PLAN APPROVAL INFORMATION

	RELATED INFORMATION		REQUIRED	NOT REQUIRED	COUNTY ID NUMBER	APPROVED ON SHEET #	COMMENTS
1	CONCURRENT PROCESSING		☐	☒			
2	MODIFIED PROCESSING		☐	☒			
3	MAXIMUM DENSITY ADJUSTMENTS		☐	☒			
4	AFFORDABLE DWELLING UNITS		☐	☒			
5	WORK FORCE UNITS		☐	☒			
6	RPA DELINEATION PLAN		☐	☒			
7	CBPO RPA EXEMPTION OR EXCEPTION		☐	☒			
8	WATER QUALITY IMPACT ASSESSMENT	ON THE PLAN	☐	☒			
9		SEPARATE SUBMISSION	☐	☒			
10	FLOODPLAIN STUDY		☐	☒			
11	FLOODPLAIN USE DETERMINATION		☐	☒			
12	DRAINAGE STUDY		☐	☒			
13	GEOTECHNICAL REPORT	FULL	☒	☐			SUBMITTED CONCURRENTLY
14		LIMITED	☒	☐			SEE SHEET 28-29
15	ONSITE EASEMENTS		☒	☐			
16	OFFSITE EASEMENTS		☐	☒			
17	LETTER OF PERMISSION FOR OFFSITE DISTURBANCE		☐	☒			
18	ADJACENT PROPERTY OWNER NOTICES		☒	☐			
19	OFFSITE UTILITY WORK NOTICES	NOTIFY OWNER OF LAND	☐	☒			
20		NOTIFY OWNER OF EASEMENT	☐	☒			
21	MAJOR UNDERGROUND UTILITY NOTICES		☐	☒			
22 23	REZONING/SPECIAL EXCEPTION/SPECIAL PERMIT and AMENDMENTS/2232 REVIEW		☒	☐	SE 2023-PR-00046		APPROVED 10-22-24 SEE SHEETS 26-27
24	VARIANCE		☐	☒			
25	BOS/BZA CLERK'S LETTER/RESOLUTION		☒	☐	SE 2023-PR-00046		SEE SHEET 26-27
26	PROFFERS/DEVELOPMENT CONDITIONS		☒	☐	SE 2023-PR-00046		SEE SHEET 26-27
27	INTERPRETATIONS WITH EXHIBITS		☐	☒			
28	ARCHITECTURAL REVIEW BOARD APPROVAL		☐	☒			
29	WETLAND/WATERS OF THE US PERMIT		☐	☒			
30	STATE REGULATED DAM PERMIT		☐	☒			
31	LOCATED IN DAM BREAK INUNDATION ZONE		☐	☒			
32	FEMA LETTER OF MAP REVISION		☐	☒			
33	BATHYMETRIC SURVEY		☒	☐			
34	TREE BANKING/TREE FUND		☐	☒			
35	MODIFICATIONS/WAIVERS (List/describe below)						
36	TRANSITIONAL SCREENING WEST PROPERTY BOUNDARY				SE 2023-PR-00046	SHEET 27	APPROVED 10-22-24
37	TRANSITIONAL SCREENING SOUTHERN PROPERTY BOUNDARY				SE 2023-PR-00046	SHEET 27	APPROVED 10-22-24
38							
39							

SOLID WASTE AND RECYCLING

All properties are required to recycle. designs for all properties must provide adequate containers/structures for the separate management of recyclables and trash.

SINGLE FAMILY DETACHED AND TOWNHOUSE DEVELOPMENTS

I CERTIFY THAT THE SITE DEPICTED ON THIS PLAN IS (Check applicable statement):
☐ IN A SANITARY DISTRICT WHERE TRASH AND RECYCLING COLLECTION IS CONDUCTED BY FAIRFAX COUNTY AND THAT I HAVE INFORMED THE PROPERTY OWNER OF THIS CONDITION.
☐ NOT IN A SANITARY DISTRICT AND TRASH AND RECYCLING COLLECTION WILL BE CONDUCTED BY A PRIVATE COMPANY.

NON-RESIDENTIAL PROPERTIES (Including businesses, schools, institutions, and multi-family properties, including condominiums and apartments)

I CERTIFY THAT (all steps must be completed):
☐ I HAVE COMPLETED AND SUBMITTED A WASTE STREAM CALCULATION WORKSHEET FOR THIS PROPERTY ON-LINE. N/A
☐ I HAVE INDICATED THE LOCATION AND TYPE OF TRASH AND RECYCLING CONTAINERS AND STRUCTURES ON SHEET NUMBER N/A IN BUILDNGN/A .
☐ THE TRASH AND RECYCLING MANAGEMENT CONTAINERS/STRUCTURES ON THIS PLAN ARE ADEQUATE TO MEET THE MINIMUM RECYCLING REQUIREMENT AS DESCRIBED ON THE WASTE STREAM CALCULATION WORKSHEET SUBMITTED ON-LINE.N/A

SANITARY SEWER INFORMATION

WASTEWATER TREATMENT PLANT ALEXANDRIA RENEW ENTERPRISE (ARE)
☐ THIS SITE IS SUBJECT TO N/A SANITARY SEWER REIMBURSEMENT CHARGES.
☐ THIS SITE IS SERVED BY ONSITE SEWAGE TREATMENT SYSTEM(S).

PROPOSED CONSTRUCTION IN THE RPA

1.	WATER DEPENDENT DEVELOPMENT (*118-2-1(a)*)	☐ YES	☒ NO
2.	REDEVELOPMENT (*118-2-1(b)*)	☐ YES	☒ NO
3.	PRIVATE ROADS/DRIVEWAYS (*118-2-1(d)*)	☐ YES	☒ NO
4.	FLOOD CONTROL AND SWM FACILITY (118-2-1(e))	☐ YES	☒ NO
5.	PUBLIC ROADS (*118-5-2(a)*)	☐ YES	☒ NO
6.	OTHER (Indicate type) ____________	☐ YES	☒ NO

TREE PRESERVATION

TREE PRESERVATION TARGET DEVIATIONS OR MODIFICATIONS ARE BEING REQUESTED.
☐ YES ☒ NO

POTENTIAL FOR WETLANDS

IS THE DISTURBED AREA LOCATED IN A WETLANDS AREA DEPICTED ON THE NATIONAL WETLANDS INVENTORY MAP? ☐ **YES** ☒ **NO**

IS THE DISTURBED AREA LOCATED IN A POTENTIAL WETLANDS AREA DEPICTED ON THE COUNTY POTENTIAL WETLAND AREA MAP? ☐ **YES** ☒ **NO**

IF YES, TO EITHER OF THE TWO QUESTIONS ABOVE, PROVIDE EVIDENCE OF EITHER
☐ AN APPROVED WETLANDS PERMIT OR
☐ A VERIFICATION THAT NO WORK WILL IMPACT RESOURCES WHICH WOULD REQUIRE A PERMIT FROM THE US ARMY CORPS OF ENGR OR THE COMMONWEALTH BEFORE PLAN APPROVAL

NOTES

1. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE DEVELOPER OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA OR ANY ORDINANCE ENACTED BY THE COUNTY OF FAIRFAX.
2. THE DESIGN, CONSTRUCTION, FIELD PRACTICES, AND METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE FAIRFAX COUNTY CODE AND IN THE PUBLIC FACILITIES MANUAL AS AMENDED. FAILURE TO COMPLY WITH THE FAIRFAX COUNTY CODE, THE PUBLIC FACILITIES MANUAL, THE APPROVED PLANS, AND THE PROVISIONS OF THE DEVELOPMENT AGREEMENT AND PERMIT SHALL BE DEEMED A VIOLATION.
3. PERMIT REQUIREMENTS:
   A. NO EARTH DISTURBANCE OR CONSTRUCTION IS ALLOWED UNTIL THE BUILDING PERMIT FOR THIS PLAN IS ISSUED. EVIDENCE OF A BUILDING PERMIT MUST BE PROVIDED TO THE SITE INSPECTOR AT THE PRE-CONSTRUCTION MEETING.
   B. A SEPARATE DEMOLITION PERMIT MUST BE PROVIDED TO THE SITE INSPECTOR AT THE PRE-CONSTRUCTION MEETING.
   C. A SEPARATE PERMIT MUST BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), NORTHERN VIRGINIA DISTRICT, FOR ANY WORK WITHIN VDOT RIGHT OF WAY (ROW), INCLUDING REPAIRS AND ACTIVITIES IMPEDING PEDESTRIAN OR VEHICULAR TRAFFIC IN THE ROW. CONTACT VDOT AT 703-259-1773 THREE (3) WORKING DAYS BEFORE EXCAVATION IN ANY STATE RIGHT OF WAY.
   D. A BUILDING PERMIT IS REQUIRED FOR RETAINING WALLS SUPPORTING 3 FEET OR MORE UNBALANCED FILL OR ANY WALL SUPPORTING SURCHARGE OTHER THAN ORDINARY UNBALANCED FILL.
4. THE COUNTY SITE INSPECTOR NOTIFICATION REQUIREMENTS:
   A. A MINIMUM OF 3 DAYS NOTICE IS REQUIRED PRIOR TO STRAR OF CONSTRUCTION. CONTACT INSPECTIONS AT 703-324-1720 OR AT ldssdidadmin@fairfaxcounty.gov. FAILURE TO NOTIFY MAY RESULT IN ISSUANCE OF A VIOLATION AND A SUBSEQUENT FINE FOR COMPLIANCE INSPECTIONS.
   B. MINIMUM OF 24 HOURS NOTICE IS REQUIRED WHEN REQUESTING RESIDENTIAL OR NON-RESIDENTIAL USE PERMITS.
   C. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED WHEN REQUESTING TESTS PERTAINING TO SANITARY SEWER ACCEPTANCE.
5. OBTAIN AN UNDERGROUND UTILITY DAMAGE PREVENTION TICKET FROM VA811 NOTIFICATION CENTER AT 811 OR 1-800-552-7001 OR VA811.COM PRIOR TO PRE-CONSTRUCTION MEETING.
6. WATER DISTRIBUTION NOTE: ALL FIRE PROTECTION SYSTEMS WHICH ARE INSTALLED IN COMPLIANCE WITH THESE PLANS AND COUNTY OF FAIRFAX ORDINANCES SHALL BE MAINTAINED IN AN OPERATIVE CONDITION AT ALL TIMES. WHEN NECESSARY TO TEMPORARILY REDUCE OR DISCONTINUE THE PROTECTION IN ORDER TO MAKE TESTS, REPAIRS, ALTERATIONS OR ADDITIONS, NOTIFY THE FAIRFAX COUNTY PUBLIC SAFETY COMMUNICATIONS CENTER AT 703-691-2131.
7. THE CONSTRUCTION AREA SHALL BE KEPT LITTER FREE. ALL LITTER, TRASH, DEBRIS, CHEMICALS, ETC. SHALL BE PROPERLY STORED AND SECURED TO MINIMIZE THE DISCHARGE OF POLLUTANTS.

PROFESSIONAL SEALS AND SIGNATURES

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
PROFESSIONAL ENGINEER

DATE: 04/29/2025 DATE: ____________ DATE: ____________

DESIGNATED PLANS EXAMINER (DPE) CERTIFICATE

FIRST SUBMISSION REVIEWED AND RECOMMENDED FOR SUBMISSION	SECOND SUBMISSION REVIEWED AND RECOMMENDED FOR APPROVAL
DPE SIGNATURE: Brent W. Boggs	DPE SIGNATURE: ____________
DPE PRINTED NAME: BRENT BOGGS	DPE PRINTED NAME: ____________
DATE: 4/29/25 REG. NUMBER 347	DATE: ________ REG. NUMBER________

ZONING REQUIREMENTS

1.	SOURCE OF ZONING REQUIREMENTS (CHECK ONE)	☐ BY RIGHT USE ☒ ZONING PLAN (RZ, SE, SP, VAR)
2.	ZONING DISTRICT	R-4
3.	AVERAGE LOT AREA	8,800 SF
4.	MINIMUM LOT AREA	8,400 SF
5.	MINIMUM LOT WIDTH	70, INTERIOR, 95 CORNER FT
6.	MAXIMUM BUILDING HEIGHT	100 FT
7.	NUMBER OF FLOORS	N/A
8.	MINIMUM YARDS (SETBACKS)	FRONT: 30 FT, SIDE: 10 FT, REAR: 25 FT; SIDE TOTAL: 8 FT (Cluster)
9.	MAXIMUM FAR	0.35
10.	MAXIMUM DENSITY	4 DU/AC
11.	OPEN SPACE REQUIRED	25 %, 16,609 SF
12.	ANGLE OF BULK PLANE (If Applicable)	FRONT: N/A FT, SIDE: N/A FT, REAR: N/A FT; DETAILS ON SHEET: N/A
13.	OVERLAY DISTRICT	N/A
14.	HISTORIC SITE	N/A

SITE PLAN TABULATION

1.	SITE AREA		66,436 SF	1.53 AC
2.	AREA OF STREET DEDICATION		N/A SF	
3.	USE		UTILITY FACILITY, LIGHT	
4.	PROPOSED NUMBER OF LOTS (Including SF attached lots)		3	
5.	PROPOSED NUMBER OF UNTIS (Multi family)		N/A	
6.	AREA OF LOT(S)		N/A SF	
7.	DENSITY		N/A DU/AC	
8.	GROSS FLOOR AREA	EXISTING BUILDING TO BE DEMOLISHED	2,284 SF	
		EXISTING BUILDING TO REMAIN	2,724 SF	
		PROPOSED BUILDING OR ADDITION	N/A SF	
		TOTAL PROPOSED (Includes existing to remain)	N/A SF	
9.	PROPOSED NET FLOOR AREA (Includes existing to remain)		N/A SF	
10.	PROPOSED BUILDING HEIGHT		100 FT	
11.	PROPOSED NUMBER OF FLOORS		N/A	
12.	TOTAL FLOOR AREA RATIO (For entire site)		2,724 / 66,436 = 0.04	
13.	TOTAL NUMBER OF PARKING SPACE REQUIRED/PROPOSED		2 / 2 (Including accessible)	
14.	TOTAL ACCESSIBLE PARKING SPACE REQUIRED/PROPOSED		N/A / N/A (Van+regular spaces)	
15.	VAN ACCESSIBLE PARKING SPACE REQUIRED/PROPOSED		N/A / N/A	
16.	BICYCLE PARKING SPACES REQUIRED/PROPOSED		N/A / N/A	
17.	LOADING SPACE REQUIRED/PROPOSED		N/A SF	%
18.	OPEN SPACE PROPOSED (Details on sheet 6)		0.779 AC.	
19.	NO. OF PROPOSED EV CHARGING SPACES (If provided)		N/A	

FIRE MARSHAL NOTES

N/A - PROPOSED BUILDING IS NOT OCCUPIED

1.	AVAILABLE FIRE FLOW		GAL/MIN
2.	PROVIDER OF FIRE FLOW		
3.	TEST HYDRANT NUMBER/LOCATION		
4.	TYPE OF CONSTRUCTION (VUSBC)		
5.	USE GROUP CLASSIFICATION (VUSBC)		
6.	BUILDING TO BE FIRE SPRINKLED	☐ YES	☐ PER NFPA 13R ☐ PER NFPA 13D ☐ PER NFPA 13
		☒ NO , PROPOSED BUILDING IS NOT OCCUPIED	

STORMWATER INFORMATION

VPDES PERMIT COVERAGE REQUIRED? ☒ YES ☐ NO ☐ **HIGH DENSITY POLYETHYLENE (HDPE) OR POLYPROPYLENE (PP) PIPE USED ON THIS PROJECT**

SWM FACILITIES DESIGNED USING TECHNICAL CRITERIA 4
☐ NEW DEVELOPMENT ☒ REDEVELOPMENT ☐ NEW + REDEVELOPMENT (i.e. Development with net increase in impervious area)

TECHNICAL CRITERIA 5 (LEGACY PROJECTS ONLY)
☐ NEW DEVELOPMENT ☐ REDEVELOPMENT

WATER QUALITY OPTIONS: ☐ COMPREHENSIVE SWM PLAN ☐ EXISTING ON-SITE FACILITY ☐ OFF-SITE FACILITY ☐ NON-POINT SOURCE NUTRIENT CREDIT
☒ PROPOSED FACILITIES (FILL OUT THE TABLE BELOW) ☐ NONE OF THE ABOVE

POST CONSTRUCTION SWM FACILITIES (Proposed Only)

FACILITY ID #	FACILITY NAME	DESIGN LEVEL	DEQ SPEC #	QUALITY	QUANTITY	AREA TREATED (AC)	LATITUDE DECIMAL DEGREES (XX.XXXX)	LONGITUDE DECIMAL DEGREES (-XX.XXXX)	VAHU6 WATERSHED	VAHU6 NO. (PL-##)	RECEIVING WATERS	MAINTE-NANCE AGREEMENT Y/N	LENGTH/ AREA OF FACILITY	UNIT (FT/SF)	NO. OF BLDG. SERVED (FOR ROOFTOP DISCONNECT)
SA	SOIL COMPOST AMENDMENT	1	P-FIL-8	☒	☐	0.97	38.8875	-77.2001	CAMERON RUN	PL26	TRIPPS RUN	N	17,425	SF	N/A
				☐	☐										
				☐	☐										
				☐	☐										
				☐	☐										
				☐	☐										
				☐	☐										

DISTURBED AREA (DA) WITHIN WATERSHED(S)

WATERSHED 1 CAMERON RUN DA= 1.12 (ACRES) WATERSHED 2 ____________ DA= ______ (ACRES) **TOTAL DISTURBED AREA=** 1.12 **(ACRES)**

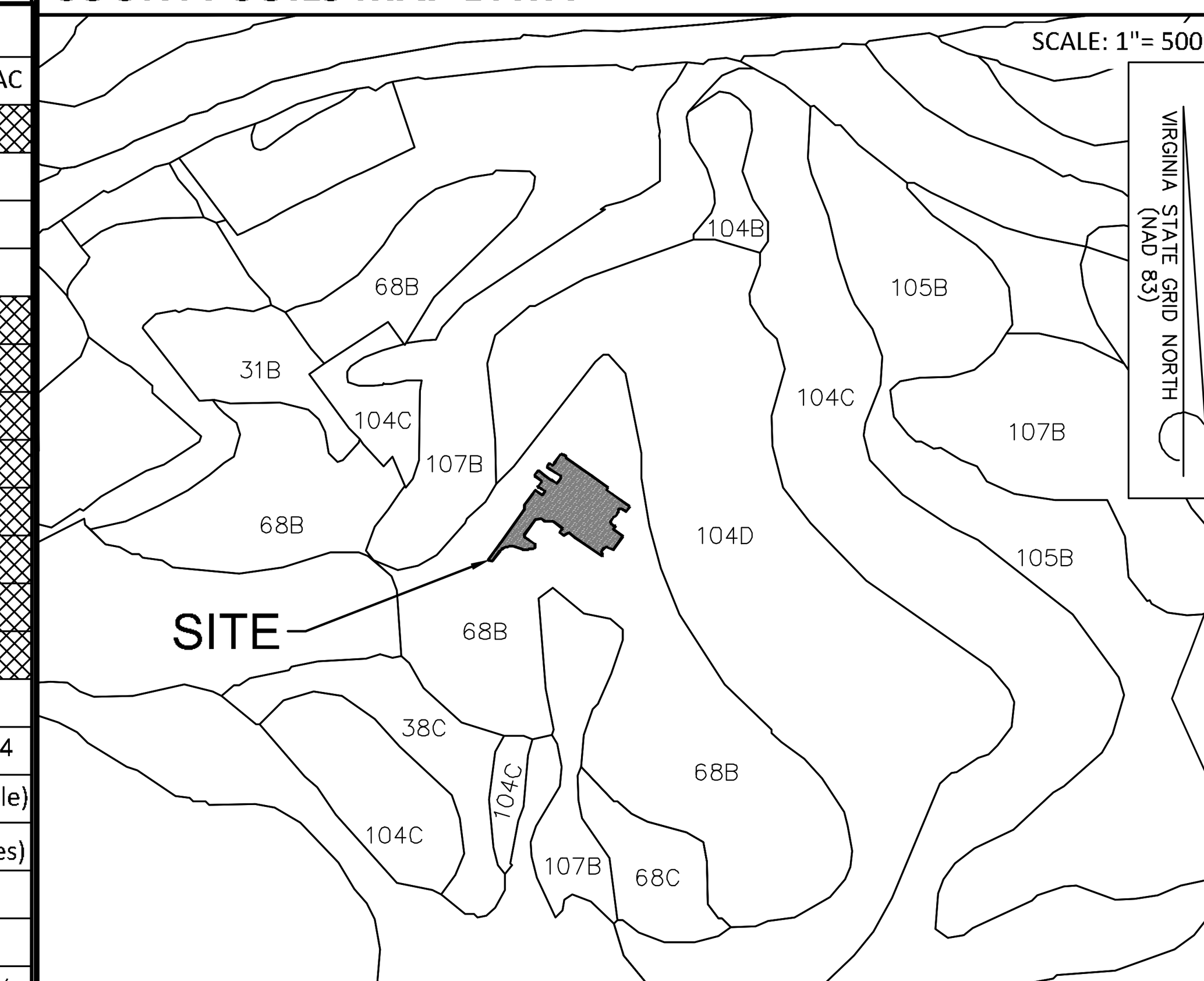
VICINITY MAP

PROPOSED SIDEWALK MAINTENANCE: XXXXX - VDOT, 00000 - FAIRFAX COUNTY
PROPOSED TRAIL MAINTENANCE: 00000 - FAIRFAX COUNTY
ALL OTHER PROPOSED SIDEWALKS/TRAILS TO BE OWNER MAINTAINED

TAX MAP REFERENCE NUMBER(S)

MAP PAGE #	DOUBLE CIRCLE #	BLOCK (SINGLE CIRCLE #)	LOT/PARCEL(S) #
050-1	2		0089 & 0094A
050-1	12		0001, 0006 & 0005 (PART)

COUNTY SOILS MAP DATA



SOIL ID NO.	SOIL SERIES NAME	FOUNDATION SUPPORT	SOIL DRAINAGE	EROSION POTENTIAL	PROBLEM CLASS	HYDROLOGIC SOIL GROUP
68B	URBAN LAND-WHEATON COMPLEX	GOOD	FAIR-S	HIGH	IVB	D

IS THIS SITE LOCATED IN NATURALLY OCCURING ASBESTOS (NOA) SOILS? ☐ YES ☒ NO

Areas that may contain NOA soils are shown in the official County soils map on the Digital Map Viewer on the County website. Asbestos is regulated by the Virginia Department of Labor and Industry. Safety precautions and links to regulations regarding these soils or fill originating from them can be found on the Northern Virginia Soil and Water Conservation District website: www.fairfaxcounty.gov/Soil-water-conservation

ENGINEER'S/SURVEYOR'S CERTIFICATE

THIS PROPERTY IS IN THE NAME OF FAIRFAX COUNTY WATER AUTHORITY
AS RECORDED IN DEED BOOK 23530 27629 & 25583 PAGE 0125 1422 & 0446 OF THE LAND RECORDS OF FAIRFAX COUNTY, VA

OWNER/OWNER'S REPRESENTATIVE INFORMATION

☒ OWNER ☐ A CORPORATION
☐ TRUSTEE ☐ A PARTNERSHIP
☐ OWNER'S REPRESENTATIVE ☐ AN INDIVIDUAL

NAME: FAIRFAX COUNTY WATER AUTHORITY PHONE: (703) 689-5600
ADDRESS: 8570 EXECUTIVE PARK AVE. FAIRFAX, VA, 22031 EMAIL: DBRANCACCIO@FAIRFAXWATER.ORG

DEVELOPER INFORMATION

☒ DEVELOPER ☐ A CORPORATION
☐ CONTRACT OWNER ☐ A PARTNERSHIP
☐ LESSEE ☐ AN INDIVIDUAL

NAME: FAIRFAX COUNTY WATER AUTHORITY PHONE: (703) 689-5600
ADDRESS: 8570 EXECUTIVE PARK AVE. FAIRFAX, VA, 22031 EMAIL: DBRANCACCIO@FAIRFAXWATER.ORG

WETLANDS PERMITS CERTIFICATION

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

SIGNATURE: Dominic Brancaccio Digitally signed by Dominic Brancaccio DN: E=dbrancaccio@fairfaxwater.org, CN=Dominic Brancaccio, OU=PNE, OU=Domain Users, DC=fw, DC=org Date: 2025.04.10 09:59:48-04'00'

OWNER DEVELOPER NAME: Fairfax County Water Authority TITLE: Chief Facilities Engineer

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

CERTIFICATE OF NO CHANGE (For submissions other than first)

I HEREBY CERTIFY THAT NO CHANGES HAVE BEEN MADE THAT WOULD AFFECT PRIOR APPROVAL BY THE

FIRE MARSHAL DATED: ____________
WATER AUTHORITY DATED: ____________
HEALTH DEPARTMENT DATED: ____________
VDOT DATED: ____________
DPWES- SANITARY SEWER DATED: ____________
DPWES- STREETLIGHTS DATED: ____________

PROJECT DESCRIPTION

THIS PROJECT PROPOSES THE INSTALLATION OF A NEW WATER STORAGE TANK, ACCOMPANIED BY THE REMOVAL OF THE EXISTING TANK. EXISTING SITE HARDSCAPE (DRIVEWAYS, SIDEWALKS, CONCRETE PADS), BUILDINGS, AND SITE UTILITIES ASSOCIATED WITHIN THE IDENTIFIED AREA OF DISTURBANCE, SHALL BE REMOVED/DEMOLISHED. THE SITE PLAN ALSO PROPOSES A NEW SIDEWALK ALONG TOWER STREET AND AN ACCESS DRIVEWAY TO THE NEW WATER STORAGE TANK. THE AREA OF DISTURBANCE PROPOSED WITH THIS PLAN IS 1.12 ACRES.

SHEET INDEX

RESERVED FOR COUNTY USE

THIS APPROVAL IS NOT A COMMITMENT TO PROVIDE PUBLIC SANITARY SEWER.
THIS PLAN SHALL EXPIRE WITHOUT NOTICE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE COUNTY CODE. REVISIONS DO NOT EXTEND THE APPROVAL PERIOD. THE APPROVAL PERIOD IS INDEPENDENT OF THE AGREEMENT EXPIRATION DATE.

DESIGN ENGINEER / SURVEYOR
FIRM NAME: DEWBERRY ENGINEERS INC.
ADDRESS: 8401 ARLINGTON BLVD, FAIRFAX, VA 22031
PROJECT MANAGER: TIM CULLEITON
PHONE NO: 703.849.0497 EMAIL: TCULLEITON@DEWBERRY.COM

SITE PLAN OR PUBLIC IMPROVEMENT PLAN COVERSHEET, REVISED **AUG 2024**

POPLAR HEIGHTS WATER TANK
7405 & 7407 TOWER STREET

PROVIDENCE MAGISTERIAL (SUPERVISOR) DISTRICT
FAIRFAX COUNTY, VIRGINIA

COUNTY RECORD NUMBER
SP-2025-00014

ABBREVIATIONS

A	AREA OR ARC
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ACRE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECTURAL
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BB	BOTTOM OF LINE
BC	BOTTOM OF CURB
BF	BASEMENT FLOOR
BLDG	BUILDING
BM	BENCHMARK
BOV	BLOW OFF VALVE
BRL	BUILDING RESTRICTION LINE
BW	BOTTOM OF WALL
C	COEFFICIENT OF RUNOFF
CATV	CABLE TELEVISION
CB	CATCH BASIN OR CHORD BEARING
CC	CENTER TO CENTER
CFS (Q)	CUBIC FEET PER SECOND
CH	CHORD
CG	CURB AND GUTTER
CIP	CAST IRON PIPE
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CO	CLEAN OUT
CONT.	CONTINUATION
CS	CURB STOP
CT	COURT
CN	(RUNOFF) CURVE NUMBER
d	DEPTH
DA	DRAINAGE AREA
DB	DEED BOOK
DETL	DETAIL
DI	DROP INLET
DIP	DUCTILE IRON PIPE
DM	DROP MANHOLE
DR	DRIVE
DWG	DRAWING
D/W	DRIVE WAY
△	DELTA
E	RATE OF SUPERELEVATION IN FEET PER FOOT
EC	EROSION CONTROL
ESMT	EASEMENT
EG	EDGE OF GUTTER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ES	END SECTION
EW	END WALL
EX	EXISTING
EXIST	EXISTING
ELEC	ELECTRICAL
EBL	EAST BOUND LANE
F	FIRE LINE
FAR	FLOOR AREA RATIO
FC	FACE OF CURB
FDC	FIRE DEPARTMENT CONNECTION (SIAMESE)
FW	FAIRFAX WATER
FF	FIRST FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FP	FLOOD PLAIN
FCPA	FAIRFAX COUNTY PARK AUTHORITY
FOY	FOYER
FPS	FEET PER SECOND
FT	FEET
G	GAS
GFA	GROSS FLOOR AREA
Gr.	GRADE
GR	GUARD RAIL
HC	HANDICAPPED PARKING SPACE
HGL	HYDRAULIC GRADE LINE
HP	HIGH POINT
HR	HAND RAIL
HT	HEIGHT
I	RAINFALL INTENSITY
ID	INSIDE DIAMETER
IN	INCH
INV	INVERT
IP	IRON PIPE
IPF	IRON PIPE FOUND
IPS	IRON PIPE SET
JB	JUNCTION BOX
K	SIGHT DISTANCE COEFFICIENT
L	LENGTH
LAT	LATERAL
LL	LOWER LEVEL
LP	LOW POINT
LS	LOADING SPACE
LCG	LIMITS OF CLEARING & GRADING
M	MONUMENT FOUND
MECH	MECHANICAL
MH	MANHOLE
MI	MILE
MS	MEDIAN STRIP
MSL	MEAN SEA LEVEL
MIN	MINIMUM
MAX	MAXIMUM
N/F	NOW OR FORMERLY
NFA	NET FLOOR AREA
NO., #	NUMBER
NBL	NORTH BOUND LANE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
P	PERIMETER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVES
PCEP	POINT OF CURVE EDGE OF PAVEMENT
PCTC	POINT OF CURVATURE TOP OF CURB
PFM	PUBLIC FACILITIES MANUAL
PG	PAGE
PGL	POINT OF GRADE LINE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVES
PRELIM	PRELIMINARY
PROP., PR	PROPOSED
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENT
P&P	PLAN AND PROFILE
PSI	POUNDS PER SQUARE INCH
Q	AMOUNT OF RUNOFF
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RESTR.	RESTRAINED (VALVE)
RET.	RETAINING
REV	REVISION
RR	RAILROAD
RTE., RT	ROUTE
R/W	RIGHT OF WAY
RGP	ROUGH GRADING PLAN
ROM	REMOTE OUTSIDE MONITOR
S	SANITARY
SBL	SOUTH BOUND LANE
SD	SIGHT DISTANCE
SECT	SECTION
SEW	SEWER
SF	SQUARE FEET
SP	SITE PLAN
SPEC	SPECIFICATION
STA	STATION
STD	STANDARD
STK	STACK
STM	STORM
SVC	SERVICE
S/W	SIDE WALK
Sx	CROSS SLOPE
T	TANGENT
TB	TEST BORE
TBR	TO BE REMOVED
TC	TOP OF CURB
TEL	TELEPHONE
TP	TEST PIT
TB	TOP OF BANK
TW	TOP OF WALL
UD	UNDER DRAIN
UG	UNDERGROUND
UL	UPPER LEVEL
UP	UTILITY POLE
V	VELOCITY
VA	VAN ACCESSIBLE
VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
VF	VERTICAL FOOT
W\M	WATER MAIN
W\L	WATER LINE
WBL	WEST BOUND LANE
WSEL	WATER SURFACE ELEVATION
X	
YI	YARD INLET
YR	YEAR
Z	SIDE SLOPES

LEGEND

ADDITIONAL LEGEND INFORMATION PROVIDED ON APPLICABLE SHEETS

- PROPOSED IMPROVEMENTS BY OTHERS
- EXISTING INTERMEDIATE CONTOUR — 86 —
- EXISTING CONTOUR INDEX — 200 —
- PROPOSED CONTOUR — 86 —
- EXISTING EDGE OF PAVEMENT — EX. E.P. —
- PROPOSED EDGE OF PAVEMENT — PROP. E.P. —
- PROPOSED HEADER CURB
- EXISTING CURB
- PROPOSED CURB & GUTTER
- PROPOSED CG-6 — CG-6 —
- TRANSITION FROM CG-6 TO CG-6R — CG-6 CG-6R —
- EXISTING WATERLINE W/TEE — W W —
- PROPOSED WATERLINE W/TEE — W —
- EXISTING TELEPHONE LINE — T T —
- PROPOSED TELEPHONE LINE — T —
- EXISTING STORM SEWER — EX. 15" RCP SD —
- PROPOSED STORM SEWER — 23 15" RCP 24 —
- EXISTING SANITARY SEWER — SS SS —
- PROPOSED SANITARY SEWER — SS A SS —
- PROPOSED SANITARY LATERAL CLEANOUT
- EXISTING ELECTRIC SERVICE — E E —
- PROPOSED ELECTRIC SERVICE — E —
- EXISTING GAS LINE — G —
- PROPOSED GAS LINE — G —
- PROPERTY LINE
- EASEMENT LINE
- CENTER LINE — 10+00 11+00 —
- LIMITS OF CLEARING & GRADING
- EXISTING SPOT ELEVATIONS — ×12.0
- PROPOSED SPOT ELEVATION — +12.0
- EXISTING TREE LINE
- EXISTING TREE W/TRUNK DIAMETER — ○ 12"DIM.
- EXISTING TREE W/DRIPLINE
- PROPOSED TREE
- FLOW LINE OF SWALE
- WOOD FENCE
- CHAIN LINK FENCE
- EXISTING UTILITY POLE
- PROPOSED UTILITY POLE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE — W —
- PROPOSED WATER VALVE — W —
- WATER METER (SINGLE & DOUBLE)
- STREET SIGN (SEE SIGNAGE PLAN)
- PARKING INDICATOR INDICATES THE NUMBER OF PARKING SPACES — 9
- TEST PIT
- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- PROPOSED TRAFFIC SIGNAL (APPROX. LOCATIONS)

SITE TABULATION:

SITE PLAN AREA.....1.5 ± AC (± 66,436 SF)

EXISTING ZONING.....R-4

FLOOR AREA RATIO (MAXIMUM).....0.35 PUBLIC USES
FLOOR AREA RATIO PROPOSED.....00.00

EXISTING STORAGE TANK HEIGHT
TANK STRUCTURE.....94.06FT
TANK VENT.....96.46FT
HIGHEST ANTENNA AT TOP OF TANK.....±110FT
PROPOSED STORAGE TANK HEIGHT.....±100FT

PARKING SPACES REQUIRED.....2
PARKING SPACES PROPOSED.....2

SW-10 STATEMENT

1. THERE IS ONE EX. DOWNSTREAM WATER IMPOUNDMENT WITHIN THE POTENTIAL INFLUENCE AREA FOR THE PROPOSED DISTURBANCE WITH THIS SITE PLAN. IT IS IDENTIFIED AS 0234DP ON THE FAIRFAX COUNTY STORMWATER MANAGEMENT MAPS (TAX MAP 40-3). IN ACCORDANCE WITH THE TECHNICAL BULLETIN 03-05 AND THE "POLICY AND PROCEDURES FOR THE EVALUATION OF DOWNSTREAM IMPOUNDMENTS" A PRE-DEVELOPMENT BATHYMETRIC SURVEY SHALL BE PROVIDED BY THE CONTRACTOR FOR ALL DOWNSTREAM IMPOUNDMENTS WITHIN THE POTENTIAL INFLUENCE AREA, PENDING ACCESS APPROVAL FROM THE LANDOWNER OF THE DOWNSTREAM IMPOUNDMENT.

GENERAL NOTES

ADDITIONAL DESIGN AND CONSTRUCTION NOTES ARE PROVIDED IN APPLICABLE SECTIONS.

1. ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
2. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE MOST CURRENT APPLICABLE FEDERAL, STATE , AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED TO, ENVIRONMENTAL PROTECTION AGENCY (EPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), VIRGINIA OCCUPATIONAL AND SAFETY HEALTH COMPLIANCE PROGRAM (VOSH ENFORCEMENT), VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT, NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), AND NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH).
3. WHEN DURING THE COURSE OF CONSTRUCTION, ANY OBJECT OF AN UNUSUAL NATURE IS ENCOUNTERED, THE CONTRACTOR SHALL CEASE WORK IN THAT AREA AND IMMEDIATELY NOTIFY THE PROPER AUTHORITY, FAIRFAX COUNTY AND/OR THE ARCHITECT/ENGINEER.
4. 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 OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN 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.
5. SOIL TESTS (CBR TEST PER VTM8) OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF SUBBASE THICKNESS PRIOR TO CONSTRUCTION.
6. ALL UTILITIES WHICH WILL BE PLACED UNDER EXISTING PUBLIC STREETS SHALL BE BORED OR JACKED, UNLESS PERMISSION TO OPEN CUT IS OBTAINED FROM VDOT.
7. CONTROLLED FILLS MUST BE COMPACTED TO 95% AS DETERMINED PER STANDARD PROCTOR AASHTO T-99 OR ASTM D 698, AS SHOWN IN THE GEOTECHNICAL REQUIREMENTS (SHEETS 28-29). DENSITY MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND THE RESULTS SUBMITTED TO FAIRFAX COUNTY PRIOR TO FOOTING CONSTRUCTION.
8. ALL FILL SOILS UNDER EXPANDED PAVED AREAS SHALL BE COMPACTED TO 95% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM SPECIFICATION D-698 STANDARD PROCTOR METHOD. WITHIN + OR - 2% OF OPTIMUM MOISTURE FOR THE FULL WIDTH OF ANY DEDICATED RIGHT-OF-WAY AND ALL PARKING LOTS; PRIVATE STREETS; PARKING BAYS; CURB AND GUTTER; AND SIDEWALKS ADJACENT TO STREETS AND PARKING LOTS (NOT INTENDED TO INCLUDE LEADWALKS), WITH UPPER 1.0 FT. COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY PER ASTM D-698, AS SHOWN IN THE GEOTECHNICAL REQUIREMENTS SHOWN IN (SHEETS 28-29).
9. ALL STREET CUT AND PATCH WORK IN PUBLIC RIGHT-OF-WAY REQUIRED FOR UTILITIES INSTALLATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH COUNTY AND VDOT STANDARDS AND SPECIFICATIONS.
10. A SMOOTH GRADE SHALL BE MAINTAINED FROM EDGE OF PAVEMENT OF EXISTING ROAD TO PROPOSED CURB AND GUTTER AND/OR PROPOSED PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER ON THE ROADWAY. REMOVE AND RECONSTRUCT EXISTING PAVEMENT AND/OR CURB AS DICTATED BY FIELD CONDITIONS TO PROVIDE POSITIVE DRAINAGE AT TIE-IN-POINTS.
11. PROPOSED SIDEWALKS MUST BE CONSTRUCTED WITH UD3 UNDERDRAINS WHEN LONGITUDINAL GRADES ARE 3% OR GREATER UNLESS SOIL TEST CONFIRM THAT THEY ARE NOT NEEDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (APPLIES TO SIDEWALK IN RIGHT-OF-WAY ONLY).
12. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STREET AND UTILITIES WHICH OCCURS AS A RESULT OF HIS CONSTRUCTION PROJECT WITHIN OR CONTIGUOUS TO THE EXISTING RIGHT-OF-WAY.
13. COMPACTION OF BACKFILL IN UTILITY TRENCHES SHALL BE IN ACCORDANCE WITH FAIRFAX COUNTY & V.D.O.T. STANDARDS & SPECIFICATIONS.
14. TO THE BEST OF THE OWNER'S KNOWLEDGE THERE ARE NO GRAVE SITES OR BURIAL PLOTS ON THIS PROPERTY.
15. THIS PLAN COMPLIES FULLY WITH THE AMENDED CHESAPEAKE BAY PRESERVATION ORDINANCE PER THE JULY 7, 2003 BOARD POLICY FOR THE TREATMENT OF APPROVED AND PENDING PLANS OF DEVELOPMENT, WITH AN EFFECTIVE DATE OF NOVEMBER 18, 2003 AND WITH REVISIONS ADOPTED BY THE BOARD WITH AN EFFECTIVE DATE OF JULY 12, 2005.
16. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL. THE CONTRACTOR SHALL SUBMIT A TEMPORARY TRAFFIC CONTROL PLAN TO THE VDOT LAND DEVELOPMENT SECTION A MINIMUM OF 30 DAYS PRIOR TO PERMIT APPLICATION. THE DEVELOPER SHALL NOT COMMENCE CONSTRUCTION OF ANY PAVEMENT COURSE WITHOUT AN APPROVED TEMPORARY TRAFFIC CONTROL PLAN.
17. THE PRIVATE STREETS AND/OR DRIVEWAYS IN THIS DEVELOPMENT DO NOT MEET THE STANDARDS NECESSARY FOR INCLUSIONS IN THE SYSTEM OF THE STATE HIGHWAYS AND WILL NOT BE MAINTAINED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION OR FAIRFAX COUNTY, AND ARE NOT ELIGIBLE FOR RURAL ADDITION FUNDS OR ANY OTHER FUNDS APPROPRIATED BY THE GENERAL ASSEMBLY OF VIRGINIA AND ALLOCATED BY THE COMMONWEALTH TRANSPORTATION BOARD.
18. ALL R/W DEDICATED TO PUBLIC USE SHALL BE CLEAR AND UNENCUMBERED.
19. ALL RETAINING WALLS 3' AND GREATER IN HEIGHT REQUIRE A SEPARATE BUILDING PERMIT.
20. ALL ROOF DRAINS AND NON-STANDARD PIPE WILL BE CONSTRUCTED UNDER A SEPARATE PLUMBING PERMIT PER IBC INTERNATIONAL PLUMBING CODE.
21. ALL EXTERIOR LIGHTING FIXTURES PROPOSED WITH THIS PLAN SHALL BE FULL CUT-OFF OR DIRECTIONALLY SHIELDED TYPES.
22. ALL ADA ACCESSIBILITY IMPROVEMENTS PROPOSED/SHOWN ON THIS PLAN, INCLUDING BUT NOT LIMITED TO PARKING SPACES, AISLES, ROUTES, AND SLOPES, COMPLY WITH THE 2010 ASA STANDARDS FOR ACCESSIBLE DESIGN AND THE 2012 USBC.

SURVEY NOTES

1. THE SITE SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 AS COMPUTED FROM FIELD RUN BOUNDARY AND HORIZONTAL AND VERTICAL CONTROL SURVEY THAT TIES THIS BOUNDARY TO THE FAIRFAX COUNTY MONUMENT GPS 93.
2. THE SITE SHOWN HEREON IS REFERENCED TO THE NATIONAL VERTICAL DATUM 1929
3. THE BOUNDARY INFORMATION SHOWN HEREON, WITH A MAXIMUM PERMISSIBLE ERROR OF CLOSURE WITHIN THE LIMIT OF ONE (1) IN TWENTY THOUSAND (20,000), WAS COMPILED FROM FIELD SURVEY COMPLETED BY DEWBERRY ENGINEERS INC. (SEPTEMBER 26,2022)
4. EXISTING TOPOGRAPHIC AND PLANIMETRIC INFORMATION WAS COMPILED FROM FIELD SURVEY COMPLETED BY DEWBERRY ENGINEERS INC. (SEPTEMBER 26, 2022)
5. EXISTING STORM AND SANITARY UTILITY INFORMATION WAS COMPILED FROM FIELD SURVEY COMPLETED BY DEWBERRY ENGINEERS INC. (SEPTEMBER 26, 2022)
6. EXISTING NON-GRAVITY (ELECTRICAL, WATER, COMMUNICATION, GAS) UTILITY INFORMATION WAS COMPILED FROM FIELD DESIGNATION AND UTILITY RECORDS BY ACCUMARK. (SEPTEMBER 26, 2022)

REVISED: 1/10/2023

VDOT GENERAL NOTES

1. THESE PLANS WERE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF (SELECT ONE):
   - N/A VDOT SECONDARY STREET ACCEPTANCE REQUIREMENTS (SSAR 24VAC-30-92 EFFECTIVE FEBRUARY 1, 2012 AND VDOT ROAD DESIGN MANUAL APPENDIX B1).
   - N/A VDOT SECONDARY STREET ACCEPTANCE REQUIREMENTS (SSAR 24VAC-30-92 EFFECTIVE FEBRUARY 1, 2012 AND VDOT ROAD DESIGN MANUAL APPENDIX B2 AS APPROVED FOR USE IN DESIGNATED HIGH DENSITY DEVELOPMENT AREAS).
   - N/A VDOT ROAD DESIGN MANUAL APPENDIX C, RURAL AND URBAN GEOMETRIC DESIGN STANDARDS EFFECTIVE AT THE TIME OF VDOT RECOMMENDED PLAN APPROVAL; LIST STANDARD USED: GS-____.
2. VDOT APPROVED EXCEPTIONS/WAIVERS (MUST BE INCORPORATED IN THE PLAN):
   - ACCESS MANAGEMENT - DATE OF APPROVAL: N/A
   - SSAR- DATE OF APPROVAL: N/A
   - DESIGN WAIVER - DATE OF APPROVAL: N/A
   - OTHER N/A DATE OF APPROVAL: _____
3. SSAR CONNECTIVITY SUMMARY (PROVIDE A CHECK MARK ✓ WHERE APPLICABLE OR WRITE N/A):
   - CONNECTIONS IN MULTIPLE DIRECTIONS (FIRST CONNECTION MUST BE TO A VDOT MAINTAINED ROAD, THE SECOND CONNECTION MAY EITHER BE TO A VDOT ROAD OR TO A STUB OUT) N/A
   - STUB OUT CONNECTION (THE PROP. RIGHT OF WAY TERMINATES AT PARCEL ABUTTING THE DEVELOPMENT AND CONSISTS OF A SHORT SEGMENT THAT IS INTENDED TO SERVE CURRENT AND FUTURE DEVELOPMENT; THE APPLICANT MUST VERIFY THAT CONNECTION WITH A FUTURE STREET IS FEASIBLE) N/A
   - NETWORK ADDITIONS PROVIDING DIRECT ACCESS TO (I) MORE THAN 200 DWELLING UNITS OR (II) LOTS WHOSE TRIP GENERATION IS EXPECTED TO BE OVER 2,000 VPD MAY BE ACCEPTED INTO THE SECONDARY SYSTEM OF STATE HIGHWAYS IF THE NETWORK ADDITION PROVIDES AN ADDITIONAL EXTERNAL CONNECTION BEYOND THAT REFERENCED ABOVE. N/A
4. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE CURRENT EDITIONS OF AND LATEST REVISIONS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS, THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE STATE, FEDERAL OR LOCAL REGULATIONS. IN CASE OF A DISCREPANCY OR CONFLICT BETWEEN THE STANDARDS OR SPECIFICATIONS AND REGULATIONS, THE MOST STRINGENT SHALL GOVERN.
5. ALL RIGHT OF WAY DEDICATED TO PUBLIC USE SHALL BE CLEAR AND UNENCUMBERED.
6. ALL UTILITIES, INCLUDING ALL POLES, ARE TO BE RELOCATED AT THE DEVELOPER'S EXPENSE, PRIOR TO CONSTRUCTION.
7. THE DEVELOPER IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF PROJECT CONSTRUCTION WITHIN OR CONTIGUOUS TO EXISTING RIGHT OF WAY.
8. OPEN CUTTING OF PAVED OR SURFACE TREATED ROADS IS NOT PERMITTED. ALL UTILITIES WHICH WILL BE PLACED UNDER EXISTING STREETS ARE TO BE BORED OR JACKED. ANY EXCEPTIONS, DUE TO EXTENUATING CIRCUMSTANCES, ARE TO BE ADDRESSED AT THE PERMIT STAGE.
9. THE PAVEMENT DESIGN IS BASED ON AN ASSUMED CBR VALUE OF 10 (USE A CBR VALUE OF 6 IN LOUDOUN CO.). SOIL TESTS OF SUBGRADE MUST BE SUBMITTED FOR THE ACTUAL DETERMINATION OF THE REQUIRED THICKNESS OF THE PAVEMENT INCLUDING LAYERS OF ASPHALT AND SUBBASE PRIOR TO SUBBASE PLACEMENT.
10. PAVEMENT DESIGN SHALL BE PROVIDED IN ACCORDANCE WITH THE PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA. FOR PRIMARY ROADS AND INTERSTATE HIGHWAYS WHERE TRUCK TRAFFIC EXCEEDS 5%, PAVEMENT DESIGN SHALL BE PROVIDED IN ACCORDANCE WITH AASHTO GUIDELINES. TYPICAL PAVEMENT SECTIONS SHALL DEPICT THE TOP 6" OF THE SUBGRADE IMMEDIATELY UNDER THE PAVEMENT STRUCTURE COMPACTED TO 100% OF THE THEORETICAL MAXIMUM DRY DENSITY.
11. ALL UNTREATED AGGREGATE USED IN BASE OR SUBBASE COURSES SHALL BE 21B, EXCEPT ON ROADS WITH AN ADT OF 1000 VPD OR LESS, WHERE 21A AGGREGATE MAY BE USED. WHEN 21B AGGREGATE IS USED, UD-4 UNDERDRAINS MUST BE PROVIDED.
12. A 4" (MIN.) LAYER OF STONE IS REQUIRED BENEATH CURB AND GUTTER (MAY BE SHOWN ON TYPICAL SECTION IN LIEU OF A NOTE).
13. THE ENTIRE SURFACE OF THE ROADWAY (OLD AND NEW PORTIONS) SHALL BE OVERLAID AND RE-STRIPED AS REQUIRED BY VDOT PERSONNEL. OVERLAY OF EXISTING PAVEMENT SHALL BE A MINIMUM OF 1.25" DEPTH; ANY COSTS ASSOCIATED WITH PAVEMENT OVERLAY, OR THE MILLING OF EXISTING PAVEMENT TO OBTAIN REQUIRED DEPTH, SHALL BE ASSUMED BY THE DEVELOPER.
14. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE PROPOSED EDGE OF PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER IN THE ROADWAY.
15. ASPHALT PAVEMENT WIDENING SHALL CONFORM TO VDOT STANDARD WP-2.
16. ANY TYPE OF REVERSE CURB (SPILL CURB, CG-6R, ETC.) AND TRANSITION TO THESE CURBS SHALL NOT BE USED WITHIN THE PUBLIC RIGHT OF WAY.
17. THE COUNTY/TOWN SHALL OBTAIN A PERMIT FOR ALL SIDEWALKS/CROSSWALKS WITHIN THE RIGHT OF WAY THAT DO NOT QUALIFY FOR VDOT MAINTENANCE.
18. ADDITIONAL DITCH LININGS OR SILTATION AND EROSION CONTROL MEASURES SHALL BE PROVIDED, AT THE DEVELOPER'S EXPENSE, AS DETERMINED NECESSARY BY VDOT AND/OR THE COUNTY/TOWN DURING FIELD REVIEW. ALL COSTS SHALL BE ASSUMED BY THE DEVELOPER.
19. STANDARD GUARDRAILS AND/OR HANDRAILS SHALL BE INSTALLED AT HAZARDOUS LOCATIONS AS DESIGNATED DURING FIELD REVIEW BY THE COUNTY/TOWN INSPECTOR OR VDOT.
20. A LANDSCAPING AND IRRIGATION SYSTEMS PLAN SHALL BE SUBMITTED FOR VDOT APPROVAL PRIOR TO INSTALLING ANY LANDSCAPING AND IRRIGATION SYSTEMS WITHIN THE PUBLIC RIGHT OF WAY.
21. FLOWERS, SHRUBS, TREES, AND IRRIGATION SHALL NOT BE PLACED WITHIN STATE MAINTAINED RIGHT OF WAY LIMITS WITHOUT AN APPROVED SET OF PLANS AND AN APPROVED PLANTING AGREEMENT. NO IRRIGATION (SPRINKLER) SYSTEMS, BRICK COLUMNS, END WALLS, AND/OR BRICK MAILBOXES WILL BE CONSTRUCTED OR INSTALLED WITHIN STATE MAINTAINED RIGHT OF WAY LIMITS WITHOUT A PERMIT. ANY OF THE ABOVE ITEMS FOUND IN THE RIGHT OF WAY WITHOUT A PERMIT WILL BE REMOVED, AND ALL COSTS OF THE REMOVAL WILL BE BORNE BY THE OWNER AND/OR DEVELOPER.
22. TRAFFIC CONTROL DEVICES OR ADVISORY SIGNS, SUCH AS MULTIWAY STOPS, SPEED LIMITS, WATCH FOR CHILDREN, PEDESTRIAN TRAFFIC ETC., SHALL NOT BE INSTALLED UNLESS SPECIFICALLY APPROVED BY VDOT TRAFFIC ENGINEERING SECTION. SHOULD UNAPPROVED SIGNS BE NOTED AT THE TIME OF VDOT INSPECTION, THE ROAD ACCEPTANCE PROCESS SHALL BE TERMINATED IMMEDIATELY AND NOT RECOMMENCED UNTIL A DETERMINATION IS MADE REGARDING THE APPROVAL OF ANY ADDITIONAL SIGNS. IMMEDIATE REMOVAL OF SUCH SIGNS SHALL NOT NEGATE THE NEED FOR THE SUBMISSION OF A REVISION.
23. A SPEED STUDY CERTIFIED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR VDOT APPROVAL PRIOR TO THE STREET ACCEPTANCE FOR ANY ROAD TO BE POSTED OTHER THAN THE STATUTORY SPEED LIMIT.
24. THE DEVELOPER IS RESPONSIBLE FOR ALL TRAFFIC CONTROL. THE DEVELOPER SHALL SUBMIT A SIGNING, STRIPING AND/OR SIGNALIZATION PLAN TO THE VDOT LAND DEVELOPMENT SECTION PRIOR TO PERMIT APPLICATION. THE DEVELOPER SHALL NOT COMMENCE CONSTRUCTION OF ANY PAVEMENT COURSE WITHOUT AN APPROVED STRIPING PLAN.
25. THE DEVELOPER IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ANY TRAFFIC SIGNAL INSTALLATION OR MODIFICATION WHICH WILL BE NECESSARY AS A RESULT OF THE DEVELOPMENT OF THIS SITE.
26. DURING CONSTRUCTION, THE MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE REQUIREMENTS IN THE MOST RECENT VERSION OF THE VIRGINIA WORK AREA PROTECTION MANUAL AND THE MUTCD.
27. THE ENGINEER OF RECORD, WHOSE PROFESSIONAL SEAL IS AFFIXED TO THIS PLAN, IS RESPONSIBLE TO ENSURE ALL VDOT STANDARDS ARE MET. VDOT REVIEW AND SIGNATURE OF THIS PLAN SHALL NOT BE INTERPRETED AS A GUARANTEE THE PLAN IS WITHOUT ERROR. THAT IS SOLELY THE RESPONSIBILITY OF THE ENGINEER OF RECORD.
28. ANY FIXTURES OR FEATURES BEING PLACED WITHIN THE VDOT RIGHT OF WAY THAT DO NOT SERVE THE GENERAL PUBLIC WILL REQUIRE A SEPARATE LAND USE PERMIT (LUP-A) AND COVENANT OF PERPETUAL MAINTENANCE (CPM).

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE

ABBREVIATION, NOTES, AND LEGEND

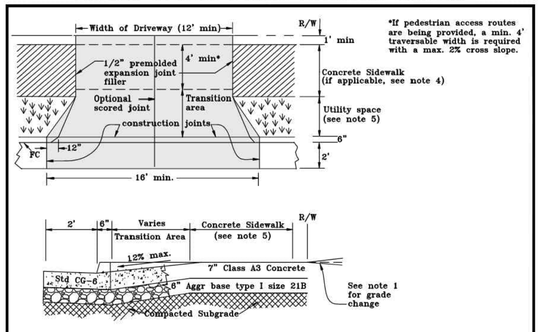
FW PROJECT NO. P2729-002

2

SHEET NO. 2 OF 29

P:\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\002 ABBREVIATION NOTES AND LEGEND.dwg
Tue, Apr 29 2025 - 3:32:46pm

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL

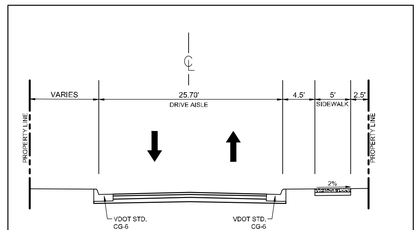


*If pedestrian access routes are being provided, a min. 4' traversable width is required with a max. 2% cross slope.

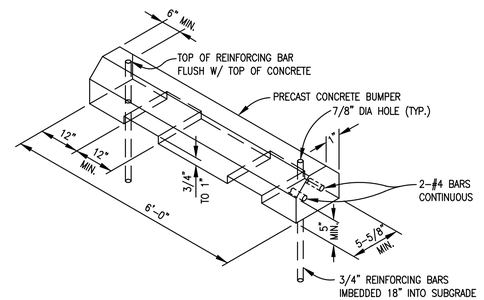
NOTES

1. Lot grading plans must provide for adequate vehicular clearance for driveway approach, departure and breakover transitions in accordance with the current VDOT Standards. Driveway profiles are required where steep grades prevail.
2. All materials and construction of these designs in a R/W to be maintained by VDOT must be in accordance with the current VDOT Road and Bridge Specifications and Standards.
3. This entrance may be used in roads that have an ADT of up to 5,499.
4. Sidewalk must be provided in accordance with Section 8-0100 et. seq. of the Public Facilities Manual and must meet the standards set forth in the VDOT Road Design Manual. Sidewalk cross slope, including passing areas (full 5-foot width) and driveway crossing (min. 4-foot width), must not exceed 2%.
5. Distances between features, and distance between features and right of way line must be in accordance with the current VDOT Standards.

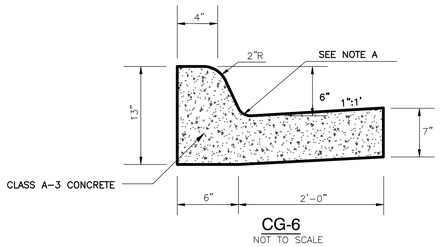
Ref. Sec. 7-0403	RESIDENTIAL DRIVEWAY ENTRANCE	PLATE NO.	STD. NO.
Rev. 10-20		20-7	DE-1



EXISTING TOWER STREET
TYPICAL SECTION
NOT TO SCALE



WHEEL STOP
NOT TO SCALE



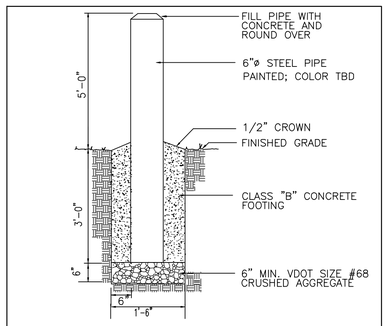
CG-6
NOT TO SCALE

DETAILS OF STANDARD CURB & GUTTER

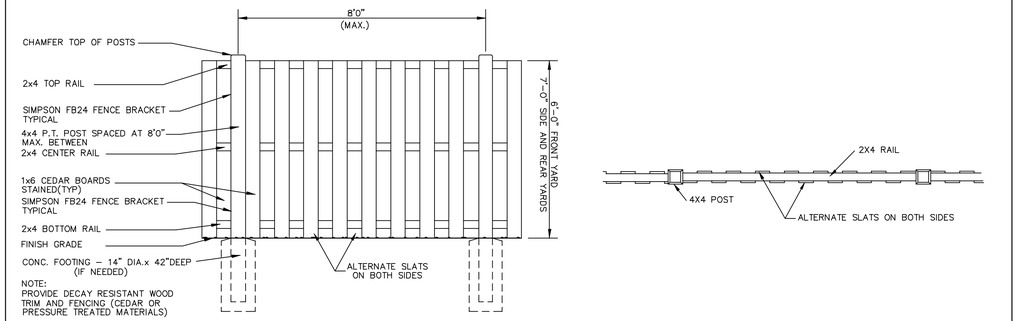
THE BOTTOM OF THE CURB AND GUTTER MAY BE CONSTRUCTED PARALLEL TO THE SLOPE OF THE SUBGRADE COURSES PROVIDED A MINIMUM DEPTH OF 7" IS MAINTAINED.

NOTES:
1. SUBGRADE FOR ALL SIDEWALKS, CURB AND GUTTER SHALL BE COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE TO FULL WIDTH OF RIGHT-OF-WAY IN ACCORDANCE WITH AASHTO T99-61.

NOTE A:
2" RADIUS WILL BE ALLOWED WITH CURB AND GUTTER

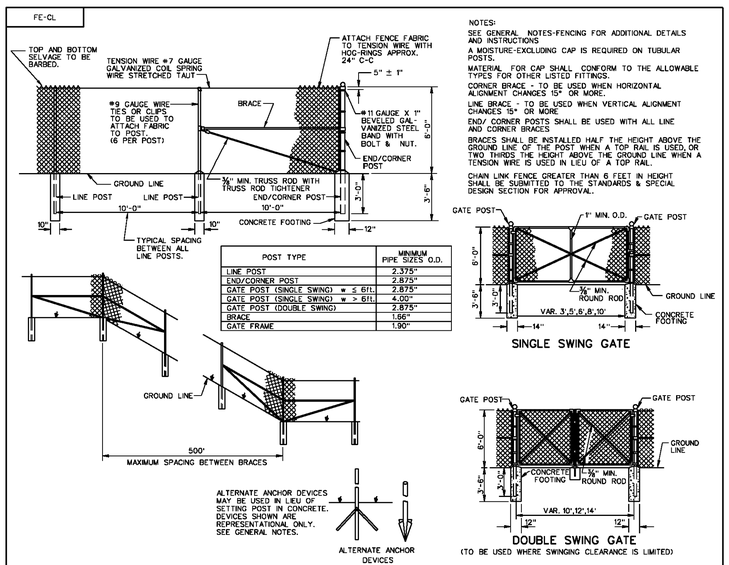


6" STEEL BOLLARD DETAIL
NOT TO SCALE



PLAN ELEVATION

BOARD ON BOARD FENCE
NO SCALE



NOTES:
SEE GENERAL NOTES-FENCING FOR ADDITIONAL DETAILS AND INSTRUCTIONS
A MOISTURE-EXCLUDING CAP IS REQUIRED ON TUBULAR POSTS.
MATERIAL FOR CAP SHALL CONFORM TO THE ALLOWABLE TYPES FOR OTHER LISTED FITTINGS.
CORNER BRACE - TO BE USED WHEN HORIZONTAL ALIGNMENT CHANGES 15° OR MORE.
LINE BRACE - TO BE USED WHEN VERTICAL ALIGNMENT CHANGES 15° OR MORE
END/ CORNER POSTS SHALL BE USED WITH ALL LINE AND CORNER BRACES
BRACES SHALL BE INSTALLED HALF THE HEIGHT ABOVE THE GROUND LINE OF THE POST WHEN A TOP RAIL IS USED, OR TWO THIRDS THE HEIGHT ABOVE THE GROUND LINE WHEN A TENSION WIRE IS USED IN LIEU OF A TOP RAIL.
CHAIN LINK FENCE GREATER THAN 6 FEET IN HEIGHT SHALL BE SUBMITTED TO THE STANDARDS & SPECIAL DESIGN SECTION FOR APPROVAL.

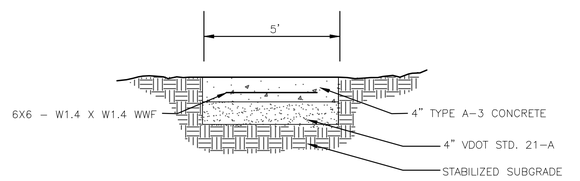
POST TYPE	MINIMUM PIPE SIZES O.D.
LINE POST	2.375"
END/CORNER POST	2.875"
GATE POST (SINGLE SWING) ≤ 6ft.	2.875"
GATE POST (SINGLE SWING) > 6ft.	4.00"
GATE POST (DOUBLE SWING)	2.875"
BRACE	1.66"
GATE FRAME	1.90"

SINGLE SWING GATE

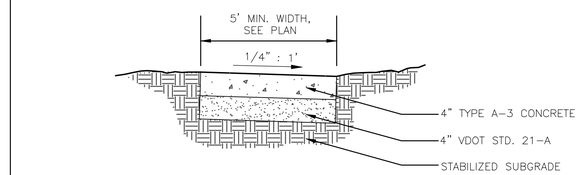
DOUBLE SWING GATE
(TO BE USED WHERE SWINGING CLEARANCE IS LIMITED)

VDOT ROAD AND BRIDGE STANDARDS	STANDARD FENCE CHAIN LINK VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE 7/11	242 507
503.04		

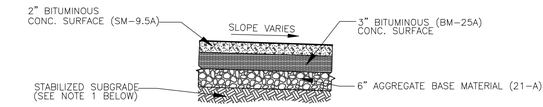
2016 ROAD & BRIDGE STANDARDS



5' X 5' CONCRETE PAD
NOT TO SCALE



TYPICAL SECTION FOR CONCRETE SIDEWALKS
NOT TO SCALE
NOTE: SIDEWALKS SHALL BE CONSTRUCTED ON A SUBGRADE COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT.



TYPICAL PAVEMENT SECTION FOR PRIVATE DRIVEWAYS AND PARKING
NOT TO SCALE

* SUBBASE NOTE: SUBBASE DEPTH IS BASED ON A CBR VALUE OF 6.

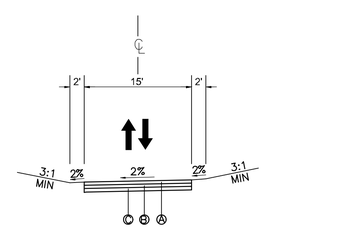
NOTE
1. TEST OF SUBGRADE ARE TO BE PERFORMED FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO THE PLACEMENT OF SUBBASE ALL FINAL PAVEMENT AND BASE COURSE THICKNESS SHALL BE DESIGNED IN ACCORDANCE WITH THE "DESIGN GUIDE FOR SUBDIVISION ROAD PAVEMENTS IN VIRGINIA", BY N.K. VASWANI, AND SHALL BE BASED ON A SUFFICIENT NUMBER OF CBR TEST TO DETERMINE THE TRUE SUPPORT VALUES OF THE VARIOUS SOILS IN THE SUBGRADE.

PAVEMENT LEGEND:

2" HOT MIXED ASPHALT SURFACE COURSE, VDOT STD SM 9.5A (A)

3" HOT MIXED ASPHALT BASE COURSE, VDOT STD BM - 25.0A (B)

6" GRADED AGGREGATE BASE COURSE VDOT STD 21A (C)



ACCESS DRIVE TYPICAL SECTION (PRIVATELY MAINTAINED)
STA 10+16.86 TO 11+27.41
NOT TO SCALE

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FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE
CONSTRUCTION DETAILS

FW PROJECT NO. P2729-002

3

SHEET NO. 3 OF 29

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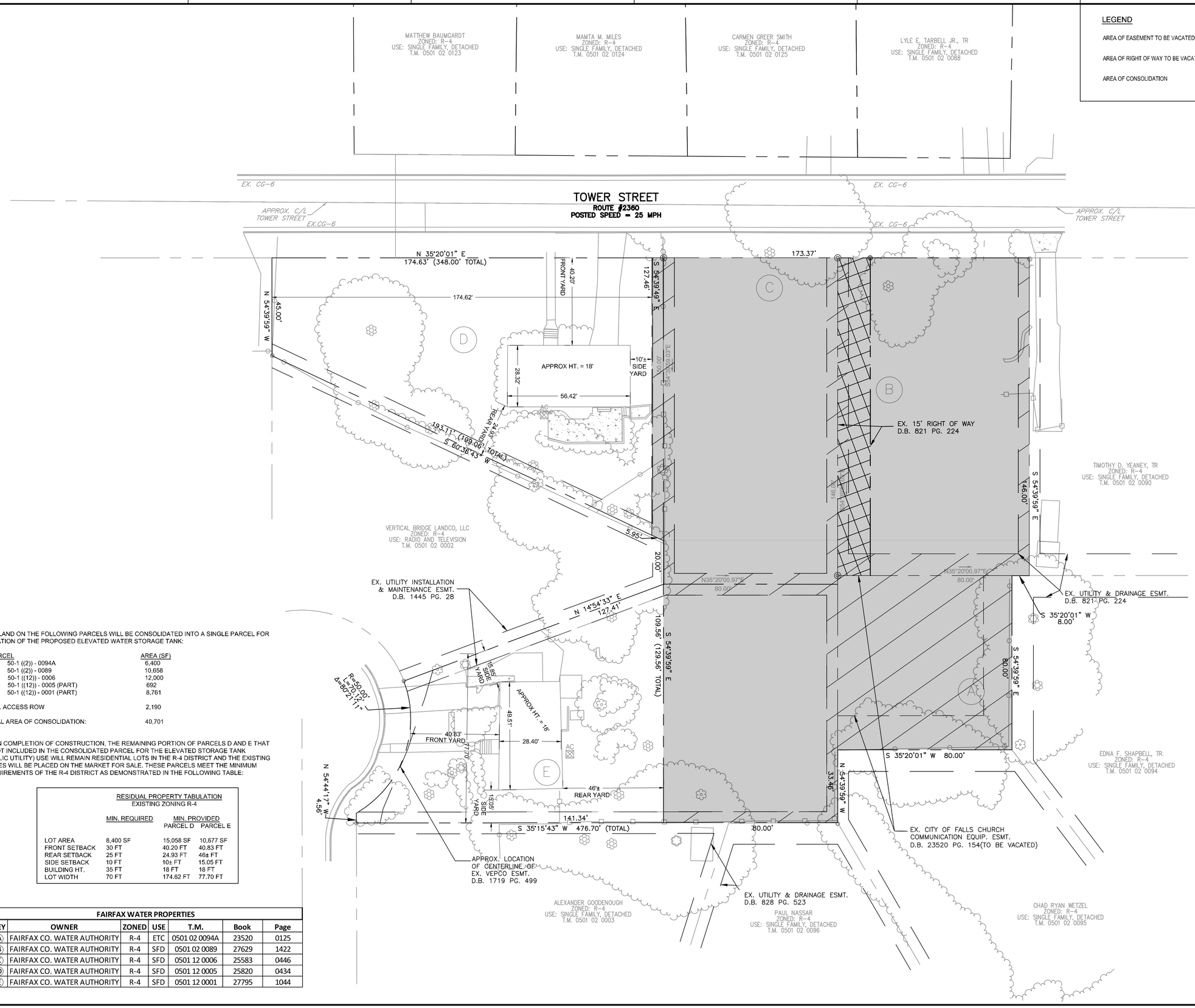
Tue, Apr 29 2025 - 3:33:00pm



THE LAND ON THE FOLLOWING PARCELS WILL BE CONSOLIDATED INTO A SINGLE PARCEL FOR LOCATION OF THE PROPOSED ELEVATED WATER STORAGE TANK:

PARCEL		AREA (SF)
A	50-1 ((2)) - 0094A	6,400
B	50-1 ((2)) - 0089	10,658
C	50-1 ((12)) - 0006	12,000
D	50-1 ((12)) - 0005 (PART)	692
E	50-1 ((12)) - 0001 (PART)	8,761
EX. ACCESS ROW		2,190
TOTAL AREA OF CONSOLIDATION:		40,701

UPON COMPLETION OF CONSTRUCTION, THE REMAINING PORTION OF PARCELS D AND E THAT IS NOT INCLUDED IN THE CONSOLIDATED PARCEL FOR THE ELEVATED STORAGE TANK (PUBLIC UTILITY) USE WILL REMAIN RESIDENTIAL LOTS IN THE R-4 DISTRICT AND THE EXISTING HOMES WILL BE PLACED ON THE MARKET FOR SALE. THESE PARCELS MEET THE MINIMUM REQUIREMENTS OF THE R-4 DISTRICT AS DEMONSTRATED IN THE FOLLOWING TABLE:

RESIDUAL PROPERTY TABULATION
EXISTING ZONING R-4

	MIN. REQUIRED	MIN. PROVIDED PARCEL D	MIN. PROVIDED PARCEL E
LOT AREA	8,400 SF	15,058 SF	10,677 SF
FRONT SETBACK	30 FT	40.20 FT	40.83 FT
REAR SETBACK	25 FT	24.93 FT	46± FT
SIDE SETBACK	10 FT	10± FT	15.05 FT
BUILDING HT.	35 FT	18 FT	18 FT
LOT WIDTH	70 FT	174.62 FT	77.70 FT

FAIRFAX WATER PROPERTIES

KEY	OWNER	ZONED	USE	T.M.	Book	Page
(A)	FAIRFAX CO. WATER AUTHORITY	R-4	ETC	0501 02 0094A	23520	0125
(B)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 02 0089	27629	1422
(C)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0006	25583	0446
(D)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0005	25820	0434
(E)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0001	27795	1044

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Tue, Apr 29, 2025 - 3:33:16pm

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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

SCALE IN FEET
1" = 20'
1 INCH

VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

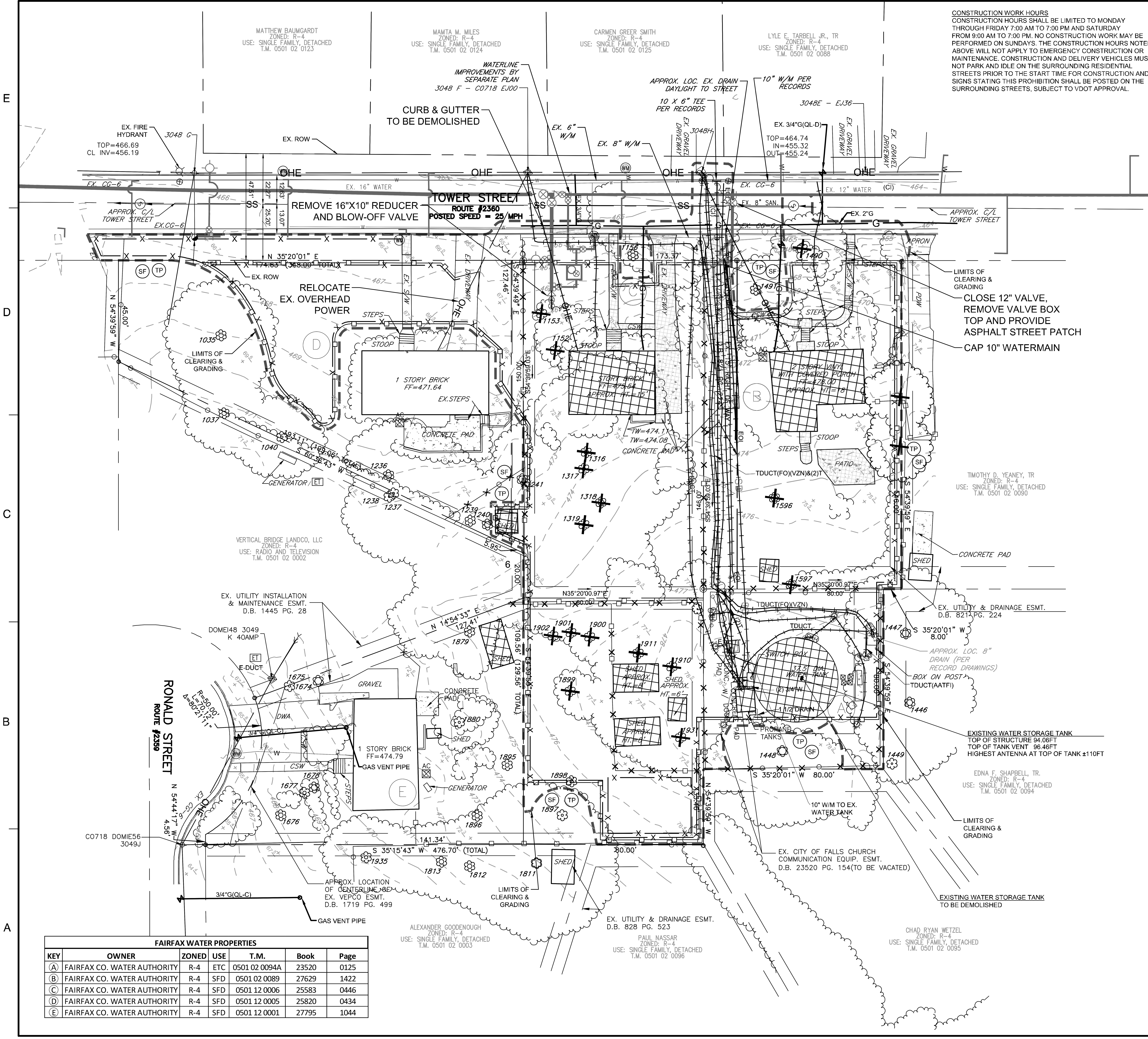
TITLE

PARCEL CONSOLIDATION & EASEMENT VACATION PLAN

FW PROJECT NO. P2729-002

4

SHEET NO. 4 OF 29



CONSTRUCTION WORK HOURS

CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY THROUGH FRIDAY 7:00 AM TO 7:00 PM AND SATURDAY FROM 9:00 AM TO 7:00 PM. NO CONSTRUCTION WORK MAY BE PERFORMED ON SUNDAYS. THE CONSTRUCTION HOURS NOTED ABOVE WILL NOT APPLY TO EMERGENCY CONSTRUCTION OR MAINTENANCE. CONSTRUCTION AND DELIVERY VEHICLES MUST NOT PARK AND IDLE ON THE SURROUNDING RESIDENTIAL STREETS PRIOR TO THE START TIME FOR CONSTRUCTION AND SIGNS STATING THIS PROHIBITION SHALL BE POSTED ON THE SURROUNDING STREETS, SUBJECT TO VDOT APPROVAL.

FAIRFAX WATER PROPERTIES						
KEY	OWNER	ZONED	USE	T.M.	Book	Page
Ⓐ	FAIRFAX CO. WATER AUTHORITY	R-4	ETC	0501 02 0094A	23520	0125
Ⓑ	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 02 0089	27629	1422
Ⓒ	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0006	25583	0446
Ⓓ	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0005	25820	0434
Ⓔ	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0001	27795	1044

P:\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\5 DEMOLITION PLAN.dwg
Tue, Apr 29 2025 – 3:33:34pm

DEMOLITION LEGEND

- EX. UTILITY TO BE ABANDONED/REMOVED*
- EX. BUILDING /STRUCTURE TO BE DEMOLISHED
- EX. HARDSCAPE TO BE DEMOLISHED
- TREE TO REMAIN
- TREE TO BE REMOVED
- CHAIN LINK FENCE TO BE REMOVED
- BOARD ON BOARD FENCE TO BE REMOVED
- LIMITS OF DISTURBANCE
- SILT FENCE
- CONSTRUCTION/TREE PROTECTION FENCE

NOTES

1. PHASE 1 EROSION & SEDIMENT CONTROL SHALL BE IN-PLACE AND APPROVED BY THE COUNTY INSPECTOR PRIOR TO BEGINNING DEMOLITION ACTIVITIES, SEE SHEETS 13 & 15
2. EXISTING UTILITY EASEMENTS FOR THE UTILITIES SERVING THE BUILDINGS TO BE DEMOLISHED SHALL BE VACATED, SEE SHEET 4

* EX. SANITARY LATERALS SERVING LOT 89 AND LOT 6 SHALL BE FIELD LOCATED, DEMOLISHED, AND CAPPED AT MAIN PRIOR TO DEMOLITION OF THE EXISTING SINGLE FAMILY STRUCTURES

GENERAL DEMOLITION NOTES

THIS SHEET IS INTENDED TO IDENTIFY THE NECESSARY DEMOLITION REQUIRED TO PERFORM SITE RELATED IMPROVEMENTS.

1. **NO DEMOLITION CAN BEGIN UNTIL REQUIRED DEMOLITION PERMITS ARE OBTAINED.**
2. **NO DEMOLITION CAN BEGIN UNTIL REQUIRED (PHASE I) EROSION AND SEDIMENT CONTROLS ARE IN PLACE.**
3. **BEFORE A DEMOLITION PERMIT CAN BE ISSUED TREE PROTECTION FENCING MUST BE PLACED AND INSTALLATION VERIFIED. VERIFICATION MAY BE ACCOMPLISHED BY NOTIFYING FAIRFAX COUNTY FOREST CONSERVATION BRANCH (FCON), AFTER WHICH STAFF WILL VISIT THE SITE TO INSPECT THE TREE PROTECTION FENCING; OR THE PROJECT ARBORIST FOR THE SITE MAY NOTIFY FCON, IN WRITING, VERIFYING INSTALLATION OF TREE PROTECTION FENCING**
4. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE MOST CURRENT APPLICABLE FEDERAL, STATE , AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED TO, ENVIRONMENTAL PROTECTION AGENCY (EPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), VIRGINIA OCCUPATIONAL AND SAFETY HEALTH COMPLIANCE PROGRAM (VOSH ENFORCEMENT), VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT, NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), AND NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH).
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY HAZARDOUS MATERIALS DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL DOCUMENT SAME TO THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY PROVIDERS, PAYMENT OF ASSOCIATED FEES AND PROCUREMENT OF ALL NECESSARY PERMITS.
7. PRIOR TO COMMENCING NEW WORK, THE CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING ADJACENT AREAS. ALL ADJACENT AREAS DAMAGED DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
8. EXISTING FEATURES TO REMAIN MAY BE TEMPORARILY RELOCATED AND/OR ADJUSTED DURING CONSTRUCTION. CONTRACTOR TO RESTORE TO ORIGINAL CONFIGURATION AND CONDITION, IF DISTURBED. IN GENERAL, ALL EXISTING ITEMS THAT ARE IN CONFLICT WITH PROPOSED CONDITIONS, SHALL BE ADJUSTED OR RELOCATED TO FACILITATE THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
9. MISCELLANEOUS SITE ITEMS, INCLUDING BUT NOT LIMITED TO SIGNS, POSTS, ETC., THAT ARE IN CONFLICT WITH PROPOSED CONDITIONS ARE TO BE REMOVED BY THE CONTRACTOR.
10. ANY WORK THAT IS TO BE PERFORMED WITHIN THE PROPERTY BUT OUTSIDE THE LIMITS OF CLEARING AND GRADING WILL BE DONE BY HAND..

UTILITY DEMOLITION NOTES

1. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDERS FOR PROPER SHUT DOWN AND DEMOLITION OF EXISTING UTILITIES. NOTE THAT EXISTING UTILITIES MAY INCLUDE APPURTENANCES (METERS, TRANSFORMERS, VAULTS).
2. DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY EXISTING UTILITIES AND/OR UTILITY SYSTEM STRUCTURES NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL DOCUMENT SAME TO THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
3. ACTIVE UTILITY DISTRIBUTION FACILITIES ENCOUNTERED DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE UTILITY PROVIDERS.
4. CONTRACTOR SHALL VERIFY PROPER SHUTDOWN AND TERMINATION OF ALL UTILITIES INDICATED TO BE REMOVED/ABANDONED, AND OF ALL UTILITY SERVICE STRUCTURES TO BE DEMOLISHED, PRIOR TO THE START OF DEMOLITION. ALL TERMINATIONS SHALL BE PERFORMED IN ACCORDANCE WITH ANY AND ALL APPLICABLE CODES. CONTRACTOR SHALL COORDINATE ALL REQUIRED SERVICE OUTAGES WITH THE UTILITY PROVIDERS.
5. SEE WATER, SANITARY, AND STORM NOTES FOR ADDITIONAL UTILITY DEMOLITION INFORMATION.

TREE PRESERVATION

REFER TO TREE PRESERVATION PLAN FOR DETERMINATION OF TREES THAT ARE TO BE REMOVED OR PROTECTED. SEE SHEETS 23-24 FOR DETAILS. THESE SHEETS SHOW TREE PROTECTION (— TP —)FOR REFERENCE.

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Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL
COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE: SCALE IN FEET 1" = 20' (1 INCH)
NORTH: VCS-83

No.	DATE	BY	Description

REVISIONS

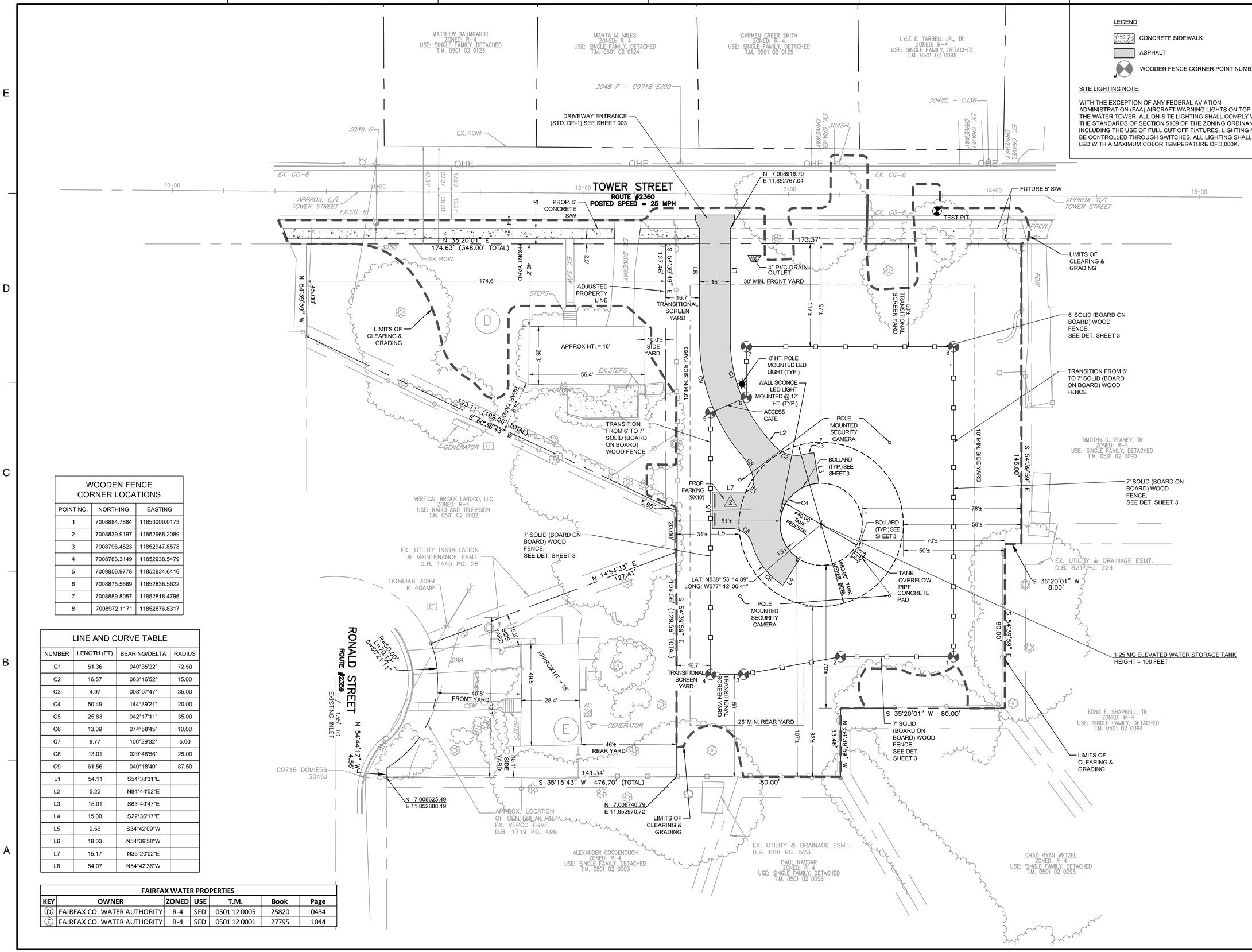
DRAWN BY: BWB
APPROVED BY: TCC
CHECKED BY: TCC
DATE: APRIL 29, 2025

TITLE

DEMOLITION PLAN

FW PROJECT NO. P2729–002

SHEET NO. 5



LEGEND

- CONCRETE SIDEWALK
- ASPHALT
- # WOODEN FENCE CORNER POINT NUMBERS

SITE LIGHTING NOTE:

WITH THE EXCEPTION OF ANY FEDERAL AVIATION ADMINISTRATION (FAA) AIRCRAFT WARNING LIGHTS ON TOP OF THE WATER TOWER, ALL ON-SITE LIGHTING SHALL COMPLY WITH THE STANDARDS OF SECTION 5109 OF THE ZONING ORDINANCE, INCLUDING THE USE OF FULL CUT OFF FIXTURES. LIGHTING MUST BE CONTROLLED THROUGH SWITCHES. ALL LIGHTING SHALL BE LED WITH A MAXIMUM COLOR TEMPERATURE OF 3,000K.

WOODEN FENCE CORNER LOCATIONS

POINT NO.	NORTHING	EASTING
1	7008884.7884	11853000.0173
2	7008839.9197	11852968.2089
3	7008796.4823	11852947.8578
4	7008783.3149	11852938.5479
5	7008856.9778	11852834.6416
6	7008875.5689	11852838.5622
7	7008889.8057	11852818.4796
8	7008972.1171	11852876.8317

LINE AND CURVE TABLE

NUMBER	LENGTH (FT)	BEARING/DELTA	RADIUS
C1	51.36	040°35'22"	72.50
C2	16.57	063°16'52"	15.00
C3	4.97	008°07'47"	35.00
C4	50.49	144°39'21"	20.00
C5	25.83	042°17'11"	35.00
C6	13.09	074°58'45"	10.00
C7	8.77	100°29'32"	5.00
C8	13.01	029°48'56"	25.00
C9	61.56	040°18'40"	87.50
L1	54.11	S54°38'31"E	
L2	5.22	N84°44'52"E	
L3	15.01	S63°40'47"E	
L4	15.00	S22°36'17"E	
L5	9.56	S34°42'09"W	
L6	18.03	N54°39'58"W	
L7	15.17	N35°20'02"E	
L8	54.07	N54°42'36"W	

FAIRFAX WATER PROPERTIES

KEY	OWNER	ZONED	USE	T.M.	Book	Page
(D)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0005	25820	0434
(E)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0001	27795	1044

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FAIRFAX, VA 22031
703.849.0100 (PHONE)
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POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

SCALE IN FEET
1" = 20'
1 INCH

NORTH
VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BWB
APPROVED BY	TCC
CHECKED BY	TCC
DATE	APRIL 29, 2025

TITLE

SITE PLAN

FW PROJECT NO. P2729-002

6

SHEET NO. 6 OF 29

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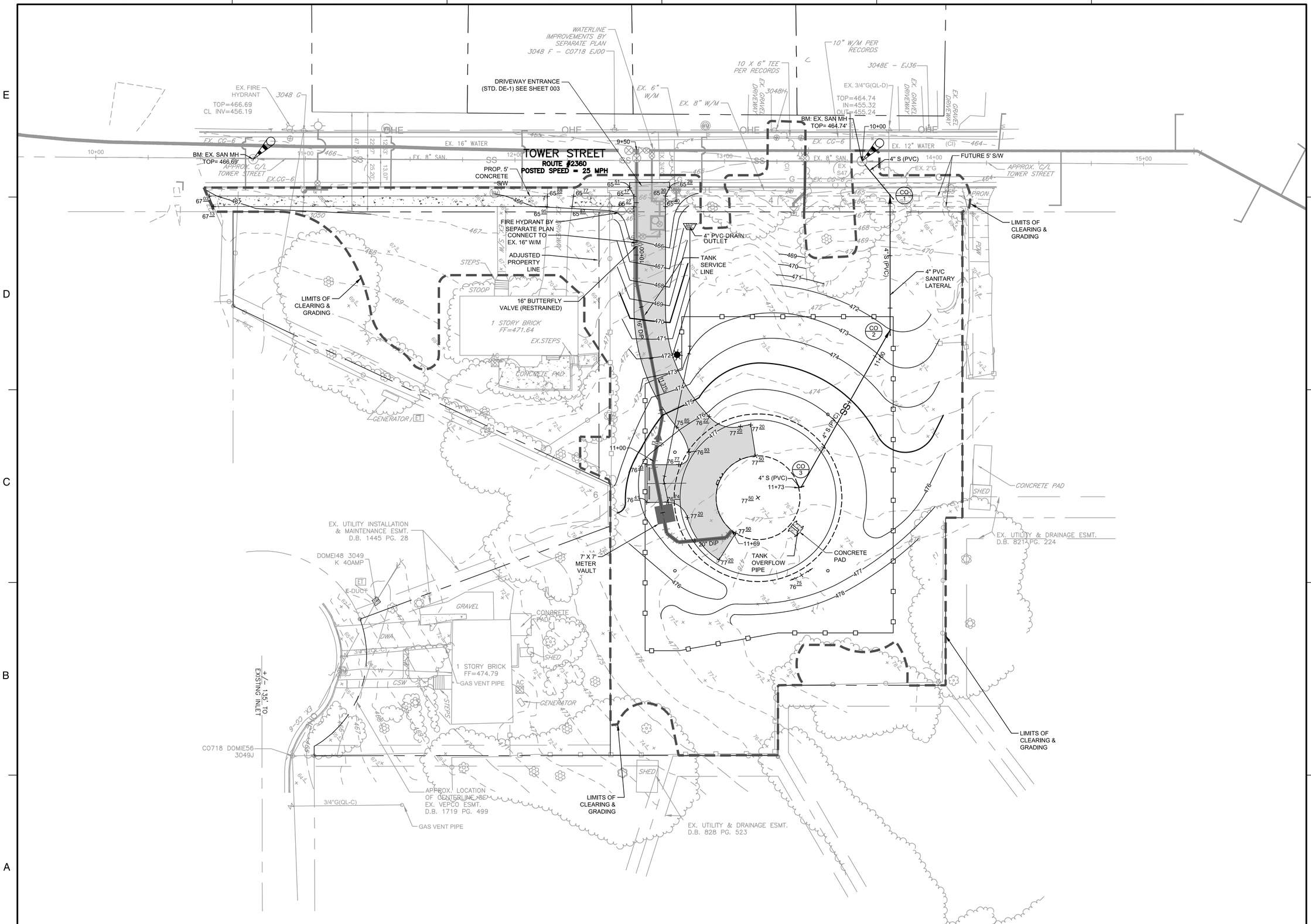

\\dewberry.dewberryroot.local\offices\Fairfax\ES\SiteCivil\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\7 GRADING & UTILITY PLAN.dwg
Tue, Apr 29, 2025 - 4:42:32pm

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FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

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SITE PLAN

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FAIRFAX COUNTY, VA

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SCALE

SCALE IN FEET
1" = 20'
1 INCH

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VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BWB
APPROVED BY	TCC
CHECKED BY	TCC
DATE	APRIL 29, 2025

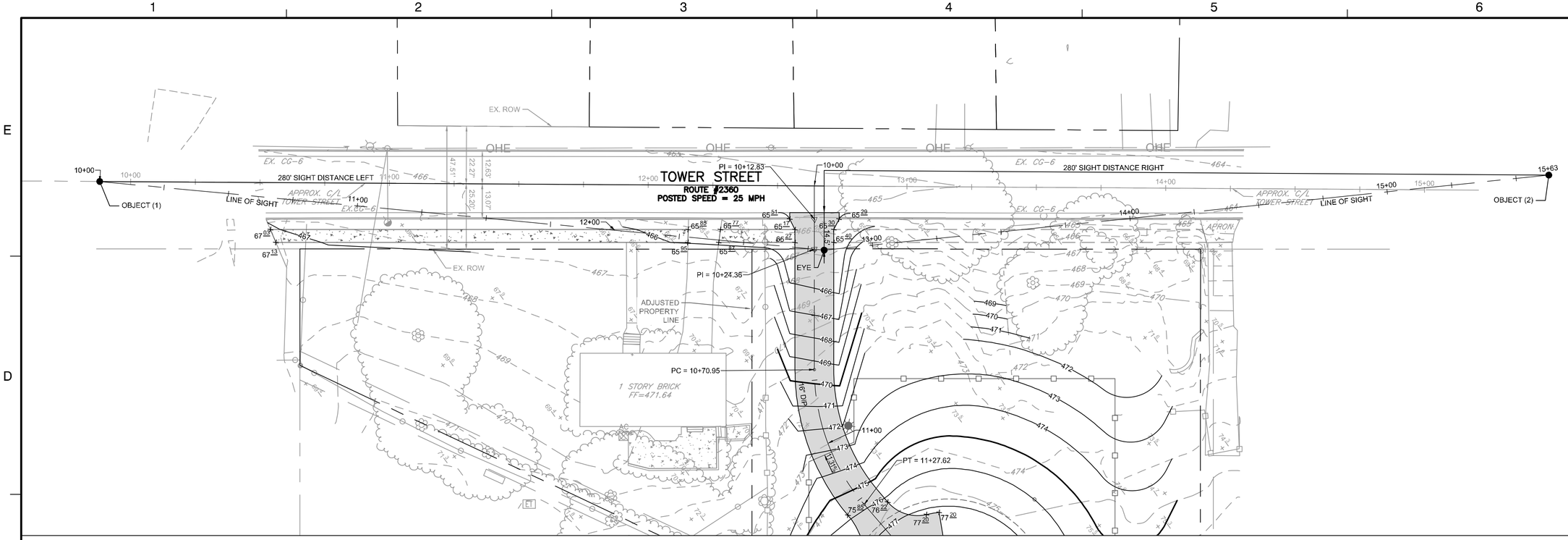
TITLE

GRADING & UTILITY PLAN

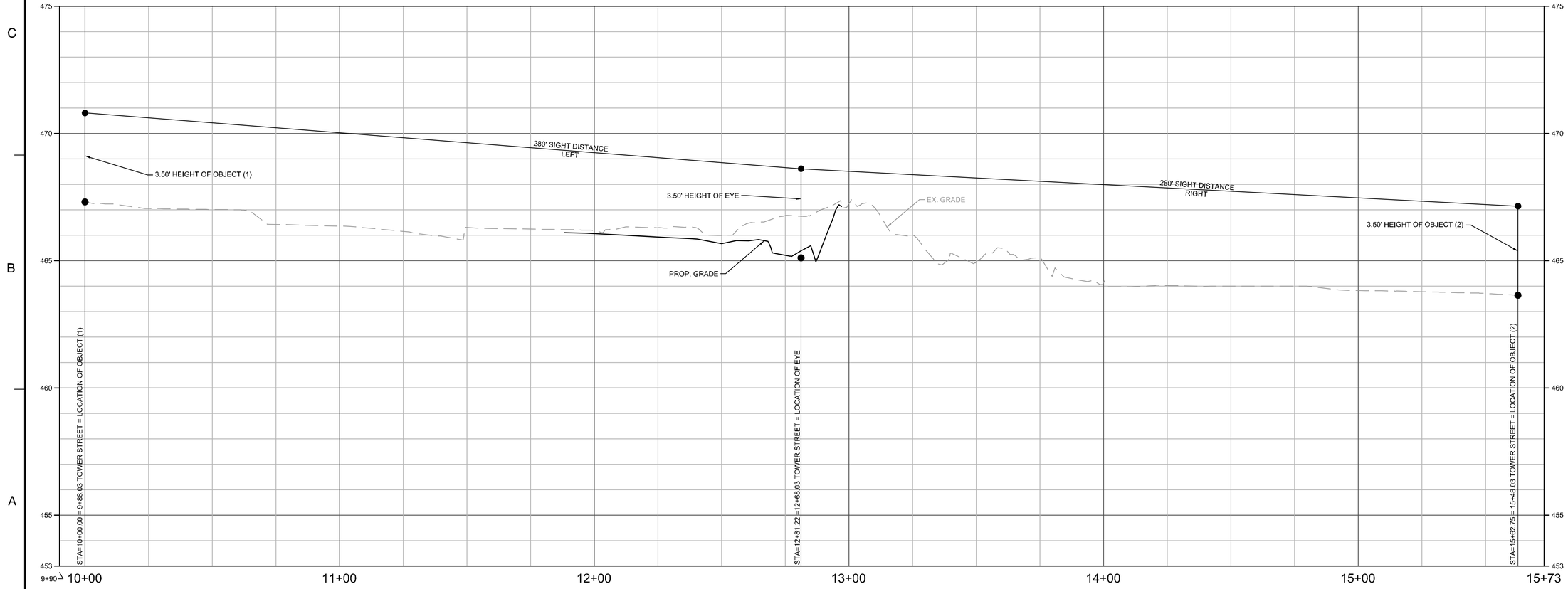
FW PROJECT NO. P2729-002

7

SHEET NO. 7 OF 29



ENTRANCE SIGHT DISTANCE PROFILE



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FAIRFAX, VA 22031
703.849.0100 (PHONE)
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SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
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04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
H: 1" = 20'
1 INCH
V: 1" = 2'
1 INCH

NORTH
VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BWB
APPROVED BY	TCC
CHECKED BY	TCC
DATE	APRIL 29, 2025

TITLE
SIGHT DISTANCE PLAN & PROFILE

FW PROJECT NO. P2729-002

8

SHEET NO. 8 OF 29

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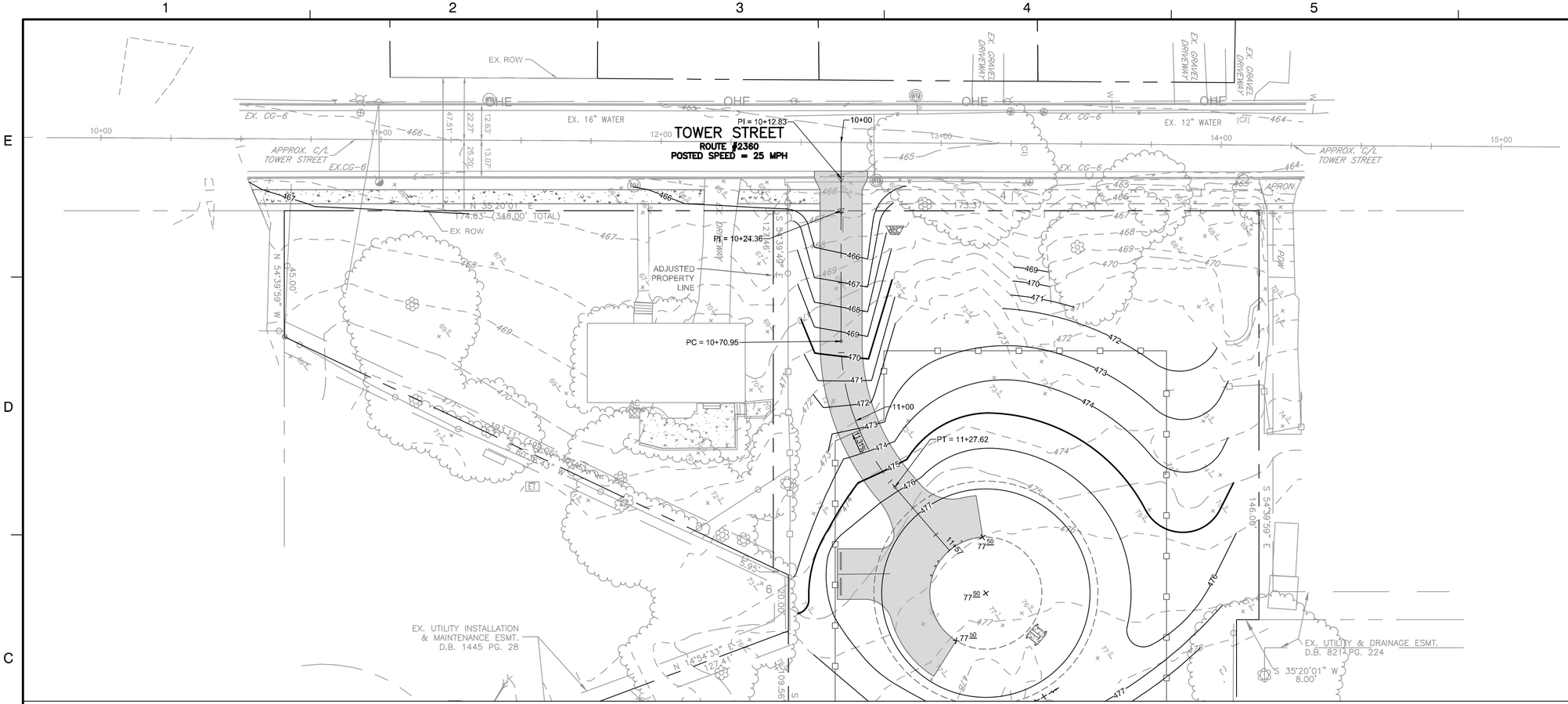
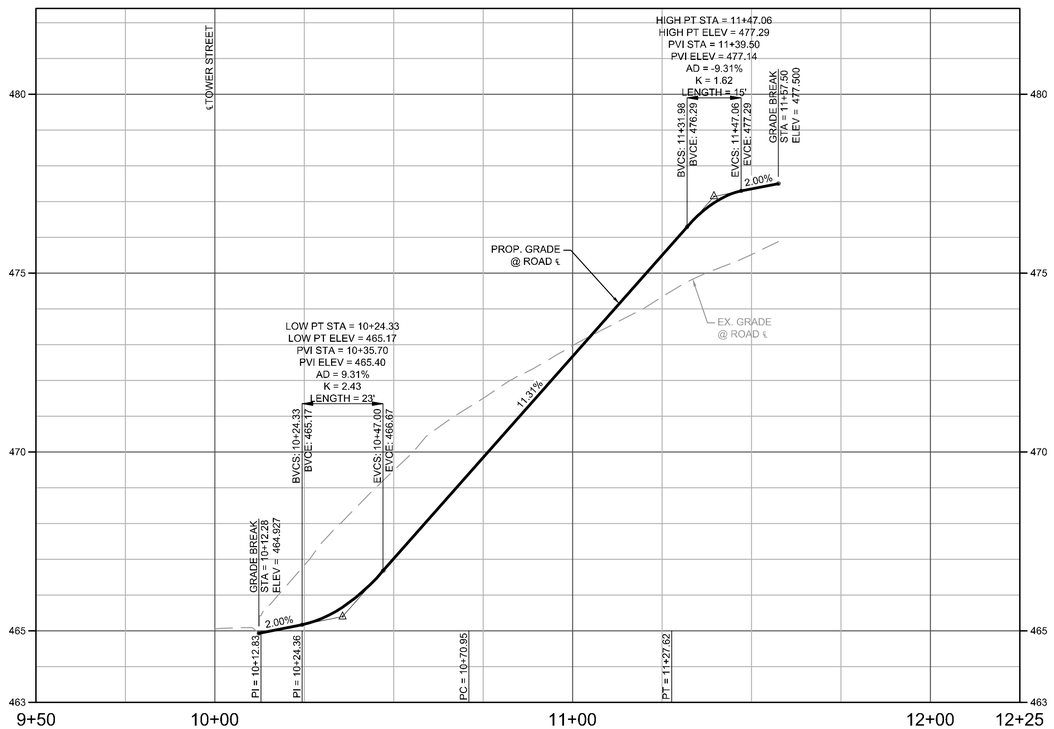


ACCESS DRIVE CENTERLINE PROFILE



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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

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SCALE
H: 1" = 20'
1 INCH
V: 1" = 2'
1 INCH

NORTH
VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BWB
APPROVED BY	TCC
CHECKED BY	TCC
DATE	APRIL 29, 2025

TITLE
ACCESS DRIVE PROFILE

FW PROJECT NO. P2729-002

9

SHEET NO. 9 OF 29

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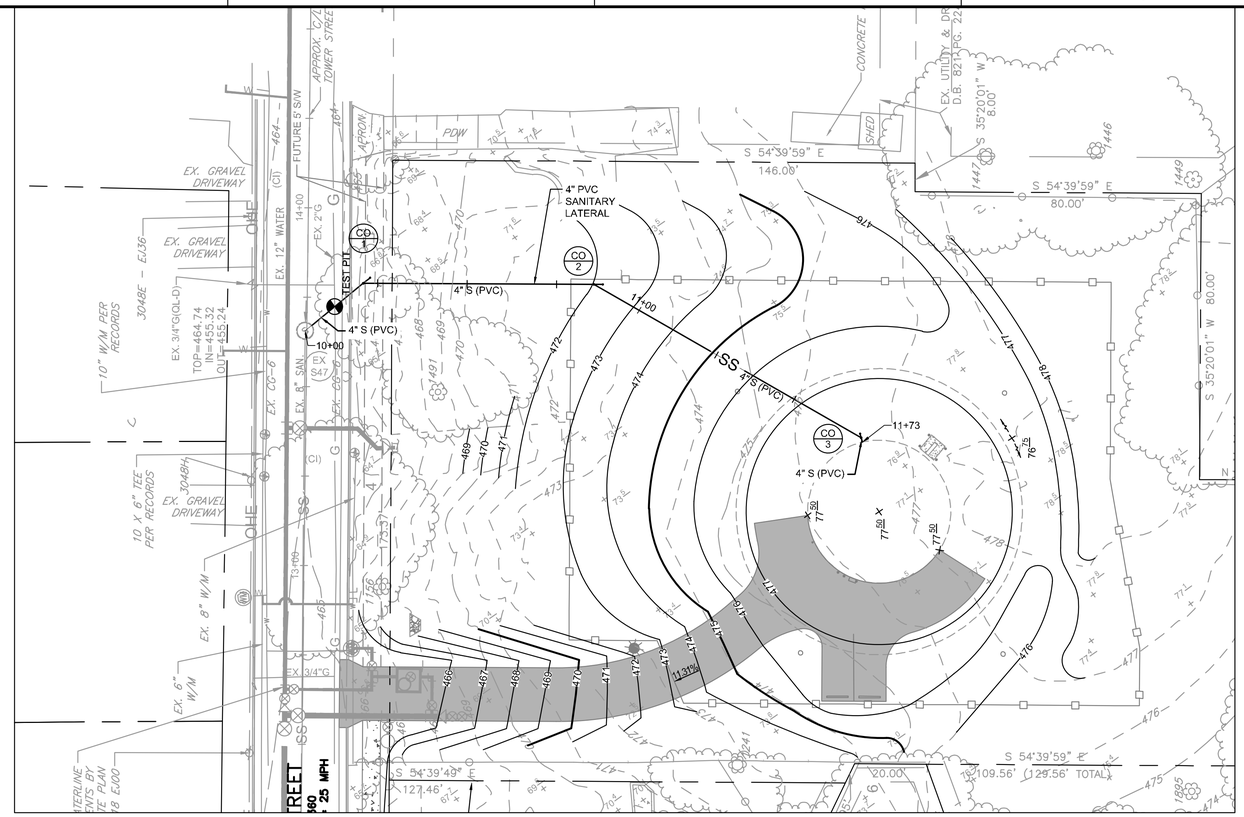
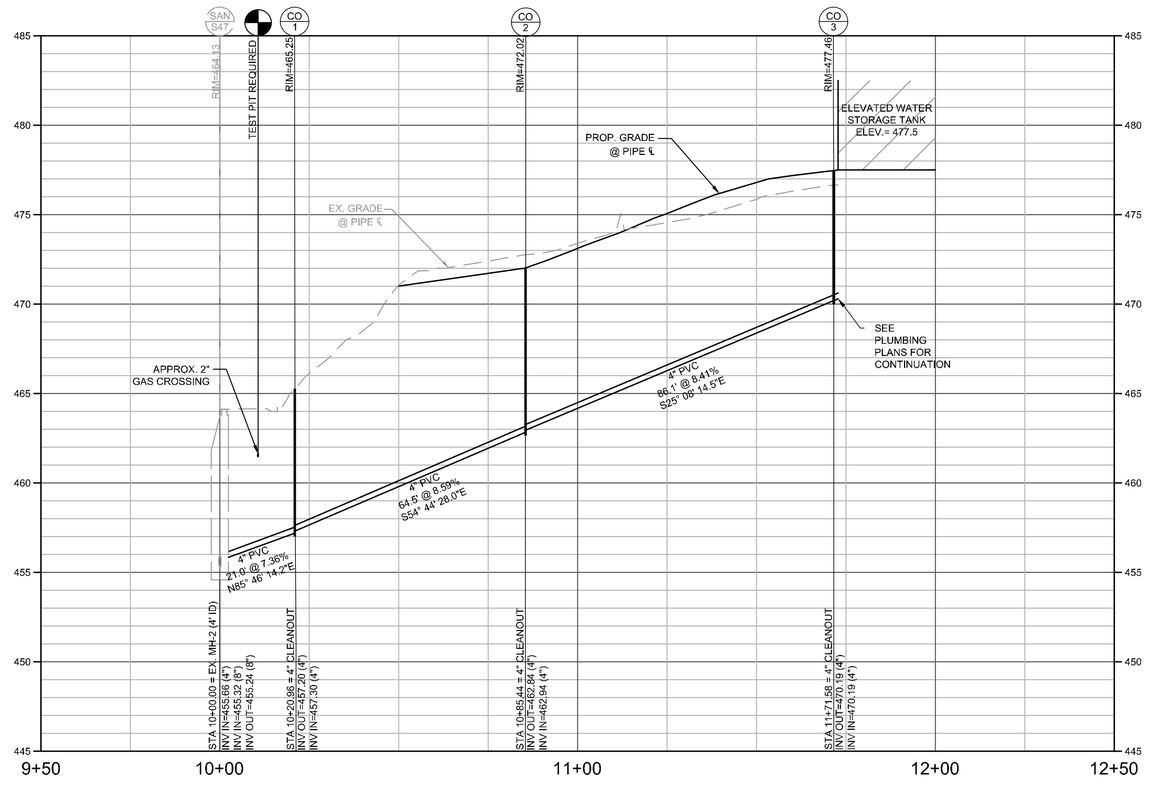


PIPE TABLE					
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	SIZE	LENGTH	SLOPE	BEARING
WATER TANK	3	4"	1.236'	8.81%	S19° 31' 05.25"W
3	2	4"	86.144'	8.41%	S25° 08' 14.48"E
2	1	4"	64.484'	8.59%	S54° 44' 28.05"E
1	S47	4"	20.956'	7.36%	N85° 46' 14.22"E

SANITARY LATERAL PROFILE



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Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
H: 1" = 20'
1 INCH
V: 1" = 4'
1 INCH

NORTH
VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE
SANITARY PROFILE

FW PROJECT NO. P2729-002

10

SHEET NO. 10 OF 29

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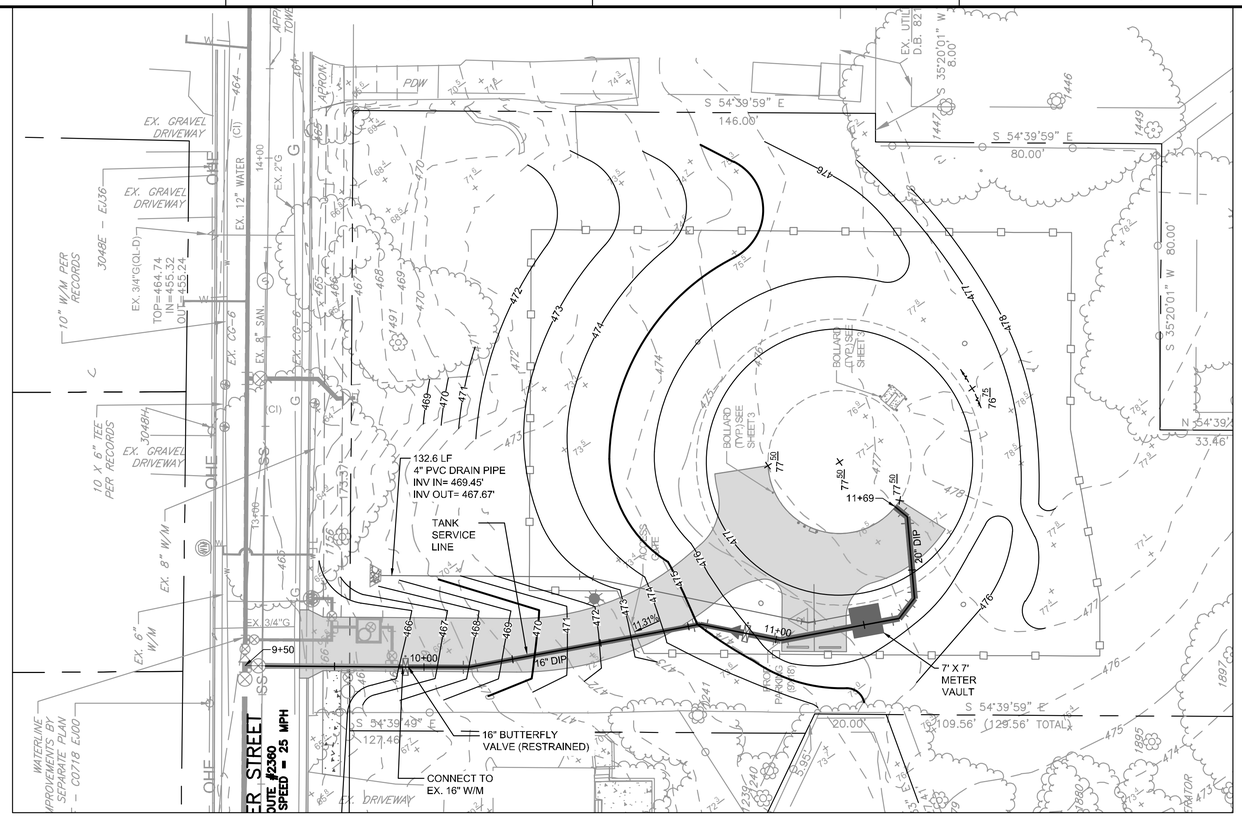
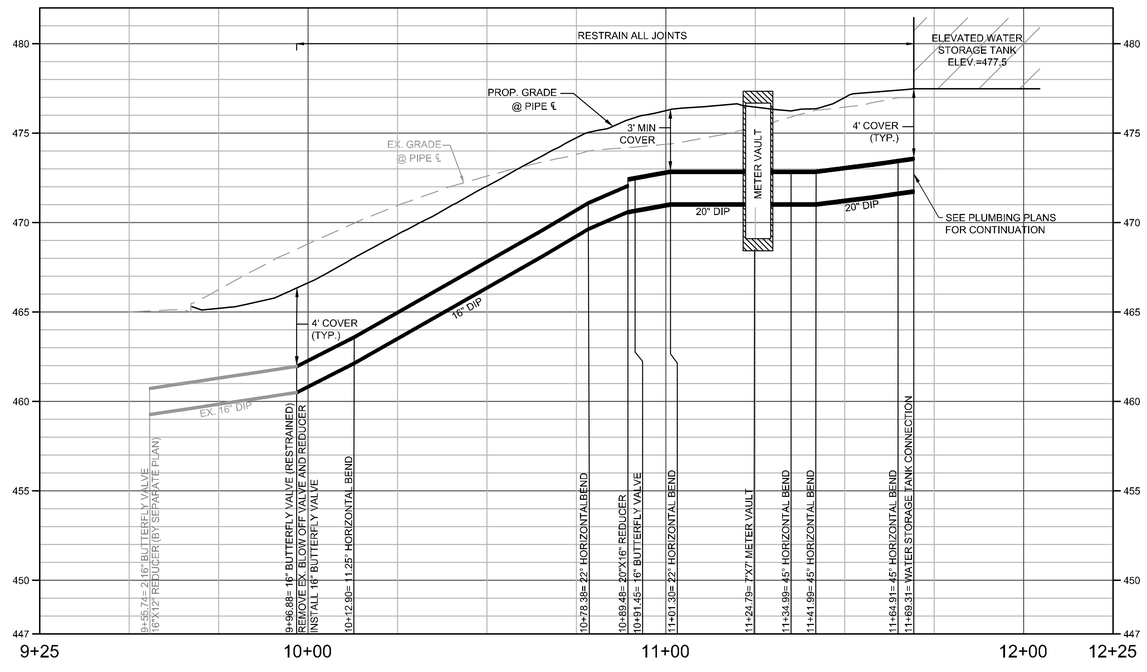


WATERMAIN PROFILE



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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

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DATE APRIL 29, 2025

TITLE
WATERMAIN PROFILES

FW PROJECT NO. P2729-002

11

SHEET NO. 11 OF 29

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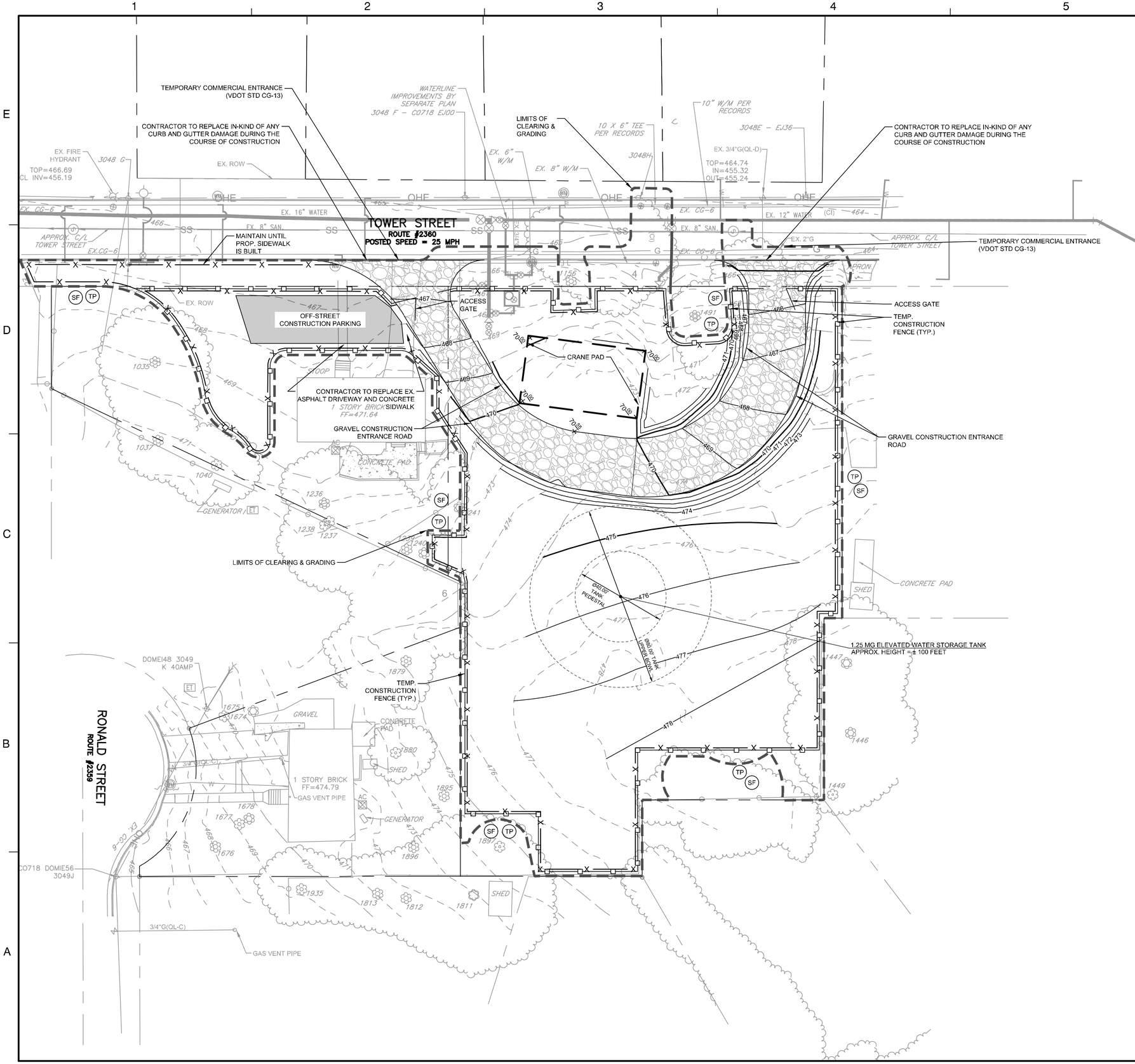

VIRGINIA UNIFORM CODING SYSTEM

FOR EROSION AND SEDIMENT CONTROL PRACTICES

NO	TITLE	KEY	SYMBOL
C-PCM-01	CONSTRUCTION / TREE PROTECTION FENCE (SEE NOTE 4 -THIS SHEET)	TP	
C-PCM-04	SILT FENCE	SF	
LIMITS OF CLEARING AND GRADING			

NOTES:

1. LOCATION OF STORAGE AND STAGING AREAS ARE SUBJECT TO CHANGE, AND WILL BE DETERMINED BY THE CONTRACTOR CONSTRUCTING THE TANK.
2. PARKING OF CONSTRUCTION VEHICLES, INCLUDING PERSONAL VEHICLES OF TRADESMEN IS PROHIBITED ON TOWER STREET DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE A COUNTY APPROVED SEDIMENTATION CONTROL FENCE ALONG THE FULL LIMITS OF DISTURBANCE OF THE CONSTRUCTION SITE.
4. THE CONTRACTOR SHALL PROVIDE A CONTINUOUS CONSTRUCTION 8' HIGH CHAIN LINK FENCE WITH SCREENING MATERIAL AROUND THE FULL PERIMETER OF THE CONSTRUCTION SITE.
5. CONSTRUCTION HOURS WILL BE LIMITED TO MONDAY THROUGH FRIDAY 7:00AM TO 7:00PM AND SATURDAY 9:00AM TO 7:00PM. NO CONSTRUCTION WORK SHALL BE PERFORMED ON SUNDAYS. CONSTRUCTION AND DELIVERY VEHICLES MUST NOT PARK AND IDLE ON THE SURROUNDING RESIDENTIAL STREETS PRIOR TO THE START TIME. POST SIGNAGE ON SURROUNDING STREETS STATING THIS PROHIBITION.
6. PRIOR TO THE START OF CONSTRUCTION/PERMIT THE APPLICANT/CONTRACTOR SHALL SUBMIT THE FOLLOWING PLANS TO VDOT, FCDOT, AND LDS REVIEW:
   - CONSTRUCTION MANAGEMENT PLAN
   - CONSTRUCTION MANAGEMENT PARKING PLAN
   - DUST MANAGEMENT PLAN
7. THE CONSTRUCTION OF THE SITE PLAN MUST BE SUBJECT TO THE NOISE ORDINANCE OF FAIRFAX COUNTY. THE FOLLOWING NOISE AND GLARE MITIGATION MEASURES MUST BE IMPLEMENTED DURING CONSTRUCTION:
   - ALL MOTORIZED VEHICLES AND EQUIPMENT USED DURING CONSTRUCTION MUST BE EQUIPPED WITH PROPER MUFFLERS.
   - DELIVERY ROUTES MUST BE ARRANGED TO MINIMIZE THE USE OF BACKUP ALARMS ON COMMERCIAL VEHICLES AND EQUIPMENT.
   - THE BANGING OF TAIL GATES MUST BE PROHIBITED. ALL DRIVERS ASSOCIATED WITH THIS PROJECT MUST BE INFORMED ABOUT THIS PROHIBITION.
   - ALL LIGHTS USED TO ILLUMINATE THE CONSTRUCTION SITE, INCLUDING ANY STAGING AREAS, MUST BE FULL CUT-OFF OR DIRECTIONALLY SHIELDED SO THAT THE DIRECT LIGHT MUST BE SUBSTANTIALLY CONFINED TO THE CONSTRUCTION SITE.

Dewberry

Dewberry Engineers Inc.
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FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

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TITLE

CONSTRUCTION MANAGEMENT PLAN

FW PROJECT NO. P2729-002

12

SHEET NO. 12 OF 29

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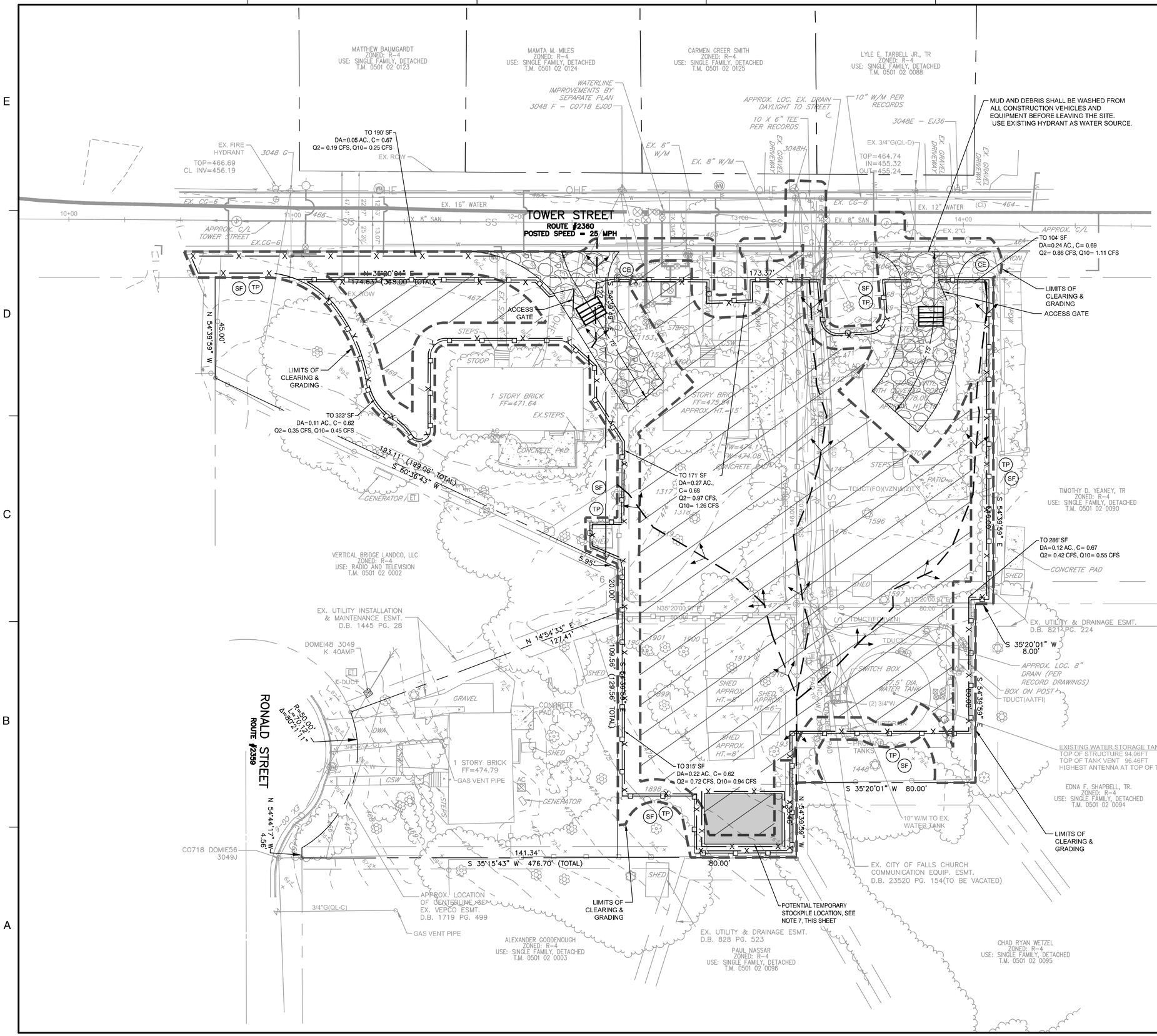

VIRGINIA UNIFORM CODING SYSTEM

FOR EROSION AND SEDIMENT CONTROL PRACTICES

NO	TITLE	KEY	SYMBOL
C-SCM-03	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
C-PCM-01	CONSTRUCTION / TREE PROTECTION FENCE (SEE NOTE 4 -THIS SHEET)	TP	
C-PCM-04	SILT FENCE	SF	
DRAINAGE DIVIDES			
LIMITS OF CLEARING AND GRADING			

EROSION & SEDIMENT CONTROL NOTES:

THIS SHEET DEPICTS PHASE 1 OF A 2 PHASE EROSION & SEDIMENT CONTROL PLAN FOR THE SITE. PHASE 1 IS INTENDED FOR INSTALLATION OF PERIMETER CONTROLS. PHASE 2 IS FOR FINAL INFRASTRUCTURE CONDITIONS.

1. PHASE 1 INITIAL LIMITS OF CLEARING AND GRADING ARE INTENDED TO REPRESENT THE MINIMUM LIMITS OF DISTURBANCE REQUIRED TO INSTALL PERIMETER CONTROLS.
2. ALL CONSTRUCTION TRAFFIC ACCESS IS TO BE LIMITED TO THE CONSTRUCTION ENTRANCES.
3. DRAINAGE DIVIDES SHOWN ARE USED FOR HYDRAULIC ANALYSIS AND DO NO REPRESENT AREA OF DISTURBANCE.
4. THE CONTRACTOR SHALL PROVIDE A CONTINUOUS CONSTRUCTION 8' HIGH CHAIN LINK FENCE WITH SCREENING MATERIAL AROUND THE FULL PERIMETER OF THE CONSTRUCTION SITE.
5. SAFETY FENCE MAY BE REQUIRED TO PROTECT THE SITE AND ADJACENT AREA FROM PEDESTRIAN TRAFFIC OF THE ADJACENT DEVELOPMENTS.
6. CLEARING AND GRADING OUTSIDE THE INITIAL LIMITS OF CLEARING AND GRADING MAY NOT OCCUR UNTIL PERIMETER CONTROLS ARE ESTABLISHED AND APPROVED BY THE FAIRFAX COUNTY SITE INSPECTOR.
7. IF REQUIRED, TEMPORARY STOCKPILE LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR AS NEEDED DURING CONSTRUCTION. STOCKPILES SHALL ADHERE TO GENERAL LAND CONSERVATION NOTES 11-0304.5 & MS-2, SEE SHEET 15

LEGEND

AREA NOT TO BE DISTURBED UNTIL PERIMETER CONTROLS ARE INSTALLED.

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PROFESSIONAL ENGINEER

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DATE	APRIL 29, 2025

TITLE

EROSION & SEDIMENT CONTROL- PHASE 1

FW PROJECT NO. P2729-002

13

SHEET NO. 13 OF 29

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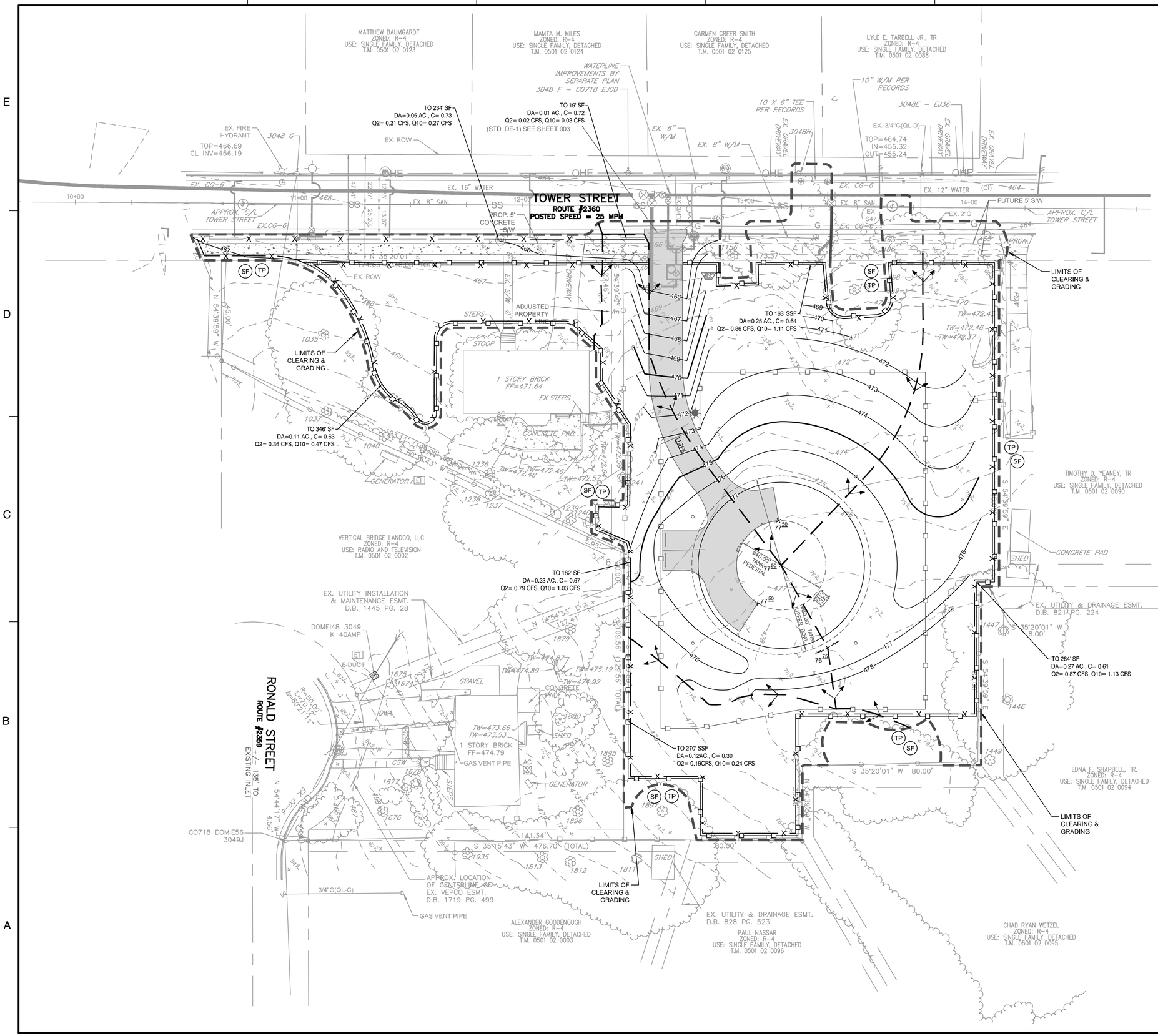

VIRGINIA UNIFORM CODING SYSTEM

FOR EROSION AND SEDIMENT CONTROL PRACTICES

NO	TITLE	KEY	SYMBOL
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C-PCM-01	CONSTRUCTION / TREE PROTECTION FENCE (SEE NOTE 4 -THIS SHEET)	TP	
C-PCM-04	SILT FENCE	SF	
DRAINAGE DIVIDES			
LIMITS OF CLEARING AND GRADING			

EROSION & SEDIMENT CONTROL NOTES:

THIS SHEET DEPICTS PHASE 2 OF A 2 PHASE EROSION & SEDIMENT CONTROL PLAN FOR THE SITE. PHASE 1 IS INTENDED FOR INSTALLATION OF PERIMETER CONTROLS. PHASE 2 IS FOR FINAL INFRASTRUCTURE CONDITIONS.

1. TREE PRESERVATION CONTROLS WILL BE SHOWN ON THIS SHEET - SEE SHEET 24 FOR ADDITIONAL INFORMATION.
2. ALL CONSTRUCTION TRAFFIC ACCESS IS TO BE LIMITED TO THE CONSTRUCTION ENTRANCES.
3. DRAINAGE DIVIDES SHOWN ARE USED FOR HYDRAULIC ANALYSIS AND DO NOT REPRESENT AREA OF DISTURBANCE.
4. THE CONTRACTOR SHALL PROVIDE A CONTINUOUS CONSTRUCTION 8' HIGH CHAIN LINK FENCE WITH SCREENING MATERIAL AROUND THE FULL PERIMETER OF THE CONSTRUCTION SITE.
5. SAFETY FENCE MAY BE REQUIRED TO PROTECT THE SITE AND ADJACENT AREA FROM PEDESTRIAN TRAFFIC OF THE ADJACENT DEVELOPMENTS.

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DATE APRIL 29, 2025

TITLE

EROSION & SEDIMENT CONTROL PLAN-PHASE 2

FW PROJECT NO. P2729-002

14

SHEET NO. 14 OF 29

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Tue, Apr 29 2025 - 3:36:24pm

GENERAL LAND CONSERVATION NOTES
(FAIRFAX COUNTY PUBLIC FACILITIES MANUAL-SECTION 11)

11-0304.1 NO DISTURBED AREA WHICH IS NOT ACTIVELY BEING WORKED MAY REMAIN DENUDED FOR MORE THAN 14 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR.

11-0304.2 ALL E&S CONTROL MEASURES APPROVED WITH THE PHASE ONE E&S CONTROL PLAN MUST BE PLACED AS THE FIRST STEP IN GRADING.

11-0304.3 ALL STORM AND SANITARY SEWER LINES NOT IN STREETS MUST BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET MAY BE OPEN AT ANY ONE TIME.

11-0304.4 ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES MUST BE COMPACTED, SEEDED AND MULCHED WITHIN 14 DAYS AFTER BACKFILL.

11-0304.5 ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS MUST BE SEEDED AND MULCHED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY (AS SOON AS POSSIBLE BUT NO LATER THAN 48 HOURS) AFTER COMPLETION OF GRADING. STRAW OR HAY MULCH IS REQUIRED. ALL SOIL STOCKPILES MUST BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER GRADING.

11-0304.6 DURING CONSTRUCTION, ALL STORM SEWER INLETS MUST BE PROTECTED BY SEDIMENT TRAPS, MAINTAINED AND MODIFIED DURING CONSTRUCTION PROGRESS AS REQUIRED.

11-0304.7 ANY DISTURBED AREA NOT COVERED BY § 11-0304.1 AND NOT PAVED, SODDED OR BUILT UPON BY NOV. 1, OR DISTURBED AFTER THAT DATE, MUST BE MULCHED IMMEDIATELY WITH HAY OR STRAW MULCH AT THE RATE OF 2 TONS/ACRE AND OVER-SEEDED BY APRIL 15.

11-0304.8 AT THE COMPLETION OF ANY PROJECT CONSTRUCTION AND BEFORE BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AND ALL DENUDED AREAS MUST BE STABILIZED.

MINIMUM STANDARDS

MS-1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. (SEE TEMPORARY AND PERMANENT STABILIZATION ON THIS SHEET)

MS-2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.

MS-4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.

B. SURFACE RUNOFF FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY SEDIMENT BASINS. THE MINIMUM STORAGE CAPACITY FOR A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL APPLY TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

MS-7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

MS-9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

MS-11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT, AND STABILIZE THE WORK AREA TO THE GREATEST POSSIBLE EXTENT DURING CONSTRUCTION. NON-ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON-ERODIBLE COVER MATERIALS.

MS-13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NON-ERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14. ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

MS-16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. (GENERAL LAND CONSERVATION NOTE #4)
E. RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

MS-17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

MS-18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM. TRAPPED SEDIMENT AND DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

MS-19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE, OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
I. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
II. (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
I. IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR
II. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; OR
III. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL, OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
IV. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION, OR OTHER MEASURES TO PREVENT DOWNSTREAM EROSION SATISFACTORY TO THE PLAN-APPROVING AUTHORITY.
D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.
F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH MAINTENANCE REQUIREMENTS OF THE FACILITY AND DESIGNATE THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATERS PLACED AT THE OUTFALL OF THE DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABLE TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
I. INCREASED VOLUMES OF SHEET FLOWS CAUSING EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL, OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT AS A WHOLE SHALL BE TREATED AS A SINGLE PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT STATE SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EXECUTED IN A MANNER THAT MINIMIZES THE IMPACT ON THE PHYSICAL, CHEMICAL, AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS, AND OTHER STATE WATERS.
L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.
M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (I) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-870-47 OR GRANDFATHERING IN 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT SHALL APPLY, OR (II) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 C 7 OF THE ACT.
N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBDIVISION 19.

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT PROPOSES THE INSTALLATION OF A NEW WATER STORAGE TANK, ACCOMPANIED BY THE REMOVAL OF THE EXISTING TANK. EXISTING SITE HARDSCAPE (DRIVEWAYS, SIDEWALKS, CONCRETE PADS), BUILDINGS, AND SITE UTILITIES ASSOCIATED WITHIN THE IDENTIFIED AREA OF DISTURBANCE, SHALL BE REMOVED/DEMOLISHED. THE SITE PLAN ALSO PROPOSES A NEW SIDEWALK ALONG TOWER STREET AND AN ACCESS DRIVEWAY TO THE NEW WATER STORAGE TANK. THE AREA OF DISTURBANCE PROPOSED WITH THIS PLAN IS 1.12 ACRES. THIS NARRATIVE PROVIDES A DESCRIPTION OF THE EROSION AND SEDIMENT CONTROLS AND THE MAINTENANCE OF THESE CONTROLS NECESSARY TO CONSTRUCT THE PROPOSED SITE PLAN IMPROVEMENTS.

EXISTING CONDITIONS:
THE SITE DEVELOPMENT AREA CONSISTS OF AN EXISTING WATER STORAGE TANK, TWO SINGLE FAMILY HOMES, UTILITIES, DRIVEWAYS AND SIDEWALKS THAT WILL BE DEMOLISHED WITH THIS PLAN.

ADJACENT PROPERTIES:
THE PROPERTIES LOCATED ALONG TOWER STREET ARE RESIDENTIAL HOMES BOUND BY TOWER STREET FROM THE NORTH AND BUCKELEW DRIVE. THEY ARE LOCATED SOUTHEAST FROM SHREVEWOOD ELEMENTARY SCHOOL.

OFF-SITE AREAS:
OFFSITE AREA IMPACTS DURING CONSTRUCTION IS LIMITED TO THE RIGHT-OF-WAY OF TOWER STREET ACROSS THE SITE FRONTAGE; ALL OTHER IMPACTS ARE ONSITE ON PROPERTY OWNED BY FAIRFAX WATER.

SOIL:
A SOILS MAP HAS BEEN PROVIDED ON THE COVER SHEET OF THIS PLAN IDENTIFYING THE SOIL TYPES ENCOUNTERED WITHIN THE PROPOSED LIMIT OF DISTURBANCE THAT INCLUDES DESCRIPTIONS OF THE ENGINEERING CHARACTERISTICS OF THE IDENTIFIED SOILS. THE EROSION POTENTIAL OF THE ONSITE SOILS ARE HIGH.

CRITICAL EROSION AREAS:
THERE ARE NO CRITICAL AREAS ASSOCIATE WITH THIS PLAN.

STORMWATER RUNOFF CONSIDERATIONS
THIS PLAN PROPOSES THE USE OF COMPOST AMENDED SOILS TO REDUCE THE STORMWATER RUNOFF VOLUMES GENERATED BY THE DEVELOPMENT OF THE SITE, FULLY ADDRESSING BOTH QUANTIY AND QUALITY REQUIREMENTS ONSITE. SEE THE STORMWATER MANAGEMENT NARRATIVE ON SHEET 017 OF THIS PLAN FOR ADDITIONAL INFORMATION.

CONSTRUCTION PHASING
THIS PLAN PROPOSES A 2 PHASE APPROACH TO EROSION AND SEDIMENT CONTROL.

PHASE 1 - INITIAL CLEARING AND GRADING
CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. THE CLEARING OF VEGETATION SHALL BE CONDUCTED IN CONFORMANCE WITH THE RECOMMENDATIONS OF THE TREE PRESERVATION PLAN (SEE SHEET 23). THE PHASE 1 CONSTRUCTION LIMITS AS SHOWN ON THE PHASE 1 EROSION AND SEDIMENT CONTROL PLANS ARE INTENDED TO DELINEATE THE INSTALLATION OF PERIMETER CONTROLS ONLY.

1. INSTALL THE TEMPORARY CONSTRUCTION ENTRANCES WITH WASH RACKS AS SHOWN ON THE PLAN. MUD AND DEBRIS SHALL BE WASHED FROM ALL CONSTRUCTION VEHICLES AND EQUIPMENT BEFORE LEAVING THE SITE.
2. THE SITE PLAN INCLUDES A TREE PRESERVATION PLAN WHICH SHALL BE FOLLOWED IN CONJUNCTION WITH THE EROSION AND SEDIMENT CONTROL PLANS.
3. CLEAR ONLY THE AREA SHOWN ON THE EROSION AND SEDIMENT CONTROL PHASE 1 PLANS FOR THE INSTALLATION OF CHAIN LINK SECURITY FENCE WITH SCREENING MATERIAL THAT WILL FUNCTION AS TREE PROTECTION FENCING AND SILT FENCE FOR THE FULL PERIMETER OF THE SITE
4. ONCE ALL PERIMETER CONTROLS ARE IN PLACE, THE REMAINDER OF THE SITE WITHIN THE LIMITS OF DISTURBANCE CAN BE OPENED FOR CLEARING AND GRADING UPON APPROVAL FROM THE COUNTY SITE INSPECTOR.

PHASE 2 - FINAL DEVELOPMENT CONTROLS
PHASE 2 OF THE EROSION AND SEDIMENT CONTROL PROGRAM IS INTENDED TO PROVIDE CONTROLS FOR THE FINAL SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE PLAN.

1. AREAS THAT ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
2. DEMOLITION AND GRADING OF THE PROJECT SITE CAN ONLY BEGIN UPON APPROVAL OF THE PHASE 1 CONTROLS BY THE COUNTY SITE INSPECTOR.
3. ADJUST THE SILT FENCE TO ACCOMMODATE THE FINAL SITE GRADING AS NEEDED (TO BE DETERMINED BY SITE CONDITIONS). MAINTAIN THE PERIMETER SECURITY FENCE THROUGHOUT CONSTRUCTION.
4. FOR VEGETATIVE STABILIZATION OF ALL DENUDED AREAS, SEE EROSION AND SEDIMENT CONTROL MAINTENANCE PROGRAM.
5. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY EROSION AND SEDIMENT CONTROLS WILL BE CLEANED AND REMOVED AT THE DIRECTION OF THE SITE INSPECTOR.

STOCKPILE
THE CONTRACTOR FOR THE SITE IMPROVEMENTS IS REQUIRED TO NOTIFY IN WRITING THE ASSIGNED SITE INSPECTOR REGARDING ANY EXCESS MATERIAL PROPOSED TO BE HAULED OFFSITE PRIOR TO HAULING. THE NOTIFICATION MUST INDICATE THE QUANTITY OF MATERIAL TO BE MOVED OFFSITE, THE IDENTIFICATION OF THE RECEIVING SITE WHERE THE EXCESS WILL BE TAKEN, AND ALL INFORMATION NECESSARY TO SHOW THAT SUCH RECEIVING SITE HAS BEEN PROPERLY PERMITTED AND EROSION AND SEDIMENT CONTROLS HAVE BEEN INSTALLED.

SAFE WORK ENVIRONMENT
CONTRACTOR SHALL PROVIDE ADEQUATE SITE PROTECTION AND WORK AREA SECURITY AT ALL TIMES.

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 SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
3. TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.
4. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, FENCING, ETC.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
6. AFTER ACHIEVING ADEQUATE STABILIZATION, THE SILT FENCE AND INLET PROTECTION WILL BE REMOVED AND CLEANED UP. APPROVAL OF THE COUNTY SITE INSPECTOR IS REQUIRED PRIOR TO THE REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES.
7. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN TWO PHASES AS INDICATED ON THE PLANS.
8. PHASE I PLAN WILL BE IMPLEMENTED FOR THE INSTALLATION OF SEDIMENT CONTROL MEASURES.
9. PHASE II MEASURES WILL BE IMPLEMENTED UPON COMPLETION OF ROUGH GRADING.
10. DUST CONTROL TO BE PROVIDED BY SPRINKLING THE SITE WITH WATER, AS NEEDED, FROM CLOSEST EXISTING HYDRANT OR USE OF WATER TRUCK.

TEMPORARY STABILIZATION:
THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS; EMPLOYED TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 14 DAYS, TO REDUCE DAMAGE FROM SEDIMENT AND RUNOFF TO DOWNSTREAM OR OFF-SITE AREAS, AND TO PROVIDE PROTECTION TO BARE SOILS EXPOSED DURING CONSTRUCTION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.
WHERE EXPOSED SOIL SURFACES ARE NOT TO BE FINE-GRADED FOR PERIODS LONGER THAN 30 DAYS. SUCH AREAS INCLUDE DENUDED AREAS, SOIL STOCKPILES, DIKES, DAMS, SIDES OF SEDIMENT BASINS, TEMPORARY ROADBANKS, ETC.
(SEE MS #1 AND MS #2 ON THIS SHEET). A PERMANENT VEGETATIVE COVER SHALL BE APPLIED TO AREAS THAT WILL BE LEFT DORMANT FOR A PERIOD OF MORE THAN 1 YEAR.

PERMANENT STABILIZATION:
ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS AND NEWLY GRADED AREAS SHALL BE SEEDED. IF SEEDING CANNOT BE ACCOMPLISHED DURING SCHEDULED TIME, PROTECT DISTURBED AREAS WITH MULCH OR JUTE MESH. RECOMMENDED SEEDING TIME SHALL BE IN SPRING BETWEEN FEBRUARY 1 AND APRIL 30 OR IN FALL BETWEEN SEPTEMBER 1 AND OCTOBER 15.

1. SELECTION OF PLANT MATERIAL IS BASED ON CLIMATE, TOPOGRAPHY, SOILS, LAND USE AND PLANTING SEASON. A SITE SPECIFIC MIX DETERMINED USING TABLES C-SSM-10-1 AND C-SSM-10-2 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK. ALL PERMANENT SEEDING SHALL BE PLACED PER THE DEQ HANDBOOK C-SSM-10.

DUST CONTROL
PREVENT SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES AND REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARD, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE BY USING ONE OR A COMBINATION OF THE FOLLOWING METHODS IN ACCORDANCE WITH C-SCM-01 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK: VEGETATIVE COVER, MULCH, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE, BARRIERS, CALCIUM CHLORIDE, AND PERMANENT VEGETATION.

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 4VAC50-30) EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

EROSION AND SEDIMENT CONTROL MEASURES

IN GENERAL, MANAGEMENT STRATEGIES WILL FOLLOW THE PRESCRIBED STRATEGIES OUTLINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ADDITIONAL GUIDANCE IS PROVIDED HEREIN FOR REFERENCE.

1. TEMPORARY CONSTRUCTION ENTRANCE - C-SCM-03
TEMPORARY CONSTRUCTION ENTRANCES SHALL BE INSTALLED WHERE CONSTRUCTION TRAFFIC ENTERS CONSTRUCTION AREAS, AS SHOWN ON THE PLAN ALL CONSTRUCTION ENTRANCES MUST HAVE AT LEAST THE MINIMUM LENGTH OF 75'. FOR WASH RACK, TANKER TRUCK SHALL BE USED IF NO AVAILABLE WATER SOURCE ON SITE.
2. SILT FENCE/SUPER SILT FENCE - C-PCM-04
SILT FENCE/SUPER SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWNSLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN SHEET FLOW AS INDICATED ON THE PLANS.
3. TREE PRESERVATION AND PROTECTION - PFM CHAPTER 12
TREE PROTECTION SHALL BE PROVIDED AS SHOWN ON THE PLAN TO ENSURE SURVIVAL OF DESIRABLE TREES WHERE THEY WILL BE EFFECTIVE FOR EROSION AND SEDIMENT CONTROL.

VEGETATIVE PRACTICES

1. TOPSOILING (STOCKPILE) - C-SSM-02
TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKLPILE LOCATIONS ARE TO BE STABILIZED WITH TEMPORARY VEGETATION.
2. TEMPORARY SEEDING - C-SSM-09
ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR MORE THAN 14 DAYS SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION 7 DAYS AFTER GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.
3. PERMANENT SEEDING - C-SSM-10
ALL DENUDED AREAS WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL OR ROUGH-GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE WILL BE STABILIZED WITH PERMANENT SEED MIX. SEE LANDSCAPE PLAN FOR DESIGNATION OF AREAS TO RECEIVE EACH SEED TYPE.
4. SODDING - C-SSM-06
DISTURBED AREAS WHICH REQUIRE IMMEDIATE VEGETATIVE COVERS, OR WHERE SODDING IS PREFERRED TO OTHER MEANS OF GRASS ESTABLISHMENT.

MAINTENANCE

ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND WITHIN 48-HOURS OF ANY RUNOFF PRODUCING RAINFALL EVENT. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

STRUCTURAL PRACTICES:

1. THE INLET AND OUTLET PROTECTION WILL BE CHECI

RESPONSIBLE LAND DISTURBER CERTIFICATION

PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITY, THE CONTRACTOR SHALL PROVIDE TO THE PLAN APPROVING AUTHORITY THE NAME OF AN INDIVIDUAL HOLDING A CERTIFICATE OF COMPETENCE (VIRGINIA PROFESSIONAL ENGINEER, VIRGINIA LAND SURVEYOR, VIRGINIA LANDSCAPE ARCHITECT, VIRGINIA ARCHITECT, COMBINED EROSION AND SEDIMENT CONTROL ADMINISTRATOR, EROSION AND SEDIMENT CONTROL ADMINISTRATOR, EROSION AND SEDIMENT CONTROL PLAN REVIEWER, EROSION AND SEDIMENT CONTROL INSPECTOR, EROSION AND SEDIMENT CONTROL CONTRACTOR, RESPONSIBLE LAND DISTURBER) ISSUED BY THE DEPARTMENT OF CONSERVATION AND RECREATION (DCR) WHO WILL BE RESPONSIBLE FOR CARRYING OUT THE LAND DISTURBING ACTIVITY.

Dewberry®

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK
SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL
COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE
EROSION & SEDIMENT CONTROL NARRATIVE

FW PROJECT NO. P2729-002

15

FAIRFAX COUNTY PRIORITY RATING FORM FOR EROSION & SEDIMENT CONTROL

PROJECT NAME: Poplar Heights Water Tank PROJECT NUMBER: SP-2025-00014

TAX MAP: 050-1 ((2)) 0089, 0094A & 050-1 ((12)) 0001, 006, 0005 EVALUATOR: Wendy Argueta DATE: April 17, 2025

A. Percentage of Denuded Area to Total Site Area

		Rating
• > 60%	[✓]	5
• 31 to 60%	[ ]	3
• 10 to 30%	[ ]	1

If the denuded area is greater than 10 acres, the project is initially rated a high priority.

B. Watercourse Crossing

		Rating
Yes	[ ]	*
No	[✓]	0

*If yes, project is initially rated a high priority.

C. Distance of Denuded Area to Downstream Adjacent Property

		Rating
• < 50-feet	[ ]	5
• 50 to 150-feet	[ ]	3
• > 150-feet	[✓]	0

D. Distance of Any Portion of the Denuded Area to a Natural Watercourse

		Rating
• < 50-feet	[ ]	5
• 50 to 150-feet	[ ]	3
• > 150- feet	[✓]	0

E. *Minimum Vegetative Buffer (Trees, Shrubs, Grasses and other Plants)

		Rating
• < 50-feet	[✓]	0
• 50 to 150-feet	[ ]	-3
• > 150-feet	[ ]	-5

* Vegetation in Resource Protection Areas are not to be included as vegetative buffers for this application.

F. Distance Between the Site Outfall and any Downstream, Wet Pond, Wetland, Parkland or other Land Deemed Environmentally Sensitive by the Director.

		Rating
• < 2,500-feet	[✓]	5
• 2,500 to 5,000-feet	[ ]	3
• > 5,000-feet	[ ]	0

G. Critical Slopes Within 50-feet of Adjacent Property

- Are there any slopes of 0 to 7%; greater than or equal to 300-feet in length; or,
- Are there any slopes of 7 to 15%; greater than or equal to 150-feet in length; or,
- Are there any slopes greater than 15% and greater than or equal to 75-feet in length

		Rating
If Yes to any of the above	[ ]	5
Not Applicable if critical slope is > 50-feet from adjacent property	[✓]	0

H. Soil Erodibility (Based on Physiographic Setting)

Physiographic Province		Rating
• Triassic Basin	[ ]	5
• Piedmont Upland	[✓]	3
• Coastal Plain	[ ]	1

TOTAL/OVERALL RATING: 13

OVERALL RATING	PRIORITY (Mark with an "X")	
If > 22	High	[ ]
If > 14 and < or = to 22	Medium	[ ]
If < or = to 14	Low	[✓]

PROJECT PRIORITY LEVEL: Low

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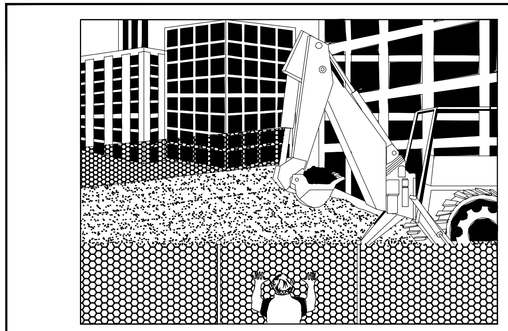
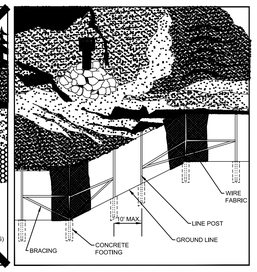
APPROVED BY: _____ DATE: _____
Plan Reviewer

Descriptions on Reverse Side



PERSPECTIVE VIEW

PERSPECTIVE VIEW
PLASTIC FENCE



PERSPECTIVE VIEW
METAL FENCE

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

v1.1

SAFETY FENCE

SOURCE: VDOT STDS., VA DSWC, CONWED PLASTICS

C-PCM-01-1

Table C-SSM-10-7 Site-Specific Seeding Mixtures for Piedmont Area

Site Condition	Seed Mix		Application Rate (pounds per acre)
Minimum-Care Lawn Commercial or Residential	Turf-Type Tall Fescue	95-100%	150 – 200
	Improved Perennial Ryegrass	0-5%	
	Kentucky Bluegrass	0-5%	
High-Maintenance Lawn	Improved (VCIA) Turf-Type Tall Fescue	100%	150 – 200
General Slope (3H:1V or less)	Tall Fescue***		50 – 75
	Red Top or Red/Hard Fescue		10 – 20
	White Clover and/or Birdsfoot Trefoil**		10 – 20
	Seasonal Nurse Crop*		30 – 40
Low-Maintenance Slope (> 3:1) or Inaccessible Area***	Tall Fescue		50 – 75
	Red Top and/or Hard Fescue		5 – 10
	White Clover and/or Birdsfoot Trefoil**		15 – 20
	Annual Lespedeza**		10 – 15
	Seasonal Nurse/Cover Crop		20-30

* Use seasonal nurse crop in accordance with seeding dates as stated below: February 16 through April annual rye

February 16 through April – annual/cereal rye

May 1 through August 15 – foxtail/German millet

August 16 through February 15 – annual/cereal rye

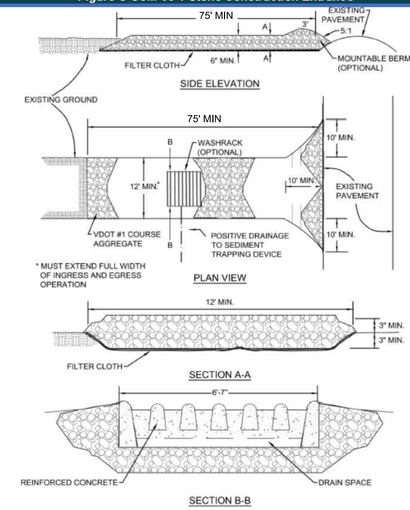
** Use legume seed that is properly inoculated with specified Rhizobia. Legumes recommended unless periodic N fertilization is intended. Weeping lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10 to 20 lbs/acre in mixes.

*** Increase seeding rate if KY-31 is used rather than VCIA/VDOT improved varieties.

Bermudagrass can be added to substitute for Tall or Hard Fescue in the Low Maintenance mixes for the Southern Piedmont, particularly on sandy soils or hot (S and W) facing slopes. May through October, use hulled seed. All other seeding periods, use un-hulled seed.

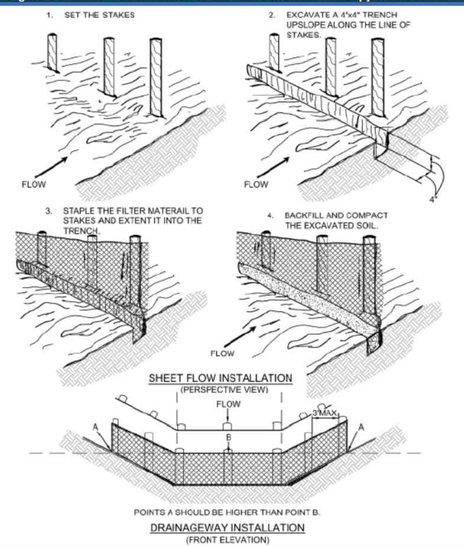
Note: Seed mixes are suggested and subject to modification based on site-specific conditions by an agronomist or other qualified revegetation professionals. All seed rates expressed as PLS (Pure Live Seed; see Table C-SSM-10-9).

Figure C-SCM-03-1 Stone Construction Entrance



Source: Maryland Water Resources Administration et al. 1983

Figure C-PCM-04-4 Construction of Silt Fence without Wire Support Installation



Source: Adapted from Straw & Fab. Barriers, Sherwood & Wyant

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE

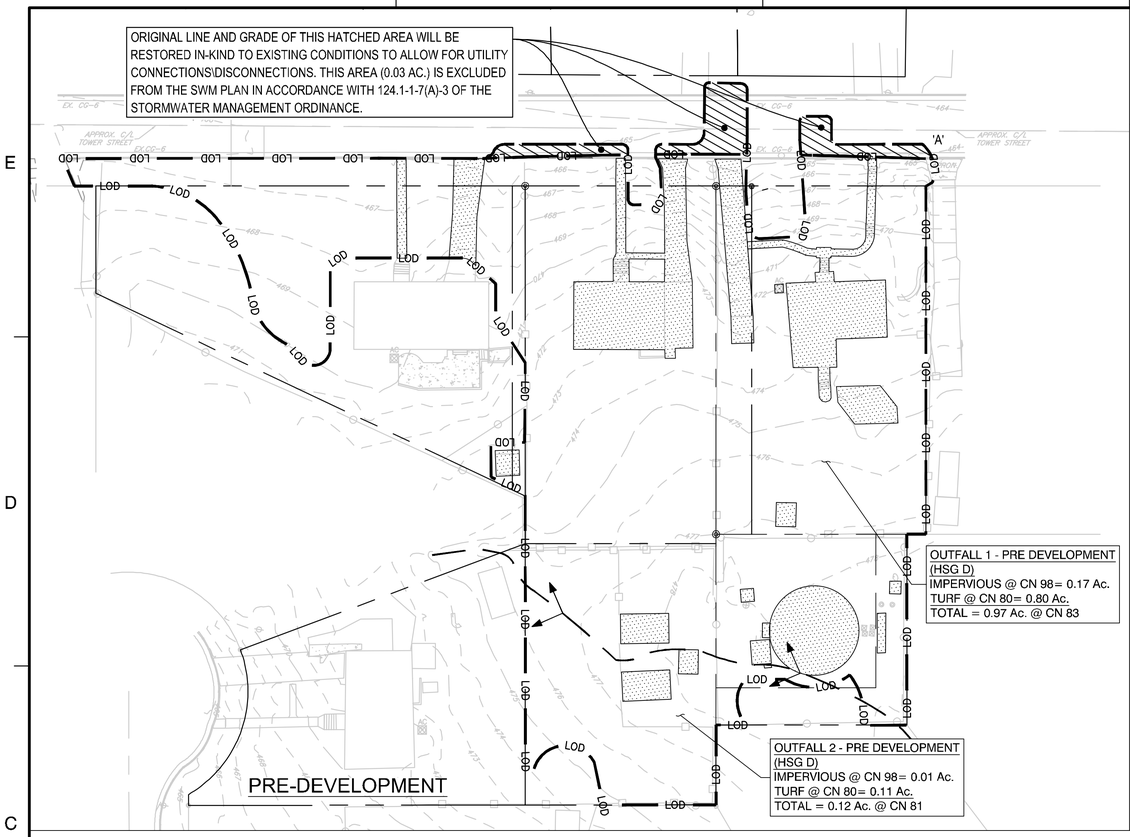
EROSION & SEDIMENT CONTROL DETAILS

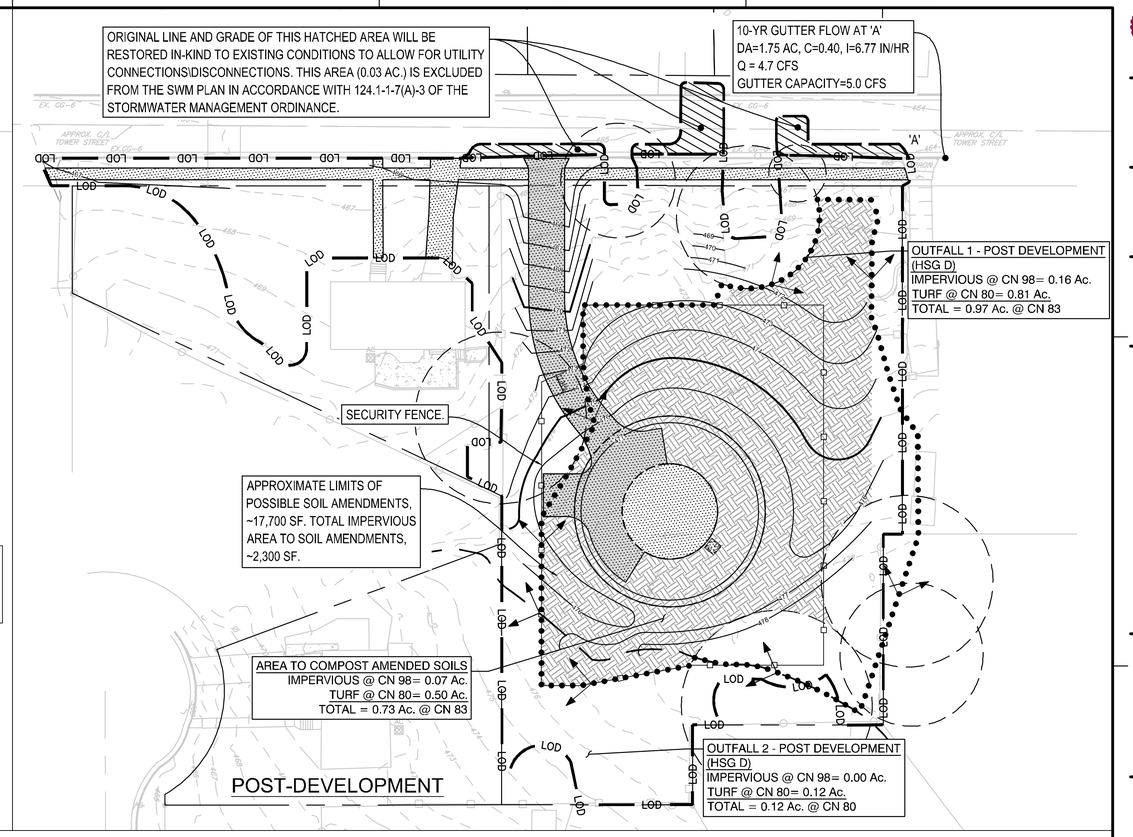
FW PROJECT NO. P2729-002

16

SHEET NO. 16 OF 29

P:\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\16 EROSION & SEDIMENT CONTROL DETAILS.dwg
Tue, Apr 29 2025 - 3:49:30pm





STORMWATER MANAGEMENT NARRATIVE

THE STORMWATER MANAGEMENT PLAN FOR THIS SITE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE FAIRFAX COUNTY STORMWATER MANAGEMENT ORDINANCE AND PUBLIC FACILITIES MANUAL.

I. SITE AREA

THE SITE AREA EVALUATED FOR WATER QUALITY AND WATER QUANTITY IS 1.09 AC.

II. WATER QUALITY

THE VIRGINIA RUNOFF REDUCTION METHOD AS DESCRIBED IN SECTION 124–4–2 OF THE FAIRFAX COUNTY STORMWATER MANAGEMENT ORDINANCE WAS USED TO EVALUATE WATER QUALITY FOR THIS SITE. BECAUSE THE SITE AREA INCLUDES NEW DEVELOPMENT ON PRIOR DEVELOPED LAND, THE VIRGINIA RUNOFF REDUCTION METHOD (VRRM) REDEVELOPMENT WORKSHEET WAS USED TO SHOW WATER QUALITY COMPLIANCE IN ACCORDANCE WITH ARTICLE 4. AS CALCULATED BY THE VRRM WORKSHEET, THE TOTAL PHOSPHORUS LOAD REDUCTION REQUIRED IS APPROXIMATELY 0.19 LB/YR. COMPOST SOIL AMENDMENTS (VIRGINIA DEQ STORMWATER DESIGN SPECIFICATIONS P–FIL–08 IS PROPOSED TO MEET THE PHOSPHORUS LOAD REDUCTION REQUIREMENT FOR THE PROJECT. AN APPROXIMATE TOTAL PHOSPHORUS LOAD REDUCTION OF APPROXIMATELY 0.24 LB/YR IS PROVIDED WITH THIS PRACTICE, WHICH EXCEEDS THE REQUIRED LOAD REDUCTION BY APPROXIMATELY 0.05 LB/YEAR.

III. WATER QUANTITY

THERE ARE TWO (2) MAIN OUTFALLS WHERE RUNOFF LEAVES THE SITE.

OUTFALL 1 DISCHARGES TO TOWER STREET WHERE IT IS INTERCEPTED BY CURB AND GUTTER. DOWNSTREAM OF OUTFALL 1 THE CONCEYANCE SYSTEM IS MANMADE, CONSISTING OF CURB AND GUTTER AND CLOSED STORM SEWER TO WHERE IT DISCHARGES INTO TRIPPS RUN. THERE ARE NO KNOWN DOCUMENTED EROSION OR FLOODING PROBLEMS ASSOCIATED WITH THIS MANMADE CONVEYANCE SYSTEM. THE CONTRIBUTING DRAINAGE AREA FROM OUTFALL 1 IS APPROXIMATELY 0.99 AC AND THE TOTAL DRAINAGE AREA AT TRIPPS RUN WHERE IT DAYLIGHTS IS MORE THAN 220 AC. RUNOFF TO OUTFALL 1 WILL NOT BE INCREASED DUE TO THE PROJECT. SEE OUTFALL SUMMARY, BELOW.

OUTFALL 2 DISCHARGES AS SHEET FLOW TO THE SOUTH–EAST TOWARDS ADJACENT PROPERTIES. SHEET FLOW TO THESE PROPERTIES WILL BE REDUCED UNDER PROPOSED CONDITIONS WITH REMOVAL OF EXISTING IMPERVIOUS COVER AS REFLECTED ABOVE. SHEET FLOW RUNOFF TO ADJACENT PROPERTIES WILL REDUCED IN THE POST–DEVELOPED CONDITION, SEE OUTFALL SUMMARY BELOW. IT IS THE OPINION OF THE ENGINEER THAT THIS OUTFALL IS ADEQUATE WITH THE REDUCTION IN SHEET FLOW WITH THE POST–DEVELOPED CONDITION.

2– AND 10–YR DETENTION FOR THE PROJECT WILL BE PROVIDED THROUGH A COMBINATION OF PROPOSED ONSITE RUNOFF REDUCTION PRACTICES AND REMOVAL OF EXISTING IMPERVIOUS COVER. THE PRE–DEVELOPED RATIONAL METHOD C–FACTOR FOR THE 1.09 AC SITE IS CALCULATED TO BE 0.40 WHEREAS THE POST–DEVELOPED C–FACTOR IS CALCULATED TO BE 0.39, RESULTING IN A TOTAL DECREASE IN SHEET FLOW TO EACH OUTFALL, SEE OUTFALL SUMMARY BELOW.

THE TOTAL 10–YEAR GUTTER FLOW TO POINT 'A' ON THE POST–DEVELOPMENT MAP ABOVE IS APPROXIMATELY 2.63 CFS. LESS THAN PRE–DEVELOPMENT CONDITION FLOW OF 2.69 CFS. THE CAPACITY OF THE GUTTER PLUS PAVEMENT SECTION TO THE NORMAL CROWN OF TOWER STREET IS APPROXIMATELY 5.0 CFS. BASED ON THIS, IT IS EXPECTED THAT FOR STORM EVENTS LESS THAN OR EQUAL TO A 10–YEAR FLOOD, GUTTER FLOW WILL BE MAINTAINED TO THE SOUTH SIDE OF TOWER STREET AT POINT 'A', WHERE THE STORM FLOW LEAVES THE SITE. SEE SHEET 18 FOR ADEQUATE OUTFALL ANALYSIS THROUGH THE EXTENT OF REVIEW.

OUTFALL SUMMARY

	PRE-DEVELOPMENT				POST-DEVELOPMENT				DELTA	
OUTFALL #	AREA (AC.)	C-FACTOR	Q_2 (cfs)	Q_{10} (cfs)	AREA (AC.)	C-FACTOR	Q_2 (cfs)	Q_{10} (cfs)	ΔQ_2 (cfs)	ΔQ_{10} (cfs)
1	0.97	0.41	2.08	2.69	0.97	0.40	2.03	2.63	-0.05	-0.07
2	0.12	0.35	0.22	0.28	0.12	0.30	0.19	0.24	-0.03	-0.04
TOTAL	1.09	0.40	2.30	2.98	1.09	0.39	2.22	2.87	-0.08	-0.11

Table P-FIL-08-2 Shortcut Method to Determine Compost and Incorporation Depths

Parameter	Contributing Impervious Cover to Soil Amendment Area Ratio [1]			
	IC/SA = 0 [2]	IC/SA = 0.5	IC/SA = 0.75	IC/SA = 1.0 [3]
Compost (inches) [4]	2 to 4 [5]	3 to 6 [5]	4 to 8 [5]	6 to 10 [5]
Incorporation Depth (inches)	6 to 10 [5]	8 to 12 [5]	15 to 18 [5]	18 to 24 [5]
Incorporation Method	Rototiller	Tiller	Subsoiler	Subsoiler

Notes:
1. IC = contributing impervious cover (square feet) and SA = surface area of compost amendment (square feet).
2. For amendment of compacted lawns that do not receive offsite runoff.
3. In general, IC/SA ratios greater than 1 should be avoided.
4. Average depth of compost added.
5. Lower end for HSG B soils, higher end for HSG C/D soils.

Table P-FIL-08-5 Operations and Maintenance Schedule

Activity	Details
Initial inspections	For the first 6 months following the incorporation of soil amendments, the site should be inspected at least once after each storm event that exceeds 0.5 inch of rainfall.
Spot Reseeding	Inspections should note bare or eroding areas in the contributing drainage area or around the soil restoration area and ensure that they are immediately stabilized with grass cover.
Fertilization	Depending on the findings of a soils test of the amended area, a one-time spot fertilization may be needed in the fall after the first growing season to increase plant vigor.
Watering	Water once every 3 days for the first month and then weekly during the first year (April through October) depending on rainfall.

Soil Compost Amendment Design					
Impervious Cover (IC)	Soil Amendent Surface Area (SA)	Area Ratio (IC/SA)	Compost Depth* (in)	Incorporation Depth* (in)	Method
6,972.29	17,424.79	0.4	6	12	Tiller
*Soil Amendents placed within HSG D soils.					

Table P-FIL-08-4 Construction Sequence for Soil Compost Amendment

Step	Details
Step 1	To help minimize compaction, heavy vehicular and foot traffic should be kept out of all restored pervious areas during and after construction. This can typically be accomplished by clearly delineating soil restoration and compost amendment areas on all development plans and, if necessary, protecting them with temporary construction fencing.
Step 2	For large areas of soils to be restored (typically with an IC/SA less than 0.5): after the area has been cleared of construction activity, the area should be deep tilled to a depth of 2 to 3 feet using a tractor and subsoiler with two deep shanks (curved metal bars) to create rips perpendicular to the direction of flow. This establishes a vertical pathway for the compost to influence microbial activity into the adjacent soil. (This step may be omitted when compost is used for narrower filter strips.)
Step 3	Spread the specified compost depth in accordance with Table P-FIL-08 across the surface and incorporate into the soil using a rotoliller, tiller, or subsoiler as specified. It is important to have dry conditions at the site prior to incorporating compost.
Step 4	To limit soil erosion and sediment loss, landscaping should be installed immediately after the soil restoration and amendments have been completed. The site should be leveled and seed or sod used to establish a vigorous grass cover. Lime and/or temporary irrigation may initially be needed to help the grass grow quickly.
Step 5	Areas of compost amendments exceeding 2,500 square feet should employ simple erosion control measures, such as silt fence or diversions, to reduce the potential for erosion and trap sediment.

5.3 Compost Specifications

- Compost will be derived from plant material and meet the general criteria set forth by the U.S. Composting Seal of Testing Assurance (STA) program. See www.compostingcouncil.org for a list of local providers.
- The compost will be the result of the biological degradation and transformation of plant-derived materials under conditions that promote aerobic decomposition. The material will be well composted, free of viable weed seeds, and stable with regard to oxygen consumption and carbon dioxide generation. The compost will have a moisture content that has no visible free water or dust produced when handling the material. It will meet the following criteria as reported by the U.S. Composting Council STA Compost Technical Data Sheet provided by the vendor:
  - 100% of the material must pass through a 0.5-inch screen.
  - The pH of the material will be between 5.5 and 8.5.
  - Manufactured inert material (e.g., plastic, concrete, ceramics, metal) will be less than 0.5 percent by weight.
  - The organic matter content will be >35 percent.
  - Soluble salt content will be less than 6.0 millimohs per centimeter (mmhos/cm).
  - Compost must be mature and stable per the appropriate test(s) as specified by STA.
  - Carbon/nitrogen ratio will be less than 25:1.
  - Must meet United States Environmental Protection Agency (USEPA) part 503 levels for heavy metals.
  - The compost should have an optimum dry bulk density ranging from 40 to 50 lbs/ft3. However, certain fully mature coarse textured composts may be lower.
  - Compost should be pesticide-free.

In general, fresh manure should not be used for compost because of high bacteria and nutrient levels. If manure is used, it must be aged (composted) and meet the criteria listed above.

LEGEND:
- PROPERTY LINE
- LIMITS OF CONSTRUCTION *
- LOD — LIMITS OF DISTURBANCE FOR SWM/BMP PURPOSES
- DRAINAGE DIVIDES
- WATER QUALITY DRAINAGE DIVIDE
- IMPERVIOUS AREA
- TURF AREA
- SOIL AMENDMENTS
- EX. TREE CRITICAL ROOT ZONE

* WHERE THE LIMITS OF CONSTRUCTION IS COINCIDENT WITH THE LOD, ONLY THE LOD IS SHOWN.

Dewberry®
Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK
SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL
COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
SCALE IN FEET
1" = 30'
1 INCH

NORTH
VCS–83

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE
SWM PLAN & NARRATIVE

FW PROJECT NO. P2729–002

17

SHEET NO. 17 OF 29

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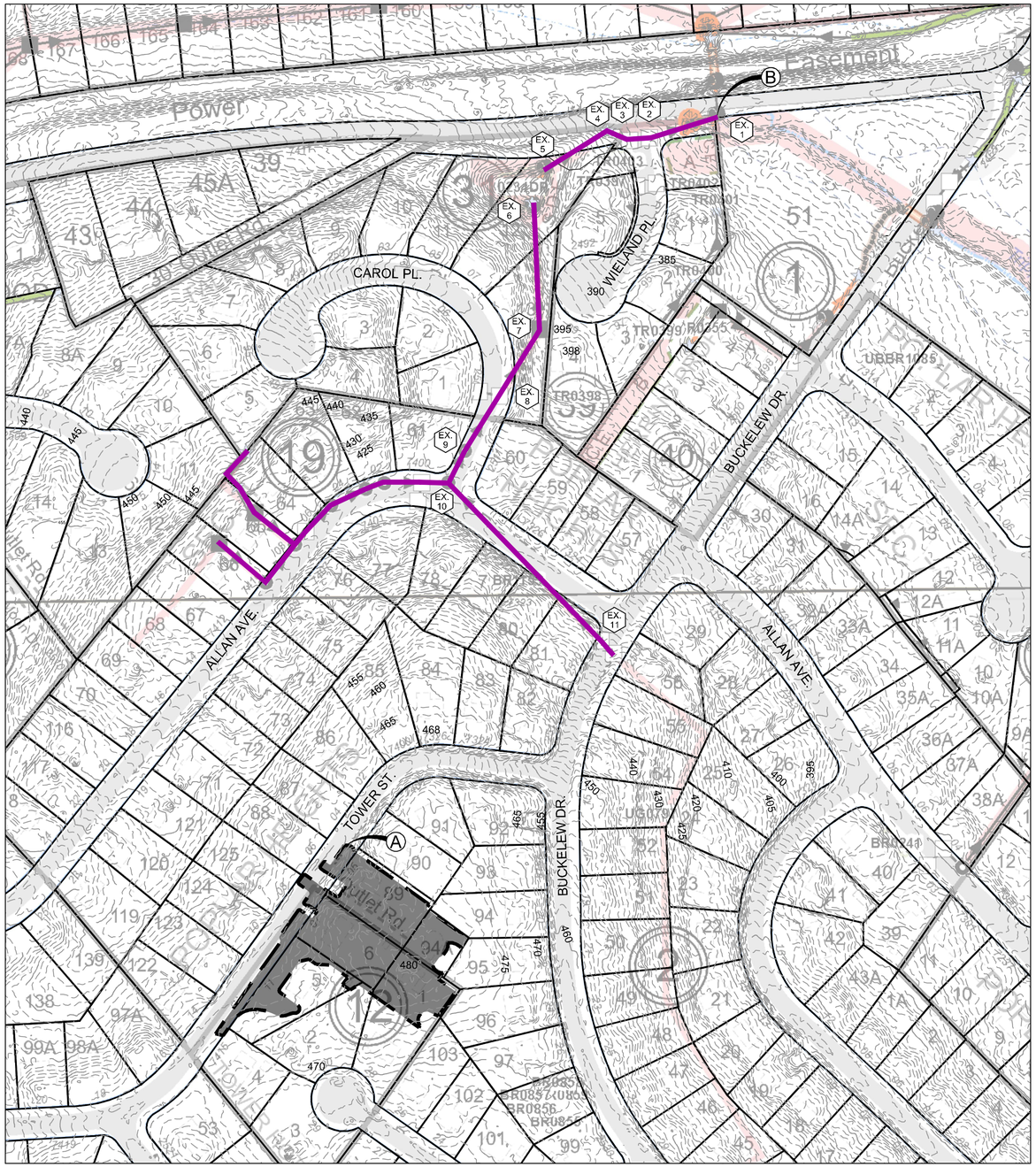
EXTENT OF REVIEW NARRATIVE

AS DESCRIBED IN THE STORMWATER MANAGEMENT NARRATIVE, SHEET 17, OUTFALL 1 DISCHARGES TO TOWER STREET WHERE IT IS INTERCEPTED BY CURB AND GUTTER. THE FLOW CONTINUES WITHIN THE CURB AND GUTTER SECTION NORTHEAST WHERE IT IS INTERCEPTED BY CURB INLET EX. 11 ON BUCKELEW DR. INTO A CLOSED MANMADE CONVEYANCE SYSTEM. THIS SYSTEM CONTINUES NORTH ALONG CAROL PLACE, INTO AN EXISTING DRY DETENTION POND, BEFORE CONTINUING EAST ACROSS WIELAND PLACE BEFORE DAYLIGHTING AT TRIPPS RUN AT EX. 1.

THE CONTRIBUTING DRAINAGE AREA FROM OUTFALL 1 IS APPROXIMATELY 0.99 AC AT POINT 'A' AND THE TOTAL DRAINAGE AREA AT TRIPPS RUN AT POINT 'B' WHERE IT DAYLIGHTS IS MORE THAN 220 AC., MORE THAN 100 TIMES THE DRAINAGE AREA AT POINT 'A'. THE ANALYSIS FOR ADEQUACY OF THE EXISTING SYSTEM ENDS AT THIS POINT PER 124.1-4-4.(B).(6)(a). IT IS THE OPINION OF THE ENGINEER THAT THE DOWNSTREAM DRAINAGE SYSTEM IS ADEQUATE FOR THE REDUCED FLOW PROPOSED BY THIS DEVELOPMENT.

ADEQUATE OUTFALL MAP

SCALE: 1" = 100'



ADEQUATE OUTFALL COMPUTATIONS

From Struct. #	To Struct. #	Structure Type	Drainage Area (acres)	Runoff C Factor	C * A		Flow		Design							Percent Full (%)
					Increm. C * A	Accum. C * A	Q Increm. (c.f.s.)	Q Accum. (c.f.s.)	Pipe Diameter (inches)	Slope (%)	Mannings "n" Factor	Maximum Q (c.f.s.)	Actual Velocity (f.p.s.)	Flow Full Velocity (f.p.s.)	Length (ft.)	
EX. 11	EX. 10	CURB INLET	5.10	0.48	5.58	5.58	0.00	15.20	18	1.77	0.013	139.75	0.00	79.08	348	10.88%
EX. 10	EX. 9	MANHOLE	27.00	0.45	12.15	12.15	51.50	66.70	33"	1.58%	0.013	66.48	0.00	11.19	57'	100.33%
EX. 9	EX. 8	MANHOLE	1.41	0.45	0.63	0.63	0.00	66.70	30"	3.71%	0.013	79.00	18.02	16.09	102'	84.43%
EX. 8	EX. 7	CURB INLET	0.83	0.45	0.37	0.37	7.80	74.50	30"	6.74%	0.013	106.49	23.43	21.69	123'	69.96%
EX.7	EX. 6	YARD INLET	0.29	0.40	0.12	0.12	0.69	75.19	30"	4.12%	0.013	83.25	19.33	16.96	190'	90.32%
POND																
EX.5	EX. 4	END SECTION	0.00	0.45	0.00	0.00	0.00	62.30	36"	8.72%	0.013	196.96	24.52	27.86	118'	31.63%
EX. 4	EX. 3	GRATE INLET	1.50	0.45	0.68	0.68	6.62	68.92	30"	7.94%	0.013	115.58	24.49	23.55	38'	59.63%
EX. 3	EX. 2	CURB INLET	0.47	0.50	0.24	0.24	2.31	71.23	30"	4.92%	0.013	90.98	20.57	18.53	32'	78.29%
EX. 2	EX. 1	CURB INLET	0.50	0.50	0.25	0.25	0.25	71.48	48"	0.62%	0.013	113.10	9.54	9.00	69'	63.20%

NOTE: ALL EX. FLOW COMPUTATIONS PER FAIRFAX COUNTY PLANS (#3549-PI-01-2, #5353-SD-001-3, & #535-SD-02-1)

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

SCALE IN FEET
1" = 100'
1 INCH

NORTH
VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE

ADEQUATE OUTFALL ANALYSIS

FW PROJECT NO. P2729-002

18

SHEET NO. 18 OF 29

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Tue, Apr 29 2025 - 3:37:44pm

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - **Version 4.1**

CLEAR ALL (Ctrl+Shift+R)

data input cells
constant values
calculation cells
final results

Project Name: **Poplar Heights Water Tank**
Date: **4/21/2025**
Linear Development Project? No

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 1.09

Maximum reduction required:	*20%*
The site's net increase in impervious cover (acres) is:	*0*
Post-Development TP Load Reduction for Site (lb/yr):	*0.18*

Check:
BMP Design Specifications List: 2024 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 (acres) -- undisturbed, protected forest or reforested land					0.00
Mixed Open (acres) -- undisturbed/infrequently maintained grass or shrub land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed				0.91	0.91
Impervious Cover (acres)				0.18	0.18
					1.09

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest or reforested land					0.00
Mixed Open (acres) -- undisturbed/infrequently maintained grass or shrub land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed				0.93	0.93
Impervious Cover (acres)				0.16	0.16
Area Check	OK.	OK.	OK.	OK.	1.09

Constants

Target Rainfall Event (inches)	1.00
Target TP Load (lb/acre/yr)	0.26

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest	0.02	0.03	0.04	0.05
Mixed Open	0.08	0.11	0.13	0.15
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	**0.18**

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	10.42
Final Post-Development TN Load	10.35

LAND COVER SUMMARY -- PRE-REDEVELOPMENT

Land Cover Summary-Pre Pre-ReDevelopment	Listed	Adjusted[1]
Forest Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
Weighted Loading Rate(forest)	0.00	0.00
% Forest	0%	0%
Mixed Open Cover (acres)	0.00	0.00
Weighted Rv(mixed)	0.00	0.00
Weighted Loading Rate(mixed)	0.00	0.00
% Mixed Open	0%	0%
Managed Turf Cover (acres)	0.91	0.91
Weighted Rv(turf)	0.25	0.25
Weighted Loading Rate(turf)	0.85	0.85
% Managed Turf	83%	83%
Impervious Cover (acres)	0.18	0.18
Rv(impervious)	0.95	0.95
Weighted Loading Rate(impervious)	0.86	0.86
% Impervious	17%	17%
Total Site Area (acres)	**1.09**	**1.09**
Site Rv	**0.37**	**0.37**

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary-Post (Final) Post ReDev. & New Impervious	
Forest Cover (acres)	0.00
Weighted Rv(forest)	0.00
Wgt. Ld. Rate(forest)	0.00
% Forest	0%
Mixed Open Cover (acres)	0.00
Weighted Rv(mixed)	0.00
Wgt. Ld. Rate(mixed)	0.00
% Mixed Open	0%
Managed Turf Cover (acres)	0.93
Weighted Rv (turf)	0.25
Wgt. Ld. Rate(turf)	0.85
% Managed Turf	85%
Impervious Cover (acres)	0.16
Rv(impervious)	0.95
Wgt. Ld. Rate(imperv.)	0.86
% Impervious	15%
Final Site Area (acres)	**1.09**
Final Post Dev Site Rv	**0.35**

Land Cover Summary-Post Post-ReDevelopment	
Forest Cover (acres)	0.00
Weighted Rv(forest)	0.00
Wgt. Ld. Rate(forest)	0.00
% Forest	0%
Mixed Open Cover (acres)	0.00
Weighted Rv(mixed)	0.00
Wgt. Ld. Rate(mixed)	0.00
% Mixed Open	0%
Managed Turf Cover (acres)	0.93
Weighted Rv (turf)	0.25
Wgt. Ld. Rate(turf)	0.85
% Managed Turf	85%
ReDev. Impervious Cover (acres)	0.16
Rv(impervious)	0.95
Wgt. Ld. Rate(imperv.)	0.86
% Impervious	15%
Total ReDev. Site Area (acres)	**1.09**
ReDev Site Rv	**0.35**

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)	0.0332	0.0332
Pre-ReDevelopment Treatment Volume (cubic feet)	1,447	1,447
Pre-ReDevelopment TP Load (lb/yr)	**0.92**	**0.92**
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	0.85	0.85
Baseline TP Load (lb/yr) (0.26 lbs/acre/yr applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		*0.28*

Treatment Volume and Nutrient Load

Final Post-Development Treatment Volume (acre-ft)	0.0320	**Post-ReDevelopment Treatment Volume (acre-ft)** 0.0320
Final Post-Development Treatment Volume (cubic feet)	1,396	**Post-ReDevelopment Treatment Volume (cubic feet)** 1,396
Final Post-Development TP Load (lb/yr)	**0.92**	**Post-ReDevelopment TP Load (TP) (lb/yr)*** **0.92**
Final Post-Development TP Load per acre (lb/acre/yr)	0.85	**Post ReDevelopment TP Load per acre (lb/acre/yr)** 0.85
		Max. Reduction Required (Below Pre-ReDevelopment Load) 20%

Post-Development Treatment Volume (acre-ft)	--
Post-Development Treatment Volume (cubic feet)	--
Post-Development TP Load (lb/yr)	--

TP Load Reduction Required for Redeveloped Area (lb/yr)	**0.18**
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, mixed open 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 requirement for new impervious cover (based on new development load limit, 0.26 lbs/acre/year).

Drainage Area A

VRRM 4.1, 2024

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv	Composite Loading P
Forest (acres)					0.00	0.00	0.00
Mixed Open (acres)					0.00	0.00	0.00
Managed Turf (acres)				0.81	0.81	0.25	0.85
Impervious Cover (acres)				0.16	0.16	0.95	0.86
				Total	0.97		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr) 0.82
Post Development Treatment Volume in D.A. A (ft³) 1,287

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Mixed Open Credit Area (acres)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	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
6. Bioretention (RR)														
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00	
9. Sheetflow to Filter/Open Space (RR)														
9.c. Sheetflow to Vegetated Filter Strip, A Soils or Compost Amended B/C/D Soils (Spec P-FIL-07 & P-FIL-08)	50		0.50	0.07	0	348	348	695	0	0.00	0.48	0.24	0.24	

TOTAL IMPERVIOUS COVER TREATED (ac) 0.07 AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac) 0.00 AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac) 0.50 AREA CHECK: OK.

TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr) 0.00

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr) 0.82
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) 0.00
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) 0.24
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. A (lb/yr) 0.24
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. A (lb/yr) 0.58

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

Site Results (Water Quality Compliance) VRRM 4.1, 2024

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MIXED OPEN (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MIXED OPEN AREA TREATED(ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.81	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.50	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	0.16	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.07	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft³) 1,396

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 (ft³)	348	0	0	0	0	348
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	0.82	0.00	0.00	0.00	0.00	0.82
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.24	0.00	0.00	0.00	0.00	0.24
TP LOAD REMAINING (lb/yr)	0.58	0.00	0.00	0.00	0.00	0.58
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	2.68	0.00	0.00	0.00	0.00	2.68

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr) 0.92
TP LOAD REDUCTION REQUIRED (lb/yr) 0.18
TP LOAD REDUCTION ACHIEVED (lb/yr) 0.24
TP LOAD REMAINING (lb/yr) 0.68
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.00 **
** TARGET TP REDUCTION EXCEEDED BY 0.06 LB/YEAR **

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr) 10.35
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) 2.68
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr) 7.67

Runoff Volume and Curve Number Calculations, VRRM 4.1, 2024

Enter design storm rainfall depths (in):

1-year storm	2-year storm	10-year storm
2.62	3.17	4.87

Use NOAA Atlas 14 (http://hdsc.nws.noaa.gov/hdsc/pfds/)

***Notes (see below):**

[1] The curve numbers and runoff volumes computed in this spreadsheet for each drainage area are limited in their applicability for determining and demonstrating compliance with water quantity requirements. See VRRM User's Guide and Documentation for additional information.

[2] Runoff Volume (RV) for pre- and post-development drainage areas must be in volumetric units (e.g., acre-feet or cubic feet) when using the Energy Balance Equation. Runoff measured in watershed-inches and shown in the spreadsheet as RV(watershed-inch) can only be used in the Energy Balance Equation when the pre- and post-development drainage areas are equal. Otherwise RV(watershed-inch) must be multiplied by the drainage area.

[3] Adjusted CNs are based on runoff reduction volumes as calculated in D.A. tabs. An alternative CN adjustment calculation for Vegetated Roofs is included in BMP specification No. 5.

Drainage Area Curve Numbers and Runoff Depths*

Drainage Area A		A Soils	B Soils	C Soils	D Soils
Forest -- undisturbed, protected forest or reforested land	Area (acres)	0.00	0.00	0.00	0.00
	CN	30	55	70	77
Mixed Open -- undisturbed/infrequently maintained grass or shrub land	Area (acres)	0.00	0.00	0.00	0.00
	CN	34	59	72	79
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.00	0.00	0.81
	CN	39	61	74	80
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.16
	CN	98	98	98	98
					$CN_{(D.A. A)}$ 83

	1-year storm	2-year storm	10-year storm
$RV_{Developed}$ *(watershed-inch)* with no Runoff Reduction*	1.15	1.58	3.06
$RV_{Developed}$ *(watershed-inch)* with Runoff Reduction*	1.05	1.49	2.96
Adjusted CN*	81	81	82

Total Area (acres):	0.97
Runoff Reduction Volume (ft³):	348

*See Notes above

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK
SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE
VRRM WATER QUALITY CALCULATIONS

FW PROJECT NO. P2729-002

19

SHEET NO. 19 OF 29

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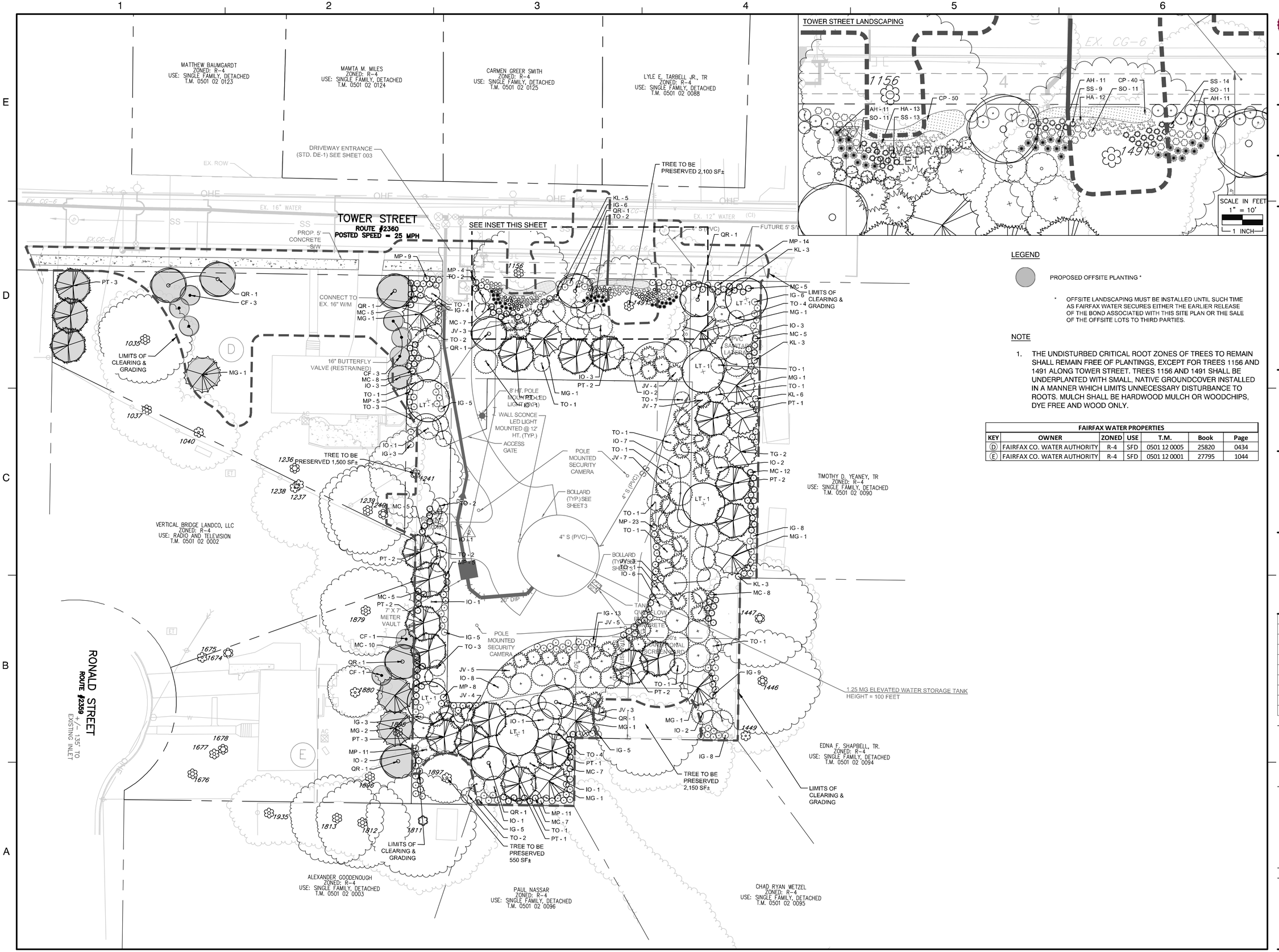
Tue, Apr 29 2025 - 3:38:47pm



LEGEND

PROPOSED OFFSITE PLANTING *

* OFFSITE LANDSCAPING MUST BE INSTALLED UNTIL SUCH TIME AS FAIRFAX WATER SECURES EITHER THE EARLIER RELEASE OF THE BOND ASSOCIATED WITH THIS SITE PLAN OR THE SALE OF THE OFFSITE LOTS TO THIRD PARTIES.

NOTE

1. THE UNDISTURBED CRITICAL ROOT ZONES OF TREES TO REMAIN SHALL REMAIN FREE OF PLANTINGS, EXCEPT FOR TREES 1156 AND 1491 ALONG TOWER STREET. TREES 1156 AND 1491 SHALL BE UNDERPLANTED WITH SMALL, NATIVE GROUNDCOVER INSTALLED IN A MANNER WHICH LIMITS UNNECESSARY DISTURBANCE TO ROOTS. MULCH SHALL BE HARDWOOD MULCH OR WOODCHIPS, DYE FREE AND WOOD ONLY.

FAIRFAX WATER PROPERTIES						
KEY	OWNER	ZONED	USE	T.M.	Book	Page
(D)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0005	25820	0434
(E)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0001	27795	1044

Dewberry

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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

SCALE IN FEET
1" = 20'
1 INCH

VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BWB
APPROVED BY	TCC
CHECKED BY	TCC
DATE	APRIL 29, 2025

TITLE

LANDSCAPE PLAN

FW PROJECT NO. P2729-002

20

SHEET NO. 20 OF 29

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Tue, Apr 29 2025 - 3:39:1 pm

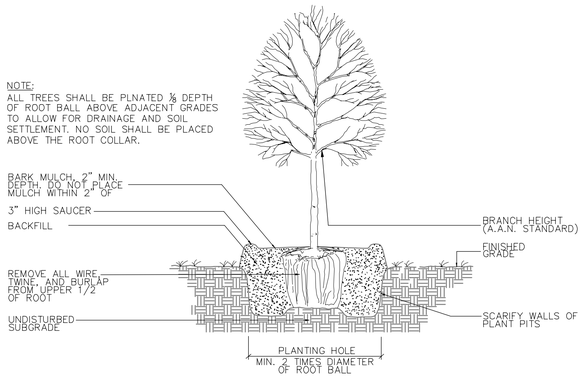
Plant Schedule

Key	QTY	Botanical Name	Common Name	Size	Ten Year Tree	Multiplier	Tree Cover Sub-total
CAT. IV Deciduous Trees							
LT	6	*Liriodendron tulipifera*	Tulip Poplar	3.0"	250	1.5 (Native)	2,250 SF
QR	5	*Quercus rubra*	Northern Red Oak	3.0"	250	1.5 (Native)	1,875 SF
CAT. IV Evergreen Trees							
PT	17	*Pinus taeda*	Loblolly Pine	10' Ht. Min.	250	1.5 (Native)	6,375 SF
MG	8	*Magnolia grandiflora 'Bracken's Brown Beauty'*	Southern Magnolia	10' Ht. Min.	250		2,000 SF
TG	2	*Thuja plicata 'Green Giant'*	Green Giant Arborvitae	10' Ht. Min.	250		500 SF
CAT. II Evergreen Trees							
IO	44	*Ilex opaca*	American Holly	8' Ht. Min.	100	1.5 (Native)	6,600 SF
CAT. I Evergreen Trees							
TO	40	*Thuja occidentalis 'Nigra'*	American Arborvitae	8' Ht. Min.	50		2,000 SF
JV	41	*Juniperus virginiana 'Brodie'*	Eastern Red Cedar	8' Ht. Min.	50		2,050 SF
						TOTAL:	**23,650 SF**

Key	QTY	Botanical Name	Common Name	Size	Spacing	Remarks
Shrubs						
MC	84	*Morella cerifera*	Wax Myrtle	3 Gal.	SEE PLAN	
MP	90	*Morella pensylvanica*	Northern Bayberry	3 Gal.	SEE PLAN	
IG	80	*Ilex glabra 'Shamrock'*	Inkberry Holly	3 Gal.	SEE PLAN	
KL	20	*Kalmia latifolia 'Yankee Doodle'*	Mountain Laurel	3 Gal.	SEE PLAN	
Groundcovers						
AH	33	*Amsonia hubrichtii*	Arkansas Bluestar	1 Gal.	SEE PLAN	
SO	33	*Symphyotrichum oblongifolium 'October Skies'*	Aromatic Aster	1 Gal.	SEE PLAN	
HA	25	*Heuchera americana*	Alumroot	1 Gal.	SEE PLAN	
SS	35	*Solidago sphacelata 'Golden Fleece'*	Autumn Goldenrod	1 Gal.	SEE PLAN	
CP	90	*Carex pensylvanica*	Pennsylvania Sedge	1 Gal.	18" O.C.	

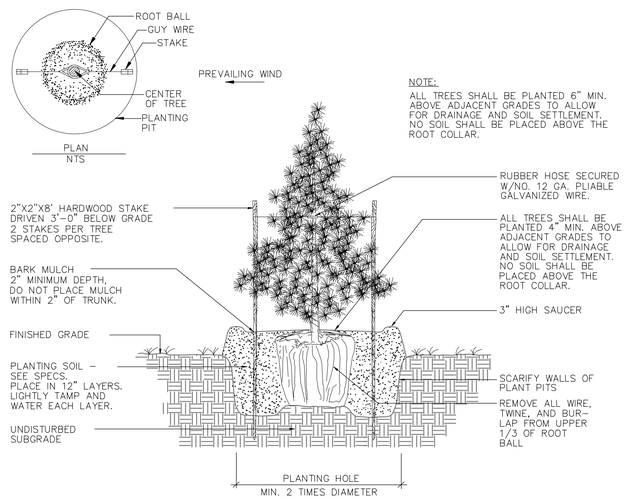
Off-Site Planting

Key	QTY	Botanical Name	Common Name	Size
CAT. IV Deciduous Trees				
QR	5	*Quercus rubra*	Northern Red Oak	2.0"
CAT. II Deciduous Trees				
CF	8	*Cornus florida*	Flowering Dogwood	3.0"
CAT. IV Evergreen Trees				
PT	3	*Pinus taeda*	Loblolly Pine	8' Ht. Min.
MG	3	*Magnolia grandiflora 'Bracken's Brown Beauty'*	Southern Magnolia	8' Ht. Min.
CAT. II Evergreen Trees				
IO	1	*Ilex opaca*	American Holly	8' Ht. Min.



TYPICAL TREE PLANTING DETAIL

NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

Table 12.9 10-year Tree Canopy Calculation Worksheet

A. Tree Preservation Target and Statement

SHEET 25

B. Tree Canopy Requirement

B1	Identify gross site area =	40,701 SF
B2	Subtract area dedicated to parks, road frontage, and	0 SF
B3	Subtract area of exemptions =	0 SF
B4	Adjusted gross site area (B1-B2) =	40,701 SF
B5	Identify site's zoning and/or use	R-4
B6	Percentage of 10-year tree canopy required =	25 %
B7	Area of 10-year tree canopy required (B4 x B6) =	10,175 SF
B8	Modification of 10-year Tree Canopy Requirements requested?	NO
B9	If B8 is yes, then list plan sheet where modification request is located	

C. Tree Preservation

C1	Tree Preservation Target Area =	5,861 SF
C2	Total canopy area meeting standards of 12-0400 =	0 SF
C3	C2 x 1.25 =	0 SF
C4	Total canopy area provided by unique or valuable forest or woodland communities =	0
C5	C4 x 1.5 =	0
C6	Total of canopy area provided by "Heritage," "Memorial," "Specimen," or "Street" trees =	0
C7	C6 x 1.5 to 3.0 =	0
C8	Canopy of trees within Resource Protection Areas and 100-year floodplains	0 SF
C9	C8 x 1.0 =	0 SF
C9a	Tree Preservation with no multiplier =	6,300 SF
C10	Total of C3, C5, C7, C9 and C9a =	6,300 SF

D. Tree Planting

D1	Area of canopy to be met through tree planting (B7-C10) =	3,875 SF
D2	Area of canopy planted for air quality benefits =	0
D3	x 1.5 =	0
D4	Area of canopy planted for energy conservation =	0
D5	x 1.5 =	0
D6	Area of canopy planted for water quality benefits =	0
D7	x 1.25 =	0
D8	Area of canopy planted for wildlife benefits =	0
D9	x 1.5 =	0
D10	Area of canopy provided by native trees =	11,400 SF
D11	x 1.5 =	17,100 SF
D12	Area of canopy provided by improved cultivars and varieties =	0
D13	x 1.25 =	0
D14	Area of canopy provided through tree seedlings =	0
	x 1.0 =	0
D15	Area of canopy provided through native shrubs or woody seed mix =	0
	x 1.0 =	0
D16	Percentage of D14 represented by D15 =	N/A
D17	Area of canopy provided with no multipliers =	6,550 SF

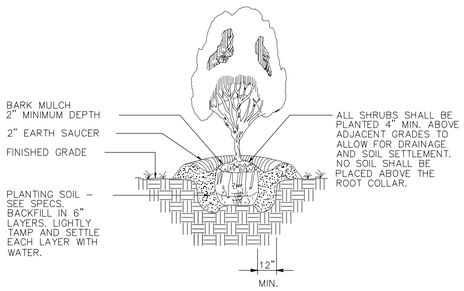
D18	Total of canopy area provded through tree planting =	23,650 SF
D19	Is an offsite planting relief requested?	0
D20	Tree Bank or Tree Fund?	NO
D21	Canopy area to be requested to be provided through offsite banking or tree fund	0
D22	Amount to be deposited into the Tree Preservation and Planting Fund	$0.00

E. Total of 10-year Tree Canopy Provided

E1	Total of canopy area provded through tree preservation (C10) =	6,300 SF
E2	Total of canopy area provided through tree planting (D17) =	23,650 SF
E3	Total of canopy area provided through offsite mechanism (D19) =	0
E4	Total of 10-year Tree Canopy Provded =	29,950 SF

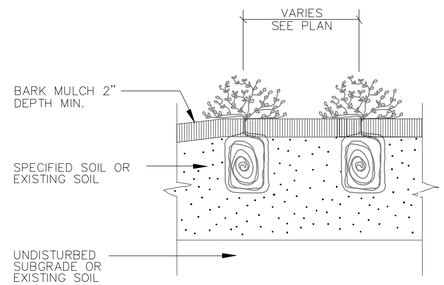
TRANSITIONAL SCREENING CALCULATIONS

			REQUIRED		*PROVIDED*		Notes:
BUFFER #1 WESTERN PROPERTY LINE @ TOWER STREET FRONTAGE - 173.37 LF							
LENGTH	**173.37**						
WIDTH			35	FT	50'	FT	
SHRUBS	173.37/10 *3 =		52		82		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	173.37'L x 35' W x 75% =		4,551	SF	4850	SF	2 ex trees to be preserved. No canopy credit taken, 1 white oak in right-of-way and 1 elm on site
EVERGREEN	70%		3,186	SF	3600	SF	6 Cat IV *250 / 11 Cat II*100 / 20 Cat I*50
DECIDUOUS					1250	SF	5 Cat IV*250
BUFFER #2 NORTHERN PROPERTY LINE 1 - 146.00 LF							
LENGTH	**146**						
WIDTH			35	FT	50	FT	
SHRUBS	146/10 x 3 =		44		71		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	146'L x 35'W x 75%		3,833	SF	5400	SF	
EVERGREEN	70%		2,683	SF	4400	SF	8 Cat. IV*250 / 12 Cat II*100 / 25 Cat I*50
DECIDUOUS					1000	SF	4 Cat.IV*250
BUFFER #3 NORTHERN PROPERTY LINE 2 - 80 LF							
LENGTH	**80**						
WIDTH			35		50	FT	
SHRUBS	80/10 x 3 =		24		36		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	80'L x 35'W x 75%		2,100	SF	4050	SF	
EVERGREEN	70%		1,470	SF	1900	SF	2 Cat IV*250 / 10 Cat II*100 / 8 Cat I*50
DECIDUOUS					2150	SF	1 ex. White oak to be preserved
BUFFER #4 EASTERN PROPERTY LINE 1 - 80 LF							
LENGTH	**80**						
WIDTH			35		50	FT	
SHRUBS	80/10 x 3 =		24		40		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	80'L x 35'W x 75%		2100	SF	5000	SF	
EVERGREEN	50%		1050	SF	2600	SF	4 Cat. IV*250 / 10 Cat II*100 / 12 Cat I*50
DECIDUOUS					2400	SF	1 ex. White oak to be preserved, 1 Cat IV*250
BUFFER #5 SOUTHERN PROPERTY LINE 1 - 33.46 LF							
LENGTH	**33.46**						
WIDTH			35		50	FT	
SHRUBS	33.46/10 x 3 =		10		29		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	33.46'L x 35'W x 75%		878	SF	2350	SF	
EVERGREEN	70%		615	SF	1850	SF	4 Cat. IV*250 / 5 Cat II*100 / 7 Cat I*50
DECIDUOUS					500		2 Cat.IV*250
BUFFER #6 EASTERN PROPERTY LINE 2 - 80 LF							
LENGTH	**80**						
WIDTH			35		50	FT	
SHRUBS	80/10 x 3 =		24		48		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	80'L x 35'W x 75%		2,100	SF	3550	SF	
EVERGREEN	50%		1,050	SF	2500	SF	6 Cat. IV*250 / 5 Cat II*100 / 10 Cat I*50
DECIDUOUS					1050	SF	Ex. White oak*550 / 2 Cat IV*250
BUFFER #7 SOUTHERN PROPERTY LINE 2 - 109.56 LF							
LENGTH	**109.56**						
WIDTH			35		16.67	FT	
SHRUBS	109.56/10 x 3 =		33		35		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	109.56'L x 16.67'W x 75%		1,370	SF	1550	SF	
EVERGREEN	70%		959	SF	1300	SF	3 Cat. IV*250 /3 Cat II*100 / 5 Cat I*50
DECIDUOUS					250	SF	1 Cat IV*250
BUFFER #8 SOUTHERN PROPERTY LINE 3 - 20 LF							
LENGTH	**20**						
WIDTH			0		16.67	FT	
SHRUBS	NO REQUIREMENT		0		5		
BARRIER			NONE		6' SOLID WOOD FENCE		
CANOPY COVERAGE	NO REQUIREMENT		0	SF	600	SF	
EVERGREEN			0	SF	600	SF	2 Cat. IV*250 / 2 Cat I*50
DECIDUOUS							
BUFFER #9 SOUTHERN PROPERTY LINE 4 - 127.46 LF							
LENGTH	**127.46**						
WIDTH			35		16.67	FT	
SHRUBS	127.46/10 x 3 =		38		44		
BARRIER			D or E		6' SOLID WOOD FENCE		
CANOPY COVERAGE	127.46'L x 16.67'W x 75%		1,594	SF	2850	SF	
EVERGREEN	70%		1,115	SF	1100	SF	1 Cat IV*250 / 4 Cat II*100 / 9 Cat I*50
DECIDUOUS					1750	SF	Ex. White oak*1500 / 1 Cat IV*250



TYPICAL SHRUB PLANTING DETAIL

NOT TO SCALE



GROUNDCOVER, ORNAMENTAL GRASS OR PERENNIAL PLANTING DETAIL

NOT TO SCALE

GENERAL PLANTING NOTES:

1. ALL REQUIRED PLANTING, SEEDING, AND/OR SODDING SHALL BE PERFORMED IN ACCORDANCE WITH THE "STANDARDIZED LANDSCAPE SPECIFICATIONS FOR THE STATE OF VIRGINIA" PREPARED AND APPROVED BY VIRGINIA NURSERYMEN'S ASSOCIATION, INC., THE VIRGINIA CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, AND THE VIRGINIA SOCIETY OF LANDSCAPE DESIGNERS. IT SHALL ALSO BE IN ACCORDANCE WITH THE "TREE AND SHRUB PLANTING GUIDELINES" PREPARED BY THE VIRGINIA COOPERATIVE EXTENSION, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY.
2. ALL PLANT MATERIAL SHALL COMPLY WITH SIZING AND GRADING STANDARDS OF THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK." PROVIDE STOCK TRUE TO BOTANICAL NAME.
3. ALL PLANT MATERIAL SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE AND COUNTY LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
4. QUANTITIES SHOWN IN THE PLANT LIST ARE GIVEN FOR THE CONTRACTOR'S CONVENIENCE. THE CONTRACTOR SHALL INSTALL ALL PLANT MATERIAL SHOWN OR NOTED ON THE PLANS **OR** THE PLANT SCHEDULE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE APPROPRIATE PARTY FOR CLARIFICATION.
5. NO CHANGES TO THE PLANT SCHEDULE UNLESS FIRST APPROVED BY THE LANDSCAPE ARCHITECT AND FOREST CONSERVATION BRANCH (FCON).
6. ALL TREES TO HAVE CLAY OR LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
7. ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
8. ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER. TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
9. ALL MULTI-STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE-SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS WILL NOT BE ACCEPTED.
10. ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
11. NO MACHINERY IS TO BE USED WITHIN THE DRIPLINE OF EXISTING TREES. HAND GRADE ALL LAWN AREAS WITHIN THE DRIPLINE OF EXISTING TREES.
12. ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO THE INSTALLATION OF THE PLANT MATERIAL.
13. IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS, WALKS AND PAVED AREAS.
14. ALL PLANTING BEDS SHALL RECEIVE SHREDDED BARK MULCH. SEE PLANTING DETAILS FOR DEPTH.

MULCH

MULCH IS DOUBLE SHREDDED HARDWOOD BARK MULCH. NO GROUND WOOD PALETTE MULCH PERMITTED.

TOPSOIL

IN ALL LAWN AREAS - SOIL WORK - SEE SOIL REBUILDING PLANS KEY NOTE #1, SHEET 16.

LANDSCAPE EDGING

ALL LANDSCAPE EDGES ARE TO BE SHOVEL CUT.

PLANT SPACING

FILL BED WITH PLANTS SPECIFIED. KEEP PLANTS AWAY FROM BUILDING 12" FROM MATURE SIZE.

PLANT BEDS

ALL PLANT BEDS TO BE FULLY EXCAVATED TO DEPTH SHOWN ON DETAILS AND AREAS SHOWN ON PLANS, AND TO RECEIVE CONTINUOUS PLANT MIX AS SPECIFIED - NOT INDIVIDUAL PLANT PITS.

PLANT BED PREPARATION

EXCAVATE PLANT BEDS TO DEPTH SHOWN ON DETAILS - DISPOSE OF SPOILS OFFSITE.

ALL PLANT BEDS TO RECEIVE CONTINUOUS PLANT MIX AS SPECIFIED - NOT INDIVIDUAL PLANT PITS.

PLANTING BEDS AND PLANT PITS TO RECEIVE:
SOIL MIXTURE OF 70% LOAM, 10% COMPOST, 20% SAND.

PLANT MIX

BASE BID - ALL PLANTING/PERENNIAL BEDS TO RECEIVE:
(1) 6 CU FT ORGANIC COMPOST
(1) 20 LB BAG COMPOSTED POULTRY MANURE
"CHICK MAGIC" 5-3-2 WWW.CHICKMAGIC.NET (262) 495-6220
(1) 5 LB BAG SHEMINS 13-13-13 MULTI PURPOSE FERTILIZER
PER 150 SQ FT BED AREA.

HAND TILL INTO SOIL TO A DEPTH OF 12" MINIMUM

SOIL AMENDMENTS / FERTILIZER RATES MAY BE MODIFIED BY THE PROJECT ARBORIST AND FCON REPRESENTATIVES AS DETERMINED BY THE SOIL REPORTS.

DEVELOPMENT CONDITIONS NOTES:

LANDSCAPE PLANTING PRE-INSTALLATION MEETING - PRIOR TO INSTALLATION OF ANY PLANTS TO MEET THE REQUIREMENTS OF THE APPROVED LANDSCAPING PLANTING PLAN, FAIRFAX WATER OR ITS CONTRACTOR MUST COORDINATE A PRE-INSTALLATION MEETING ON-SITE WITH THE LANDSCAPE CONTRACTOR AND FCON STAFF. ANY PROPOSED CHANGES TO PLANTING LOCATIONS, TREE/SHRUB PLANTING SIZES, AND ANY PROPOSED SPECIES SUBSTITUTIONS FOR THE PLANTS SHOWN ON THE LANDSCAPE PLAN MUST BE REVIEWED AND APPROVED BY FCON PRIOR TO PLANTING. THE INSTALLATION OF PLANTS TO MEET THE REQUIREMENTS OF THE LANDSCAPE PLAN THAT ARE NOT APPROVED BY FCON MAY REQUIRE THE SUBMISSION OF A REVISION TO THE LANDSCAPE PLAN, OR PART THEREOF, OR REMOVAL AND REPLACEMENT WITH APPROVED TREES/SHRUBS PRIOR TO BOND RELEASE.

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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BWB
APPROVED BY	TCC
CHECKED BY	TCC
DATE	APRIL 29, 2025

TITLE

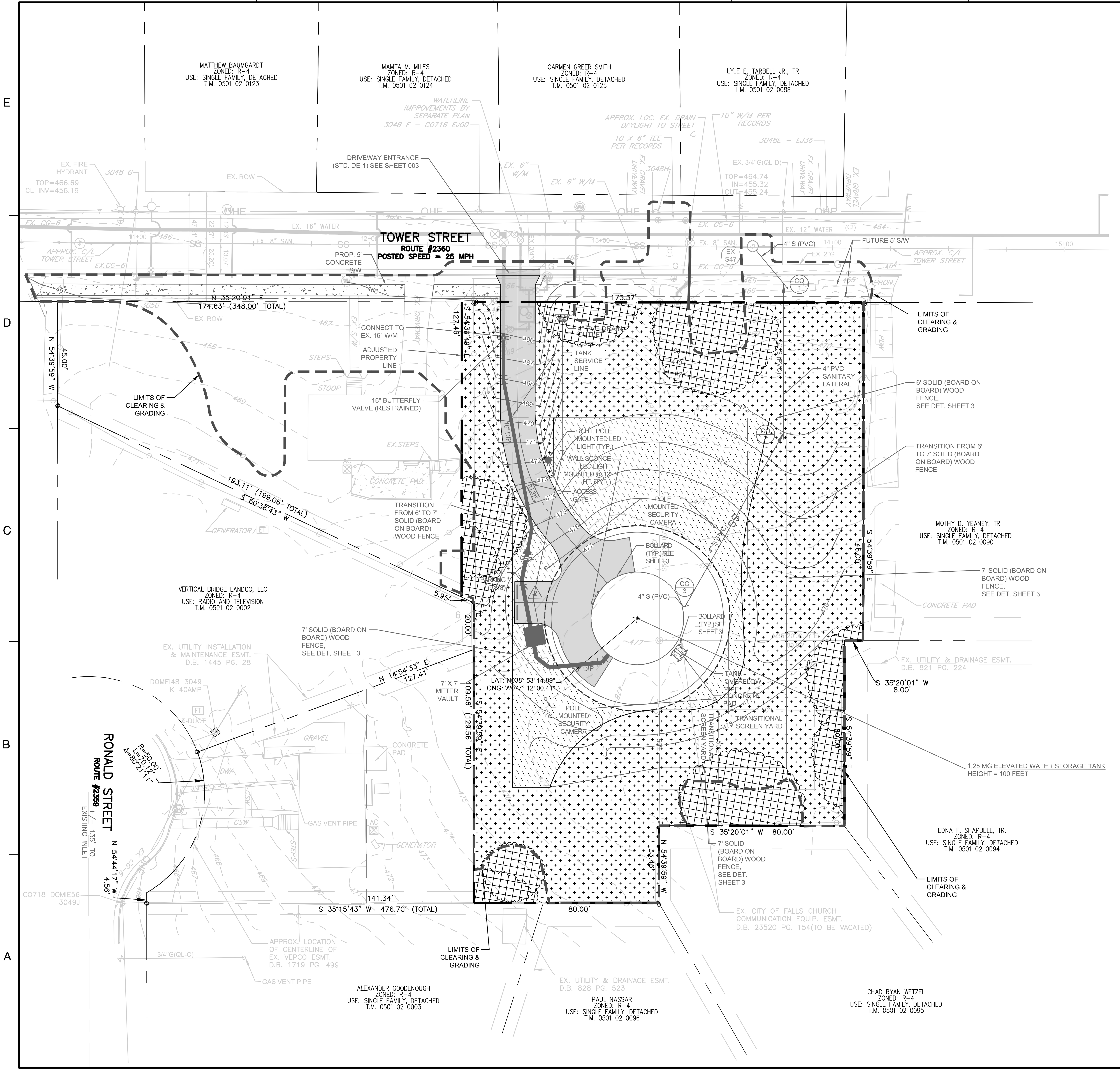
LANDSCAPE NOTES & DETAILS

FW PROJECT NO. P2729-002

21

SHEET NO. 21 OF 29

P:\PROJECT\50143066 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\20 LANDSCAPE NOTES & DETAILS.dwg
Tue, Apr 29 2025 - 3:39:18pm


MATTHEW BAUMGARDT
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0123
MAMTA M. MILES
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0124
CARMEN GREER SMITH
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0125
LYLE E. TARBELL JR., TR
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0088
DRIVEWAY ENTRANCE (STD. DE-1) SEE SHEET 003
TOWER STREET
ROUTE #2360
POSTED SPEED = 25 MPH
PROP. 5' CONCRETE S/W
FUTURE 5' S/W
4" S (PVC)
LIMITS OF CLEARING & GRADING
N 35°20'01" E
174.63' (348.00' TOTAL)
173.37'
CONNECT TO EX. 16" W/M
ADJUSTED PROPERTY LINE
16" BUTTERFLY VALVE (RESTRAINED)
TANK SERVICE LINE
4" PVC SANITARY LATERAL
6' SOLID (BOARD ON BOARD) WOOD FENCE, SEE DET. SHEET 3
TRANSITION FROM 6' TO 7' SOLID (BOARD ON BOARD) WOOD FENCE
8' HT. POLE MOUNTED LED LIGHT (TYP.)
WALL SCONCE LED LIGHT MOUNTED @ 12' HT. (TYP.)
ACCESS GATE
POLE MOUNTED SECURITY CAMERA
BOLLARD (TYP.) SEE SHEET 3
TIMOTHY D. YEANEY, TR
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0090
7' SOLID (BOARD ON BOARD) WOOD FENCE, SEE DET. SHEET 3
193.11' (199.06' TOTAL)
S 60°36'43" W
TRANSITION FROM 6' TO 7' SOLID (BOARD ON BOARD) WOOD FENCE
VERTICAL BRIDGE LANDCO, LLC
ZONED: R-4
USE: RADIO AND TELEVISION
T.M. 0501 02 0002
7' SOLID (BOARD ON BOARD) WOOD FENCE, SEE DET. SHEET 3
N 14°54'33" E
127.41'
7' X 7' METER VAULT
LAT: N038° 53' 14.89"
LONG: W077° 12' 00.41"
TANK OVERFLOW PIPE CONCRETE PAD
TRANSITIONAL SCREEN YARD
S 35°20'01" W
8.00'
1.25 MG ELEVATED WATER STORAGE TANK
HEIGHT = 100 FEET
RONALD STREET
ROUTE #2359
+/- 135' TO EXISTING INLET
N 54°44'17" W
4.56'
141.34'
S 35°15'43" W 476.70' (TOTAL)
80.00'
S 35°20'01" W 80.00'
EDNA F. SHAPBELL, TR.
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0094
EX. CITY OF FALLS CHURCH COMMUNICATION EQUIP. ESMT.
D.B. 23520 PG. 154(TO BE VACATED)
ALEXANDER GOODENOUGH
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0003
PAUL NASSAR
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0096
CHAD RYAN WETZEL
ZONED: R-4
USE: SINGLE FAMILY, DETACHED
T.M. 0501 02 0095

LEGEND

1. LAWN AREA - DISC SUB-GRADE MIN. 12" DEEP. INCORPORATE 6" COMPOST AND TILL TO 12" DEPTH. INSTALL 2"-3" DEEP SHREDDED BARK MULCH TO NEW INDIVIDUAL TREES PER PLANTING DETAILS. TREE SAVE/ TREE PRESERVATION AREAS - HAND DISC AND ADD TOPSOIL TO DISTURBED AREAS ONLY.
2. PLANTING BED AREA - DISC SUB-GRADE MIN. 12" DEEP. INCORPORATE 6" COMPOST AND TILL TO 12" DEPTH. INSTALL 2-3" DEEP SHREDDED BARK MULCH THROUGHOUT BED.
3. TREE SAVE AREA - DO NOT DISTURB SOILS.

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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
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POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL: COMMONWEALTH OF VIRGINIA — TIMOTHY CHARLES CULLEITON, Lic. No. 20112, 04/29/2025, PROFESSIONAL ENGINEER

KEY PLAN

SCALE: SCALE IN FEET 1" = 20' (1 INCH)
NORTH: VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY: BWB
APPROVED BY: TCC
CHECKED BY: TCC
DATE: APRIL 29, 2025

TITLE

SOILS REBUILDING PLAN

FW PROJECT NO. P2729-002

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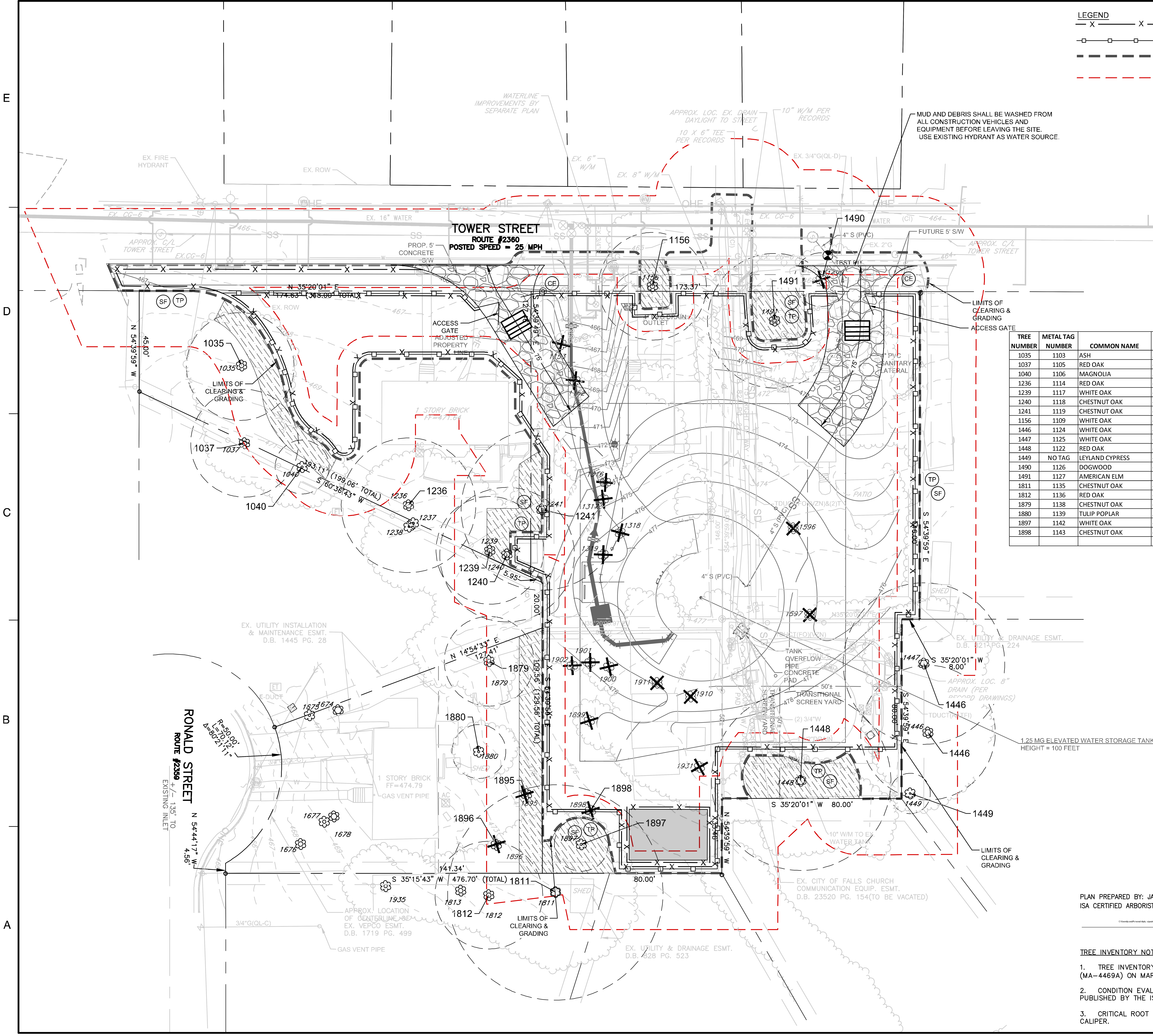
Tue, Apr 29 2025 - 3:39:41pm



LEGEND

- SILT FENCE
- CONSTRUCTION FENCE/TREE PROTECTION FENCE (SEE NOTE 4 ON SHEET 13)
- LIMITS OF DISTURBANCE
- TREE INVENTORY LIMITS
- TREE TO REMAIN
- TREE TO BE REMOVED
- CRITICAL ROOT ZONE
- 10' WIDE WOODCHIP MULCH

TREE NUMBER	METAL TAG NUMBER	COMMON NAME	SCIENTIFIC NAME	SIZE (DBH)	CRZ (RAD. FEET)	CONDITION	REMOVE	Comments
1035	1103	ASH	*Fraxinus*	24	24	FAIR		
1037	1105	RED OAK	*Quercus rubra*	24	24	POOR		
1040	1106	MAGNOLIA	*Magnolia soulan*	12"+ 6"	14	GOOD		
1236	1114	RED OAK	*Quercus rubra*	30	30	FAIR		
1239	1117	WHITE OAK	*Quercus alba*	24	24	FAIR		
1240	1118	CHESTNUT OAK	*Quercus montan*	30	30	GOOD		
1241	1119	CHESTNUT OAK	*Quercus montan*	18"+ 18"	26	GOOD		
1156	1109	WHITE OAK	*Quercus alba*	24	24	FAIR		
1446	1124	WHITE OAK	*Quercus alba*	12"+ 12"	17	FAIR		
1447	1125	WHITE OAK	*Quercus alba*	12"+7"+10'	17	POOR		
1448	1122	RED OAK	*Quercus rubra*	18"+20"	27	FAIR		
1449	NO TAG	LEYLAND CYPRESS	*Cupressocyparis*	9	9	FAIR		
1490	1126	DOGWOOD	*Cornus florida*	12	12	FAIR	X	
1491	1127	AMERICAN ELM	*Ulmus americana*	30	30	GOOD		
1811	1135	CHESTNUT OAK	*Quercus montan*	24"+ 24"	34	FAIR		
1812	1136	RED OAK	*Quercus rubra*	24	24	FAIR		
1879	1138	CHESTNUT OAK	*Quercus montan*	20	20	FAIR		
1880	1139	TULIP POPLAR	*Liriodendron tulip*	12	12	FAIR		
1897	1142	WHITE OAK	*Quercus alba*	12	12	GOOD		
1898	1143	CHESTNUT OAK	*Quercus montan*	18		DEAD	X	

PLAN PREPARED BY: JANICE M. CENA, PLA
ISA CERTIFIED ARBORIST No. MA-4469A

C:\Users\jcena\Personal digital signature\J. Cena.TIF

TREE INVENTORY NOTES

1. TREE INVENTORY AND CONDITION EVALUATION PERFORMED BY JANICE M. CENA (MA-4469A) ON MARCH 19, 2025.

2. CONDITION EVALUATION PER 10TH EDITION OF THE GUIDE FOR PLANT APPRAISAL, PUBLISHED BY THE ISA.

3. CRITICAL ROOT ZONE (CRZ) IS EQUAL TO I FOOT OF RADIUS FOR EVERY INCH CALIPER.

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8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
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POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE: SCALE IN FEET 1" = 20' (1 INCH)

NORTH: VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY: BWB
APPROVED BY: TCC
CHECKED BY: TCC
DATE: APRIL 29, 2025

TITLE

TREE PRESERVATION PLAN

FW PROJECT NO. P2729-002

SHEET NO. 23

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Tue, Apr 29 2025 - 3:40:02pm

PRE– TO POST–CONSTRUCTION TREE PRESERVATION NARRATIVE:

PRE–CONSTRUCTION REQUIREMENTS/TREATMENTS:

1. THE SERVICES OF A CERTIFIED ARBORIST SHALL BE OBTAINED TO ENSURE THE PROPER IMPLEMENTATION OF THE TREE PRESERVATION PLAN AND CONFORMANCE WITH THE TREE PRESERVATION PROFFERS, AND IS HERETO REFERRED TO AS THE 'PROJECT ARBORIST'.

2. ALL WORK SHALL MEET OR EXCEED INDUSTRY STANDARDS AS MOST RECENTLY PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), OR THE TREE CARE INDUSTRY ASSOCIATION (TCIA). IF THESE STANDARDS DO NOT COVER A PRESCRIBED TREATMENT, THE WORK SHALL MEET THE STANDARDS APPROVED BY FOREST CONSERVATION BRANCH (FCON).

3. THE PROJECT ARBORIST OR LANDSCAPE ARCHITECT SHALL HAVE THE LIMITS OF CLEARING AND GRADING IN THE AREAS OF TREE PRESERVATION MARKED WITH A CONTINUOUS LINE OF FLAGGING PRIOR TO A WALK–THROUGH MEETING WITH FCON TO BE HELD PRIOR TO ANY CLEARING AND GRADING. DURING THE TREE PRESERVATION AREA WALK–THROUGH MEETING, THE ARBORIST OR LANDSCAPE ARCHITECT SHALL WALK SUCH LIMITS OF CLEARING AND GRADING WITH A FCON REPRESENTATIVE TO DETERMINE WHERE ADJUSTMENTS TO THE CLEARING LIMITS CAN BE MADE TO INCREASE THE AREA OF TREE PRESERVATION AND/OR INCREASE THE SURVIVABILITY OF THE TREES AT THE EDGE OF THE LIMITS OF CLEARING AND GRADING, AND SUCH ADJUSTMENT SHALL BE IMPLEMENTED; PROVIDED, HOWEVER, THAT NO ADJUSTMENT SHALL BE REQUIRED THAT WOULD AFFECT THE DESIGN AND/OR LOCATION OF THE PROPOSED IMPROVEMENTS.

4. ROOT PRUNING SHALL BE COMPLETED IN A SINGLE OPERATION WHERE INDICATED ON THIS PLAN. TRENCHES SHALL BE A MINIMUM 18 INCHES DEEP AND BACKFILLED IMMEDIATELY. IF TREE PROTECTION/SILT FENCE IS TO BE INSTALLED AT THE LIMITS, THE ROOT PRUNING TRENCH MAY BE USED FOR TREE PROTECTION/SILT FENCE INSTALLATION. THE ROOT PRUNING SHALL BE CONDUCTED WITH THE SUPERVISION OF A CERTIFIED ARBORIST, AND FCON SHALL BE INFORMED WHEN ALL ROOT PRUNING AND TREE PROTECTION FENCE INSTALLATION IS COMPLETE.

5. TREE PROTECTION/SILT FENCES SHALL BE INSTALLED AFTER THE TREE PRESERVATION WALK–THROUGH WITH FCON WHERE INDICATED ON THIS PLAN. THE INSTALLATION OF ALL TREE PROTECTION FENCING SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT ARBORIST, AND SHALL BE ACCOMPLISHED IN A MANNER THAT DOES NOT HARM EXISTING VEGETATION TO BE PRESERVED. AT LEAST TEN (10) DAYS PRIOR TO THE COMMENCEMENT OF ANY CLEARING AND GRADING ACTIVITIES ADJACENT TO THE TREE PRESERVATION DEVICES, FCON SHALL BE NOTIFIED AND GIVEN THE OPPORTUNITY TO INSPECT THE SITE TO ENSURE THAT ALL TREE PROTECTION DEVICES HAVE BEEN CORRECTLY INSTALLED. IF IT IS DETERMINED THAT THE FENCING HAS NOT BEEN INSTALLED CORRECTLY, GRADING OR CONSTRUCTION ACTIVITIES SHALL NOT OCCUR UNTIL THE FENCING IS INSTALLED CORRECTLY, AS DETERMINED BY THE FCON. (SEE TREE PROTECTION FENCE DETAIL)

6. PRIOR TO ANY DEMOLITION ACTIVITIES, BRANCHES OVERHANGING THE LIMITS OF DISTURBANCE SHALL BE PRUNED TO ELIMINATE DAMAGE FROM CONSTRUCTION ACTIVITY AND/OR TRAFFIC.

7. WOOD CHIPS SHALL BE PLACED ADJACENT TO TREE PRESERVATION AREAS IN A 10 FOOT STRIP ALONG THE LIMITS OF DISTURBANCE 6 INCHES DEEP. WOOD CHIPS SHALL NOT BE PLACED ANY CLOSER THAN 2 INCHES FROM EXISTING TREE TRUNKS. ANY VARIETY OF HARDWOOD OR PINE MULCH CAN BE USED IN ADDITION TO ANY MULCH THAT HAS BEEN CHIPPED ONSITE FROM UNSAVED TREES OR DEAD LIMBS. ALL MULCH MUST BE PLACED BY HAND.

8. TREES LOCATED OUTSIDE THE LIMITS OF CLEARING AND WITHIN AREAS DESIGNATED TO BE PRESERVED THAT HAVE BEEN IDENTIFIED ON THIS PLAN AS "DEAD", "POOR CONDITION" OR "POTENTIAL HAZARD" SHALL BE EVALUATED BY FOREST CONSERVATION BRANCH (FCON) STAFF, IN CONSULTATION WITH THE PROJECT ARBORIST, PRIOR TO OR DURING THE PRE–CONSTRUCTION WALK–THROUGH FOR REMOVAL DURING THE DEVELOPMENT SITE'S INITIAL LAND CLEARING OPERATIONS.

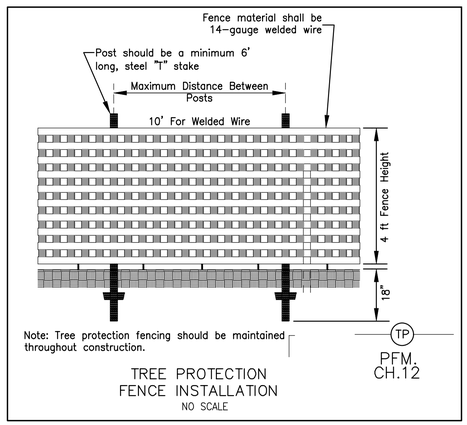
9. DURING ANY CLEARING OR TREE/VEGETATION REMOVAL IN AREAS ADJACENT TO THE TREE PRESERVATION AREAS AND ALL RECOMMENDED TREATMENTS, THE PROJECT ARBORIST SHALL BE PRESENT TO MONITOR THE PROCESS AND ENSURE THAT THE ACTIVITIES ARE CONDUCTED AS PROFFERED AND AS APPROVED BY THE FOREST CONSERVATION BRANCH.

10. ALL FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION OF THE PROPOSED PHASE/ PROJECT. FENCING SHALL NOT BE REMOVED OR RELOCATED WITHOUT THE CONSENT OF THE DIRECTOR UPON COMPLETION OF CONSTRUCTION.

11. "TREE PRESERVATION AREA" SIGNS ARE TO BE SECURED TO THE TREE PROTECTION FENCING NO MORE THAN 50–FEET APART. SIGNS SHALL BE RE–SECURED AS NEEDED THROUGHOUT CONSTRUCTION.

12. THE TREE PROTECTION SIGNS SHOULD BE POSTED IN ENGLISH AND SPANISH, AND READ "TREE PROTECTION ZONE – KEEP OUT – OFF LIMITS TO CONSTRUCTION EQUIPMENT, MATERIALS AND WORKERS" AND IN SPANISH "ZONA DE PROTECCION DEL ARBOL – PROHIBIDO ENTRAR" (SEE TREE PRESERVATION SIGN DETAIL)

13. HEAVY EQUIPMENT, VEHICULAR TRAFFIC, AND STOCKPILING OF MATERIALS SHALL NOT BE PERMITTED OUTSIDE THE LCG. ALL TREES TO BE PLANTED OUTSIDE OF THE LIMITS OF CLEARING AND GRADING SHALL BE PLANTED BY HAND AT THE END OF E&S PHASE II. NO MACHINERY IS PERMITTED BEYOND THE LIMITS OF CLEARING AND GRADING. ACCESS TO THESE AREAS SHALL BE FROM INSIDE THE LIMITS OF CLEARING AND GRADING CLOSEST TO THE PROPOSED TREES. CONTRACTOR SHALL COORDINATE WITH THE COUNTY INSPECTOR TO REMOVE ENOUGH TREE PROTECTION FENCE SO THAT THESE AREAS CAN BE ACCESSED FOR PLANTING.



TREE PROTECTION FENCE INSTALLATION
NO SCALE

DURING CONSTRUCTION REQUIREMENTS/ TREATMENTS:

1. UNDER NO CIRCUMSTANCES IS TRESPASS TO OCCUR WITHIN THE TREE PRESERVATION AREA WITHOUT THE CONSENT OF THE DIRECTOR. SHOULD DAMAGE OCCUR, EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO HAVE A LICENSED ARBORIST ATTEMPT TO RESOLVE THE PROBLEM AS SOON AS POSSIBLE.

2. SHOULD ENTRY BE AUTHORIZED BY THE DIRECTOR, 3–4" OF MULCH SHALL BE PLACED WITHIN THE WORK AREA PRIOR TO ENTRY AND SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

3. ALL REQUIRED PRUNING, BRACING, AND/ OR CABLING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A300–2000 PRUNING STANDARDS.

4. TREES TO BE REMOVED SHALL NOT BE FELLED, PUSHED, OR PULLED INTO THE TREE PRESERVATION AREA. TREES ON THE EDGE OF THE LIMITS OF CLEARING AND GRADING THAT NEED TO BE REMOVED SHALL BE CUT DOWN BY HAND WITH A CHAIN SAW. REMAINING STUMPS INSIDE THE TREE PRESERVATION AREA SHALL BE LEFT IN PLACE.

5. REMOVAL OF INDIVIDUAL TREES OR TREE PRESERVATION AREAS SHOWN ON THE APPROVED PLAN TO BE PRESERVED MUST BE PRE–APPROVED BY DIRECTOR.

6. NO TOXIC MATERIALS SHALL BE STORED WITHIN 100 FEET OF VEGETATION TO BE RETAINED.

POST–CONSTRUCTION REQUIREMENTS/ TREATMENTS:

1. AT THE END OF CONSTRUCTION, FCON SHALL BE NOTIFIED AND ALLOWED TO INSPECT THAT ALL WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.

2. TOTAL COMPLETION OF THE SITE SHALL BE INDICATED BY CAREFUL REMOVAL OF ALL TREE PRESERVATION FENCING AND THE SPREADING OF EXISTING MULCH OVER THE REMAINDER OF THE ROOT SYSTEMS TO A DEPTH OF 1–2".

PROJECT ARBORIST MONITORING SCHEDULE

THE PROJECT ARBORIST SHALL MAKE REGULAR SITE VISITS TO MONITOR CONSTRUCTION ACTIVITIES ADJACENT TO THE TREE PRESERVATION AREAS TO ENSURE COMPLIANCE WITH THE TREE PRESERVATION PLAN.

1. SITE MONITORING VISITS SHALL BE CONDUCTED DAILY WHILE THE FOLLOWING ACTIVITIES ARE BEING PERFORMED;
   - 1.1. TREE REMOVAL WITHIN THE TREE PRESERVATION AREA
   - 1.2. ROOT PRUNING OPERATIONS
   - 1.3. CLEARING OF ANY TREE/VEGETATION IN THE AREAS ADJACENT TO THE TREE PRESERVATION AREAS
   - 1.4. INSTALLATION OF TREE PROTECTION FENCING
2. SITE MONITORING VISITS SHALL BE CONDUCTED WEEKLY DURING PHASE I CLEARING AND GRADING OPERATIONS.
3. SITE MONITORING VISITS SHALL BE CONDUCTED MONTHLY AFTER PHASE I CLEARING AND GRADING OPERATIONS ARE COMPLETED UNTIL PROJECT COMPLETION. MONITORING MAY DISCONTINUE PRIOR TO PROJECT COMPLETION WITH WRITTEN APPROVAL FROM FCON.
4. MONITORING REPORTS WITH UPDATES ON TREE PRESERVATION ACTIVITIES AND FENCING SHALL BE SUBMITTED TO FCON AND SITE DEVELOPMENT AND INSPECTION DIVISION (SDID) ON A WEEKLY BASIS DURING PHASE I AND MONTHLY THEREAFTER UNTIL PROJECT COMPLETION.

INVASIVE PLANT MANAGEMENT PROGRAM:

1. UNDESIRABLE PLANT SPECIES WITHIN THE TREE PRESERVATION AREAS SHALL BE IDENTIFIED AND CONTROLLED SUCH THAT THEY ARE NOT DOMINANT SPECIES OR DO NOT CHANGE THE EXISTING VEGETATIVE COMMUNITY. NO INVASIVE SPECIES WERE NOTED ON SITE IN THE PREPARATION OF THE EXISTING VEGETATION MAP AND EXISTING TREE INVENTORY. IN ORDER TO PREVENT FUTURE AND CONTROL OR ERADICATE EXISTING INFESTATIONS OF INVASIVE PLANT SPECIES, THE FOLLOWING RECOMMENDATIONS SHALL BE A PART OF THE LONG–TERM MANAGEMENT OF THE TREE PRESERVATION AREAS.

   1) PLANT SPECIES KNOWN TO BE INVASIVE SHALL NOT BE USED AS PART OF ANY PROPOSED LANDSCAPING OR RESTORATION PLAN. ONLY THE USE OF NATIVE, NON–INVASIVE SPECIES THAT ARE SUITABLE TO THE SITE CONDITIONS ARE PERMITTED.
   2) DISTURBANCE WITHIN THE TREE PRESERVATION AREAS SHALL BE MINIMIZED. HEAVY EQUIPMENT, VEHICULAR TRAFFIC, STOCKPILING OF MATERIALS, AND DEPOSITION OF YARD DEBRIS AND SEDIMENT SHALL NOT BE PERMITTED WITHIN THE TREE PRESERVATION AREAS.
   3) INVASIVE PLANTS CAN BE ERADICATED OR CONTROLLED BY MECHANICAL REMOVAL, (HAND PULLING OR USE OF HAND OR POWER TOOLS) OR CHEMICAL TREATMENTS (APPLICATIONS OF HERBICIDES), OR BY A COMBINATION OF BOTH.

   MANUAL REMOVAL IS SLOW, METICULOUS, AND LABOR–INTENSIVE, BUT IT IS RECOMMENDED FOR SMALL INFESTATIONS OR ENVIRONMENTALLY SENSITIVE AREAS. REGULAR MONITORING AND EARLY REMOVAL OF INVASIVE PLANTS CAN MAKE THIS METHOD THE MOST ECONOMICAL. PLANT FRAGMENTS AND FRUITS MUST BE COMPLETELY REMOVED FROM THE AREA AND PROPERLY DISPOSED OF IN A PLASTIC BAG TO ENSURE ROOT REGENERATION WILL NOT ESTABLISH NEW COLONIES.

   CHEMICAL TREATMENT MIGHT BE REQUIRED FOR PERSISTENT CASES, BUT CARE MUST BE EXERCISED TO LIMIT THE CHEMICAL TO ONLY THE AFFECTED AREA AND THE TARGETED SPECIES. HERBICIDE APPLICATION IS STRICTLY REGULATED, AND THE CONTRACTOR MUST ENSURE THAT ALL REGULATIONS ARE FOLLOWED AND THAT THE HERBICIDE APPLICATOR IS CERTIFIED AS EITHER A TECHNICIAN OR AN APPLICATOR BY THE VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.

TREE PRESERVATION AREA

KEEP OUT

ZONA DE PROTECCION DEL ARBOL

NO ENTRAR

SPECIFICATIONS:

- DIMENSIONS:	LENGTH=17 INCHES WIDTH=11 INCHES	
- BACKGROUND/TEXT COLOR	RED/WHITE OR YELLOW/BLACK	
- MINIMUM LETTER SIZE:	LARGE TEXT SMALL TEXT	= 0.60" = 0.28"

- LETTERS ARE ALWAYS TO BE IN CAPITALS AND ALWAYS BOLD.
- TREE PRESERVATION AREA SIGN TO BE POSTED IN ENGLISH AND SPANISH

TREE PRESERVATION SIGN DETAIL

TREE NUMBER	METAL TAG NUMBER	COMMON NAME	SCIENTIFIC NAME	SIZE (DBH)	CRZ (RAD. FEET)	CONDITION	REMOVE	Comments
1035	1103	ASH	*Fraxinus*	24	24	FAIR		
1037	1105	RED OAK	*Quercus rubra*	24	24	POOR		
1040	1106	MAGNOLIA	*Magnolia soulan*	12"+ 6"	14	GOOD		
1236	1114	RED OAK	*Quercus rubra*	30	30	FAIR		
1239	1117	WHITE OAK	*Quercus alba*	24	24	FAIR		
1240	1118	CHESTNUT OAK	*Quercus montan*	30	30	GOOD		
1241	1119	CHESTNUT OAK	*Quercus montan*	18"+ 18"	26	GOOD		
1156	1109	WHITE OAK	*Quercus alba*	24	24	FAIR		
1446	1124	WHITE OAK	*Quercus alba*	12"+ 12"	17	FAIR		
1447	1125	WHITE OAK	*Quercus alba*	12"+7"+10"	17	POOR		
1448	1122	RED OAK	*Quercus rubra*	18"+20"	27	FAIR		
1449	NO TAG	LEYLAND CYPRESS	*Cupressocyparis*	9	9	FAIR		
1490	1126	DOGWOOD	*Cornus florida*	12	12	FAIR	X	
1491	1127	AMERICAN ELM	*Ulmus americana*	30	30	GOOD		
1811	1135	CHESTNUT OAK	*Quercus montan*	24"+ 24"	34	FAIR		
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1879	1138	CHESTNUT OAK	*Quercus montan*	20	20	FAIR		
1880	1139	TULIP POPLAR	*Liriodendron tulip*	12	12	FAIR		
1897	1142	WHITE OAK	*Quercus alba*	12	12	GOOD		
1898	1143	CHESTNUT OAK	*Quercus montan*	18		DEAD	X	

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
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POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
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Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

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DATE APRIL 29, 2025

TITLE

TREE PRESERVATION NOTES

FW PROJECT NO. P2729–002

24

SHEET NO. 24 OF 29

P:\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL–SITE\Sheets\23 TREE PRESERVATION NOTES.dwg
Tue, Apr 29 – 2025 – 3:45:07pm

EXISTING VEGETATION INVENTORY

KEY	COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGES	CONDITION	AREA SE only	AREA OVERALL* (Pcl A,B,C,D,E)	COMMENTS
	DEVELOPED LAND	N/A	N/A	N/A	**0.089 AC (3,920 SF)**	**0.198 AC (8,643 SF)**	EX. BUILDINGS, WATER TANK, DRIVEWAYS
	LANDSCAPED TREE CANOPY	WHITE OAK & CHESTNUT OAK	CLIMAX	FAIR	**0.539 AC (23,480 SF)**	**0.759 AC (33,080 SF)**	MATURE LANDSCAPE
	MAINTAINED GRASSLAND	N/A	N/A	N/A	**0.305 AC (13,301 SF)**	**0.567 AC (24,703 SF)**	LAWNS AND FOUNDATION PLANTINGS
				TOTAL ACREAGE:	**0.934 ACRES (40,701 SF)**	**1.525 ACRES (66,236 SF)**	

Table 12.3 Tree Preservation Target Calculations and Statement		FOR AREA OF SE (40,701± SF)
A	Pre-development area of existing tree canopy (from Existing Vegetation Map) =	0.54 AC (23,480± SF)
B	Percentage of gross site area covered by existing tree canopy =	57.6%
C	Percentage of 10-year Tree Canopy required for site (see Table 12.4) =	25.0 % = 0.23 AC (10,175± SF)
D	Percentage of the 10-year Tree Canopy requirement that should be met through tree preservation (same as line B)=	57.6%
E	Tree Canopy area that should be met through tree preservation (Tree Preservation Target)=	0.13 AC (5,861± SF)
F	Proposed percentage of canopy requirement that will be met through tree preservation =	61.9 %
G	Has the Tree Preservation Target minimum been met?	Yes or No **YES**
H	If No for line G, then a request to deviate from the Tree Preservation Target must be provided on the plan that states one or more of the justifications listed in § 12-0308.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target cannot be met. Provide sheet number where deviation request is located.	
I	If step H requires a narrative, it must be prepared in accordance with § 12-0308.4.	
J	Place tree preservation target information before the 10-year Tree Canopy calculations as per instructions in Table 12.9.	

Table 12.3 Tree Preservation Target Calculations and Statement		FOR OVERALL AREA* (66,236± SF)
A	Pre-development area of existing tree canopy (from Existing Vegetation Map) =	0.76 AC (33,080± SF)
B	Percentage of gross site area covered by existing tree canopy =	49.7%
C	Percentage of 10-year Tree Canopy required for site (see Table 12.4) =	25.0 % = 0.38 AC (16,609± SF)
D	Percentage of the 10-year Tree Canopy requirement that should be met through tree preservation (same as line B)=	49.7%
E	Tree Canopy area that should be met through tree preservation (Tree Preservation Target)=	0.18 AC (7,956± SF)
F	Proposed percentage of canopy requirement that will be met through tree preservation =	90%
G	Has the Tree Preservation Target minimum been met?	Yes or No **YES**
H	If No for line G, then a request to deviate from the Tree Preservation Target must be provided on the plan that states one or more of the justifications listed in § 12-0308.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target cannot be met. Provide sheet number where deviation request is located.	
I	If step H requires a narrative, it must be prepared in accordance with § 12-0308.4.	
J	Place tree preservation target information before the 10-year Tree Canopy calculations as per instructions in Table 12.9.	

***EXISTING VEGETATION INVENTORY AND TREE PRESERVATION TARGET CALCULATIONS ARE INCLUDED FOR BOTH THE AREA CONSOLIDATED FOR THE PROPOSED WATER STORAGE TANK (0.934 AC) AND THE ENTIRETY OF THE FIVE FAIRFAX WATER OWNED PROPERTIES (1.525 AC) TO ILLUSTRATE THE EXTENTS OF THE LIMITS OF DISTURBANCE OUTSIDE OF THE 0.934 AC WATER STORAGE TANK PARCEL. THE TREE CANOPY CALCULATIONS ON SHEET 020 ARE BASED ON THE 0.934 AC SITE AREA WHICH WAS THE BASIS OF THE APPROVED SPECIAL EXCEPTION.**

FAIRFAX WATER PROPERTIES						
KEY	OWNER	ZONED	USE	T.M.	Book	Page
(A)	FAIRFAX CO. WATER AUTHORITY	R-4	ETC	0501 02 0094A	23520	0125
(B)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 02 0089	27629	1422
(C)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0006	25583	0446
(D)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0005	25820	0434
(E)	FAIRFAX CO. WATER AUTHORITY	R-4	SFD	0501 12 0001	27795	1044

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

SCALE IN FEET
1" = 20'
1 INCH

NORTH
VCS-83

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE

EXISTING VEGETATION MAP

FW PROJECT NO. P2729-002

25

SHEET NO. 25 OF 29

P:\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\24 EXISTING VEGETATION MAP.dwg
Tue, Apr 29, 2025 - 3:40:40pm

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods, and diverse communities of Fairfax County

October 30, 2024

John McGranahan
Hunton Andrews Kurth LLP
8000 Towers Crescent Drive, Suite 1350
Tysons, VA 22812

RE: Special Exception Application SE 2023-PR-00046 – Fairfax County Water Authority
Providence District

Dear Mr. McGranahan:

At a regular meeting held on October 22, 2024, the Board of Supervisors approved Special Exception Application SE 2023-PR-00046, subject to the development conditions dated October 21, 2024, and the modifications dated July 18, 2024, as attached.

For additional information, please visit https://plus.fairfaxcounty.gov/CitizenAccess/ or contact the Zoning Evaluation Division at (703) 324-1290.

Sincerely,

Jill G. Cooper
Clerk for the Board of Supervisors

Department of Clerk Services
Clerk for the Board of Supervisors
12000 Government Center Parkway, Suite 552
Fairfax, Virginia 22035
Phone: 703-324-3151 ♦ Fax: 703-324-3926 ♦ TTY: 711
Email: clerktothebos@fairfaxcounty.gov
http://www.fairfaxcounty.gov/bosclerk

Cc: Supervisor Dalia A. Palchik, Providence District
Thomas Reed, Director, Real Estate Division, Dept. of Tax Administration
David Pellegrino, Assistant Director, Real Estate Division, Dept. of Tax Administration
Suzanne Wright, Director, Zoning Evaluation Division, Dept. of Planning and Development
Drew Hushour, Deputy Zoning Administrator, Dept. of Planning and Development
Michael Liddle, Director, GIS Services, Department of Information Technology
Jeff Hermann, Chief, Site Analysis and Transportation Planning Division, FCDOT
Randall Farren, Park Planning Branch Manager, FCPA
Abdi Hamud, Program Administrator, DHCD/Design Development Division
Leanna O'Donnell, Director, Office of Facilities Planning Services, FCPS
Michael Guarino, Chief Capital Projects Sections, Dept. of Transportation
Morgan Wolfe, Chief, Bonds & Agreements, Land Development Services

Attachments

APPROVED DEVELOPMENT CONDITIONS

SE 2023-PR-00046

October 21, 2024

If it is the intent of the Board of Supervisors to approve SE 2023-PR-00046 located at Tax Map 50-1 ((2)) 89 and 94A; 50-1 ((12)) 1 (pt.), 5 (pt.), and 6, to permit a public facility, light (water storage tank), pursuant to the Fairfax County Zoning Ordinance, staff recommends that the approval be subject to the following development conditions.

1. This Special Exception (SE) is granted for and runs with the land indicated in this application and is not transferable to other land.

2. This SE is granted only for the purpose(s), structure(s) and/or use(s) indicated on the Special Exception Plat (SE Plat) approved with the application, as qualified by these development conditions.

3. This SE is subject to the site plan provisions of the Zoning Ordinance as may be determined by the Director, Land Development Services (LDS). Any plan submitted pursuant to this SE must be in substantial conformance with the approved SE Plat entitled "Poplar Heights Water Tank, Special Exception Plat, SE-2023-PR-00046" prepared by Dewberry, consisting of 17 sheets, dated February 2, 2024, as revised through September 4, 2024, and these conditions. Minor modifications to the approved SE may be permitted pursuant to the requirements listed in the Zoning Ordinance.

4. Sidewalk. Upon demand by Fairfax County, the applicant will provide all necessary dedication of right-of-way and associated easements at no public cost to accommodate construction of a five-foot-wide sidewalk along that portion of the Tower Street frontage of the site where no sidewalk exists.

5. Lighting. With the exception of any required Federal Aviation Administration (FAA) aircraft warning lights on top of the water tower, on-site lighting for the SE use will be provided as shown on the SE Plat and must comply with the Outdoor Lighting Standards of Section 5109 of the Zoning Ordinance, including the use of full cut-off fixtures that are mounted horizontal to the ground. Such lighting must be controlled through switches and/or motion sensors to ensure the lights do not remain illuminated longer than the amount of time necessary. All lighting will be LED lighting with a maximum color temperature of 3,000 K.

6. Limits of Clearing and Grading. The applicant must conform to the limits of clearing and grading as shown on the SE Plat, subject to allowances specified in these conditions and for the installation of utilities as determined necessary by the Director of the LDS, as described herein. If it is determined necessary to install utilities in areas protected by the limits of clearing and grading as shown on the SE Plat, such utilities must be located in the least disruptive manner necessary as determined by the applicant and the Forest Conservation Branch (FCON) of LDS. A replanting plan must be developed and implemented, subject to approval by FCON, for any areas protected by the limits of clearing and grading that must be disturbed for such utilities.

7. Tree Inventory and Condition Analysis. A Tree Inventory and Condition Analysis will be submitted for review and approval as part of the first and all subsequent site plan submissions. The Tree Inventory and Condition Analysis must be prepared by a certified arborist or registered consulting arborist and must include elements of Public Facilities Manual (PFM) 12-0307 deemed appropriate to the property as determined by FCON.

8. Tree Preservation Plan. A Tree Preservation Plan and Narrative will be submitted for review and approval as part of the first and all subsequent site plan submissions for the SE use. The Tree Preservation Plan and Narrative must be prepared by a certified arborist or registered consulting arborist and must include elements of PFM 12-0309 deemed appropriate to the property as determined by FCON.

9. Tree Preservation Walk-Through. The applicant must retain the services of a certified arborist or registered consulting arborist ("Project Arborist") and must have the approved limits of clearing and grading marked with a continuous line of flagging prior to the walk-through meeting. During the tree preservation walk-through meeting, the Project Arborist or a landscape architect must walk the limits of clearing and grading with an FCON representative to determine where adjustments to the clearing limits can be made to increase the area of tree preservation and/or to increase the survivability of trees at the edge of the limits of clearing and grading. Such adjustments must be recorded by the Project Arborist and tree protection fencing must be implemented under the Project Arborist's supervision based on these adjustments.

10. Tree Protection Fencing. All trees shown to be preserved on the Tree Preservation Plan must be protected by tree protection fencing. Tree protection fencing must be in a form of four-foot (4') high, fourteen (14) gauge welded wire attached to six-foot (6') steel posts driven eighteen inches (18") into the ground and placed no farther than ten (10) feet apart, or super silt fence so long as any required trenching is done per the root pruning guidelines. All tree protection fencing must be installed after the tree preservation walk-through meeting but prior to any clearing and grading activities. The installation of all tree protection fencing must be performed under the direct supervision of the Project Arborist, and accomplished in a manner that does not harm existing vegetation that is to be preserved. Three (3) business days prior to commencement of any clearing or grading activities, but subsequent to the installation of the tree protection fencing, FCON must be notified and given the opportunity to inspect the property to ensure that all tree protection fencing has been correctly installed. If it is determined that the fencing has not been installed correctly, no grading or construction activities will occur until the fencing is installed correctly, as determined by FCON.

11. Tree Preservation Measures. Tree preservation measures must be clearly identified, labeled, and detailed on the Erosion and Sediment Control Plan sheets and the Tree Preservation Plan. Tree preservation measures may include, but are not limited to the following: root pruning, crown pruning, mulching and watering. Specifications must be provided on the Tree Preservation Plan detailing how preservation measures must be implemented. Tree preservation activities must be completed during implementation of the Erosion and Sediment Control Plan.

12. Demolition. The demolition of all existing structures and site features within or adjacent to tree preservation areas must be accomplished in the least disruptive manner practical as reviewed and approved by FCON. All tree protection fencing must be in place and verified by a County representative prior to commencement of demolition activities.

13. Site Monitoring. The Project Arborist must be present on-site during implementation of the Tree Preservation Plan and monitor any construction activities conducted within or adjacent to areas of trees to be preserved. Construction activities include, but may not be limited to clearing, root pruning, tree protection fence installation, vegetation/tree removal, and demolition activities. During implementation of the Erosion and Sediment Control Plan, the Project Arborist must visit the site on a regular basis to continue monitoring tree preservation measures and ensure that all activities are conducted as identified in the Tree Preservation Plan and approved by FCON. Written reports must be submitted to FCON and Site Development and Inspection Services (SDID) site inspectors detailing site visits. A monitoring schedule and Project Arborist reports must be described and detailed in the Tree Preservation Plan.

14. Invasive Plant Species Management. Forested areas containing plant species that are known to be invasive in quantities that threaten the long term health and survival of the existing vegetation present must be the subject of an invasive plant species management plan in order for the area to be awarded full 10-year canopy credit. At the time of site plan submission, the applicant must provide a management plan for review and approval by FCON specifying the common and scientific name of invasive species proposed for management, the target area for management efforts, methods of control and disposal of invasive plants, timing of treatments and monitoring, duration of the management program, and potential reforestation as needed.

15. Landscape Plan. Landscaping must be generally consistent with the quality, quantity and locations shown on the Landscape Plan included as Sheet 14 of the SE Plat, which illustrates the plantings to be provided on the property. The Landscape Plan is conceptual in nature and the tree species and planting locations may be modified by the applicant, in coordination with FCON, as part of final engineering and design, provided such modifications provide a similar quality and quantity of landscape plantings and materials as shown on the Landscape Plan. At the time of planting, the initial heights of the proposed trees will range from minimum heights of eight (8) feet to minimum heights of fourteen (14) to sixteen (16) feet (minimum 3-inch caliper), depending on the species of tree as shown on the SE Plat.

16. Landscape Planting Pre-installation Meeting. Prior to installation of plants to meet the requirements of the Landscape Plan, the applicant or its contractor must coordinate a pre-installation meeting on-site with the landscape contractor and FCON staff. Any proposed changes to the planting locations, tree/shrub planting sizes, and any proposed species substitutions for the plants shown on the Landscape Plan must be reviewed and approved by FCON prior to planting. The installation of plants to meet the requirements of the Landscape Plan that are not approved by FCON may require the submission of a revision to the Landscape Plan, or part thereof, or removal and replacement with approved trees/shrubs prior to bond release.

17. On-site Vegetation. The vegetation on-site, including existing trees identified as to be saved, is required to remain as generally depicted on the SE Plat. Minor modifications as allowed by the Zoning Ordinance may be permitted; however, replacement and appropriate maintenance of the vegetation will be provided as necessary to ensure the survival of the vegetation. Should the vegetation not survive or be damaged or removed as a result of maintenance of the water tank, the applicant will replace such vegetation, at the minimum initial planting heights identified on the SE Plat, and maintain it thereafter.

18. Soil Remediation. Soil in planting areas that contain construction debris and rubble, are compacted or are unsuitable for the establishment and long-term survival of landscape plants, must be the subject of remedial action to restore planting areas to satisfy cultural requirements of trees, shrubs and groundcovers specified in the Landscape Plan. The applicant must provide notes and details specifying how the soil will be restored for the establishment and long-term survival of landscape plants for review and approval by FCON.

19. Native Landscaping. All new landscaping planted on the property must be generally consistent with the quality, quantity and locations shown on the SE Plat and must include a plant selection that includes species that will reduce the need for supplemental watering and the use of chemical fertilizers, herbicides and pesticides. All landscaping provided must be native to the mid-Atlantic region to the extent available and feasible, and must be non-invasive (meaning the applicant must not use any plant species identified in the 2014, or latest version, of the Virginia Invasive Plant Species List published by the Virginia Department of Conservation and Recreation); provided, however, the applicant reserves the right to utilize Green Giant Arborvitae for some of the Large Evergreen trees shown on the SE Plat. The applicant reserves the right, in consultation with and approval by FCON, to modify the exact species to be used, such as when plant materials are not available or have been deemed by FCON to no longer be appropriate.

20. Offsite Landscaping. All new landscaping planted on applicant-owned property outside of the limits of the SE, and as further identified on the SE Plat as "Proposed Offsite Planting (not part of PFM required planting for the SE)" (the "Offsite

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
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POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

REVISIONS

DRAWN BY BWB
APPROVED BY TCC
CHECKED BY TCC
DATE APRIL 29, 2025

TITLE
CLERK'S LETTER AND DEVELOPMENT CONDITIONS

FW PROJECT NO. P2729-002

26

SHEET NO. 26 OF 29

P:\PROJECT\50142065 Poplar Heights Tank Design\CAD\CIVIL-SITE\Sheets\26 CLERK'S LETTER AND DEVELOPMENT CONDITIONS.dwg
Tue, Apr 29, 2025 - 3:40:36pm

Landscaping") must be shown on the site plan for the SE use. Such Offsite Landscaping must be installed and maintained until such time as the applicant secures either the earlier of the release of the bond associated with the site plan depicting the Offsite Landscaping or the sale of the offsite lots to third parties.

21. Construction Management Plan. The applicant must prepare a plan for the mitigation of construction impacts to be implemented during construction to mitigate construction impacts on adjoining properties and ensure safe and efficient pedestrian and vehicle circulation at all times along Tower Street. The construction management plan will address:
    - Anticipated construction entrances, construction staging areas, construction vehicle routes and procedures for coordination with FCDOT and/or VDOT concerning construction material deliveries and lane, street or sidewalk closures, if any;
    - Ensure the limits of clearing and grading are maintained as provided in these conditions;
    - Off-street construction worker parking;
    - Outreach to the Fairfax County Public Schools that serve the surrounding neighborhood to confirm the school bus routes, bus stop locations and timing of morning pick-ups and afternoon drop-offs so the applicant can coordinate construction activities to the extent possible and schedule and direct construction traffic to avoid conflicts with school bus traffic and students in the neighborhood;
    - Providing a person along the Tower Street frontage of the property during the morning pick-up and afternoon drop-off of students from Fairfax County Public Schools buses and during times of day when deliveries of construction materials and equipment are scheduled in order to maintain safe pedestrian and vehicular traffic on Tower Street during construction;
    - Including pedestrian and vehicle traffic control along the Tower Street frontage of the property in the contractor's daily briefings;
    - Locating dumpsters and other similar devices behind covered fencing or in a location on the property to reasonably limit public visibility and providing timely removal of the same when full; and
    - Establishment and continuation of a website for the project which will provide alerts (which could include mass emails or use of social media) for high impact (for instance noise or traffic impacts) activities, designed to provide timely notification to the area residents and those who regularly travel on Tower Street and a contact for construction-related questions and complaints.

    The applicant will inform all contractors and subcontractors of the plans for construction related traffic circulation. Signs providing such information will be posted at all construction entrances. Such plan will be prepared by a qualified professional and submitted for review and comment to VDOT, FCDOT and LDS prior to issuance of any land disturbance permit for construction of the SE use on the property. Such plan must identify the name and contact information for the person responsible for responding to complaints related to the construction and/or the construction-related obligations in these conditions. The construction management plan must be provided to the Providence District Supervisor's office.

22. Domestic Water Service During Construction. At such time as the existing water tank is removed from service and until the new water tank is put into service, the applicant will take necessary steps consistent with water industry standards to maintain water service, including water pressure to existing residents, during construction.

23. Construction Noise and Glare. Construction of the SE use must be subject to the Noise Ordinance of Fairfax County. The following noise and glare mitigation measures must be implemented during construction:
    - All motorized vehicles and equipment used during construction must be equipped with proper mufflers.
    - Delivery routes must be arranged to minimize the use of backup alarms on commercial vehicles and equipment.
    - The banging of tail gates must be prohibited. All drivers associated with this project must be informed about this prohibition.
    - All lights used to illuminate the construction site, including any staging areas, must be full cut-off or directionally shielded so that the directed light must be substantially confined to the construction site.

24. Construction Hours and Activity. Construction hours must be limited to Monday through Friday 7:00 am to 7:00 pm and Saturday from 9:00 am to 7:00 pm. No construction work must be performed on Sundays. The construction hours noted above will not apply to emergency construction or maintenance. Construction and delivery vehicles must not park and idle on the surrounding residential streets prior to the start time for construction and signs stating this prohibition will be posted on the surrounding street subject to VDOT approval.

25. Construction Timeline. The applicant must notify the Providence District Supervisor's office when construction commences and when construction has been completed.

26. Point of Contact. The applicant must provide the Providence District Supervisor's office with the point of contact for construction-related questions and complaints. This information will also be posted on the applicant's project website. In addition to providing the point of contact to the Supervisor's office and posting it on the project website, prior to commencing construction activities related to the water tank, including demolition of any existing structures, the applicant will notify by first class mail all owners of the properties that abut the site or are located on both sides of Tower Street between Midway Street and Buckelew Drive of the anticipated start date and the point of contact, and if different, an after-hours or emergency number for construction-related questions and complaints. Further, the applicant will post and maintain a sign along the Tower Street frontage of the property that includes the point of contact for after-hours or emergency questions and complaints related to construction. The applicant must provide to the Providence District Supervisor's office copies of construction related questions and complaints within 24 hours of receiving them.

27. Community Meetings. The applicant must host a pre-construction meeting with the surrounding community prior to the commencement of construction of the SE use on the property. The applicant will coordinate the invitations and date and location of this meeting with the Providence District Supervisor's office. Once construction commences, and until construction is completed, the applicant must host quarterly virtual meetings with the surrounding community (as identified by the Providence District Supervisor's Office) to provide them with project updates. In addition, prior to commencing construction, the applicant will provide a written invitation to the owners of the properties that abut the site or are located on both sides of Tower Street between Midway Street and Buckelew Drive to provide their email address in order to receive notifications of major construction milestones and deliveries, such as the demolition of the existing homes and the existing water tank, commencement of clearing, the pouring of the foundation for the new tank and the delivery of the crane. The applicant will maintain the list and will send email notifications at least one (1) business day prior to the date such milestones and deliveries are scheduled to occur.

28. Construction Parking Management Plan. The applicant will prepare and implement a construction parking management plan during construction of the SE use. Such plan must require that all construction vehicles (including personal vehicles of tradesman working on the property) must not be parked on Tower Street.

29. Dust Management Plan. The applicant will prepare and implement a dust management plan tailored to the characteristics of the property and designed to suppress dust from leaving the site. Such plan will be incorporated with the Erosion and Sediment Control Plan and will include, but not be limited to, installation of wash racks, regular use of dust-removing watering methods, and use of covered trucks for removal of construction debris. The applicant will work with all contractors on the dust management plan and will monitor and enforce its implementation.

30. Site Maintenance. The applicant will maintain the construction site for the SE use in a secure and orderly manner and will provide for: 1) a County-approved sedimentation control fence along the limits of disturbance of the construction site; 2) continuous construction fencing around the perimeter of the construction site, designed with screening material to block views into the construction site and prevent construction debris from blowing off the site; and 3) location of trailers, materials, and equipment inside the construction fence. The applicant will maintain the street surfaces adjacent to the property in a clean and safe condition during the construction activity. At the end of each work day during construction, any streets used for hauling construction materials and entrances to the construction site will be free of mud, dirt, trash, allaying dust, and debris, and all streets adjacent to the property will be free of construction-related trash and debris.

31. Resurfacing of Tower Street. The applicant must mill and overlay the surface of Tower Street prior to the release of the bond associated with the site plan depicting the SE use.

32. Antennas. No cellular antennas will be permitted on the top of the water tower, except antennas required for the applicant's or another governmental body's communication and security systems. This condition does not preclude the applicant from installing and maintaining the required FAA aircraft warning lights on top of the water tower.

33. Signs. All signs on-site must be subject to Article 7.

34. Watermain Improvements. In conjunction with construction of the SE use, the applicant will construct watermain improvements to provide the capability to obtain domestic water supply from the adjacent higher pressure zone in order to increase water pressures by approximately fifteen (15) pounds per square inch (psi) or more at the service connection for those customers who are located in certain of the higher elevations within the Poplar Heights Pressure Zone, including the dwellings located near the subject site.

35. During final engineering and design of the water tank, the Applicant will continue to work with the landowners who abut or are located immediately across Tower Street from the property on potential adjustments and/or enhancements to the commitments made in Conditions 4 (Sidewalk), 5 (Lighting), 15 (Landscape Plan) and 20 (Offsite Landscaping) in order to maintain the residential character of the surrounding community, as long as such adjustments and/or enhancements remain in substantial conformance with the SE Plat as determined by the Zoning Administrator.

36. Pursuant to the Zoning Ordinance, this Special Exception will automatically expire, without notice, thirty (30) months after the date of approval unless the use has been established or construction has commenced and been diligently prosecuted. The Board of Supervisors may grant additional time to establish the use or to commence construction if a written request for additional time is filed with the Zoning Administrator prior to the date of expiration of the Special Exception. The request must specify the amount of additional time requested, the basis for the amount of time requested and an explanation of why additional time is required.

This approval, contingent on the above noted conditions, does not relieve the applicant from compliance with the provisions of any applicable ordinances, regulations, or adopted standards. The applicant must be responsible for obtaining the required Non-Residential Use Permit through established procedures, and this Special Exception will not be valid until this has been accomplished.

Approved Modifications

SE 2023-PR-00046
Fairfax County Water Authority

July 18, 2024

- Modification of the transitional screening requirement along the western property boundary in favor of the proposed landscaping as shown on the SE Plat.
- Modification of the transitional screening requirement along the southern property boundary in favor of the proposed landscaping as shown on the SE Plat.

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
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PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

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TITLE
CLERK'S LETTER AND DEVELOPMENT CONDITIONS

FW PROJECT NO. P2729-002

27

SHEET NO. 27 OF 29

4.0 DESIGN RECOMMENDATIONS

The recommendations outlined in the following sections are based on the borings, pressuremeter data, and laboratory tests performed for this project, as well as design details available at the time of the preparation of this report. Based on the review of the exploration, the primary concern for the proposed new water tank from a geotechnical perspective is the presence of compressible loose to medium dense natural soils below the bearing elevations of the tank structure. We have evaluated the use of shallow (ring and mat) foundations in conjunction with our boring and pressuremeter testing data, which has resulted in excessive elastic settlement estimates on the order of 3 to 4 inches. Based on our experience, micropiles are not expected to be economical for this project. As a result, we recommend deep foundations consisting of augered cast-in-place piles be utilized to support the structure. ECS has reviewed other deep foundation alternatives such as driven piles; however, we expect this will not be a viable option considering the residential community where this construction will occur, and driven steel piles are also considered to be less economical.

We also understand that foundations will ultimately be designed by the tank manufacturer's geotechnical engineer. This report contains the pertinent geotechnical recommendations for design soil and rock parameters that can be used to perform the final design.

4.1 AUGERED CAST-IN-PLACE PILES

Based on the subsurface conditions encountered and our understanding of the loading for the water tank, the proposed tank can be supported on a system of auger cast-in-place (ACIP) piles.

Our analysis indicates 14 to 18-inch diameter piles should be capable of supporting allowable axial compression loads of 100 to 140 tons. We anticipate that the bottom of the pile cap (top of pile) will be at an elevation of 475 feet. The allowable capacities based on anticipated pile design tip elevations are given in the table below:

ACIP Pile Diameter	Design Tip Elevation	Allowable Pile Axial Capacity (FS = 2.0)	Allowable Pile Tension Capacity (FS = 3.0)
14-inch	EL. 422 feet	100 tons	50 tons
16-inch	EL. 422 feet	140 tons	70 tons

*Notes: (1) The tip elevations presented above are only estimated values and will need to be verified in the field during the test pile program

We recommend the ACIP piles be constructed with grout strengths of at least 5,000 psi. The piles will need full depth reinforcement, both for axial uplift reasons and for quality control issues.

Properly installed ACIP piles are anticipated to settle less than 1-inch. A goal of the suggested test pile program (detailed below) is to clarify the required minimum pile tip elevation throughout the site and refine the recommendations based on field observations. Once indicator piles and subsequent load testing is complete, the manufacture's geotechnical engineer should render opinions on the required pile tip elevations.

Grout

The grout used shall consist of a mixture of Portland Cement, fluidifier, retarder, fine aggregate and water so proportioned and mixed as to produce a grout mix capable of being pumped. The pile grout shall have a minimum 28-day compressive strength of 5,000 psi. Mixing time after adding the fluidifier at the site shall be no less than 3 minutes. The grout shall be mixed in accordance with the applicable requirements of ASTM C94.

The Contractor shall not use any grout older than the maximum time specified by the supplier. If the pre-approved maximum time limit is in excess of 120 minutes, the supplier shall provide adequate documentation that the grout does not become detrimentally affected beyond this general local industry accepted standard time limit. The Contractor shall coordinate the grout delivery to meet the above requirement and to assure continuity of the work.

The viscosity of the grout should be controlled with a grout flow cone. This will reduce the variability of the grout and result in a more uniform compressive strength. It is recommended that the flow cone requirement be specified as a range rather than as a single value.

The grout shall be sampled and tested by an independent Testing Laboratory retained by the Owner. During indicator and test pile installation, sampling and casting of a set of six 3x6-inch cylinders or 2-inch cubes shall be made from each truck of grout delivered to the site. During production pile installation, sampling and casting of a set of six 3x6-inch cylinders or 2-inch cubes shall be made for every 50 cubic yards of grout delivered to the site and no less than once per day. For test piles and production pile grout cylinder/cube sets, two cylinders/cubes shall be tested at 7 days, two at 28 days, and the remaining two at 56 days (additional samples may be cast and tested at varying ages as necessary). Grout cylinders/cubes shall be made and tested in accordance with ASTM C31, C109 and C469. The test results shall be submitted to the Owner, the Structural Engineer, and the manufacturer's Geotechnical Engineer for review within 3 days of completion of the testing.

Reinforcing Steel

The auger cast piles shall have a minimum one #10 bar full length with centralizers placed along the bar every 15 ft (max spacing). Additional reinforcing steel will be required for uplift/tension and lateral loads. The design of the reinforcing steel cage details (beyond the center bar required herein) shall be performed by either the Structural Engineer of Record or the manufacturer's licensed Geotechnical or Structural Engineer.

Grout Pump

The grout pump should be a positive displacement piston pump capable of developing sufficient displacement pressures to ensure the continuous and complete filling of the augered pile shafts. The Contractor shall field-calibrate the pump discharge capacity in strokes per cubic foot prior to the installation of piles so that grout take can be monitored by the manufacturer's Geotechnical Engineer. A second/standby grout pump is also recommended in case the first grout pump becomes inoperable.

ACIP Pile Rig

The pile rig shall be capable of advancing and withdrawing the auger in a slow and steady continuous motion, and shall have sufficient torque and weight to advance the auger to the required depths outlined in the table above. The auger shall have continuous flights that are of uniform diameter, throughout its length with no reduction in section at any point along the length. The auger shall have a 3-inch minimum I.D. hollow stem to facilitate grout injection.

The ACIP contractor should plan accordingly and utilize a drill rig with sufficient torque and crowd to penetrate the bearing strata to install the piles to the lengths required to meet the design criteria detailed herein. Plan tip elevation confirmed by the test pile program will be the terminating criteria for the piles, not a subjective opinion on the density of the soil during the augering process. In addition to penetrating this stratum, we have seen challenges with establishing grout heads due to the stiff clay materials "clogging" the augers. As a result, the grout pressure lifts the auger prior to establishing the appropriate grout head. We have found that pumping air through the stem while drilling has been helpful in overcoming this challenge and recommend the contractor include this equipment.

Pile Installation

Piles should be installed at locations laid out by a surveyor and as shown on the Foundation Plans prepared by the Structural Engineer and the manufacturer's Geotechnical Engineer. Installation of auger cast piles is messy and staked locations frequently become covered with mud or grout or are destroyed by other means. Measuring from previously installed piles is not acceptable. Pile spacing should be designed by the Structural Engineer and the manufacturer's Geotechnical Engineer considering lateral loading, group effects, and associated p-y reductions. Pile centers shall be within 3 inches of those shown on the Foundation Plans at the pile cut-off elevation. The piles shall be cut-off to the specified elevation with the specified reinforcement extended as required above the cut-off elevation. Vertical piles shall be installed with deviations of no more than 1-inch in 5 feet from a vertical line.

The piles shall be installed by the rotation of the continuous flight auger into the ground to the tip elevation as outlined in this report. Once the tip elevation has been attained, a slow positive rotation shall be maintained and the auger initially withdrawn 0.5 Feet to 1 feet. Grout should then be pumped through the auger tip until a minimum grout head of 10 feet is achieved. This will be estimated based on the pump calibration performed prior to pile installation. The auger shall then be advanced back to the tip elevation and steadily withdrawn in a continuous operation while grout is being injected without interruption. The rate of auger withdrawal and that of grout injection shall be coordinated such that the amount of grout pumped per foot of pile during auger retrieval is at least 115% of the theoretical volume per foot of pile. A positive grout pressure head above the tip of the auger shall be maintained at all times as verified by the return of slurry/grout from around the auger flights. If the auger jumps during withdrawal, if the pump skips a stroke, or if there is a break in the slurry/grout return as observed from the top of the augered shaft, the auger shall be lowered a minimum of 5 feet below the depth of questionable area and regrouted. The rate of auger withdrawal shall not be increased once grout return is observed at the ground surface. If the auger is withdrawn too rapidly, suction within the pile shaft could occur, exacerbating the potential for pile necking. If the minimum 115% grout volume is not achieved, the Geotechnical Engineer should be consulted and the pile shall be redrilled and regrouted at the affected depths.

The augered shaft shall be completely filled to the ground surface with grout. Grout shall not be removed from the augered shafts by dipping or other means prior to setting of the grout. Installed piles shall be periodically checked by the Contractor to determine if the grout in the piles has settled. If the grout level drops more than about 1 foot, the top of the pile shall be purged and fresh grout shall be added to the top of the pile prior to the grout reaching its initial set.

Immediately upon completion of the grouting operation of each pile, the specified reinforcement shall be installed. If difficulty is encountered during installation of the reinforcement, the pile shall be redrilled and regrouted. If problems are still encountered, then the shaft shall be filled with grout and abandoned, and alternate pile location(s) shall be determined by the manufacturer's Geotechnical Engineer.

In case there is a loss of grout upon pile grouting or if there is no return of grout from the shaft during pumping, the shaft shall be temporarily abandoned and shall be redrilled and regrouted after approximately 1 hour. If problems are still encountered, then the shaft shall be redrilled and regrouted the following day. If problems are still encountered, then a replacement pile shall be installed at a location determined by the Structural Engineer.

A minimum grout set time of 12 hours shall be allowed before any adjacent piles are installed unless otherwise directed by the Geotechnical Engineer. No piles closer than 9 feet center to center shall be installed the same day. If grout loss is experienced in a completed pile while drilling an adjacent pile, the construction of the adjacent pile shall be ceased and the completed pile shall be redrilled and regrouted. The adjacent pile shall not be installed until the next day.

General

ACIP installation shall be observed by a qualified geotechnical engineer or their authorized representative. The representative should observe the pressures used to pump the grout into the hole, the volume of pumped grout, and also the withdrawal (withdrawal rate) of the auger to determine that the pile is being properly constructed. In addition, pile depths and any abnormalities encountered during drilling should be recorded.

We recommend that the geotechnical engineer of record be present during installation of ACIP piles to perform the inspections of the ACIP piles. Properly generated installation records are required to evaluate and confirm the piles have been installed in accordance with this report, project requirements, and industry standards.

ACIP Pile Foundation, Test Pile Program

The Geotechnical Engineer responsible for the final design of the piles should evaluate the need for and provide guidelines for pile load testing.

4.2 SHALLOW FOUNDATIONS (ANCILLARY STRUCTURES)

ECS understands that some lightly loaded ancillary structures (max column load of 150 kip and wall load of 3 klf) may need to be constructed for the tank operation. Based on the assumptions, it appears the foundations of the ancillary structures may predominately bear at the elevations of existing fill noted on the boring logs. The existing fills are not suitable for support of foundations and will need to be removed in their entirety below foundations and replaced with engineered fill, lean concrete or foundation

concrete extended to the depth of natural soils. Provided subgrades and structural fills are prepared as recommended in this report, the proposed structure can be supported by shallow foundations including column footings and continuous wall footings. We recommend the foundation design use the following parameters:

Design Parameter	Column Footing	Wall Footing
Net Allowable Bearing Pressure[1]	3,000 psf (F.S.=3)	3,000 psf (F.S.=3)
Acceptable Bearing Soil Material	New Structural Fill or Stratum II soils	New Structural Fill or Stratum II soils
Minimum Width	24 inches	18 inches
Minimum Footing Embedment Depth (below slab or finished grade)[2]	30 inches	30 inches
Estimated Total Settlement [3]	Less than 1- inch	Less than 1- inch
Estimated Differential Settlement [4]	Less than ¾ inches between columns	Less than ¾ inches

Notes:

(1) Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation.
(2) For bearing and frost depth considerations
(3) Based on assumed structural loads. If final loads are different, ECS must be contacted to update foundation recommendations and settlement calculations.
(4) Based on maximum column/wall loads and variability in borings. Differential settlement can be re-evaluated once the foundation plans are more complete.

Potential Undercuts: Based on the assumed lowest slab elevation, we anticipate 1 to 2 feet of undercutting may be required to remove the existing fill from beneath footings. If all of the existing fill is removed during grading and replaced with new engineered fill, undercutting should not be required. If soft or unsuitable soils are observed at the footing bearing elevations, the unsuitable soils should be undercut and removed. Any undercut should be backfilled with lean concrete ($f'_c \geq 1{,}000$ psi at 28 days) up to the original design bottom of footing elevation; the original footing shall be constructed on top of the hardened lean concrete. Alternatively, the footing can be extended lower to bear on the suitable materials.

4.3 SLABS ON GRADE

Provided subgrades and structural fills are prepared as discussed herein, the proposed floor slabs can be constructed as Ground Supported Slabs (or Slab-On-Grade). Based on a lowest finished floor elevation of EL. 477 feet, it appears that the slabs will bear on newly compacted fill. The following graphic depicts our soil-supported slab recommendations:

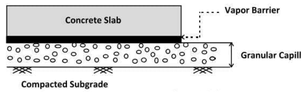

Figure 4.2.1

1. Drainage Layer Thickness: 4 inches
2. Drainage Layer Material: 4 inches of GRAVEL (GP, GW), SAND (SP, SW)

Soft or yielding soils may be encountered in some areas. Those soils must be removed and replaced with compacted Structural Fill in accordance with the recommendations included in this report. The existing fill soils may be suitable for support of the proposed finished floor slab; however the soils should be evaluated at the time of construction with the use of proofrolling and test pitting to determine if localized areas may require remediation.

Subgrade Modulus: Provided the Structural Fill and Granular Drainage Layer are constructed in accordance with our recommendations, the slab may be designed assuming a modulus of subgrade reaction, k_1 of 100 pci (lbs./cu. inch). The modulus of subgrade reaction value is based on a 1 ft by 1 ft plate load test basis.

Vapor Barrier: Before the placement of concrete, a vapor barrier may be placed on top of the granular drainage layer to provide additional protection against moisture penetration through the floor slab. When a vapor barrier is used, special attention should be given to surface curing of the slab to reduce the potential for uneven drying, curling and/or cracking of the slab. Depending on proposed flooring material types, the architect may choose to eliminate the vapor barrier if the building area is not heated.

Slab Isolation: Soil-supported slabs should be isolated from the foundations and foundation-supported elements of the structure so that differential movement between the foundations and slab will not induce excessive shear and bending stresses in the floor slab. Where the structural configuration prevents the use of a free-floating slab such as in a dropdown footing/monolithic slab configuration, the slab should be designed with suitable reinforcement to prevent overstressing the slab.

4.4 SEISMIC DESIGN CONSIDERATIONS

The Commonwealth of Virginia has adopted Virginia Construction Code 2021 (VCC) via the Virginia Uniform Statewide Building Code (USBC). The current version of VCC incorporates ASCE 7-22, Minimum design Loads and Associated Criteria for Building and Other Structures into the building code. This adoption supersedes Section 16 of IBC 2021, in respect to seismic site classification.

ASCE 7-22, Chapter 20 has updated the procedure for determining Site Classification. This chapter requires that site classification be conducted based on the average shear wave velocity of the top 100 feet of the site. The shear velocity can either be measured or estimated based on established correlations. If site classification is based on estimated values of shear wave velocity (v_s) the site class shall be derived using

V_o, V_s/1.3 and V_s(1.3). The seismic site class definitions for the weighted average shear wave velocities in the upper 100 feet of the soil profile are presented in Chapter 20 of ASCE 7-22 and in the table below.

Table 4.7.1: Seismic Site Classification

Site Class	Soil Profile Name	Shear Wave Velocity, Vs, (ft./s)
A	Hard Rock	Vs > 5,000 ft./s
B	Rock	>3,000 to 5,000 ft./s
BC	Soft Rock	>2,100 to 3,000 ft./s
C	Very Dense Sand or Hard Clay	>1,450 to 2,100 ft./s
CD	Dense Sand or Very Stiff Clay	>1,000 to 1,450 ft./s
D	Medium Dense Sand or Stiff Clay	>700 to 1,000 ft./s
DE	Loose Sand or Medium Stiff Clay	>500 to 700 ft./s
E	Very Loose Sand of Soft Clay	Vs < 500 ft./s

Shear wave velocity profiles for the lines performed are included in Appendix B of this report. Based on the data collected, the ReMi survey produced an average shear wave velocity (Vs) of 933 ft/s in the upper 100± feet below the existing ground surface, resulting in a recommend **Site Classification of D.** This recommendation is in accordance with the procedure outlined in ASCE 7-22. It is worth noting that if this project is submitted under a different code year an alternate soil site classification may be appropriate. We should be notified if this project is being submitted for design under VCC 2018 (IBC-2018 or ASCE 7-16)

4.5 CORROSION POTENTIAL

Site-specific corrosion series were performed on recovered samples to evaluate corrosivity potential of concrete and steel. The results are presented in the following table.

Table: Corrosion Potential Test Results

Sample Location	Sample Depth (ft)	Saturated Electrical Resistivity (Ohm-cm)	pH	Chloride Content (mg/Kg)	Sulfate Content (mg/Kg)	Sulfide Content (mg/Kg)	Redox Potential (mV)
B-2	0-5	24,470	5.5	3.0	9.9	<1.2	+160.0
B-4	0-10	74,193	4.6	<2.5	<5.0	<1.2	+130.0

Generally, soils with pH less than 4.5, electrical resistivity less than 2,000 ohm-cm, or sulfate or chloride content greater than 200 ppm (mg/Kg) should be considered as aggressive subsurface environments in terms of corrosivity. Additionally, soil resistivity over 20,000 Ohm-cm is considered "Essentially noncorrosive". Based on these results, the site soils are generally not considered to create environments that will have concerns with respect to corrosion of concrete and steel elements.

Additionally, based on the American Water Works Association (AWWA) Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems, document C105-18, the residual soils are not anticipated to be corrosive to ductile iron pipe, and therefore will likely not require protection.

Based on a review of the sulfate content of the residual soils, the sulfate concentrations appear to be low. The American Concrete Institute (ACI) 318 - Chapter 19 indicates that below-grade concrete structures should be designed to meet Exposure Class S0 and C1.

4.6 PAVEMENTS

Subgrade Characteristics: Based on the results of our borings, it appears that the pavement subgrades in cuts will consist mainly of SANDY SILT (ML), and LEAN CLAY (CL) material.

California Bearing Ratio (CBR) testing was not performed as part of this study. Therefore, we recommend a design CBR value of 4, where additional CBR samples will be required within the upper 12 inches of the subgrade soils during construction. Therefore, this value should be used in the design of the pavements and the additional CBR results obtained during construction should be used to evaluate this design. If the results of the CBR tests taken during construction differ from that mentioned above, the pavement design should be modified as necessary.

Large, front loading trash dumpsters frequently impose concentrated front wheel loads on pavements during loading. This type of loading typically results in rutting of asphalt pavement and ultimately pavement failures. For preliminary design purposes, we recommend that the pavement in trash pickup areas consist of a 6-inch thick, 4,000 psi, reinforced concrete slab over 6-inches of dense graded aggregate. When traffic loading becomes available ECS or the Civil Engineer can design the pavements.

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

POPLAR HEIGHTS WATER TANK

SITE PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA

SEAL

COMMONWEALTH OF VIRGINIA
TIMOTHY CHARLES CULLEITON
Lic. No. 20112
04/29/2025
PROFESSIONAL ENGINEER

KEY PLAN

SCALE NORTH

No.	DATE	BY	Description

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FW PROJECT NO. P2729-002

28

SHEET NO. 28 OF 29

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 SUBGRADE PREPARATION

5.1.1 Demolition

Initial preparation of the site should include the complete removal of the existing structure, footings, topsoil, roots, pavement, sidewalks and utilities that will not be part of the new construction. This includes any below-grade portions of the existing water tank and should be backfilled in accordance with the requirements outlined in sections 5.2.1 Structural Fill Materials and 5.2.2 Compaction. Existing structure debris left in place may prohibit deep foundation installation.

5.1.2 Stripping and Grubbing

After stripping to the desired grade and performing all necessary removal of any existing surface materials, the exposed soils should be carefully examined to identify any localized loose, yielding or otherwise unsuitable materials by an experienced geotechnical engineer or his/her authorized representative. It is recommended that unsuitable existing fill below the subgrade layer should be removed completely and backfilled or reworked with proper structural material.

The preparation of fill subgrades should be observed on a full-time basis. These observations should be performed by an experienced geotechnical engineer, or his representative, to document that all unsuitable materials have been removed and that the subgrade is suitable for support of the proposed construction and/or fills. In some areas, excessively soft and/or wet soils may be encountered for fill subgrades, especially in the winter or early spring months. Soil bridging lifts should not be used to span over soft-fill subgrade soils within the expanded building limits. All soft areas shall be excavated and removed.

5.1.3 Proofrolling

Prior to fill placement or other construction on subgrades, the subgrades should be evaluated by an ECS field technician. The exposed subgrade should be thoroughly proofrolled with construction equipment having a minimum axle load of 10 tons [e.g. fully loaded tandem-axle dump truck]. Proofrolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of an ECS technician. This procedure is intended to assist in identifying any localized yielding materials.

Where proofrolling identifies areas that are unstable or "pumping" subgrade those areas should be repaired prior to the placement of any subsequent Structural Fill or other construction materials. Methods of stabilization include undercutting, moisture conditioning, or chemical stabilization. The situation should be discussed with ECS to determine the appropriate procedure. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of the observed unstable materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

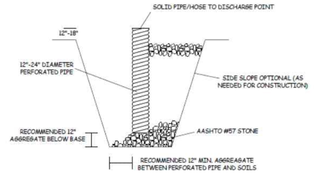
5.1.4 Site Temporary Dewatering

The contractor shall make their own assessment of temporary dewatering needs based upon the limited subsurface groundwater information presented in this report. Soil sampling is not continuous, and thus soil and groundwater conditions may vary between sampling intervals (typically 5 feet). If the contractor believes additional subsurface information is needed to assess dewatering needs, they should obtain such information at their own expense. ECS makes no warranties or guarantees regarding the adequacy of the provided information to determine dewatering requirements; such recommendations are beyond our scope of services.

Dewatering systems are a critical component of many construction projects. Dewatering systems must be selected, designed, and maintained by a qualified and experienced (specialty or other) contractor familiar with the succinct geotechnical and other aspects of the project. The failure to properly design and maintain a dewatering system for a given project can result in delayed construction, unnecessary foundation subgrade undercuts, detrimental phenomena such as 'running sand' conditions, internal erosion (i.e., 'piping'), the migration of 'fines' down-gradient towards the dewatering system, localized settlement of nearby infrastructure, foundations, slabs-on-grade and pavements, etc. Water discharged from any site dewatering system shall be discharged in accordance with all local, state and federal requirements.

Strategies for Addressing Perched Groundwater:

The typical primary strategy for addressing perched groundwater seeping into excavations is pumping from trench (or French) and sump pits with sump pumps. A typical sump pump drain (found in a sump pit or along a French drain) is depicted below. The inlet of the sump pump is placed at the bottom of the corrugated pipe and the discharge end of the sump is directed to an appropriate stormwater drain.



Sump Pit/Pump Diagram

Details of a typical French drainage installation are included in Appendix D. A typical French drain consists of an 18 to 24-inch wide by 18 to 24-inch deep bed of AASHTO #57 (or similar open graded aggregate) aggregate wrapped in a medium duty, non-woven geotextile and (sometimes) containing a 6-inch

diameter, Schedule 40 PVC perforated or slotted pipe. Actual dimensions should be as determined necessary by ECS during construction. After the installation has been completed, the geotextile should be wrapped over the top of the aggregate and pipe followed by placement of backfill. The top of the drain should be positioned at least 18 inches below the design subgrade elevations. Drains should not be routed within the expanded building limits.

5.2 EARTHWORK OPERATIONS

5.2.1 Existing Man-Placed Fill

Fill Content: Existing fill was encountered in each of the borings with the deepest areas of fill of up to approximately 2.5± feet below existing grade. Typically, the existing fill consisted of low plasticity SILT or Lean CLAY with varying amounts of sand and gravel. The fill soils contained both roots and rock fragments; however, based on the visual classification of the samples obtained, ECS anticipates that the majority of the onsite FILL materials are likely suitable to reuse as Structural Fill for this site. However, if highly plastic soils (CH/MH) or organic soils are encountered, these soils will not be considered suitable for reuse.

Fill Removal in Building Areas: All fill should be removed from below the planned pavement and building areas or possibly densified in place. Existing fill should be evaluated with the use of proofrolling or test pitting at the time of construction.

5.2.2 High Plasticity Soils

High plasticity soils are those soil materials classified as **MH/CH**. High plasticity soils were encountered in the borings B-01 and B-04 at depths ranging from 8.5± feet to 18.5± feet below existing grade. Where high plasticity soils are encountered at design subgrade elevations in slab and pavement areas areas, the subgrade should be undercut to 2 feet and grades restored with approved non-plastic Structural Fill (LL<40, PI<20).

5.2.3 Structural Fill

Prior to placement of Structural Fill, representative bulk samples (about 50 pounds) of on-site and/or off-site borrow should be submitted to ECS for laboratory testing, which will typically include Atterberg limits, natural moisture content, grain-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications. Alternatively, Proctor data from other accredited laboratories can be submitted if the test results are within the last 90 days.

Satisfactory Structural Fill Materials: Materials satisfactory for use as Structural Fill should consist of inorganic soils with the following engineering properties and compaction requirements.

STRUCTURAL FILL INDEX PROPERTIES	
Subject	**Property**
Building and Pavement Areas	LL < 40, PI<20
Max. Particle Size	4 inches
Max. organic content	5% by dry weight

STRUCTURAL FILL COMPACTION REQUIREMENTS	
Subject	**Requirement**
Compaction Standard	Standard Proctor, ASTM D698
Required Compaction	95% of Max. Dry Density
Moisture Content	-2 to +2 % points of the soil's optimum value
Loose Thickness	8 inches prior to compaction

On-Site Borrow Suitability: Significant natural deposits of soils that meet the definition of Satisfactory Structural Fill are present on the site. These occur mostly at relatively shallow depth below the surficial materials and/or existing fill materials where encountered. Deeper utility excavations (greater than 8± feet) may encounter high plasticity soils in the vicinity of Borings B-01 and B-04. These materials are not suitable for reuse as structural fill.

Fill Placement: Fill materials should not be placed on frozen soils, on frost-heaved soils, and/or on excessively wet soils. Borrow fill materials should not contain frozen materials at the time of placement, and all frozen or frost-heaved soils should be removed prior to placement of Structural Fill or other fill soils and aggregates. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned.

5.3 FOUNDATION AND SLAB OBSERVATIONS

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. Therefore, foundation concrete should be placed the same day that excavations are made. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, a 1 to 3-inch thick "mud mat" of "lean" concrete should be placed on the bearing soils before the placement of reinforcing steel.

Footing Subgrade Observations: Most of the soils at the foundation bearing elevation are anticipated to be suitable for support of the proposed structure. It is important to have ECS observe the foundation subgrade prior to placing foundation concrete, to confirm the bearing soils are what was anticipated.

Slab Subgrade Verification: Prior to placement of a drainage layer, the subgrade should be prepared in accordance with the recommendations found in **Section 5.1.3 Proofrolling**.

5.4 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes. The pipe subgrades should be observed and probed for stability by ECS. Any loose or unsuitable materials encountered should be removed and replaced with suitable compacted Structural Fill, or pipe stone bedding material.

Utility Backfilling: The granular bedding material (often AASHTO #57 stone) should be at least 4 inches thick, but not less than that specified by the civil engineer's project drawings and specifications. We recommend that the bedding materials be placed up to the springline of the pipe. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for Structural Fill and Fill Placement.

Excavation Safety: All excavations and slopes should be constructed and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing, constructing, and maintaining stable temporary excavations and slopes. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Dewberry

Dewberry Engineers Inc.
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
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29

SHEET NO. 29 OF 29

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