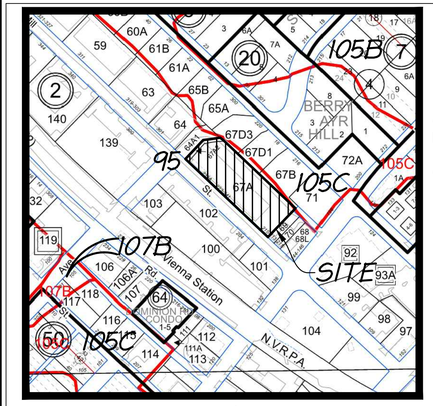
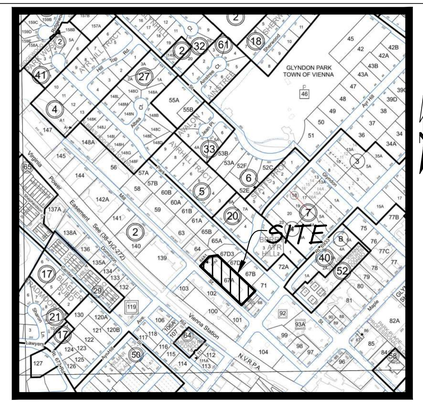
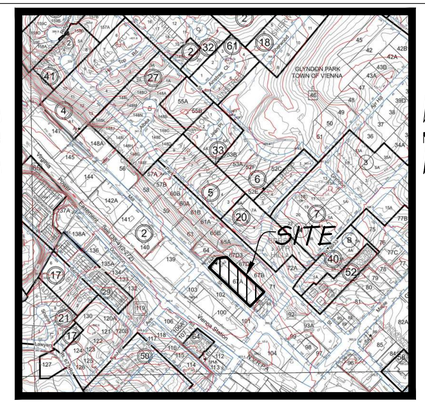


SOIL MAP
1"=250'



VICINITY MAP
1"=500'



TOPOGRAPHIC MAP
1"=500'

SOIL INFORMATION

SOIL #	SOIL NAME	PROBLEM CLASS	FOUNDATION SUPPORT	DRAINAGE	EROSION POTENTIAL	HYDROLOGIC SOIL GROUP
95	URBAN LAND	IVB	N/A	N/A	N/A	D

CONSTRUCTION NOTES

1. THE PROPERTY DELINEATED IS LOCATED ON FAIRFAX COUNTY MAP No. 38-2 ((2)) PARCELS 67A & 67A2 AND ARE CURRENTLY ZONED CM.
2. THE PROPERTIES SHOWN HEREON IS CURRENTLY IN THE NAME OF MILL STREET DEVELOPMENT ONE, LLC BY DEED RECORDED IN DEED BOOK 24554 AT PAGE 821 AMONG THE LAND RECORDS OF FAIRFAX COUNTY, VIRGINIA.
3. THE PROPERTY SHOWN HEREON LIES WITHIN A ZONE "X", AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS DELINEATED ON FLOOD INSURANCE RATE MAP No. 51059C0145E, PANEL 145 OF 450, WITH AN EFFECTIVE DATE OF SEPTEMBER 17, 2010.
4. THERE ARE NO RESOURCE PROTECTION AREAS ON THIS SITE AS SHOWN ON THE TOWN OF VIENNA CHESAPEAKE BAY PRESERVATION MAP.
5. THIS TOPOGRAPHIC SURVEY ON THE PROPERTIES OF MILL STREET DEVELOPMENT ONE, LLC WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF KEVIN D. VAUGHN FROM AN ACTUAL GROUND SURVEY MADE UNDER HIS SUPERVISION; THE ORIGINAL DATA WAS OBTAINED ON SEPTEMBER 27, 2018; AND THAT THIS PLAT MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED. THE VERTICAL DATUM IS REFERENCED TO NGVD 29. THE CONTOUR INTERVAL IS TWO (2) FOOT.
6. UTILITY PLANS WERE NOT PROVIDED DURING THE PERFORMANCE OF THIS SURVEY. ADDITIONAL UTILITY FACILITIES AND/OR UNDERGROUND LINES MAY EXIST THAT WERE NOT EVIDENT OR IDENTIFIED. UTILITY PLANS NEED TO BE ACQUIRED AND COMPARED WITH THIS SURVEY PRIOR TO COMMENCING SITE DESIGN.
7. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN IN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUANCE OF SERVICE.
8. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED FOLLOWING NOTIFICATION AND MARKING OF ALL EXISTING UTILITIES BY MISS UTILITY TO VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES. TEST HOLES TO BE PERFORMED AT LEAST 30 DAYS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE OWNER AND ENGINEER. REDESIGN AND APPROVAL BY REVIEWING AGENCIES SHALL BE OBTAINED IF REQUIRED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM ANY AUTHORITY ISSUING PERMITS.
10. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
11. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL TREES, BUILDINGS, FOUNDATIONS, ETC. WITHIN THE LIMITS OF CONSTRUCTION UNLESS OTHERWISE SPECIFIED, AND SHALL BE RESPONSIBLE FOR CAUSING EXISTING UTILITIES TO BE DISCONNECTED.
12. FINISHED GRADES SHOWN IN PROFILE FOR FINISHED TOP OF CURB GRADES ON EXISTING ROADS SHALL BE FIELD ADJUSTED AS REQUIRED TO CONFORM TO THE INTENT OF THE TYPICAL SECTION USING THE EXISTING EDGE OF PAVEMENT AS THE CONTROL POINT. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING RIGHT-OF-WAY TO THE FACE OF CURB TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF WATER ON THE ROADWAY. THE EXISTING PAVEMENT SHALL BE RECAPPED AND/OR REMOVED AND REPLACED AS REQUIRED TO ACCOMPLISH THIS REQUIREMENT. CURB FORMS SHALL BE INSPECTED AND APPROVED FOR HORIZONTAL AND VERTICAL ALIGN'MENT BY TOWN OF VIENNA INSPECTORS PRIOR TO PLACING OF CONCRETE.
13. ALL AREAS, ON OR OFF-SITE, WHICH ARE DISTURBED BY THIS CONSTRUCTION AND WHICH ARE NOT PAVED OR BUILT UPON, SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION. THE MINIMUM ACCEPTABLE STABILIZATION SHALL CONSIST OF PERMANENT GRASS, SEED MIXTURE TO BE AS RECOMMENDED BY THE TOWN AGENT. ALL SLOPES 3:1 AND GREATER SHALL BE SODDED AND PEGGED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE TOWN OF VIENNA.
14. EXISTING WELLS SHALL BE PERMANENTLY ABANDONED IN ACCORDANCE WITH VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY STANDARDS AND REQUIREMENTS.
15. EXISTING SEPTIC FIELDS SHALL BE ABANDONED IN ACCORDANCE WITH VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY STANDARDS AND REQUIREMENTS.
16. ALL OVER HEAD POLE LINES SHALL BE RELOCATED AS REQUIRED BY THE OWNING UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL ARRANGEMENTS AND COORDINATING ALL WORK REQUIRED FOR THE NECESSARY RELOCATIONS.
17. THE CONTRACTOR IS TO VERIFY INVERT, SIZE AND LOCATION OF BUILDING UTILITY CONNECTIONS WITH THE MECHANICAL PLANS PRIOR TO PLACEMENT OF UNDERGROUND UTILITIES.
18. NO UNDERGROUND SOILS INVESTIGATION HAS BEEN PERFORMED BY LAND DESIGN CONSULTANTS, INC. ALL SOILS INFORMATION PRESENTED AS PART OF THIS SITE PLAN HAS BEEN PREPARED BY OTHERS.
19. EXISTING BUILDINGS, FENCES AND OTHER EXISTING PHYSICAL FEATURES ARE TO BE REMOVED AS INDICATED ON THE DEMOLITION PLAN. ALL REQUIRED DEMOLITION PERMITS WILL BE OBTAINED PRIOR TO DEMOLITION OF ANY FEATURES.
20. DAMAGE TO ANY EXISTING ENTRANCES, CURB AND GUTTER, PAVEMENT OR OTHER EXISTING STRUCTURES NOT PROPOSED TO BE DISTURBED WITH THIS DEVELOPMENT , WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE REPAIRED TO THE SATISFACTION OF TOWN OF VIENNA AND ANY ADJOINING OWNERS THAT MAY BE AFFECTED.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING A SMOOTH TRANSITION TO EXISTING PAVEMENT.
22. ALL PRIVATE BUILDING CONNECTIONS ARE TO BE INSTALLED IN ACCORDANCE WITH THE CURRENT PLUMBING CODE.
23. TOPS OF EXISTING STRUCTURES WHICH REMAIN IN USE ARE TO BE ADJUSTED IN ACCORDANCE WITH THE GRADING PLAN. ALL PROPOSED STRUCTURE TOP ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE SITE GRADING PLANS. IN CASE OF CONFLICT, THE GRADING PLAN SHALL SUPERSEDE PROFILE ELEVATIONS. MINOR ADJUSTMENTS TO MEET FINISHED GRADE ELEVATIONS MAY BE REQUIRED.
24. THE DESIGN, CONSTRUCTION, FIELD PRACTICES AND METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH BY THE GOVERNING AGENCY AND ITS CURRENT SUBDIVISION ORDINANCE. FAILURE TO COMPLY WITH THE CODE, APPLICABLE MANUALS, PROVISIONS OF THE CONSTRUCTION AND ESCROW AGREEMENTS OR THE PERMITS SHALL BE DEEMED A VIOLATION.
25. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE OWNER/DEVELOPER OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA OR ANY ORDINANCE ENACTED BY THE GOVERNING AGENCY.
26. A MINIMUM PERMISSIBLE GRADE OF 1.00% IS REQUIRED FOR PAVEMENT TO ASSURE POSITIVE DRAINAGE. IF THERE IS EXISTING PAVEMENT WHICH IS TO REMAIN DISTURBED DURING CONSTRUCTION AND IS LESS THAN 1.00%, THEN THE CONTRACTOR IS TO CHECK TO MAKE SURE THE SITE AREA WILL HAVE ADEQUATE DRAINAGE.
27. CONSTRUCTION STAKEOUT SHALL BE UNDER THE DIRECT SUPERVISION OF A LICENSED LAND SURVEYOR IN THE STATE OF VIRGINIA.
28. THIS PROPERTY SHALL BE SERVED BY PUBLIC WATER AND SANITARY SEWER.
29. AIR QUALITY PERMITS SHALL BE OBTAINED, IF REQUIRED, AND PROVIDED PRIOR TO ANY CLEARING, GRADING OR OTHER CONSTRUCTION.
30. NO GRAVES HAVE BEEN FOUND ON THIS SITE.
31. SUBBASE DEPTH IS BASED ON A CBR VALUE OF 10, BASED ON AN ACTUAL DETERMINATION PER SOIL TESTS (OR) AN ESTIMATE WHICH WILL BE REVISED ONCE THE SOIL TESTS OF SUBGRADE ARE PERFORMED.
32. THE METHODS AND MATERIALS USED IN THE CONSTRUCTION OF ALL ROADS SHALL CONFORM TO THE CURRENT TOWN OF VIENNA OR VDOT STANDARD SPECIFICATIONS, UNLESS HEREIN MODIFIED. ALL CONSTRUCTION WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO TOWN OF VIENNA STANDARDS.
33. THE SITE PLAN WAS PREPARED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
34. ALL CLEANOUTS WITHIN PAVED AREAS SHALL BE FITTED WITH A TRAFFIC-RATED COVER AND ADJUSTED TO FINISHED GRADE.
35. ALL RETAINING WALLS EQUAL TO OR GREATER THAN 3' IN HEIGHT SHALL REQUIRE A SEPARATE BUILDING PERMIT AND HANDRAIL. A BUILDING PERMIT SHALL BE OBTAINED FROM THE BUILDING DIVISION PRIOR TO CONSTRUCTION OF THE RETAINING WALLS.
36. THE FEE TITLE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PRIVATE DRAINAGE, STORM WATER MANAGEMENT, AND BEST MANAGEMENT PRACTICES FACILITIES AND SYSTEMS IN ACCORDANCE WITH THE MAINTENANCE AGREEMENT TO ENSURE THAT THEY FUNCTION PROPERLY.

SUBJECT TO OTHER LIMITATIONS, THE FEE TITLE OWNER MAY LANDSCAPE THE EASEMENT TO INCLUDE VEGETATION, SIGNS AND FENCES, PROVIDED THAT DRAINAGE AND THE TOWN OR THE OWNER'S ABILITY TO ACCESS THE EASEMENT IS NOT COMPROMISED AND THAT THE TOWN IS NOT IN ANY WAY RESPONSIBLE FOR THE REPAIRS OF THESE LANDSCAPE ITEMS EVEN IF DAMAGED BY TOWN FORCES.

WETLANDS PERMITS CERTIFICATION

I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING WITH LAND DISTURBING ACTIVITIES.

SIGNATURE _____

OWNER/DEVELOPER MICHAEL A. ROSAL — MANAGING MEMBER
NAME — TITLE

NOTE: PERMITS MUST BE PRESENTED TO THE COUNTY INSPECTOR PRIOR TO LAND DISTURBANCE.

ZONING TABULATIONS

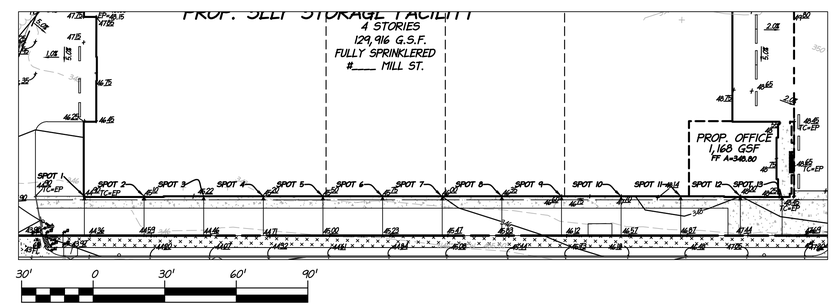
SITE AREA	54,705# (1.26 Ac.)
ZONE	CM
Proposed Use	Self-Storage Facility
Front Yard	15'
Side Yard	N/A
Rear Yard	10'
Max Building Height	45'
Prop. Building Height	45'
Lot Coverage	N/A

EMPLOYEES PER SHIFT = 1
ANTICIPATED # STORAGE UNITS = 1,150 UNITS

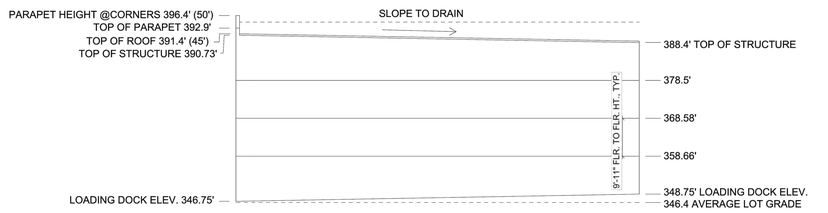
PARKING TABULATIONS

USE	GSF	SPACES PER 1,000 SF	SPACES REQUIRED
SELF-STORAGE	131,084	0.10	**14**
SPACES PROVIDED			
LOADING*			2
STANDARD			17
TOTAL SPACES PROVIDED			**19**
Handicap Accessible Required			1
Handicap Accessible Provided**			2
*1 loading space required			
**Included in overall parking			

NOTE: REQUIRED PARKING FOR SELF STORAGE BASED ON THE 5TH ED. ITE MANUAL. (0.10 PER 1,000SF GSF)



SIDE ELEVATION



FRONT ELEVATION

BUILDING HEIGHT COMPUTATIONS

SPOT	PRE-EX.	F.L.G.	DEV.
1	345.21	344.90	-0.31
2	348.24	345.10	-3.14
3	348.08	345.22	-2.86
4	348.01	345.20	-2.81
5	347.70	345.50	-2.20
6	347.97	345.75	-2.22
7	348.30	346.00	-2.30
8	348.42	346.35	-2.07
9	348.83	346.60	-2.23
10	349.17	347.70	-1.47
11	349.20	348.14	-1.06
12	349.39	348.00	-1.39
13	349.30	348.25	-1.05

NOTE:
- F.L.G. - FINISHED LOT GRADE
- DEV. - DEVIATION OF F.L.G. FROM PRE-EXISTING GRADE
- BUILDING HEIGHT EXCLUDES PARAPETS
- AVERAGE FRONT GRADE = 346.40'
- PROPOSED TOP OF ROOF = 391.40'
- MAX BUILDING ELEV = 391.40'
- TOP OF PARAPET ALONG FACE = 392.90'
- TOP OF PARAPET AT CORNER = 396.40'
- TOTAL HEIGHT TO ROOF = 45'
- TOTAL HEIGHT TO TOP OF PARAPET AT FRONT CORNER = 50'

OVERALL PROJECT NARRATIVE:

THE PROPOSED SITEPLAN, APPROX. 1.26 ACRES, SHALL PROVIDE FOR THE CONSTRUCTION OF A SELF-STORAGE FACILITY. THE EXISTING ON-SITE STRUCTURES SHALL BE RAZED. THE SCOPE OF THIS PROJECT SHALL INCLUDE CONSTRUCTION OF PRIVATE PARKING AND DRIVE AISLE, OFF SITE PARKING, MILLING AND OVERLAY OF MILL STREET, AN UNDERGROUND SWM FACILITY, STORM & SANITARY SEWER AND WATERLINE. THE LIMIT OF WORK AREA IS APPROXIMATELY ±1.7 ACRES.

FIRE MARSHAL NOTES

AVAILABLE FIRE FLOW 2,951 GPM AVAILABLE (GAL./MIN.)
SOURCE OF FIRE FLOW INFO. TOWN OF VIENNA (12/09/2019)
TYPE OF CONSTRUCTION – USBC II B
USE GROUP CLASSIFICATION – USBC S-1
PROPOSED BUILDING HEIGHT 45' (FT.)
BUILDING TO BE FULLY SPRINKLERED ☑ YES ☐ NO
IF YES, CHECK APPROPRIATE STANDARD: NFPA 13 ☑ ; NFPA 13D ☐ ; NFPA 13R ☐
PROPOSED NUMBER OF FLOORS 4

SHEET INDEX

SHEET No.	DESCRIPTION
1.	COVER SHEET
2.	CONSTRUCTION DETAILS
3.	EXISTING CONDITIONS & DEMOLITION PLAN
4.	GRADING PLAN
4A.	MILL STREET FRONTAGE DETAILED GRADING PLAN
5.	SITE PLAN
6.	MILL & OVERLAY PLAN
7.	EROSION & SEDIMENT CONTROL - PHASE I
8.	EROSION & SEDIMENT CONTROL - PHASE II
9.	EROSION & SEDIMENT CONTROL NARRATIVES & DETAILS
10.	UTILITY PROFILE & SANITARY SEWER LATERAL TABLE
10A-10C.	DRY UTILITY RELOCATION
11.	WATERLINE PROFILES
12.	FIRE LANE PLAN
13.	AUTOTURN EXHIBIT
14.-15.	STORM SEWER PROFILES & COMPUTATIONS
16.	PRE AND POST STORM SEWER MAPS
17.	PRE AND POST SWM DIVIDE MAPS
18.	SWM COMPUTATIONS & RELEASE RATES
19.	SWM ROUTINGS & HYDROGRAPHS
20-21.	ADS STORMTECH DETAILS
22.	VRRM SPREADSHEET
23.	PHOTOMETRIC PLAN
24.	LANDSCAPE PLAN & DETAILS
25.	TREE PRESERVATION PLAN

FEE CALCULATION: SITE PLAN - $2,000 PLUS $30 FOR EACH 1,000 SF OF GROSS FLOOR AREA OF NEW CONSTRUCTION.
GROSS FLOOR AREA = 130,000 SF
FEE = 2,000 + (130,000/1000)*30 = $5,900.00

PROJECT FILE # PF-48-19-SP

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

SITE PLAN COVER SHEET

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE
		REVISION APPROVED BY:			
		ENGINEER			

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040858
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS NOTED

SHEET 1 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-2-0-CVR.dwg

Town of Vienna Virginia

ZONING COMPLIANCE LETTER

Department of Planning and Zoning

December 17, 2015

Resolution Escrow Services, LLC
7164 Columbia Gateway Drive, Suite 210-B
Columbia, MD 21046
Attn: Richard Sterm

RE: Zoning Compliance Letter for 211-241 Mill Street NE, Vienna, VA (to be referred to as "The Property")

To Whom It May Concern,

Please allow this letter to serve as an official Zoning Compliance letter for the property located at 211-241 Mill Street NE, Tax Map Numbers 38-2 ((2)) 70, 38-2 ((2)) 69, 38-2 ((2)) 67A and 38-2 ((2)) 67A2, currently under the ownership of Mill Street Development One LLC.

The four parcels are zoned CM, Limited Industrial. Uses permitted in the C-2 zone (as well as C-1A and C-1 zones) are permitted in the CM zone as long as those uses shall conform to any specific requirements or limitations in the CM zone. Limited manufacturing and industrial uses, as listed under Section 18-118 of the Town Code, are also permitted in the CM zone. The code section for the CM zone, Article 15 of Chapter 18 of the Town Code, has been attached.

The Property is not located in any Resource Management Area or Resource Protection Area. There are no outstanding notices of violation applicable to the Property.

The Property is not subject to any Special Development Approvals, Special Exceptions, Variances or Special Use Permits.

There are no legal nonconforming uses or conditions at the Property. The Property is also not subject to the satisfaction of any proffered conditions.

If you have any further questions regarding this property, please do not hesitate to contact my office.

Sincerely,

Patrick O'Mulhern

Patrick Mulhern, AICP
Director of Planning and Zoning
Town of Vienna, VA

127 Center Street, South • Vienna, Virginia 22180
p: (703) 255-6341 • f: (703) 255-5729 • TTY711
www.viennava.gov

ZONING ORDINANCE WAIVER & MODIFICATION

LDC Land Design Consultants

January 3, 2020

Mr. Mike Gallagher, P.E.
Director of Public Works
Mr. Frank Simeck, CZA
Director of Planning & Zoning
Zoning Administrator
Town of Vienna
127 Center Street, South
Vienna, VA 22180

Re: Mill Street Self Storage
Request for Zoning Ordinance Modification and Waiver
LDC Project #16220-2-0

Gentlemen:

This is a request for a waiver and modification to two provisions set forth in the Zoning Ordinance and as outlined on the associated site plan for the above-referenced application. This waiver and modification are as follows:

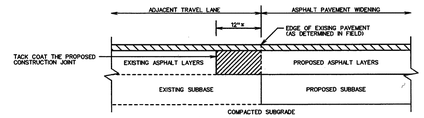
1. The applicant respectfully requests a waiver of the masonry screen wall requirement where upon any commercial use is conducted shall be screened from all adjacent property in any detached residential zones as set forth by Section 18-172 of the Zoning Ordinance. A masonry screen wall is required by the Zoning Ordinance along rear property line of the application. The construction of the wall as codified requires the installation of a frost footer which may damage the root structure of the adjacent, offsite mature trees and vegetation. It is our intent to ensure this existing vegetation remains in excellent condition.
2. The applicant respectfully requests a modification to the loading space size requirement for the site as set forth by Section 18-132 of the Zoning Ordinance. This modification contemplates a changing the requirement of the loading space based on width of the building to instead provide two spaces of at least 25 feet in depth by 15 feet in width. The existing condition of the application boasts no existing loading spaces. As the primary function of the building will serve as self storage it is anticipated that the large vehicle traffic will consist of smaller box trucks in lieu of larger delivery vehicles at the site.

If you have any questions, feel free to call me at 703-680-4585.

Sincerely,

Paul Reynolds, P.E.
Project Manager

WP-2



CONSTRUCTION JOINT DETAIL

REMOVE EXISTING ASPHALT LAYERS TO EXISTING SUBBASE AND REPLACE WITH PROPOSED ASPHALT WIDENING LAYERS

PROPOSED MINIMUM 1½ INCH THICK ASPHALT SURFACE COURSE (SEE NOTE 5)

* MINIMUM 12 INCHES, OR GREATER AS NECESSARY TO ABUT THE FULL THICKNESS OF EXISTING ASPHALT LAYERS AS DETERMINED BY CORES (SEE NOTE 3)

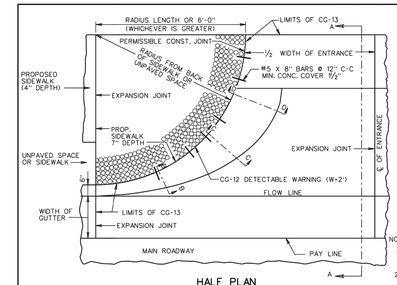
NOTES:

1. ASPHALT PAVEMENT WIDENING SHALL HAVE A PAVEMENT DESIGN IN ACCORDANCE WITH CURRENT VDOT PROCEDURES AND BE APPROVED BY THE ENGINEER.
2. THE PAVEMENT DESIGN FOR ASPHALT PAVEMENT WIDENING SHALL MEET OR EXCEED THE DEPTHS AND TYPES OF THE LAYERS OF EXISTING PAVEMENT. SUBSURFACE DRAINAGE OF THE EXISTING AND PROPOSED PAVEMENT SHALL BE ADDRESSED IN THE PAVEMENT DESIGN.
3. A MINIMUM OF THREE CORES SHALL BE TAKEN ALONG THE CENTER OF THE ADJACENT TRAVEL LANE TO DETERMINE THE TYPE AND THICKNESS OF EXISTING PAVEMENT LAYERS. THESE CORES SHALL BE SPACED NO MORE THAN 500 FEET APART.
4. THE ADJACENT TRAVEL LANE SHALL BE MILLED A MINIMUM DEPTH OF 1½ INCHES AND REPLACED WITH AN ASPHALT SURFACE COURSE TO MATCH THE PROPOSED PAVEMENT WIDENING SURFACE COURSE, UNLESS WAIVED BY THE ENGINEER.
5. THE ENGINEER MAY REQUIRE THE MILLING DEPTH OF THE EXISTING PAVEMENT TO BE ADJUSTED TO ACHIEVE AN ACCEPTABLE PAVEMENT CROSS-SLOPE AND EFFECTIVE SURFACE DRAINAGE.
6. EXISTING PAVEMENT MARKINGS AND MARKERS WITHIN THE PROJECT LIMITS SHALL BE RESTORED SUBJECT TO THE APPROVAL OF THE ENGINEER.
7. FINAL TRANSVERSE PAVEMENT TIE-IN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 315.05(c) OF THE SPECIFICATIONS EXCEPT THAT ALL JOINTS AT TIE-IN LOCATIONS SHALL BE TESTED USING A 10 FOOT STRAIGHTEDGE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 315.07(a) OF THE SPECIFICATIONS.

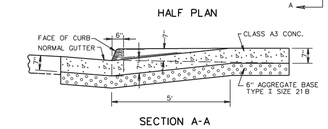
VDOT ROAD AND BRIDGE STANDARDS		PAVEMENT WIDENING	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE	VIRGINIA DEPARTMENT OF TRANSPORTATION	315
303.02			

2016 ROAD & BRIDGE STANDARDS

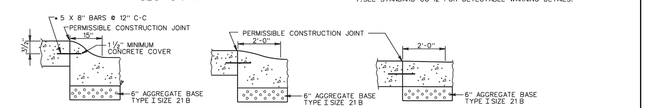
CG-13



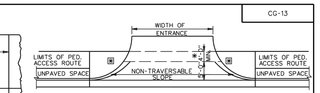
HALF PLAN



SECTION A-A



SECTION B-B SECTION C-C SECTION D-D



PEDESTRIAN ACCESS ROUTE DETAIL

ADDITIONAL RIGHT-OF-WAY IS REQUIRED IF THE LIMITS OF PEDESTRIAN ACCESS ROUTE ☒ EXTEND BEYOND EXISTING OR PROPOSED VDOT RIGHT-OF WAY.

☒ PEDESTRIAN ACCESS ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS. IF ACCESS ROUTE IS ADJACENT TO BACK OF CURB, MINIMUM WIDTH SHOULD BE 6'.

✕ IF PEDESTRIAN ACCESS ROUTES ☒ ARE BEING PROVIDED, A MINIMUM 4' TRAVERSABLE WIDTH IS REQUIRED WITH MAX. 2% CROSS SLOPE.

NOTES:

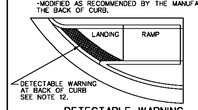
1. PROPOSED 7" SIDEWALK IS TO BE POURED MONOLITHICALLY WITH ENTRANCE OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
2. PROPOSED 7" SIDEWALK TO BE CLASS A-3 CONCRETE.
3. REQUIRED BARS ARE TO BE NO. 5X8' PLACED 1' CENTER TO CENTER ALONG BACK OF CURB, MID-DEPTH OF SIDEWALK. MINIMUM CONCRETE COVER ½".
4. ALL DETAILS AND DIMENSIONS NOT SHOWN ARE THE SAME AS STANDARD CG-10.
5. THIS DESIGN MAY ALSO BE APPLIED TO OTHER ENTRANCE STANDARDS AS THE NEED ARISES.
6. WHEN USED IN CONJUNCTION WITH STANDARD CG-3 OR CG-7, THE CURB FACE ON THIS STANDARD IS TO BE ADJUSTED TO MATCH THE MOUNTABLE CURB CONFIGURATION.
7. SEE STANDARD CG-12 FOR DETECTABLE WARNING DETAILS.

SPECIFICATION REFERENCE	COMMERCIAL ENTRANCE (HEAVY TRUCK TRAFFIC ANTICIPATED)	VDOT ROAD AND BRIDGE STANDARDS	
502	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 1 OF 1
			203.10

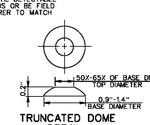
CG-12

GENERAL NOTES:

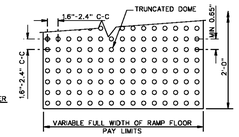
1. THE DETECTABLE WARNING SHALL BE PROVIDED BY TRUNCATED DOMES.
2. DETECTABLE WARNING TO BE CLASS A-3 CONCRETE (CLASS A-4 IF PRECAST) WITH SLIP RESISTANT INTEGRAL SURFACE COVERING THE FULL WIDTH OF THE RAMP FLOOR BY 2 FOOT IN LENGTH IN THE DIRECTION OF PEDESTRIAN TRAVEL. OTHER TYPES OF MATERIAL WITH THE TRUNCATED DOMES DETECTABLE WARNING MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
3. SLOPING SIDES OF CURB RAMP MAY BE POURED MONOLITHICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
4. IF RAMP FLOOR IS PRECAST, HOLES MUST BE PROVIDED FOR DOWEL BARS SO THAT ADJOINING FLARED SIDES CAN BE CAST IN PLACE AFTER PLACEMENT OF PRECAST RAMP FLOOR. PRECAST CONCRETE SHALL BE CLASS A-4.
5. REQUIRED BARS ARE TO BE NO. 5 X 8' PLACED 1' CENTER TO CENTER ALONG BOTH SIDES OF THE RAMP FLOOR, MID-DEPTH OF RAMP FLOOR. MINIMUM CONCRETE COVER ½".
6. CURB / CURB AND GUTTER SLOPE TRANSITIONS ADJACENT TO CURB RAMPS ARE INCLUDED IN PAYMENT FOR CURB / CURB AND GUTTER.
7. CURB RAMPS ARE TO BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THEY ARE TO BE PROVIDED AT INTERSECTIONS WHENEVER AN ACCESSIBLE ROUTE WITHIN THE RIGHT-OF-WAY OF A HIGHWAY FACILITY CROSSES A CURB REGARDLESS OF WHETHER SIDEWALK, EXISTING, PROPOSED, OR NONEXISTENT. THEY MUST BE LOCATED WITHIN PEDESTRIAN CROSSWALKS AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER, AND SHOULD NOT BE LOCATED BEHIND VEHICLE STOP LINES, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. ACCESSIBLE ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.
8. RAMPS MAY BE PLACED ON RADIAL OR TANGENTIAL SECTIONS PROVIDED THAT THE CURB OPENING IS PLACED WITHIN THE LIMITS OF THE CROSSWALK AND THAT THE SLOPE AT THE CONNECTION OF THE CURB OPENING IS PERPENDICULAR TO THE CURB.
9. TYPICAL CONCRETE SIDEWALK IS 4" THICK. WHEN THE ENTRANCE RADII CANNOT ACCOMMODATE THE TURNING REQUIREMENTS OF ANTICIPATED HEAVY TRUCK TRAFFIC, REFER TO STANDARD CG-13, COMMERCIAL ENTRANCE (HEAVY TRUCK TRAFFIC) FOR CONCRETE DEPTH.
10. WHEN CURB RAMPS ARE USED IN CONJUNCTION WITH A SHARED USE PATH, THE MINIMUM WIDTH SHALL BE THE WIDTH OF THE SHARED USE PATH
11. WHEN ONLY ONE CURB RAMP IS PROVIDED FOR TWO CROSSINGS (DIAGONAL), A 4' x 4' LANDING AREA SHALL BE PROVIDED TO MANEUVER A WHEELCHAIR INTO THE CROSSWALK WITHOUT GOING INTO THE TRAVELWAY. THIS 4' x 4' LANDING AREA MAY INCLUDE THE GUTTER PAN.
12. ALL CASES WHERE CURB RAMPS INTERSECT A RADIAL SECTION OF CURB AT ENTRANCES OR STREET CONNECTIONS THE DETECTABLE WARNING SURFACE SHALL HAVE A FACTORY RADIUS OR BE FIELD MODIFIED AS RECOMMENDED BY THE MANUFACTURER TO MATCH THE BACK OF CURB.



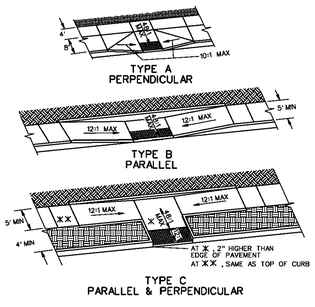
DETECTABLE WARNING INSTALLED ON A RADIUS



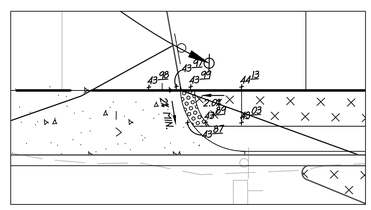
TRUNCATED DOME DETAIL

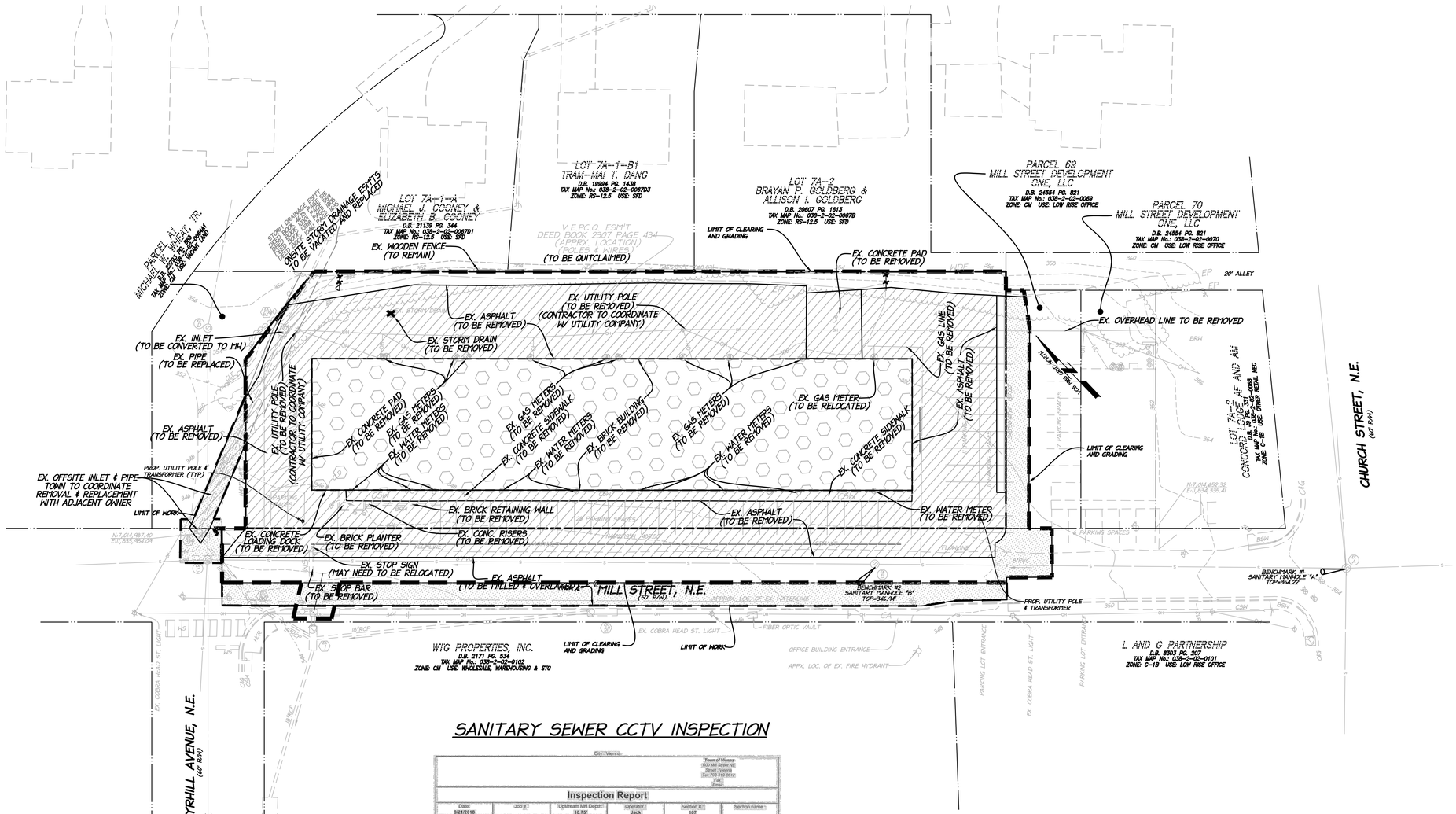


DETECTABLE WARNING DETAIL



VDOT ROAD AND BRIDGE STANDARDS		CG-12 DETECTABLE WARNING SURFACE (GENERAL NOTES)	SPECIFICATION REFERENCE
SHEET 1 OF 5	REVISION DATE	VIRGINIA DEPARTMENT OF TRANSPORTATION	105
203.05	7/11		502





AS-BUILT INFORMATION

SANITARY SEWER

(DB A) EX. SANITARY MANHOLE TOP=354.22'
EX. IN=344.93' (8"PVC FROM NORTHEAST)
EX. IN=344.97' (8"PVC FROM SOUTHEAST)
EX. IN=345.06' (8"PVC FROM SOUTHWEST)
EX. OUT=344.67' (8"PVC TO B)

(DB A) → (DB B) 251.45' - SANITARY SEWER 8"PVC - @ 3.29%

(DB B) EX. SANITARY MANHOLE TOP=346.94'
EX. IN=336.40' (8"PVC FROM A)
EX. OUT=336.30' (8"PVC TO C)

(DB B) → (DB C) 355.97' - SANITARY SEWER 8"PVC - @ 0.37%

(DB C) EX. SANITARY MANHOLE TOP=344.02'
EX. IN=335.00' (8"PVC FROM B)
EX. IN=334.94' (8"PVC FROM SOUTHWEST)
EX. IN=335.37' (8"PVC FROM D)
EX. OUT=334.79' (8"PVC TO NORTH WEST)

(DB D) → (DB C) 123.59' - SANITARY SEWER 8"PVC - @ 7.23%

(DB D) EX. SANITARY MANHOLE TOP=355.16'
EX. IN=344.51' (8"PVC FROM NORTHEAST)
EX. OUT=344.31' (8"PVC TO C)

STORM SEWER

(DB 511) EX. STORM CURB INLET TOP=344.65'
EX. OUT=340.62' (18"RCP TO 2)

(DB 511) → (DB 1) 148.58' - STORM SEWER 18"RCP - @ 0.66%

(DB 1) EX. STORM CURB INLET TOP=342.89'
EX. IN=339.64' (18"RCP FROM 511)
EX. IN=339.63' (18"RCP FROM 522)
EX. IN=339.67' (15"RCP FROM 868)
EX. OUT=339.42' (18"RCP TO SOUTHWEST)

(DB 522) → (DB 1) 8.74' - STORM SEWER 18"RCP - @ 0.23%

(DB 522) EX. STORM CURB INLET TOP=343.53'
EX. OUT=339.65' (18"RCP TO 1)

(DB 868) EX. STORM MANHOLE TOP=343.96'
(UNABLE TO ACCESS)

(DB 533) EX. STORM CURB INLET TOP=344.25'
EX. IN=341.67' (15"RCP FROM)
EX. OUT=341.57' (15"RCP TO 868)

(DB 624) EX. STORM CURB INLET TOP=348.14'
(NO ACCESS / BURIED)

(DB 2) EX. STORM DETENTION TOP=347.77'
(NO ACCESS - FULL OF WATER)

NOTE:
CONTRACTOR TO COORDINATE GAS AND ELECTRIC METER LOCATIONS WITH ASSOCIATED ENTITIES.

SANITARY SEWER CCTV INSPECTION

City: Vienna

Town of Vienna
1000 Mill Street NE
Street: Vienna
Tel: 703-319-8812
Fax:
Email:

Inspection Report

Date:	Job #:	Upstream MH Depth:	Operator:	Section #:	Section name:
8/21/2018		10.75'	Jack	107	
Present:	Vehicle:	Downstream MH Depth:	Preset:	Cleaned:	Rate:

Street 1:	Mill St.	Map # 1:	From MH: 38-2-280
Street 2:	Ayr Hill Ave	Map # 2:	To MH: 38-2-281
City:	Vienna	VCR #:	Section length: 353.55 ft
Insp. method:		Media #:	Joint length:

Reason of inspection:
Section type:
Area:

Pipe shape:
Pipe size: 8 inch
Pipe material: Vitrified Clay
Lining:

Remarks:

1:896	Position	Observation
38-2-280	0.01	inspection begins at upstream manhole
	5.31	service connection, at 02 o'clock
	39.22	service connection, at 02 o'clock
	68.61	service connection, at 12 o'clock
	80.53	service connection, at 02 o'clock
	114.71	service connection, at 02 o'clock
	120.19	service connection, at 02 o'clock
	156.66	service connection, at 02 o'clock
	192.31	service connection, at 02 o'clock
	233.12	service connection, at 02 o'clock
	256.48	service connection, at 02 o'clock
	275.79	service connection, at 02 o'clock
38-2-281	353.55	inspection ends at downstream manhole

09-04-18

WATER AND SEWER CAP OFF

THE INITIAL PHASE OF THE WATER CAP OFF INCLUDES EXCAVATION AND DISCONNECTION OF THE APPROXIMATELY 10 EXISTING WATER SERVICE CONNECTIONS BETWEEN THE METER AND BUILDING. THIS IS TO BE PERFORMED BEHIND THE PROPERTY LINE.

AT A LATER DATE, AND PRIOR TO BOND RELEASE, THE 10 CORPORATION STOPS ON THE WATER MAIN WILL NEED TO BE EXCAVATED, TURNED OFF AND HAVE THE EXISTING WATER SERVICE LINE CUT AND CRIMPED.

THE INITIAL PHASE OF THE SEWER CAP OFF INCLUDES EXCAVATION AND DISCONNECTION OF THE APPROXIMATELY 10 EXISTING SANITARY LATERALS BEHIND THE PROPERTY LINE.

PROPOSED 4" SEWER CONNECTION SHALL BE COMPLETED PRIOR TO THE MAIN LINING. THIS SERVICE SHOULD BE REINSTATED AFTER THE LINING IS COMPLETE.

AT A LATER DATE, IN LIEU OF EXCAVATING DOWN TO THE SEWER MAIN AT EACH LATERAL THE EXISTING MAIN WILL NEED TO BE LINED FROM MANHOLE TO MANHOLE.

ANY LATERALS THAT CONFLICT WITH THE PROPOSED STORM SEWER SHALL BE FURTHER CUT AND CAPPED JUST BEYOND THE LIMIT OF THE UTILITY TRENCH.

LEGEND

DHF	DRILL HOLE FOUND
PKF	PK NAIL FOUND
IPF	IRON PIPE FOUND
BP	BRICK PLANTER
BRW	BRICK RETAINING WALL
BSW	BRICK SIDEWALK
C&G	CURB & GUTTER
℄	CENTERLINE
CA	CONCRETE APRON
CLD	CONCRETE LOADING DOCK
CP	CONCRETE PAD
CSW	CONCRETE SIDEWALK
EP	EDGE OF PAVEMENT
HCR	HANDICAP RAMP
WS	WHITE STRIPING
	GAS VALVE
	SIGN
	BOLLARD
	CLEAN OUT
	FIRE HYDRANT
	WATER VALVE
	POWER POLE WITH LIGHT
	POWER POLE WITHOUT LIGHT
	GAS METER
	WATER METER
GW	GUY WIRE
	SANITARY MANHOLE
	STORM MANHOLE
OH	OVERHEAD UTILITY
S	SANITARY SEWER LINE
G	UNDERGROUND GAS LINE (PAINTED YELLOW LINE)
CLF	CHAIN-LINK FENCE
WDF	WOOD FENCE
	STORM CURB INLET
	TREE DRIP LINE

NOTES:

1. DENOTES EXISTING PHYSICAL IMPROVEMENTS TO BE REMOVED.
   DENOTES EXISTING BUILDINGS OR STRUCTURES TO BE REMOVED.
   DENOTES EXISTING PHYSICAL IMPROVEMENTS TO BE REMOVED.
   DENOTES PORTIONS OF EXISTING ROADS TO BE MILLED & OVERLAYED.
2. ALL EXISTING STRUCTURES TO BE RAZED UNLESS OTHERWISE NOTED.
3. SEE SHEET 24 FOR LANDSCAPE PLAN & TREE PROTECTION NOTE.

GRAPHIC SCALE:
1" = 30'
30' 0' 30' 60' 90'

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

EXISTING CONDITIONS & DEMOLITION PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE
		REVISION APPROVED BY:			

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
06/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 3 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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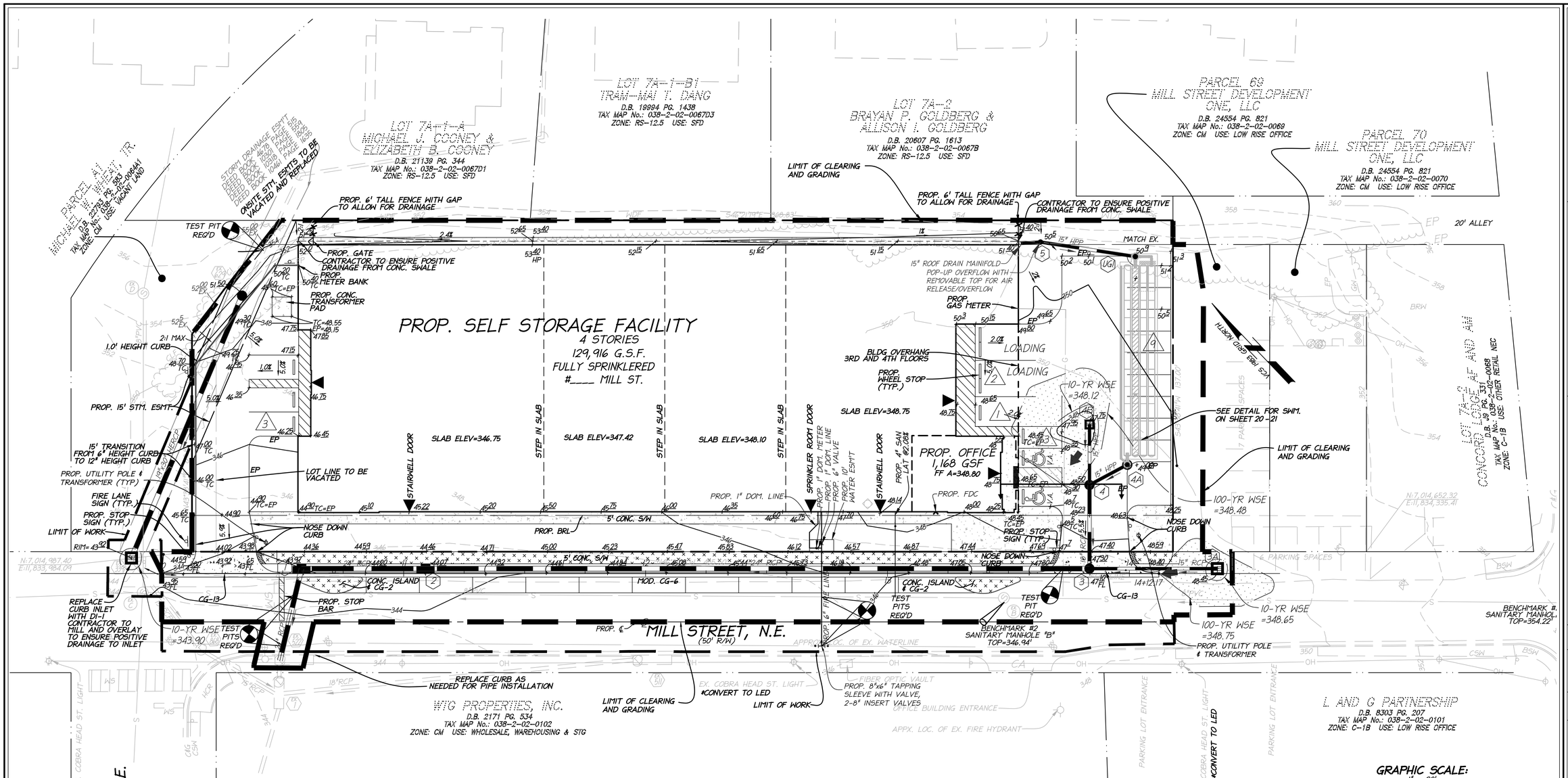
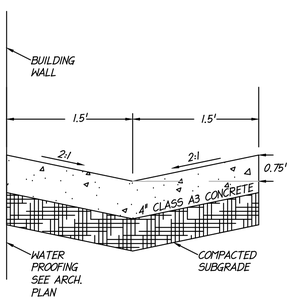




CONCRETE DITCH DETAIL
N.T.S.

CONCRETE DITCH TO THE WEST

Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.013
Channel Slope	0.0240ft/ft
Left Side Slope	2.00ft/ft (H:V)
Right Side Slope	2.00ft/ft (H:V)
10YR Discharge	1.35ft³/s
Results	
Normal Depth	0.40ft
Flow Area	0.30ft²
Wetted Perimeter	1.60ft
Hydraulic Radius	0.20ft
Top Width	1.44ft
Critical Depth	0.50ft
Critical Slope	0.005ft/ft
Velocity	5.23ft/s
Velocity Head	0.43ft
Specific Energy	0.78ft
Froude Number	2.18
Flow Type	Supercritical

CONCRETE DITCH TO THE EAST

Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.013
Channel Slope	0.0100ft/ft
Left Side Slope	2.00ft/ft (H:V)
Right Side Slope	2.00ft/ft (H:V)
10YR Discharge	3.60ft³/s
Results	
Normal Depth	0.61ft
Flow Area	0.70ft²
Wetted Perimeter	2.70ft
Hydraulic Radius	0.26ft
Top Width	2.45ft
Critical Depth	0.73ft
Critical Slope	0.0041ft/ft
Velocity	4.82ft/s
Velocity Head	0.36ft
Specific Energy	0.97ft
Froude Number	1.54
Flow Type	Supercritical

OFFSITE STORM SEWER IMPROVMENTS:

THE TOWN OF VIENNA IS RESPONSIBLE FOR THE COST OF CONVERTING EX. 339 STRUCTURE TO A DI-1 AND WILL COORDINATE CONSTRUCTION PERMISSION WITH THE OFFSITE PROPERTY OWNER. THE APPLICANT IS RESPONSIBLE FOR THE COST OF CONSTRUCTION FOR THE STORM FROM MANHOLE EX. 629 TO EX. 339 AND THE MILLING AND OVERLAY TO ENSURE POSITIVE DRAINAGE.

OVERLAND RELIEF NARRATIVE:

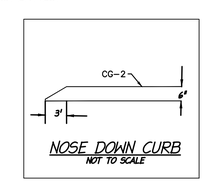
IN THE EVENT THAT STRUCTURE 4B IS CLOGGED, OVERLAND RELIEF HAS BEEN CONTEMPLATED TO PREVENT FLOODING IN THE PROPOSED BUILDING. THE RELIEF POINT IS LOCATED AT THE END OF THE HANDICAPPED PARKING. THERE IS 0.5' OF FREEBOARD FROM THE SLAB ELEVATION OF THE OFFICE TO THE POINT OF OVERLAND RELIEF. THUS, ALLOWING THE FLOW TO DISCHARGE AWAY FROM THE BUILDING AND PREVENT FLOODING.

LEGEND

- HEADER CURB
- REVERSE CURB
- CURB TRANSITION
- ACCESS POINTS
- STORM STRUCTURE LABEL
- TEST PIT REQUIRED
- 100-YR OVERLAND RELIEF FLOW PATH
- DENOTES NUMBER OF PARKING SPACES
- DENOTES NUMBER OF COMPACT PARKING SPACES
- SIDEWALK TO BE MAINTAINED BY TOWN OF VIENNA

ROOF DRAIN/DOWNSPOUT NOTE:

ROOF DRAIN SYSTEMS WILL BE REQUIRED TO DIRECT ROOF TOP DRAINAGE TO THE DOWNSPOUTS AS DEPICTED BY THIS PLAN AND WILL NOT DISCHARGE CONCENTRATED RUNOFF FROM THE ROOF TOPS TOWARDS OFFSITE PROPERTIES.



NOSE DOWN CURB
NOT TO SCALE

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PH: 703-680-4585 FX: 703-680-4775

GRADING PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

ENGINEER

REVISION APPROVED BY:

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 20'

SHEET 4 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

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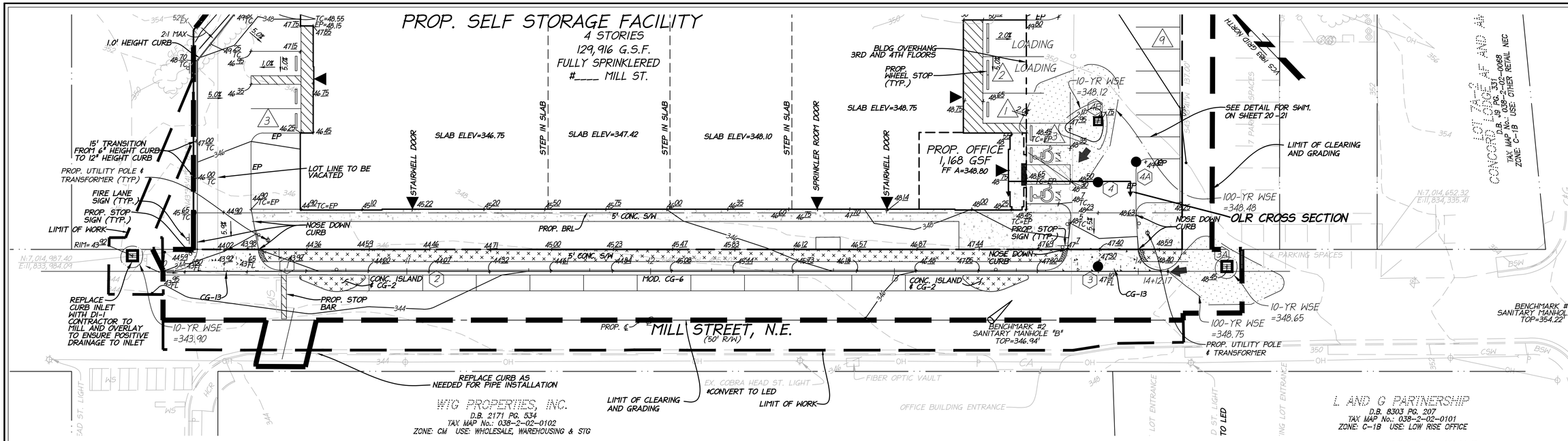
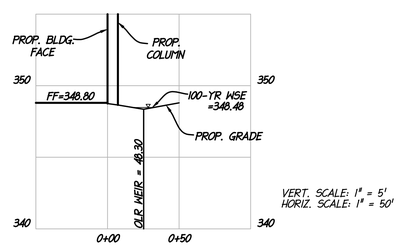
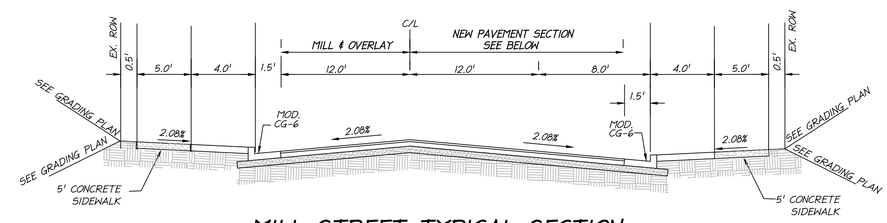


OLR CROSS SECTION





MILL STREET TYPICAL SECTION

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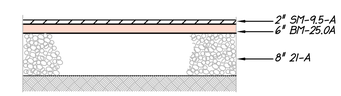
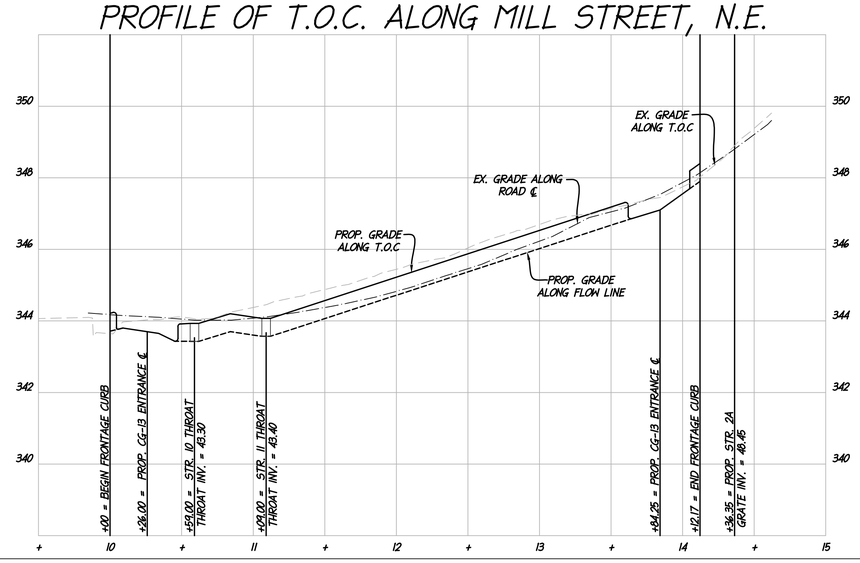


MILL STREET PAVEMENT

NOTE:
SUBBASE DEPTH IS BASED ON AN ANTICIPATED CBR VALUE OF 10 AND RF OF 1.0. TWO CBR SOILS TESTS OF THE SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO CONSTRUCTION FOR APPROVAL. PAVEMENT SECTION TO BE REPLACED FROM FRONTAGE TO CENTERLINE OF THE STREET ONLY. MILL AND OVERLAY FROM CENTERLINE TO OPPOSING SIDE OF STREET. PAVEMENT DESIGN IS BASED UPON 4,000 VPD IN AN INDUSTRIAL SETTING. FINAL PAVEMENT DESIGN IS TO BE SUBMITTED TO TOWN OF VIENNA UPON CONFIRMATION OF VEHICLE COUNT STUDY.

PROFILE OF T.O.C. ALONG MILL STREET, N.E.



LEGEND

- HEADER CURB
- REVERSE CURB
- CURB TRANSITION
- ACCESS POINTS
- STORM STRUCTURE LABEL
- TEST PIT REQUIRED
- 100-YR OVERLAND RELIEF FLOW PATH
- DENOTES NUMBER OF PARKING SPACES
- DENOTES NUMBER OF COMPACT PARKING SPACES
- SIDEWALK TO BE MAINTAINED BY TOWN OF VIENNA

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

MILL STREET FRONTAGE DETAILED GRADING PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE:
AS SHOWN

SHEET 4A OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

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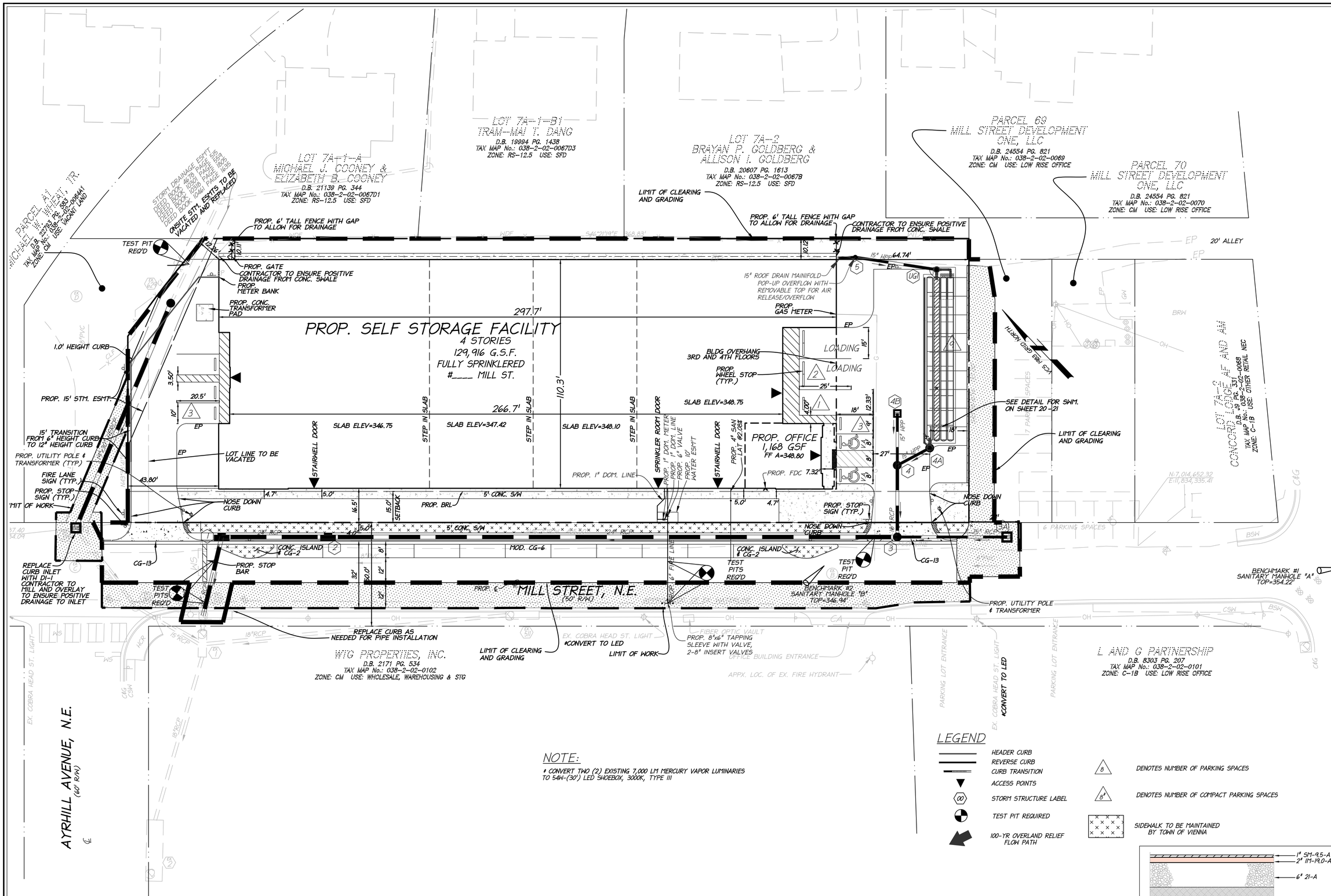

NOTE:

* CONVERT TWO (2) EXISTING 7,000 LM MERCURY VAPOR LUMINARIES TO 54W-(30') LED SHOEBOX, 3000K, TYPE III

CURVE	ARC LENGTH	RADIUS	TANGENT	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	59.70'	479.83'	29.89'	7°07'44.96"	S81°33'02"W	59.67'
C2	64.30'	469.83'	32.20'	7°50'28.03"	N82°16'54"E	64.25'

LEGEND

- HEADER CURB
- REVERSE CURB
- CURB TRANSITION
- ACCESS POINTS
- STORM STRUCTURE LABEL
- TEST PIT REQUIRED
- 100-YR OVERLAND RELIEF FLOW PATH
- DENOTES NUMBER OF PARKING SPACES
- DENOTES NUMBER OF COMPACT PARKING SPACES
- SIDEWALK TO BE MAINTAINED BY TOWN OF VIENNA

GRAPHIC SCALE:

1" = 20'

20' 0' 20' 40' 60'

ON-SITE STANDARD PAVEMENT

NOT TO SCALE

NOTE:
SUBBASE DEPTH IS BASED ON AN ANTICIPATED CBR VALUE OF 10 AND RF OF 1.0. SOILS TEST OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO CONSTRUCTION FOR APPROVAL.

LDC
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PH: 703-680-4585 FX: 703-680-4775

SITE PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 20'

SHEET 5 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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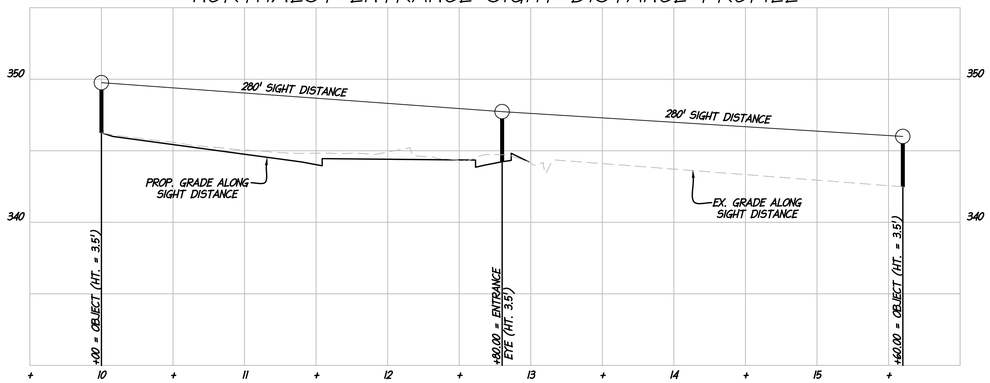
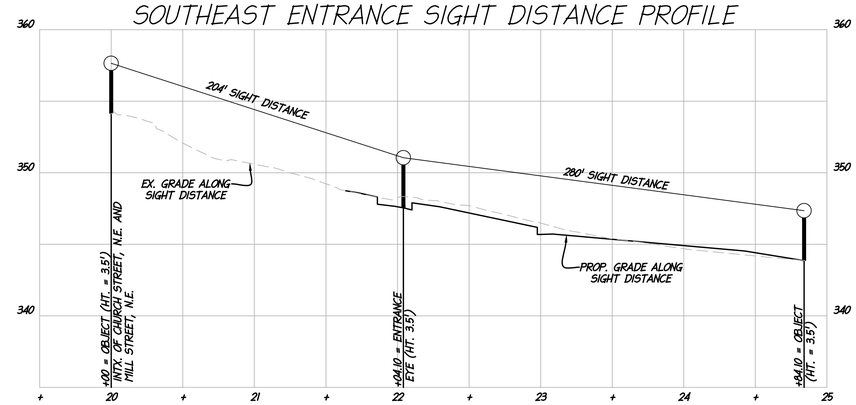
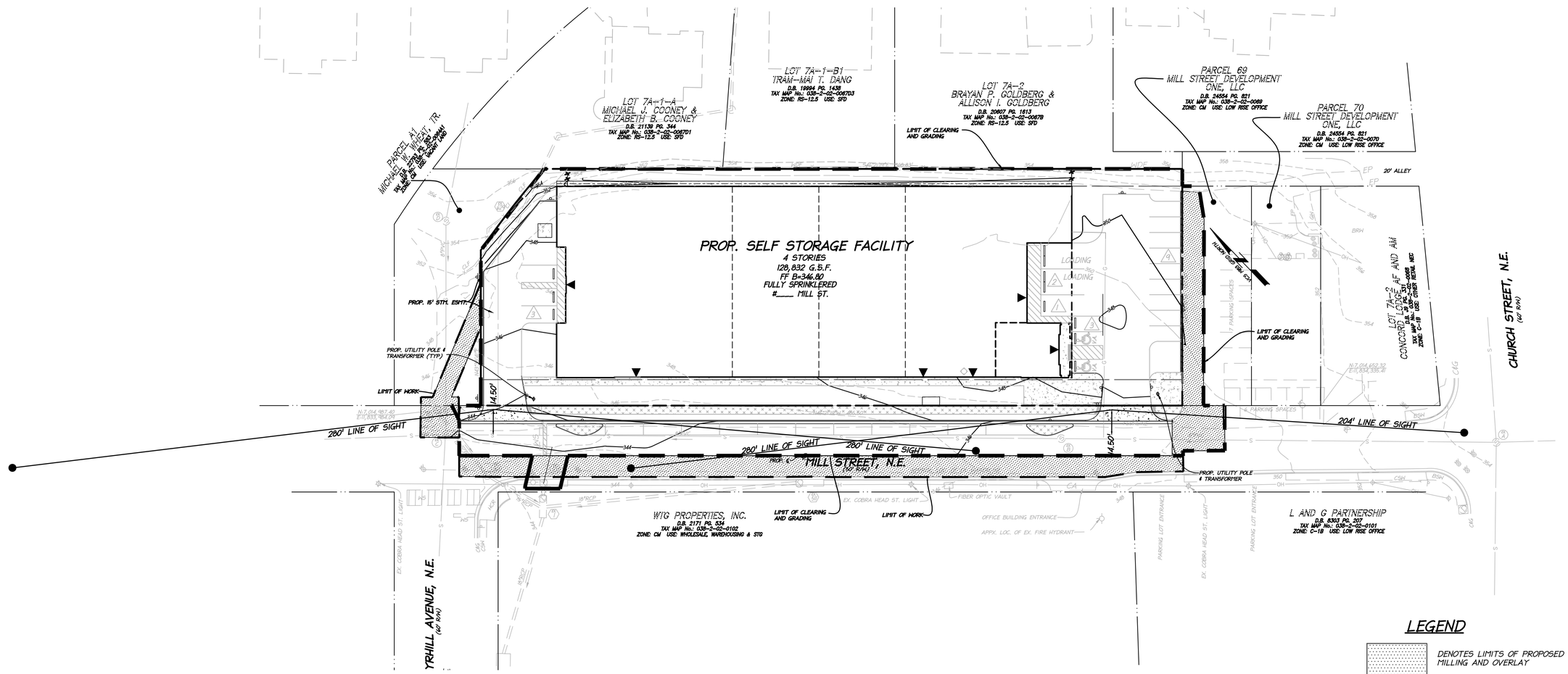
NORTHWEST ENTRANCE SIGHT DISTANCE PROFILE



SOUTHEAST ENTRANCE SIGHT DISTANCE PROFILE



GRAPHIC SCALE:
1" = 50'
50' 0' 50' 100' 150'



LEGEND

DENOTES LIMITS OF PROPOSED MILLING AND OVERLAY

GRAPHIC SCALE:
1" = 30'
30' 0' 30' 60' 90'

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SIGHT DISTANCE/ MILL & OVERLAY PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN. NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS SHOWN

SHEET 6 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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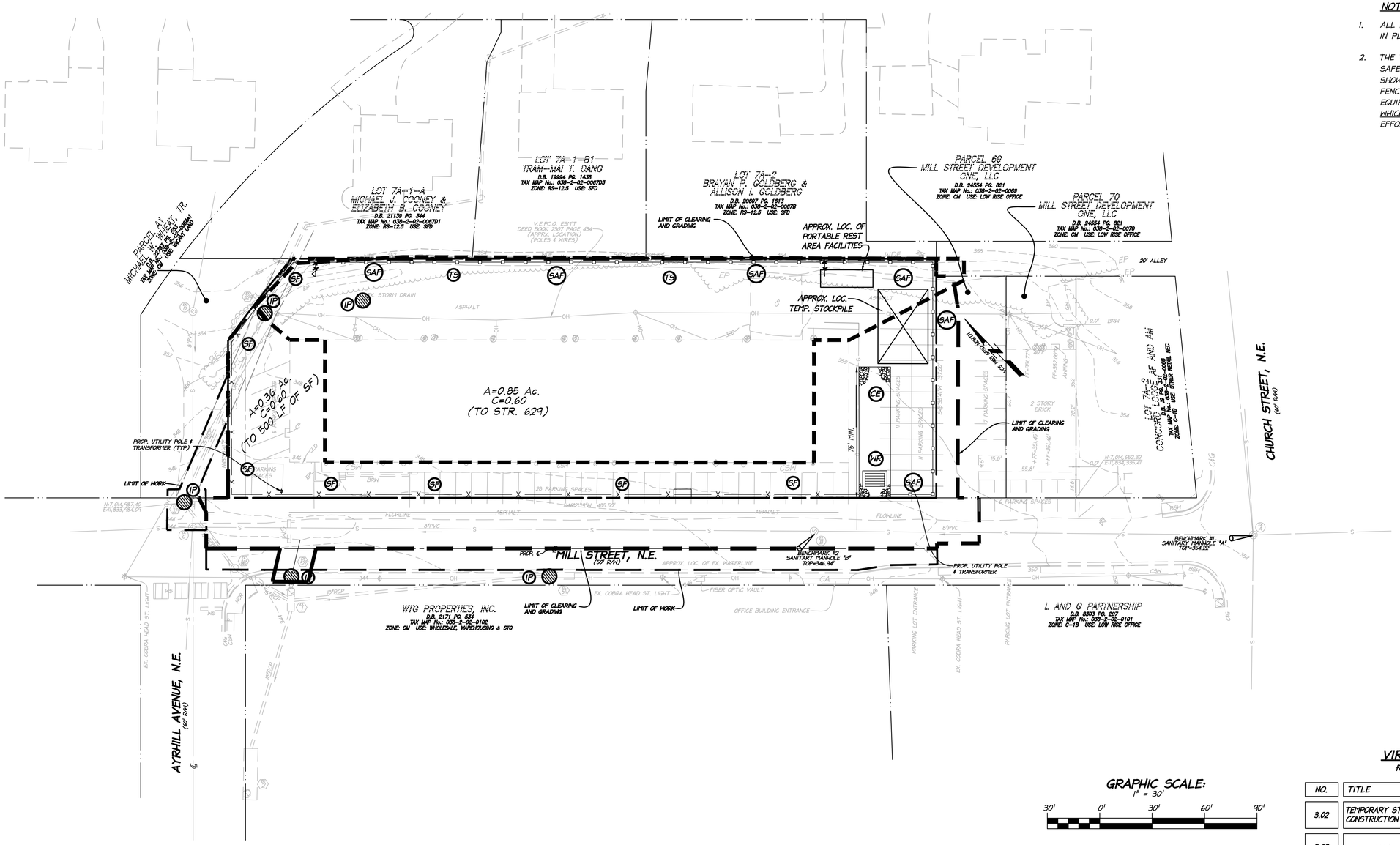

NOTES:

1. ALL PERIMETER CONTROLS FROM PHASE I SHALL REMAIN IN PLACE UNTIL THE SITE IS STABILIZED.
2. THE TREE PROTECTION PROVIDED SHALL CONSIST OF SAFETY FENCE AROUND THE LIMITS OF CLEARING (AS SHOWN ON E&S PLANS - SEE SHEETS 7-9). THE AREAS FENCED OFF SHALL BE KEPT FREE OF ALL SOIL, EQUIPMENT AND CONSTRUCTION MATERIAL STORAGE; WHICH INCLUDES FINAL GRADING AND LANDSCAPING EFFORTS.

GRAPHIC SCALE:

1" = 30'

30' 0' 30' 60' 90'

VIRGINIA UNIFORM CODING SYSTEM

for Erosion and Sediment Control Practices

NO.	TITLE	KEY	SYMBOL
3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.02	WASH RACK	WR	
3.05	SILT FENCE	SF	—— X ——
	SAFETY FENCE	SAF	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.31	TEMPORARY SEEDING	TS	
	LIMITS OF CLEARING AND GRADING		
	DRAINAGE DIVIDE		

TEMPORARY SEEDING TO CONFORM TO STANDARDS & SPECIFICATIONS SECTION 3.31, VESCH

THIS SHEET IS FOR EROSION & SEDIMENT CONTROL PURPOSES ONLY!!!!

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EROSION & SEDIMENT CONTROL PLAN PHASE I

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

ENGINEER

REVISION APPROVED BY:

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 0401958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 7 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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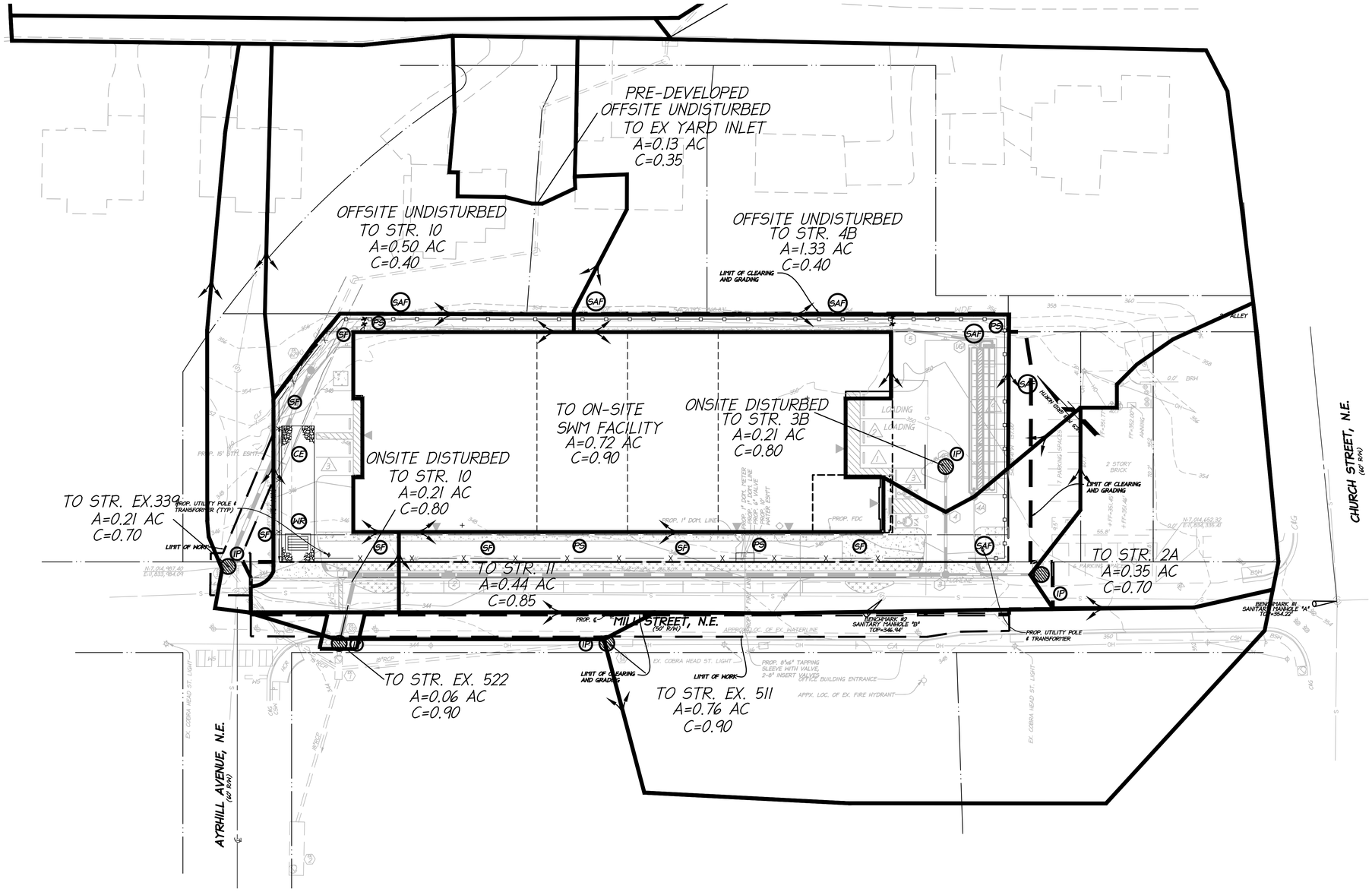

NOTES:

1. ALL PERIMETER CONTROLS FROM PHASE I SHALL REMAIN IN PLACE UNTIL THE SITE IS STABILIZED. ADJUSTMENT TO THE SILT FENCE WILL BE MADE AS INSTALLATION OF THE SIDEWALK AND PARKING COMMENCES.
2. THE TREE PROTECTION PROVIDED SHALL CONSIST OF SAFETY FENCE AROUND THE LIMITS OF CLEARING (AS SHOWN ON E&S PLANS - SEE SHEETS 7-9). THE AREAS FENCED OFF SHALL BE KEPT FREE OF ALL SOIL, EQUIPMENT AND CONSTRUCTION MATERIAL STORAGE; WHICH INCLUDES FINAL GRADING AND LANDSCAPING EFFORTS.

VIRGINIA UNIFORM CODING SYSTEM

for Erosion and Sediment Control Practices

NO.	TITLE	KEY	SYMBOL
3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.02	WASH RACK	WR	
3.05	SILT FENCE	SF	—— x ——
	SAFETY FENCE	SAF	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.32	PERMANENT SEEDING	PS	
	LIMITS OF CLEARING AND GRADING		
	DRAINAGE DIVIDE		

PERMANENT SEEDING TO CONFORM TO STANDARDS & SPECIFICATIONS SECTION 3.32, VESCH

GRAPHIC SCALE:
1" = 30'
30' 0' 30' 60' 90'

THIS SHEET IS FOR EROSION & SEDIMENT CONTROL PURPOSES ONLY!!!!

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EROSION & SEDIMENT CONTROL PLAN PHASE 2

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

ENGINEER

REVISION APPROVED BY:

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 8 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-2-0-E52.dwg

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:

THE PROPOSED SITEPLAN, APPROX. 1.26 ACRES, SHALL PROVIDE FOR THE CONSTRUCTION OF ONE SELF STORAGE BUILDING. ALL EXISTING, ON-SITE STRUCTURES SHALL BE RAZED. THE SCOPE OF THIS PROJECT SHALL INCLUDE CONSTRUCTION OF PRIVATE PARKING AND DRIVE AISLE, MILLING AND OVERLAY, UNDERGROUND SWM FACILITY, STORM SEWER, SANITARY LATERAL AND WATERLINE. THE TOTAL DISTURBED AREA APPROXIMATELY ±1.7 ACRES.

EXISTING SITE CONDITIONS:

THE SITE AREA CONSISTS OF AN OVERGROWN WOOD FENCE ALONG THE NORTHEAST SIDE OF THE SITE, AND AN EXISTING 1 STORY BRICK BUILDING WITH TYPICAL PHYSICAL IMPROVEMENTS. THERE ARE STEEP SLOPES ON SHARED PROPERTY LINE AT THE NORTH EAST.

ADJACENT PROPERTIES:

NORTHERN BOUNDARY:

THE NORTH SIDE OF THE SUBJECT PROPERTY IS BOUND BY A DRIVE AISLE TO A SHARED PARKING LOT FOR RETAIL USE.

EASTERN BOUNDARY:

EASTERN SIDE OF THE SUBJECT PROPERTY IS BOUND BY RESIDENTIAL SINGLE FAMILY HOMES.

SOUTHERN BOUNDARY:

SOUTHERN SIDE OF THE SUBJECT PROPERTY IS BOUND BY A SHARED PARKING LOT FOR RETAIL USE.

WESTERN BOUNDARY:

WESTERN SIDE OF THE SUBJECT PROPERTY IS BOUND BY MILL STREET, N.E..

EROSION CONTROL PROGRAM:

THE AREAS TO BE CLEARED SHALL BE DESIGNATED IN ACCORDANCE WITH THE APPROVED PLAN. PRIOR TO THE COMMENCEMENT OF THE ASSOCIATED CLEARING AND GRADING, THE SITE INSPECTOR MUST BE NOTIFIED AT LEAST TWO DAYS IN ADVANCE. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER THE FINAL GRADE IS ESTABLISHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS FOR AREAS THAT WILL REMAIN DENUDED FOR SEVEN (7) DAYS OR GREATER. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT WILL BE DORMANT FOR GREATER THAN SEVEN (7) DAYS ONCE FINAL GRADE IS ESTABLISHED. ALL REVEGETATION SHALL BE ACCOMPLISHED IMMEDIATELY. MAXIMUM SLOPES OF 2:1 SHALL BE USED FOR FOR GRADING PURPOSES.

CRITICAL EROSION AREAS

THE STEEP SLOPES ALONG THE NORTHEAST SIDE OF THE PROPERTY ARE THE ONLY CRITICAL EROSION AREAS ON THIS SUBJECT SITE.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

STRUCTURAL PRACTICES

1. SILT FENCE & SUPER SILT FENCE BARRIERS - 3.05
SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWNSLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW AS INDICATED ON SHEETS 4 AND 5. SUPER SILT FENCE SHALL ALSO PROVIDE TREE PROTECTION IN AREAS WHERE IT IS ADJACENT TO VEGETATION TO BE PRESERVED.

2. TEMPORARY CONSTRUCTION ENTRANCE - 3.02
A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK SHALL BE INSTALLED WHERE THE ACCESS AREA INTERSECTS WITH CENTER STREET. DURING MUDDY CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE ENTERING THE HIGHWAY.

3. STORM DRAIN INLET PROTECTION - 3.07
ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT-LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER INLETS.

4. TREE PROTECTION - 3.38
TREE PROTECTION WILL BE INSTALLED ADJACENT TO AREAS OF VEGETAION TO BE PRESERVED. SUPER SILT FENCE WILL ALSO ACT AS TREE PROTECTION WHERE INSTALLED ADJACENT TO AREAS OF VEGETATION TO BE PRESERVED.

VEGETATIVE PRACTICES

1. TOPSOILING (STOCKPILE) - 3.30
TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATIONS SHALL BE LOCATED ON-SITE AND ARE TO BE STABILIZED WITH TEMPORARY VEGETATION.

2. TEMPORARY SEEDING - 3.31
ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED. SEE TABLES 3.31B & 3.31C ON THIS SHEET.

3. PERMANENT SEEDING - 3.32
ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEED ON ROUGH GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG LIVED VEGETATIVE COVER IS NEEDED ON FINE GRADED AREAS.

4. EROSION CONTROL BLANKETS - 3.36 OR MULCH - 3.35
EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN THE SEEDING OPERATION.

MANAGEMENT STRATEGIES

1. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
3. TEMPORARY SEEDING AND OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.
4. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
6. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS WILL BE CLEANED UP AND REMOVED.

TREE PRESERVATION NOTE

THE PROTECTION PROVIDED SHALL CONSIST OF FENCING OR OTHER APPROVED MEASURES AROUND THE TREE TO THE DRIP LINE AS DEPICTED ON THE PLAN AND AREAS ENCLOSED KEPT FREE OF ALL SOIL, EQUIPMENT AND CONSTRUCTION MATERIAL STORAGE; WHICH INCLUDES FINAL GRADING AND LANDSCAPING EFFORTS. NO EQUIPMENT SHALL BE ALLOWED ENTRY INTO THE FENCED ROOT ZONE AREA AT ANY TIME. THE AREA FENCED SHALL BE MULCHED WITH TWO INCHES OF SUITABLE MATERIAL AND THE TREES SHALL BE WATERED WITH ONE INCH OF WATER PER WEEK DURING THE GROWING SEASON IN ABSENCE OF ADEQUATE RAINFALL.

NARRATIVE:

THE CONTROL PROGRAM ESTABLISHED HEREIN SHALL BE COMPLETED IN TWO PHASES.

PHASE I

THE FIRST PHASE SHALL COMMENCE WITH THE INSTALLATION OF A CONSTRUCTION ENTRANCE AT MILL STREET. THE WASH RACK SHALL BE SUPPLIED BY A WATER TRUCK IN THE EVENT THAT AN EXISTING HYDRANT IS NOT AVAILABLE. SUBSEQUENTLY, THE PROPOSED PERIMETER CONTROLS (SILT FENCE, SUPER SILT FENCE AND SAFETY FENCING) AND INLET PROTECTION SHALL BE INSTALLED AS DEPICTED ON PHASE I PLANS. PERIMETER CONTROLS SHALL BE MAINTAINED AND UTILIZED DURING ALL PHASES OF CONSTRUCTION TO THE GREATEST EXTENT FEASIBLE. ONCE SAID CONTROLS ARE IN PLACE AN INSPECTION SHOULD BE REQUESTED FROM THE INSPECTOR. UPON APPROVAL OF SAID CONTROLS ROUGH GRADING OF THE SITE MAY COMMENCE. PLEASE NOTE THAT THE E&S PLAN PROVIDED HEREIN IS ONLY A GUIDE AND SHOULD BE UTILIZED AS SUCH. SHOULD DIFFERENT SITE CONDITIONS, WEATHER CONDITIONS OR OTHER UNFORESEEN CIRCUMSTANCES EXIST AT THE TIME OF CONSTRUCTION A MORE APPROPRIATE PLAN SHOULD BE IMPLEMENTED PROVIDED THE DEVIATIONS FROM THE ATTACHED PLAN ARE ACCEPTABLE TO THE SITE INSPECTOR. UPON COMPLETION AND INSTALLATION OF THE CONTROLS DEEMED APPROPRIATE FOR THE SITE CONDITIONS, PHASE 2 OF THE PROGRAM SHOULD COMMENCE.

PHASE II

THE INSTALLATION OF PERIMETER CONTROLS AND THE APPROVAL BY THE SITE INSPECTOR SHALL PERMIT THE PHASE II PROGRAM TO COMMENCE. THE SITE GRADING, UTILITY AND ROAD CONSTRUCTION SHALL COMMENCE AND SLOPES STABILIZED AS NECESSARY. INLET PROTECTION SHALL BE INSTALLED ON ALL INLETS ONCE CONSTRUCTED. ALL FILL SLOPES SHALL REMAIN IN A ROUGHENED CONDITION TO REDUCE SHEET FLOWS AND THE RILL EROSION OF THE SLOPE.

ALL CRITICAL SLOPES SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY UPON THE ESTABLISHMENT OF THE FINAL GRADE. IF NECESSARY, EROSION CONTROL BLANKETS WILL BE INSTALLED AT FINAL GRADE AND SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION TO ALLOW THE GRASS SEED TO GERMINATE PROPERLY. SEEDED AREAS MUST BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS MUST BE FERTILIZED AND RESEEDED AS NECESSARY.

THE CONSTRUCTION ENTRANCE AND WASH RACK SHALL CONTINUE TO BE UTILIZED TO ASSIST IN THE REMOVAL OF SEDIMENT. ALL SIGNAGE TO REMAIN UNTIL CONSTRUCTION HAS BEEN COMPLETED.

ALL PERIMETER CONTROLS SHALL REMAIN UNTIL ALL ON-SITE MATERIALS ARE STABILIZED.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD. & SPEC. 3.32, 'PERMANENT SEEDING', OF THE HANDBOOK. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

STORMWATER MANAGEMENT

CALCULATION OF RUNOFF BEFORE AND AFTER DEVELOPMENT INDICATES THAT THERE WILL BE A NET INCREASE IN PEAK RUNOFF AS A RESULT OF PROJECT DEVELOPMENT. CONSEQUENTLY, UNDERGROUND STORM WATER MANAGEMENT FACILITY SHALL BE PROVIDED TO ATTENUATE THE 1, 2 & 10 YEAR RAINFALL EVENTS.

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

1. THE GRAVEL OUTLETS WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF THE GRAVEL IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED OR REPLACED.

2. THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.

3. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NECESSARY.

GENERAL LAND CONSERVATION NOTES

1. NO DISTURBED AREA WHICH IS NOT ACTIVELY BEING WORKED SHALL REMAIN DENUDED FOR MORE THAN SEVEN CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR.
2. ALL E&S CONTROL MEASURES APPROVED WITH THE PHASE I E&S CONTROL PLAN SHALL BE PLACED AS THE FIRST STEP IN GRADING.
3. ALL STORM AND SANITARY SEWER LINES NOT IN STREETS SHALL BE SEEDED AND MULCHED WITHIN SEVEN DAYS AFTER BACKFILL. NO MORE THAN 500' SHALL BE OPEN AT ANY TIME.
4. ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES SHALL BE COMPACTED, SEEDED AND MULCHED WITHIN SEVEN DAYS AFTER BACKFILL.
5. ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS SHALL BE SEEDED AND MULCHED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY(AS SOON AS POSSIBLE BUT NO LATER THAN 48 HR.) AFTER COMPLETION OF GRADING. STRAW OR HAY MULCH IS REQUIRED. ALL SOIL STOCKPILES SHALL BE SEEDED AND MULCHED WITHIN SEVEN DAYS AFTER GRADING.
6. DURING CONSTRUCTION, ALL STORM SEWER INLETS SHALL BE PROTECTED BY SEDIMENT TRAPS, MAINTAINED AND MODIFIED DURING CONSTRUCTION PROGRESS AS REQUIRED.
7. ANY DISTURBED AREA NOT COVERED BY #1 AND NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED IMMEDIATELY WITH HAY OR STRAW MULCH AT THE RATE OF 2 TONS/ACRE AND OVERSEEDED BY APRIL 15.
8. AT THE COMPLETION OF ANY PROJECT CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED.

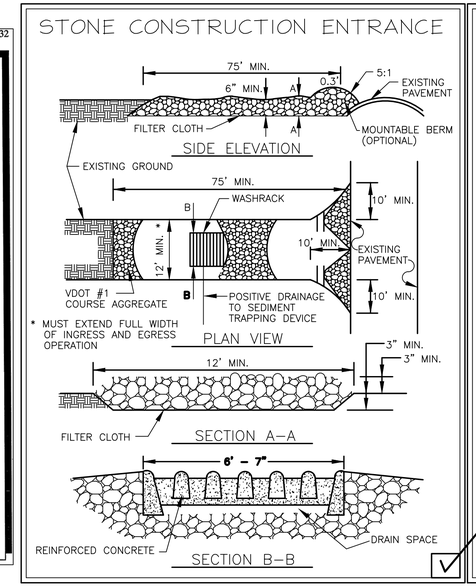
1992 3.32

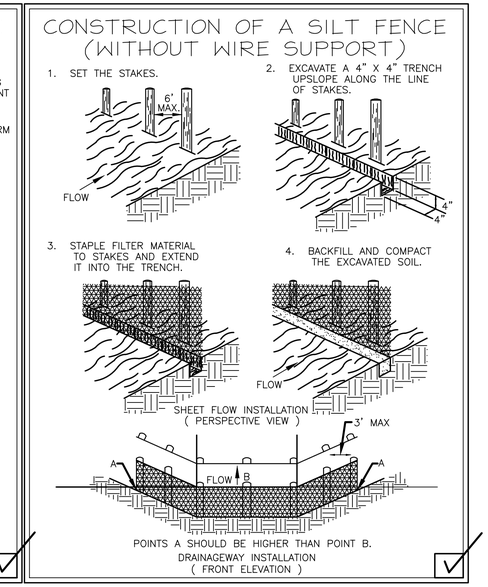
TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

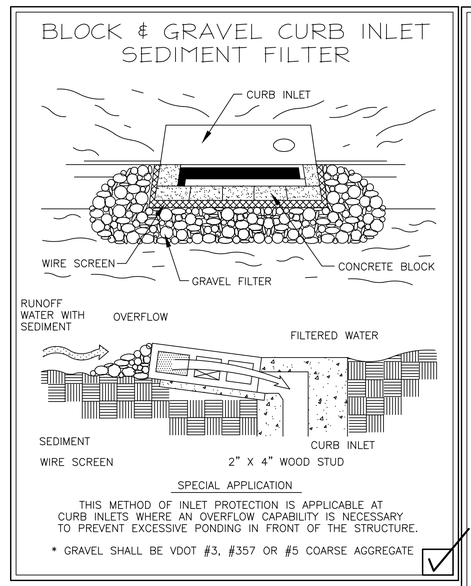
	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	175-200 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	95-100%
- Improved Perennial Ryegrass	0-5%
- Kentucky Bluegrass	0-5%
High-Maintenance Lawn	200-250 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	100%
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Fescue	108 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Crownvetch **	20 lbs.
	150 lbs.

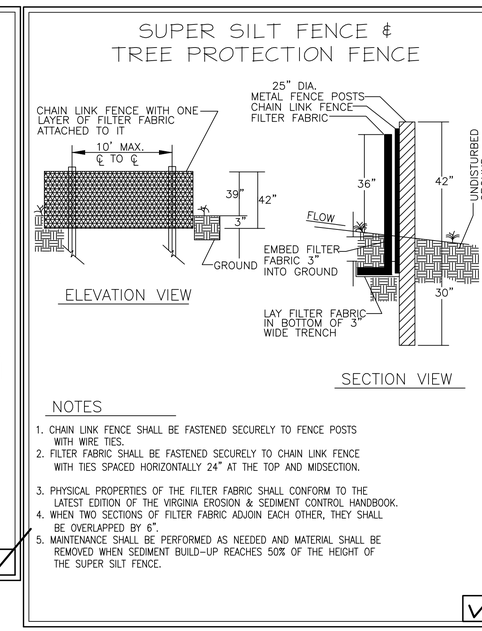
* Use seasonal nurse crop in accordance with seeding dates as stated below:
February 16th through April ..... Annual Rye
May 1st through August 15th ..... Foxtail Millet
August 16th through October ..... Annual Rye
November through February 15th ..... Winter Rye

** Substitute Sericea lespedeza for Crownvetch east of Farmville, Va. (May through September use hulled Sericea, all other periods, use unhulled Sericea). If Flatpea is used in lieu of Crownvetch, increase rate to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.









NOTES

1. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
2. FILTER FABRIC SHALL BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED HORIZONTALLY 24" AT THE TOP AND MIDSECTION.
3. PHYSICAL PROPERTIES OF THE FILTER FABRIC SHALL CONFORM TO THE LATEST EDITION OF THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK.
4. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6".
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 50% OF THE HEIGHT OF THE SUPER SILT FENCE.

1992

TABLE 3.31-C

TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE: Acre	SEEDING RATE: 1000 ft²	NORTH[a] 3/1 to 4/30	NORTH[a] 5/1 to 8/15	NORTH[a] 8/15 to 11/1	SOUTH[b] 2/15 to 4/30	SOUTH[b] 5/1 to 9/1	SOUTH[b] 9/1 to 11/15	PLANT CHARACTERISTICS
OATS (Avena sativa)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-	Use spring varieties (e.g., Noble).
RYE[d] (Secale cereale)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (Setaria italica)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS[c] (Lolium multi-florum)	60 lbs.	1½ lbs.	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.
WEEPING LOVEGRASS (Eragrostis curvula)	15 lbs.	5⅓ ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.
KOREAN LESPEDEZA[c] (Lespedeza stipulacea)	25 lbs.	approx. 1⅛ lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.

TABLE 3.31-B

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS

"QUICK REFERENCE FOR ALL REGIONS"

Planting Dates	Species	Rate (lbs./acre)
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100
Feb. 16 - Apr. 30	Annual Ryegrass (Lolium multi-florum)	60 - 100
May 1 - Aug 31	German Millet (Setaria italica)	50

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EROSION & SEDIMENT CONTROL NARRATIVE & DETAILS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE
			REVISION APPROVED BY:			

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: N/A

SHEET 9 OF 25

DATE: AUGUST 2, 2019

DRAFT: CDS | CHECK: PDR

FILE NUMBER: 16220-2-0

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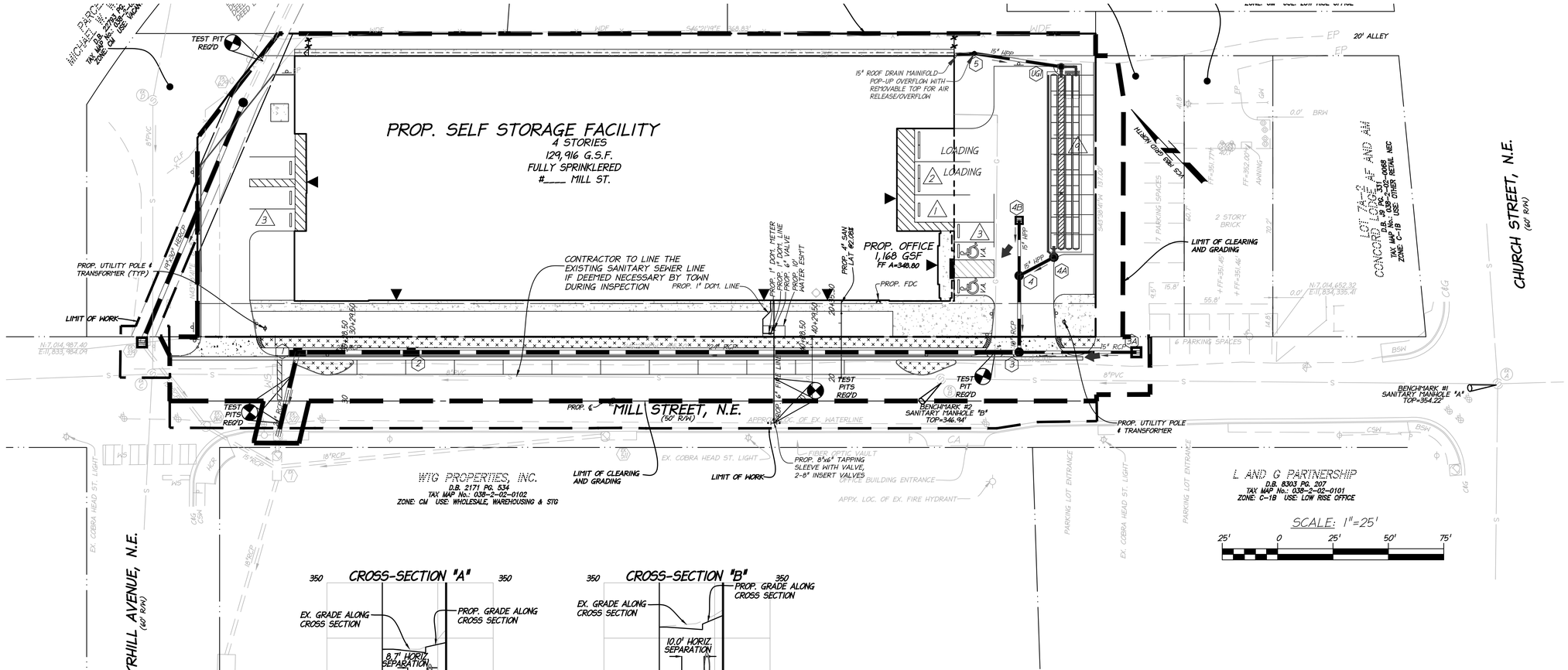

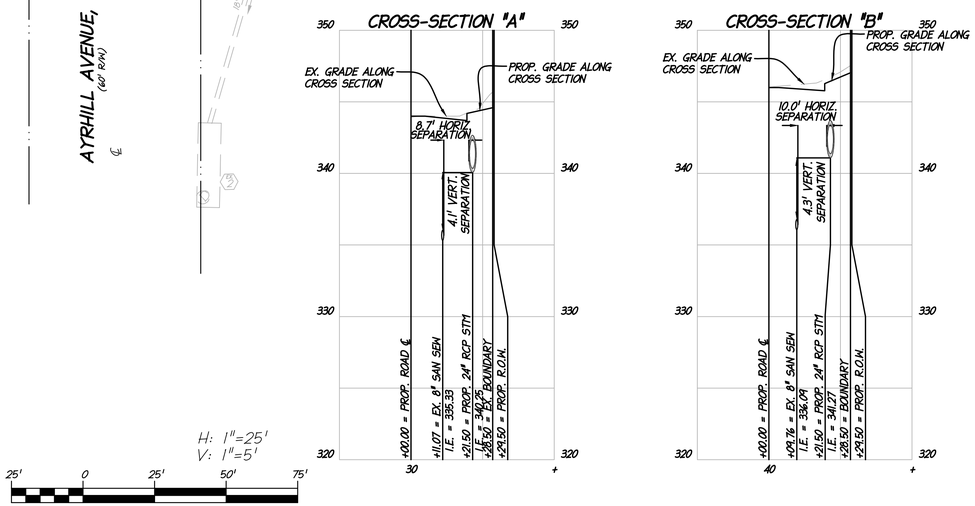

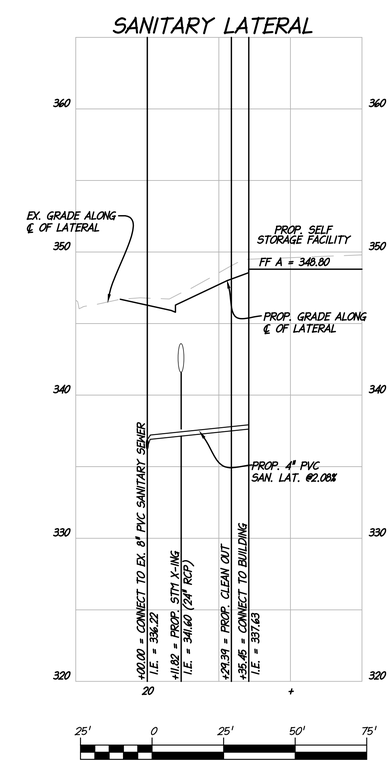

STANDARD NOTES:

1. ALL WATER AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF VIENNA SPECIFICATIONS, PIM AND DETAILS, LATEST EDITION (REVISED JANUARY 1997) AND WATER AND SEWER REGULATIONS FOUND HTTP://WWW.VIENNAVA.GOV/DOCUMENTVIEW.ASPX?DID=114 AND FAIRFAX WATER CONSTRUCTION PRACTICE MANUAL.
2. THE OWNER IS RESPONSIBLE FOR ALL WORK AND COSTS ASSOCIATED WITH EXCAVATION, INSTALLATION, AND RESTORATION OF PUBLIC SPACE TO PERFORM A WATER/SEWER CONNECTION/ABANDONMENT. THE OWNER SHALL BE HELD RESPONSIBLE FOR ALL DAMAGES TO EXISTING STRUCTURES AND UTILITIES CAUSED BY CONSTRUCTION ACTIVITY.
3. CONTACT MISS UTILITY AT 800-257-7777 48 HOURS BEFORE ANY DIGGING.
4. A SET OF SIGNED & SEALED AND VIENNA STAMPED PLANS SHALL BE KEPT AT ALL TIMES AT THE JOB SITE ON WHICH ALL CHANGES OR VARIATIONS IN THE WORK, INCLUDING ALL EXISTING UTILITIES, ARE TO BE RECORDED AND/OR CORRECTED DAILY.
5. THE OWNER MUST PHYSICALLY DISCONNECT EXISTING WATER, SEWER LATERALS THAT ARE TO BE ABANDONED AT THEIR CONNECTION TO THE PUBLIC MAIN.
6. AS-BUILT: DEVELOPERS, CONTRACTORS AND/OR PLUMBERS MUST SUBMIT FINAL CONSTRUCTION AS-BUILT INFORMATION TO VIENNA FOR REVIEW AND APPROVAL, UPON COMPLETION OF INSTALLATION OF NEW SERVICES OR ABANDONMENT OF EXISTING SERVICES. WHEN THE FINAL AS-BUILT IS APPROVED ALL DEPOSITS WILL BE RETURNED TO THE APPLICANT.
7. CONFLICTS: THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF PROPOSED UTILITIES. A MINIMUM OF 18 INCHES VERTICAL AND FIVE FEET HORIZONTAL CLEARANCE SHALL BE MAINTAINED FROM ANY UTILITIES AND PUBLIC WATER AND SEWER MAINS.
8. ALL WATER AND SEWER FACILITIES SHALL BE INSTALLED BY A LICENSED CONTRACTOR IN THE STATE OF VIRGINIA.
9. ALL WATER AND SEWER CONSTRUCTION IS INSPECTED AND TESTED AS PER VIENNA STANDARDS PRIOR TO FINAL ACCEPTANCE BY THE TOWN.
10. THE VIENNA SEWER DEPARTMENT SHALL BE NOTIFIED AT A MINIMUM 48 HOURS (MONDAY THROUGH FRIDAY) PRIOR TO COMMENCING ANY WORK, TESTING, AND PRIOR TO MAKING ANY CONNECTIONS TO EXISTING SEWER LINES OR MANHOLES. IN ADDITION, THE EXISTING SEWER MAY BE REQUIRED TO BE LINED IF REQUIRED BY THE TOWN DURING AN INSPECTION PERFORMED BY THE TOWN.
11. THERE SHALL BE NO UNMETERED CONNECTIONS TO THE TOWN'S WATER SYSTEM, INCLUDING CONNECTIONS BYPASSING METERS FOR TESTING ON-SITE PLUMBING OR FOR OBTAINING CONSTRUCTION WATER.
12. PRESSURE TESTING AGAINST VALVES WILL NOT BE ALLOWED.
13. A NOMINAL FOUR FEET OF COVER IS REQUIRED FOR ALL WATER MAINS AT FINAL GRADE.
14. THE USE OF A FIRE HYDRANT AS A WATER SOURCE IS PROHIBITED UNLESS A METER HAS BEEN OBTAINED FROM VIENNA FOR USE OF A SPECIFIC HYDRANT(S).
15. THE TOWN OF VIENNA WATER DEPARTMENT SHALL BE NOTIFIED AT A MINIMUM 48 HOURS (MONDAY THROUGH FRIDAY) PRIOR TO COMMENCING ANY WORK, TESTING, AND PRIOR TO MAKING ANY CONNECTIONS TO EXISTING WATERLINES.
16. PER SECTION TOWN OF VIENNA CONSTRUCTION SPECIFICATIONS SECTION I.B.10, SUPPORTS SHALL BE CONSTRUCTED BEHIND ALL BENDS, TEES, CAPS, PLUGS AND HYDRANTS. THE USE OF SUPPORTS BEHIND FITTINGS REFERS TO FITTINGS IN THE VERTICAL PLANE AS WELL AS THOSE USED IN THE HORIZONTAL PLAN. THEY SHALL BE DESIGNED TO CARRY THE LOAD THAT WILL REASONABLY BE REQUIRED OF THEM UNDER MAXIMUM HEAD AND A REASONABLE ALLOWANCE FOR WATER HAMMER."
17. POLYETHYLENE ENCASEMENT IS REQUIRED FOR ALL LINES IN VIENNA IN ACCORDANCE WITH ANSI/AWWA STANDARD C105 CLASS C, PER SECTION1.B.14.B OF THE VIENNA STANDARD CONSTRUCTION SPECIFICATIONS.
18. THE PLUMBING ENGINEER OR ARCHITECT SHALL PROVIDE METER SIZING CALCULATIONS WITH THE BUILDING PLANS.

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UTILITY PROFILES & SAN. LATERAL TABLE

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

ENGINEER

REVISION APPROVED BY:

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040858
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS SHOWN

SHEET 10 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

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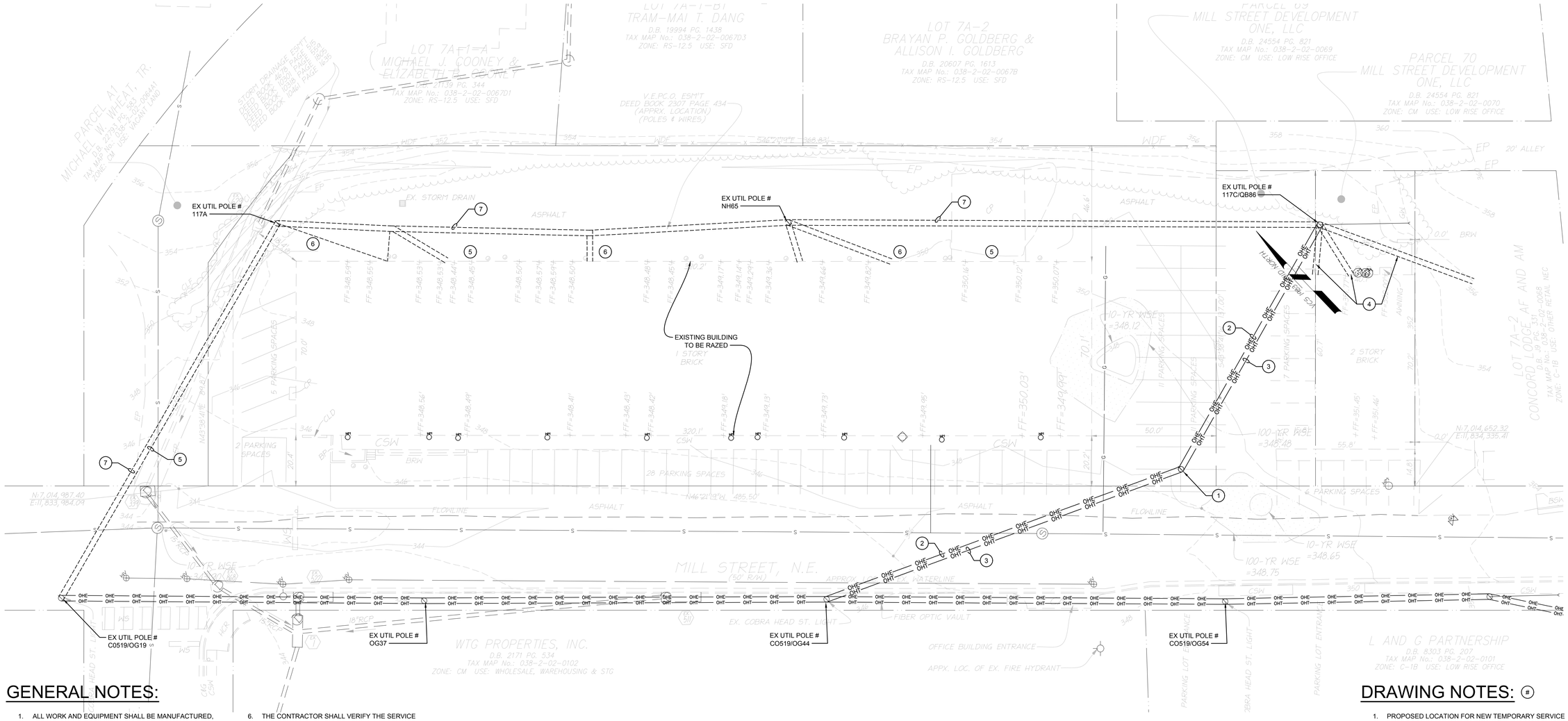

1 DRY UTILITY SITE PLAN - TEMP & DEMOLITION

Scale: 1" = 20'-0"

GENERAL NOTES:

1. ALL WORK AND EQUIPMENT SHALL BE MANUFACTURED, INSTALLED AND TESTED IN ACCORDANCE WITH THE CURRENT NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. THE CONTRACTOR SHALL FURNISH AN UNDERWRITERS CERTIFICATE OF INSPECTION COVERING ALL WORK INSTALLED UNDER THIS SCOPE OF WORK.
2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS AND CERTIFICATES. A FINAL INSPECTION CERTIFICATE SHALL BE SUBMITTED TO THE CIVIL ENGINEER PRIOR TO REQUEST FOR FINAL PAYMENT.
3. THOROUGHLY EXAMINE ALL RELATED CIVIL DRAWINGS AND ARCHITECTURAL DRAWINGS OF THE PROPOSED BUILDING PRIOR TO THE COMMENCEMENT OF ANY WORK. COORDINATE ALL ELECTRICAL, TELECOMMUNICATIONS AND GAS SERVICE WORK WITH ALL OTHER SITE UTILITIES. COORDINATE THE TERMINATION LOCATIONS OF ALL UTILITY SERVICES WITH THE BASE BUILDING CONSTRUCTION DOCUMENTS.
4. ALL UTILITY WORK SHALL BE PROVIDED IN ACCORDANCE WITH THE RULES, REGULATIONS AND STANDARDS OF THE LOCAL UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO DOMINION ENERGY, VERIZON AND WASHINGTON GAS.
5. THESE PLANS AND DETAILS ARE INTENDED TO PROVIDE A BROAD OUTLINE OF THE WORK AND EQUIPMENT REQUIRED BUT ARE NOT INTENDED TO INCLUDE ALL DETAILS OF CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY THE SERVICE REQUIREMENT OF ALL EXISTING AND NEW EQUIPMENT BEFORE MAKING FINAL PROVISIONS. SHOP DRAWINGS SHALL BE MADE AVAILABLE FOR VERIFICATION OF SERVICE ENTRANCE SIZES AND LOCATIONS PRIOR TO INSTALLATION OF ROUGH-IN.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO THE BID DATE TO EXAMINE THE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. NO EXTRAS SHALL BE ALLOWED FOR FAILURE TO NOTE EXISTING CONDITIONS.
8. THE CONTRACTOR SHALL COORDINATE THE CONNECTIONS TO EXISTING UTILITY SYSTEMS WITH THE OWNER AND OTHER FACILITIES AFFECTED BY THIS PROJECT. ALL OUTAGES SHALL BE CLOSELY COORDINATED WITH THE OWNER AND EXISTING FACILITY OPERATING SCHEDULES.
9. PROVIDE COMPLETE SHOP DRAWINGS FOR ALL NEW EQUIPMENT AND MATERIALS BEING PROVIDED FOR THE PROJECT. REFER TO THE CIVIL GENERAL NOTES FOR SHOP DRAWING SUBMITTAL PROCESS TO BE FOLLOWED.
10. UPON COMPLETION OF THE ROUGH-IN WORK FOR EACH UTILITY THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE AND OBTAIN APPROVAL OF THE WORK PRIOR TO PROCEEDING WITH CONCRETE ENCASEMENT, BACKFILL OR FURTHER INSTALLATION. ONLY AFTER ACCEPTANCE OF THE ROUGH-IN INSTALLATION SHALL THE WORK PROCEED.

DRAWING NOTES: (#)

1. PROPOSED LOCATION FOR NEW TEMPORARY SERVICE POLE TO BE PROVIDED BY DOMINION ENERGY. THIS POLE SHALL REMAIN INTACT TO SERVE AS THE TERMINAL POLE FOR THE PERMANENT OVERHEAD PRIMARY SERVICE.
2. NEW OVERHEAD PRIMARY SERVICE CONDUCTORS TO BE PROVIDED BY DOMINION ENERGY FOR CONNECTION FROM THE POLE LINE DISTRIBUTION WIRING ON MILL STREET TO RECONNECT TO THE OVERHEAD PRIMARY SERVICE AT EXISTING POLE #117C.
3. NEW OVERHEAD TELEPHONE SERVICE CABLES TO BE PROVIDED BY VERIZON FOR CONNECTION FROM THE POLE LINE DISTRIBUTION WIRING ON MILL STREET TO RECONNECT TO THE OVERHEAD CABLES AT EXISTING POLE # 117C.
4. ALL EXISTING ELECTRICAL SECONDARY SERVICE DROPS AND TELEPHONE CABLES SERVING 211 MILL STREET, 213 MILL STREET AND 146 CHURCH STREET SHALL REMAIN INTACT AND FUNCTIONAL.
5. AFTER ALL OF THE TELEPHONE SERVICES HAVE BEEN TERMINATED TO THE TENANTS FROM 223 THROUGH 241 MILL STREET, COORDINATE THE REMOVAL OF ALL ABANDONED OVERHEAD TELECOMMUNICATIONS WIRING FROM THE POLES AND CABLES BEHIND THE EXISTING BUILDING TO THE DEMARK LOCATIONS WITH VERIZON AND ANY OTHER TELECOMMUNICATIONS COMPANIES.
6. AFTER ALL OF THE SECONDARY ELECTRICAL SERVICES HAVE BEEN TERMINATED TO THE TENANT METERS FROM 223 THROUGH 241 MILL STREET, COORDINATE THE REMOVAL OF ALL ABANDONED OVERHEAD SECONDARY SERVICE DROP CONDUCTORS WITH DOMINION ENERGY.
7. AFTER THE TEMPORARY OVERHEAD PRIMARY SERVICE HAS BEEN ESTABLISHED AT POLE # 117C COORDINATE THE REMOVAL OF ALL EXISTING OVERHEAD PRIMARY SERVICE CONDUCTORS AND POLES BETWEEN POLE # OG19 AND POLE # 117C.

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DRY UTILITY TEMP AND DEMOLITION

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE
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ENGINEER

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COMMONWEALTH OF VIRGINIA
GARY T. RICH
Lic. No. 020322
05/12/2020
PROFESSIONAL ENGINEER

SCALE:

SHEET 10A OF 25

DATE: AUGUST 2, 2019

DRAFT: SLS | CHECK: GTR

FILE NUMBER: 16220-2-0

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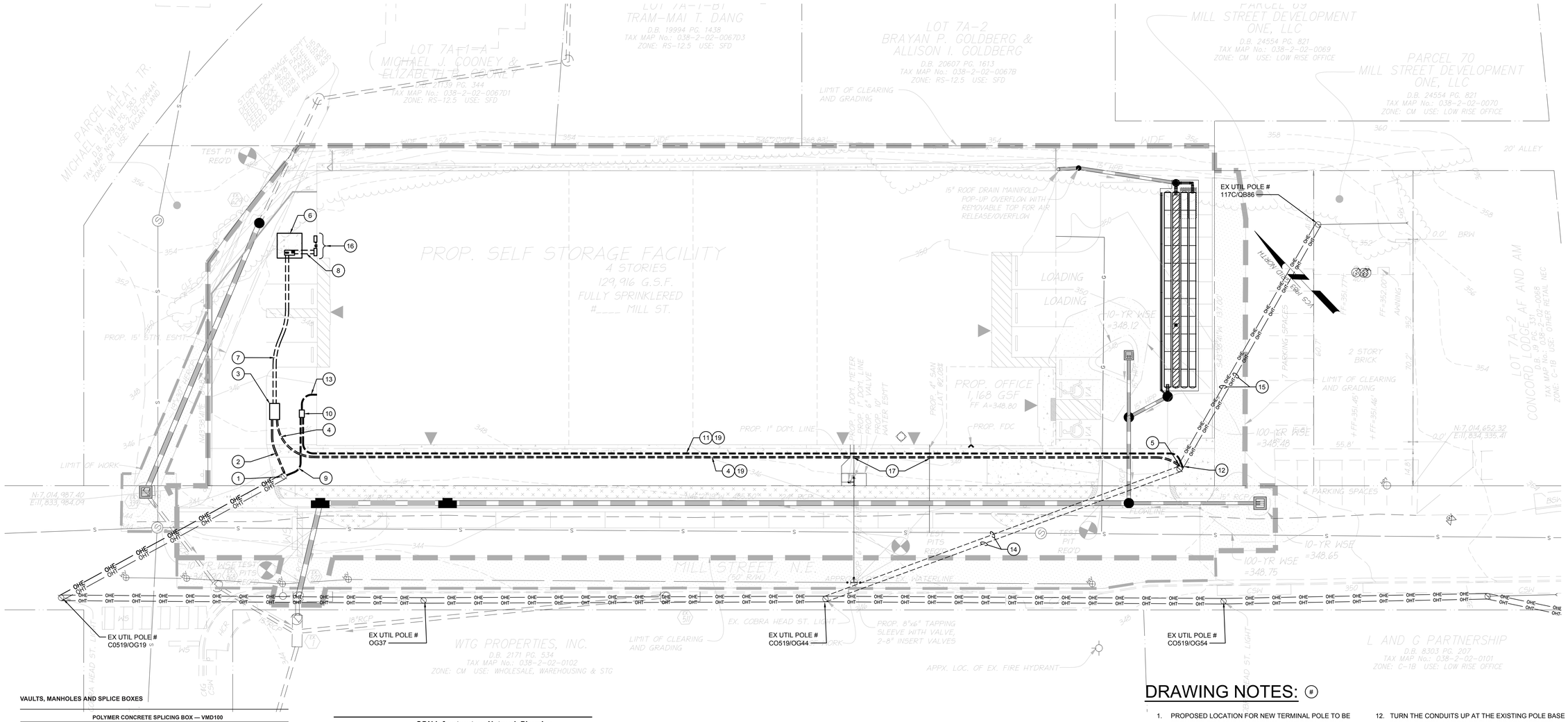

1 DRY UTILITY SITE PLAN - NEW SERVICES

Scale: 1" = 20'-0"

DRAWING NOTES: (#)

1. PROPOSED LOCATION FOR NEW TERMINAL POLE TO BE PROVIDED BY DOMINION ENERGY. COORDINATE THE INSTALLATION OF THIS POLE AND THE NEW OVERHEAD PRIMARY SERVICE CONDUCTORS WITH DOMINION ENERGY. IN ADDITION COORDINATE THE INSTALLATION OF THE NEW OVERHEAD TELECOMMUNICATIONS CABLES WITH VERIZON.
2. PROVIDE NEW 2 WAY - 6" RNC DIRECT BURIED DUCTBANK FROM THE TERMINAL POLE BASE TO THE NEW DOMINION ENERGY SPLICE BOX.
3. PROVIDE NEW 78"X 48" PRIMARY CABLE SPLICE BOX # SBOX78 IN ACCORDANCE WITH DOMINION ENERGY STANDARDS.
4. PROVIDE NEW 2 WAY - 6" RNC DIRECT BURIED DUCTBANK FROM THE SPLICE BOX TO THE TEMPORARY OVERHEAD SERVICE TERMINAL POLE.
5. TURN THE CONDUITS UP AT THE EXISTING POLE BASE FOR THE INSTALLATION OF THE DOMINION ENERGY PRIMARY SERVICE CONDUCTORS. COORDINATE THE CONNECTION OF THE NEW PRIMARY SERVICE CONDUCTORS WITH THE EXISTING TEMPORARY PRIMARY SERVICE CONDUCTORS WITH DOMINION ENERGY.
6. PROVIDE NEW TRANSFORMER PAD IN ACCORDANCE WITH DOMINION ENERGY STANDARDS.
7. PROVIDE NEW 2 WAY - 6" RNC DIRECT BURIED DUCTBANK FROM THE SPLICE BOX TO THE TRANSFORMER PAD.
8. PROVIDE NEW 4 WAY - 4" RNC CONCRETE ENCASED DUCTBANK FROM THE TRANSFORMER PAD. TURN UP UNDER THE NEW C/T CABINET AT THE PROPOSED BUILDING. COORDINATE THIS INSTALLATION WITH THE PROPOSED BUILDING CONSTRUCTION DOCUMENTS.
9. PROVIDE NEW 2 WAY - 4" RNC DIRECT BURIED DUCTBANK FROM THE TERMINAL POLE BASE TO THE NEW VERIZON HANDHOLE.
10. PROVIDE NEW 36"X24"X24"D TELEPHONE HANDHOLE # T22 IN ACCORDANCE WITH VERIZON STANDARDS.
11. PROVIDE NEW 2 WAY - 4" RNC DIRECT BURIED DUCTBANK FROM THE SPLICE BOX TO THE TEMPORARY OVERHEAD SERVICE TERMINAL POLE.
12. TURN THE CONDUITS UP AT THE EXISTING POLE BASE FOR THE INSTALLATION OF THE VERIZON SERVICE CABLES. COORDINATE THE CONNECTION OF THE NEW SERVICE CABLES WITH THE EXISTING SERVICE CABLES WITH VERIZON.
13. PROVIDE NEW 2 WAY - 4" RNC DIRECT BURIED DUCTBANK FROM THE VERIZON HANDHOLE TO THE TELEPHONE SERVICE ENTRANCE LOCATION AT THE PRPOSED BUILDING. COORDINATE THIS INSTALLATION WITH THE PROPOSED NEW BUILDING CONSTRUCTIONJ DOCUMENTS.
14. AFTER ALL OF THE NEW POWER AND TELEPHONE SERVICES ARE CONNECTED AND TIED INTO THE EXISTING SERVICE LOCATIONS COORDINATE THE REMOVAL OF THE TEMPORARY OVERHEAD PRIMARY SERVICE CONDUCTORS WITH DOMINION ENERGY AND THE TEMPORARY OVERHEAD SERVICE CABLES WITH VERIZON.
15. EXISTING OVERHEAD PRIMARY SERVICE CONDUCTORS AND TELEPHONE CABLES SHALL REMAIN INTACT AND FULLY OPERATIONAL DURING THE TRANSFER OF ELECTRICAL AND TELEPHONE SERVICES.
16. PROPOSED 800A C/T CABINET, METER AND 800A SERVICE DISCONNECT PROVIDED AS PART OF THE PROPOSED BUILDING CONSTRUCTION DOCUMENTS.
17. COORDINATE DUCTBANK LOCATION WITH METER VAULT. COORDINATE CROSSING ELEVATION WITH WATER AND SEWER PIPING IN THIS AREA.
18. ALL NEW DUCTBANK AND UNDERGROUND CONDUIT SHALL BE PROVIDED WITH PULL CORDS FULL LENGTH.
19. COORDINATE THE DUCTBANK LOCATION ALONG THE FRONT OF THIS BUILDING WITH THE STRUCTURAL FOOTINGS FOR THE ENTIRE LENGTH OF THE STRUCTURE.

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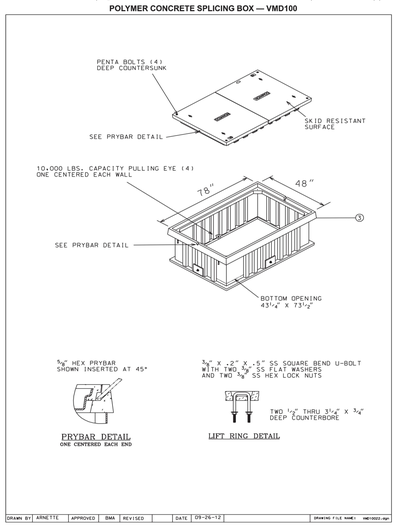
VAULTS, MANHOLES AND SPLICE BOXES

POLYMER CONCRETE SPLICING BOX — VMD100



2 DETAIL - UNDERGROUND SPLICE BOX

Scale: N.T.S.

ODN Infrastructure Network Planning Information Letter

NP-IL-2017-0028 July 24, 2017 FOR VZT

24" x 36" x 24" Handhole : T22

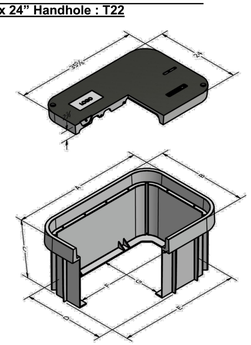
Straight Wall
24" x 36" x 24" Handhole
Rated: T-22 Heavy Duty Truck up to class 8

Handhole – Box and SMC Cover
Oldcastle Part # : 38104395
Material ID : 11343247
Size : 24" x 36" x 24"

Replacement SMC Cover
Oldcastle Part # : 31254121
Material ID : 11343248
Size : 24" x 36"

COVER:
Style: Flush Solid
Material: DuoMold Composite
Model: 24" x 36"
Weight: 126.0 lbs
Std. Fasteners: 1/2-13 Stainless Steel Hex Head Bolt, Self-Locating Insert
Options: Logos and Special Markings
Surface: Skid Resistant & Marked
Coefficient of Friction: >0.6 ASTM 1028
Performance: ANSI/SCTE-77 Tier 22, WUC 3.6, ASTM C857 A-16

BODY:
Material: DuoMold Composite
Model: 24" x 36"
Weight: 92.0 lbs
Wall Type: Straight
Performance: ANSI/SCTE-77 Tier 22, WUC 3.6, ASTM C857 A-16



	A	B	C	D	E	F	G
24X36-24	36-1/8	26-1/2	24	23-1/2	35-1/8	29-1/8	17-1/2

This assembly provides a means to house buried drops.

Oldcastle Enclosure Solutions

Verizon Proprietary: Not for use or disclosure outside of the Verizon Companies without express written permission

3 DETAIL - VERIZON HANDHOLE

Scale: N.T.S.

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DRY UTILITY
NEW SERVICES

MILL STREET
SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

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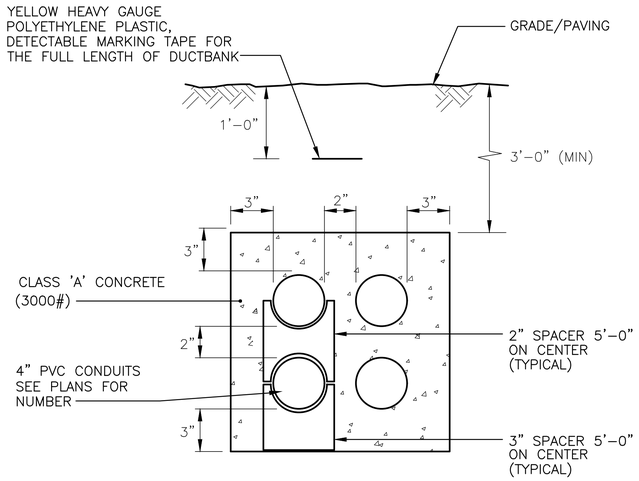
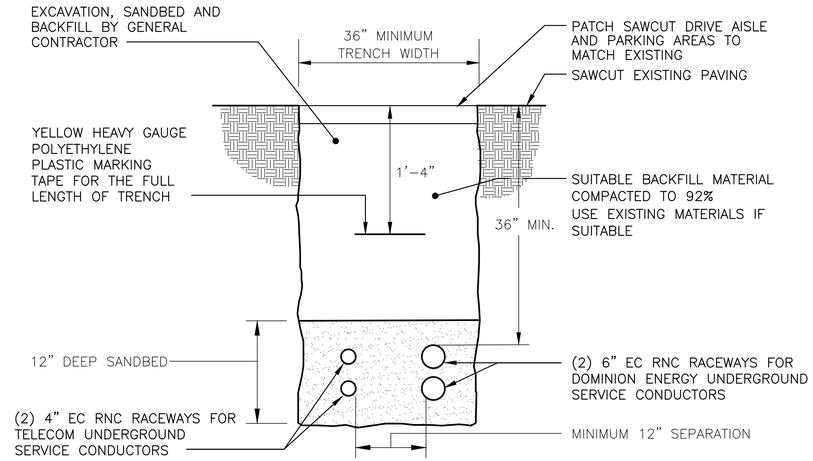


1 DETAIL - 4-WAY DUCTBANK SECTION

Scale: N.T.S.

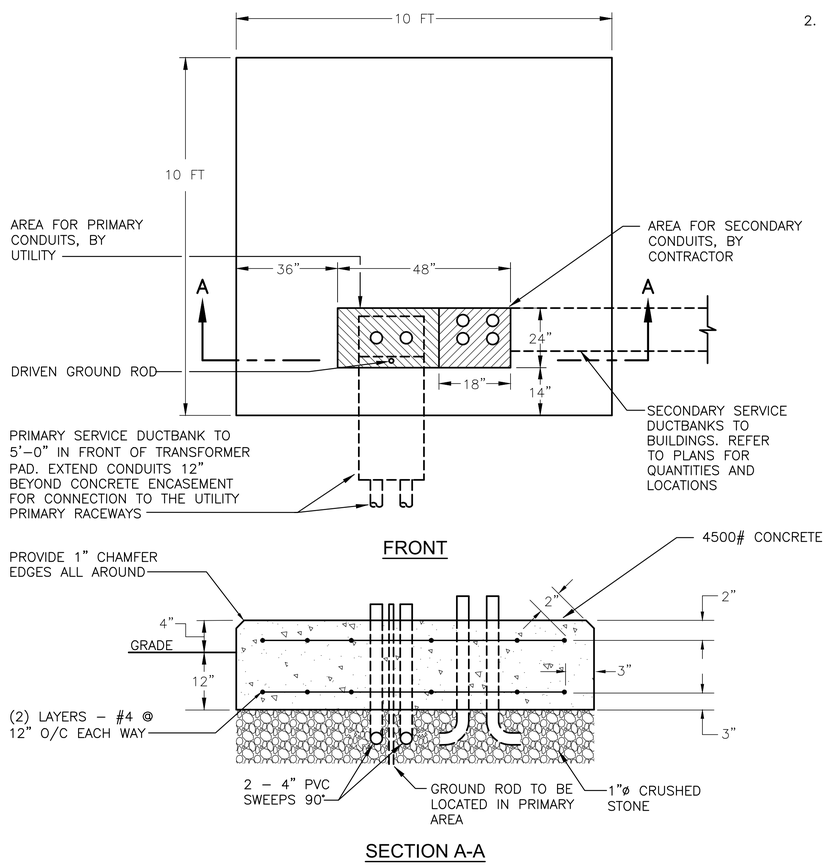


2 DETAIL - POWER & TELECOM RACEWAY DUCTBANKS

Scale: N.T.S.

NOTES:

1. EXCAVATION, SANDBED AND CLEAN BACKFILL BY GENERAL CONTRACTOR
2. EXACT ROUTING OF THE DUCTBANK SHALL BE COORDINATED IN THE FIELD BY THE ELECTRICAL CONTRACTOR WITH THE CIVIL ENGINEER IN ORDER TO AVOID OTHER UNDERGROUND UTILITIES.

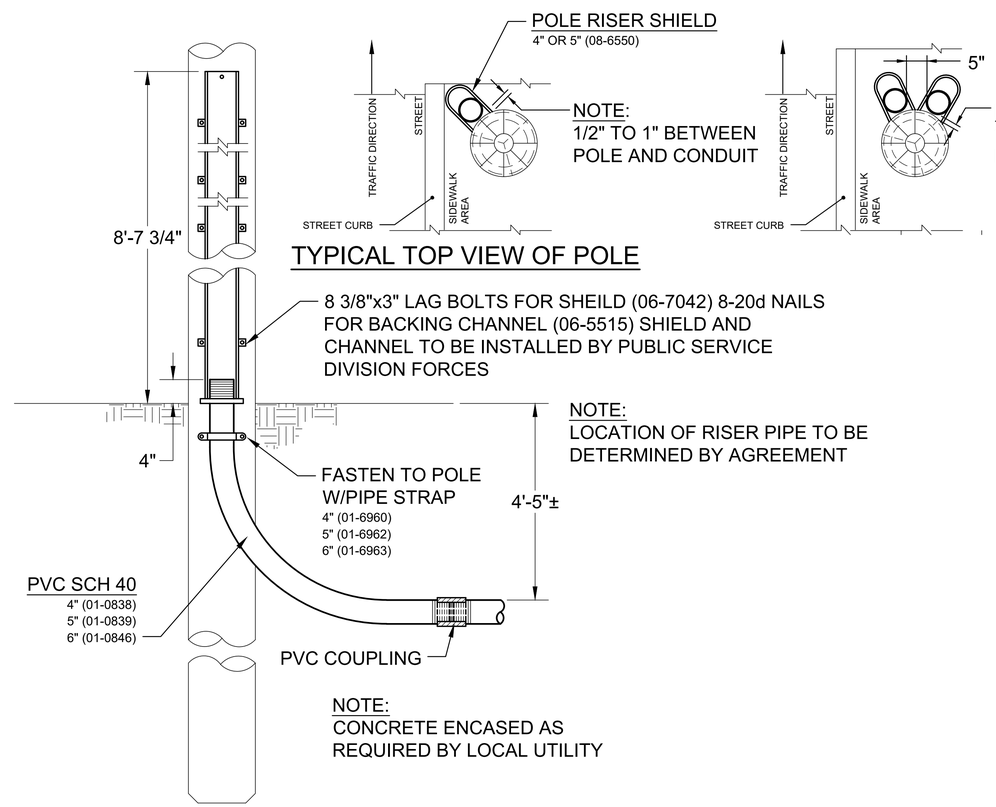


3 DETAIL - UTILITY TRANSFORMER PAD

Scale: N.T.S.

NOTE:

THE CONTRACTOR SHALL PROVIDE CAST-IN-PLACE TRANSFORMER PADS FOR NEW UTILITY COMPANY PAD MOUNTED TRANSFORMER IN ACCORDANCE WITH THE UTILITY STANDARDS.



4 DETAIL - POLE RISER

Scale: N.T.S.

RE Engineering, LLC
1927 Surf Circle
Pasadena, Maryland 21122
Phone (410) 804-5714
Phone (443) 756-9065
Fax (410) 360-8880

LDC
4385 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4172

DRY UTILITY DETAILS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE	REVIEW BY	APPROVED	DATE
	ISSUED FOR PERMIT		REVISION APPROVED BY:		

DATE	DESIGN	ENGINEER
05/12/20		

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
GARY T. RICH
Lic. No. 020322
05/12/2020
PROFESSIONAL ENGINEER

SCALE:

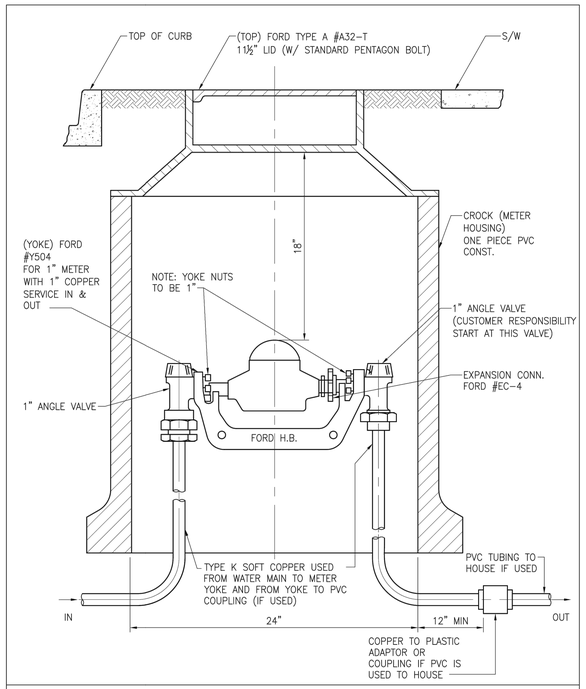
SHEET 10C OF 25

DATE: AUGUST 2, 2019

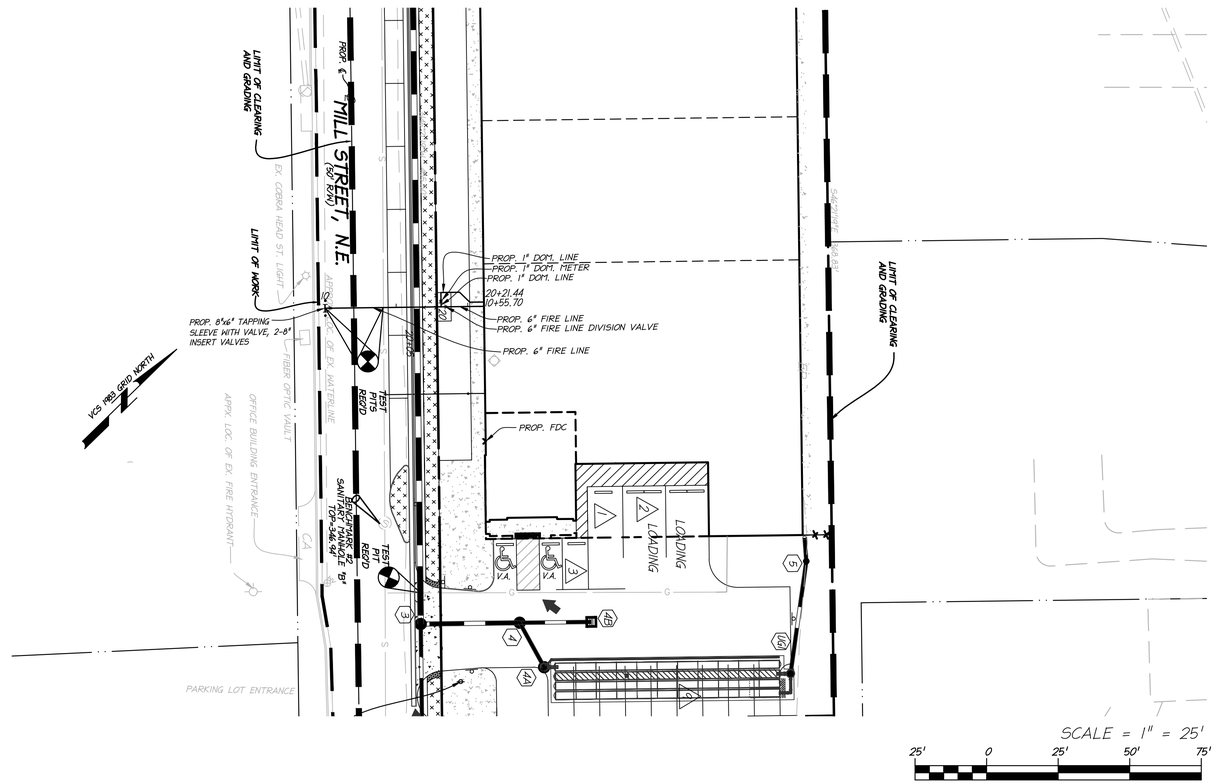
DRAFT: SLS | CHECK: GTR

FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\



1" WATER METER SETTING
TOWN OF VIENNA
DEPARTMENT OF PUBLIC WORKS
PREPARED: 11-11-2010



WATER SERVICE TABULATION SHEET

Mill Street Cube Smart

Project Number	19060
Date	12/10/19
Prepared by:	P.Lange
Code Book	IPC 2015

Look Up Table (1 - Flush Tank, 2 - Flush Valve): 2

Name of Fixture	Number of Fixtures	Load Values, in Water Supply Fixture Units			Supply Fixture Units		
		Cold	Hot	Total	Cold	Hot	Total
	(A)	(B)	(C)	(D)	(B X A)	(C X A)	(D X A)
Bathroom Group (Private, Flush Tank)		2.7	1.5	3.6	0.0	0.0	0.0
Bathroom Group (Private, Flush Valve)		6.0	3.0	8.0	0.0	0.0	0.0
Bathtub (Private)		1.0	1.0	1.4	0.0	0.0	0.0
Bathtub (Public)		3.0	3.0	4.0	0.0	0.0	0.0
Bidet (Private)		1.5	1.5	2.0	0.0	0.0	0.0
Combination Fixture (Private)		2.25	2.25	3.0	0.0	0.0	0.0
Dishwashing Machine (Private)		-	1.4	1.4	0.0	0.0	0.0
Drinking Fountain	1	0.25	-	0.25	0.3	0.0	0.3
Kitchen Sink (Private)		1.0	1.0	1.4	0.0	0.0	0.0
Kitchen Sink (Public)		3.0	3.0	4.0	0.0	0.0	0.0
Laundry Trays (1 to 3)		1.0	1.0	1.4	0.0	0.0	0.0
Lavatory (Private)		0.5	0.5	0.7	0.0	0.0	0.0
Lavatory (Public)	1	1.5	1.5	2.0	1.5	1.5	2.0
Service Sink	1	2.25	2.25	3.0	2.3	2.3	3.0
Hose bib	4	1	-	1.0	4.0		4.0
Shower Head (Public)		3.0	3.0	4.0	0.0	0.0	0.0
Shower Head (Private)		1.0	1.0	1.4	0.0	0.0	0.0
Urinal (Public, 1" Flush Valve)		10.0	-	10.0	0.0	0.0	0.0
Urinal (Public, ½" Flush Valve)		5.0	-	5.0	0.0	0.0	0.0
Urinal (Public, Flush Tank)		3.0	-	3.0	0.0	0.0	0.0
Washing Machine (Private, 8lb)		1.0	1.0	1.4	0.0	0.0	0.0
Washing Machine (Public, 8lb)		2.25	2.25	3.0	0.0	0.0	0.0
Washing Machine (Public, 15lb)		3.0	3.0	4.0	0.0	0.0	0.0
Water Closet (Private, Flush Valve)		6.0	-	6.0	0.0	0.0	0.0
Water Closet (Private, Flush Tank)		2.2	-	2.2	0.0	0.0	0.0
Water Closet (Public, Flush Valve)	1	10.0	-	10.0	10.0	0.0	10.0
Water Closet (Public, Flush Tank)		5.0	-	5.0	0.0	0.0	0.0
Water Closet (Public or Private, Flushometer)		2.0	-	2.0	0.0	0.0	0.0
Total					**18.0**	**3.8**	**19.3**

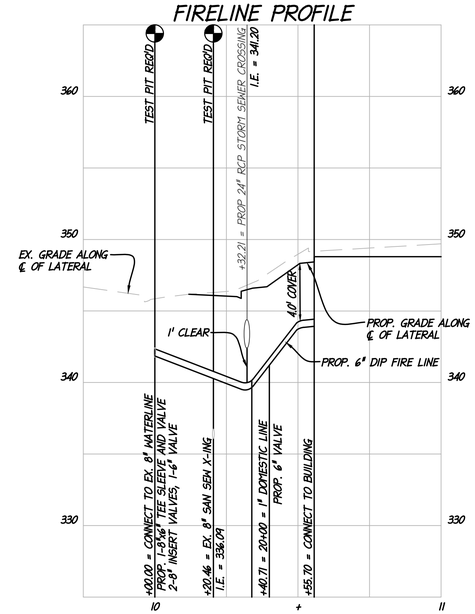
Demand in GPM Per Tables. Confirm type of closets.	33.4	0	34.2
Sprinkler Demand in GPM (NFPA 13R Only)			
Total Demand in GPM	33.4	0	**34.2**
Pipe Type (Copper K, Copper L or Smooth Steel) (K - Copper Type K, L - Copper Type L, Steel - Smooth Steel)			L
Pipe size (inches) Refer to pipe sizing chart based on demand		-	**1¼"**

Notes: Based on standard practice the water meter will be 1 pipe size smaller than line size, ie 1"

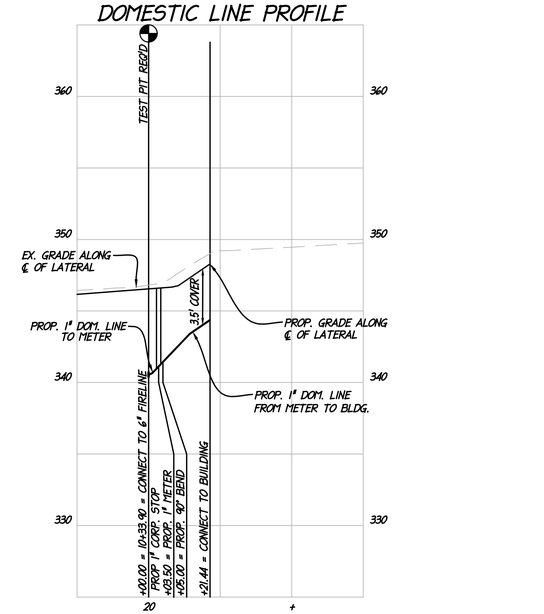
TOWN OF VIENNA WATER MAIN CONSTRUCTION NOTES

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. 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. THE DEVELOPER SHALL REQUEST INSPECTION BY THE PUBLIC WATER SUPPLY AGENCY THREE DAYS PRIOR TO COMMENCING CONSTRUCTION OF ANY WATER MAIN.
4. ALL BRANCH VALVES SHALL BE STRAPPED, AND ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET, UNLESS OTHERWISE APPROVED BY THE TOWN OF VIENNA.
5. BACKFLOW PREVENTER IS ABSOLUTELY REQUIRED FOR TEMPORARY CONSTRUCTION, IRRIGATION SYSTEM OR VEHICLE WASH AREAS, AND WHERE AS REQUIRED BY THE STATE WATERWORKS REGULATIONS.
6. PRIOR TO DIGGING, NOTIFY MISS UTILITY @ 1-800-552-7001 THREE (3) WORKING DAYS IN ADVANCE.
7. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF 1970, AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
8. THE DEVELOPER AGREES TO ACCEPT COMPLETE RESPONSIBILITY AND ALL COSTS FOR THE INSTALLATION OF WATER MAINS AND APPURTENANCES, 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 GRADED.
9. ALL WATER METERS SHALL BE PLACED BETWEEN THE BACK OF CURB AND PROPOSED SIDEWALK AND SHALL BE 1" WATER METERS WITH 24" METER BOXES.
10. ALL SERVICE LINES ARE 1" OFF WATER MAIN.
11. ALL T'S AND VALVES NEED TO BE CONNECTED WITH MEGALUGS RETAINER GLANDS.
12. ALL T'S NEED BLOCKING.
13. BEFORE THE START OF CONSTRUCTION, THE DEVELOPER MUST PROVIDE THE FOLLOWING INFO AND/OR EVIDENCE OF COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND LAWS:
    - IF ANY EASEMENTS ARE NEEDED, TWO COPIES OF THE RECORDED EASEMENT MUST BE PROVIDED, INCLUDING THE PLACE, DATE AND REFERENCE OF THE RECORDED EASEMENT.
    - WRITTEN NOTICE OF THE TENTATIVE STARTING DATE OF CONSTRUCTION, WHICH MUST BE A MINIMUM OF ONE WEEK FOLLOWING THE DATE OF NOTICE, IS NEEDED. IN ADDITION, THE DEVELOPER MUST PROVIDE THE NAMES AND PHONE NUMBERS OF TWO EMERGENCY CONTACTS.
14. WATER VALVES SHALL ONLY BE OPERATED BY TOWN OF VIENNA PERSONNEL. THE CONTRACTOR IS REQUIRED TO PROVIDE 2 WORKING DAYS NOTICE OF ANY SHUT DOWN REQUIRED. WATER DISRUPTIONS TO EXISTING CUSTOMERS SHALL BE KEPT TO A MINIMUM WHICH MAY REQUIRE THE CONTRACTOR TO INSTALL INSERTING VALVES.
15. TOWN WORKING HOURS FOR WATER AND SEWER ARE MONDAY THRU FRIDAY (7:00 AM - 3:30 PM) WITH THE EXCEPTION OF HOLIDAYS. ANY INSPECTIONS OR SHUT DOWNS OUTSIDE OF WORKING HOURS SHALL REQUIRE ADDITIONAL FEES.
16. ALL VALVE COVERS SHALL BE STAMPED WATER.
17. ALL FIRE HYDRANTS SHALL BE MUELLER.
18. DEVELOPER IS RESPONSIBLE FOR ALL ADJUSTMENTS DUE TO FIELD CONDITIONS.

FIRELINE PROFILE



DOMESTIC LINE PROFILE



SCALE = H: 1"=25'
V: 1"=5'
25' 0 25' 50' 75'

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4365 FX: 703-680-4775

WATERLINE PROFILES

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE
		REVISION APPROVED BY:			
		ENGINEER			

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS SHOWN

SHEET 11 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

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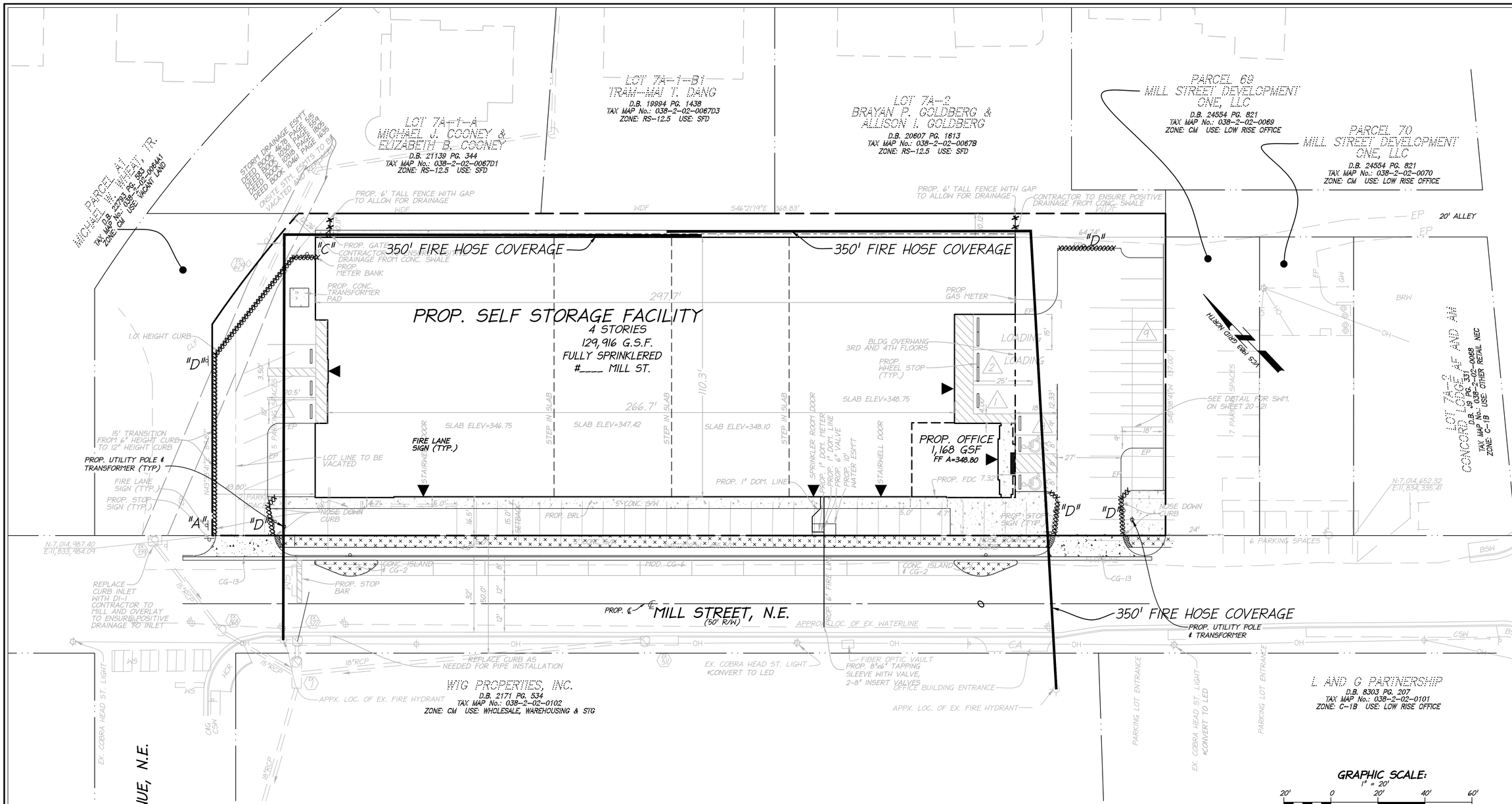

CURB DESIGNATION

ALL CURBS OR PAVED SPACES DESIGNATED AT FIRE LANES SHALL BE INDICATED BY YELLOW PAINT AS APPROVED BY THE FIRE PREVENTION DIVISION. IN AREAS WITHOUT CURBING, A 6" WIDE YELLOW STRIPE SHOULD BE APPLIED TO THE EDGE OF THE PAVEMENT. PAINT SHALL BE HIGHWAY TRAFFIC GRADE.

X X X X X X X X X CURB DESIGNATION

FIRE LANE NOTE

FIRE MARSHAL FIELD INSPECTION NECESSARY FOR FINAL APPROVAL OF FIRE LANES. FIRE LANES MUST HAVE FINAL APPROVAL PRIOR TO REQUEST FOR OCCUPANCY.

OWNER SHALL NOTIFY FIRE PREVENTION DIVISION. FIRE LANE SECTION 12099 GOVERNMENT CENTER PKWAY FAIRFAX, VIRGINIA 22035 WHEN FIRE LANES HAVE BEEN INSTALLED. (703)246-4891

SIGN TYPE "A"

STANDARD WORDING WITH AN ARROW AT BOTTOM POINTING TO THE RIGHT. ONE SIGN MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE AT END OF PAINTED AREA.

SIGN TYPE "C"

STANDARD WORDING WITH AN ARROW AT BOTTOM POINTING TO THE LEFT. ONE SIGN MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE AT END OF PAINTED AREA.

SIGN TYPE "D"

STANDARD WORDING TWO SIGNS MOUNTED PERPENDICULAR TO THE LINE OF CURBING OR PAVEMENT EDGE.

SIGN SPECIFICATIONS

A. METAL CONSTRUCTION, 12" X 18"

B. RED LETTERS ON REFLECTIVE WHITE BACKGROUND WITH 3/8" RED TRIM STRIP AROUND ENTIRE OUTER EDGE OF SIGN.

C. LETTERING ON SIGN TO BE: "NO PARKING OR STANDING FIRE LANE"

D. LETTERING SIZE TO BE AS FOLLOWS: "NO PARKING" AND "STANDING" - 2", OR 1, FIRE LANE 2.5", ARROWS 1" X 6" SOLID SHAFT WITH A SOLID HEAD 1.5" WIDE AND 2" DEEP.

E. SIGNS ARE TO BE MOUNTED 7' FROM THE GROUND TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE FAIRFAX COUNTY FIRE PREVENTION DIVISION, FIRE LANES SECTION.

F. POSTS FOR SIGNS, WHEN REQUIRED, SHALL BE METAL AND SECURELY MOUNTED, UNLESS WRITTEN PERMISSION FOR ALTERNATIVES IS OBTAINED PRIOR TO INSTALLATION FROM FAIRFAX COUNTY PREVENTION DIVISION, FIRE LANES SECTION.

G. OTHER SPECIAL SIGNS AS APPROVED BY THE FIRE PREVENTION DIVISION.

REQUIRED FIRE FLOW:

THERE ARE NO PROPOSED FIREWALLS. THE TOTAL GROSS SQUARE FOOTAGE OF THE BUILDING IS 131,084SF (129,916 + 1,168)

REQUIRED FIRE FLOW = 18(C)(A^(1/2))(SPRINKLER)(OCCUPANCY)(EXPOSURE)
=18(0.8)(131,084SF^(1/2))(0.5)(0.9)(1.2)
=2815 GPM @ 20PSI (REQUIRED)

FIRE MARSHAL NOTES

AVAILABLE FIRE FLOW 2,951 GPM AVAILABLE @ 20PSI (GAL./MIN.)

SOURCE OF FIRE FLOW INFO. TOWN OF VIENNA (12/06/2019)

TYPE OF CONSTRUCTION – USBC II B

USE GROUP CLASSIFICATION – USBC S-1

PROPOSED BUILDING HEIGHT 45' (FT.)

BUILDING TO BE FULLY SPRINKLERED ☑ YES ☐ NO

IF YES, CHECK APPROPRIATE STANDARD: NFPA 13 ☑ ; NFPA 13D ☐ ; NFPA 13R ☐

PROPOSED NUMBER OF FLOORS 4

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

FIRE LANE PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW	APPROVED	DATE

ENGINEER

REVISION APPROVED BY:

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1"=20'

SHEET 12 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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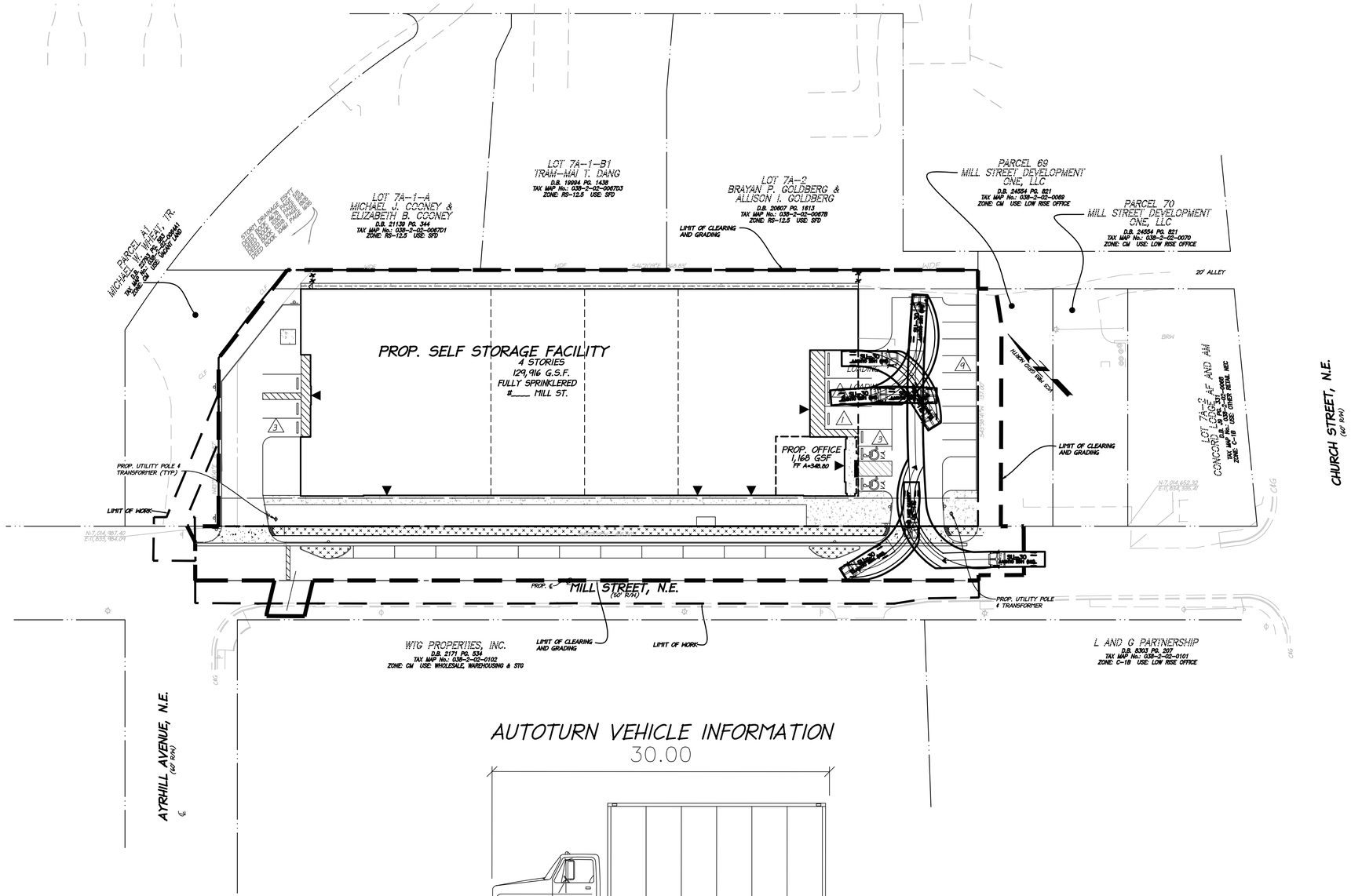
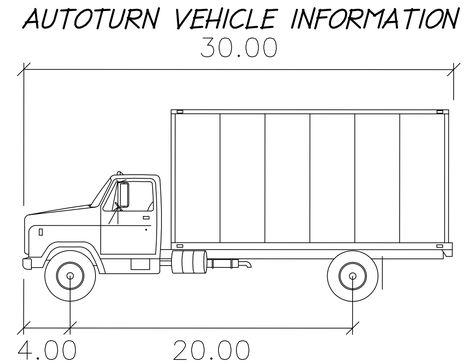


AUTOTURN VEHICLE INFORMATION



SU-30

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

NOTES:

1. THIS AUTOTURN ANALYSIS WAS CREATED TO SHOW THE TURNAROUND OF A BOX TRUCK (SU-30) THAT WOULD UTILIZE THE PROPOSED SELF STORAGE BUILDING.
2. THIS ANAYLSIS IS NOT INTENDED TO SHOW THE TURNAROUND OF ANY EMS VEHICLES DUE TO THE DRIVE ISLE BEING LESS THAN 150' IN LENGTH.

GRAPHIC SCALE:
1" = 30'

30' 0' 30' 60' 90'

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

AUTOTURN EXHIBIT

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1"=30'

SHEET 13 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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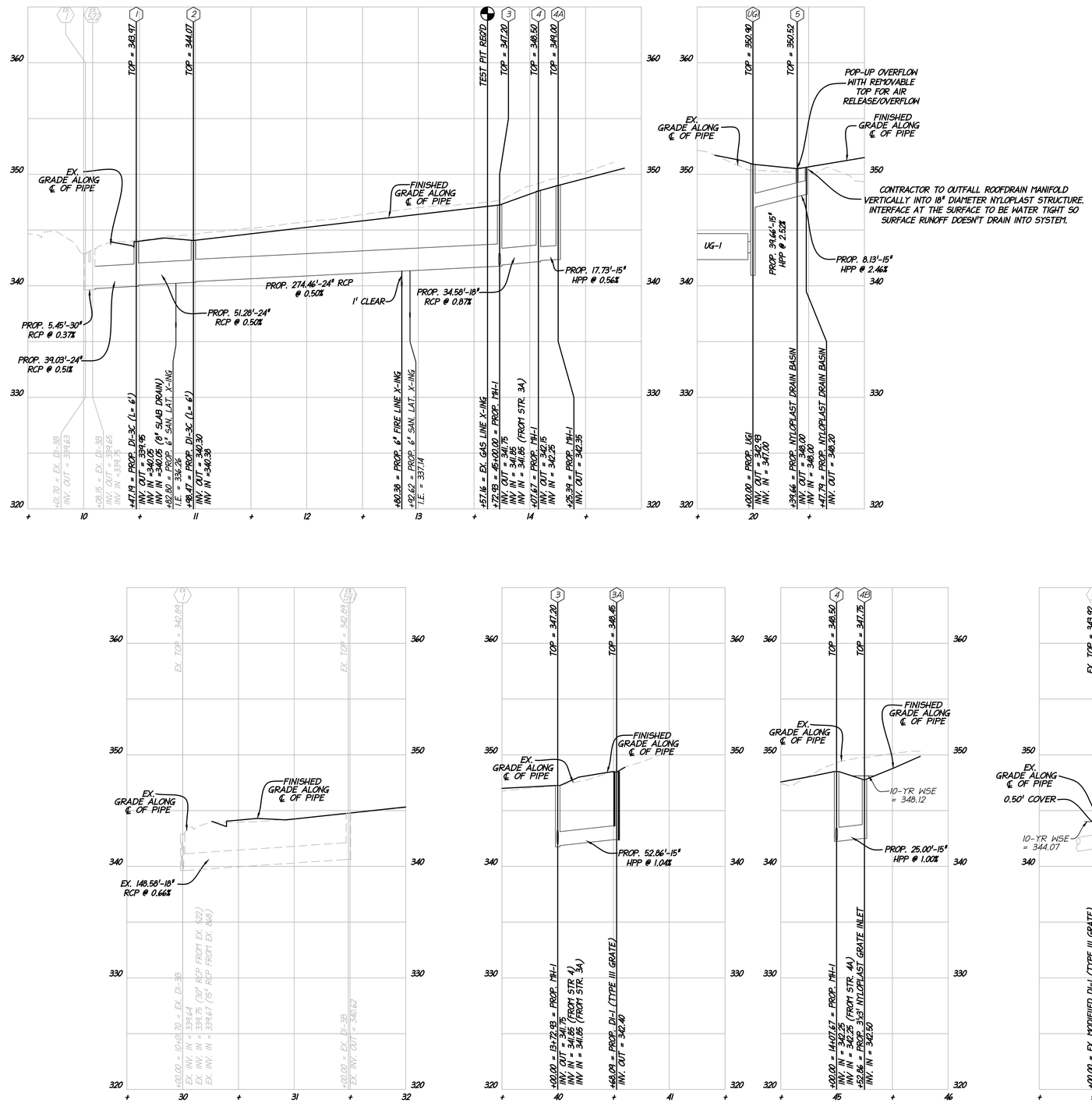

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

STORM SEWER PROFILES

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

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ENGINEER

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS SHOWN

SHEET 14 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

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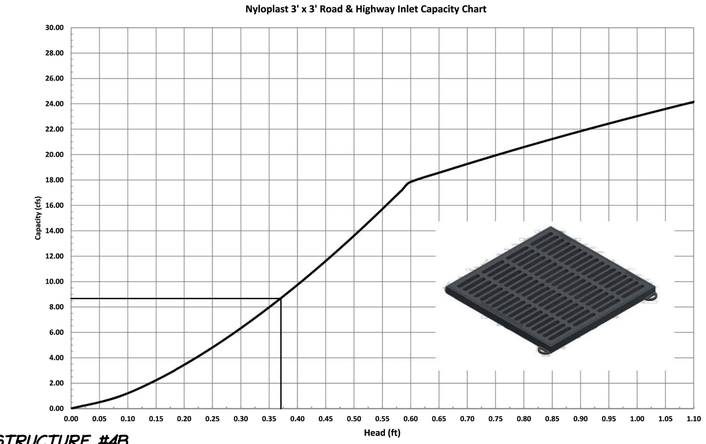

STRUCTURE #4B
(ASSUME 50% CLOGGED)
*Q_{10} = C*I*A*2(50% CLOGGED)= 0.45*6.77*1.54*2 = 9.38 CFS*
HEAD = 0.37
GRATE = 347.75
10-YEAR WSE = 347.75 + 0.37 = 348.12

Nyloplast
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490
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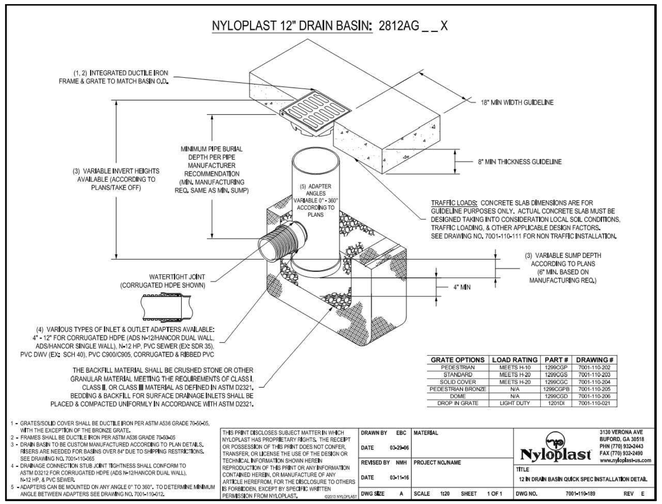
STORM SEWER DESIGN COMPUTATIONS

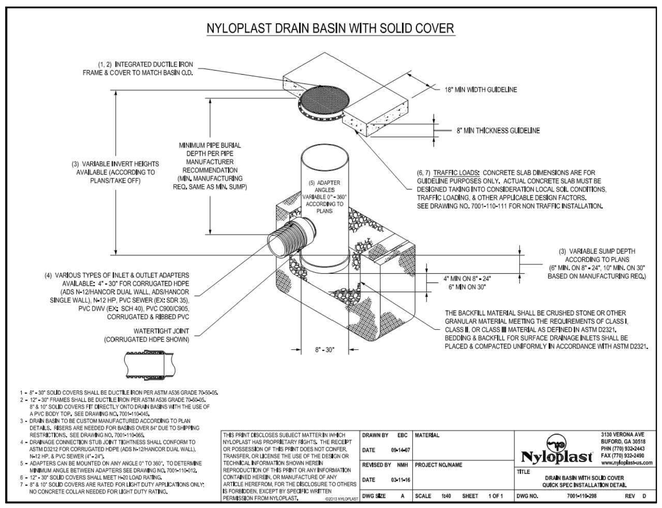
FROM POINT	TO POINT	DRAIN. AREA ACRES	RUNOFF COEFF C	CA INCREM	CA ACCUM	INLET TIME MIN	RAINFALL INTENSITY IN/HR	Q RUNOFF CFS	INVERT ELEV UPPER FT	INVERT ELEV LOWER FT	LENGTH FT	SLOPE FT/FT	DIA IN	n	CAPACITY CFS	VELOCITY FPS	FLOW TIME SEC	REMARKS
OFFSITE	EX629	4.04	0.73	2.95	2.95	5.00	6.77	19.97										
EX629	EX339	0.00	0.00	0.00	2.95	5.00	6.77	19.97	343.55	341.57	117.59	1.68%	24	0.013	**29.43**	10.24	11.5	19"x30" ELLIPTICAL
EX339	EX868	0.21	0.70	0.15	3.10	5.00	6.77	20.97	341.57	340.55	47.95	2.13%	15	0.013	**9.45**	7.85	6.1	
EX868	EX1	0.00	0.00	0.00	3.10	5.00	6.77	20.97	340.45	339.67	35.50	2.20%	15	0.013	**9.60**	7.98	4.4	
RD1	5	0.76	0.90	0.68	0.68	5.00	6.77	4.63	348.20	348.00	8.13	2.46%	15	0.011	**12.01**	9.34	0.9	
5	UG1	0.00	0.00	0.00	0.68	5.00	6.77	4.63	348.00	347.00	39.66	2.52%	15	0.011	**12.16**	9.35	4.2	
4B	4	1.54	0.45	0.69	0.69	5.00	6.77	4.69	342.50	342.25	25.00	1.00%	15	0.011	**7.65**	6.65	3.8	
3A	3	0.35	0.70	0.25	0.25	5.00	6.77	1.66	342.40	341.85	52.86	1.04%	15	0.011	**7.81**	5.15	10.3	
EX511	EX1	0.76	0.90	0.68	0.68	5.00	6.77	4.63	340.62	339.64	148.58	0.66%	18	0.013	**8.55**	5.02	29.6	
4A	4	0.00	0.00	0.00	0.43	5.00	6.77	2.91	342.35	342.25	17.73	0.56%	15	0.011	**5.75**	4.78	3.7	10YR ROUTED FLOW
4	3	0.00	0.00	0.00	1.12	5.00	6.77	7.60	342.15	341.85	34.58	0.87%	18	0.013	**9.81**	6.24	5.5	
3	2	0.00	0.00	0.00	1.37	5.00	6.77	9.26	341.75	340.38	274.46	0.50%	24	0.013	**16.03**	5.37	51.1	
2	1	0.44	0.85	0.37	1.74	5.00	6.77	11.79	340.30	340.05	51.28	0.50%	24	0.013	**15.96**	5.64	9.1	
1	EX522	0.71	0.55	0.39	2.13	5.00	6.77	14.44	339.95	339.75	39.03	0.51%	24	0.013	**16.24**	5.94	6.6	
EX522	EX1	0.06	0.90	0.05	2.19	5.00	6.77	14.80	339.65	339.63	5.45	0.37%	30	0.013	**24.91**	5.38	1.0	

STORM SEWER GRATE INLET COMPUTATIONS:

INLET	AREA	RUNOFF	GRATE	10 YR Q	10 YR	GRATE	10 YR
EX339	0.21	0.7	DI-1	1.00	0.15	343.92	344.07
3A	0.35	0.7	DI-1	1.66	0.20	348.45	348.65



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-20	1299CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021



STORM SEWER INLET DESIGN COMPUTATIONS: — DESIGN STORM: 2 YR

INLET NO.	INLET TYPE	INLET LENGTH (FT)	DRAINAGE AREA (A)	C	CA INC.	CA CUM.	I (IN/HR)	Q INCR (CFS)	Q_a CARRYOVER (CFS)	Q_t GUTTER FLOW (CFS)	S_t GUTTER SLOPE (FT/FT)	S_x CROSS SLOPE (FT/FT)	T SPREAD (FT)	W (FT)	W/T	S_w (FT/FT)	S_w/S_x	E_o	a = 12W(S_w-S_x) + Local Depression	S_y =a/(12W)	S_e=S_x+S_y(E_o) (FT/FT)	COMPUTED LENGTH, L_t (FT)	L/L_T	E, EFFICIENCY	Q_i INTERCEPTED (CFS)	Q_b, CARRYOVER (CFS)	Sag Inlets Only d (FT)	h (FT)	d/h	T, SPREAD @ SAG
1	DI3-C	6	0.71	0.55	0.39	0.39	4.00	1.56	0.00	1.56	0.0010	0.0200	N/A	1.50	N/A	0.0833	N/A	N/A	N/A	N/A	N/A	N/A	-	-	1.56	0.00	0.17	0.46	0.37	8.55
1L	DI-3C	3	0.36	0.55	0.20	0.20	4.00	0.78	0.00	0.78	0.0010	0.0200	8.10	1.50	0.19	0.0833	4.17	0.61	3.14	0.174	0.126	-	-	-	-	-				
1R	DI-3C	3	0.36	0.55	0.20	0.20	4.00	0.78	0.00	0.78	0.0010	0.0200	8.10	1.50	0.19	0.0833	4.17	0.61	3.14	0.174	0.126	-	-	-	-	-				
2	DI3-C	6	0.44	0.85	0.37	0.37	4.00	1.50	0.00	1.50	0.0010	0.0200	N/A	1.50	N/A	0.0833	N/A	N/A	N/A	N/A	N/A	N/A	-	-	1.50	0.00	0.17	0.46	0.36	8.31
2L	DI-3C	3	0.22	0.85	0.19	0.19	4.00	0.75	0.00	0.75	0.0010	0.0200	7.94	1.50	0.19	0.0833	4.17	0.61	3.14	0.174	0.127	-	-	-	-	-				
2R	DI-3C	3	0.22	0.85	0.19	0.19	4.00	0.75	0.00	0.75	0.0010	0.0200	7.94	1.50	0.19	0.0833	4.17	0.61	3.14	0.174	0.127	-	-	-	-	-				

HYDRAULIC GRADE LINE COMPUTATIONS

PROJECT: Mill Street
COUNTY: Town of Vienna
COMP. BY: PDR

0.013 (RCP)

AT INLET #	OUTLET WATER SURFACE ELEV (FT)	OUTLET PIPE DIAM Do (IN)	OUTLET FLOW-RATE Qo (CFS)	OUTLET PIPE LENGTH Lo (FT)	FRIC-TION SLOPE Sfo (%)	FRIC-TION LOSS Hf (FT)	JUNCTION LOSS: VELOCITY OUTLET PIPE Vo (FPS)	CONTR LOSS Ho (FT)	DISCHARGE INFLOW PIPE Qi (CFS)	VELOCITY INFLOW PIPE Vi (FPS)	MAX INFLOW PRODUCT Qi * Vi (FT^4/S^2)	INFLOW VELOCITY HEAD (Vi^2)/(2g) (FT)	MAX EXP.AN. LOSS Hi (FT)	MAX ANGLE Ai (DEG)	LOSS COEFF K	MAX BEND LOSS Hb (FT)	TOTAL HEAD LOSS Ht (FT)	INLET CORRECT FACTOR 1.3 Ht (FT)	SHAPE CORRECT FACTOR 0.5 Ht (FT)	FINAL HEAD LOSS H (FT)	INLET WATER SURFACE ELEV (FT)	INLET RIM ELEV (FT)	HGL BELOW RIM (FT)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		(13)	(14)		(15)	(16)	(17)	(18)	(19)	(20)	(21)	
EX868	340.67	15	20.97	35.50	10.60%	**3.763**	8.0	**0.247**	20.97	7.9	164.66	0.9574	**0.335**	22	0.27	0.258	0.841	0.84	0.420	**4.183**	344.85	343.96	-0.89
EX339	344.85	15	20.97	47.95	10.60%	**5.083**	7.9	**0.239**	19.97	10.2	204.45	1.6267	**0.569**	64	0.58	0.943	1.752	1.75	0.876	**5.959**	350.81	343.75	-7.06
EX629	350.81	24	19.97	117.59	0.80%	**0.941**	10.2	**0.407**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.407	0.53	0.264	**1.205**	352.02	354.20	2.18
5	348.00	15	4.63	39.66	0.50%	**0.198**	9.3	**0.339**	4.63	9.3	43.23	1.3536	**0.474**	11	0.14	0.192	1.005	1.01	0.503	**0.701**	348.70	350.50	1.80
4A	344.05	15	2.91	17.73	0.20%	**0.035**	4.8	**0.089**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.089	0.12	0.058	**0.093**	344.14	349.00	4.86
4B	344.05	15	4.69	25.00	0.50%	**0.125**	6.7	**0.172**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.172	0.22	0.112	**0.237**	344.28	347.75	3.47
3A	343.56	15	1.66	52.86	0.10%	**0.053**	5.2	**0.103**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.103	0.13	0.067	**0.120**	343.68	348.45	4.77
EX522	341.63	30	14.80	5.45	0.10%	**0.005**	5.4	**0.112**	14.44	5.9	85.73	0.5475	**0.192**	15	0.19	0.104	0.408	0.41	0.204	**0.209**	341.84	343.53	1.69
1	341.84	24	14.44	39.03	0.40%	**0.156**	5.9	**0.137**	11.79	5.6	66.48	0.4934	**0.173**	75	0.64	0.313	0.623	0.62	0.311	**0.468**	342.31	344.07	1.76
2	342.31	24	11.79	51.28	0.30%	**0.154**	5.6	**0.123**	9.26	5.4	49.70	0.4472	**0.157**	0	0.00	0.000	0.280	0.36	0.182	**0.336**	342.64	344.17	1.53
3	342.64	24	9.26	274.46	0.20%	**0.549**	5.4	**0.112**	7.60	6.2	47.44	0.6045	**0.212**	90	0.70	0.423	0.747	0.75	0.373	**0.922**	343.56	347.20	3.64
4	343.56	18	7.60	34.58	0.50%	**0.173**	6.2	**0.151**	2.91	4.8	13.91	0.3545	**0.124**	62	0.57	0.202	0.477	0.62	0.310	**0.483**	344.05	348.50	4.45
4A	344.05	15	2.91	17.73	0.20%	**0.035**	4.8	**0.089**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.089	0.12	0.058	**0.093**	344.14	349.00	4.86

100-YEAR OVERLAND RELIEF COMPUTATIONS

STRUCTURE NUMBER	A (Ac)	C	CA	I (in/hr)	Q_{100} (cfs)	L (ft)	H (ft)	WEIR ELEV (ft)	100 OVERLAND RELIEF ELEV.
3A	0.35	0.70	0.25	9.10	2.23	20	0.10	348.65	348.75
4B	1.54	0.45	0.69	9.10	6.31	25	0.18	348.30	348.48

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PH: 703-680-4585 FX: 703-680-4775

STORM SEWER COMPUTATIONS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: N/A

SHEET 15 OF 25

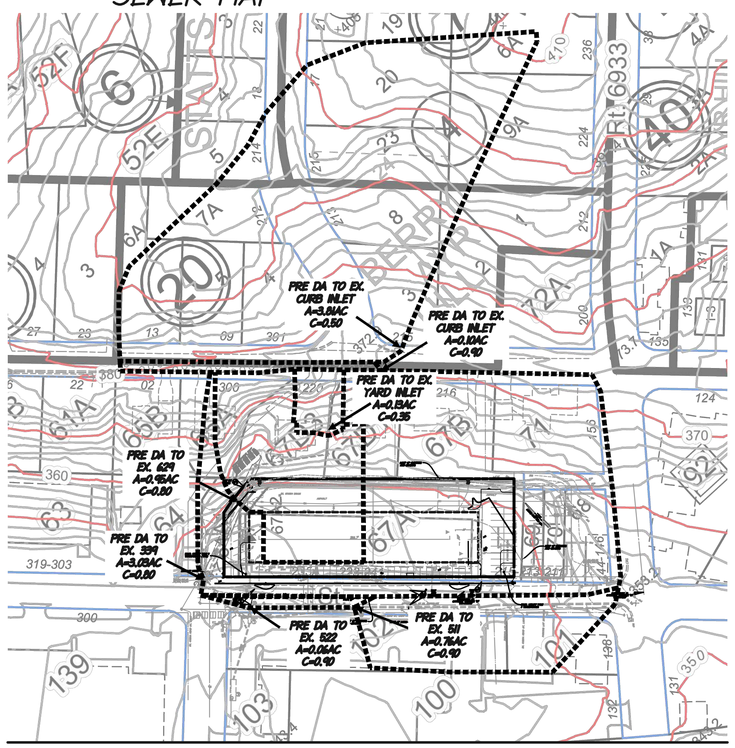
DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

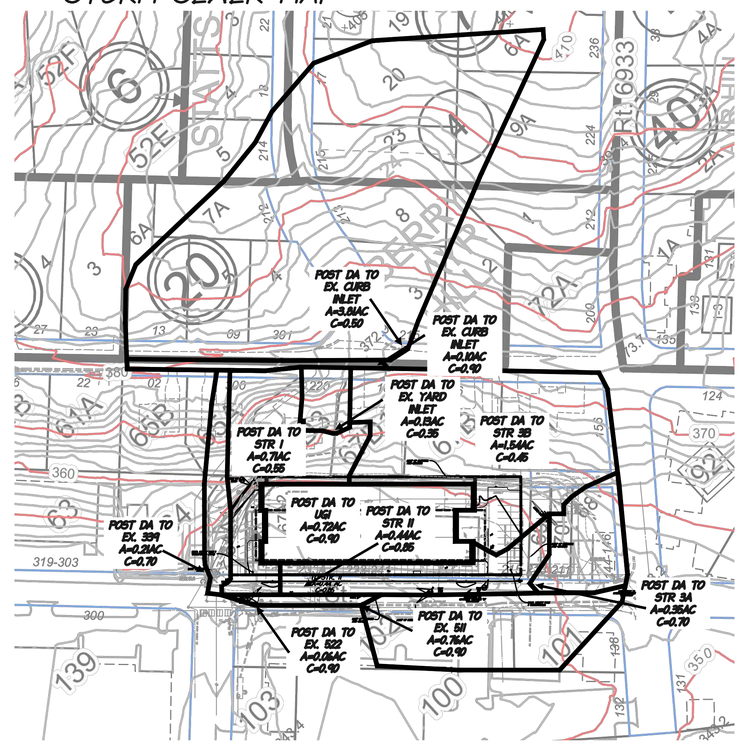
FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-2-0-STMP.dwg

OVERALL PRE-DEVELOPED STORM SEWER MAP



OVERALL POST-DEVELOPED STORM SEWER MAP



PRE-DEVELOPED STORM SEWER

STORM SEWER DESIGN COMPUTATIONS

FROM POINT	TO POINT	DRAIN. AREA	RUNOFF COEFF	CA		INLET TIME	RAINFALL INTENSITY	Q RUNOFF	INVERT ELEV		LENGTH	SLOPE	DIA	n	CAPACITY	VELOCITY	FLOW TIME	REMARKS
				INCREM	ACCUM				UPPER	LOWER								
		ACRES	C			MIN	IN/HR	CFS	FT	FT	FT	FT/FT	IN		CFS	FPS	SEC	
OFFSITE	EX629	4.04	0.73	2.95	2.95	5.00	6.77	19.97										
EX629	EX339	0.95	0.80	0.76	3.71	5.00	6.77	25.12	344.00	341.67	136.98	1.70%	15	0.013	**8.45**	7.02	19.5	
EX339	EX868	3.03	0.80	2.42	6.13	5.00	6.77	41.53	341.57	340.55	47.95	2.13%	15	0.013	**9.45**	7.85	6.1	
EX868	EX1	0.00	0.00	0.00	6.13	5.00	6.77	41.53	340.45	339.67	35.50	2.20%	15	0.013	**9.60**	7.98	4.4	
EX511	EX1	0.76	0.90	0.68	0.68	5.00	6.77	4.63	340.62	339.64	148.58	0.66%	18	0.013	**8.55**	5.02	29.6	
EX522	EX1	0.06	0.90	0.05	0.05	5.00	6.77	0.37	339.65	339.63	5.45	0.37%	18	0.013	**6.38**	2.01	2.7	

PRE-DEVELOPED HYDRAULIC GRADE LINE COMPUTATIONS

HYDRAULIC GRADE LINE COMPUTATIONS

PROJECT: Mill Street
COUNTY: Town of Vienna
COMP. BY: PDR

MANNING ROUGHNESS COEFFICIENT = 0.013 (RCP)

AT INLET #	HIDE TO INLET #	HIDE OUTLET INVERT ELEV (FT)	OUTLET WATER SURFACE ELEV (FT)	OUTLET PIPE DIAM Do (IN)	OUTLET FLOW-RATE Qo (CFS)	OUTLET PIPE LENGTH Lo (FT)	FRIC-TION SLOPE Sfo (%)	FRIC-TION LOSS Hf (FT)	JUNCTION LOSS: VELOCITY OUTLET PIPE Vo (FPS)	CONTR. LOSS Ho (FT)	DISCHARGE INFLOW PIPE Qi (CFS)	VELOCITY INFLOW PIPE Vi (FPS)	MAX INFLOW PRODUCT Qi * Vi (FT^4/S^2)	INFLOW VELOCITY HEAD (Vi^2)/(2g) (FT)	MAX EXPAN. LOSS Hi (FT)	MAX ANGLE Ai (DEG)	LOSS COEFF K	MAX BEND LOSS Hb (FT)	TOTAL HEAD LOSS Ht (FT)	INLET CORRECT FACTOR 1.3 Ht (FT)	SHAPE CORRECT FACTOR 0.5 Ht (FT)	FINAL HEAD LOSS H (FT)	INLET WATER SURFACE ELEV (FT)	INLET RIM ELEV (FT)	HGL BELOW RIM 0' min-VDOT 1' min-FFX (FT)
(1)			(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		(13)	(14)		(15)	(16)	(17)	(18)	(19)	(20)	(21)	
EX868	**EX1**	339.67	340.67	15	41.53	35.50	41.40%	**14.697**	8.0	**0.247**	41.53	7.9	326.10	0.9574	**0.335**	22	0.27	0.258	0.841	0.84	0.420	**15.117**	355.79	343.96	-11.83
EX339	**EX868**	340.55	355.79	15	41.53	47.95	41.40%	**19.851**	7.9	**0.239**	25.12	7.0	176.38	0.7655	**0.268**	64	0.58	0.444	0.951	1.24	0.618	**20.470**	376.26	344.25	-32.01
EX629	**EX339**	341.67	376.26	15	25.12	136.98	15.20%	**20.821**	7.0	**0.191**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.191	0.25	0.124	**20.945**	397.20	348.14	-49.06
EX511	**EX1**	339.64	340.84	18	4.63	148.58	0.20%	**0.297**	5.0	**0.098**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.098	0.13	0.064	**0.361**	341.20	344.65	3.45
EX522	**EX1**	339.63	340.83	18	0.37	5.45	0.00%	**0.000**	2.0	**0.016**	0.00	0.0	0.00	0.0000	**0.000**	0	0.00	0.000	0.016	0.02	0.010	**0.010**	340.84	343.53	2.69

30' 0 30' 60' 90'

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4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

OVERALL PRE AND POST STM SEWER MAPS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS SHOWN

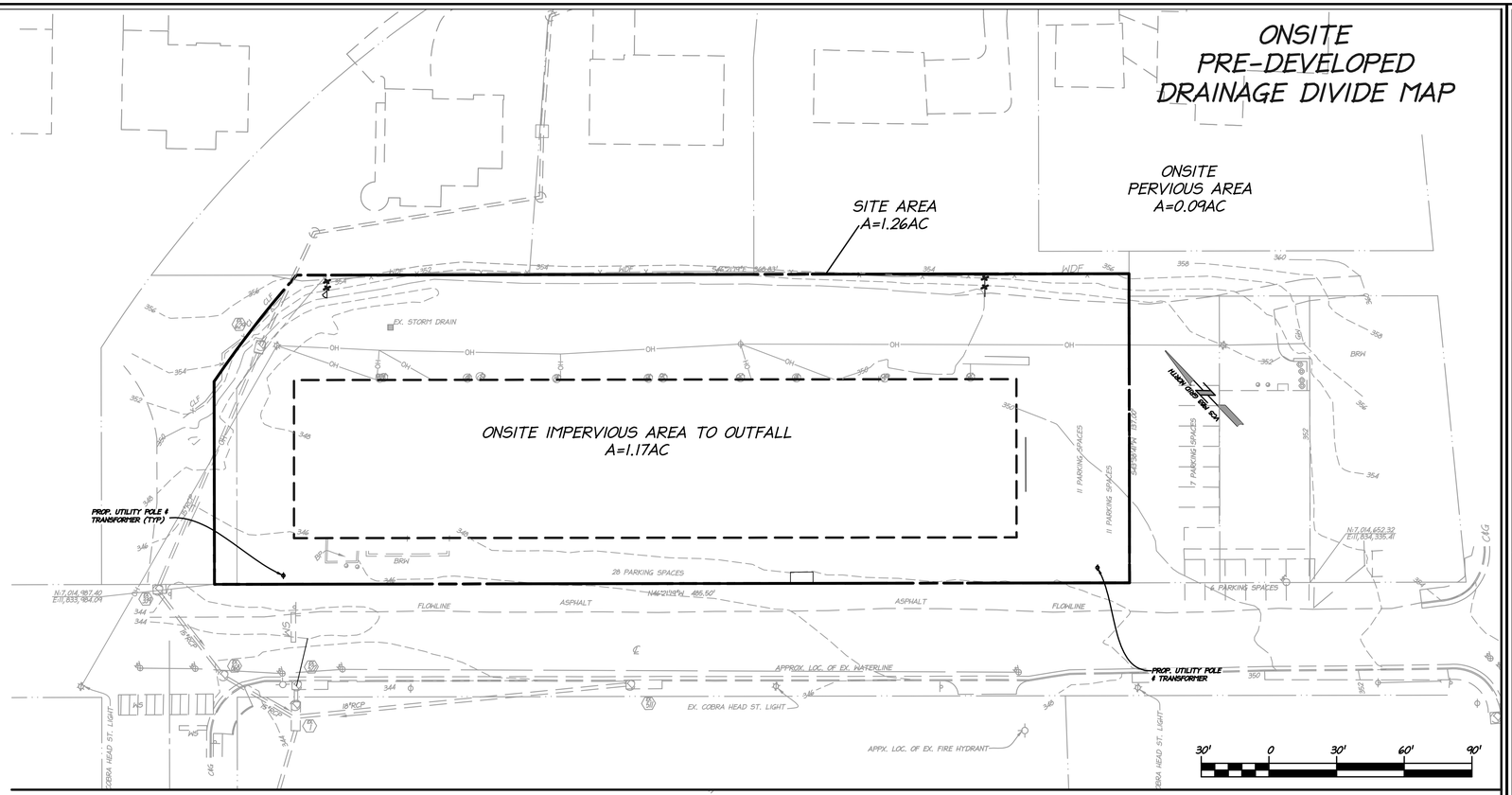
SHEET 16 OF 25

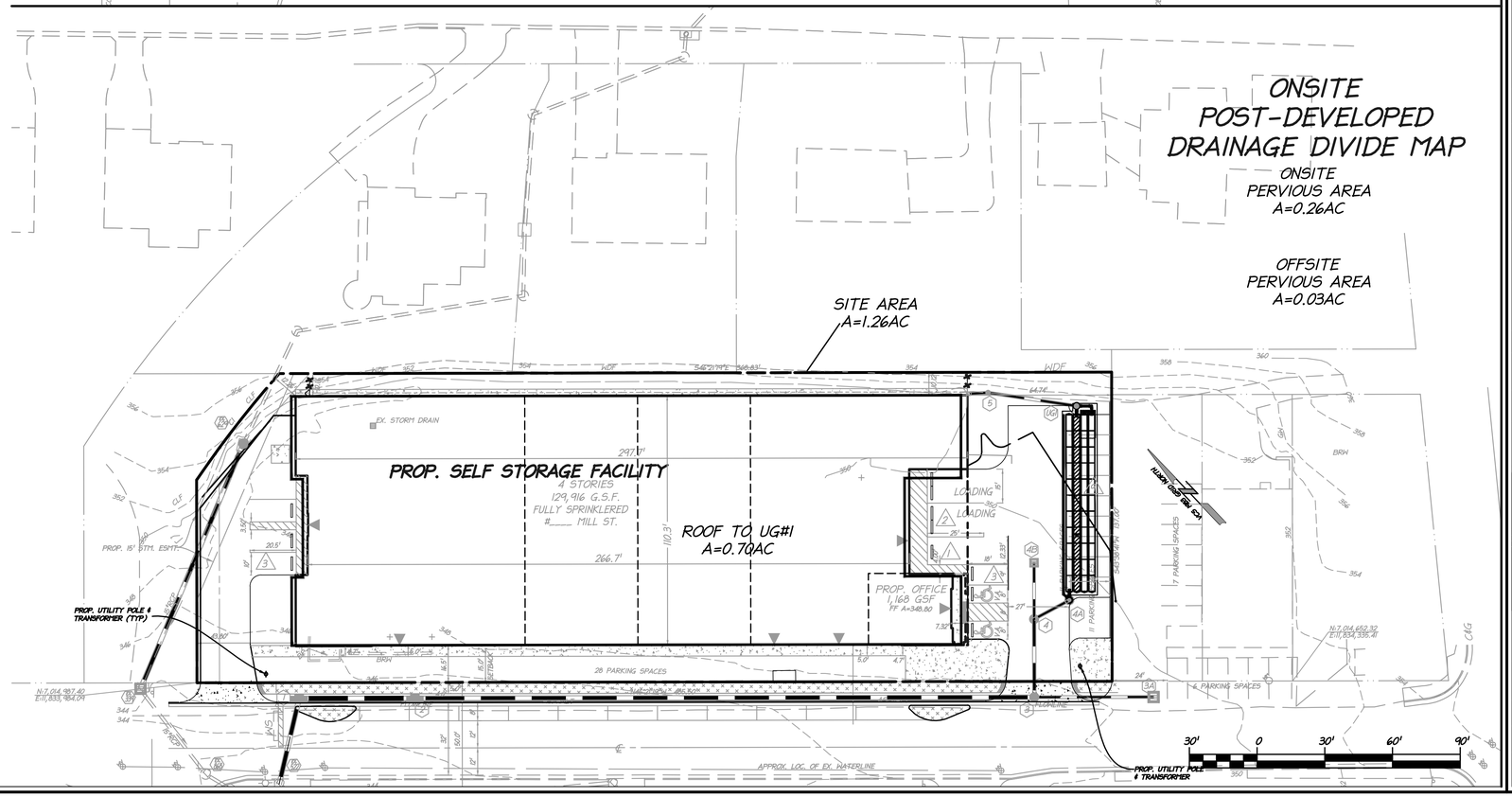
DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\ 16220-SWM.dwg





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4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

ON-SITE
PRE AND POST SWM
DIVIDE MAPS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED BY	DATE

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P:\FY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-SWM.dwg

PRE-DEVELOPED CN

TR-55 METHODOLOGY WAS USED FOR CALCULATING THE CN FACTORS FOR THE SITE. THE PRE-DEVELOPED SITE CONDITIONS ARE PREDOMINANTLY IMPERVIOUS SURFACE D SOILS. COMPOSITE CN CALCULATIONS CAN BE FOUND BELOW.

PRE-DEVELOPED - AREA 1 (ONSITE)

MILL STREET
ONSITE UNDETAINED
VIENNA, VIRGINIA

WATERSHED PEAK TABLE

SUB-AREA	PEAK FLOW BY RAINFALL RETURN PERIOD		
AREA 1	1-YR	2-YR	10-YR
	3.46 CFS	4.23 CFS	6.59 CFS

SUB-AREA LAND USE AND CURVE NUMBER DETAILS

SUB-AREA	LAND USE	HYDROLOGIC SOIL GROUP	AREA(AC)	CN
AREA 1				
	IMPERVIOUS		1.17	98
	OPEN SPACE	D	0.09	80
	TOTAL AREA/WEIGHTED CURVE NUMBER		1.26	97

POST-DEVELOPED CN

TR-55 METHODOLOGY WAS USED FOR CALCULATING THE COMPOSITE CN FACTORS FOR THE SITE. THE POST-DEVELOPED SITE CONDITION ARE OPEN SPACE AND PAVEMENT IN GOOD CONDITION WITH TYPE D SOIL. COMPOSITE CN CALCULATIONS CAN BE FOUND BELOW.

POST-DEVELOPED - AREA 1 (UNCONTROLLED-ONSITE)

MILL STREET
ONSITE UNDETAINED
VIENNA, VIRGINIA

WATERSHED PEAK TABLE

SUB-AREA	PEAK FLOW BY RAINFALL RETURN PERIOD		
AREA 1	1-YR	2-YR	10-YR
	1.12 CFS	1.45 CFS	2.50 CFS

SUB-AREA LAND USE AND CURVE NUMBER DETAILS

SUB-AREA	LAND USE	HYDROLOGIC SOIL GROUP	AREA(AC)	CN
AREA 1				
	IMPERVIOUS		0.28	98
	OPEN SPACE	D	0.26	80
	TOTAL AREA/WEIGHTED CURVE NUMBER		0.54	89

POST-DEVELOPED - AREA 1 (CONTROLLED-ONSITE)

MILL STREET
ONSITE DETAINED
VIENNA, VIRGINIA

WATERSHED PEAK TABLE

SUB-AREA	PEAK FLOW BY RAINFALL RETURN PERIOD		
AREA 1	1-YR	2-YR	10-YR
	2.02 CFS	2.46 CFS	3.81 CFS

SUB-AREA LAND USE AND CURVE NUMBER DETAILS

SUB-AREA	LAND USE	HYDROLOGIC SOIL GROUP	AREA(AC)	CN
AREA 1				
	IMPERVIOUS		0.70	98
	OPEN SPACE	D	0.00	80
	TOTAL AREA/WEIGHTED CURVE NUMBER		0.70	98

TIME OF CONCENTRATION

DUE TO THE SIZE OF THE DRAINAGE AREA AND THE PREDOMINANTLY IMPERVIOUS SURFACE AREA OF THE SITE A TIME OF CONCENTRATION OF 0.10 HR WAS UTILIZED.

OUTFALL NARRATIVE

THE SUBJECT PROPERTY IS LOCATED WITHIN THE DIFFICULT RUN WATERSHED. THE PRE-DEVELOPED LAND COVER OF THE SITE IS PREDOMINATLY IMPERVIOUS WITH AN EXISTING BUILDING AND PARKING LOT. THE POST-DEVELOPED CONDITION PROPOSES THE REMOVAL AND REPLACEMENT OF THE EXISTING BUILDING WITH ONE OF A LARGER FOOTPRINT AND THE REMOVAL OF A PORTION OF ONSITE AND OFFSITE PAVEMENT. THE ULTIMATE OUTFALL POINT FOR THIS PROJECT IS THE POTOMAC RIVER.

THE SITE IS BEING ANALYZED WITH ONE POINT OF INTEREST, QUANTITY CONTROL FOR AREA #1 IS SATISFIED THROUGH DETENTION IN THE UNDERGROUND SWM FACILITY WITH ISOLATOR ROW. THE SITE DRAINS TO EXISTING INLETS THAT CONVERGE AT EXISTING STM #1. THE TAILWATER CONDITION FOR THE UNDERGROUND SWM FACILITY IS MODELED AS FREE FLOWING DUE TO THE SIGNIFICANT DIFFERENCE IN THE TIMING OF THE PEAK EVENT VERSES THE STORM SEWER PIPE CALCULATIONS.

AREA 1

IN THE PRE-DEVELOPED CONDITION AREA #1 SHEET FLOWS TO THE SOUTHWEST AND IS COLLECTED BY EX. STORM STRUCTURES THAT CONVERGE AT EX. STORM #1. FOR THE POST-DEVELOPED CONDITION AREA #1 UTILIZES A STORMWATER DETENTION VOLUME CONTROL STRUCTURE WHICH HAS BEEN DESIGNED TO REGULATE THE OUTFLOW FROM THE FACILITY IN ACCORDANCE WITH THE ALLOWABLE RELEASE RATES. SEE THIS SHEET FOR ALLOWABLE RELEASE RATE COMPUTATIONS. DISCHARGES FROM THE DETENTION FACILITY FOR 1, 2 AND 10 YEAR STORM EVENTS ARE LESS THAN THE ALLOWABLE RELEASE RATE COMPUTED FOR THE SUBJECT AREA. PLEASE REFER TO THE FLOW SUMMARY TABLE ON THIS SHEET.

ADEQUATE OUTFALL ANALYSIS DETERMINES THAT THE 1-YR, 2-YR AND 10-YR POST-DEVELOPMENT RUNOFF GENERATED FLOWS FROM THE DISTURBED AREAS ARE LESS THAN THE ALLOWABLE RELEASE RATES. IN ACCORDANCE WITH VAESCH MS-19(c)3, THE OUTFALL IS CONSIDERED ADEQUATE SINCE THE ENERGY BALANCE EQUATION HAS BEEN SATISFIED AND THE FLOWS HAVE BEEN REDUCED BELOW PRE-DEVELOPMENT CONDITIONS. GIVEN THE INFORMATION PROVIDED HEREIN IT IS THE ENGINEER'S OPINION THAT THE OUTFALL FOR THE SUBJECT PROPERTY IS ADEQUATE AND SATISFIES THE REQUIREMENTS AS SET FORTH IN STATE CODE 9VAC25-870-66 AS WELL AS MS-19.

THE STORM WATER MANAGEMENT FACILITY WILL BE MAINTAINED BY THE OWNER.

PRE-DEVELOPMENT / POST-DEVELOPMENT FLOW SUMMARY TABLE

PRE-DEVELOPED ONSITE							
	AREA (AC)	IMP AREA (AC)	CN	Q1 (cfs)	Q2 (cfs)	Q10 (cfs)	TC (HR)
AREA 1	1.26	1.17	97	3.46	4.23	6.59	0.10
POST-DEVELOPED - UNCONTROLLED							
	TOTAL AREA (AC)	IMP AREA (AC)	CN	Q1 (cfs)	Q2 (cfs)	Q10 (cfs)	TC (HR)
AREA 1	0.54	0.28	89	1.12	1.45	2.50	0.10
POST-DEVELOPMENT - CONTROLLED (PRIOR TO ROUTING)							
	TOTAL AREA (AC)	IMP AREA (AC)	CN	Q1 (cfs)	Q2 (cfs)	Q10 (cfs)	TC (HR)
AREA 1	0.72	0.72	98	2.02	2.46	3.81	0.10
POST-DEVELOPMENT - CONTROLLED ALLOWABLE							
	TOTAL AREA (AC)	IMP AREA (AC)	CN	Q1 (cfs)	Q2 (cfs)	Q10 (cfs)	TC (HR)
AREA 1	0.72	0.72	98	1.41	2.78	4.09	0.10
POST-DEVELOPMENT - ACTUAL RELEASE RATES							
	TOTAL AREA (AC)	IMP AREA (AC)	CN	Q1 (cfs)	Q2 (cfs)	Q10 (cfs)	TC (HR)
AREA 1	0.72	0.72	90	1.28	1.46	2.54	0.10

CHANNEL PROTECTION

CHANNEL PROTECTION IS MET THROUGH THE ACTUAL RELEASE RATE FROM THE UNDERGROUND SYSTEM BEING LESS THAN THE ALLOWABLE RATE CALCULATED ON THIS SHEET FOR ENERGY BALANCE. SEE RUNOFF VOLUME COMPUTATIONS FOR THE 1 YR STORM EVENTS ON THIS SHEET AND THE ACTUAL RELEASE RATES FOUND IN THE FLOW SUMMARY ON THIS SHEET.

FLOOD PROTECTION

FLOOD PROTECTION CALCULATIONS SHOW THE 10-YEAR POST-DEVELOPED FLOW RATE HAS BEEN REDUCED BELOW THE PRE-DEVELOPED FLOW RATE FOR THE SITE AND THEREFOR SATISFY THE REQUIRED FLOOD PROTECTION REQUIREMENTS.

RUNOFF VOLUME COMPUTATIONS (EXISTING CONDITION)

PER CHAPTER 5 - VIRGINIA SWM HANDBOOK VOLUME II
RAIN FALL DEPTH JURISDICTION: Town of Vienna
DRAINAGE AREA: AREA 1

			UNIT	FORMULA KEY
1. RAINFALL DEPTH (P)	1YR STORM	2.62	IN	P
2. HYDOLOGIC SOILS DRAINING TO OUTFALL ARE:				
	SOIL GROUP A:	0.00	AC	
	SOIL GROUP B:	0.00	AC	
	SOIL GROUP C:	0.00	AC	
	SOIL GROUP D:	1.26	AC	
3. WEIGHTED CN FOR SITE GOOD CONDITION: (SEE TR-55 CALCULATION FOR WEIGHTED CN)		97		CN
4. TOTAL AREA DRAINING TO OUTFALL		1.01	AC	A
5. S=(1000/CN)-10		0.31		S
1 YEAR STORM EVENT				
6. RUNOFF Q = ((P-0.2S)^2)/(P+0.8S)		2.28	IN	RQex
7. RUNOFF VOLUME (RVex) = A*RQex		0.192	AC-FT	RVex

RUNOFF VOLUME COMPUTATIONS (DEVELOPED CONDITION)

			UNIT	FORMULA KEY
1. RAINFALL DEPTH (P)	1YR STORM	2.62	IN	P
2. HYDOLOGIC SOILS DRAINING TO OUTFALL ARE:				
	SOIL GROUP A:	0.00	AC	
	SOIL GROUP B:	0.00	AC	
	SOIL GROUP C:	0.00	AC	
	SOIL GROUP D:	1.26	AC	
1 YEAR STORM EVENT				
3. ADJUSTED CN FOR SITE (SEE TR-55 Calculations):		94		CN
4. TOTAL AREA DRAINING TO OUTFALL		1.26	AC	A
5. S=(1000/CN)-10		0.62		S
6. RUNOFF Q = ((P-0.2S)^2)/(P+0.8S)		2.00	IN	RQd
7. RUNOFF VOLUME (RVd) = A*RQd		0.210	AC-FT	RVd

Reduction required for Channel Protection per VA State code section 9VAC25-870-66:
Qallow = I.F.*Qex * (RVex/RVd)
I.F. (Improvement Factor) equals 0.8 for sites > 1acre or 0.9 for sites < or = 1 acre
See Detention Release Rate Computations for Reductions

DETENTION RELEASE RATES

PRE DEVELOPMENT SITE CONDITIONS - DEVELOPMENT AREA:
SEE PRE DEVELOPMENT DRAINAGE AREA MAP

FOR 1-YEAR CHANNEL PROTECTION PER 9VAC25-870-66 USE:
AREA = 1.01 AC | TC= 0.10 HR | CN = 97

1 YEAR STORM — 12% REDUCTION REQUIRED
SEE RUNOFF VOLUME COMPS
Qex = 3.46 CFS (FROM TR-55 RESULTS)
Qallow = I.F.*Qex*(RVex/RVd) 2.53 CFS

POSTDEVELOPMENT SITE CONDITIONS

THE SWM SYSTEM PROVIDES DETENTION FOR THE 1, 2, & 10 YEAR STORM EVENTS FOR THE CONTROLLED AREA.
SEE POST DEVELOPMENT DRAINAGE AREA MAP

POST DEVELOPMENT SITE CONDITIONS - UNCONTROLLED AREA:
AREA = 0.54 AC | TC= 0.10 HR | CN = 89
1 YEAR STORM
Q1uncontrolled = 1.12 CFS (FROM TR-55 RESULTS)

POST DEVELOPMENT SITE CONDITIONS -OFFSITE CONTROLLED AREA:
!!THIS AREA IS BEING CONTROLLED TO OFFSET THE ON-SITE UNCONTROLLED AREA!!
SEE POST DEVELOPMENT DRAINAGE AREA MAP
AREA = 0.00 AC | TC= 0.00 HR | CN = 0
1 YEAR STORM
Q1offsite = 0.00 CFS (FROM TR-55 RESULTS)

TOTAL ALLOWABLE RELEASE FROM SWM SYSTEM
Q(SWM)allowable = Qallow - Quncontrolled + Qoffsite
1 YEAR STORM
Q1(SWM)allowable = 1.41 CFS

RESULT: **CHANNEL PROTECTION REDUCTION PROVIDED PER STATE CODE**

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

SWM COMPUTATIONS & RELEASE RATES

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:
ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE:
1" = 30'

SHEET 18 OF 25

DATE: AUGUST 2, 2019
DRAFT: CBS
CHECK: PDR
FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-SWM.dwg

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	1-YR orifice	Forward	TW	342.35	344.68
Rectangular Weir	Overflow Weir	Forward	TW	343.95	344.68
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: 1-YR orifice
Structure Type: Orifice-Circular

Number of Openings	1
Elevation	342.35 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Overflow Weir
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	343.95 ft
Weir Length	4.00 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

1 YR STORM ROUTING SUMMARY

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Developed	NOAA-FFX 1YR STORM	1	6,066	12.08	1.748

Node Summary

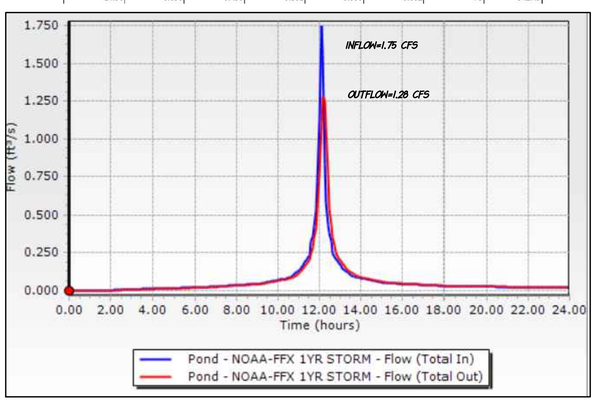
Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Outfall	NOAA-FFX 1YR STORM	1	6,029	12.16	1.280

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Pond (IN)	NOAA-FFX 1YR STORM	1	6,066	12.08	1.748	(N/A)	(N/A)
Pond (OUT)	NOAA-FFX 1YR STORM	1	6,029	12.16	1.280	343.26	643

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
9.04	0.045	0.386	0.472	0.000	0.043	61	342.47
9.12	0.047	0.389	0.477	0.000	0.044	61	342.47
9.20	0.049	0.395	0.485	0.000	0.045	62	342.47
9.28	0.051	0.401	0.495	0.000	0.047	63	342.47
9.36	0.053	0.408	0.505	0.000	0.049	64	342.48
9.44	0.055	0.415	0.516	0.000	0.051	66	342.48
9.52	0.057	0.423	0.528	0.000	0.052	67	342.48
9.60	0.060	0.431	0.540	0.000	0.055	68	342.48
9.68	0.062	0.439	0.552	0.000	0.057	70	342.49
9.76	0.064	0.447	0.565	0.000	0.059	71	342.49
9.84	0.066	0.455	0.577	0.000	0.061	72	342.49
9.92	0.068	0.464	0.590	0.000	0.063	74	342.50
10.00	0.071	0.472	0.603	0.000	0.065	75	342.50
10.08	0.073	0.481	0.616	0.000	0.067	77	342.50
10.16	0.078	0.492	0.632	0.000	0.070	78	342.50
10.24	0.083	0.505	0.653	0.000	0.074	81	342.51
10.32	0.073	0.511	0.661	0.000	0.075	81	342.51
10.40	0.080	0.513	0.664	0.000	0.076	82	342.51
10.48	0.084	0.521	0.677	0.000	0.078	83	342.51
10.56	0.089	0.533	0.694	0.000	0.081	85	342.52
10.64	0.096	0.549	0.718	0.000	0.085	88	342.52
10.72	0.104	0.569	0.749	0.000	0.090	93	342.53
10.80	0.113	0.594	0.787	0.000	0.096	98	342.54
10.88	0.122	0.622	0.829	0.000	0.103	104	342.55
10.96	0.129	0.649	0.873	0.000	0.112	110	342.55
11.04	0.139	0.675	0.917	0.000	0.121	115	342.56
11.12	0.153	0.704	0.967	0.000	0.131	120	342.57
11.20	0.170	0.739	1.027	0.000	0.144	127	342.58
11.28	0.186	0.779	1.095	0.000	0.158	135	342.59
11.36	0.201	0.820	1.165	0.000	0.173	143	342.60
11.44	0.215	0.861	1.235	0.000	0.187	151	342.62
11.52	0.232	0.903	1.307	0.000	0.202	159	342.63
11.60	0.325	0.989	1.460	0.000	0.235	176	342.65
11.68	0.365	1.096	1.679	0.000	0.291	200	342.69
11.76	0.429	1.200	1.891	0.000	0.345	223	342.72
11.84	0.540	1.328	2.170	0.000	0.421	252	342.77
11.92	0.714	1.502	2.582	0.000	0.540	294	342.83
12.00	1.122	1.788	3.338	0.000	0.775	369	342.94
12.08	1.748	2.441	4.659	0.000	1.109	511	343.12
12.16	1.554	3.183	5.744	0.000	1.280	643	343.26
12.24	0.830	3.059	5.567	0.000	1.254	621	343.24
12.32	0.576	2.313	4.465	0.000	1.076	488	343.09
12.40	0.430	1.782	3.320	0.000	0.769	367	342.94
12.48	0.383	1.507	2.595	0.000	0.544	295	342.83
12.56	0.322	1.346	2.213	0.000	0.433	256	342.77
12.64	0.249	1.213	1.918	0.000	0.352	225	342.73
12.72	0.227	1.102	1.689	0.000	0.294	201	342.69
12.80	0.210	1.028	1.538	0.000	0.255	185	342.67
12.88	0.193	0.975	1.431	0.000	0.228	173	342.65
12.96	0.178	0.926	1.347	0.000	0.210	164	342.64
13.04	0.164	0.880	1.269	0.000	0.194	155	342.62
13.12	0.148	0.836	1.192	0.000	0.178	146	342.61
13.20	0.138	0.795	1.122	0.000	0.164	138	342.60
13.28	0.129	0.759	1.061	0.000	0.151	131	342.59
13.36	0.121	0.729	1.009	0.000	0.140	125	342.58
13.44	0.113	0.701	0.963	0.000	0.131	120	342.57
13.52	0.105	0.676	0.919	0.000	0.122	115	342.56
13.60	0.096	0.651	0.876	0.000	0.113	110	342.56
13.68	0.091	0.628	0.838	0.000	0.105	105	342.55
13.76	0.089	0.608	0.808	0.000	0.100	101	342.54
13.84	0.087	0.592	0.784	0.000	0.096	98	342.54
13.92	0.085	0.579	0.764	0.000	0.093	95	342.53
14.00	0.082	0.567	0.747	0.000	0.090	92	342.53
14.08	0.080	0.557	0.730	0.000	0.087	90	342.53
14.16	0.078	0.546	0.715	0.000	0.084	88	342.52
14.24	0.076	0.537	0.701	0.000	0.082	86	342.52
14.32	0.074	0.528	0.687	0.000	0.079	84	342.52
14.40	0.071	0.519	0.673	0.000	0.077	83	342.51
14.48	0.069	0.510	0.660	0.000	0.075	81	342.51
14.56	0.067	0.501	0.646	0.000	0.073	80	342.51
14.64	0.065	0.493	0.633	0.000	0.070	78	342.50
14.72	0.063	0.484	0.620	0.000	0.068	77	342.50
14.80	0.061	0.475	0.607	0.000	0.066	76	342.50
14.88	0.058	0.467	0.594	0.000	0.064	74	342.50
14.96	0.056	0.458	0.581	0.000	0.062	73	342.49



2 YR STORM ROUTING SUMMARY

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Developed	NOAA-FFX 2YR STORM	2	7,455	12.08	2.128

Node Summary

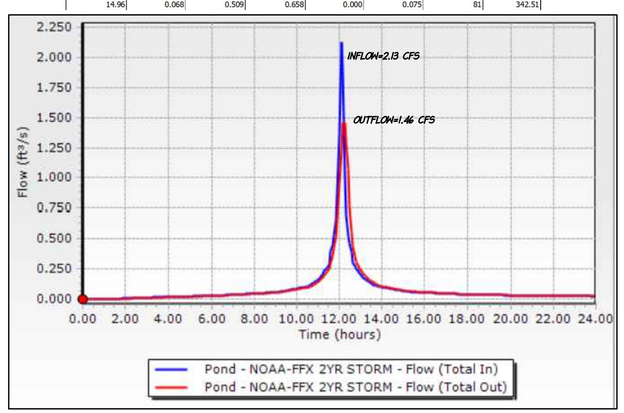
Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Outfall	NOAA-FFX 2YR STORM	2	7,411	12.16	1.461

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Pond (IN)	NOAA-FFX 2YR STORM	2	7,455	12.08	2.128	(N/A)	(N/A)
Pond (OUT)	NOAA-FFX 2YR STORM	2	7,411	12.16	1.461	343.44	802

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
9.04	0.056	0.429	0.538	0.000	0.054	68	342.48
9.12	0.059	0.434	0.545	0.000	0.055	69	342.49
9.20	0.061	0.440	0.554	0.000	0.057	70	342.49
9.28	0.064	0.448	0.566	0.000	0.059	71	342.49
9.36	0.067	0.457	0.579	0.000	0.061	72	342.49
9.44	0.069	0.465	0.592	0.000	0.063	74	342.50
9.52	0.072	0.475	0.606	0.000	0.066	75	342.50
9.60	0.075	0.484	0.621	0.000	0.068	77	342.50
9.68	0.077	0.495	0.636	0.000	0.071	79	342.51
9.76	0.080	0.505	0.652	0.000	0.073	80	342.51
9.84	0.082	0.515	0.667	0.000	0.076	82	342.51
9.92	0.085	0.525	0.682	0.000	0.079	84	342.52
10.00	0.088	0.535	0.698	0.000	0.081	86	342.52
10.08	0.091	0.546	0.714	0.000	0.084	88	342.52
10.16	0.098	0.559	0.734	0.000	0.087	90	342.53
10.24	0.103	0.576	0.759	0.000	0.092	94	342.53
10.32	0.091	0.583	0.769	0.000	0.093	96	342.53
10.40	0.099	0.585	0.773	0.000	0.094	96	342.53
10.48	0.104	0.595	0.788	0.000	0.097	98	342.54
10.56	0.110	0.609	0.809	0.000	0.100	101	342.54
10.64	0.119	0.628	0.838	0.000	0.105	105	342.55
10.72	0.129	0.651	0.876	0.000	0.113	110	342.56
10.80	0.140	0.676	0.920	0.000	0.122	115	342.56
10.88	0.150	0.704	0.966	0.000	0.131	120	342.57
10.96	0.160	0.731	1.013	0.000	0.141	126	342.58
11.04	0.171	0.759	1.062	0.000	0.151	131	342.59
11.12	0.189	0.793	1.119	0.000	0.163	138	342.60
11.20	0.209	0.835	1.191	0.000	0.178	146	342.61
11.28	0.229	0.883	1.273	0.000	0.195	155	342.62
11.36	0.247	0.933	1.358	0.000	0.213	165	342.64
11.44	0.264	0.981	1.443	0.000	0.231	175	342.65
11.52	0.284	1.023	1.529	0.000	0.253	184	342.67
11.60	0.398	1.110	1.706	0.000	0.298	203	342.69
11.68	0.447	1.231	1.954	0.000	0.362	229	342.73
11.76	0.525	1.342	2.203	0.000	0.430	255	342.77
11.84	0.660	1.479	2.528	0.000	0.525	288	342.82
11.92	0.872	1.667	3.010	0.000	0.672	337	342.90
12.00	1.368	2.006	3.906	0.000	0.950	421	343.02
12.08	2.128	3.014	5.502	0.000	1.244	613	343.23
12.16	1.889	4.109	7.031	0.000	1.461	802	343.44
12.24	1.009	4.091	7.006	0.000	1.458	799	343.44
12.32	0.699	3.222	5.799	0.000	1.288	649	343.27
12.40	0.523	2.300	4.444	0.000	1.072	486	343.09
12.48	0.465	1.770	3.287	0.000	0.759	364	342.94
12.56	0.391	1.520	2.626	0.000	0.553	299	342.84
12.64	0.302	1.347	2.213	0.000	0.433	256	342.77
12.72	0.276	1.216	1.924	0.000	0.354	226	342.73
12.80	0.254	1.129	1.746	0.000	0.308	207	342.70
12.88	0.235	1.067	1.618	0.000	0.276	193	342.68
12.96	0.217	1.018	1.518	0.000	0.250	183	342.66
13.04	0.199	0.976	1.433	0.000	0.228	173	342.65
13.12	0.180	0.931	1.355	0.000	0.212	165	342.64
13.20	0.167	0.886	1.278	0.000	0.196	156	342.62
13.28	0.156	0.846	1.210	0.000	0.182	148	342.61
13.36	0.147	0.810	1.149	0.000	0.169	141	342.60
13.44	0.137	0.778	1.094	0.000	0.158	135	342.59
13.52	0.127	0.748	1.042	0.000	0.147	129	342.58
13.60	0.116	0.718	0.991	0.000	0.137	123	342.58
13.68	0.111	0.691	0.945	0.000	0.127	118	342.57
13.76	0.108	0.671	0.910	0.000	0.120	114	342.56
13.84	0.106	0.655	0.884	0.000	0.114	111	342.56
13.92	0.103	0.644	0.864	0.000	0.110	109	342.55
14.00	0.100	0.633	0.846	0.000	0.107	107	342.55
14.08	0.097	0.623	0.831	0.000	0.104	104	342.55
14.16	0.095	0.613	0.815	0.000	0.101	102	342.54
14.24	0.092	0.603	0.800	0.000	0.099	100	342.54
14.32	0.089	0.592	0.784	0.000	0.096	98	342.54
14.40	0.087	0.582	0.769	0.000	0.093	95	342.53
14.48	0.084	0.571	0.753	0.000	0.091	93	342.53
14.56	0.081	0.561	0.737	0.000	0.088	91	342.53
14.64	0.079	0.551	0.721	0.000	0.085	89	342.52
14.72	0.076	0.540	0.706	0.000	0.083	86	342.52
14.80	0.073	0.530	0.690	0.000	0.080	85	342.52
14.88	0.071	0.519	0.674	0.000	0.077	83	342.51
14.96	0.068	0.509	0.658	0.000	0.075	81	342.51



10 YR STORM ROUTING SUMMARY

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Developed	NOAA-FFX 10YR STORM	10	11,760	12.08	3.294

Node Summary

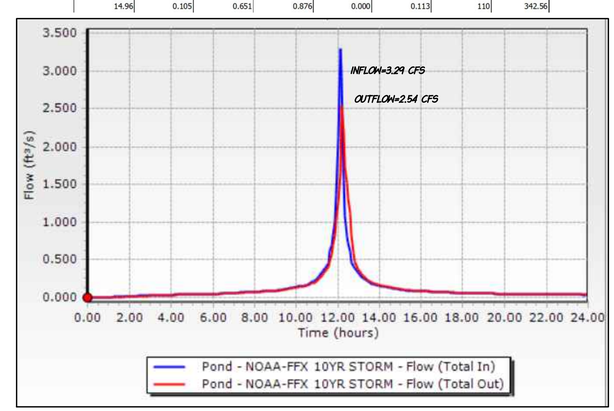
Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Outfall	NOAA-FFX 10YR STORM	10	11,702	12.16	2.543

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Pond (IN)	NOAA-FFX 10YR STORM	10	11,760	12.08	3.294	(N/A)	(N/A)
Pond (OUT)	NOAA-FFX 10YR STORM	10	11,702	12.16	2.543	344.08	1,276

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
9.04	0.092	0.563	0.740	0.000	0.088	91	342.53
9.12	0.095	0.570	0.750	0.000	0.090	93	342.53
9.20	0.100	0.580	0.765	0.000	0.093	95	342.53
9.28	0.104	0.592	0.783	0.000	0.096	98	342.54
9.36	0.108	0.605	0.804	0.000	0.099	100	342.54
9.44	0.112	0.619	0.825	0.000	0.103	103	342.55
9.52	0.116	0.633	0.846	0.000	0.107	107	342.55
9.60	0.120	0.647	0.869	0.000	0.111	109	342.55
9.68	0.124	0.660	0.892	0.000	0.116	112	342.56
9.76	0.128	0.672	0.912	0.000	0.120	114	342.56
9.84	0.132	0.684	0.932	0.000	0.124	116	342.57
9.92	0.137	0.695	0.952	0.000	0.129	119	342.57
10.00	0.141	0.707	0.973	0.000	0.133	121	342.57
10.08	0.145	0.719	0.993	0.000	0.137	123	342.58
10.16	0.156	0.735	1.020	0.000	0.143	126	342.58
10.24	0.164	0.755	1.054	0.000	0.150	130	342.59
10.32	0.145	0.761	1.064	0.000	0.152	131	342.59
10.40	0.158	0.760	1.063	0.000	0.152	131	342.59
10.48	0.165	0.772	1.084	0.000	0.156	134	342.59
10.56	0.175	0.789	1.113	0.000	0.162	137	342.60
10.64	0.189	0.813	1.154	0.000	0.170	142	342.60
10.72	0.205	0.844	1.207	0.000	0.181	148	342.61
10.80	0.222	0.882	1.271	0.000	0.194	155	342.62
10.88	0.237	0.923	1.341	0.000	0.209	163	342.63
10.96	0.252	0.965	1.412	0.000	0.224	171	342.65
11.04	0.270	1.003	1.487	0.000	0.242	179	342.66
11.12	0.298	1.043	1.570	0.000	0.263	188	342.67
11.20	0.329	1.092	1.671	0.000	0.289	199	342.69
11.28	0.359	1.146	1.781	0.000	0.317	211	342.71
11.36	0.387	1.201	1.893	0.000	0.346	223	342.72
11.44	0.414	1.255	2.002	0.000	0.374	234	342.74
11.52	0.446	1.305	2.114	0.000	0.404	246	342.76
11.60	0.622	1.414	2.373	0.000	0.480	273	342.80
11.68	0.698	1.564	2.734	0.000	0.585	309	342.85
11.76	0.820	1.693	3.081	0.000	0.694	344	342.91
11.84	1.028	1.865	3.540	0.000	0.837	388	342.97
11.92	1.355	2.171	4.248	0.000	1.039	462	343.07
12.00	2.123	3.115	5.649	0.000	1.267	631	343.25
12.08	3.294	5.192	8.533	0.000	1.670	988	343.67
12.16	2.921	6.321	11.407	0.000	2.543	1,276	344.08
12.24	1.558	6.418	10.799	0.000	2.191	1,244	344.02
12.32	1.079	5.570	9.055	0.000	1.743	1,053	343.76
12.40	0.806	4.419	7.455	0.000	1.518	857	343.50
12.48	0.718	3.324	5.943	0.000	1.309	667	343.29
12.56	0.604	2.432	4.646	0.000	1.107	510	343.12
12.64	0.466	1.851	3.502	0.000	0.826	384	342.97
12.72	0.425	1.567	2.742	0.000	0.588	310	342.86
12.80	0.392	1.418	2.384	0.000	0.483	274	342.80
12.88	0.362	1.329	2.172	0.000	0.421	252	342.77
12.96	0.334	1.266	2.025	0.000	0.380	237	342.75
13.04	0.306	1.207	1.906	0.000	0.349	224	342.73
13.12	0.277	1.151	1.791	0.000	0.320	212	342.71
13.20	0.258	1.100	1.686	0.000	0.293	201	342.69
13.28	0.241	1.057	1.599	0.000	0.271	191	342.68
13.36	0.226	1.021	1.525	0.000	0.252	183	342.67
13.44	0.211	0.989	1.459	0.000	0.235	176	342.65
13.52	0.195	0.955	1.396	0.000	0.220	169	342.64
13.60	0.179	0.916	1.329	0.000	0.207	162	342.63
13.68	0.171	0.879	1.266	0.000	0.193	154	342.62
13.76	0.166	0.850	1.216	0.000	0.183	149	342.61
13.84	0.163	0.828	1.179	0.000	0.175	144	342.61
13.92	0.159	0.811	1.149	0.000	0.169	141	342.60
14.00	0.154	0.795	1.123	0.000	0.164	138	342.60
14.08	0.150	0.781	1.099	0.000	0.159	135	342.59
14.16	0.146	0.768	1.077	0.000	0.154	133	342.59
14.24	0.142	0.756	1.057	0.000	0.150	131	342.59
14.32	0.138	0.745	1.036	0.000	0.146	128	342.58
14.40	0.133	0.733	1.016	0.000	0.142	126	342.58
14.48	0.129	0.721	0.995	0.000	0.137	124	342.58
14.56	0.125	0.709	0.975	0.000	0.133	121	342.57
14.64	0.121	0.697	0.956	0.000	0.129	119	342.57
14.72	0.117	0.686	0.936	0.000	0.125	117	342.57
14.80	0.113	0.674	0.916	0.000	0.121	115	342.56
14.88	0.109	0.662	0.896	0.000	0.117	112	342.56
14.96	0.105	0.651	0.876	0.000	0.113	110	342.56



LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

SWM ROUTINGS & HYDROGRAPHS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 19 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	EPM NAME EPM NUMBER EPM EMAIL
ADS SALES REP	SALES NAME SALES NUMBER SALES EMAIL
PROJECT NO.	

ADVANCED DRAINAGE SYSTEMS, INC.

MILL STREET

TOWN OF VIENNA, VA

FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

SC-310 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-310.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418-16a (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/IN/IN, 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.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

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IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

1. STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

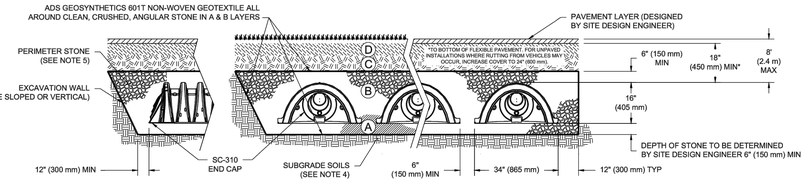
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

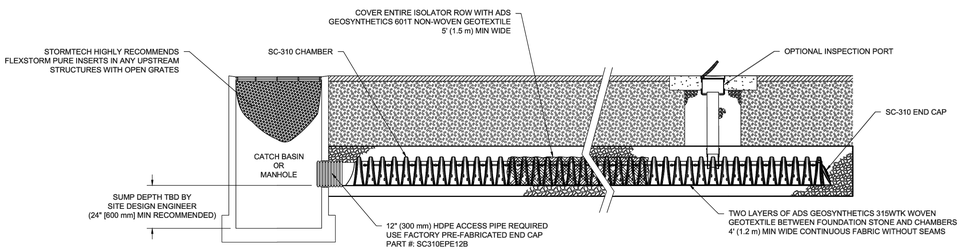
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	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 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	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" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, 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:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418-16a (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. 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.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/IN/IN. 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.



SC-310 ISOLATOR ROW DETAIL

NTS

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 FLEXSTORM 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
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

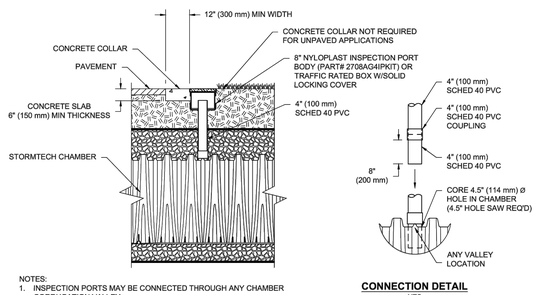
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

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

1. 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.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTES:
1. INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED (4" PVC NOT PROVIDED BY ADS).

CONNECTION DETAIL

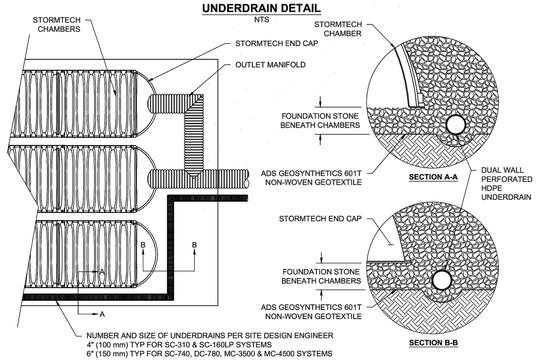
NTS

4" PVC INSPECTION PORT DETAIL

NTS

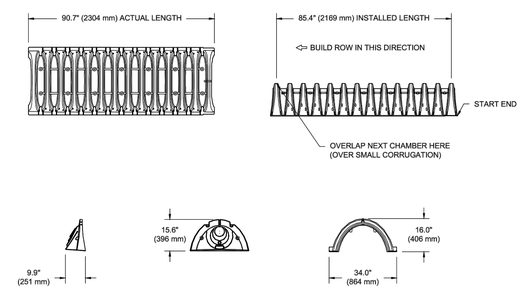
UNDERDRAIN DETAIL

NTS



SC-310 TECHNICAL SPECIFICATION

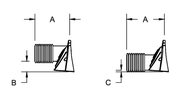
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET	(0.88 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS



STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC			---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE08B / SC310EPE08BPC			---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC			---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

LDC
4586 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

ADS STORMTECH DETAILS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE
			REVISION APPROVED BY:		
	ENGINEER				

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 20 OF 25

DATE: AUGUST 2, 2019

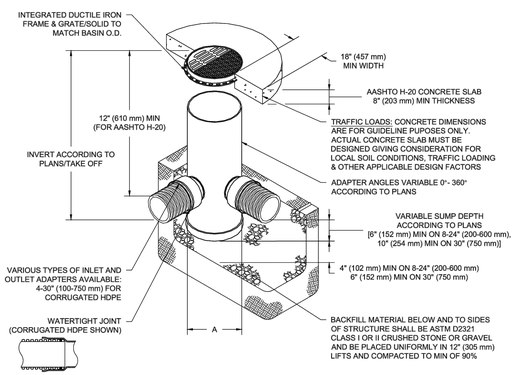
DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-SWM.dwg

NYLOPLAST DRAIN BASIN

NTS



NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	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-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

NYLOPLAST DRAIN BASINS

THE ROOF DRAIN MANIFOLDS SHALL UTILIZE NYLOPLAST DRAIN BASINS OR APPROVED EQUAL. THE DRAIN BASINS AT THE REAR OF THE BUILDING ARE NOT INTENDED TO CAPTURE SURFACE RUNOFF SO THEY SHALL HAVE A SOLID COVER. TRAFFIC RATED TOPS ARE ONLY REQUIRED IN THE PAVED AREAS.

CONSTRUCTION INSPECTION

INSPECTIONS ARE NEEDED DURING CONSTRUCTION TO ENSURE THAT THE FACILITIES ARE BUILT IN ACCORDANCE WITH THE APPROVED PLANS AND DESIGN SPECIFICATIONS. THE DEVELOPER/OWNER SHALL PROVIDE FOR PERIODIC INSPECTIONS OF THE FACILITY DURING CONSTRUCTION. DETAILED INSPECTION CHECKLISTS SHALL BE USED THAT INCLUDE SIGN-OFFS BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA AT CRITICAL STAGES OF CONSTRUCTION, TO ENSURE THAT THE CONTRACTOR'S INTERPRETATION OF THE PLAN IS CONSISTENT WITH THE DESIGNER'S INTENT. THE ACTUAL INSPECTIONS MAY BE PERFORMED BY AN INDIVIDUAL UNDER THE DIRECT SUPERVISION OF THE LICENSED PROFESSIONAL.

AS-BUILT CERTIFICATION

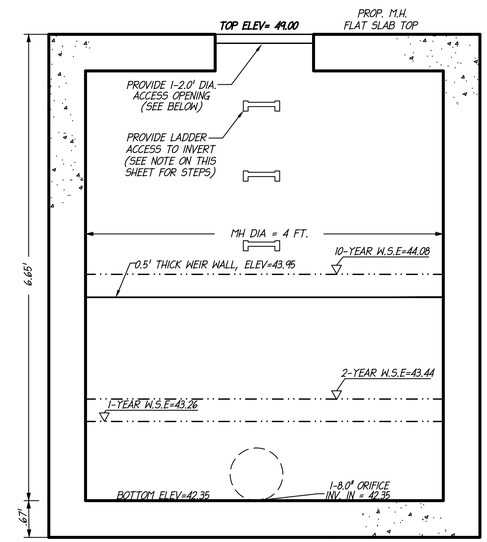
AFTER THE FACILITY HAS BEEN CONSTRUCTED, THE DEVELOPER SHALL HAVE AN AS-BUILT CERTIFICATION CONDUCTED BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA AND SUBMITTED TO THE TOWN OF VIENNA ALONG WITH THE AS-BUILT CHECKLIST AND AS-BUILT PLAN. THE AS-BUILT CERTIFICATION VERIFIES THAT THE FACILITY WAS INSTALLED AS DESIGNED AND APPROVED. THE FOLLOWING COMPONENTS SHALL BE ADDRESSED IN THE AS-BUILT CERTIFICATION:

A. ELEVATIONS PER PLAN
B. PRETREATMENT STRUCTURES ARE PROPERLY INSTALLED (I.E. ISOLATOR ROW)
C. OBSERVATION WELLS ARE INSTALLED AND WORKING EFFECTIVELY
D. DIGITAL PHOTOGRAPHS DOCUMENTING CONSTRUCTION AND SHOWING THE SITE BEFORE CONSTRUCTION, THE EXCAVATION'S WALLS AND BOTTOM BEFORE ANY BACKFILL, PLACEMENT OF EACH MATERIAL LAYER, PLACEMENT OF UNDERDRAIN SYSTEM, OBSERVATION WELLS, AND OUTLET WORKS.
E. GPS COORDINATES FOR THE FACILITY

STORMTECH CHAMBERS OUTLET CONTROL STRUCTURE STORM STR #4A

N.T.S.

PROP. MANHOLE (MOD. MH-2, 4' DIA.)

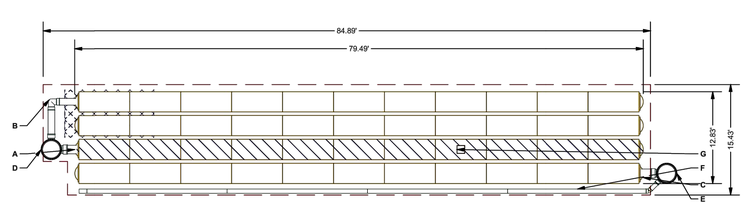


SECTION A-A

PROPOSED LAYOUT		PROPOSED ELEVATIONS	
44	STORMTECH SC-310 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	352.18
8	STORMTECH SC-310 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	346.18
6	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	345.68
6	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	345.68
40	% STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	345.68
1596	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	344.68
		TOP OF SC-310 CHAMBER:	344.18
		10" x 10" TOP MANIFOLD INVERT:	342.97
		12" ISOLATOR ROW INVERT:	342.93
1294	SYSTEM AREA (SF)	12" BOTTOM CONNECTION INVERT:	342.93
200.65	SYSTEM PERIMETER (ft)	BOTTOM OF SC-310 CHAMBER:	342.85
		UNDERDRAIN INVERT:	342.35
		BOTTOM OF STONE:	342.35

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	12" BOTTOM PREFABRICATED END CAP/TYP OF ALL 12" BOTTOM CONNECTIONS AND ISOLATOR ROWS	0.90"	
MANIFOLD	B	10" X 10" TOP, MOLDED FITTINGS	1.40"	
PIPE CONNECTION	C	12" BOTTOM CONNECTION	0.90"	
NYLOPLAST (INLET W/ ISO ROW)	D	30" DIAMETER (24" SUMP MIN)		1.3 CFS IN
NYLOPLAST (OUTLET)	E	30" DIAMETER (DESIGN BY ENGINEER)		2.0 CFS OUT
UNDERDRAIN	F	6" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		
INSPECTION PORT	G	4" SEE DETAIL		



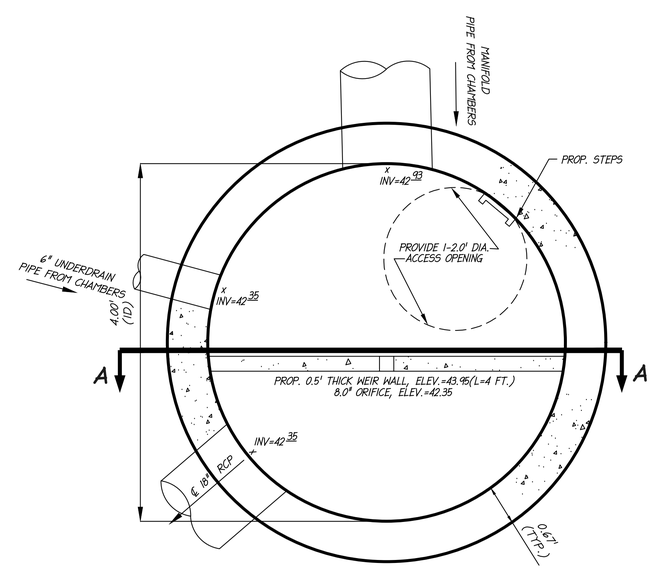
ISOLATOR ROW (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADS GEOSYNTHETICS 315WTK WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.



PLAN VIEW

NOTES

1. STAIRS ARE TO BE PROVIDED WITHIN ALL ACCESS STRUCTURES. THESE STAIRS SHALL BE PROVIDED 1' ON CENTER AND SHOULD BE LOCATED ALONG AN INTERIOR WALL AT THE DISCRETION OF THE MANUFACTURER.
2. VIRGINIA RUNOFF REDUCTION METHOD AND SCS METHODS WERE UTILIZED TO GENERATE THE HYDROLOGY AND THE HYDRAULICS FOR THE WEIR AND ORIFICE EQUATIONS AND PONDPACK USED FOR THE SWM ROUTINGS COMPUTATIONS.
3. A 6" DIA. PVC UNDERDRAIN SHALL BE INSTALLED AT BOTTOM OF STONE ELEVATION AS SHOWN ON THE ADS DETAILS.

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4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

ADS STORMTECH DETAILS

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 21 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS | CHECK: PDR

FILE NUMBER: 16220-2-0

P:\PY 2016\16220-2-0 Mill Street, N.E. - 215-241\ENG\SITEPLAN\16220-SWM.dwg

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

○ 2011 BMP Standards and Specifications ◉ 2013 Draft BMP Standards and Specifications

Project Name:	MILL STREET
Date:	2-Aug-19
Linear Development Project?	No

CLEAR ALL

data input cells
constant values
calculation cells
final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 1.71

Maximum reduction required:	*20%*
The site's net increase in impervious cover (acres) is:	*0*
Post-Development TP Load Reduction for Site (lb/yr):	*0.44*

Check:
BMP Design Specifications List: 2013 Draft Stds & Specs
Linear project? No
Land cover areas entered correctly? ✔
Total disturbed area entered? ✔

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land				0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed				0.09	0.09
Impervious Cover (acres)				1.62	1.62
					1.71

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land				0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed				0.26	0.26
Impervious Cover (acres)				1.45	1.45
Area Check	OK.	OK.	OK.	OK.	1.71

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

LAND COVER SUMMARY -- PRE-REDEVELOPMENT

Land Cover Summary-Pre

Pre-ReDevelopment	Listed	Adjusted[1]
Forest/Open Space Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.09	0.09
Weighted Rv(turf)	0.25	0.25
% Managed Turf	5%	5%
Impervious Cover (acres)	1.62	1.62
Rv(impervious)	0.95	0.95
% Impervious	95%	95%
Total Site Area (acres)	**1.71**	**1.71**
Site Rv	**0.91**	**0.91**

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary-Post (Final)

Post ReDev. & New Impervious	
Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.26
Weighted Rv (turf)	0.25
% Managed Turf	15%
Impervious Cover (acres)	1.45
Rv(impervious)	0.95
% Impervious	85%
Final Site Area (acres)	**1.71**
Final Post Dev Site Rv	**0.84**

Land Cover Summary-Post

Post-ReDevelopment	
Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.26
Weighted Rv (turf)	0.25
% Managed Turf	15%
ReDev. Impervious Cover (acres)	1.45
Rv(impervious)	0.95
% Impervious	85%
Total ReDev. Site Area (acres)	**1.71**
ReDev Site Rv	**0.84**

Land Cover Summary-Post

Post-Development New Impervious	
New Impervious Cover (acres)	0.00
Rv(impervious)	--

Treatment Volume and Nutrient Load

Pre-ReDevelopment Treatment Volume (acre-ft)	0.1301	0.1301
Pre-ReDevelopment Treatment Volume (cubic feet)	5,668	5,668
Pre-ReDevelopment TP Load (lb/yr)	**3.56**	**3.56**
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.08	2.08
Baseline TP Load (lb/yr) (**0.41 lbs/acre/yr** applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		*0.70*

Treatment Volume and Nutrient Load

Final Post-Development Treatment Volume (acre-ft)	0.1202	**Post-ReDevelopment Treatment Volume (acre-ft)**	0.1202	**Post-Development Treatment Volume (acre-ft)**	--
Final Post-Development Treatment Volume (cubic feet)	5,236	**Post-ReDevelopment Treatment Volume (cubic feet)**	5,236	**Post-Development Treatment Volume (cubic feet)**	--
Final Post-Development TP Load (lb/yr)	**3.29**	**Post-ReDevelopment Load (TP) (lb/yr)***	**3.29**	**Post-Development TP Load (lb/yr)**	--
Final Post-Development TP Load per acre (lb/acre/yr)	1.92	Post-ReDevelopment TP Load per acre (lb/acre/yr)	1.92		
		Max. Reduction Required (Below Pre-ReDevelopment Load)	**20%**		
		TP Load Reduction Required for Redeveloped Area (lb/yr)	**0.44**	**TP Load Reduction Required for New Impervious Area (lb/yr)**	**0**

[1] *Adjusted Land Cover Summary:*
Pre ReDevelopment land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.

Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).

Column I shows load reduction requriement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	**0.44**

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	25.48	Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	23.54

nage Area A

CLEAR BMP AREAS

ge Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.00	0.00	0.00
Impervious Cover (acres)				0.72	0.72	0.95
				Total	0.72	

Total Phosphorus Available for Removal in D.A. A (lb/yr)	1.56
Post Development Treatment Volume in D.A. A (ft^3)	2,483

nwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
nufactured Treatment Devices (no RR)													
. Manufactured Treatment Device-Hydrodynamic	0			0	0	0	0	20	0.00	0.00	0.00	0.00	
nufactured Treatment Device-Filtering	0	0.00	0.72	0	0	2,483	2,483	40	0.00	1.56	0.62	0.93	
nufactured Treatment Device-Generic	0			0	0	0	0	20	0.00	0.00	0.00	0.00	

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	0.72	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.72	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3) 5,236

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft^3)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	1.56	0.00	0.00	0.00	0.00	1.56
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.62	0.00	0.00	0.00	0.00	0.62
TP LOAD REMAINING (lb/yr)	0.94	0.00	0.00	0.00	0.00	0.94
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	3.29
TP LOAD REDUCTION REQUIRED (lb/yr)	0.44
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.62
TP LOAD REMAINING (lb/yr):	2.67
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **

** TARGET TP REDUCTION EXCEEDED BY 0.18 LB/YEAR **

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	23.54
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	23.54

BMP NARRATIVE

THE SITE IS BEING ANALYZED AS RE-DEVELOPMENT FOR WATER QUALITY PURPOSES. THE PRE-DEVELOPED LAND COVER OF THE SITE IS PREDOMINANTLY IMPERVIOUS WITH AN EXISTING BUILDING AND PARKING LOT. THE POST-DEVELOPED CONDITION PROPOSES THE REMOVAL AND REPLACEMENT OF THE EXISTING BUILDING WITH ONE OF A LARGER FOOTPRINT AND THE REMOVAL OF A PORTION OF ONSITE AND OFFSITE PAVEMENT.

WATER QUALITY REQUIREMENTS ARE SATISFIED THROUGH THE REDUCTION IN ONSITE IMPERVIOUS AREA AND TREATMENT OF THE ROOF AREA THAT IS DIRECTED TO THE ISOLATOR ROW IN THE UNDERGROUND SWM FACILITY. PLEASE SEE VRRM CALCULATIONS ON THIS SHEET.

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

VRRM SPREADSHEET

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

REVISION APPROVED BY:

ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS NOTED

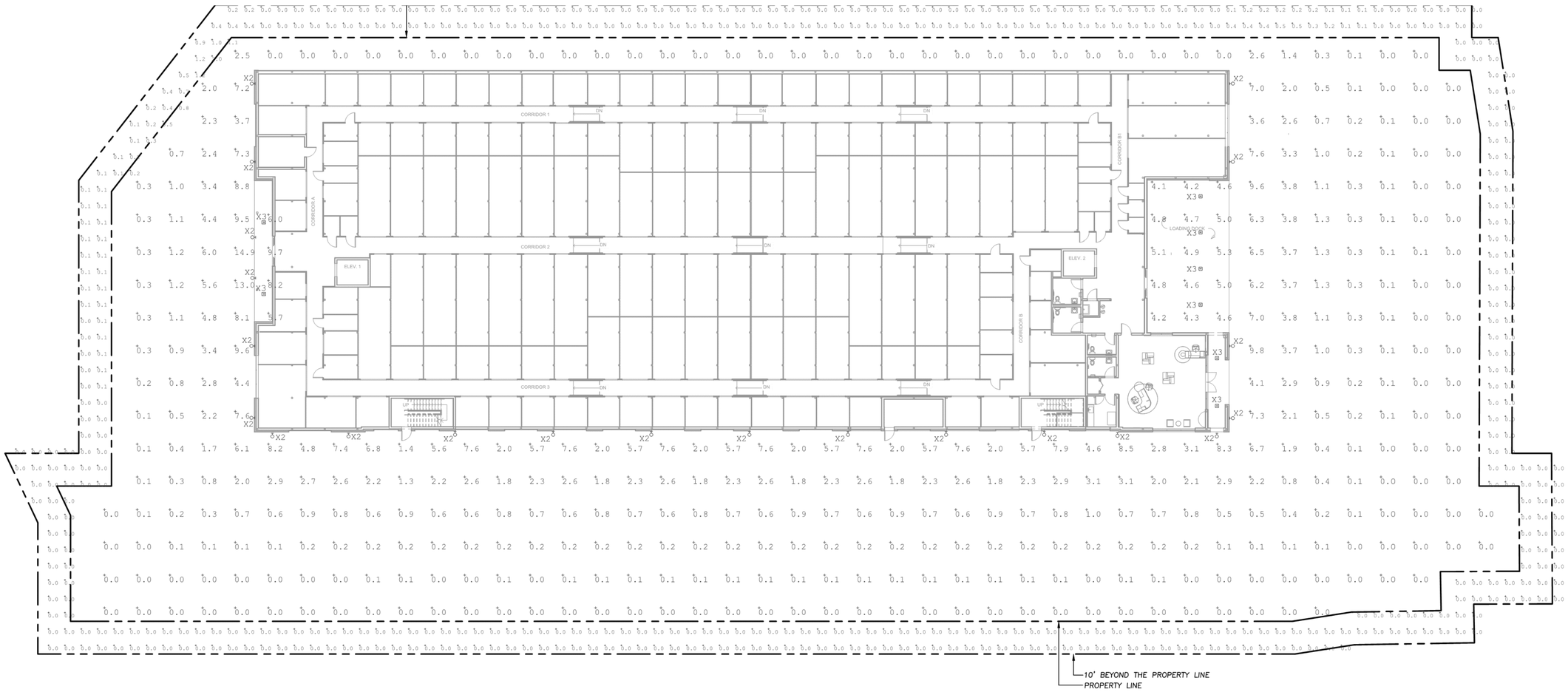
SHEET 22 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

P:\FY 2016\16220-2-0 Mill Street, N.E. - 215-24\ENG\SITEPLAN\16220-2-0-VRRM.dwg



SITE PLAN - PHOTOMETRIC CALCULATIONS

SCALE: 1/16" = 1'-0" 0 4' 8' 16' 32'

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	Lum. Lumens
	21	X2	SINGLE	0.900	LIGMAN TA-31861-T4-W40	37.8	2777
	6	X3	SINGLE	0.900	DECO D533-LED-40-50-U-PRO	42	4830

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Max/Min
CUBE SMART SITE	Illuminance	Fc	1.58	14.9	0.0	N.A.
10 FOOT BEYOND PROPERTY LINE	Illuminance	Fc	0.04	2.0	0.0	N.A.

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4775

PHOTOMETRIC PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW	APPROVED	DATE

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COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: AS SHOWN

SHEET 23 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

P:\PT 2016\16220-2-0 Mill Street, N.E. - 215-24\ENG\SITEPLAN\

SPECIFICATIONS FOR PLANTING

1. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS. ANY SUBSTITUTIONS IN PLANT MATERIAL AND SIZES SPECIFIED WILL NOT BE ACCEPTED, UNLESS APPROVED BY TOWN ARBORIST PRIOR TO INSTALLATION.

2. ALL PLANT MATERIAL SHALL CONFORM THE AMERICAN STANDARD FOR NURSERY, LATEST EDITION, PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. ALL PLANTS MUST BE FREE FROM INJURY, INSECT INFESTATIONS AND DISEASE.

3. TREES SHALL BE HEALTHY AND VIGOROUS, AND MEET ALL ANSI STANDARDS. ALL NEWLY INSTALLED TREES THAT ARE REQUIRED BY THE TREE CONSERVATION PLAN, WHICH IN THE OPINION OF THE TOWN ARBORIST ARE DEAD OR ARE NOT HEALTHY, SHALL BE REPLACED BY THE CONTRACTOR.

4. ALL PLANT MATERIAL MUST BEAR ORIGINAL NURSERY TAGS INDICATING THE GENUS, SPECIES AND IF APPLICABLE, CULTIVARS AND VARIETY. ALL TAGS SHALL BE REMOVED AFTER THE SITE INSPECTOR HAS INSPECTED THE PLANT MATERIAL.

5. TEST SOIL DRAINAGE BEFORE PLANTING. DIG A HOLE AS DEEP AS YOUR PLANTING HOLE AND FILL WITH WATER. IF WATER DRAINS AT A RATE LESS THAN ONE INCH PER HOUR, INSTALL DRAINAGE TO CARRY WATER AWAY FROM THE PLANTING HOLE BASE, OR MOVING OR RAISING THE PLANTING SITE.

6. TREE PITS SHALL BE A MINIMUM OF TWO (2) AND A HALF (1/2) TIMES THE WIDTH OF THE ROOT BALL AND NO DEEPER THAN THE HEIGHT OF THE ROOT BALL. ON BALLED AND BURLAPED TREES, REMOVE PINNING NAILS OR ROPE LACING, THEN CUT AWAY THE WRAPPING AND THEN BACKFILL. REMOVE THE TOP 12" OF THE WIRE BASKET. REMOVE ALL ROPE, WHETHER JUTE OR NYLON, FROM TRUNKS. FOR CONTAINER MATERIALS, REMOVE THE CONTAINER COMPLETELY. IF ROOTS ARE CIRCLING AROUND THE ROOT BALL EXTERIOR OF CONTAINER PLANTS (TREES, SHRUBS OR PERENNIALS) CUT THROUGH THE ROOTS AND SOIL IN A FEW PLACES. CONTAINER TREE WITH MULTIPLE CIRCLING ROOTS WILL BE REJECTED. PLACE SHRUBS AND PERENNIALS AT THE SAME DEPTH THEY WERE IN THE CONTAINERS.

7. WHEN HALF OF THE BACKFILL HAS BEEN RETURNED TO THE PLANTING HOLE, WATER SHALL BE APPLIED TO PROVIDE SETTLEMENT AND ELIMINATE AIR POCKETS. THE TREE SHALL BE THOROUGHLY WATERED AGAIN AFTER THE REMAINING SOIL HAS BEEN PLACED IN THE PLANTING PIT. A THREE (3) TO FOUR (4) INCH DAM OF SOIL SHALL BE CONSTRUCTED AROUND THE PLANTING PIT.

8. TWO (2) TO THREE (3) INCHES OF MULCH SHALL BE PLACED OVER THE TREE-PLANTING PIT, BUT SHALL BE KEPT THREE (3) TO FOUR (4) INCHES AWAY FROM THE TRUNK OF THE TREE OR CROWNS OF SHRUBS. DO NOT ALLOW MULCH TO TOUCH THE TRUNKS OF TREES OR CROWNS OF SHRUBS. USE MULCH THAT IS COMPATIBLE WITH THE TYPE OF PLANT USED. IN MULCHING PERENNIALS, USE NO MORE THAN 1-2".

9. TREES SHALL BE PLANTED AT THE HEIGHT OF THE SURROUNDING GRADE WITH ROOT FLARES VISIBLE. SHOULD SOIL HAVE BEEN PILED OVER THE ROOT FLARE DURING THE DIGGING PROCESS, THIS SOIL SHALL BE REMOVED SO THAT THE FLARE IS SLIGHTLY ABOVE GRADE.

10. PRUNING AT THE TIME OF PLANTING SHALL BE DONE ONLY TO REMOVE BROKEN BRANCHES LEADERS.

11. REMOVE TAGS AND LABELS FROM TREES AND SHRUBS TO PREVENT GIRDLING BRANCHES AND TRUNKS.

12. STAKES SHALL BE USED ONLY IN AREA OF HIGH TRAFFIC OR HIGHLY WINDY LOCATIONS. A TREE-STAKING DIAGRAM SHOULD BE PROVIDED IF STAKING IS NECESSARY. STAKE FOR MAXIMUM OF ONE YEAR. ALLOW TREES A SLIGHT AMOUNT OF FLEX RATHER THAN HOLDING THEM RIGIDLY IN PLACE. USE GUYING OR ATTACHING THAT WON'T DAMAGE THE BARK. TO PREVENT TRUNK GIRDLING, REMOVE ALL GUYING MATERIAL AFTER ONE YEAR.

13. IF GUYING WILL BE CARRIED OUT, THEN THE MATERIAL SHALL ONLY BE A WIDE FABRIC TAPE SUCH AS ARBORTIE OR EQUIVALENT, INSTALLED PER MANUFACTURES INSTRUCTIONS.

14. PLANTING SEASON - PLANTING SHALL BE DONE ONLY WITHIN THE FOLLOWING DATES:
    A. DECIDUOUS TREES - MARCH 15 TO MAY 30 OR SEPTEMBER 15 TO DECEMBER 15 (OAKS AND BLACK GUM TO BE SPRING DUG AND PLANTED ONLY).
    B. EVERGREEN TREES - MARCH 1 TO MAY 15 OR SEPTEMBER 15 TO NOVEMBER 15.

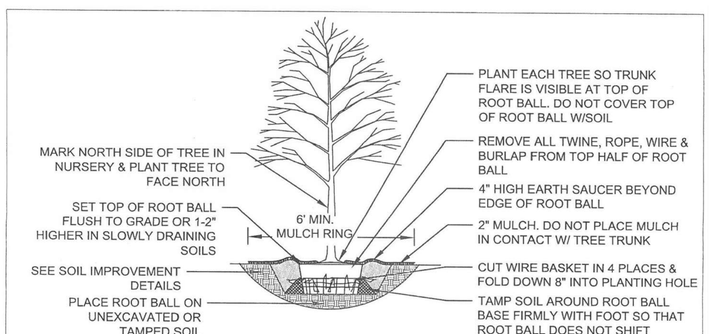
15. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR FROM THE DATE OF ACCEPTANCE TO BE IN GOOD, HEALTHY AND FLOURISHING CONDITION. IN THE EVENT THAT A PLANT DIES OR IN THE JUDGMENT OF THE TOWN ARBORIST, FAILS TO FLOURISH; THE CONTRACTOR SHALL REPLACE IN ACCORDANCE WITH THE ABOVE NOTED SPECIFICATIONS.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE PLANTS DURING THIS ONE-YEAR WARRANTY PERIOD. THIS MAINTENANCE SHALL INCLUDE PROVIDING WATER ON A WEEKLY BASIS WHEN NATURAL RAINFALL IS LESS THAN ONE INCH A WEEK. DRIP IRRIGATION SYSTEMS AND WATER RESERVOIR DEVICES CAN FACILITATE WATERING. ROOT BALLS OF TREES SHOULD BE SLOWLY AND THOROUGHLY SOAKED AT TIME OF WATERING. FOR PLANTING BEDS (I.E., TREES, SHRUBS AND PERENNIALS), WATER SLOWLY AND DEEPLY PUTTING DOWN 1"-2" OF WATER IN A 6-12 HOUR PERIOD. THIS SHOULD GIVE A PENETRATION OF 12-18" DEPTH.

17. PLANT MATERIAL SHALL NOT BE STORED ON SITE FOR A PERIOD LONGER THAN 3 DAYS FROM THE TIME OF DELIVERY.

18. ALL PLANT MATERIAL SHALL BE PROTECTED FROM DRYING DURING TRANSPORTATION AND DURING STORAGE ON SITE. ANY PLANT THAT IS NOT PLANTED ON THE DAY OF DELIVERY WILL BE PLACED IN A HOLDING AREA. THE TREE OR SHRUB WILL BE STORED VERTICALLY AND ITS ROOTS WILL BE COVERED WITH A MOISTURE HOLDING MEDIUM (WOOD CHIPS, SAW-DUST, ECT.) UNTIL PLANTED.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN THE PLANT LIST AND THE PLANTING PLAN.

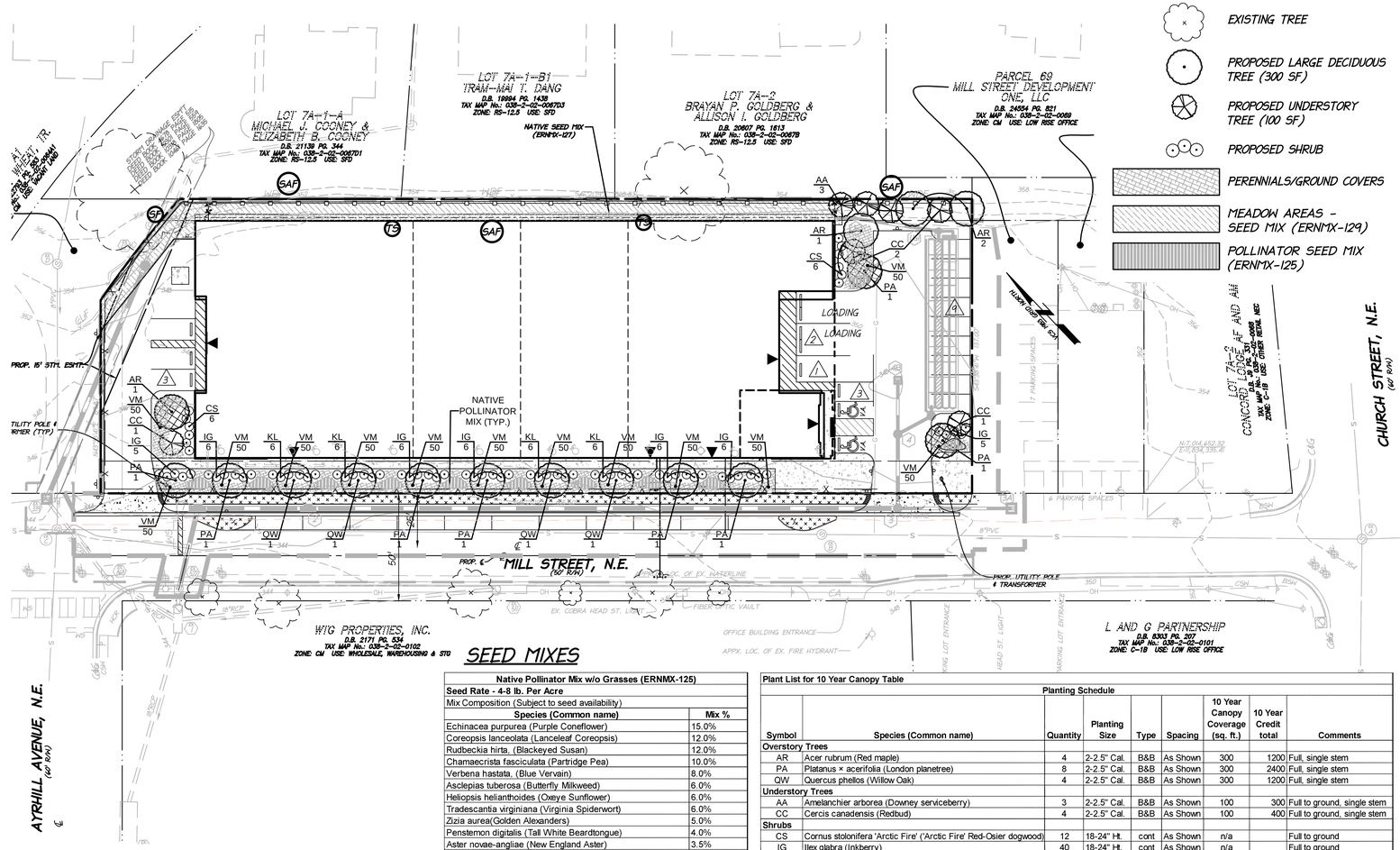


NOTES:
1. TREES WILL BE REJECTED IF TRUNK FLARE IS NOT VISIBLE AT TOP OF ROOT BALL.
2. DO NOT HEAVILY PRUNE TREE AT PLANTING. PRUNE ONLY CROSSING LIMBS, CO-DOMINANT LEADERS & BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS & LATERAL BRANCHES MAY BE PRUNED, BUT DO NOT REMOVE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF CROWN.
3. STAKE OR WRAP TREE ONLY UPON APPROVAL OF LANDSCAPE ARCHITECT.
4. THIS DETAIL ASSUMES THAT PLANTING SPACE IS LARGER THAN 8 SQUARE FEET, OPEN TO SKY, AND NOT COVERED BY PAVING OR GRATING.
5. THIS PLANTING DETAIL WAS BASED ON ISA (INTERNATIONAL SOCIETY OF ARBORICULTURE) STANDARD TREE PLANTING DETAIL. FOR MORE INFORMATION SEE www.isa-arbor.com OR CALL (217) 355-9411.

TREE PLANTING DETAIL
B&B TREES IN ALL SOIL TYPES
N.T.S.

LEGEND:

- LIMITS OF CLEARING AND GRADING
- EXISTING TREE
- PROPOSED LARGE DECIDUOUS TREE (300 SF)
- PROPOSED UNDERSTORY TREE (100 SF)
- PROPOSED SHRUB
- PERENNIALS/GROUND COVERS
- MEADOW AREAS - SEED MIX (ERNMX-129)
- POLLINATOR SEED MIX (ERNMX-125)



SEED MIXES

Native Pollinator Mix w/o Grasses (ERNMX-125)	
Seed Rate - 4-8 lb. Per Acre	
Mix Composition (Subject to seed availability)	
Species (Common name)	Mix %
Echinacea purpurea (Purple Coneflower)	15.0%
Coreopsis lanceolata (Lanceleaf Coreopsis)	12.0%
Rudbeckia hirta. (Blackeyed Susan)	12.0%
Chamaecrista fasciculata (Partridge Pea)	10.0%
Verbena hastata. (Blue Vervain)	8.0%
Asclepias tuberosa (Butterfly Milkweed)	6.0%
Heliopsis helianthoides (Oxeye Sunflower)	6.0%
Tradescantia virginiana (Virginia Spiderwort)	6.0%
Zizia aurea(Golden Alexanders)	5.0%
Penstemon digitalis (Tall White Beardtongue)	4.0%
Aster novae-angliae (New England Aster)	3.5%
Senna hebecarpa (Wild Senna)	2.4%
Pycnanthemum tenuifolium (Narrowleaf Mountainmint)	2.0%
Solidago nemoralis (Gray Goldenrod)	1.6%
Aster umbellatus (Flat Topped White Aster)	1.5%
Eupatorium perfoliatum (Boneset)	1.5%
Monarda fistulosa (Wild Bergamot)	1.5%
Geum canadense(White Avens)	1.0%
Tradescantia virginiana (Virginia Spiderwort)	1.0%
Total	100.0%

Conservation Shade Mix (ERNMX-129)	
Seed Rate - 4 lb. Per 1,000 Square Feet	
Mix Composition (Subject to seed availability)	
Species (Common name)	Mix %
Festuca rubra (Creeping Red Fescue)	30.0%
Festuca rubra ssp. commutata (Chewings Fescue)	30.0%
Lolium multiflorum (Annual Ryegrass)	20.0%
Poa pratensis, 'Kelly' (Kentucky Bluegrass, 'Kelly')	10.0%
Poa trivialis (Rough Bluegrass)	10.0%
Total	100.0%

SEEDING NARRATIVE

1. SEEDING SHALL BE DONE IN THE DESIGNATED AREAS AS NOTED ON THIS PLAN.
2. BEFORE SEEDING, REMOVE ALL DEAD VEGETATION FROM THE SITE.
3. SEEDING SHALL BE DONE BY HAND, BROADCAST SPREADER OR HYDROSEEDING.
4. THE LANDSCAPE CONTRACTOR SHALL FOLLOW THE SEED DISTRIBUTOR'S RECOMMENDED TIME FOR SEEDING.
5. NO APPLICATION OF FERTILIZER SHALL BE USED DURING THE ESTABLISHMENT OF THE SEED MIXTURE.
6. SEEDING RATE OF ERNMX-129 IS 4 LB./ 1,000 S.F. A COVER SEED OF GRAIN OATS IS RECOMMENDED FROM JAN. 1 - AUG. 1 , AT A RATE OF 30LB./ 1 AC. AND A COVER SEED OF GRAIN RYE IS RECOMMENDED FROM AUG. 1 - DEC. 31, AT A RATE OF 30LB./ 1 AC.
7. MONITORING OF WEEDS AND EVASIVE PLANT MATERIAL SHALL BE DONE SEASONALLY.

FRONT YARD LANDSCAPING TABULATION:

TOTAL FRONT YARD AREA: 6,484 SF (0.15 AC)
TOTAL LANDSCAPED AREA IN FRONT YARD: 2,978 SF (0.07 AC)

PERCENTAGE OF FRONT YARD LANDSCAPED: 2,978/6,484 = 46%

TREE CANOPY COVER REQUIREMENTS

GROSS SITE AREA	54,716 SF	(1.26 AC)
DEDUCTION OF R.O.W. DEDICATION	±0 SF	(0.00 AC)
ADJUSTED SITE AREA	54,716 SF	(1.26 AC)
ZONING:		CM
TREE CANOPY COVER REQUIRED (54,716 SF X 10%)		5,472 SF
EXISTING TREE CANOPY CREDIT (0 SF X 1.25)		0 SF
TREE CANOPY COVER PROVIDED:		
LANDSCAPE TO BE PROVIDED		5,500 SF
TREE SAVE AREA		0 SF
TOTAL		5,500 SF

Plant List for 10 Year Canopy Table

Planting Schedule

Symbol	Species (Common name)	Quantity	Planting Size	Type	Spacing	10 Year Canopy Coverage (sq. ft.)	10 Year Credit total	Comments
Overstory Trees								
AR	Acer rubrum (Red maple)	4	2-2.5" Cal.	B&B	As Shown	300	1200	Full, single stem
PA	Platanus × acerifolia (London planetree)	8	2-2.5" Cal.	B&B	As Shown	300	2400	Full, single stem
QW	Quercus phellos (Willow Oak)	4	2-2.5" Cal.	B&B	As Shown	300	1200	Full, single stem
Understory Trees								
AA	Amelanchier arborea (Downey serviceberry)	3	2-2.5" Cal.	B&B	As Shown	100	300	Full to ground, single stem
CC	Cercis canadensis (Redbud)	4	2-2.5" Cal.	B&B	As Shown	100	400	Full to ground, single stem
Shrubs								
CS	Cornus stolonifera 'Arctic Fire' ('Arctic Fire' Red-Osier dogwood)	12	18-24" Ht.	cont	As Shown	n/a		Full to ground
IG	Ilex glabra (Inkberry)	40	18-24" Ht.	cont	As Shown	n/a		Full to ground
KL	Kalmia latifolia 'Elf' (Dwarf Mountain Laurel)	24	18-24" Ht.	cont	As Shown	n/a		Full to ground
Perennials								
VM	Periwinkle(Vinca minor)	650	2" PP	cont	12" O.C.	n/a		Full to ground
Totals(Sq. Ft.)						Sub-total	5500	

NOTE:

NO TREES BEYOND R.O.W. DUE TO CONFLICT WITH PIPE

TREE PRESERVATION NOTE:

NO TREES ARE BEING PRESERVED ONSITE. THE EXISTING VEGETATION CONSISTS OF BAMBOO ALONG THE REAR PROPERTY LINE.

SIGHT DISTANCE NOTE:

STREET TREES WILL HAVE THEIR LOWER BRANCHES LIMBED TO A HEIGHT OF 5.5' TO MAINTAIN A CLEAR SIGHT DISTANCE

ZONING WAIVER & MODIFICATION

SEE ZONING ORDINANCE WAIVER & MODIFICATION LETTER ON SHEET 2 FOR THE MASONRY SCREEN WALL AND TREE CANOPY COVER.

COMMONWEALTH OF VIRGINIA
Wm. O'Kelly Russell
Lic. No. 001014
2/24/20
LICENSED LANDSCAPE ARCHITECT

PREPARED BY:
WM. O'KELLY RUSSELL
ISA Certified Arborist, MA-5009A
2/24/20

GRAPHIC SCALE:
1" = 30'
30' 0' 30' 60' 90'

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4715

LANDSCAPE PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE
	REVISION APPROVED BY:	
	REVIEW BY:	APPROVED
	DESIGN	ENGINEER

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 24 OF 25

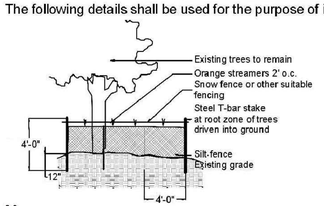
DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

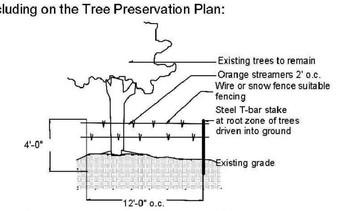
FILE NUMBER: 16220-2-0

Town of Vienna TREE PROTECTION DETAILS

The following details shall be used for the purpose of including on the Tree Preservation Plan:

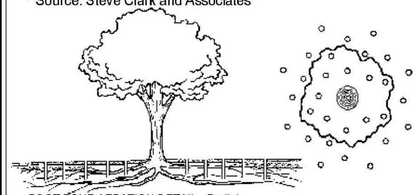


COMBINED SILT AND TREE PROTECTION FENCE



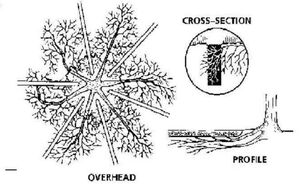
CONSTRUCTION FENCE FOR TREE PROTECTION

* Source: Steve Clark and Associates



*ROOT ZONE AERATION DETAIL - Radial Aeration *NOTE: Narrow trenches are to be dug in a radial pattern throughout the root zone. Begin the trenches 4-3 feet from the trunk of the tree to avoid cutting any major support roots. Trenches are to extend at least as far as the dripline of the tree. Trenches are to be a minimum of 1 foot in depth and may need to be deeper if the soil grade has been raised. Trenches are to be backfilled with topsoil or compost. Finish top layer of trench with a minimum 3 layer of wood chips. This technique is to be used for only isolated trees, where the roots of other trees would not be damaged.* Source: International Society of Arboriculture*

*ROOT ZONE AERATION DETAIL - Drilling Holes/Vertical Mulching **
*NOTE: Holes are to be 2-4 inches in diameter and made about 3 feet on center, throughout the root zone of the tree. Depth shall be at least 12 inches and may be deeper if the soil grade has been raised. Holes are to be filled with peat moss, wood chips, pea gravel or other materials that maintain aeration and support root growth. * Source: International Society of Arboriculture*



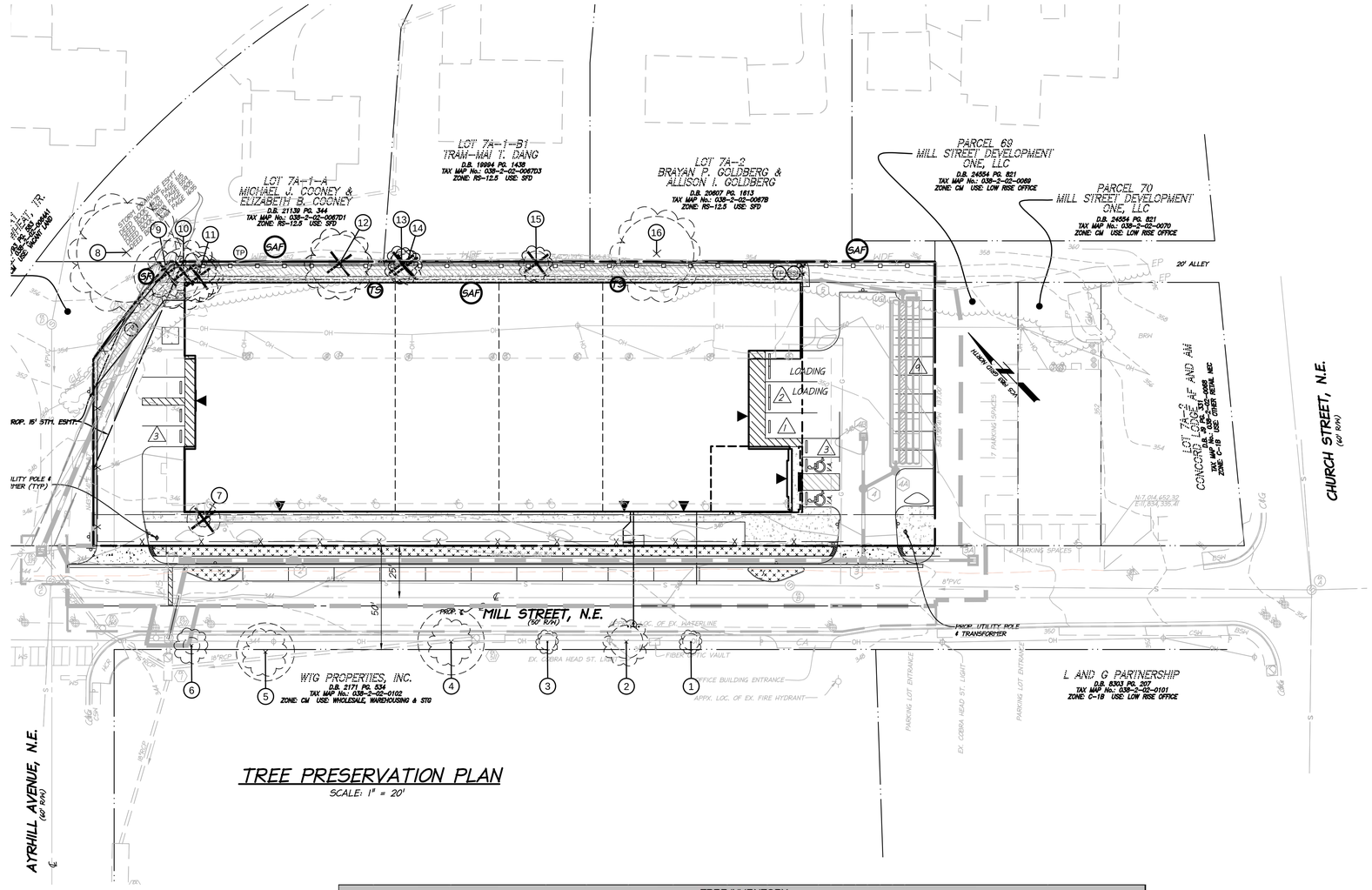
Town of Vienna TREE PROTECTION PLAN NOTES

The following tree protection practices are to be followed. The information listed below is required on the landscape plan:

1. A pre-construction meeting shall be held on-site to explain protection measures to operators, construction supervisors, or contractor's representatives with the Town Arborist or their representative.
2. Contractor on the site shall stake clearing limits in order to facilitate location for trenching and fencing installation for tree protection.
3. No clearing or grading shall begin in areas where tree preservation measures have not been completed.
4. The use of heavy equipment is strictly prohibited within tree preservation areas to include the removal of unwanted trees. Structures, pads etc. shall be removed by hand.
5. The sequence of tree preservation measures, if required, shall be as follows:
   a. Root pruning trenching;
   b. Tree protection fencing;
   c. Tree pruning and chemical treatment;
   d. Aeration systems installed;
6. The preceding measures shall be directed in the field by the construction supervisor.
7. Tree protection fencing shall be maintained by the contractor for the duration of construction. No alteration shall occur without prior approval by a town representative.
8. Critical root zone shall be defined as 1.5' radius per 1" of DBH. DBH (Diameter at Breast Height) shall be measured at a height of 4.5' from highest point of ground at base of trunk.
9. The protection provided shall consist of fencing around the tree to the drip line and the areas enclosed kept free of all soil, equipment, and construction material storage, which includes final grading and landscaping efforts.
10. Root Pruning Requirements: Unless otherwise instructed by the Office of the Head Arborist, root pruning MUST be performed when the limits of disturbance fall within critical root zone of trees to be saved. Roots shall be pruned to a minimum depth of 12" at or before the LOD.
11. Trees that are determined by the Town Arborist to be in "Poor" condition shall not count towards canopy coverage calculations.
12. All pruning shall be done in accordance with the American National Standards Institute (ANSI) A300-1995 Pruning Standards. Climbing or tree spikes shall not be used to climb live trees unless the tree is being removed.

NOTE:

SUPER SILT FENCE MAY BE USED AS TREE PROTECTION FENCING.



TREE PRESERVATION PLAN

SCALE: 1" = 20'

LEGEND:

- EXISTING TREE
- TREE CANOPY CREDIT
- TREE TO BE REMOVED
- TREE ID
- CRITICAL ROOT ZONE (CRZ)
- LIMITS OF CLEARING & GRADING
- TREE PROTECTION
- AREA TO BE MULCHED

TREE INVENTORY

Plan#	Species		Size	Typical Root Zone	Condition	Canopy Position	Crown Density	Crown Spread	Activities						Problems/Comments	Action to be taken
	Common Name	Scientific Name	DBH	Radius (ft)	%		%	Average Canopy Spread (ft)	Root Prune	Mulch	Fertilize	Prune	Remove Vines	Treat Pests	Remove Tree	
1	Red Maple	Acer rubrum	4	6	70	suppressed	75	10							Overhead Wire, Offsite	To remain
2	Ornamental Pear	Pyrus calleryana	8	12	75	suppressed	80	20							Overhead Wire, Offsite	To remain
3	Red Maple	Acer rubrum	4	6	75	suppressed	75	10							Overhead Wire, Offsite	To remain
4	Ornamental Pear	Pyrus calleryana	16	24	80	suppressed	80	20							Overhead Wire, Offsite	To remain
5	Ornamental Pear	Pyrus calleryana	14	21	80	suppressed	80	20							Overhead Wire, Offsite	To remain
6	Red Maple	Acer rubrum	4	6	80	suppressed	85	15							Overhead Wire, Offsite	To remain
7	Spruce	Picea abies	8	12	75	suppressed	85	6							X Conflict with Proposed Construction	Remove
8	Sycamore	Platanus occidentalis	24	36	85	dominant	85	50							Offsite	To remain
9	Poplar sp.	Populus sp.	16	24	65	dominant	70	20							X Conflict with Proposed Construction	Remove
10	American ash	Fraxinus pennsylvanica	12	18	50	dominant	65	30							X Conflict with Proposed Construction	Remove
11	American ash	Fraxinus pennsylvanica	12	18	40	intermediate	60	20							X Conflict with Proposed Construction	Remove
12	Black locust	Robinia pseudoacacia	14	21	70	intermediate	75	30							X Conflict with Proposed Construction	Remove
13	Black locust	Robinia pseudoacacia	6	9	70	suppressed	70	15							X Conflict with Proposed Construction	Remove
14	Black locust	Robinia pseudoacacia	6	9	75	suppressed	70	15							X Conflict with Proposed Construction	Remove
15	Black locust	Robinia pseudoacacia	6	9	65	suppressed	70	15							X Conflict with Proposed Construction	Remove
16	White pine	Pinus alba	18	27	65	dominant	80	40							Offsite	To remain

COMMONWEALTH OF VIRGINIA
Wm. O'Kelly Russell
Lic. No. 001014
2/24/20
LICENSED LANDSCAPE ARCHITECT

PREPARED BY:
WM. O'KELLY RUSSELL
ISA Certified Arborist, MA-5005A
2/24/20

GRAPHIC SCALE:
1" = 30'
30' 0' 30' 60' 90'

LDC
4585 DAISY REID AVENUE, SUITE 201 WOODBRIDGE, VIRGINIA 22192
PH: 703-680-4585 FX: 703-680-4715

TREE PRESERVATION PLAN

MILL STREET SELF-STORAGE

TOWN OF VIENNA, VIRGINIA

DATE	DESIGN	NO.	DESCRIPTION	REVIEW BY	APPROVED	DATE

ENGINEER

REVISION APPROVED BY:

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

COMMONWEALTH OF VIRGINIA
JOSHUA MARSHALL
Lic. No. 040958
05/12/2020
PROFESSIONAL ENGINEER

SCALE: 1" = 30'

SHEET 25 OF 25

DATE: AUGUST 2, 2019

DRAFT: CBS CHECK: PDR

FILE NUMBER: 16220-2-0

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