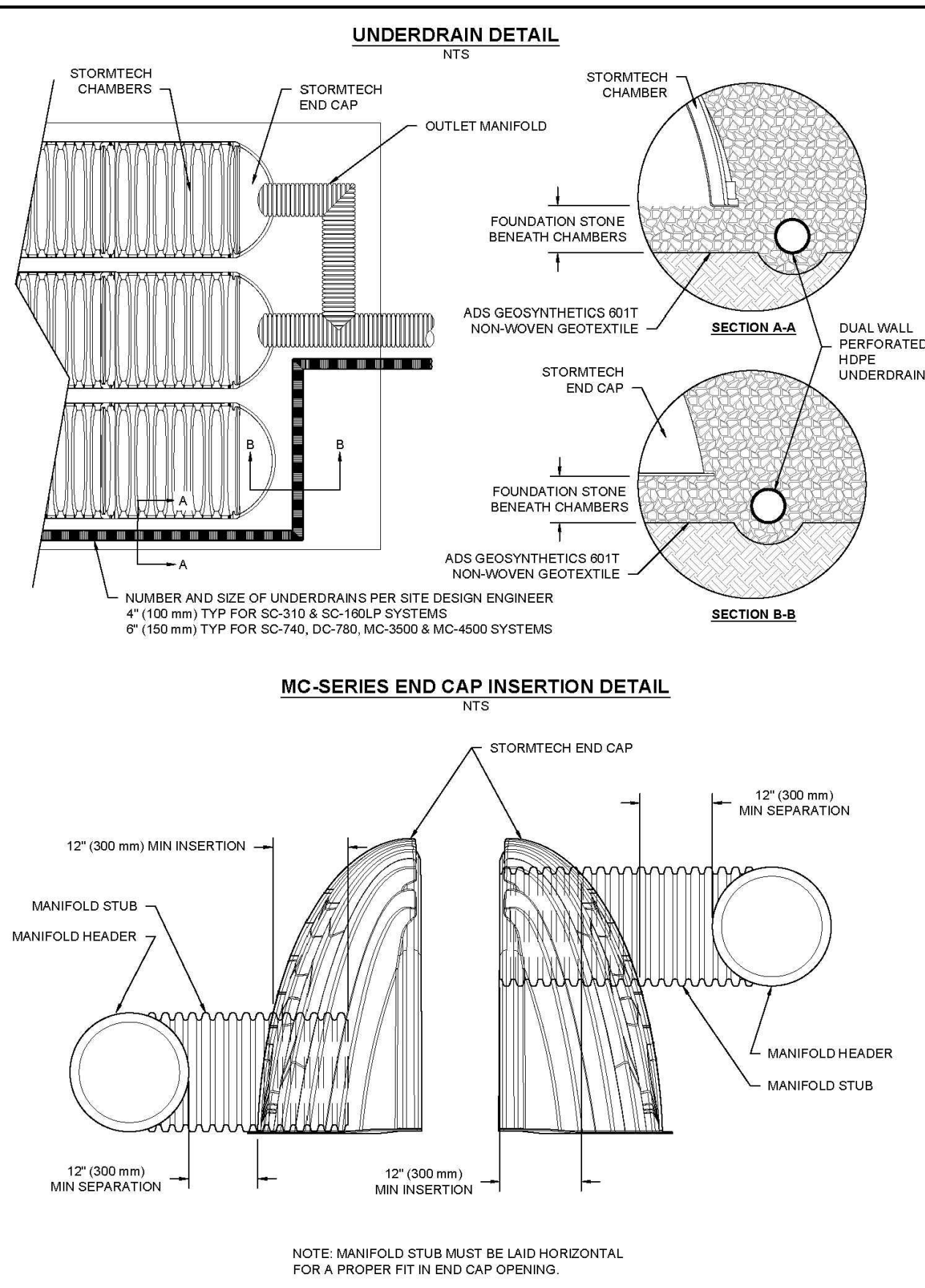
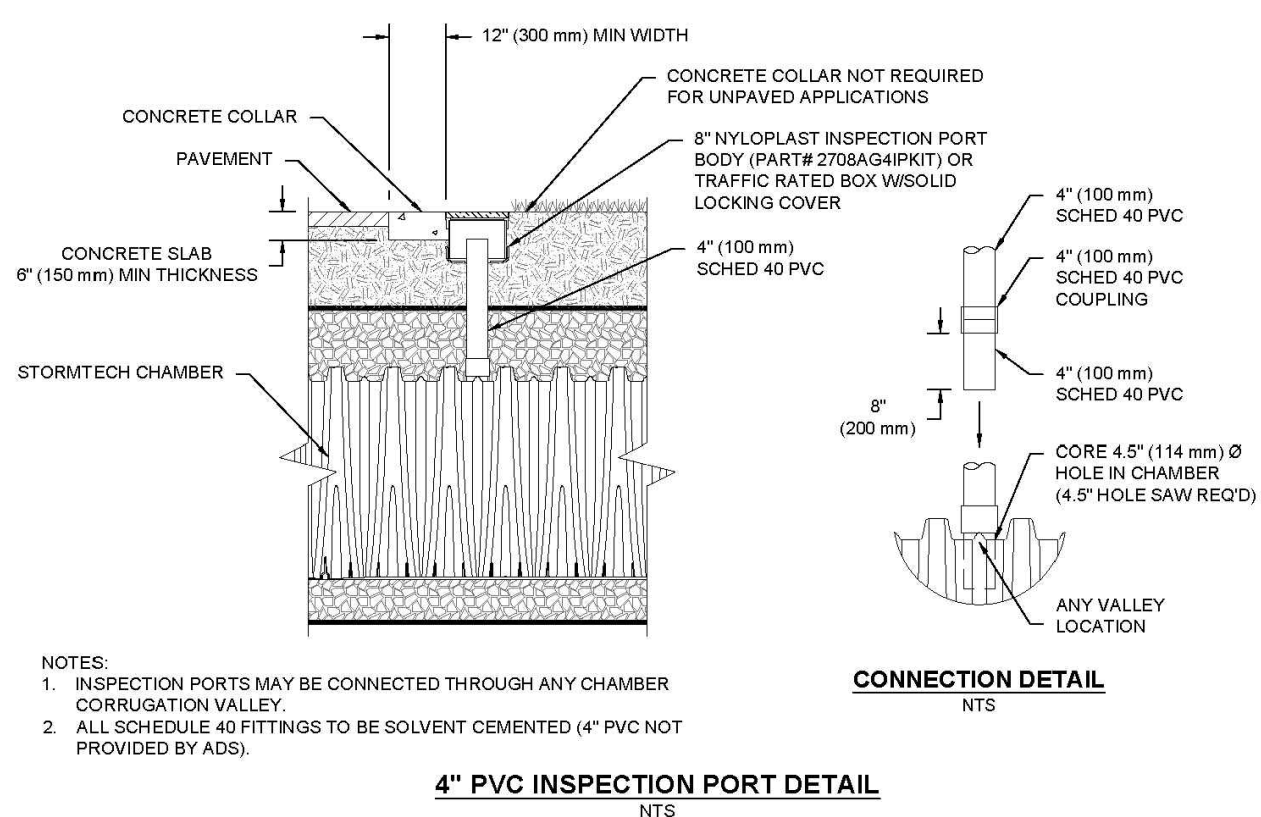


INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT**
 A. INSPECTION PORTS (IF PRESENT)
 A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 A.2. REMOVE AND CLEAN FLEXTORM FILTER IF INSTALLED
 A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 B. ALL ISOLATOR ROWS
 B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 B.3. IF MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 B. FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 B. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS**
 A. A FIXED CULVERT CLEANING NOZZLE WITH NEAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.**
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.**

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



MC-3500 TECHNICAL SPECIFICATION

NOMINAL CHAMBER SPECIFICATIONS
 SIZE (W X H X INSTALLED LENGTH)
 CHAMBER STORAGE
 MINIMUM INSTALLED STORAGE²
 WEIGHT

SIZE (W X H X INSTALLED LENGTH)	CHAMBER STORAGE	MINIMUM INSTALLED STORAGE ²	WEIGHT
77" 0" X 45" 0" X 86" 0" (3.11 m ³)	109.0 CUBIC FEET (4.96 m ³)	175.0 CUBIC FEET (4.96 m ³)	134 lbs. (60.8 kg)
156" 0" X 45" 0" X 22" 2" (3.10 m ³)	14.6 CUBIC FEET (0.42 m ³)	45.1 CUBIC FEET (1.26 m ³)	49 lbs.

NOMINAL END CAP SPECIFICATIONS
 SIZE (W X H X INSTALLED LENGTH)
 END CAP STORAGE
 MINIMUM INSTALLED STORAGE²
 WEIGHT

SIZE (W X H X INSTALLED LENGTH)	END CAP STORAGE	MINIMUM INSTALLED STORAGE ²	WEIGHT
75" 0" X 45" 0" X 22" 2" (3.10 m ³)	14.6 CUBIC FEET (0.42 m ³)	45.1 CUBIC FEET (1.26 m ³)	49 lbs.

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" (152 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "V"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"

PART #	STUB	B	C
MC3500EPP00T	6" (150 mm)	33.21" (844 mm)	---
MC3500EPP00B	6" (150 mm)	31.16" (791 mm)	0.69" (17 mm)
MC3500EPP00T	8" (200 mm)	---	0.81" (21 mm)
MC3500EPP10B	10" (250 mm)	29.04" (738 mm)	---
MC3500EPP12T	12" (300 mm)	26.36" (670 mm)	0.93" (24 mm)
MC3500EPP12B	12" (300 mm)	---	1.35" (34 mm)
MC3500EPP15T	15" (375 mm)	23.36" (594 mm)	---
MC3500EPP15B	15" (375 mm)	1.50" (38 mm)	---
MC3500EPP18T	18" (450 mm)	20.03" (509 mm)	---
MC3500EPP18B	18" (450 mm)	---	1.77" (45 mm)
MC3500EPP24T	24" (600 mm)	14.48" (368 mm)	---
MC3500EPP24B	24" (600 mm)	---	2.06" (52 mm)
MC3500EPP24W	24" (600 mm)	---	2.75" (70 mm)
MC3500EPP30B	30" (750 mm)	---	---

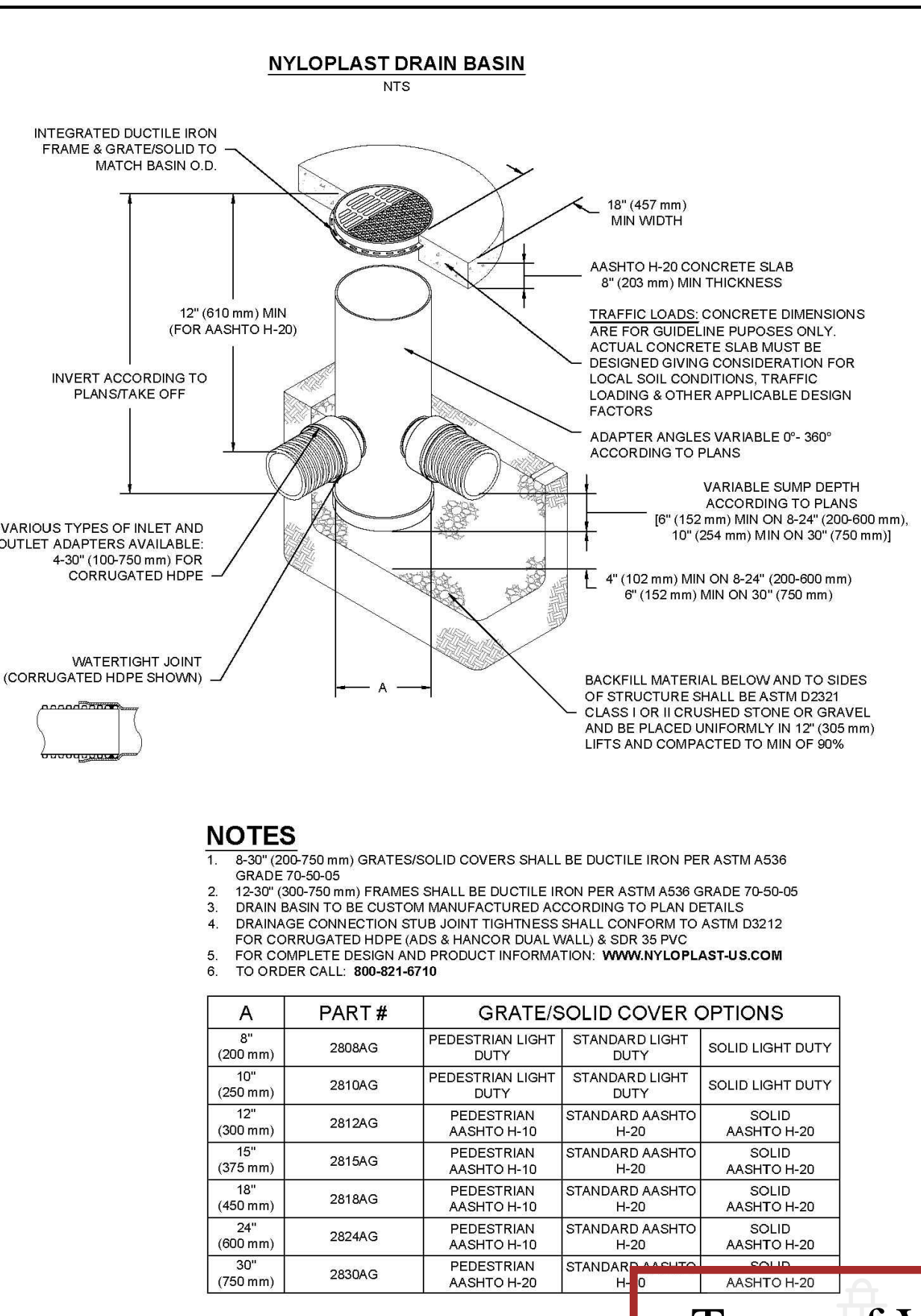
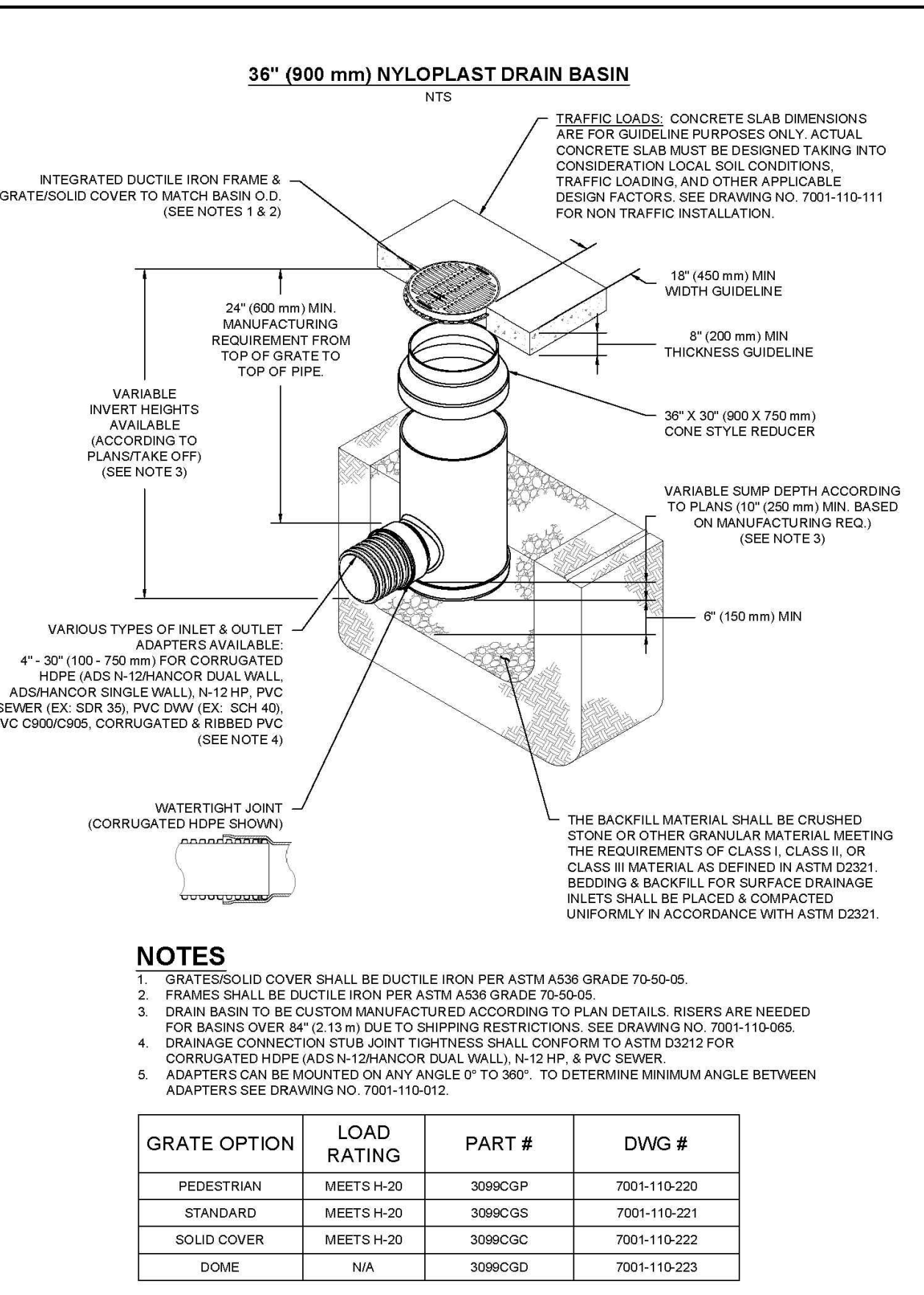
CUSTOM PARTIAL CUT INVERTS ARE AVAILABLE UPON REQUEST. INVERTED MANIFOLDS INCLUDE 12" (300-600 mm) SIZE ON SIZE AND 15" (375-1200 mm) SIZE ON SIZE. ECCENTRIC MANIFOLDS, CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

NOTE: ALL DIMENSIONS ARE NOMINAL

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MILLERSBURG, OH 43030
DATE: 4-15-19
DRAWN: R/W
CHECKED: A/S
PROJECT # : S12812

6 SHEET OF 7



NOTES

- GRATE/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" (2131 mm) DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
- DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL) & SDR 35 PVC.
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION: WWW.NYLOPLAST-US.COM TO ORDER CALL: 800-821-8710

GRATE OPTION	LOAD RATING	PART #	DWG #
PEDESTRIAN	MEETS H-20	3096GP	7001-110-220
STANDARD	MEETS H-20	3096GS	7001-110-221
SOLID COVER	MEETS H-20	3096GC	7001-110-222
DOVE	N/A	3096GD	7001-110-223

A	PART #	GRATE/SOLID COVER OPTIONS	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2888AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

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5 SHEET OF 7

444 MAPLE AVENUE
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7 SHEET OF 7

STORM SEWER INLET COMPUTATIONS

NUMBER	TYPE	LENGTH (FT)	STATION	DRAINAGE AREA (AC)	C	CA	Σ CA	Intensity	Q INCR. (CFS)	C _s CARRYOVER (CFS)	Q _L GUTTERFLOW	S _G GUTTER SLOPE (FT/FT)	S _s CROSS SLOPE (FT/FT)	T (SPREAD)	W (FT)	WIT	S _w (FT/FT)	S _w /S _G	E _o (APP. 9C-8)	a = 12W/(S _w -S _G) + LOCAL DEPRESSION	S' = a/(12W)	S _e = S _w + S' * W(E _o) (FT/FT)	COMPUTED LENGTH L _i (FT) (APP. 9C-17)	L _s SPECIFIED LENGTH (FT)	L _i /L _s	SAG INLETS ONLY			
																										d (FT)	h (FT)	d/h	T. SPREAD @ SAG (FT)
10	DI-2A	2	0+00	0.04	0.87	0.03	0.03	6.78	0.24	0.00	0.24	0.01	0.03	1.53	2.00	1.31	0.08	2.69	-	-	-	-	-	0.24	0.00	0.08	0.46	0.1747	2.58
11	DI-2A	2	0+00	0.03	0.9	0.03	0.03	6.78	0.18	0.00	0.18	0.02	0.04	1.27	2.00	1.58	0.08	2.38	-	-	-	-	-	0.18	0.00	0.08	0.46	0.1747	2.29
12	DI-2A	2	0+00	0.05	0.86	0.04	0.04	6.78	0.29	0.00	0.29	0.03	0.01	1.37	2.00	1.46	0.08	6.41	-	-	-	-	-	0.29	0.00	0.08	0.46	0.1747	6.15
13	DI-2A	2	0+00	0.1	0.85	0.09	0.09	6.78	0.58	0.00	0.58	0.02	0.02	2.00	2.00	1.00	0.08	3.79	-	-	-	-	-	0.58	0.00	0.08	0.46	0.17	3.64
14	DI-2A	2	0+00	0.09	0.89	0.08	0.08	6.78	0.54	0.00	0.54	0.02	0.02	1.95	2.00	1.03	0.08	4.90	-	-	-	-	-	0.54	0.00	0.08	0.46	0.1747	4.71
15	DI-2A	2	0+00	0.05	0.9	0.05	0.05	6.78	0.31	0.00	0.31	0.03	0.01	1.45	2.00	1.38	0.08	6.41	-	-	-	-	-	0.31	0.00	0.08	0.46	0.1747	6.15
16	DI-2B	4	0+00	0.25	0.85	0.21	0.21	6.78	1.44	0.00	1.44	0.02	0.02	5.15	2.00	0.39	0.08	4.90	-	-	-	-	-	1.44	0.00	0.08	0.46	0.1747	4.71

HGL COMPUTATIONS

Inlet Station	Structure Type (M)	Outlet Water Surface Elevation	Junction Loss													Inlet Water Surface Elevation	Max Water Surface Elevation	Difference	Fix?					
			D _s (in)	Q _s	L _s	S _s	H _s	V ₁	H ₁	D ₁ (in)	Q ₁	V ₂	H ₂	V _{3/2g}	H ₃					Angle (°)	H _{total}	H _t	1.3H _t	5(H _t)
16	M	382.93	24	4.14	3	0.000	0.00	1.32	0.01	15	4.14	3.37	13.93	0.18	0.06	90	0.12	0.23	0.11	0.48	384.48	386.15	3.18	OK
17	M	384.00	15	4.14	90	0.004	0.37	3.37	0.04	15	4.14	3.37	13.93	0.18	0.06	90	0.12	0.23	0.11	0.48	384.48	386.92	2.44	OK
21	M	382.93	24	4.13	5	0.000	0.00	1.31	0.01	15	4.13	3.37	13.90	0.18	0.06	90	0.12	0.23	0.11	0.48	384.48	385.40	2.47	OK
22	M	383.00	15	4.13	9	0.004	0.04	3.37	0.04	15	4.14	3.37	13.93	0.18	0.06	90	0.12	0.23	0.11	0.48	384.48	385.70	2.70	OK
23	M	383.50	15	4.14	68	0.004	0.28	3.37	0.04	15	4.14	3.37	13.93	0.18	0.06	90	0.12	0.23	0.11	0.48	384.48	385.85	2.35	OK

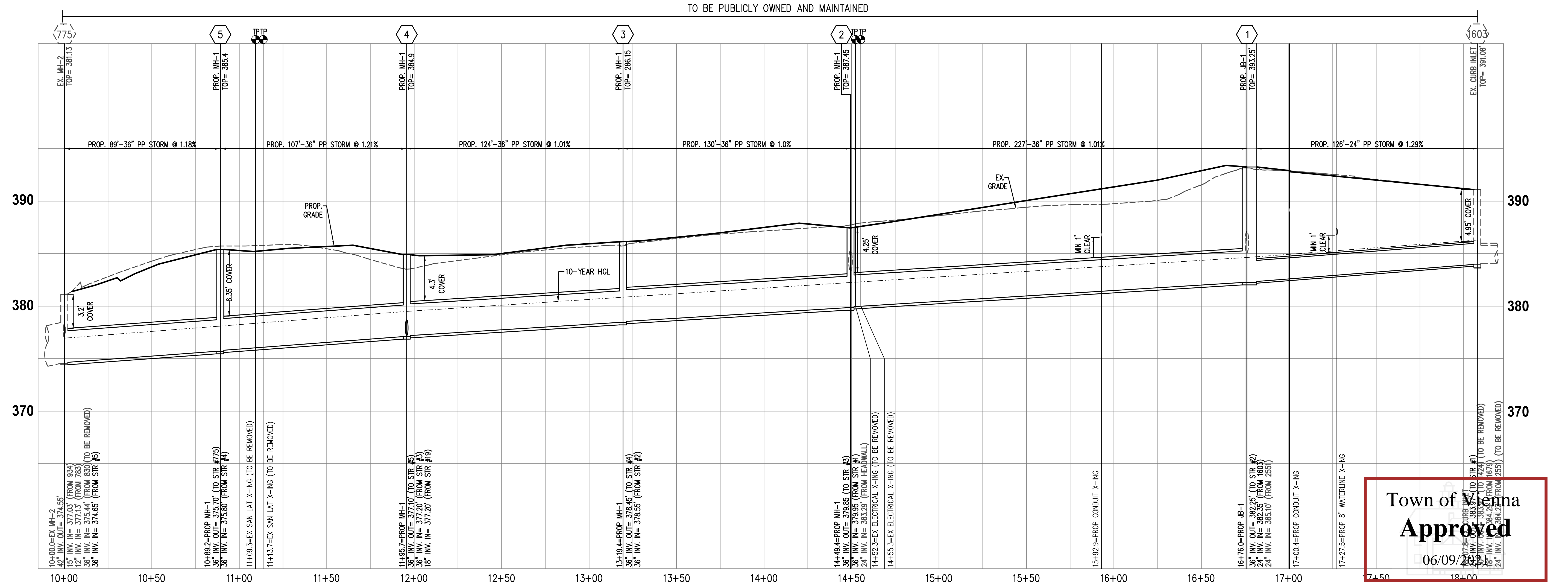
EX. STORM SEWER COMPUTATIONS

FROM POINT	TO POINT	"A" ACRES	AREA ACCUMULATED	CURVE NUMBER	RUNOFF Q INCREMENT C.F.S.	RUNOFF Q ACCUMULATED C.F.S.	INVERT ELEV'S UPPER END	INVERT ELEV'S LOWER END	LENGTH FT.	SLOPE FT./FT.	MANNING'S 'n'	DIA. IN.	CAPA-CITY C.F.S.	VEL. F.P.S.	FLOW TIME SEC.	NORMAL DEPTH IN.	CAPA-CITY %
1603	1424	0.33	11.96	85	1.76	49.92	383.97	382.71	188	0.0067	0.013	30	33.53	16.41	2.68	18.67	148.9%
1424	1365	0.52	12.48	98	2.77	52.69	382.39	380.96	44	0.0326	0.013	30	73.84	7.31	17.11	8.01	71.4%
1365	1365	0.29	13.97	98	1.55	6.72	382.77	380.87	125	0.0152	0.013	24	27.80	7.31	17.11	8.01	24.2%
1365	830	0.22	14.19	98	1.17	60.59	380.12	378.14	123	0.0161	0.013	33	66.98	12.82	9.59	24.49	90.5%
830	775	0.80	14.99	98	4.27	64.85	377.49	375.44	195	0.0105	0.013	36	68.28	11.04	17.67	27.89	95.0%

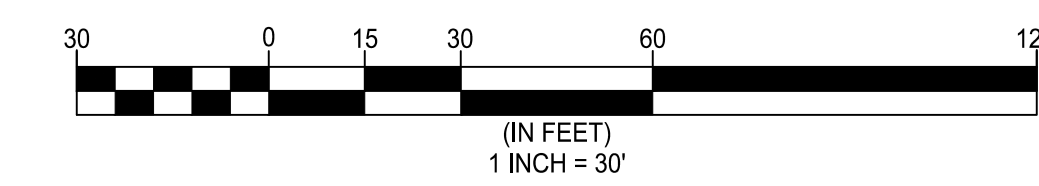
PROP. STORM SEWER COMPUTATIONS

FROM POINT	TO POINT	"A" ACRES	AREA ACCUMULATED	CURVE NUMBER	RUNOFF Q INCREMENT C.F.S.	RUNOFF Q ACCUMULATED C.F.S.	INVERT ELEV'S UPPER END	INVERT ELEV'S LOWER END	LENGTH FT.	SLOPE FT./FT.	MANNING'S 'n'	DIA. IN.	CAPA-CITY C.F.S.	VEL. F.P.S.	FLOW TIME SEC.	NORMAL DEPTH IN.	CAPA-CITY %
1603	1	0.36	4.12	85	1.92	17.74	383.97	382.35	126	0.0129	0.013	24	25.58	8.83	14.27	14.65	69.4%
1	2	0.00	11.63	-	0.00	50.08	382.25	379.95	227	0.0101	0.013	36	67.03	10.43	21.75	23.13	74.7%
2	3	1.20	12.83	85	5.17	55.25	379.85	378.55	130	0.0100	0.013	36	66.59	10.57	12.30	24.94	83.0%
3	4	0.00	12.83	-	0.00	55.25	378.45	377.20	124	0.0101	0.013	36	66.86	10.61	11.69	24.87	82.6%
4	5	1.55	14.38	-	7.99	63.24	377.10	375.80	107	0.0121	0.013	36	73.40	11.72	9.13	25.68	86.1%
5	775	0.00	14.38	-	0.00	63.24	375.70	374.65	89	0.0118	0.013	36	72.33	11.58	7.69	25.98	87.4%
RD	17	0.78	0.78	98	4.14	4.14	383.50	383.10	6	0.0727	0.013	15	17.34	11.65	0.47	4.97	23.8%
17	18	0.00	0.78	-	0.00	4.14	383.00	379.65	90	0.0372	0.013	15	12.41	9.14	9.84	5.94	33.3%
18	20	0.00	0.78	-	0.00	4.14	378.60	378.50	30	0.0333	0.013	24	41.18	8.43	0.36	5.12	10.0%
19	4	0.00	0.78	-	0.00	7.99	377.70	377.20	16	0.0313	0.013	18	18.50	10.13	1.58	8.24	43.2%
RD	23	0.78	0.78	98	4.14	4.14	383.00	382.60	11	0.0370	0.013	15	12.37	9.12	1.19	5.95	33.4%
23	22	0.00	0.78	-	0.00	4.14	382.50	380.00	68	0.0367	0.013	15	12.32	9.09	7.49	5.96	33.6%
22	21	0.00	0.78	-	0.00	4.13	379.90	379.65	9	0.0287	0.013	15	10.90	8.31	1.05	6.38	37.9%
21	20	0.00	0.78	-	0.00	4.13	378.60	378.50	5	0.0200	0.013	24	31.90	7.03	0.71	5.82	12.9%
16	15	0.25	0.25	97	1.33	1.33	382.60	381.80	79	0.0101	0.013	12	3.57	4.23	18.66	5.05	37.3%
15	14	0.05	0.30	95	0.26	1.59	381.70	380.80	84	0.0107	0.013	12	3.67	4.53	18.54	5.50	43.3%
14	13	0.09	0.39	95	0.47	2.06	380.70	379.80	84	0.0107	0.013	12	3.67	4.83	17.38	6.40	56.2%
13	12	0.10	0.49	95	0.52	2.58	379.70	379.50	15	0.0133	0.013	12	4.09	5.54	2.71	6.88	63.0%
12	11	0.05	0.54	96	0.26	2.84	379.40	378.70	61	0.0115	0.013	12	3.80	5.34	11.43	7.70	74.8%
11	10	0.03	0.57	94	0.15	2.99	378.60	378.40	15	0.0138	0.013	12	4.16	5.80	2.50	7.49	71.8%
10	783	0.04	0.61	95	0.21	3.20	378.30	377.63	110	0.0061	0.013	15	5.02	4.36	25.23	8.66	63.8%

NOTE:
CONTRACTOR TO USE POLYPROPYLENE PIPE (PP) MEETING VDOT SPEC. PC-1. USE ADS HP STORM OR EQUIVALENT.



SCALE: HOR. 1" = 30'
VERT. 1" = 5'



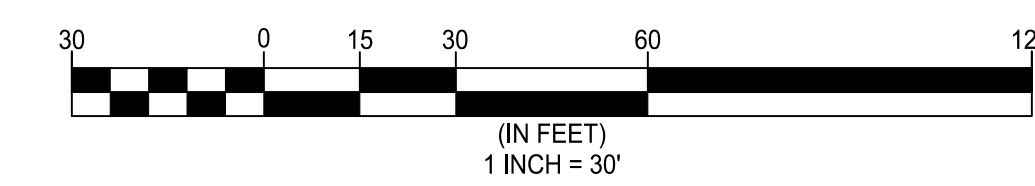
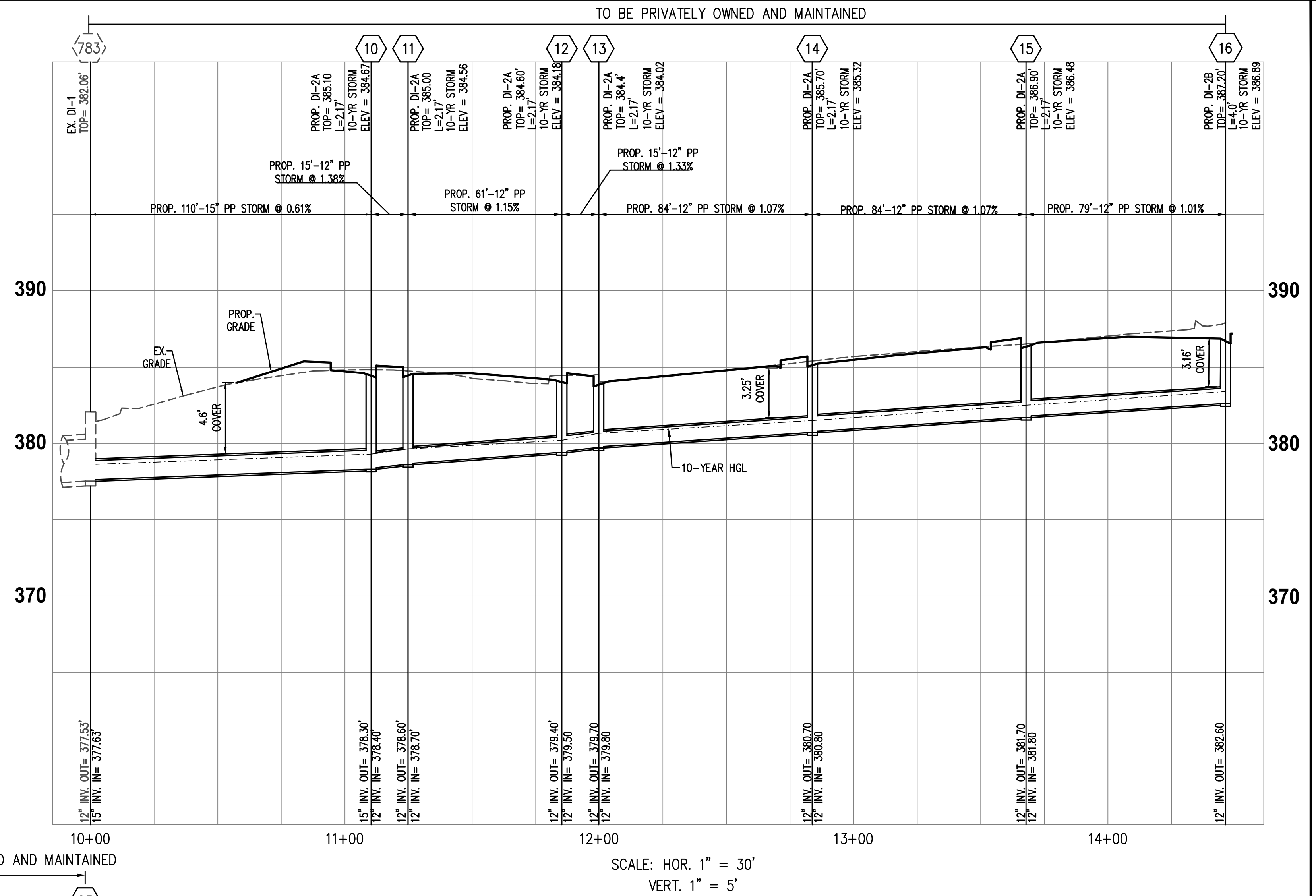
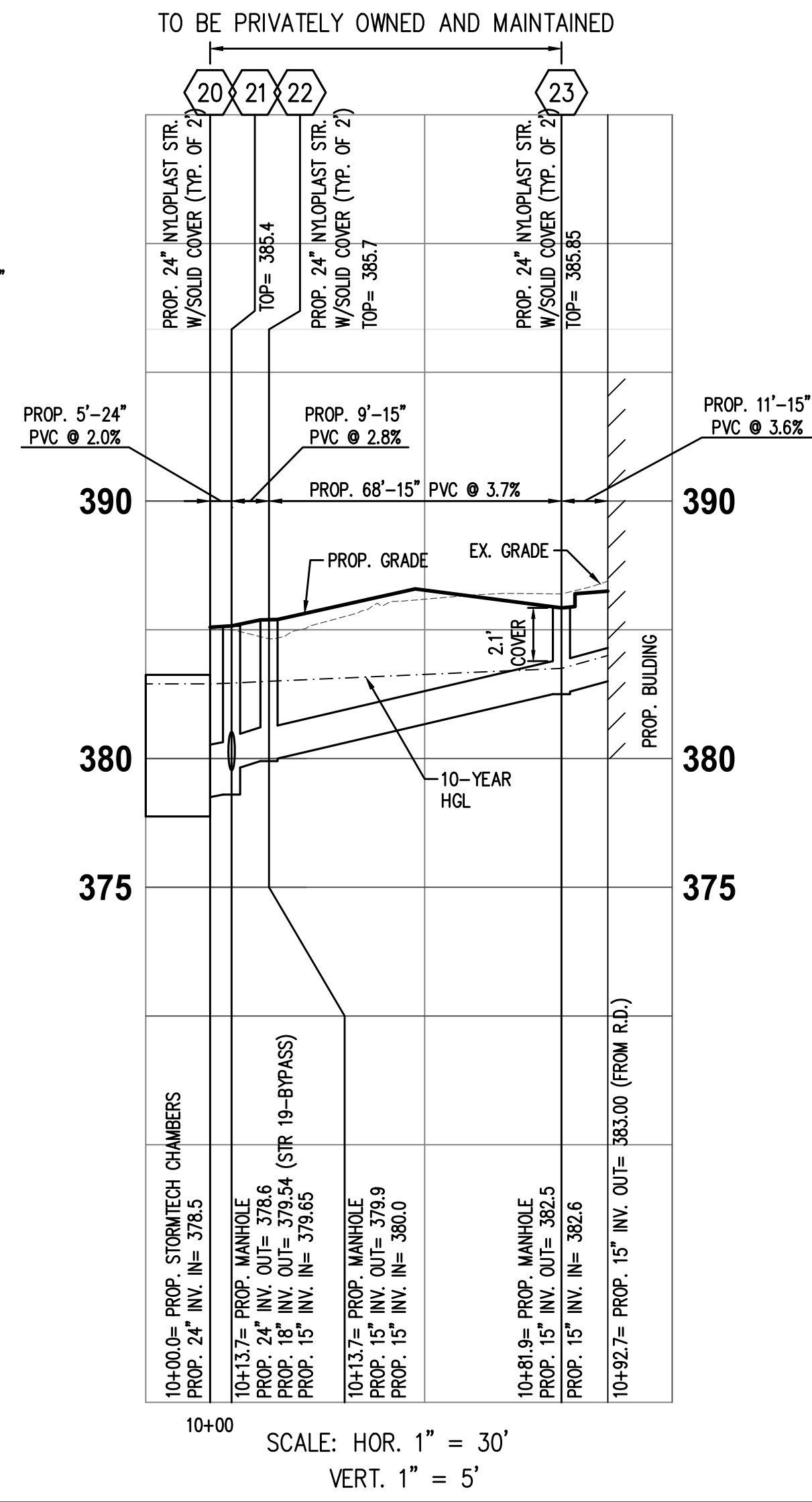
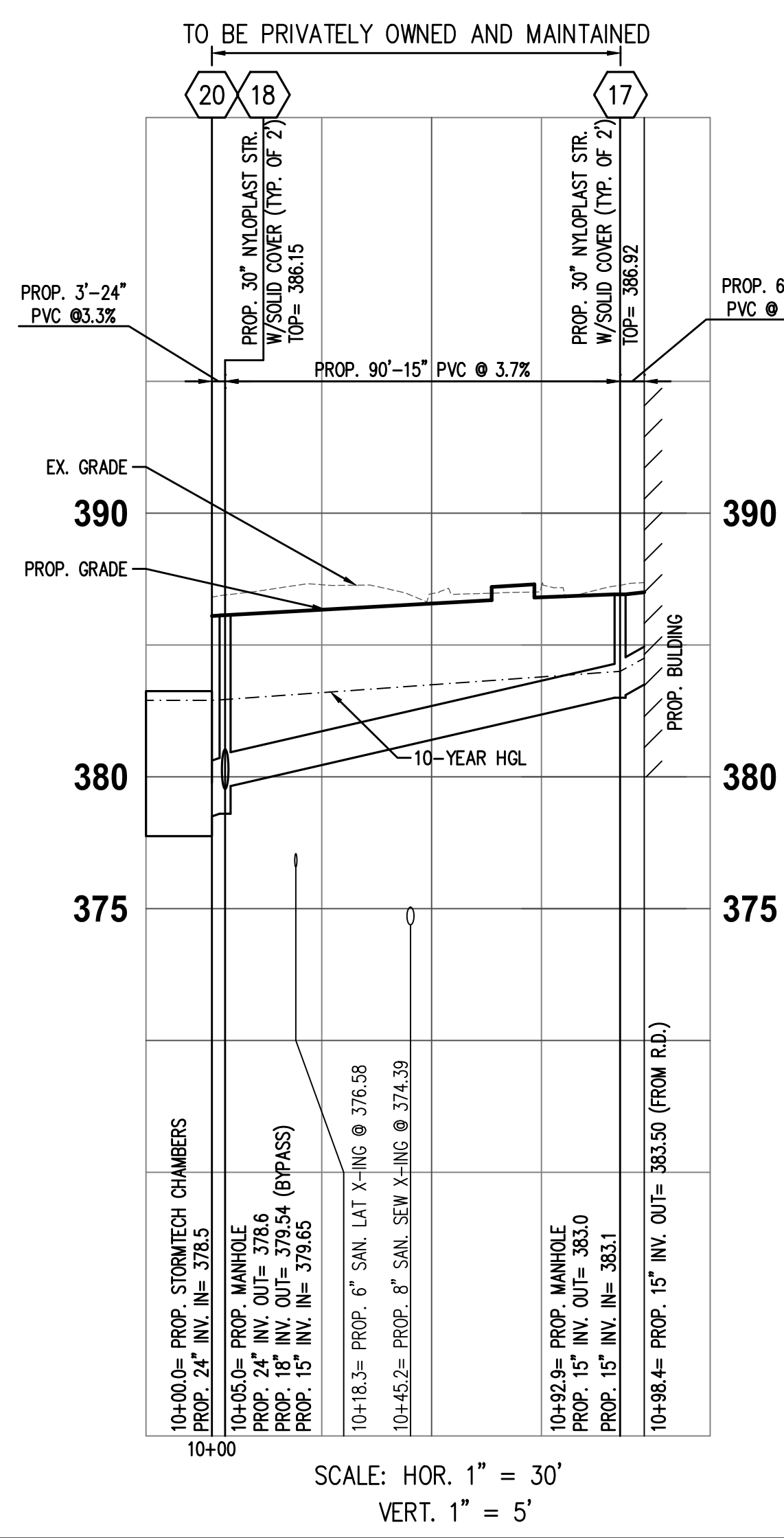
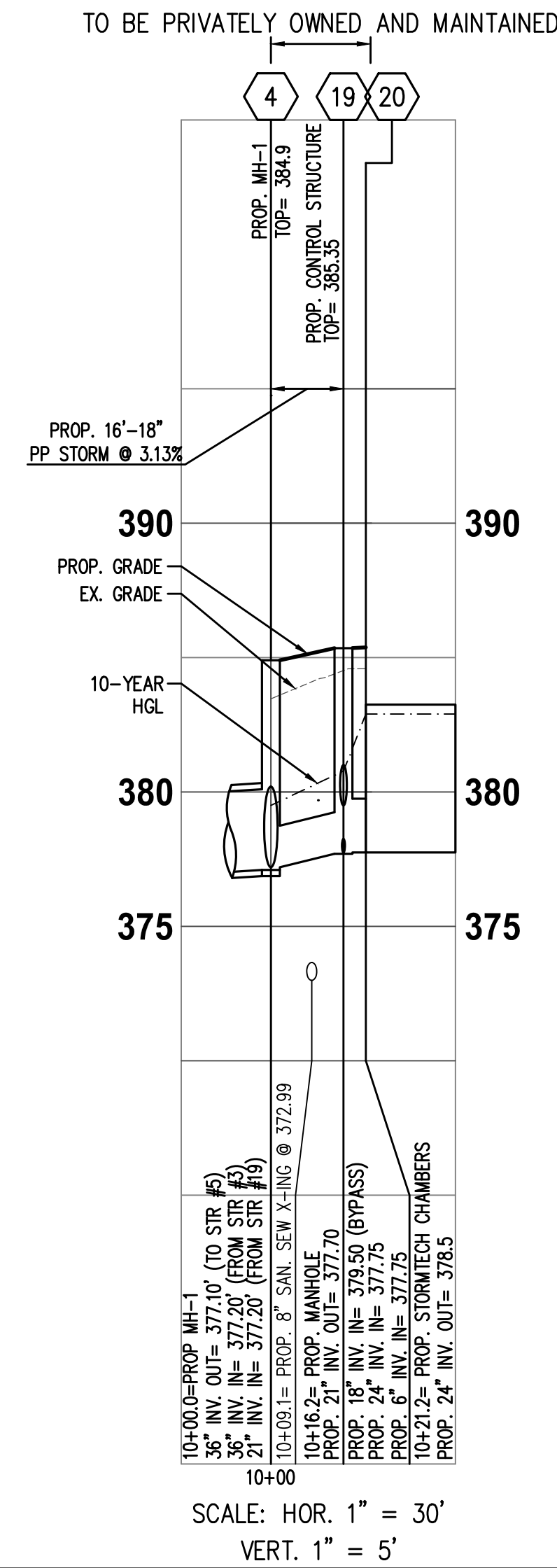
STORM SEWER PROFILES
444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA

Town of Vienna
Approved
 06/09/2021

Engineers • Surveyors • Planners
WALTER L. PHILLIPS
 Landscape Architects • Arborists
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
 (703) 532-6163 Fax (703) 533-1301
 www.WLPHINC.com

INCORPORATED ESTABLISHED 1945
 DATE SUBMITTED: 05/07/2021 SUBJOB: 07036C-0801.dwg
 SCALE: HOR. 1" = 30' VERT. 1" = 5'
 CHECKED: DL DRAWN: DL

NO.	DESCRIPTION	DATE	REV.	APPROVED	DATE



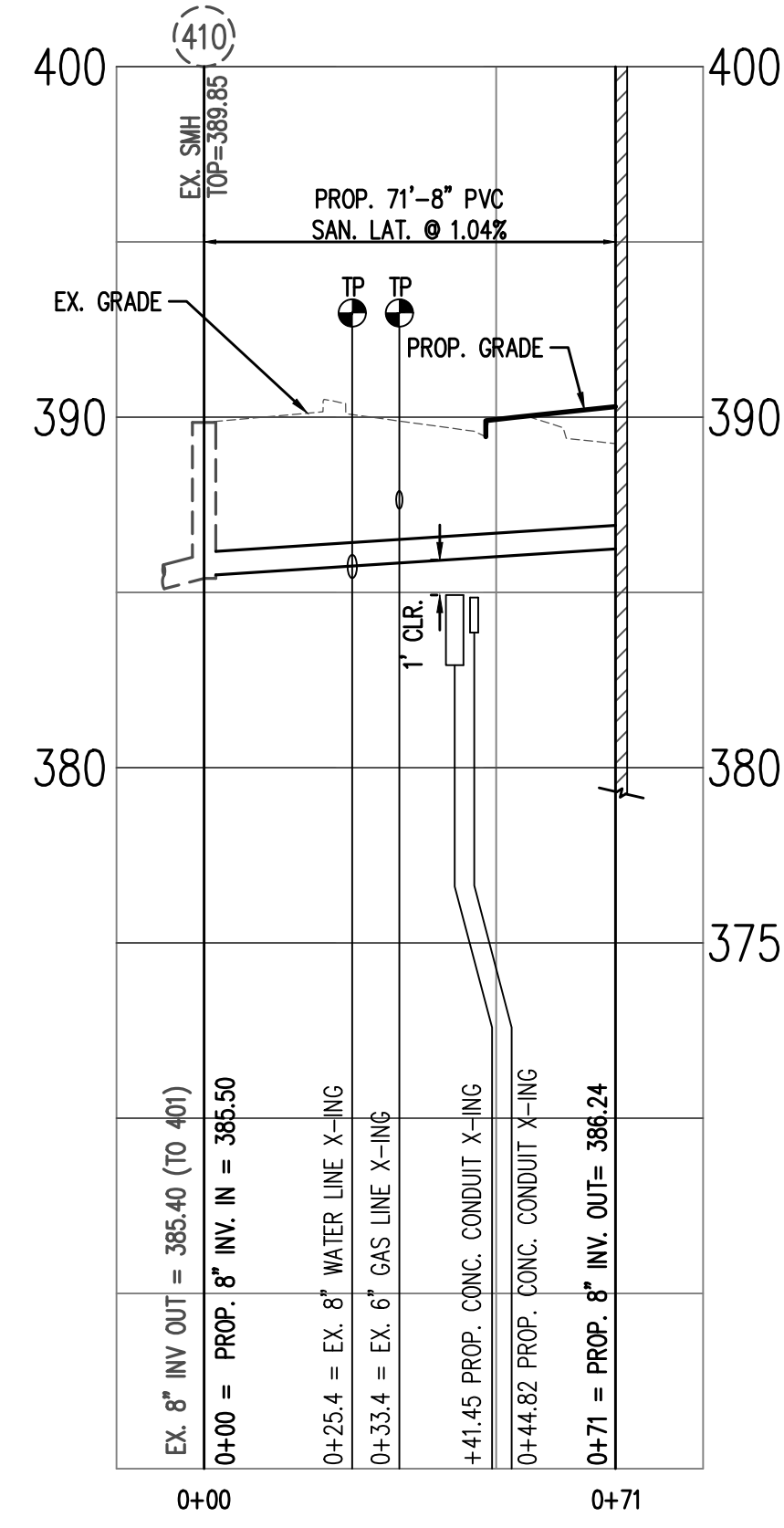
Town of Vienna
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06/09/2021

STORM SEWER PROFILES

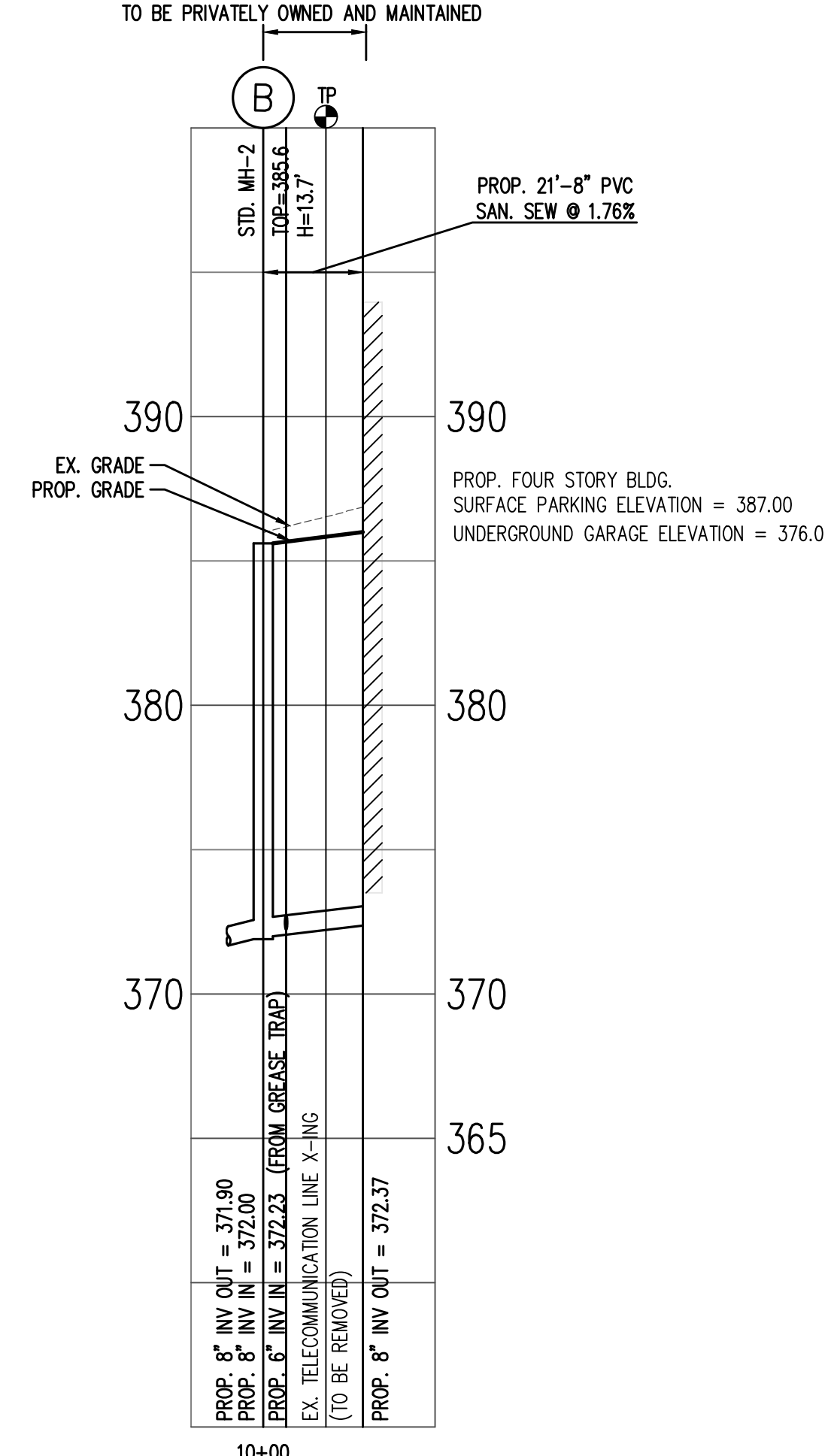
444 MAPLE AVENUE WEST
SITE PLAN
TOWN OF VIENNA, VIRGINIA

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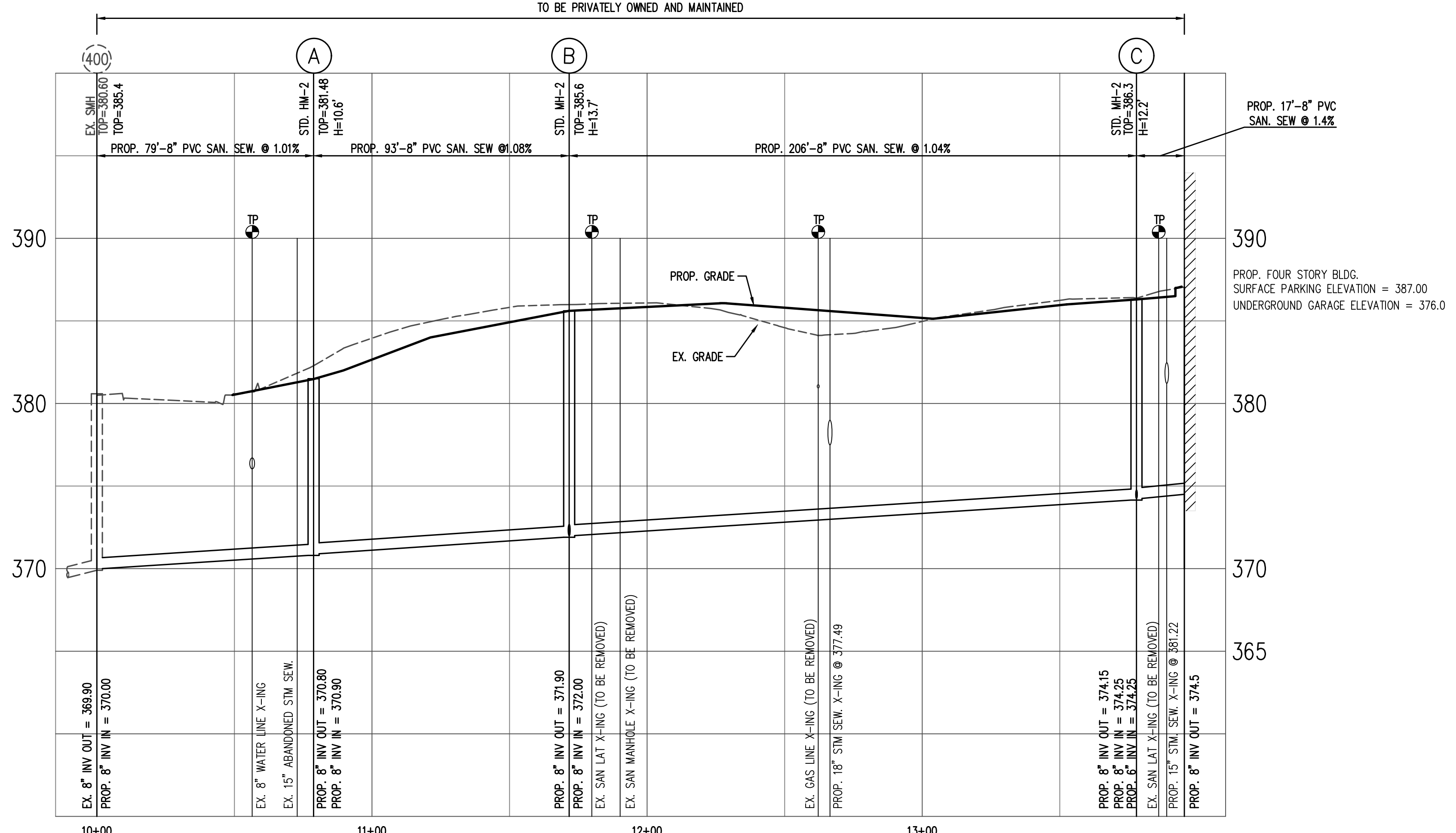
NO.	DESCRIPTION	DATE	REV.	APPROVED BY



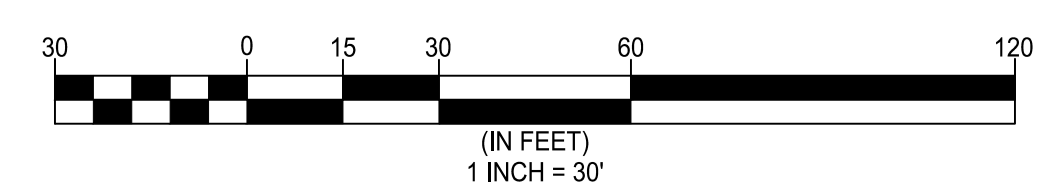
PROPOSED 8" SANITARY LINE (NORTH)
 SCALE: HOR. 1" = 30'
 VERT. 1" = 5'



PROPOSED 8" SANITARY LINE
 SCALE: HOR. 1" = 30'
 VERT. 1" = 5'



PROPOSED 8" SANITARY LINE
 SCALE: HOR. 1" = 30'
 VERT. 1" = 5'



Town of Vienna
Approved
 06/09/2021

SANITARY SEWER PROFILES

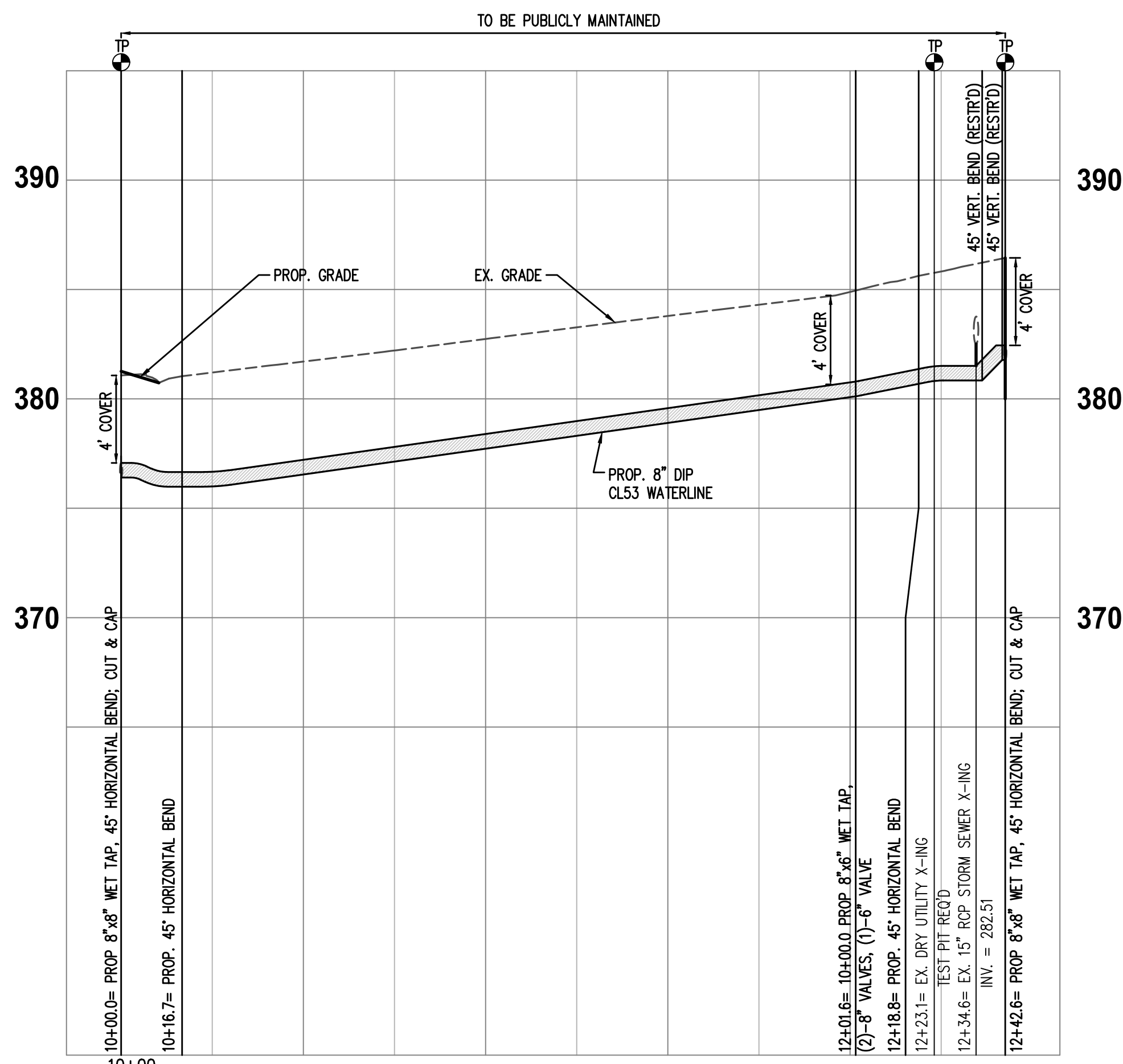
444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE	REV. BY	APPROVED BY



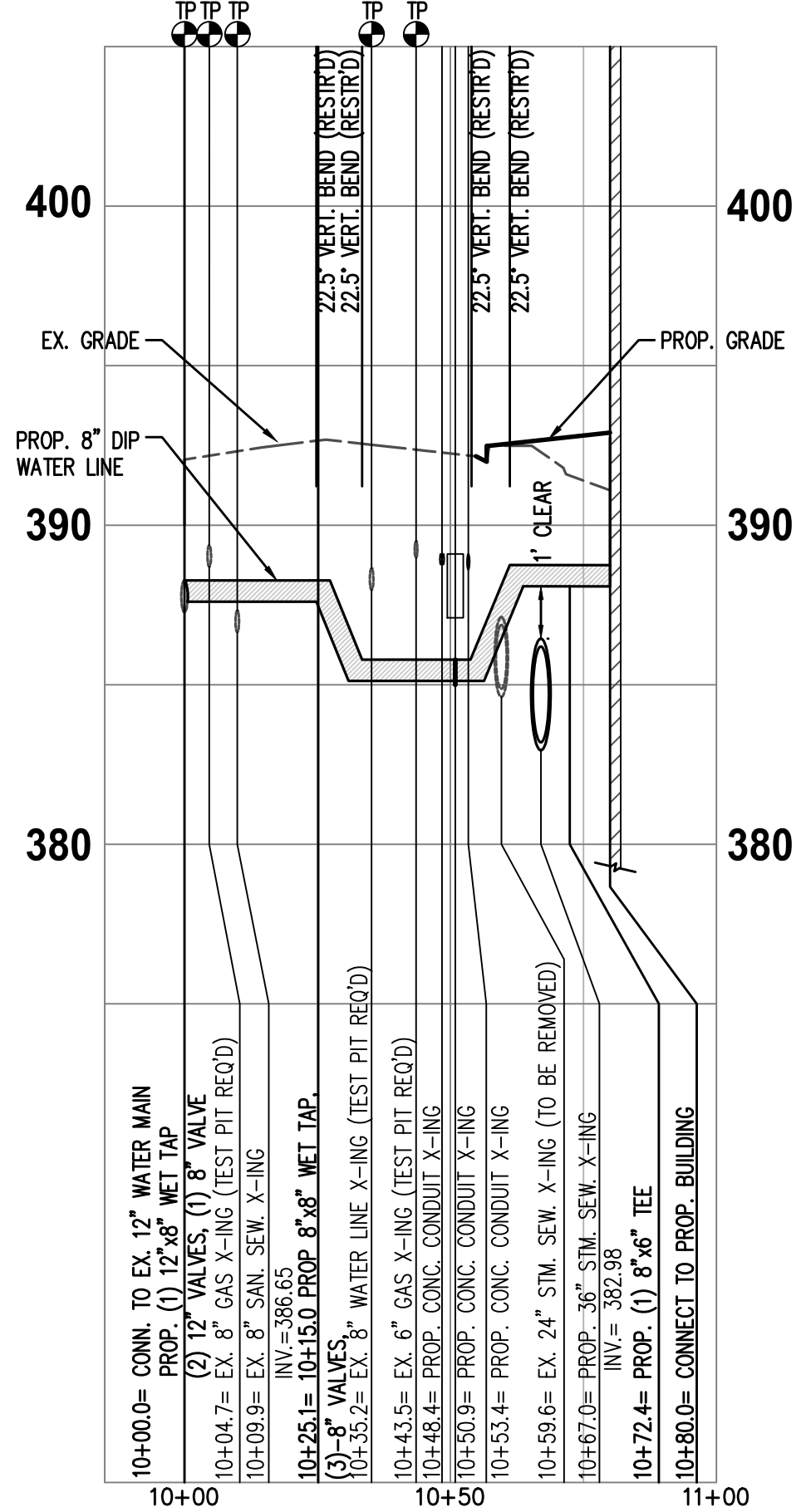
WALTER L. PHILLIPS
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 LANDSCAPE ARCHITECTS • ARBORISTS
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
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 www.WLPINC.com

DATE: SUB01: 01/12/2019; SUB02: 05/07/2020; SUB03: 4/19/2021
 DATE: SUB04: 05/25/2021
 SCALE: HOR. 1" = 30' VERT. 1" = 5'
 DRAWN: DL
 CHECKED: KW



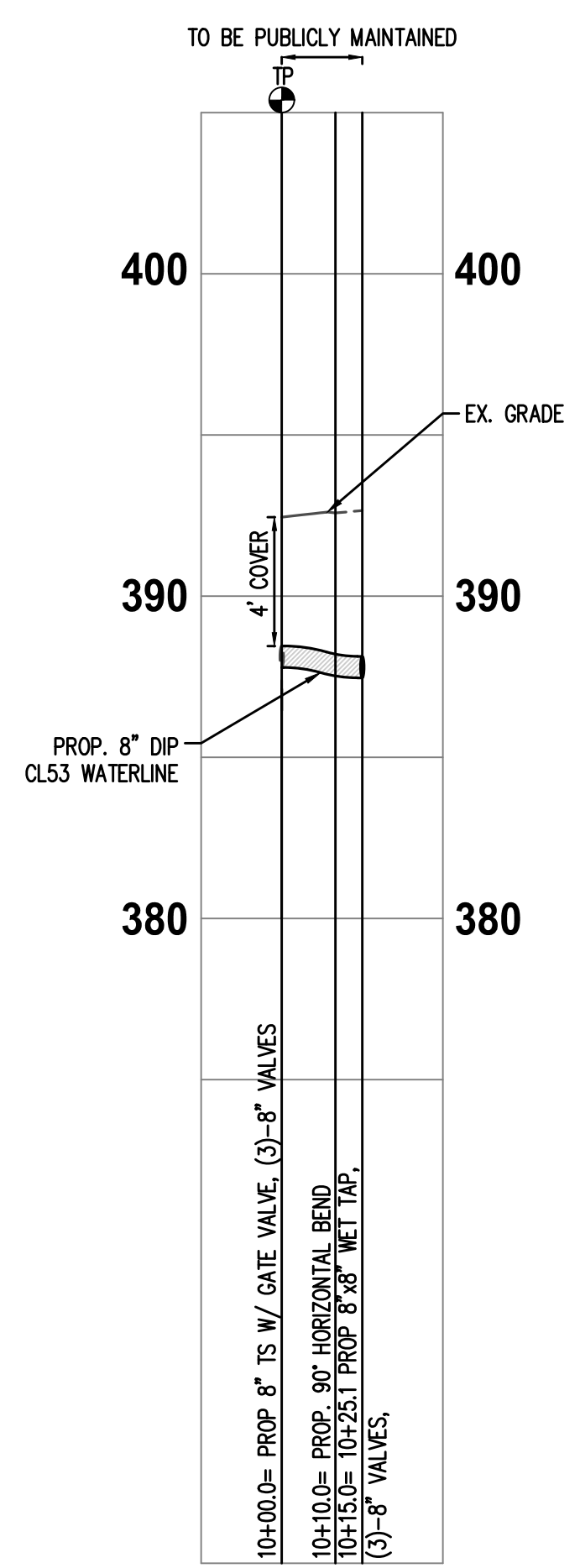
EXISTING 8" WATERLINE RELOCATION

SCALE: HOR. 1" = 30'
VERT. 1" = 5'



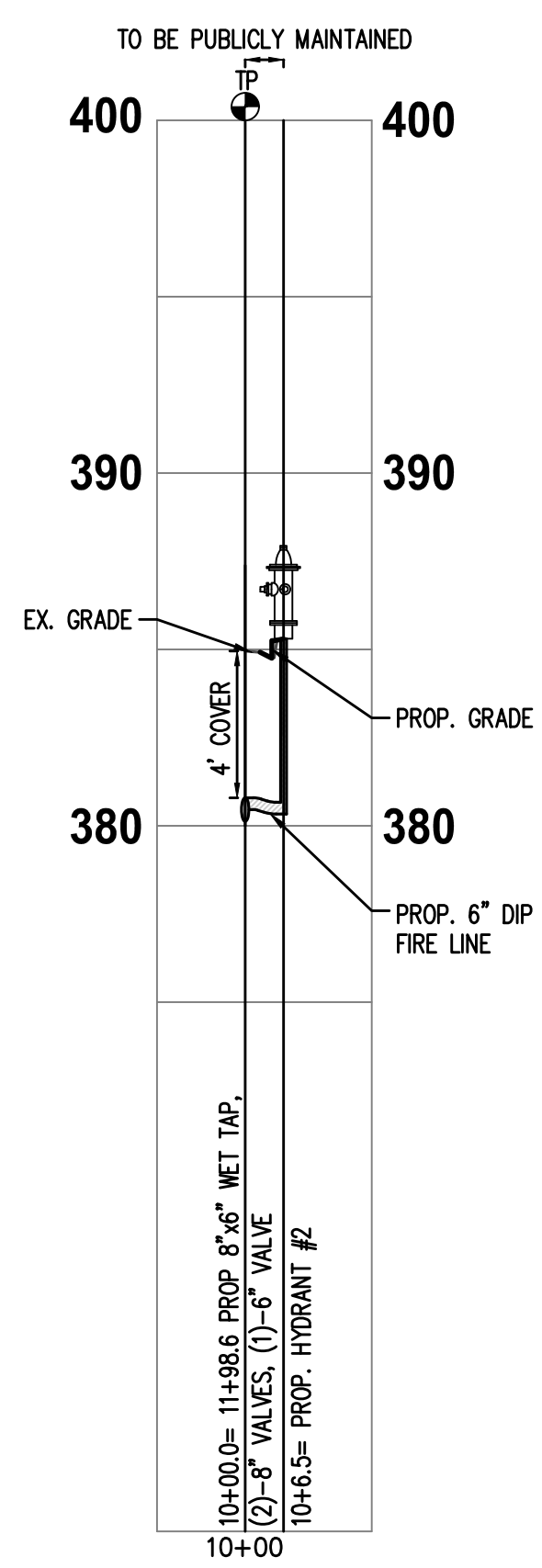
PROPOSED 8" WATER LINE

SCALE: HOR. 1" = 30'
VERT. 1" = 5'



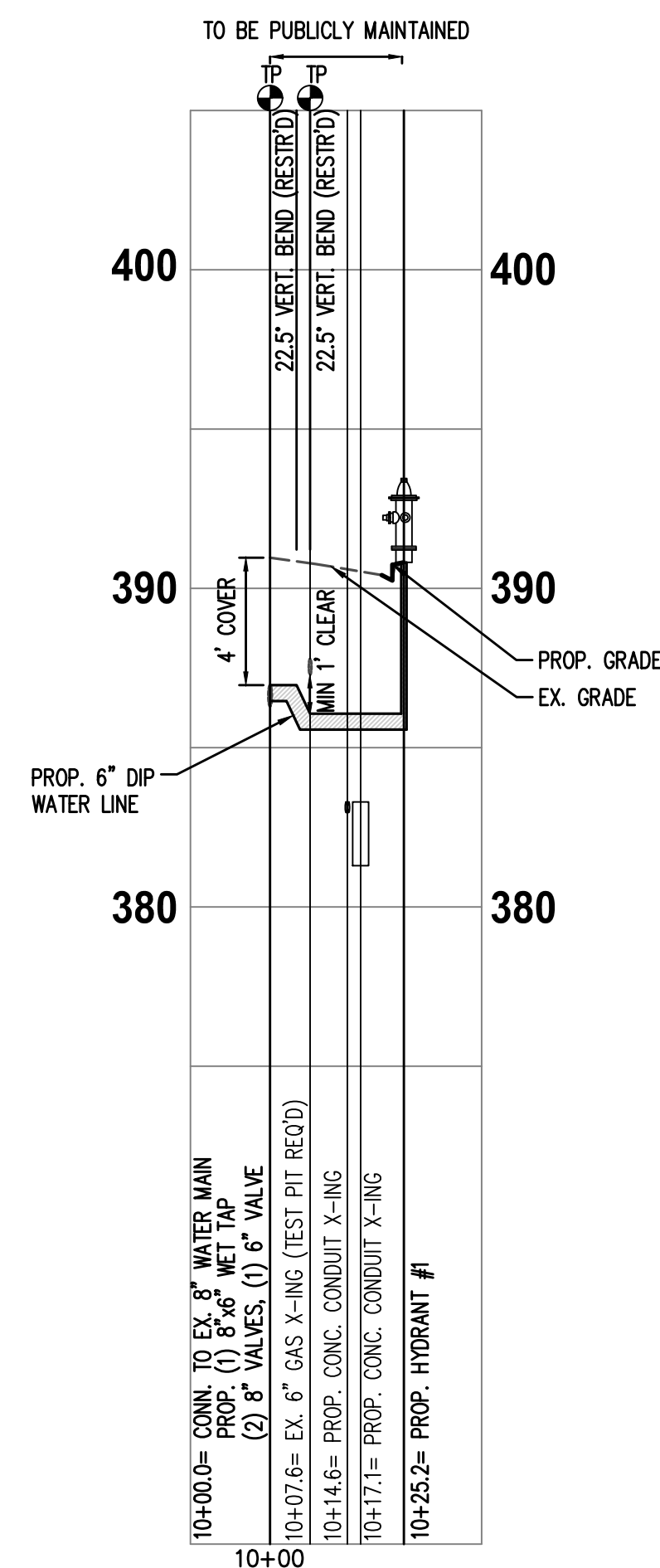
PROP 8" WATERLINE

SCALE: HOR. 1" = 30'
VERT. 1" = 5'



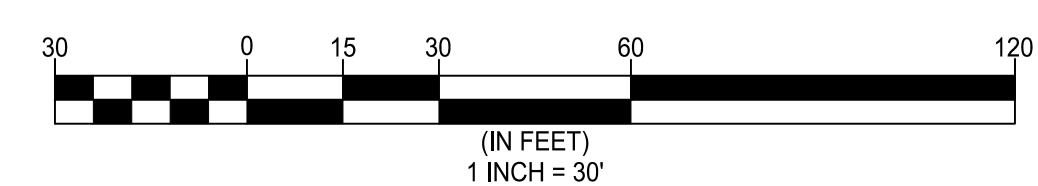
PROPOSED FIRE HYDRANT #2

SCALE: HOR. 1" = 30'
VERT. 1" = 5'



PROPOSED FIRE HYDRANT #1

SCALE: HOR. 1" = 30'
VERT. 1" = 5'



TOWN OF VIENNA WATER MAIN CONSTRUCTION NOTES

1. WATER MAIN CONSTRUCTION SHALL COMPLY WITH THE LATEST ISSUE OF THE TOWN OF VIENNA PUBLIC INFRASTRUCTURE MANUAL (PIM), VIRGINIA STATE WATERWORKS REGULATIONS, VDOT ROAD & BRIDGE SPECIFICATIONS & STANDARDS, AND FAIRFAX COUNTY PUBLIC FACILITY MANUAL (PFM).
2. THREE (3) DAYS PRIOR TO COMMENCING THE WATER MAIN CONSTRUCTION, THE DEVELOPER/OWNER SHALL NOTIFY THE TOWN OF VIENNA, DEPARTMENT OF PUBLIC WORKS, WATER & SEWER DIVISION, 703-255-6380.
3. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET UNLESS OTHERWISE APPROVED BY THE TOWN OF VIENNA.
4. BACKFLOW PREVENTER IS ABSOLUTELY REQUIRED FOR TEMPORARY CONSTRUCTION, IRRIGATION SYSTEMS OR VEHICLE WASH AREAS, WHERE AS REQUIRED BY THE STATE WATERWORKS REGULATIONS.
5. THE DEVELOPER AGREES TO ACCEPT FULL RESPONSIBILITY AND ALL COSTS FOR THE INSTALLATION OF WATER MAINS AND ADJUSTMENTS, INCLUDING ANY ADJUSTMENTS IN ALIGNMENT AND GRADE OR RELOCATION TO EXISTING WATER FACILITIES DUE TO THE DEVELOPMENT OF THIS PROPERTY, ANY REPAIR AND MAINTENANCE REQUIRED PRIOR TO FINISH GRADING AND SURFACING OF THE STREETS AND/OR EASEMENTS. FINAL ACCEPTANCE WILL NOT BE CONSIDERED OR GRANTED UNTIL AFTER THE STREETS HAVE BEEN SURFACED OR THE EASEMENTS FINALLY GRANTED.
6. ALL TS, BENDS AND VALVES NEED TO BE CONNECTED WITH MEGALUGS RETAINER GLANDS AND BLOCKED.
7. BEFORE THE START OF CONSTRUCTION, THE DEVELOPER MUST PROVIDE THE FOLLOWING INFORMATION AND/OR EVIDENCE OF COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND LAWS:
 - a. IF ANY EASEMENTS ARE NEEDED, TWO (2) COPIES OF THE RECORDED EASEMENT MUST BE PROVIDED, INCLUDING THE PLACE, DATE AND REFERENCE OF THE RECORDED EASEMENT.
 - b. WRITTEN NOTICE OF THE TENTATIVE STARTING DATE OF CONSTRUCTION, WHICH MUST BE A MINIMUM OF ONE (1) WEEK FOLLOWING THE DATE OF NOTICE, IS NEEDED. IN ADDITION, THE DEVELOPER MUST PROVIDE THE NAMES AND PHONE NUMBERS OF TWO (2) EMERGENCY CONTACTS.
8. WATER VALVES SHALL ONLY BE OPERATED BY THE TOWN OF VIENNA PERSONNEL. THE CONTRACTOR IS REQUIRED TO PROVIDE TWO (2) WORKING DAYS NOTICE OF ANY SHUTDOWN REQUIRED. WATER DISRUPTIONS TO EXISTING CUSTOMERS SHALL BE KEPT TO A MINIMUM WHICH MAY REQUIRE THE CONTRACTOR TO INSTALL INSERTING VALVES.
9. TOWN WORKING HOURS FOR WATER & SEWER ARE MONDAY THROUGH FRIDAY, 7:00AM - 3:30PM, WITH THE EXCEPTION OF HOLIDAYS. ANY INSPECTION OR SHUT DOWNS OUTSIDE OF WORKING HOURS SHALL REQUIRE ADDITIONAL FEES.
10. ALL VALVE COVERS SHALL BE STAMPED, WATER.
11. ALL FIRE HYDRANTS SHALL BE MUELLER.
12. DEVELOPER IS RESPONSIBLE FOR ALL ADJUSTMENTS DUE TO FIELD CONDITIONS.

NOTES

1. TEST PITS ARE TO BE PERFORMED AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION.
2. SEE SHEET C-0404 FOR UTILITY PLAN AND C-0404B FOR METER VAULT ENLARGEMENT
3. SEE SHEET C-0404B FOR VAULT AND METER DETAILS.
4. DEFLECTIONS AS SHOWN DO NOT PRECLUDE ADDITIONAL VERTICAL BENDS FROM BEING REQUIRED IN THE FIELD AT THE DISCRETION OF THE INSPECTOR.
5. MECHANICAL JOINT AND APPURTENANCE RESTRAINTS (EBAA IRON, INC. MEGALUG OR APPROVED EQUAL) ARE TO BE PROVIDED PER TOWN OF VIENNA SPECIFICATIONS AND WITH INSTALLATION LENGTHS PER THE MANUFACTURER RECOMMENDATIONS.
6. WATERLINE DEPTH MAY BE ADJUSTED IN THE FIELD UNDER COORDINATION WITH THE TOWN OF VIENNA INSPECTOR.
7. EXISTING 8" WATERLINE IN NUTLEY ST IS TO BE RELOCATED. ANY EXISTING SERVICES ON THE SOUTH SIDE OF NUTLEY ST MUST BE CONNECTED TO THE RELOCATED WATERLINE UPON COMPLETION AND ACCEPTANCE BY TOWN OF VIENNA.
8. TOWN OF VIENNA MAY REQUIRE ADDITIONAL INSERT VALVES TO AVOID WATER SHUT DOWNS FOR EXTENDED PERIODS. CONTRACTOR TO COORDINATE WITH TOWN OF VIENNA INSPECTOR PRIOR TO WATER SHUTOFFS NECESSARY FOR INSTALLATION AND ABANDONMENT.

Town of Vienna
Approved
06/09/2021

Engineers • Surveyors • Planners
WALTER L. PHILLIPS
 Landscape Architects • Arborists
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
 (703) 532-6163 Fax (703) 533-1301
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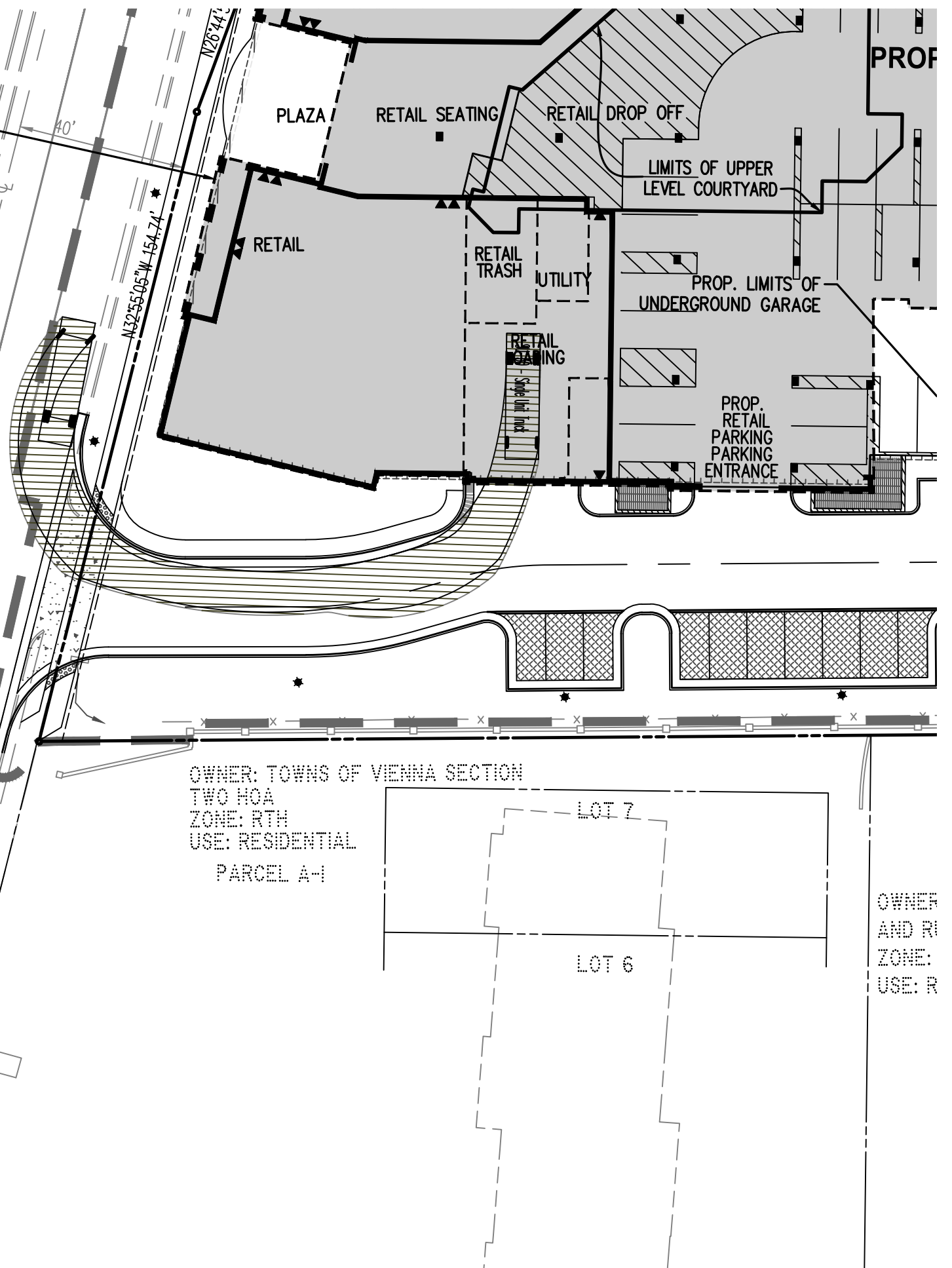
ESTABLISHED 1945
 INCORPORATED
 DATE SUB01: 01/12/2018, SUB02: 05/07/2020, SUB03: 4/19/2021
 SCALE: HOR. 1" = 30' VERT. 1" = 5'
 DRAWN: DL
 CHECKED: KW

NO.	DESCRIPTION	DATE	REV.	APPROVED BY

WATERLINE PROFILES
444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA

PROP. LIMITS OF UNDERGROUND GARAGE

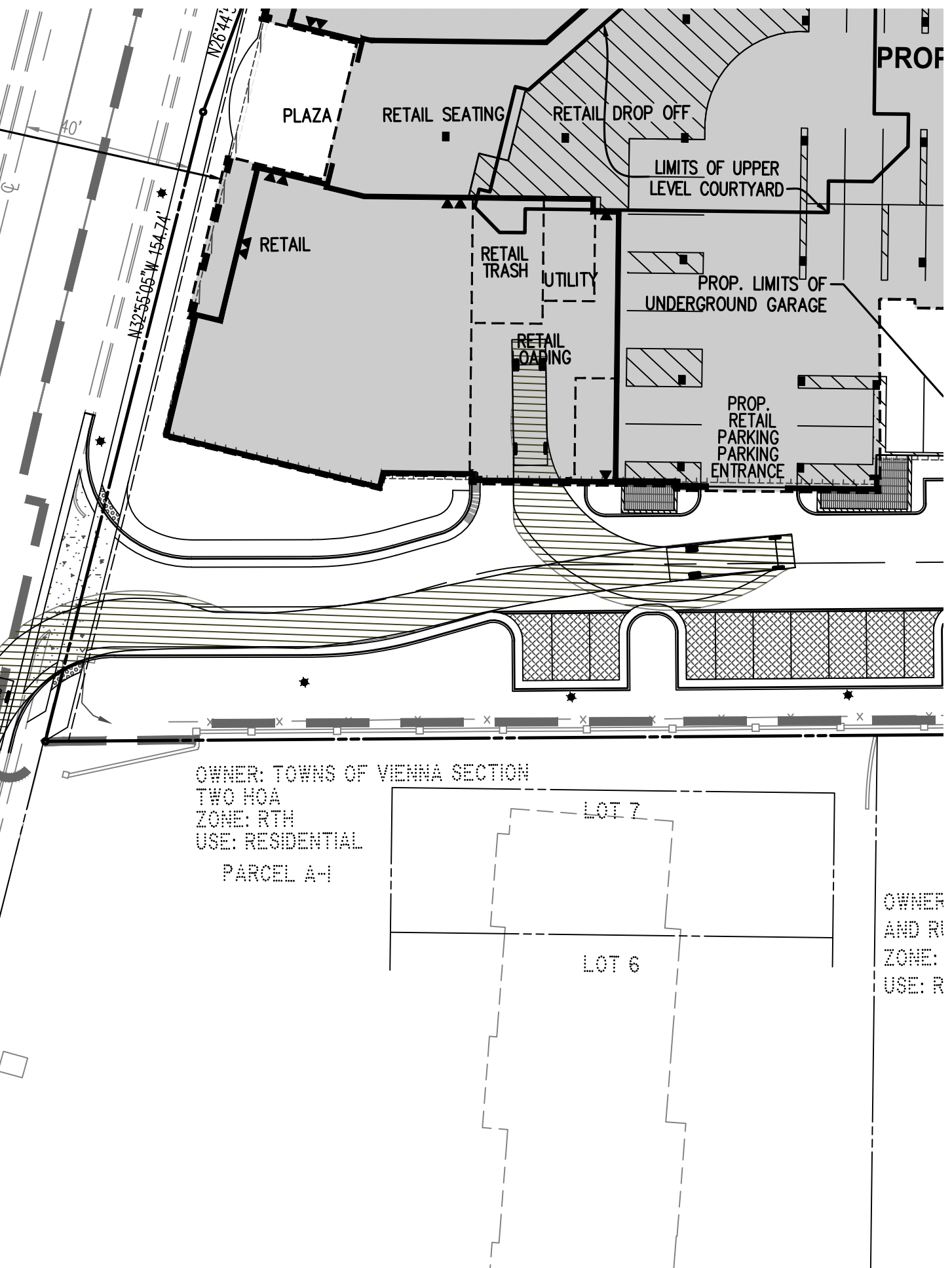
NUTLEY STREET SW - ROUTE 243
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)



RETAIL LOADING - EXITING (SU-30)

PROP. LIMITS OF UNDERGROUND GARAGE

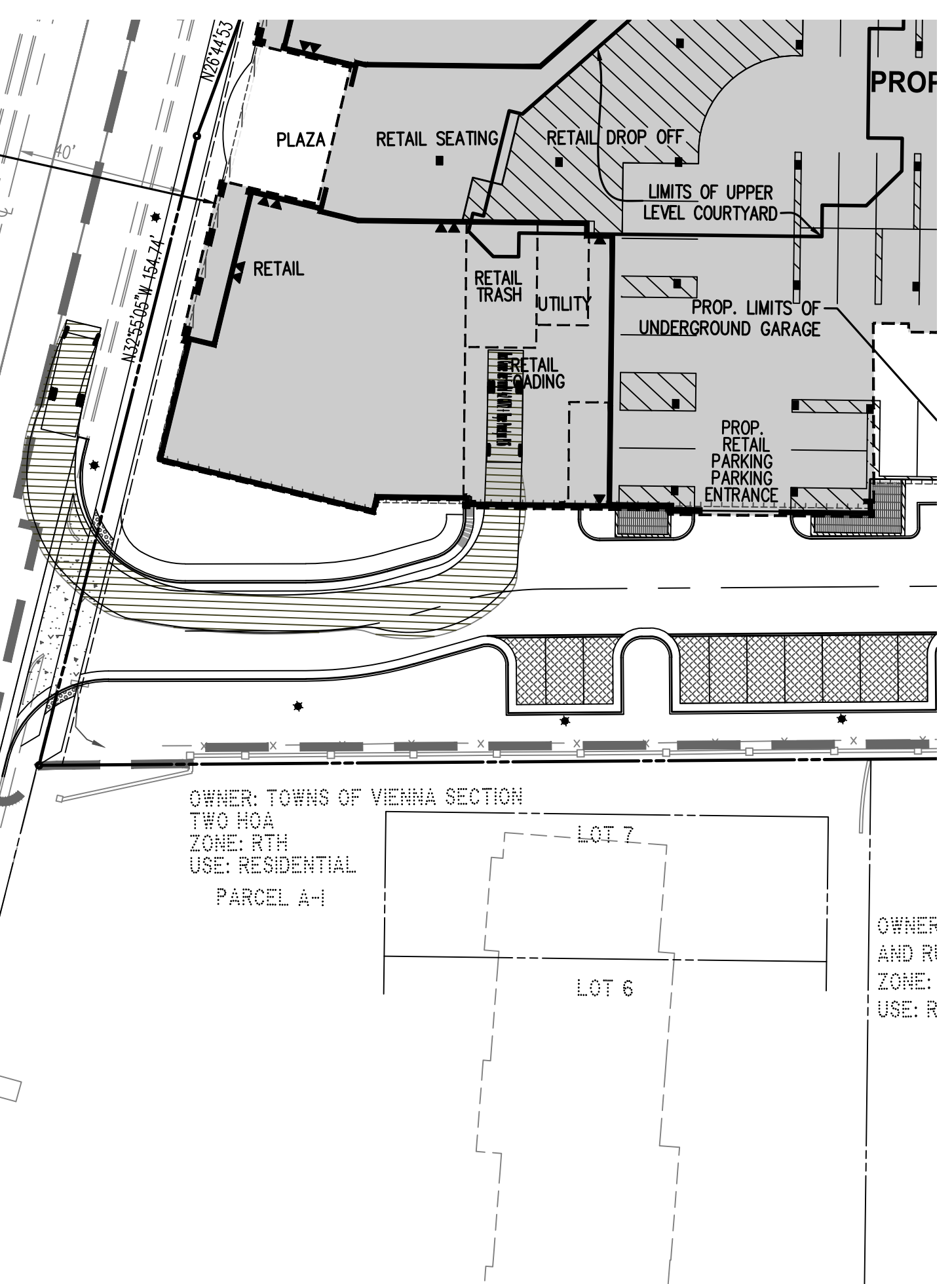
NUTLEY STREET SW - ROUTE 243
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)



RETAIL LOADING - ENTERING (SU-30)

PROP. LIMITS OF UNDERGROUND GARAGE

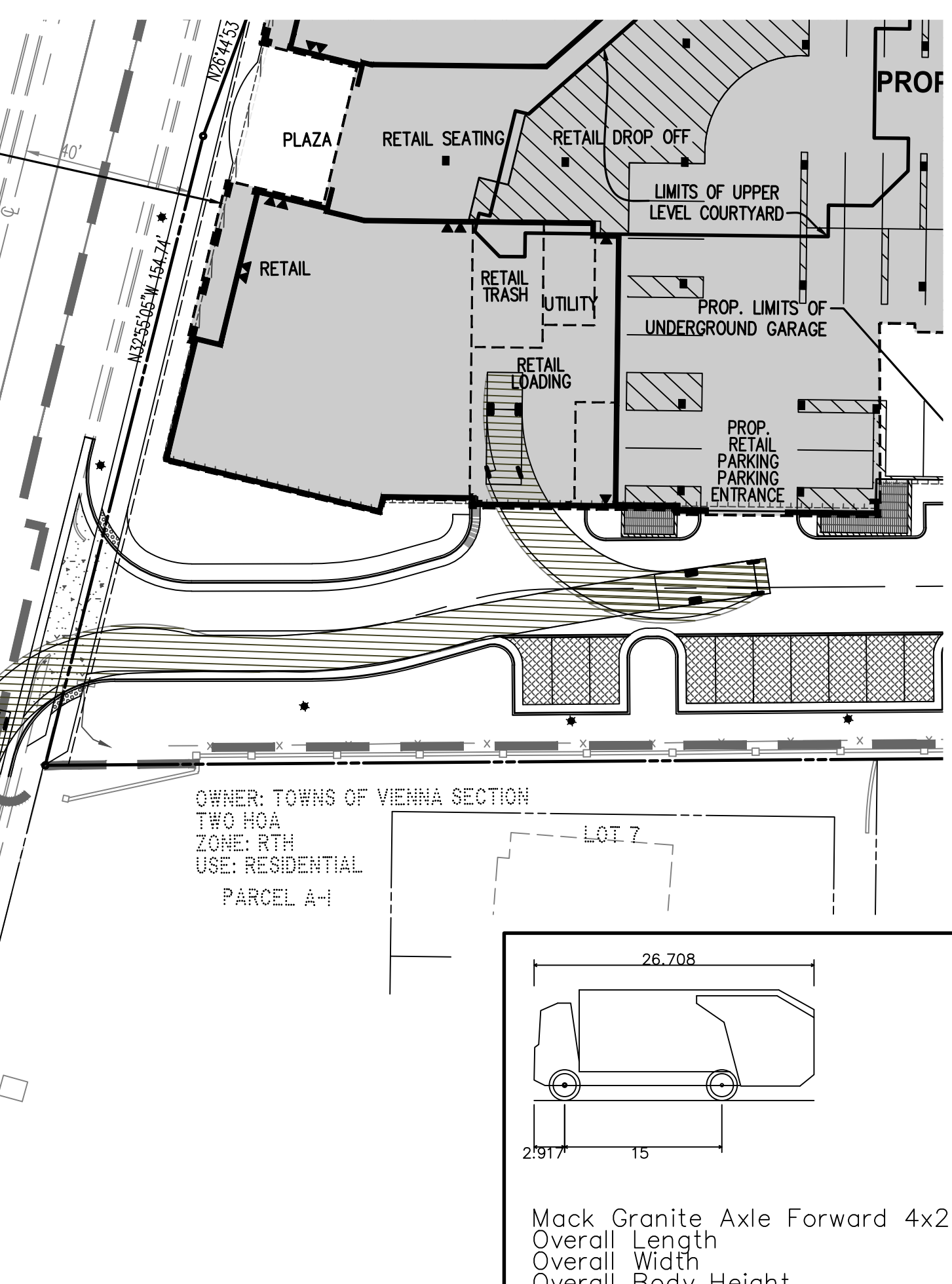
NUTLEY STREET SW - ROUTE 243
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)



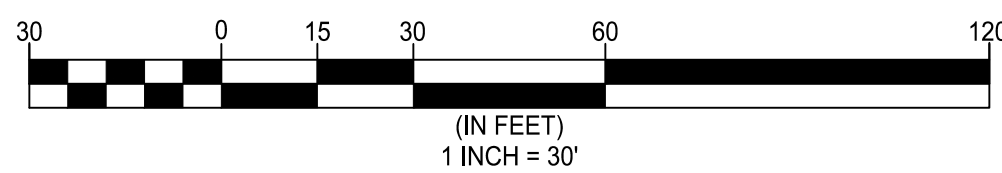
RETAIL TRASH - EXITING (PL16)

PROP. LIMITS OF UNDERGROUND GARAGE

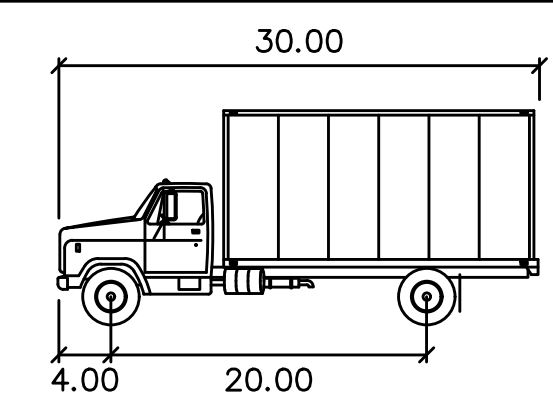
NUTLEY STREET SW - ROUTE 243
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)



RETAIL TRASH - ENTERING (PL16)



LEGEND



SU-30	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

Mack Granite Axle Forward 4x2 GU712 + W...
 Overall Length : 26.708ft
 Overall Width : 8.375ft
 Overall Body Height : 10.546ft
 Min Body Ground Clearance : 1.376ft
 Track Width : 8.375ft
 Lock-to-lock time : 6.00s
 Curb to Curb Turning Radius : 29.300ft

Town of Vienna
Approved
 06/09/2021

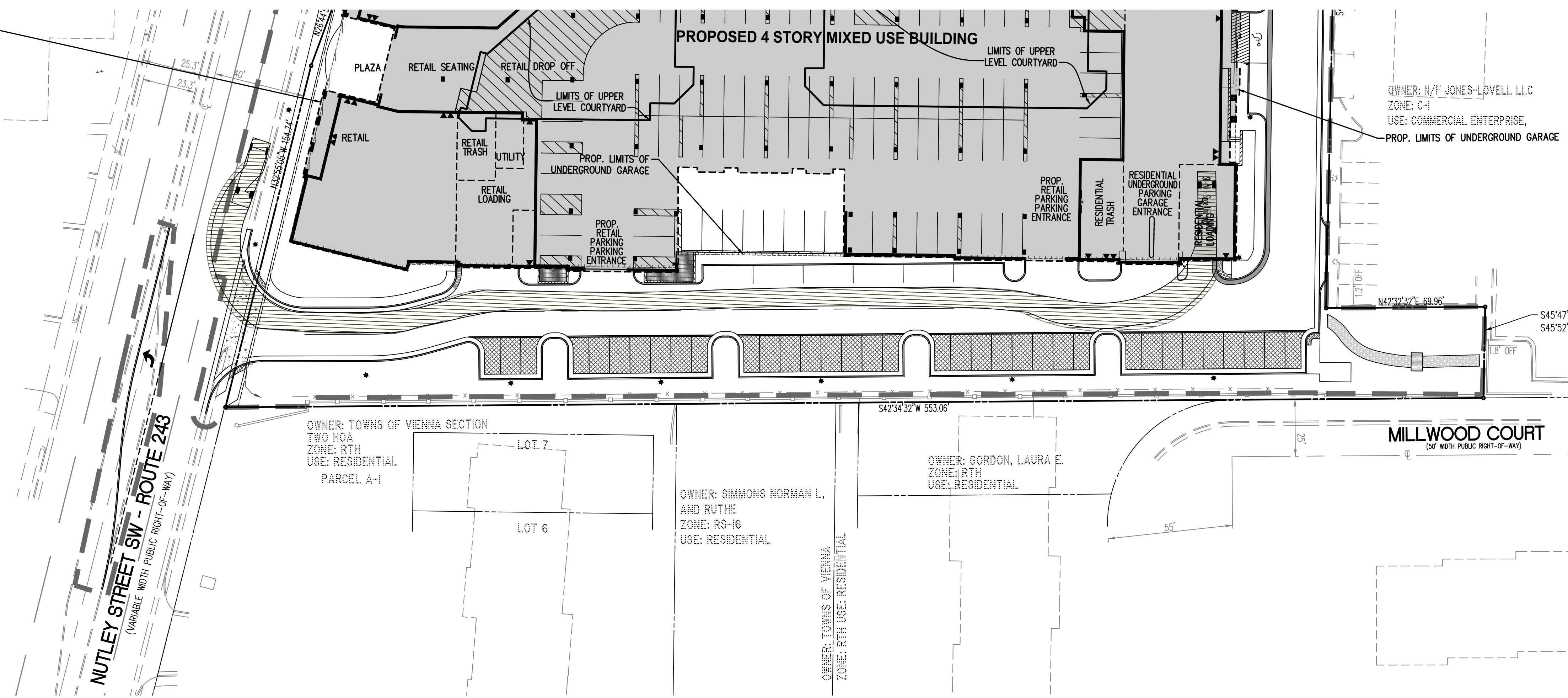
Engineers • Surveyors • Planners
 Landscape Architects • Arborists
WALTER L. PHILLIPS
 INCORPORATED ESTABLISHED 1945
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
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NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

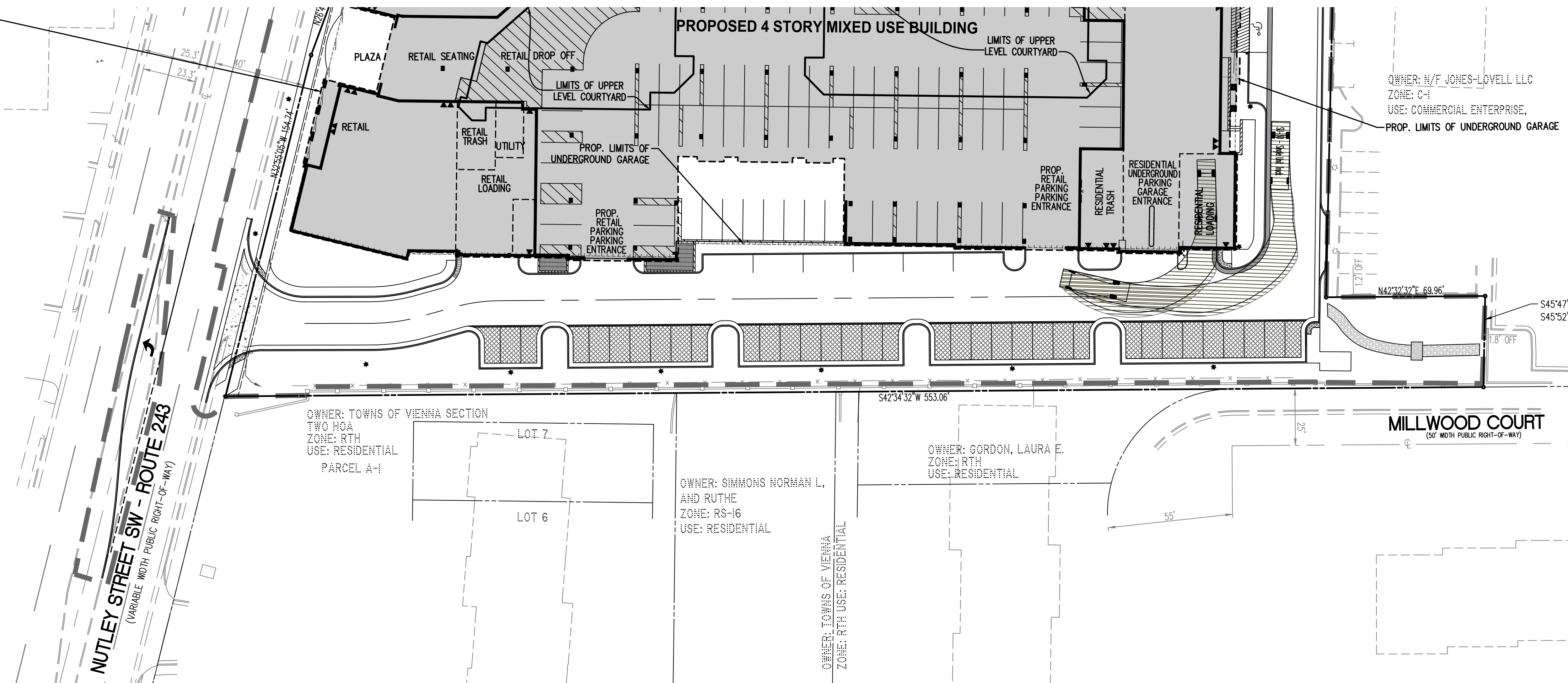
VEHICLE MOVEMENTS
444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA

PROP. LIMITS OF UNDERGROUND GARAGE



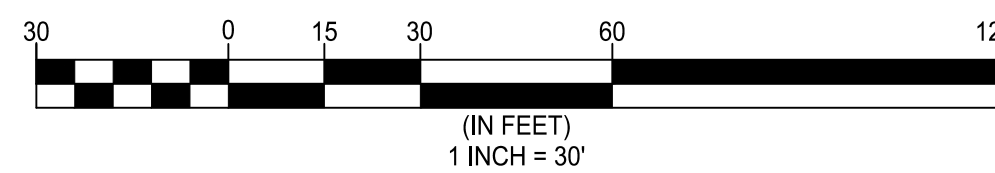
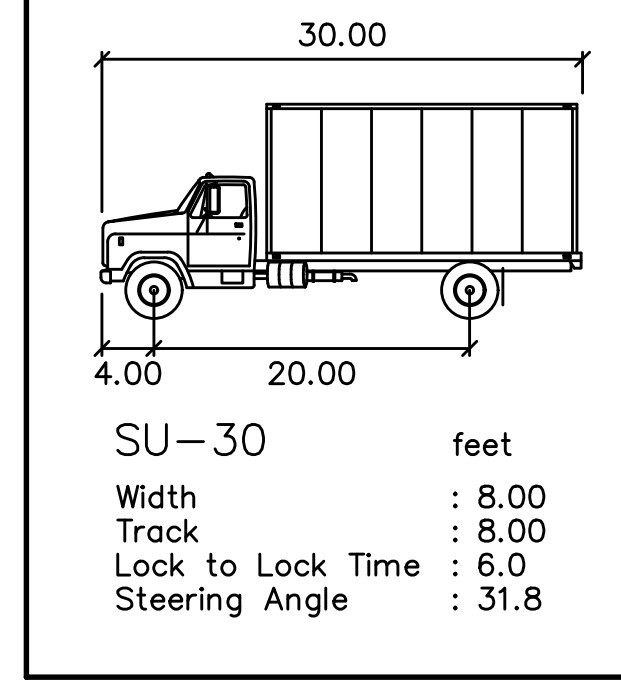
RESIDENTIAL LOADING - EXITING (SU-30)

PROP. LIMITS OF UNDERGROUND GARAGE



RESIDENTIAL LOADING - ENTERING (SU-30)

LEGEND

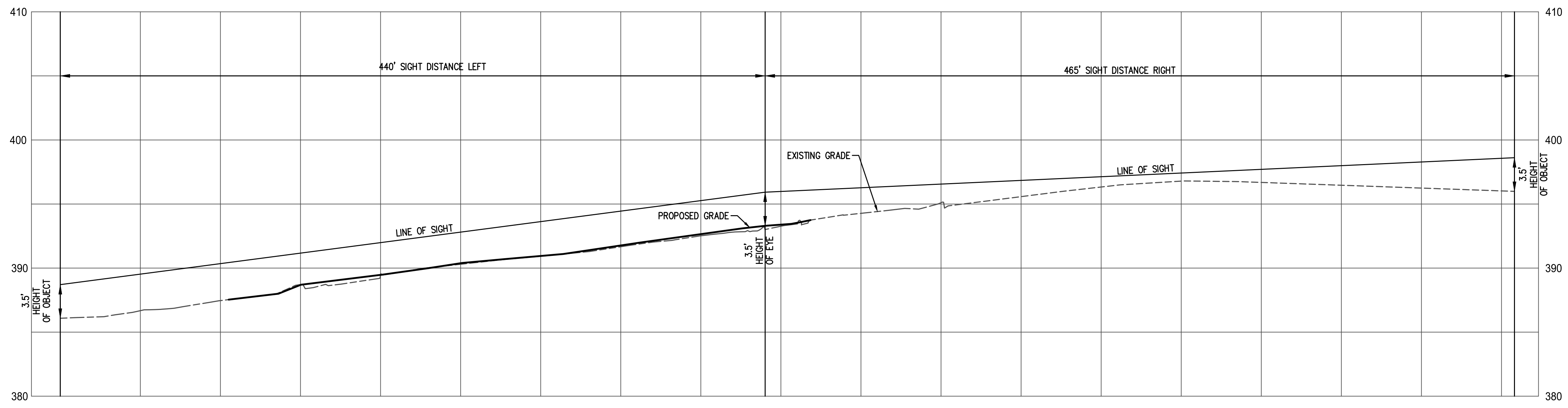


Town of Vienna
Approved
 06/09/2021

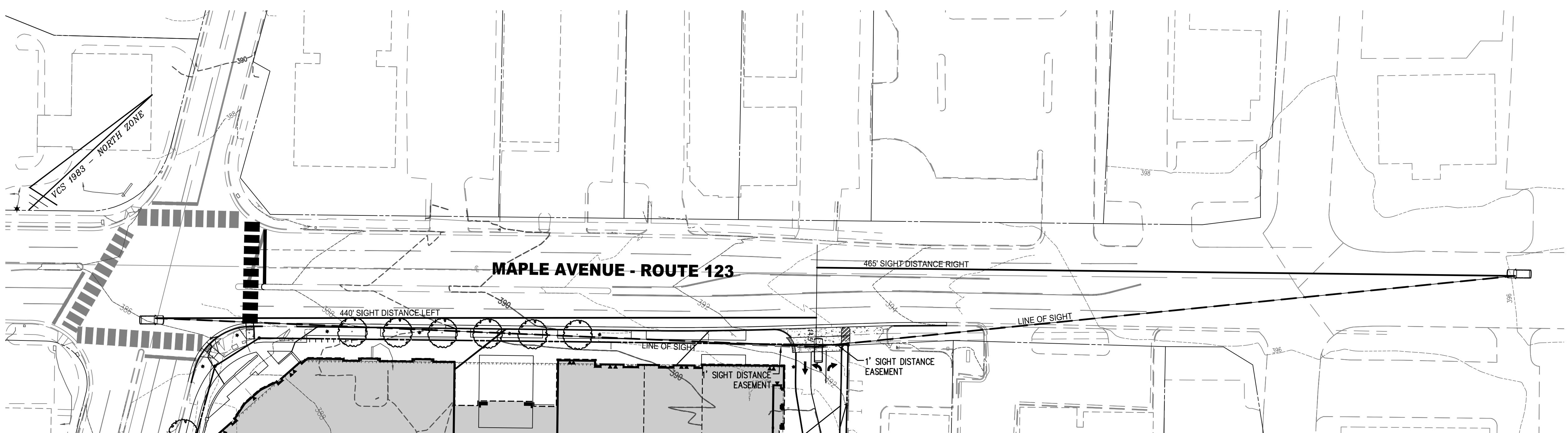
Engineers • Surveyors • Planners
 Landscape Architects • Arborists
WALTER L. PHILLIPS
 INCORPORATED
 ESTABLISHED 1945
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
 (703) 532-6163 Fax (703) 533-1301
 www.WLPINC.com
 DATE: SUB01: 01/12/2019; SUB02: 05/07/2020; SUB03: 4/19/2021
 SCALE: 1" = 30'
 DRAWN: DL
 CHECKED: KW

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

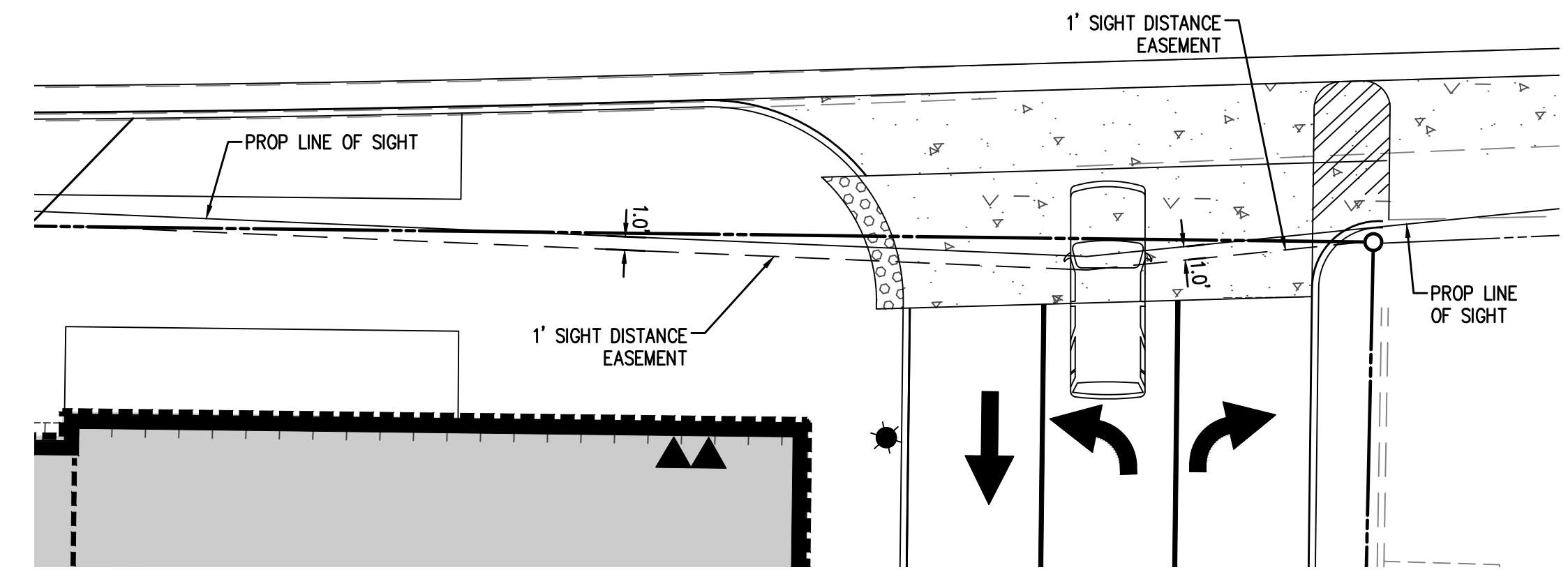
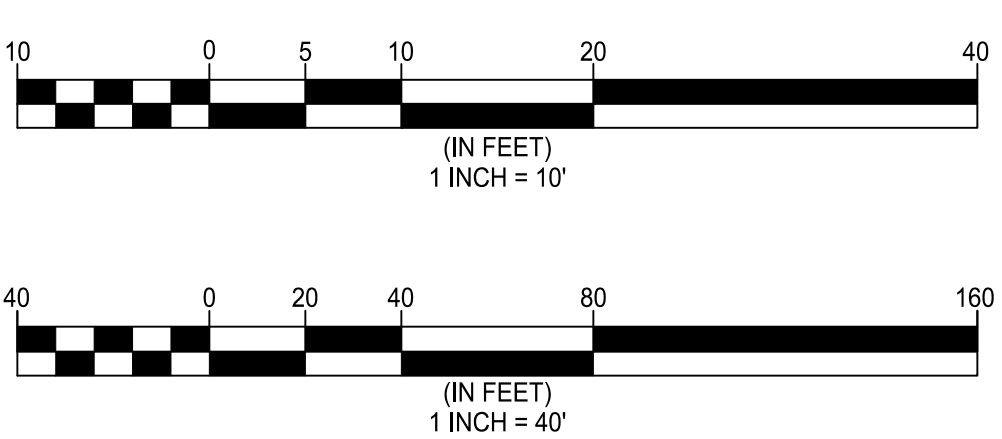
VEHICLE MOVEMENTS
444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA



SIGHT DISTANCE MAPLE AVE W
 SCALE: HOR. 1" = 40'
 VERT. 1" = 5'
 POSTED SPEED: 30 MPH
 DESIGN SPEED: 35 MPH



NOTES
 PROP STREET TREES ALONG MAPLE AVE FRONTAGE TO BE MAINTAINED IN ORDER TO PREVENT LIMBS FROM OBSTRUCTING LINE OF SIGHT DOWN MAPLE AVE.



SIGHT DISTANCE EASEMENT BLOW UP
 SCALE: 1" = 10'

Town of Vienna
Approved
 06/09/2021

SIGHT DISTANCE PLAN & PROFILE - MAPLE AVENUE

444 MAPLE AVENUE WEST

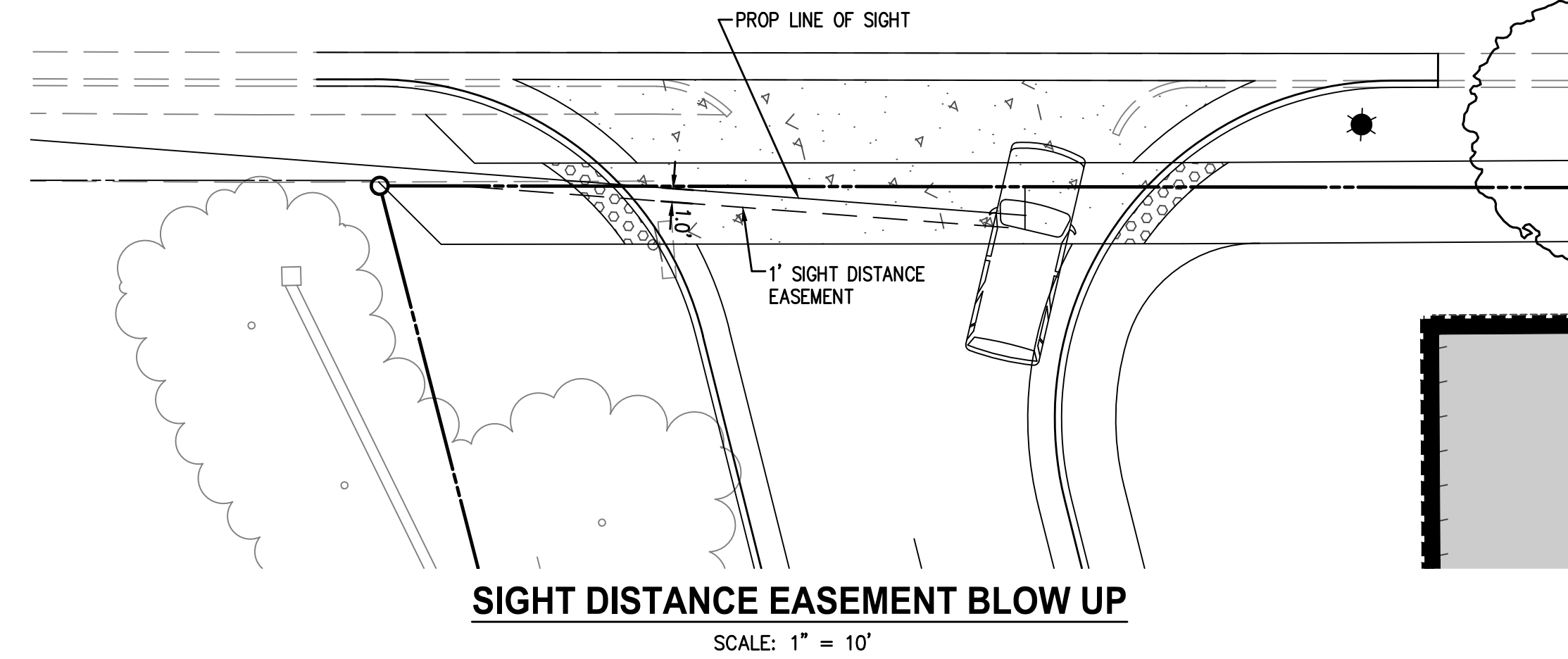
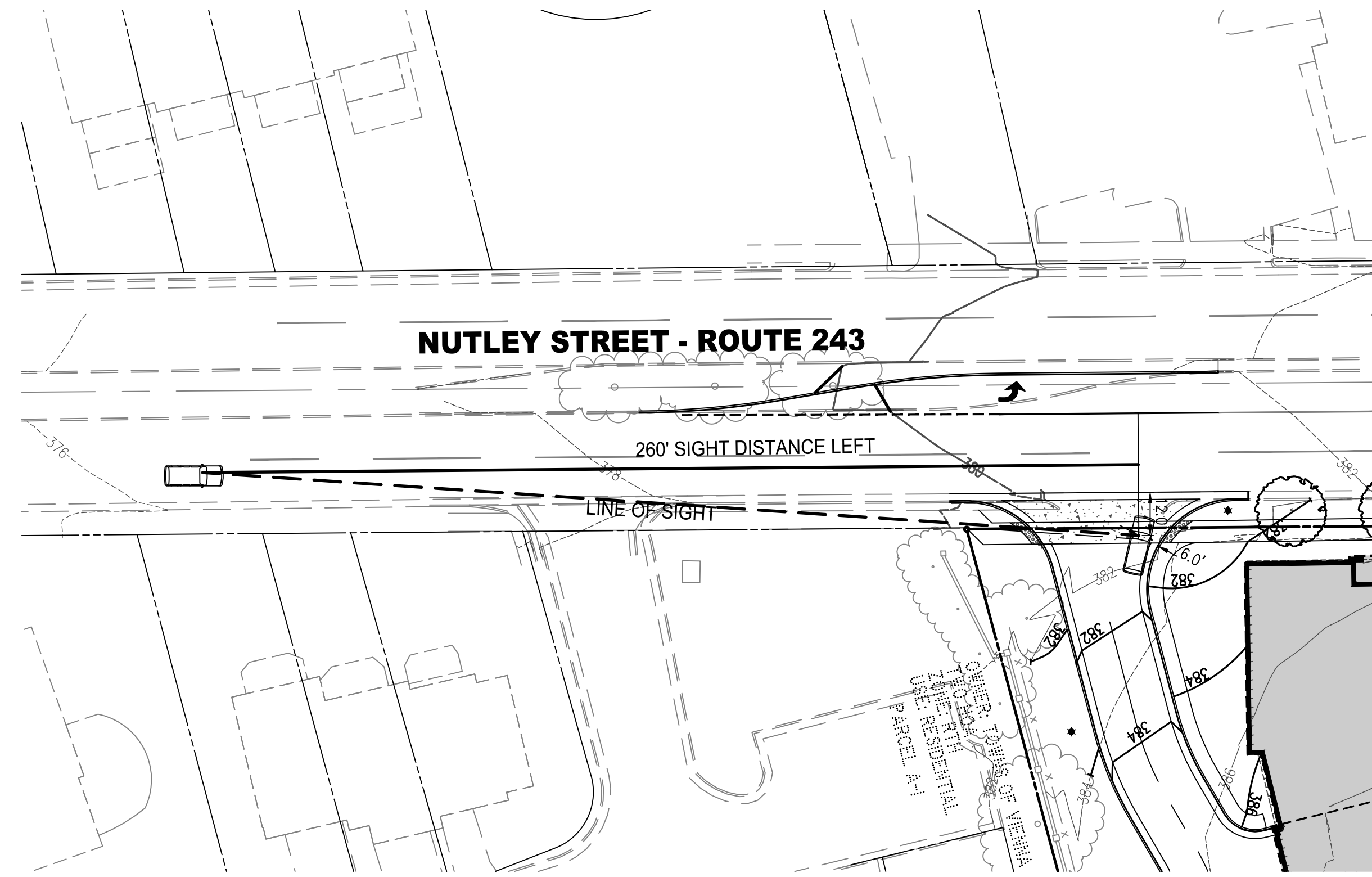
SITE PLAN
 TOWN OF VIENNA, VIRGINIA

REVISION APPROVED BY		DATE		APPROVED		DATE	
NO.	DESCRIPTION	DATE	REV. BY	DATE	APPROVED	DATE	DATE

WALTER L. PHILLIPS
 ENGINEERS • SURVEYORS • PLANNERS
 LANDSCAPE ARCHITECTS • ARBORISTS
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
 (703) 532-6163 Fax (703) 533-1301
 www.WLPINC.com

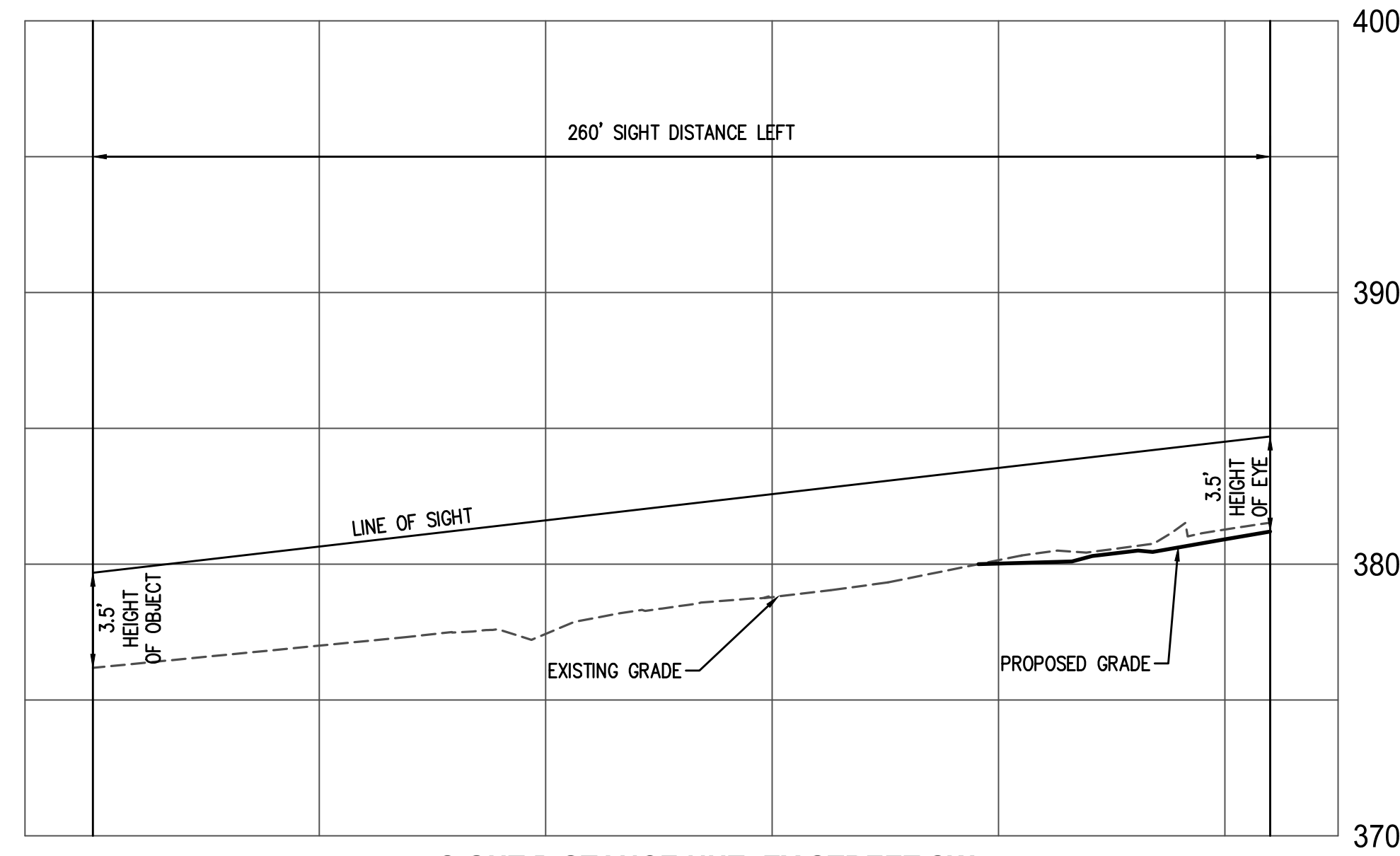
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 DATE SUB01: 01/12/2019; SUB02: 05/07/2020; SUB03: 4/19/2021
 DATE: 05/25/2021
 DRAWN: DL
 CHECKED: KW

SCALE: HOR. 1" = 40' VERT. 1" = 5'



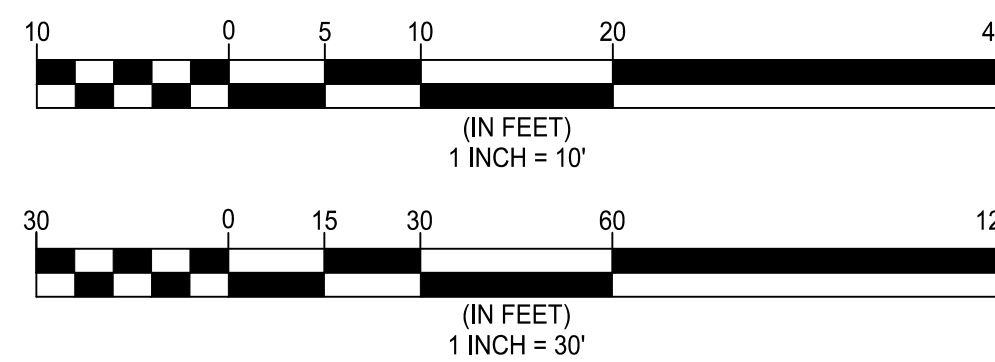
NOTES

SIGHT DISTANCE MODIFIED FROM VDOT STANDARD DUE EXISTING ENTRANCE LOCATION BEING MAINTAINED AND URBAN SETTING. TABLE 12 OF THE TRANSPORTATION DESIGN STANDARDS FOR TYSONS CORNER UTILIZED FOR SIGHT DISTANCE DETERMINATION.



SIGHT DISTANCE NUTLEY STREET SW

SCALE: HOR. 1" = 30'
VERT. 1" = 5'
POSTED SPEED: 35 MPH
DESIGN SPEED: 35 MPH



Town of Vienna
Approved
 06/09/2021

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ESTABLISHED 1945
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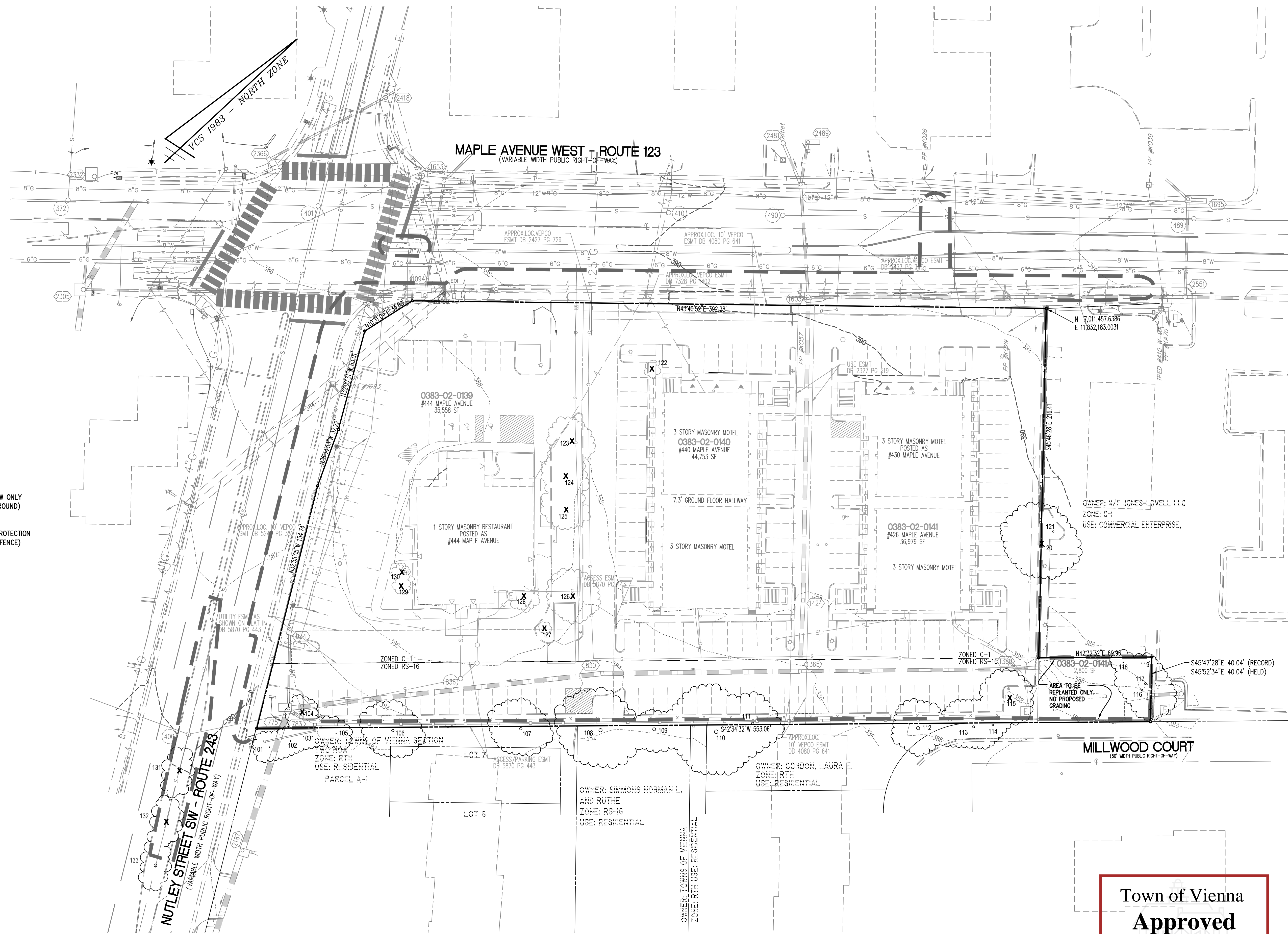
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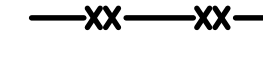
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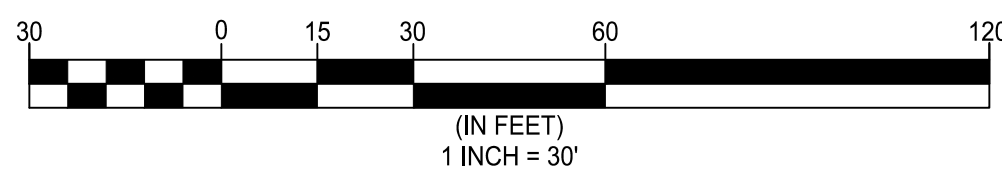
SIGHT DISTANCE PLAN & PROFILE - NUTLEY STREET

444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA

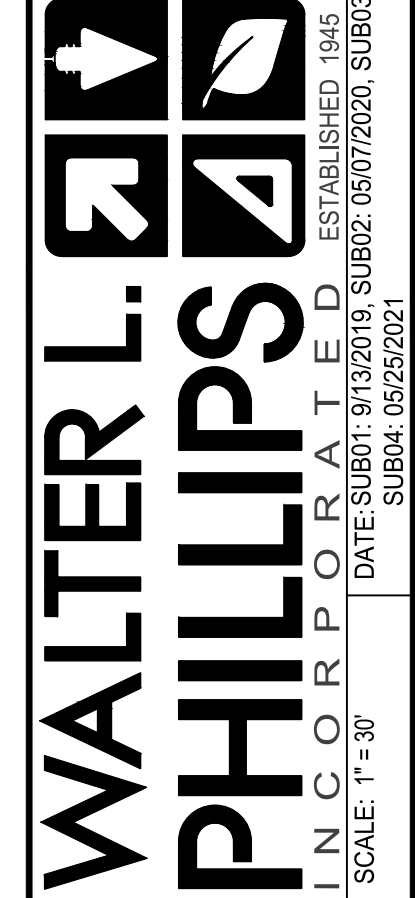


LEGEND

-  CROWN PRUNING, REMOVE HAZARDOUS DEADWOOD
-  TREE REMOVAL BY CHAINSAW ONLY (LEAVE STUMP FLUSH TO GROUND)
-  TREE REMOVAL
-  ROOT PRUNING AND TREE PROTECTION (BY MEANS OF SUPER SILT FENCE)



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NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

TREE PRESERVATION PLAN
444 MAPLE AVENUE WEST
 SITE PLAN
 TOWN OF VIENNA, VIRGINIA

Town of Vienna
Approved
 06/09/2021