GREAT OUTDOORS OF SPOTSYLVANIA
MAJOR SITE PLAN
TM 25-6-17
LEE HILL VOTING DISTRICT
LEE HILL MAGISTERIAL DISTRICT
11100 PIERSON DRIVE

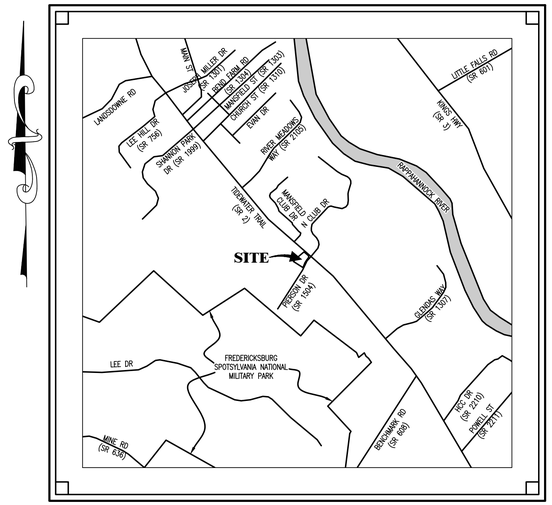
SITE STATISTICS:

1.) TAX MAP:	25-6-17
2.) PARCEL AREA:	PRE ROW DEDICATION: 2.12 ACRES; 92,347 SF POST ROW DEDICATION: 2.03 ACRES; 88,311 SF
3.) DISTURBED AREA:	1.77 AC.
4.) ZONING:	C-2
5.) PROPOSED RIGHT-OF-WAY:	.05 ACRES
6.) OVERLAY DISTRICT:	AIRPORT OVERLAY
7.) USE:	
EXISTING USE::	VACANT
PROPOSED USE:	RETAIL SHED SALES
8.) BUILDING SETBACK:	
FRONT	30 FEET
SIDE	0 FEET
REAR	20 FEET
9.) MAXIMUM BUILDING HEIGHT:	55'
10.) TRIP GENERATOR:	NURSERY GARDEN CENTER PER ACRE (CODE 817)
VEHICULAR TRIPS PER DAY	108.10 * 2.03 ACRES = 219.44 TRIPS
AM PEAK	9.29 * 2.03 ACRES = 18.86 TRIPS
PM PEAK	10.49 * 2.03 ACRES = 21.29 TRIPS

11.) THE PROJECT DOES NOT CONTAIN ANY HISTORIC RESOURCES. IF ANY RESOURCES ARE DISCOVERED DURING CONSTRUCTION, THEY WILL NOT BE IMPACTED WITHOUT PROPER REGULATORY APPROVALS.

12.) NO EVIDENCE OF PLACES OF BURIAL ON SITE.	
13.) WETLANDS WITHIN 100' OF SITE:	YES
14.) WETLANDS PERMIT REQUIRED:	NO
15.) RMA ON SITE:	ENTIRE SITE
16.) RPA ON SITE:	NO
17.) THIS PROPERTY IS SERVICED BY PUBLIC SEWER AND WATER.	
18.) SOLID WASTE COLLECTION:	PRIVATE
19.) ALL EXISTING UTILITIES SHOWN HEREON NEED VERIFICATION BY SELECTED CONTRACTOR.	
20.) THERE ARE NO EXISTING STRUCTURE ON SITE.	
21.) THERE ARE NO ONSITE SEWAGE DISPOSAL SYSTEMS ON SITE.	
23.) FUTURE LAND USE DESIGNATION:	RETAIL
24.) PARKING TABULATION: RETAIL	
REQUIRED: 1 SPACE PER EACH 250 S.F. OF GROSS FLOOR AREA (GFA = 960 S.F.)	
TOTAL PARKING SPACES REQUIRED: 4	
TOTAL PARKING SPACES PROVIDED: 10	
TOTAL LOADING SPACES REQUIRED: 1 SPACE PER 1ST 10,000 SF OF GFA + 1 SPACE PER EACH ADDITIONAL 15,000 SF = 1 SPACE AT 960 GFA	
TOTAL LOADING SPACES PROVIDED: 1	
TOTAL HANDICAP PARKING SPACES REQUIRED: 1	
TOTAL HANDICAP PARKING SPACES PROVIDED: 1	
26.) OPEN SPACE REQUIRED: (GROSS)	2.03 AC. x 0.15 = 0.30 AC.
OPEN SPACE PROVIDED	1.56 AC. (PROVIDED)
27.) IMPERVIOUS RATIO:	20,361 / 88,311 = 23.1%
28.) GROSS FLOOR AREA:	960 S.F.
29.) FLOOR AREA RATIO:	
ALLOWED:	1.0
PROVIDED:	960 / 88,311 = 0.01%
29.) WATER AND SEWER DEMAND	
960 SF @ 250 GPD/1,000 SF = 240 GPD	
30.) REQUIRED FIRE FLOW:	1,250 GAL @ 20 PSI (ONE HYDRANT)
32.) EXISTING VEGETATION WILL BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE, HOWEVER SUBJECT TO FINAL ENGINEERING.	
33.) HYDROLOGIC UNIT CODE(S):	RA46 RAPPAHANNOCK RIVER - HAZEL RUN
34.) CONSTRUCTION TYPE:	VB

34.) THERE ARE NO KNOWN HISTORIC BUILDINGS OR FEATURES ON THIS SITE.
35.) THERE ARE NO RESOURCE PROTECTION AREAS (RPA) ON THIS SITE.
36.) THE OUTDOOR RETAIL SALES AREA WILL REMAIN STABILIZED, UNDISTURBED, AND DUST FREE AT ALL TIMES. NON-COMPLIANCE WILL RESULT IN APPROPRIATE SITE IMPROVEMENTS AS DETERMINED BY THE ZONING ADMINISTRATOR. THESE SITE IMPROVEMENTS WILL NE THE OWNERS'S RESPONSIBILITY.
37.) KNOX BOX REQUIRED AT OFFICE FRONT DOOR. CONTACT FIRE MARSHAL FOR FURTHER INFORMATION PRIOR TO INSTALLING.
38.) SIDEWALK TO BE MAINTAINED BY PROPERTY OWNER.



VICINITY MAP
SCALE: 1"=2000'

2000 0 2000 4000
SCALE: 1" = 2000'

SHEET INDEX

TOTAL NUMBER OF SHEETS = 22

ENGINEER:
BAGBY, FOROUGHI, GOODPASTURE PLLC
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22408
PHONE: (540) 373-5178
EMAIL: RFOROUGHI@BFGENG.COM
ATTN: RYAN K. FOROUGHI

APPLICANT/OWNER:
11100 PIERSON LLC
1118 RICHMOND HWY
FREDERICKSBURG, VIRGINIA 22405
PHONE: (703) 929-6201
EMAIL: RWISE@DALMATIAN247.COM

PROJECT NARRATIVE

THIS PROJECT IS BEST SUMMARIZED AS A CONSTRUCTION PLAN FOR A RETAIL SALES OFFICE FOR OUTDOOR SHED SALES AND SUPPORTING INFRASTRUCTURE. A SHED AND GARDEN DISPLAY AREA SHALL BE UTILIZED BUT WILL NOT RESULT IN ANY DISTURBANCE. DISPLAYS SHALL BE PLACED DIRECTLY ON EXISTING GRADE.

STORMWATER MANAGEMENT NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT IS BEST SUMMARIZED AS A CONSTRUCTION PLAN FOR A RETAIL SALES OFFICE FOR OUTDOOR SHED SALES AND SUPPORTING INFRASTRUCTURE. THE PARCEL IS OWNED BY 11100 PIERSON LLC AND IS CURRENTLY USED VACANT LAND. THE OVERALL IMPERVIOUS COVER WILL INCREASE 0.47 ACRES FROM EXISTING TO PROPOSED CONDITIONS.

THE TOTAL SITE AREA IS 2.03 ACRES AFTER ROW DEDICATION AND DISTURBED AREA FOR THE PROPOSED PROJECT IS 1.77 ACRES. DRAINAGE PATTERNS FOR FLOW LEAVING THE DEVELOPED SITE WILL BE SIMILAR TO THE PRE-DEVELOPMENT CONDITIONS.

QUANTITY
STORMWATER QUANTITY IS ANALYZED IN ACCORDANCE WITH 9VAC25-875 FOR THE PROPOSED DEVELOPMENT.

UNDER 9VAC25-875-600D, CHANNEL PROTECTION COMPLIANCE IS MET DUE TO THE IMPLANTATION FOR TREATMENT TRAIN OF IMPERVIOUS DISCONNECT, GRASS SWALES AND TWO HENRICO LEVEL SPREADERS TO CREATE SHEET FLOW.

UNDER 9VAC25-875-600, FLOOD PROTECTION COMPLIANCE IS MET. INCREASED FLOWS THAT ARE PHYSICALLY SPREAD HAVE NO DELETERIOUS EFFECT TO EROSION, DEPOSITION OF SEDIMENT, OR FLOODING TO DOWNSTREAM PROPERTIES.

QUALITY
STORMWATER QUALITY CALCULATIONS WERE PERFORMED USING VIRGINIA RUNOFF REDUCTION METHOD SPREADSHEET VERSION 3.0 FOR A NEWLY DEVELOPED SITE. BASED ON THE VRRM SPREADSHEET, TOTAL PHOSPHOROUS REMOVAL HAS BEEN EXCEEDED BY 0.42 LB/YR THROUGH A TWO LEVEL SPREADERS. THEREFORE, THE PROJECT WILL BE INCOMPLIANCE WITH WATER QUALITY REQUIREMENTS OF 9VAC25-875-590.

VDOT NOTES
1. ALL STANDARD DETAILS SHOWN ARE FOR INFORMATIONAL PURPOSES. AT THE TIME OF CONSTRUCTION THE DEVELOPMENT SHALL BE CONSTRUCTED TO MEET THE LATEST CURRENT VDOT STANDARD DETAIL IN AFFECT.
2. ALL CONSTRUCTION METHODS AND MATERIALS WITHIN STATE MAINTAINED RIGHT OF WAY SHALL BE IN ACCORDANCE WITH CURRENT VDOT STANDARDS, SPECIFICATIONS, CURRENT "WORK AREA PROTECTION MANUAL," AND ALL APPLICABLE LOCATION AND DESIGN INSTRUCTION AND INFORMATIONAL MEMORANDA. INSPECTION DOCUMENTATION SHALL BE PROVIDED CONSISTENT WITH THE VDOT INSPECTION DOCUMENTATION BEST PRACTICES MANUAL.
3. VDOT ACCEPTANCE/VDOT APPROVAL OF THIS PLAN, AS INDICATED BY THE VDOT SIGNATURE, DOES NOT RELIEVE THE APPLICANT/ENGINEER/SURVEYOR FROM THE RESPONSIBILITY FOR COMPLYING WITH ALL VDOT REGULATIONS. VDOT'S REVIEW IS NOT INTENDED TO BE EITHER COMPLETE OR COMPREHENSIVE AS IT IS THE RESPONSIBILITY OF THE SUBMITTING ENGINEER/SURVEYOR THAT SIGNS AND SEALS THESE PLANS TO ENSURE COMPLETENESS AND ACCURACY OF THEIR PLANS IN ACCORDANCE WITH THE GOVERNING LAWS, REGULATIONS, SPECIFICATIONS AND STANDARDS. PLAN ERRORS AND OR OMISSIONS THAT ARE DISCOVERED DURING CONSTRUCTION REMAIN THE RESPONSIBILITY OF THE SUBMITTING ENGINEER/SURVEYOR

MISS UTILITY

BEFORE YOU DIG CALL "MISS UTILITY"
PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE
FOR ALL EXCAVATION WORK ANYWHERE IN VIRGINIA!
IT'S THE LAW!

Dig With CARE. Keep Virginia Safe!
C Call Miss Utility @ 811 before you dig.
A Allow required time for marking.
R Respect the marks.
E Excavate carefully.

THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

THE CONTRACTOR TO CALL MISS UTILITY TO HAVE ALL EXISTING UTILITIES MARKED 48 HOURS PRIOR TO ANY CONSTRUCTION.

SOLID WASTE NOTE:
ALL REFUSE MUST BE DISPOSED OF AT COUNTY APPROVED DISPOSAL SITES.

FLOOD NOTE:
THIS PROJECT IS LOCATED IN FLOOD ZONE 'X' (AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) AS SHOWN ON F.I.R.M. COMMUNITY–PANEL 51177C 0125D, DATED MAY 9, 2023.

RPA NOTES:

CHESAPEAKE BAY PRESERVATION ACT:
CBPA IS AN OVERLAY DISTRICT FOR THE ENTIRE SPOTSYLVANIA COUNTY AND THE PARCEL DESCRIBED WITHIN THIS PLAN LIES WITHIN THE RMA FEATURES AND DOES NOT CONTAIN RPA FEATURES WITHIN THE CHESAPEAKE BAY PRESERVATION AREA OVERLAY DISTRICT.

CONSTRUCTION WASTE STORAGE NOTE:
PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, ALL STOCKPILES MATERIALS, INCLUDING BUT NOT LIMITED TO STUMPS, BRUSH, AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF IN ACCORDANCE WITH CHAPTER 19 OF THE COUNTY CODE(SOLID WASTE) OR ANY OTHER STATE OR FEDERAL REGULATIONS.

LANDSCAPE NOTE:
PRIOR TO DEVELOPMENT, THE BOUNDARIES OF THE CONSTRUCTION FOOTPRINT SHALL BE CLEARLY MARKED ON THE PROPERTY AND SUITABLE PROTECTIVE BARRIERS SHALL BE ERECTED FIVE (5) FEET OUTSIDE OF THE DRIP LINE OF ANY TREE OR STAND OF TREES TO BE PRESERVED WITHIN 100 FEET OF THE CONSTRUCTION FOOTPRINT. THE BARRIERS SHALL REMAIN ERECTED THROUGHOUT ALL PHASES OF CONSTRUCTION. THE STORAGE OF EQUIPMENT, MATERIALS, DEBRIS, OR FILL SHALL NOT BE ALLOWED WITHIN THE AREA PROTECTED BY THE BARRIER. REQUIRED LANDSCAPE MATERIAL, PLANTING, AND MAINTENANCE OF BEST MANAGEMENT PRACTICES SHALL CONFORM TO CHAPTER 6A OF THE SPOTSYLVANIA COUNTY CODE.

BUILDING OFFICE NOTE:
APPROVAL OF THIS SITE PLAN DOES NOT PERMIT OR GIVE PERMISSION FOR ANY CONSTRUCTION OF THE STRUCTURES OR OTHER FEATURES SHOWN HEREIN. A SEPARATE PERMIT REVIEW AND APPROVAL WILL BE REQUIRED, FROM THE BUILDING SAFETY DEPARTMENT, PRIOR TO CONSTRUCTION OF ANY OF THE FOLLOWING: RETAINING WALLS, SITE LIGHTING, FREE STANDING SIGNS, BUILDING SEWER LINES, UNDERGROUND TANK, ABOVE GROUND TANK, FIRE LANES, ALL PROPOSED STRUCTURES OR ANY OTHER FEATURE THAT IS DEFINED AS A STRUCTURE BY THE VIRGINIA CONSTRUCTION CODE.

GPS TIE IN NOTE:
THE SITE PLAN SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 AS COMPUTED FROM A FIELD SURVEY WHICH TIES THIS SUBDIVISION BOUNDARY TO SPOTSYLVANIA COUNTY SURVEY CONTROL MONUMENT GREENWICH, ID: D16650.

THE GRID FACTOR, ELEVATION FACTOR X GRID FACTOR, WHICH HAS BEEN APPLIED TO THE FIELD DISTANCE TO DERIVE THE REFERENCED COORDINATES IS 0.99996050. UNLESS OTHERWISE STATED, THE PLAT DISTANCE SHOWN ARE INTENDED TO BE HORIZONTAL DISTANCES MEASURED AT THE MEAN ELEVATION OF THE SUBDIVISION.

THE BEARINGS SHOWN ARE REFERENCED TO VCS 1983 GRID NORTH. THE FOOT DEFINITION USED FOR CONVERSION OF THE MONUMENT COORDINATES IS THE "US SURVEY FOOT" AND 1200/3937 METER CONVERSION.

GEODETIC CONTROL MONUMENTS EXISTING OR PLACED WITHIN THE BOUNDARIES OF THIS SUBDIVISION SHALL NOT BE DISTURBED. THE LAND OWNER ASSUMES THE RESPONSIBILITY OF REPLACEMENT OF ANY DISTURBED MONUMENT.

E & S FIELD MEASURES NOTE:
ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS FIELD CONDITIONS WARRANT.

TRANSPORTATION NOTE:
A SEPARATE PERMIT REVIEW AND APPROVAL IS REQUIRED THROUGH VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO ANY CONSTRUCTION OF ALL ROAD NETWORK AND ENTRANCES. VDOT APPROVAL AND A SEPARATE PERMIT ARE REQUIRED FOR WORK IN THE RIGHT OF WAY INCLUDING GRADING, SANITARY SEWER, AND STORM SEWER CONSTRUCTION. THE OWNER/DEVELOPER MAY CONTACT PERMITS SECTION AT (540) 899–4525 FOR ASSISTANCE WITH THE PROCESS.

SEEDING NOTE:
CONTRACTOR SHALL SEED OR MULCH ALL DENUDED OR DISTURBED AREAS IN ACCORDANCE WITH VIRGINIA EROSION & SEDIMENT CONTROL REGULATIONS STANDARDS MS–1, MS–2 & MS–3.

DEMOLITION NOTE:
A SEPARATE DEMOLITION PERMIT IS REQUIRED.

SIGNAGE NOTE:
A SEPARATE SIGN PERMIT IS REQUIRED.

CONSTRUCTION/DEMOLITION MATERIALS NOTE:
NO BURNING OF CONSTRUCTION OR DEMOLITION MATERIALS ON SITE.

FIRE LANE NOTE:
FIRE LANE AND FIRE DEPARTMENT CONNECTION LOCATIONS AND SIZES WILL NOT BE APPROVED UNTIL SPRINKLER SYSTEM DESIGN IS APPROVED BY FIRE MARSHAL. A SEPARATE PERMIT IS REQUIRED FOR THIS WORK.

PASS NOTE:
DUE TO RECENT FINDINGS OF POSSIBLE ACID SULFATE SOILS (PASS) WITHIN SPOTSYLVANIA COUNTY IT IS RECOMMENDED THAT THE DEVELOPER, BUILDERS AND ENGINEERS BE AWARE THAT IF ACID SULFATE SOILS AS WELL AS OTHER SOILS THAT PRODUCE A pH OF <4 ARE PRESENT ON THE PROJECT SITE EXTENSIVE TREATMENT TO BRING THE SOILS ACID/pH LEVEL TO AN ACCEPTABLE LEVEL TO SUSTAIN ANY FORM OF PLANT GROWTH MAY BE REQUIRED.

WETLANDS NOTES:
WETLANDS DO NOT EXIST ON THIS SITE. NO DISTURBANCE OF THE ADJACENT WETLANDS IS PROPOSED, THEREFORE PERMITS WILL NOT BE NEEDED FROM THE VIRGINIA DEQ AND ARMY CORP OF ENGINEERS.

UTILITIES NOTES:
1) THIS PROJECT WILL CONNECT TO PUBLIC UTILITIES (WATER AND SEWER) AS PART OF THE SITE CONSTRUCTION.
2) THE APPROVAL OF THIS PLAN DOES NOT GUARANTEE THAT SEWER AND/OR WATER CAPACITY IS AVAILABLE BY A CERTAIN DATE. CAPACITY FOR THIS PROJECT, IF AND WHEN AVAILABLE, WILL NOT BE RESERVED UNTIL ALL CONSTRUCTION, INSPECTION AND AVAILABILITY FEES ARE PAID AND THE PROPERTY IN CONNECTED TO THE PUBLIC SEWER AND/OR WATER SYSTEM.

GENERAL NOTES:
1) VSMP PERMIT FOR LAND DISTURBANCE IS REQUIRED PRIOR TO APPROVAL OF THIS PLAN. ALL REQUIRED FEDERAL AND STATE PERMITS SHALL BE OBTAINED PRIOR TO APPROVAL OF THIS SITE PLAN.
2) VDOT LAND USE PERMIT WILL BE REQUIRED PRIOR TO START OF ANY CONSTRUCTION WITHIN THE STATE MAINTAINED RIGHT–OF–WAY. DEVELOPER TO CONTACT THE FREDERICKSBURG DISTRICT PERMIT SECTION AT 540–899–4525 TO OBTAIN THE INFORMATION CONCERNING FEES AND PROCESS.

ZONING NOTE:
1) A SEPARATE PERMIT IS REQUIRED FOR SIGNS, RETAINING WALLS, AND ABOVE OR BELOW GRADE TANKS.

ENGINEER'S CERTIFICATE

I, RYAN K. FOROUGHI, A PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF VIRGINIA, DO HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS PLAN CONFORMS TO ALL APPLICABLE STATE AND LOCAL STANDARDS.

DATE RYAN K. FOROUGHI, PE

RESPONSIBLE LAND DISTURBER

RLD # PE # 41245
(RLD TO BE CHANGED UPON SELECTION OF CONTRACTOR)

DATE RYAN K. FOROUGHI, PE

APPROVAL BLOCK

SPOTSYLVANIA COUNTY VIRGINIA

REVISIONS	DATE
PER COUNTY & VDOT COMMENTS	6/22/23
PER COUNTY & VDOT COMMENTS	6/27/24
PER COUNTY & VDOT COMMENTS	9/27/24
PER COUNTY COMMENTS	3/3/25
PER COUNTY & VDOT COMMENTS	5/20/25
SIGNATURE SET	7/7/25

BFG
BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22408
TELEPHONE: (540) 373-5178
WEBSITE: BFGENG.COM

COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
PROFESSIONAL ENGINEER

COVER SHEET

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT

DATE:	3/1/2023
SCALE:	AS SHOWN
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581–4
PLAN NO.	ST23-0006

1

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LEGEND

AC	ACRE(S)
BLDG	BUILDING
CL	CENTERLINE
CO	CLEAN OUT
CONC	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
CG	CURB & GUTTER
DB	DEED BOOK
DEMO	DEMOLISH
DIP	DUCTILE IRON PIPE
D/W	DRIVEWAY
ESMT	EASEMENT
EP	EDGE OF PAVEMENT
EG	EDGE OF GRAVEL
ELEV	ELEVATION
ES	END SECTION
EW	END WALL
EX	EXISTING
FG	FINISHED GRADE
FF	FINISHED FLOOR
FH	FIRE HYDRANT
F/M	FORCE MAIN
GL	GAS LINE
GM	GAS METER
GFA	GROSS FLOOR AREA
HC	HANDICAPPED
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
HORZ	HORIZONTAL
INV	INVERT
IPF	IRON PIPE FOUND
IPS	IRON PIPE SET
LP	LIGHT POLE
MH	MANHOLE
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMALLY
OHE	OVERHEAD ELECTRIC
OHE&T	OVERHEAD ELECTRIC, TELEPHONE
OHE,T,TV	OVERHEAD ELECTRIC, TELEPHONE, TELEVISION
PG	PAGE
PVMT	PAVEMENT
PED	PEDESTAL
PERF	PERFORATED
PROP	PROPOSED
PVC	POLYVINYL CHLORIDE
R	RADIUS
RED	REDUCER
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
R/W	RETAINING WALL
SAN	SANITARY
SEW	SEWER
SFD	SINGLE FAMILY DETATCHED
SHT	SHEET
SW	SIDEWALK
SQFT	SQUARE FEET (FOOT)
STD	STANDARD
STM	STORM
T & S	TAP AND SLEEVE
TM	TAX MAP
TEL	TELEPHONE
TBR	TO BE REMOVED/RELOCATED
TC	TOP OF CURB
TRAN	TRANSFORMER
TYP	TYPICAL
UG	UNDERGROUND
UGE,T,TV	UNDERGROUND ELECTRIC, TELEPHONE, TELEVISION
UP	UTILITY POLE
VERT	VERTICAL
WL	WATER LINE
WM	WATER METER
WV	WATER VALVE
W/	WITH
W/L	WATERLINE

ACCESSIBLE

98 EXISTING INTERMEDIATE CONTOUR

100 EXISTING INDEX CONTOUR

276.93 EXISTING SPOT SHOT

50 FINISHED GRADE

90 95 TC FINISHED SPOT SHOT

FIRE HYDRANT

LIGHT POLES

SIGNS

TEST PIT

C&G TRANSITION

EX. TREES

N48°01'50"E 398.94'

20' DRAINAGE EASEMENT D.B. 808 PG. 193

PROPOSED FUTURE FORCE MAIN LOCATION

MH 1A
INV OUT: 69.33

EX. 18" RCP

11100 PIERSON LLC
TM 25-6-17
ZONED: C-2
EX. USE: VACANT
2.12 ACRES (PRE ROW DEDICATION)
2.03 (POST ROW DEDICATION)

N/F
11040 PIERSON DRIVE LLC
TM 25-6-16
ZONED: C-3
USE: FLEX OFFICE

N56°35'06"W 318.90'

PUBLIC UTILITY EASEMENT LR#230014005

20'SAN. SEWER EASEMENT D.B. 808 PG. 193

S89°16'09"E 150.00'

10' SAN. SEWER EASEMENT D.B. 469 PG. 558

15' VA. POWER RIGHT OF WAY D.B. 924 PG. 259

15' DRAINAGE AND UTILITY EASEMENT D.B. 870 PG. 750

EX. SIDEWALK

EX. TRANSFORMER

EX. F.H.

L=107.11'
R=1564.62'

EX. CG-6

EX. 8" WATERLINE

L=206.48'
R=616.59'

INLET 2
15" OUT = 71.38

L=78.54'
R=50.00'

EX. 39" RCP

C/L

INLET 1
15" IN = 71.13
18" IN = 70.78
24" OUT = 70.69

EX. 10" SEWER

EX. FORCEMAIN

EX. 12" WATERLINE

PIERSON DRIVE
SR 1504 - 25 MPH

TIDEWATER TRAIL- ROUTE 2 - MINOR ARTERIAL - 45 MPH

MH 2
INV IN: 69.03
INV. OUT: 68.93

N/F
A SPOTSWOOD LLC
TM 25-6-A
ZONED: C-2
USE: VACANT

EX. 8" SEWER

MH 1
INV IN (1A): 68.08
INV. IN (2): 68.02
INV. OUT: 67.92

30 15 0 30 60
SCALE: 1" = 30'

APPROVAL BLOCK

REVISIONS	DATE
PER COUNTY & VDOT COMMENTS	6/22/23
PER COUNTY & VDOT COMMENTS	6/27/24
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SIGNATURE SET	7/7/25

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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

EXISTING CONDITIONS PLAN

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	1" = 30'
DESIGNED BY:	MRB
DRAWN BY:	MRB
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PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

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PAVEMENT MARKING & SIGNAGE LEGEND:

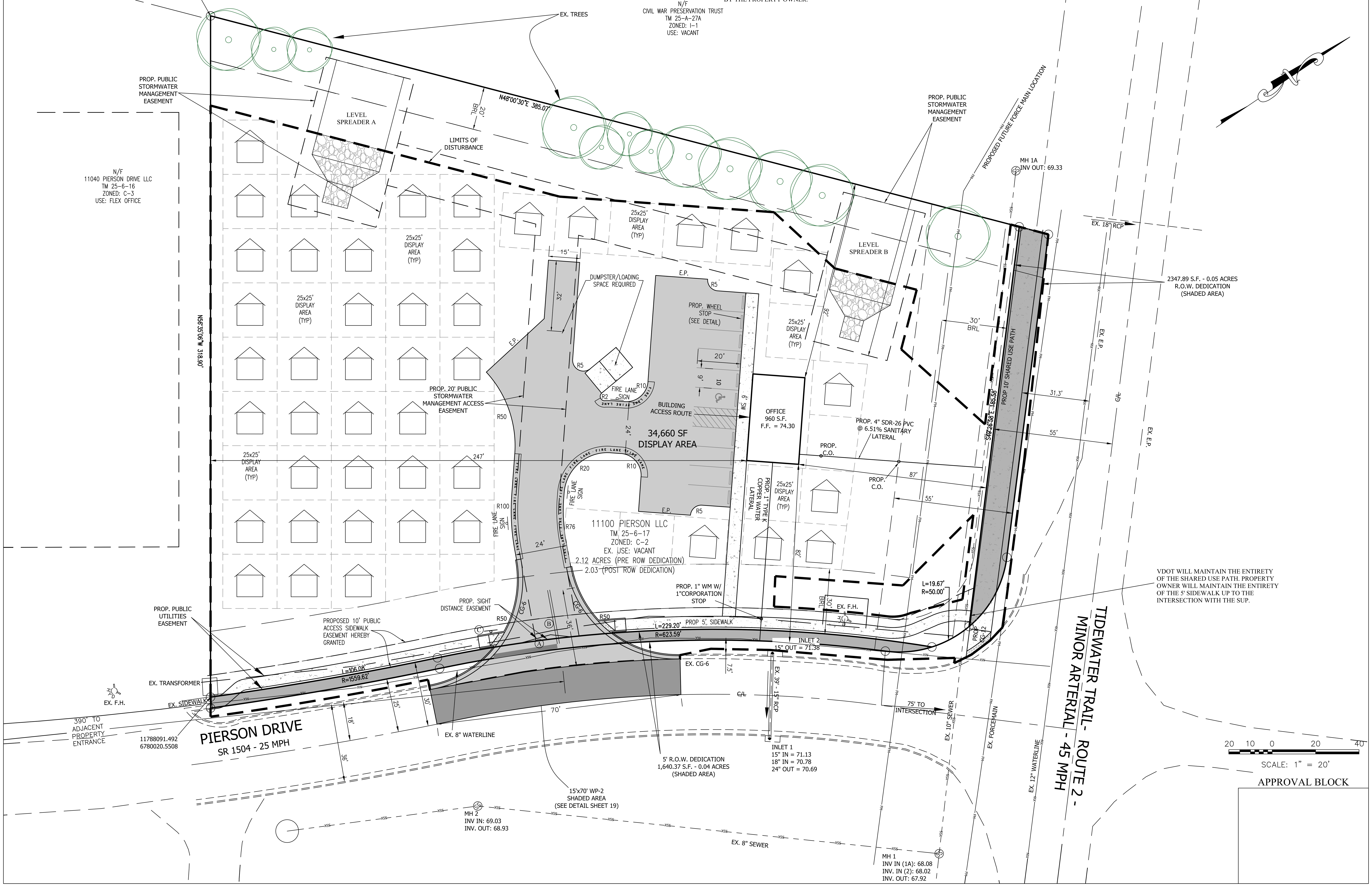
(A) TYPE B, CLASS I, WHITE, 24" WIDTH STOP BAR.

(B) TYPE B, CLASS I, YELLOW, 4" WIDTH, DOUBLE LINE, SEPARATED BY A 4" SPACE.

(C) STOP SIGN

NOTES

- SEE PAVEMENT DETAIL ON SHEET 10 FOR ENTRANCE PAVEMENT CONSTRUCTION
- KNOX BOX REQUIRED AT FRONT DOOR OF OFFICE. CONTACT FIRE MARSHAL FOR FURTHER INFORMATION PRIOR TO INSTALLING.
- 12'x12' GRAVEL PAD TO BE PLACED UNDER EACH SHED DISPLAY AREA.
- SIDEWALK TO BE MAINTAINED BY PROPERTY OWNER.
- VDOT SUP MAINTENANCE WILL EXTEND TO THE CG-12 ALONG PIERSON. THE ENTIRETY OF THE 5' SIDEWALK ALONG PIERSON WILL BE MAINTAINED BY THE PROPERTY OWNER.



SCALE: 1" = 20'

APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BAGBY, FOROUGHI and GOODPASTURE, PLLC
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125 OLDE GREENWICH DRIVE, SUITE 115
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

LAYOUT PLAN

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT

SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	1" = 20'
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
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PLAN NO.	ST23-0006

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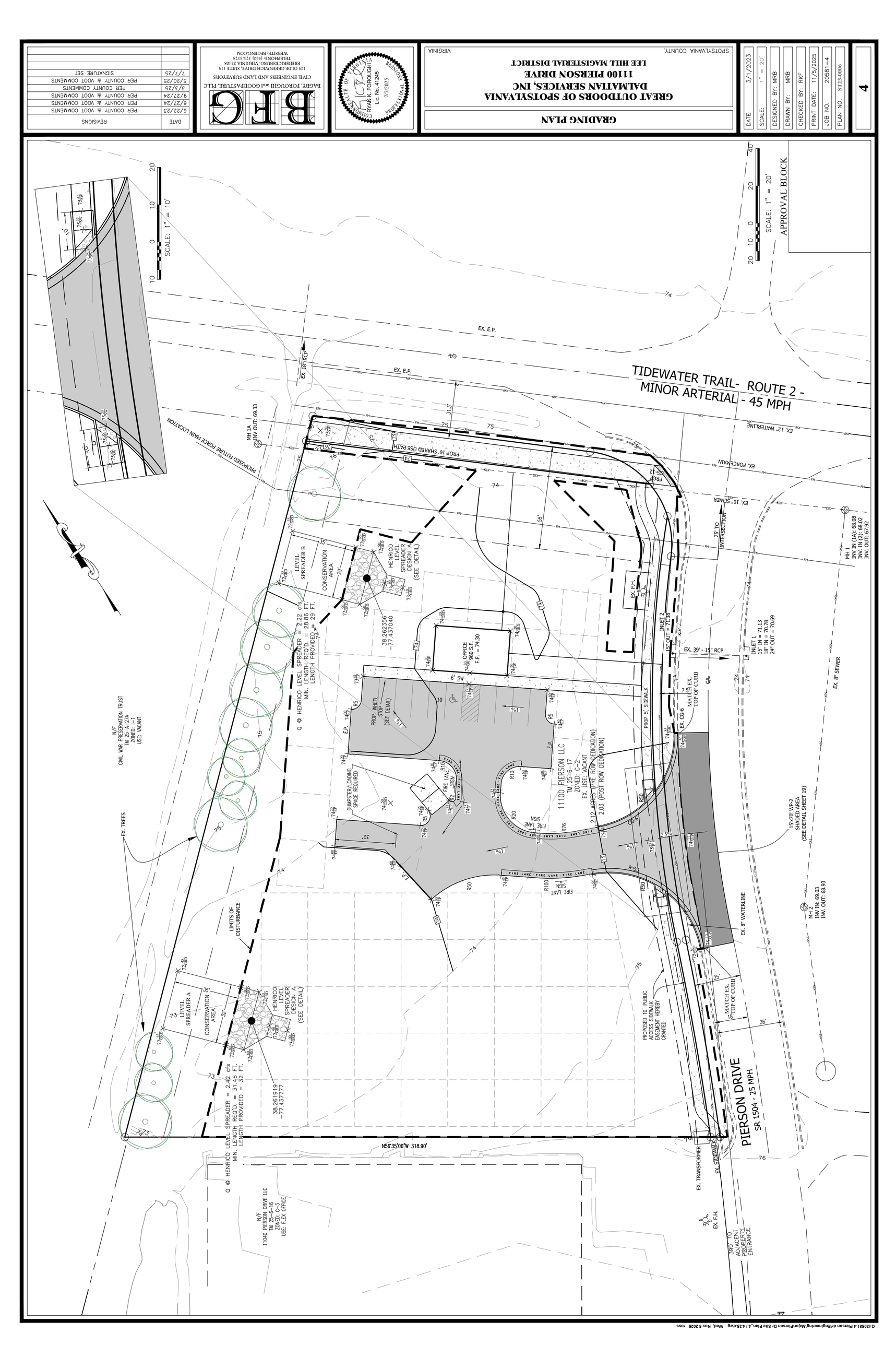
GRADING PLAN
GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA
DATE: 3/1/2023
SCALE: 1" = 20'
DESIGNED BY: MRB
DRAWN BY: MRB
CHECKED BY: RKF
PRINT DATE: 11/5/2025
JOB NO. 20581-4
PLAN NO. ST23-0006
4
RYAN K. POROUGH
Lic. No. 41245
7/7/2025
BAGBY, HOROUGH and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22405
TELEPHONE: (540) 373-5178
WEBSITE: BGENG.COM
DATE REVISIONS
6/22/23 PER COUNTY & VDOT COMMENTS
6/27/24 PER COUNTY & VDOT COMMENTS
9/27/24 PER COUNTY & VDOT COMMENTS
5/3/25 PER COUNTY COMMENTS
5/20/25 PER COUNTY & VDOT COMMENTS
7/7/25 SIGNATURE SET
APPROVAL BLOCK
SCALE: 1" = 10'
SCALE: 1" = 20'
TIDEWATER TRAIL- ROUTE 2 -
MINOR ARTERIAL - 45 MPH
PIERSON DRIVE
SR 1504 - 25 MPH
11100 PIERSON LLC
TM 25-6-17
ZONED: I-1
EX. USE: VACANT
2.12 ACRES (TYPE ROW DEDICATION)
2.03 (POST ROW DEDICATION)
N/F
CIVIL WAR PRESERVATION TRUST
TM 25-A-27A
ZONED: I-1
USE: VACANT
N/F
11040 PIERSON DRIVE LLC
TM 25-A-16
ZONED: C-3
USE: FLEX OFFICE
PROPOSED FUTURE FORCE MAIN LOCATION
EX. E.P.
EX. 18" RCP
EX. 12" WATERLINE
EX. FORCE MAIN
EX. 10" SEWER
EX. 8" SEWER
EX. 8" WATERLINE
EX. 39' - 15" RCP
EX. TREES
EX. TRANSFORMER
EX. SIDEWALK
EX. F.H.
PROP 10' SHARED USE PATH
PROP. 5' SIDEWALK
6' SW
PROP. WHEEL STOP (SEE DETAIL)
DUMPSTER/LOADING SPACE REQUIRED
FIRE LANE SIGN
FIRE LANE
LIMITS OF DISTURBANCE
LEVEL SPREADER A
LEVEL SPREADER B
CONSERVATION AREA
HENRICO LEVEL SPREADER DESIGN A (SEE DETAIL)
Q @ HENRICO LEVEL SPREADER = 2.22 cfs
MIN. LENGTH REQ'D. = 28.86 FT.
LENGTH PROVIDED = 29 FT.
Q @ HENRICO LEVEL SPREADER = 2.42 cfs
MIN. LENGTH REQ'D. = 31.46 FT.
LENGTH PROVIDED = 32 FT.
38.262356
-77.437040
38.261919
-77.437777
OFFICE
960 S.F.
F.F. = 74.30
INLET 2
15" OUT = 71.38
INLET 1
15" IN = 71.13
18" IN = 70.78
24" OUT = 70.69
MH 1
INV IN (1A): 68.08
INV. IN (2): 68.02
INV. OUT: 67.92
MH 1A
INV OUT: 69.33
MH 2
INV IN: 69.03
INV. OUT: 68.93
MATCH EX. TOP OF CURB
15'X70' WP-2 SHADED AREA (SEE DETAIL SHEET 19)
PROPOSED 10' PUBLIC ACCESS SIDEWALK EASEMENT HEREBY GRANTED
75' TO INTERSECTION
390' TO ADJACENT PROPERTY ENTRANCE
N56°35'06"W 318.90'
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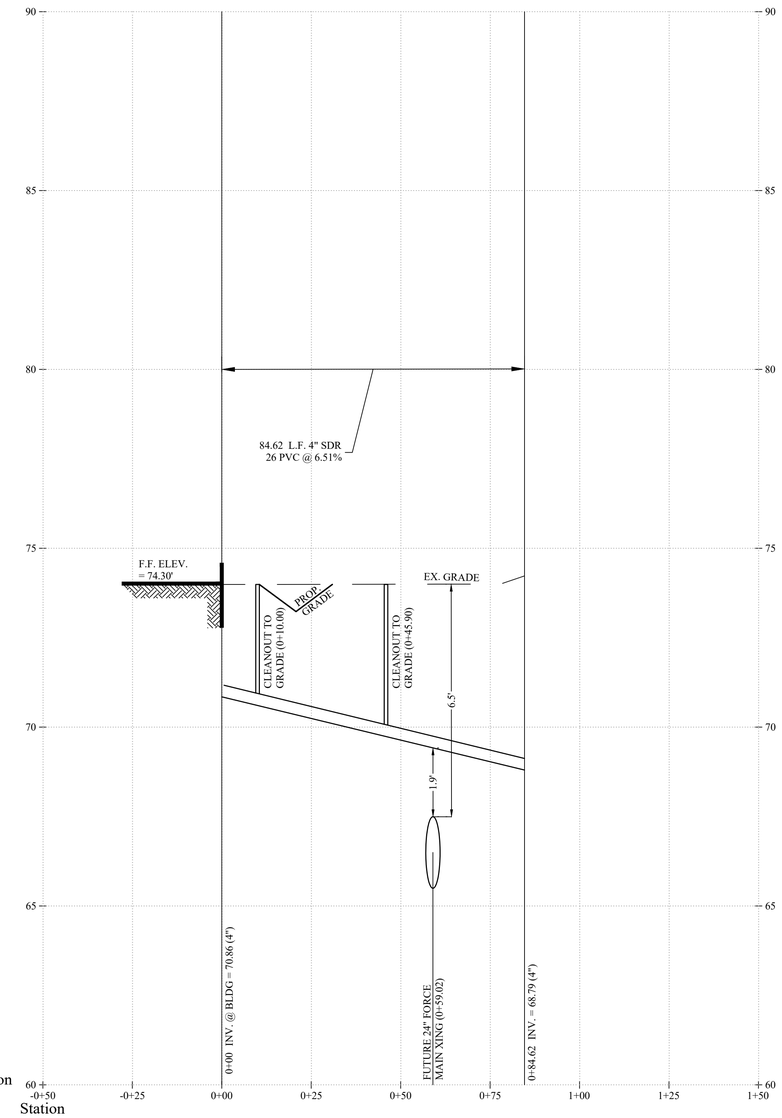
WATER LATERAL

SANITARY SEWER LATERAL



20 10 0 20 40

SCALE: 1" = 20'

APPROVAL BLOCK

REVISIONS	
DATE	
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6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BAGBY, FOROUGH and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
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TELEPHONE: (540) 373-5178
WEBSITE: BFGENG.COM

COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

UTILITY PROFILES

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

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NOTE

- REQUEST VARIANCE TO UTILIZE SUPER SILT FENCE AS AN EROSION CONTROL MEASURE (ESC) FOR THIS PROJECT. APPROVAL OF THE SITE PLAN CONSTITUTES APPROVAL OF THE REQUESTED VARIANCE.

EROSION CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
3.05	SILT FENCE	SF	
3.05	SUPER SILT FENCE	SSF	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	
3.12	DIVERSION DIKE	DD	
3.20	CHECK DAM	CD	
3.07	INLET PROTECTION	IP	
3.35	MULCHING	MU	

N/F
11040 PIERSON DRIVE LLC
TM 25-6-16
ZONED: C-3
USE: FLEX OFFICE

N/F
CIVIL WAR PRESERVATION TRUST
TM 25-A-27A
ZONED: I-1
USE: VACANT

EX. TREES

N48°01'50"E 398.94'

N55°35'06"W 316.80'

11100 PIERSON LLC
TM 25-6-17
ZONED: C-2
EX. USE: VACANT
2.12 ACRES (PRE ROW DEDICATION)
2.03 (POST ROW DEDICATION)

DRAINAGE DIVIDE

LIMITS OF DISTURBANCE

30'X30' STOCK PILE AREA IF NECESSARY

PROPOSED FUTURE FORCE MAIN LOCATION

MH 1A
INV OUT: 69.33

EX. 18" RCP

EX. TRANSFORMER

EX. F.H.

EX. SIDEWALK

L=107.11'
R=564.60'

EX. CG-6

L=206.48'
R=616.59'

L=78.54'
R=50.00'

S49°16'09"E 150.00'

EX. F.H.

EX. F.H.

EX. 8" WATERLINE

EX. 10" SEWER

EX. FORCEMAIN

EX. 12" WATERLINE

EX. E.P.

PIERSON DRIVE
SR 1504 - 25 MPH

TIDEWATER TRAIL-
MINOR ARTERIAL - ROUTE 2 -
45 MPH

MH 2
INV IN: 69.03
INV. OUT: 68.93

EX. 8" SEWER

MH 1
INV IN (1A): 68.08
INV. IN (2): 68.02
INV. OUT: 67.92

SCALE: 1" = 20'

APPROVAL BLOCK

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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL PLAN - PHASE 1

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT

VIRGINIA
SPOTSYLVANIA COUNTY.

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NOTE

- REQUEST VARIANCE TO UTILIZE SUPER SILT FENCE AS AN EROSION CONTROL MEASURE (ESC) FOR THIS PROJECT. APPROVAL OF THE SITE PLAN CONSTITUTES APPROVAL OF THE REQUESTED VARIANCE.

EROSION CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
3.05	SILT FENCE	SF	
3.05	SUPER SILT FENCE	SSF	
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3.32	PERMANENT SEEDING	PS	
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	
3.12	DIVERSION DIKE	DD	
3.20	CHECK DAM	CD	
3.07	INLET PROTECTION	IP	
3.35	MULCHING	MU	

N/F
11040 PIERSON DRIVE LLC
TM 25-6-16
ZONED: C-3
USE: FLEX OFFICE

N/F
CIVIL WAR PRESERVATION TRUST
TM 25-A-27A
ZONED: I-1
USE: VACANT

EX. TREES

LEVEL SPREADERS SHALL NOT BE CONSTRUCTED UNTIL AFTER UPLAND LAND DISTURBANCE IS STABILIZED.

PROPOSED FUTURE FORCE MAIN LOCATION

MH 1A
INV OUT: 69.33

EX. 18" RCP

EX. E.P.

N36°35'50"W 318.90'

DRAINAGE DIVIDE

FIRE LANE - FIRE LANE - FIRE LANE

PROP. OFFICE BUILDING

11100 PIERSON LLC
TM. 25-6-17
ZONED: C-2
EX. USE: VACANT
2.12 ACRES (PRE ROW DEDICATION)
2.03 (POST ROW DEDICATION)

30'x30' STOCK PILE AREA IF NECESSARY

LIMITS OF DISTURBANCE

EX. F.H.

EX. TRANSFORMER

EX. SIDEWALK

EX. CG-6

C/L

PIERSON DRIVE
SR 1504 - 25 MPH

18'

25'

36'

EX. 8" WATERLINE

MH 2
INV IN: 69.03
INV. OUT: 68.93

EX. 8" SEWER

EX. 10" SEWER

EX. FORCEMAIN

EX. 12" WATERLINE

MH 1
INV IN (1A): 68.08
INV. IN (2): 68.02
INV. OUT: 67.92

TIDEWATER TRAIL - ROUTE 2 - MINOR ARTERIAL - 45 MPH

20 10 0 20 40
SCALE: 1" = 20'

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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL PLAN - PHASE 2

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT

VIRGINIA
SPOTSYLVANIA COUNTY.

DATE:	3/1/2023
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PROJECT NARRATIVE:

PROJECT DESCRIPTION

THIS PROJECT IS BEST SUMMARIZED AS A CONSTRUCTION PLAN FOR A SALES OFFICE FOR OUTDOOR SHED SALES AND SUPPORTING INFRASTRUCTURE. A SHED AND GARDEN DISPLAY AREA SHALL BE UTILIZED BUT WILL NOT RESULT IN ANY DISTURBANCE. DISPLAYS SHALL BE PLACED ON GRAVEL PADS ON EXISTING GRADE. WATER QUANTITY WILL BE HANDLED VIA TWO HENRICO LEVEL SPREADERS. WATER QUALITY IS SHOWN ON THE VRRM SPREADSHEET AND TP LOAD REDUCTION IS NOT REQUIRED FOR THIS LOT. THEREFORE THE PROJECT IS IN COMPLIANCE WITH 9VAC25-875-600. APPROXIMATELY 1.77-AC. WILL BE DISTURBED AS A RESULT OF CONSTRUCTION.

EXISTING SITE CONDITIONS

THE MAJORITY OF THE SITE IS COVERED IN PERVIOUS TURF SURFACES. THE TOPOGRAPHY ON THIS SITE RANGES IN ELEVATION FROM 77 FEET TO 73 FEET ABOVE SEA LEVEL. THE MAJORITY OF THE SITE DRAINS TO THE NORTH WEST PROPERTY LINE AND WILL ENTER AN EXISTING SWALE.

ADJACENT PROPERTIES

TIDEWATER TRAIL BOUNDS THE SUBJECT PROPERTY TO THE NORTH EAST. PIERSON DRIVE BOUNDS THE PROPERTY TO THE SOUTH EAST. A CIVIL WAR PRESERVATION TRUST BOUNDS THE SUBJECT PROPERTY TO THE NORTH WEST. AN EXISTING INDUSTRIAL BUILDING IS LOCATED ON THE PROPERTY TO THE SOUTH WEST. ACCESS TO THE SUBJECT PROPERTY WILL UTILIZE A PROPOSED ENTRANCE OFF PIERSON DRIVE. THERE ARE NO ENVIRONMENTALLY SENSITIVE AREAS LOCATED ON SITE.

OFFSITE AREAS

NO OFF-SITE GRADING IS NOT REQUIRED IN THE DEVELOPMENT OF THESE PLANS. TOPSOIL SHALL BE STRIPPED FROM GRADED AREAS AND STOCKPILED ON-SITE AS REQUIRED FOR USE IN FINAL GRADING AND PERMANENT STABILIZATION. STOCKPILE SHALL BE LOCATED SO THAT ANY SOIL LOSS DUE TO EROSION SHALL BE CAPTURED BY THE E&S DEVICES SHOWN. STOCKPILES SHALL BE STABILIZED WITH TEMPORARY VEGETATION TO PREVENT SOIL LOSS AND SEDIMENT TRANSPORT FROM THE STOCKPILE UNTIL NEEDED. IT IS THE INTENT OF THE GRADING TO BALANCE THE EARTHWORK ON-SITE. IN THE EVENT THAT BORROW OR SPOIL IS IS REQUIRED, SAID AREAS SHALL HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE ONSITE STOCKPILE AREA IS SURROUNDED BY SILT FENCE .

CRITICAL EROSION AREAS

THERE ARE CRITICAL AREAS ON THE WEST OF THE SITE. HOWEVER, THEY ARE OUTSIDE ANY PROPOSED CONSTRUCTION OR DEVELOPMENT ACTIVITY ASSOCIATED WITH THIS PROJECT.

STRUCTURAL PRACTICES

TEMPORARY CONSTRUCTION ENTRANCE - 3.02 THE EXISTING ENTRANCE OFF OF GARRISONVILLE ROAD, WHICH IS CURRENTLY UTILIZED BY THE SITE, WILL SERVE AS A TEMPORARY CONSTRUCTION ENTRANCE. DURING MUDDY CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE ENTERING THE ROAD. (MS-17)

SILT FENCE BARRIER - 3.05 SILT FENCE AND SUPER SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWNSLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW AS INDICATED ON THE SITE PLAN.

STORM INLET PROTECTION - 3.07 TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

DIVERSION DIKE - 3.12 TO REDUCE SLOPE LENGTH AND TO INTERCEPT AND DIVERT STORMEWATER RUNOFF TO STABILIZED OUTLETS AT NON EROSIVE VELOCITIES.

CHECK DAM - 3.20 REDUCE VELOCITY OF CONCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH.

TEMPORARY SEEDING - 3.31 TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING DISTUBRED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOF OF MORE THAN 14 DAYS.

PERMANENT SEEDING - 3.32 TO ESTABLISH PERMANENT PERENNIAL VEGETATIVE COVER TO REDUCE EROSION BY PLANTING SEEDING. ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT-LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER INLETS. (MS-6)

MULCH - 3.35 TO PREVENT EROSION BY PROTECTING THE SPIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW.

DUST CONTROL - 3.39 REDUCING SURFACE AND AIR MOVEMENT DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES.

SOILS

SOILS MAP PROVIDED ON SHEET 13.

MINIMUM STANDARDS

FOR EVERY MEASURE EMPLOYED TO SATISFY EACH OF THE NINETEEN MINIMUM STANDARDS APPLICABLE TO THIS DEVELOPMENT, THE NUMBER FOR THE PARTICULAR STANDARD BEING SATISFIED HAS BEEN PLACED IN PARENTHESES NEXT TO THE CORRESPONDING MEASURE. STORM SEWER COMPUTATIONS AND CHANNEL COMPUTATIONS HAVE BEEN PROVIDED WITHIN THE PLAN. THE FOLLOWING MINIMUM STANDARDS DO NOT APPLY TO THIS DEVELOPMENT: MS-5, MS-8, MS-9, MS-12, MS-13, MS-14, AND MS-15.

EMBANKMENT FILL MATERIAL

THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED BORROW AREAS. IT SHALL BE CLEAN MINERAL SOIL, FREE OF ROOTS, WOODY VEGETATION, STUMPS, SOD, OVERSIZED STONES, ROCKS, OR OTHER PERISHABLE OR OBJECTIONABLE MATERIAL. FILL CONTAINING PARTICLES RANGING FROM SMALL GRAVEL OR COARSE SAND TO FINE SAND AND CLAY IN DESIRED PROPORTION IS APPROPRIATE. ANY EMBANKMENT MATERIAL SHOULD CONTAIN APPROXIMATELY 20% CLAY PARTICLES BY WEIGHT. USING THE UNIFIED SOIL CLASSIFICATION SYSTEM, SC (CLAYEY SAND), GC (CLAYEY GRAVEL) AND CL ("LOW LIQUID LIMIT" CLAY) ARE AMONG THE PREFERRED TYPES OF EMBANKMENT SOILS. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. THE FILL MATERIAL SHOULD CONTAIN PROPER AMOUNT OF MOISTURE TO ENSURE THAT 95% COMPACTION WILL BE ACHIEVED. FILL MATERIAL WILL BE PLACED IN 6-INCH CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF THE FILL. COMPACTION SHALL BE OBTAINED BY ROUTING THE HAULING EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF THE FILL IS TRANSFERRED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT, OR BY USING A COMPACTOR.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

NO DISTURBED AREAS SHALL BE DENUDED FOR MORE THAN SEVEN (7) DAYS, EXCEPT FOR THAT PORTION OF THE SITE IN WHICH WORK WILL BE CONTINUOUS BEYOND SEVEN (7) DAYS. SILT FENCE BARRIERS AND ALL OTHER PERIMETER CONTROL MEASURES, AS INDICATED ON THE PLANS SHALL BE PLACED IN CONJUNCTION WITH CLEARING AND PRIOR TO ROUGH GRADING. (MS-1)

ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN SEVEN (7) DAYS SHALL BE SEEDED AND MULCHED FOR TEMPORARY VEGETATION. WHEN NECESSARY TO DE-WATER A TRENCH, THE PUMP DISCHARGE HOSE SHALL BE OUTLETTED INTO A STABILIZED AREA OR SEDIMENT TRAPPING STRUCTURE. (MS-1, MS-2)

THE CONTRACTOR SHALL MAKE PROVISIONS FOR DUST CONTROL DURING CONSTRUCTION ACTIVITIES. ACCEPTABLE MEASURES FOR DUST CONTROL INCLUDE TEMPORARY VEGETATIVE COVER, MULCHING, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE, BARRIERS, AND CALCIUM CHLORIDE. PLEASE SEE STD & SPEC 3.39 OF THE VESCH FOR A DESCRIPTION OF EACH METHOD, AND HOW IT IS USED MOST EFFECTIVELY.

VEGETATIVE PRACTICES

1. TOPSOIL (STOCKPILES)-3.30
TOPSOIL SHALL BE STRIPPED FROM GRADED AREAS AND STOCKPILED ON SITE FOR LATER USE AS REQUIRED. WHERE NECESSARY, TOPSOIL SHALL BE REAPPLIED AT A COMPACTED DEPTH OF 2"-4"(A DEPTH CLOSER TO 4" IS PREFERED). STOCKPILES SHALL BE STABILIZED WITH TEMPORARY VEGETATION AND LOCATED SUCH THAT ANY SOIL LOSS DUE TO EROSION IS CAPTURED BY E&S DEVICES SHOWN ON THIS PLAN. SIDE SLOPES SHALL NOT EXCEED 2:1, PERIMETER CONTROLS (SILT FENCE) MUST BE PLACED AROUND THE STOCKPILE IMMEDIATELY; SEEDING OF STOCKPILE SHALL BE COMPLETED WITHIN 7 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH STD.&SPEC. 3.31, TEMPORARY SEEDING IF IT IS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS. (REFER TO MS#1 & MS#2).

2. TEMPORARY SEEDING-3.31:
TEMPORARY SEEDING SHALL BE PROVIDED FOR ALL DENUDED AREAS WHICH ARE TO BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME. DENUDED AREAS SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED. CONTRACTOR SHALL PERFORM SOILS TESTS TO DETERMINE PROPER LIMING AND FERTILIZATION REQUIREMENTS.

3. PERMANENT SEEDING-3.32:
AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING AFTER REACHING FINAL GRADE. SEED, FERTILIZER AND LIME SHALL BE APPLIED AS SPECIFIED IN THE VESCH. DURING SEEDING OPERATIONS, EROSION CONTROL BLANKETS AND MULCH SHALL BE USED TO HELP PREVENT EROSION AND ALLOW SEED TO GERMINATE PROPERLY. CONTRACTOR SHALL PERFORM SOILS TESTS TO DETERMINE PROPER LIMING AND FERTILIZATION REQUIREMENTS.

4. EROSION CONTROL BLANKETS-3.32 AND MULCH-3.35:
EROSION CONTROL BLANKETS SHALL BE INSTALLED AS REQUIRED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) SHALL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN THE SEEDING OPERATION. SOME MULCH REQUIREMENTS DIFFER FOR THE SUMMER AND WINTER PERIODS.

5. SODDING - 3.33:
STABILIZING FINE GRADED AREAS BY ESTABLISHING PERMANENT GRASS STANDS WITH SOD. PROVIDES IMMEDIATE PROTECTION AGAINST EROSION AND IS ESPECIALLY EFFECTIVE IN GRASSED SWALES AND WATERWAYS OR IN AREAS WHERE IMMEDIATE AESTHETIC EFFECT IS DESIRABLE.

SEEDING SPECIFICATIONS

TEMPORARY SEEDING SPECIFICATION: 3.31 - ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS (THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN A PERIOD OF MORE THAN 30 DAYS) BY SEEDING AND MULCHING WITH FAST GERMINATING TEMPORARY VEGETATION. (MS-1)

PLANT SELECTION - SELECT PLANTS APPROPRIATE TO THE SEASON AND SITE CONDITIONS FROM TABLES 3.31-B AND 3.31-C IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). SEE SHEET 58A FOR DETAILS.

LIMING - A SOILS TEST SHALL BE REQUIRED TO DETERMINE SITE SPECIFIC LIMING APPLICATIONS.

FERTILIZER - A SOILS TEST SHALL BE REQUIRED TO DETERMINE SITE SPECIFIC FERTILIZER APPLICATIONS.

SURFACE ROUGHENING - IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE SHALL BE LOOSENED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS (SEE SURFACE ROUGHENING, STD. & SPEC. 3.29 VESCH).

SEEDING - SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" SOIL COVER.

MULCHING - SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED ACCORDING TO MULCHING, STD. & SPEC. 3.35 VESCH, EXCEPT THAT HYDROMULCHES (FIBER MULCH) WILL NOT BE CONSIDERED ADEQUATE. STRAW MULCH SHOULD BE USED DURING THESE PERIODS. TEMPORARY SEEDINGS MADE ON FAVORABLE SOIL AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

RE-SEEDING - AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.

PERMANENT SEEDING SPECIFICATION: 3.32 - ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON ROUGH GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL. THE PROJECT SITE IS IN THE COASTAL PLAIN REGION OF SPOTSYLVANIA COUNTY THEREFORE PLANT MATERIALS SHOULD BE SELECTED SPECIFICALLY FOR THIS REGION. (MS-3)

PLANT SELECTION - SELECT PLANT MATERIALS BASED ON CLIMATE, TOPOGRAPHY, SOILS, LAND USE, AND PLANTING SEASON. USE TABLES 3.32-A AND 3.32-B IN THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK (VESCH) TO SELECT WHICH PLANT CHARACTERISTICS AND VARIETIES WOULD BE BEST SUITED FOR THE PROJECT SITE. APPROPRIATE SEEDING MIXTURES FOR VARIOUS SITE CONDITIONS ARE PROVIDED ON TABLES 3.32-C, 3.32-D, AND 3.32-E IN VESCH.

SEEDBED REQUIREMENTS - VEGETATION SHOULD NOT BE ESTABLISHED ON SLOPES THAT ARE UNSUITABLE DUE TO INAPPROPRIATE SOIL TEXTURE, POOR INTERNAL STRUCTURE OR INTERNAL DRAINAGE, VOLUME OF OVERLAND FLOW, OR EXCESSIVE STEEPNESS, UNTIL MEASURES HAVE BEEN TAKEN TO CORRECT THESE PROBLEMS (SEE STD. & SPEC. 3.32 FOR THESE REQUIREMENTS).

SOIL CONDITIONERS - IF REQUIRED, THE FOLLOWING MATERIALS MAY BE ADDED TO THE SOIL TO IMPROVE THE STRUCTURE, TEXTURE, OR DRAINAGE CHARACTERISTICS OF THE SOIL: PEAT, SAND, VERMICULITE, RAW MANURE, ROTTED SAWDUST, TREATED SEWAGE SLUDGE. A DESCRIPTION OF THESE MATERIALS AND APPLICATIONS CAN BE FOUND IN STD. & SPEC. 3.32 VESCH.

LIMING & FERTILIZER- SOIL TESTS SHALL BE CONDUCTED TO DETERMINE LIME AND FERTILIZER NEEDS. SOIL TESTS MAY BE PERFORMED BY THE COOPERATIVE EXTENSION SERVICE SOIL TESTING LABORATORY AT VPI&SU OR BY ANOTHER REPUTABLE COMMERCIAL LABORATORY.

INCORPORATION - LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4- 6 INCHES OF THE SOIL BY DISCING OR OTHER MEANS WHEREVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDROSEEDER, APPLY TO A ROUGH, LOOSE SURFACE.
SEEDING - CERTIFIED SEED WILL BE USED FOR ALL PERMANENT SEEDING. THE SEED MUST MEET PUBLISHED STATE STANDARDS AND BEAR AN OFFICIAL "CERTIFIED SEED" LABEL. LEGUME SEED SHOULD BE APPROPRIATELY INOCULATED TO THE SPECIES. SEED OF LESPEDEZAS, THE CLOVERS AND CROWNVETCH SHOULD BE SCARIFIED TO PROMOTE UNIFORM GERMINATION. APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, CULTI-PACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED. SEEDING DEPTH SHOULD BE 1/4 TO 1/2 INCH.
HYDROSEEDING SPECIAL REQUIREMENTS - TO AVOID POOR GERMINATION RATES AS A RESULT OF SEED DAMAGE DURING HYROSEEDING, IT IS RECOMMENDED THAT IF A MACHINERY BREAKDOWN OF 30 MINUTES TO 2 HOURS OCCURS, 50% MORE SEED SHOULD BE ADDED TO THE TANK, BASED ON PROPORTIONS OF THE SLURRY REMAINING IN THE TANK. BEYOND 2 HOURS A BATCH OF NEW SEED MAY BE NECESSARY. IN INACCESSIBLE AREAS, LIME MAY HAVE TO BE APPLIED SEPARATELY IN PELLETIZED OR LIQUID FORM. SURFACE ROUGHENING IS PARTICULARLY IMPORTANT WHEN HYDROSEEDING BECAUSE A ROUGHENED SLOPE WILL PROVIDE SOME NATURAL COVERAGE OF LIME, FERTILIZER, AND SEED. LEGUME INOCULANTS SHOULD BE APPLIED AT FIVE TIMES THE RECOMMENDED RATE WHEN INOCULANT IS INCLUDED IN THE HYDROSEEDER SLURRY.
MULCHING - ALL PERMANENT SEEDING MUST BE MULCHED IMMEDIATELY UPON COMPLETION OF SEED APPLICATION (SEE MULCHING STD. & SPEC. 3.35 VESCH). IRRIGATION - NEW SEEDINGS SHOULD BE SUPPLIED WITH ADEQUATE MOISTURE.
RE-SEEDING - INSPECT SEEDED AREAS FOR LACK OF GERMINATION AND MAKE NECESSARY REPAIRS AND RE-SEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.
MAINTENANCE FERTILIZATION - COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING. SEE STD. & SPEC. 3.32 VESCH FOR PROPER MAINTENANCE FERTILIZATION BASED ON SITE CONDITIONS.
SODDING: 3.33 - STABILIZING FINE GRADED AREAS BY ESTABLISHING PERMANENT GRASS STANDS WITH SOD PROVIDES IMMEDIATE PROTECTION AGAINST EROSION AND IS ESPECIALLY EFFECTIVE IN GRASSED SWALES AND WATERWAYS OR IN AREAS WHERE IMMEDIATE AESTHETIC EFFECT IS DESIRABLE.
MULCHING: 3.35 - APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO DISTURBED SURFACES TO PREVENT EROSION AND REDUCE OVERLAND FLOW VELOCITIES FOSTER PLANT GROWTH BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT OR COLD. APPLICABLE TO ALL SEEDING OPERATIONS, OTHER PLANT MATERIALS WHICH DO NOT PROVIDE ADEQUATE SOIL PROTECTION BY THEMSELVES, AND BARE AREAS WHICH CANNOT BE SEEDED DUE TO THE SEASON BUT WHICH STILL NEED SOIL PROTECTION.

NOTE:

1. PERMANENT SEEDING SHALL BE PLACED ON ALL CUT/FILL SLOPES ADJACENT TO THE LIMITS OF CLEARING AND TEMPORARY SEEDING SHALL BE PLACED ON ALL AREAS THAT WILL BE DENUDED FOR MORE THAN 7 DAYS, EXCEPT FOR THAT PORTION IN WHICH WORK WILL BE CONTINUOUS BEYOND 7 DAYS.

2. PER VESCH STD. 3.30, PLANTING SOIL MUST HAVE ENOUGH FINES, SUFFICIENT PORE SPACE, DEPTH, AND FREE OF DELETERIOUS MATERIALS TO PROMOTE GROWTH.

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EROSION & SEDIMENT CONTROL BOND

GREAT OUTDOORS OF SPOTSYLVANIA - SP23-0006

STRUCTURAL PRACTICES

DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
DIVERSION DIKE	L.F.	$7.00	715	$5,005.00
SILT FENCE (0'-1,000')	L.F.	$8.00	745	$5,960.00
SUPER SILT FENCE (0'-1,000')	L.F.	$20.00	100	$2,000.00
TOPSOIL, SEED, FERTILIZER & MULCH	AC.	$1,500.00	1.38	$2,070.00
INLET PROTECTION	EA	$190.00	2	$380.00
ROCK CHECK DAMS	EA	$250.00	2	$500.00
CONSTRUCTION ENTRANCE	EA	$2,300.00	1	$2,300.00
WASH RACK	EA	$2,000.00	1	$2,000.00
LEVEL SPREADER	EA	$2,500.00	2	$5,000.00
MOBILIZATION	L.S.	$10,000.00	1	$10,000.00
DUST CONTROL	L.S.	$5,000.00	1	$5,000.00
25% MAINTENANCE/ADMINISTRATIVE FEE				$10,053.75
TOTAL COST				$50,268.75

CONSTRUCTION SEQUENCING

PHASE 1

1. IT IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO SETUP A PRE-CONSTRUCTION MEETING WITH THE E&S INSPECTOR AND ANY OTHER APPLICABLE AGENCIES.
2. INSTALL CONSTRUCTION ENTRANCE.
3. INSTALL PERIMETER CONTROLS.
4. GRADING OPERATIONS SHALL NOT BE PERMITTED UNTIL ALL PERIMETER CONTROLS ARE IN-PLACE AND STABILIZED AND APPROVAL IS GIVEN BY COUNTY INSPECTOR.
5. STRIP TOPSOIL GRUB AS NECESSARY AND STOCKPILE TOPSOIL.

PHASE 2

6. ROUGH GRADE REMAINING PORTION OF THE SITE. FIELD ADJUSTMENTS SHALL BE MADE TO PERIMETER CONTROLS TO ACCOMMODATE CHANGING DRAINAGE PATTERNS AND TO FACILITATE POSITIVE DRAINAGE TO EROSION CONTROLS.
7. INSTALL UTILITIES.
8. CONSTRUCT BUILDING.
9. INSTALL PAVEMENT ELEMENTS.
10. STABILIZE THE REMAINDER OF THE DISTURBED AREA WITH PERMANENT SEEDING (MS-3).
11. UPON ESTABLISHMENT OF PERMANENT VEGETATION, INSTALL POLE TENT.
12. START RE-VEGETATION AS AREAS ARE BROUGHT TO GRADE OR STAND IDLE FOR MORE THAN SEVEN DAYS.
13. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30-DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, WITH PERMISSION OF THE E&S INSPECTOR. (MS-18)

MAINTENANCE PROGRAM

DAILY SITE INSPECTION WILL BE REQUIRED AND DAMAGED CONTROLS REPAIRED BY CLOSE OF THAT DAY. INSPECTIONS SHALL ALSO FOLLOW EACH SIGNIFICANT RAINFALL. IN PARTICULAR THE FOLLOWING SHALL BE INSPECTED:

1. THE SEDIMENT BASINS AND TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT CLEANOUT.

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

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

4. THE SEEDED AREAS AND CUT AND FILL SLOPES WILL BE CHECKED REGULARLY TO INSURE THAT A GOOD STAND OF VEGETATION IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED. (MS-7)

SEDIMENT CONTROL NARRATIVE

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE STANDARDS AND SPECIFICATIONS OF THE 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), THIRD EDITION.

PERMANENT STABILIZATION:

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

WINTER STABILIZATION:

IF THE ENTIRE SITE WILL NOT BE PERMANENTLY STABILIZED BEFORE DECEMBER 1, THE RESPONSIBLE LAND DISTURBER SHALL CONTACT THE COUNTY EROSION AND SEDIMENT CONTROL STAFF TO SCHEDULE A PRE-WINTER MEETING TO OCCUR BEFORE OCTOBER 1."

SOILS:

A SUBSURFACE EXPLORATION REPORT HAS NOT BEEN PREPARED.

MANAGEMENT STRATEGIES

1. CONSTRUCTION SHOULD BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. SEDIMENT TRAPPING MEASURES SHALL BE INSTALLED AS A FIRST STEP IN GRADING.
3. TEMPORARY SEEDING OR OTHER STABILIZATION SHALL FOLLOW IMMEDIATELY AFTER GRADING.
4. AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
6. ALL CUT AND FILL SLOPES SHALL BE GRADED IN SUCH A MANNER AS TO MINIMIZE EROSION, THIS MAY INCLUDE SURFACE ROUGHENING (STD. & SPEC. 3.29) PRIOR TO VEGETATIVE STABILIZATION.
7. CARE SHOULD BE TAKEN TO ENSURE THAT CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
8. IF WATER IS FOUND SEEPING FROM A SLOPE FACE, ADEQUATE DRAINAGE OR PROTECTION SHALL BE PROVIDED PER THE VESCH.
9. UPON APPROVAL BY THE INSPECTOR EROSION OF TEMPORARY E&S DEVICES SHALL BE REMOVED AS CONSTRUCTION IS COMPLETED AND DENUDED AREAS ARE STABILIZED. AREAS DISTURBED BY REMOVAL OF TEMPORARY E&S DEVICES SHALL BE PERMANENTLY STABILIZED.

MAINTENANCE

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

1. EARTHEN BERMS SHALL BE CHECKED REGULARLY FOR EROSION OR DETERIORATION.
2. WATER SEEPAGE FROM ANY SLOPES WILL REQUIRE STABILIZATION AND ADEQUATE DRAINAGE PROTECTION.
3. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RE-SEEDED AS NEEDED.
4. SILT SHALL BE REMOVED FROM THE SEDIMENT TRAPPING MEASURES AS NEEDED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
5. ALL DAMAGED EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REPAIRED BY THE END OF THE DAY.
6. ALL STREETS SHALL BE KEPT IN A SAFE AND CLEAN CONDITION AT ALL TIMES.

STORMWATER RUNOFF, STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES

1. THE INCREASED RUNOFF OF THE PROPOSED DEVELOPMENT WILL BE HANDLED VIA SHEET FLOW TO TWO HENRICO LEVEL SPREADERS. DUE TO THE MINIMAL DISTURBANCE, NO STORMWATER MANAGEMENT IS REQUIRED.

LEVEL SPREADER CONSTRUCTION SEQUENCING:

The Conserved Open Space must be fully protected during the construction stage of development and kept outside the limits of disturbance on the Erosion and Sediment (E&S) Control Plan.

 No clearing, grading or heavy equipment access is allowed except temporary disturbances associated with incidental utility construction, restoration operations or management of nuisance vegetation.
 The perimeter of the Conserved Open Space shall be protected by super silt fence, chain link fence, orange safety fence, or other measures to prevent sediment discharge.
 The limits of disturbance should be clearly shown on all construction drawings and identified and protected in the field by acceptable signage, silt fence, snow fence or other protective barrier.
 Construction of the gravel diaphragm or engineered level spreader shall not commence until the contributing drainage area has been stabilized and perimeter E&S controls have been removed and cleaned out.
 Some light grading may be needed at the Filter Strip boundary; this should be done with tracked vehicles to prevent compaction.
 Stormwater should not be diverted into the Vegetated Filter Strip until the gravel diaphragm and/or level spreader are installed and stabilized.

EROSION AND SEDIMENT CONTROL NOTES:

1. THE OWNER/DEVELOPER MUST NOTIFY THE COUNTY ENGINEER AT 540-775-9181 AT LEAST 24 HOURS PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH APPLICABLE COUNTY ORDINANCES AND POLICIES.

2. THE OWNER/DEVELOPER GRANTS THE RIGHT-OF-ENTRY ON TO THIS PROPERTY TO THE DESIGNATED spotsylvania COUNTY PERSONNEL FOR THE PURPOSE OF INSPECTING AND MONITORING FOR COMPLIANCE WITH TITLE 10.01, CHAPTER 5, ARTICLE 4 OF THE CODE OF VIRGINIA, EROSION AND SEDIMENT CONTROL LAW AND THE DESIGN AND CONSTRUCTION STANDARDS MANUAL SECTION 750.04 (C).

3. ALL EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLAN MUST BE IN PLACE AND INSPECTED AND APPROVED BY THE COMMUNITY DEVELOPMENT DEPARTMENT PRIOR TO CLEARING, STRIPPING OF TOPSOIL OR GRADING.

4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE KEPT ON THE SITE AT ALL TIMES.

5. THE DEVELOPER/DEVELOPER'S REPRESENTATIVE IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY spotsylvania COUNTY.

6. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL COMPLETE AND ADEQUATE STABILIZATION IS ACHIEVED.

7. WATER MUST BE PUMPED INTO AN APPROVED FILTERING DEVICE DURING DEWATERING OPERATIONS.

8. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS AND TO THE SPOTSYLVANIA COUNTY REQUIREMENTS.

9. THE DEVELOPER/DEVELOPER'S REPRESENTATIVE WILL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES AT ALL TIMES.

   a. SEDIMENT TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT CLEANOUT. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN VOLUME OF THE WET STORAGE. SEDIMENT REMOVED FROM THE TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.

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

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

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

   e. STREAM DIVERSION AND STORM CONVEYANCE CHANNELS SHALL BE INSPECTED DAILY AND AFTER EACH RAIN TO ENSURE THEY'RE FUNCTIONING PROPERLY AND THAT THE INTEGRITY OF THE LININGS ARE NOT IMPAIRED.

   f. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES MUST BE MADE IMMEDIATELY AFTER THE INSPECTION.

10. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.

11. PERMANENT SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.

   a. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN FOURTEEN (14) DAYS.

   b. SEEDING AND SELECTION OF THE SEED MIXTURE SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK STANDARD AND SPECIFICATION 3.32. CONTRACTOR SHALL PERFORM SOILS TESTS TO DETERMINE PROPER LIMING AND FERTILIZATION REQUIREMENTS.

   c. ROADS AND PARKING AREAS SHALL BE STABILIZED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED.

12. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED WITHIN 30 DAYS AFTER ADEQUATE SITE STABILIZATION AND AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, AS AUTHORIZED BY THE KING GEORGE COUNTY INSPECTORS. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES WILL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION

13. WHEN SEDIMENT IS TRANSPORTED ONTO A PAVED ROAD SURFACE, THE ROAD WILL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT WILL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

14. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.

15. RPA AND FLOOD PLAIN LIMITS SHALL BE CLEARLY MARKED IN THE FIELD BY FLAGS, SIGNS, ETC.

16. ORANGE SAFETY FENCE MUST BE INSTALLED AROUND ALL SILT TRAPS.

17. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE NECESSARY TO BE INSTALLED UPON THE DISCRETION OF SPOTSYLVANIA COUNTY INSPECTORS DURING CONSTRUCTION.

18. ALL EROSION AND SEDIMENT CONTROL MEASURES ON PHASE I SHALL REMAIN THROUGH THE DURATION OF PHASE II CONSTRUCTION. SEDIMENT CONTROLLING DEVICES MAY BE MODIFIED WITH A LESSER CAPACITY AS GRADING PROGRESSES WITH THE SPOTSYLVANIA COUNTY INSPECTORS APPROVAL.

19. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WITH THE WRITTEN APPROVAL FROM SPOTSYLVANIA COUNTY INSPECTORS.

20 SEDIMENT BASINS AND TRAPS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN AS FOLLOWS: SEDIMENT TRAPS SHALL BE DESIGNED TO CONTROL DRAINAGE AREAS LESS THAN THREE ACRES AND HAVE A MINIMUM CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. SEDIMENT BASINS SHALL CONTROL DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES, HAVE A MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND HAVE AN OUTFALL SYSTEM CAPABLE OF WITHSTANDING THE FIVE YEAR 24-HOUR STORM.

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

21. 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.

22. 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 THE RECEIVING CHANNEL.

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

24. 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 NONERODIBLE MATERIAL SHALL BE PROVIDED.

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

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

27. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH. 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. ALL UTILITY INSTALLATION TRENCHES ARE TO BE COMPACTED, MULCHED AND SEEDED WITHIN SEVEN (7) DAYS AFTER BACKFILL.

29. ANY DISTURBED AREA NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST., OR DISTURBED AFTER THAT DATE SHALL BE TEMPORARILY SEEDED AND MULCHED IMMEDIATELY WITH HAY OR STRAW MULCH AT THE RATE OF TWO TONS PER ACRE AND OVER-SEEDED NO LATER THAN MARCH 15TH.

30. THE CONTRACTOR SHALL USE THE PROPER MIX OF SEED AND FERTILIZER THAT WILL ALLOW THE SEED TO GERMINATE IN ALL SOILS PRESENTLY ON SITE.

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

32. SEDIMENT TRAPS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING SHALL BE CONSTRUCTED WITHIN 20 FOOT OF A SEDIMENT TRAP. IF A BUILDING IS PROPOSED WITHIN THE 20 FOOT RADIUS OF A SEDIMENT TRAP CONSTRUCTION CAN NOT BEGIN UNTIL THE AREA GOING TO THE SEDIMENT TRAP MUST BE STABILIZED IN SUCH A WAY THAT THE SEDIMENT TRAP CAN BE REMOVED OR RESIZED. BEFORE REMOVAL OF A SEDIMENT TRAP A SEDIMENT CONTROL INSPECTOR MUST APPROVE FOR IT TO BE REMOVED.

33. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL STORM IS IN PLACE WITH INLET AND OUTLET PROTECTION IN PLACE.

34. IN-STREAM WORK SHOULD BE PERFORMED IN DRY CONDITIONS. IF UNABLE TO WORK IN DRY CONDITIONS UTILIZE A STREAM DIVERSION CHANNEL OR COFFERDAM CROSSING TO PROVIDE DRY CONDITIONS FOR CONDUCTING THE WORK. SEE STREAM DIVERSION CHANNEL AND/OR COFFERDAM CROSSING SPECIFICATION(S) IN VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

35. UNSTABLE STREAM BANKS SHOULD BE LINED WITH RIPRAP OR OTHERWISE APPROPRIATELY STABILIZED.

36. ALL STORM SEWER INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE STORMWATER CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED/TREATED TO REMOVE SEDIMENT. INLET PROTECTION SHALL BE INSTALLED IN ACCORDANCE WITH THE PHASE 2 EROSION AND SEDIMENT CONTROL PLAN.

37. SOILS TESTING REQUIRED FOR SITE SPECIFIC LIME AND FERTILIZER APPLICATION SHALL BE DELIVERED TO SITE CONTRACTOR AND INSPECTOR PRIOR TO FINAL STABILIZATION.

APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BFG
BAGBY, FOROUGHI and GOODPASTURE, PLLC
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125 OLDE GREENWICH DRIVE, SUITE 115
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

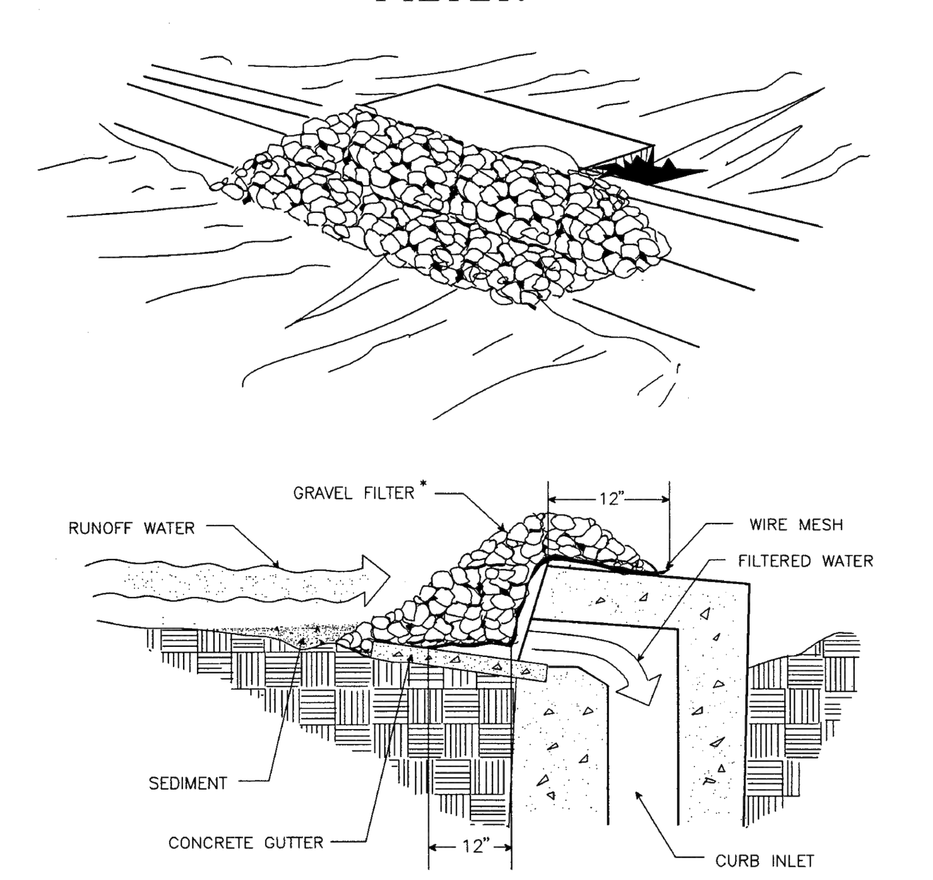
EROSION & SEDIMENT CONTROL NARRATIVE

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT

SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	NONE
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

GRAVEL CURB INLET SEDIMENT FILTER



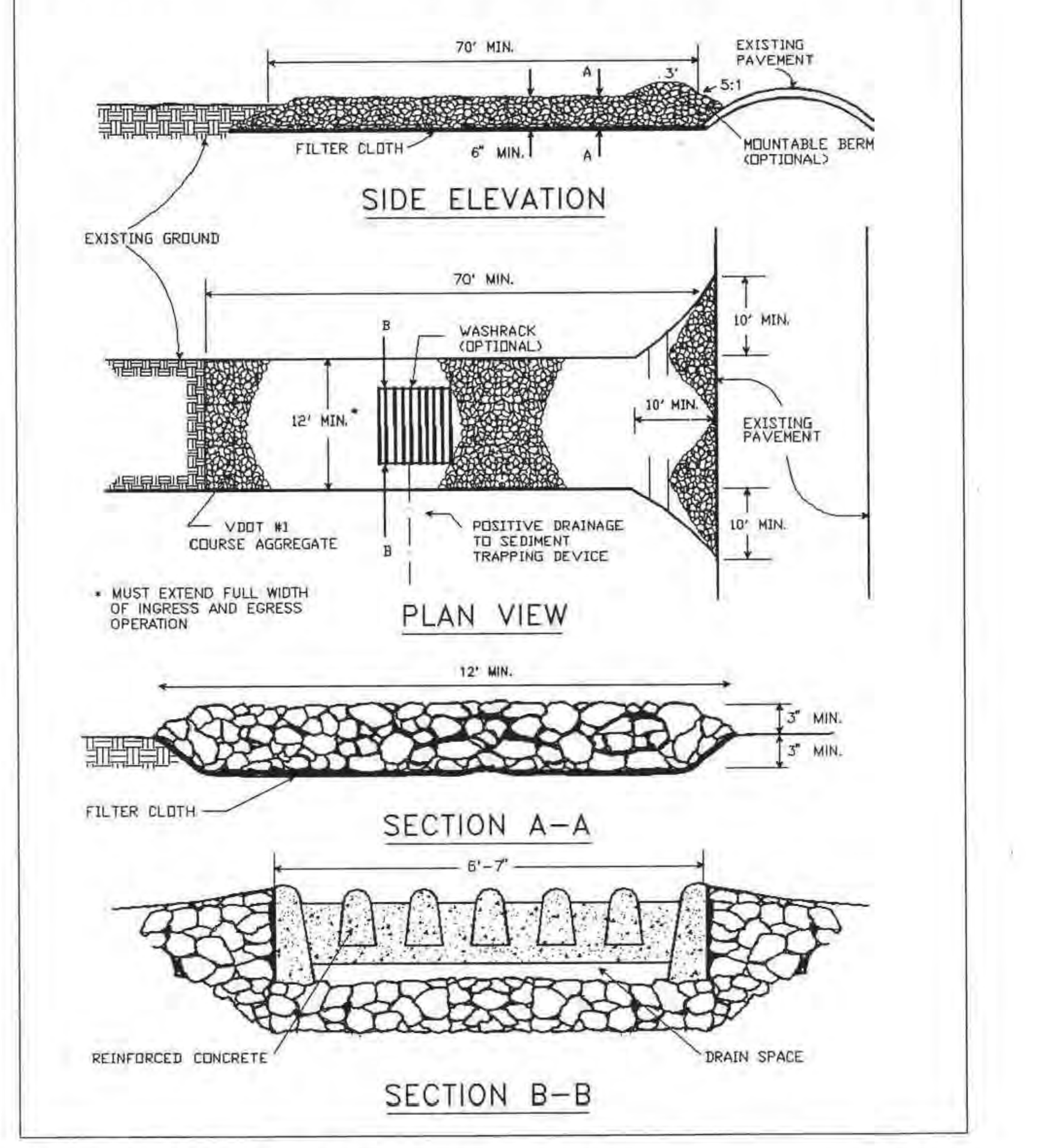
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

Source: Va. DSWC Plate 3.07-6

STONE CONSTRUCTION ENTRANCE



Source: Adapted from 1983 Maryland Standards for Soil Erosion and Sediment Control, and Va. DSWC Plate 3.02-1

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

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

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

~~...stitute Sericea lespedeza for Crownvetch east of Farmville ... (May through Septem... hulled Sericea, all other period... unhulled Sericea). If Flatpea is used in lieu of Crow... rate to 30 lbs./acre. All legume seed must be properly inocul... Weeping ... may be added to any slope or low-mainten... mix during warmer seeding periods, ... lbs./acre in mix...~~

TABLE 3.31-C

TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE		NORTH[a]			SOUTH[b]			PLANT CHARACTERISTICS
	Acre	1000 ft^2	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15	
OATS (Avena sativa)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-	Use spring varieties (e.g., Noble).
RYE[d] (Secale cereale)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (Setaria italica)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS[c] (Lolium multi-florum)	60 lbs.	1½ lbs.	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.
~~WEEPING LOVEGRASS (Eragrostis curvula)~~	~~15 lbs.~~	~~5½ ozs.~~	~~-~~	~~X~~	~~-~~	~~-~~	~~X~~	~~-~~	~~Warm-season ... Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.~~
~~KOREAN LESPEDEZA[c]~~	~~25 lbs.~~	~~approx. 1½ lbs.~~	~~X~~	~~X~~	~~-~~	~~X~~			~~Warm season annual legume. ... acid soils. May be added to mixes.~~

[a] Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
[b] Southern Piedmont and Coastal Plain.
[c] May be used as a cover crop with spring seeding.
[d] May be used as a cover crop with fall seeding.
X May be planted between these dates.
- May not be planted between these dates.

TABLE 3.31-B

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS

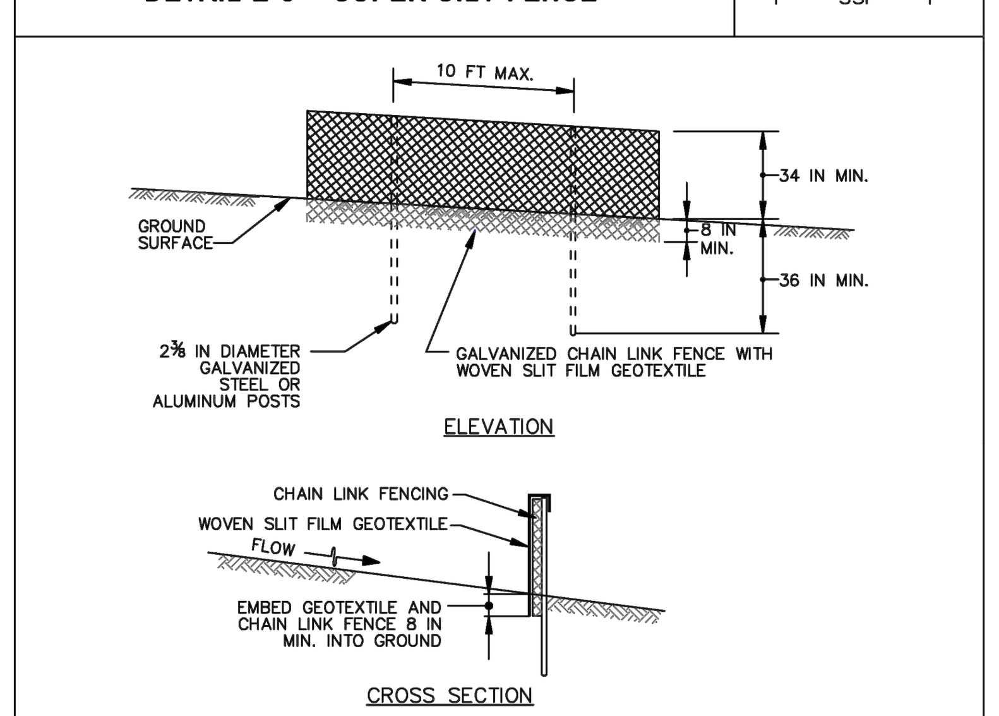
"QUICK REFERENCE FOR ALL REGIONS"

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

Source: Va. DSWC

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL
——SSF——



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

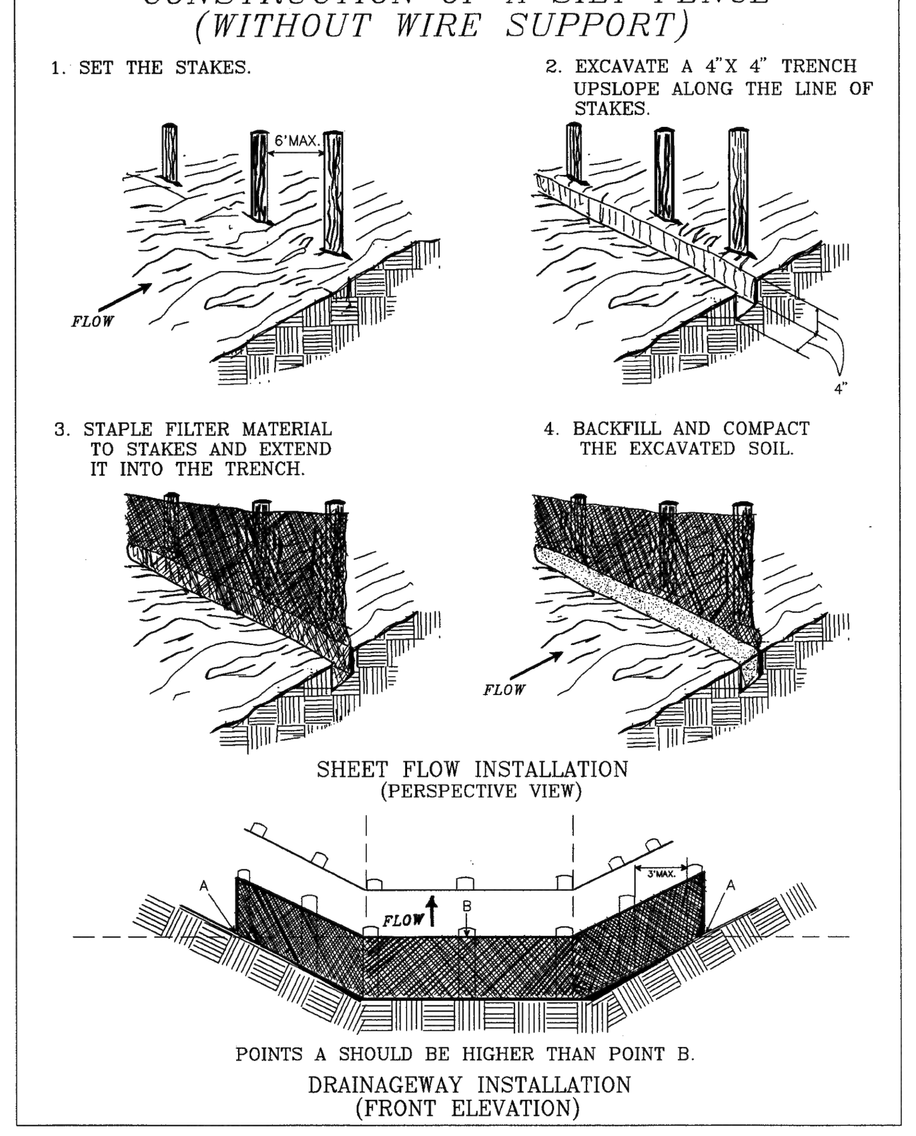
Design Criteria

Table E.3: Super Silt Fence Design Constraints

Average Slope Steepness	Maximum Slope Length	Maximum Super Silt Fence Length
Flatter than 10:1 (0 - <10%)	Unlimited	Unlimited
10:1 to 5:1 (10 - 20%)	200 feet	1,500 feet
<5:1 to 3:1 (>20 - 33%)	150 feet	1,000 feet
<3:1 to 2:1 (>33 - 50%)	100 feet	500 feet
Steeper than 2:1 (>50%)	50 feet	250 feet

1. Super silt fence should be placed on the contour. No section of super silt fence is to exceed a grade of 5% for a distance of more than 50 feet.
2. Super silt fence should be used with caution in areas where rocky soils may prevent trenching.
3. The use of super silt fence must conform to the design constraints listed in Table E.3 above.
4. Extend both ends of the silt fence a minimum five (5) feet horizontally upslope at 45 degrees to the main fence alignment to prevent runoff from going around the ends of the silt fence.

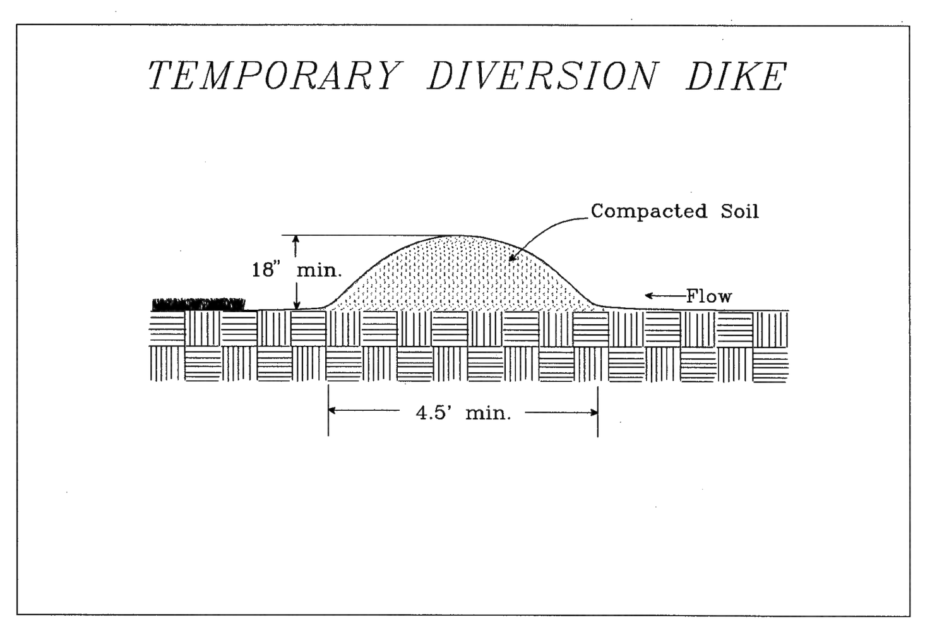
CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant Plate 3.05-2

Height

The minimum allowable height measured from the upslope side of the dike is 18 inches (see Plate 3.09-1).



Source: Va. DSWC Plate 3.09-1

Side Slopes

1½:1 or flatter, along with a minimum base width of 4.5 feet (see Plate 3.09-1).

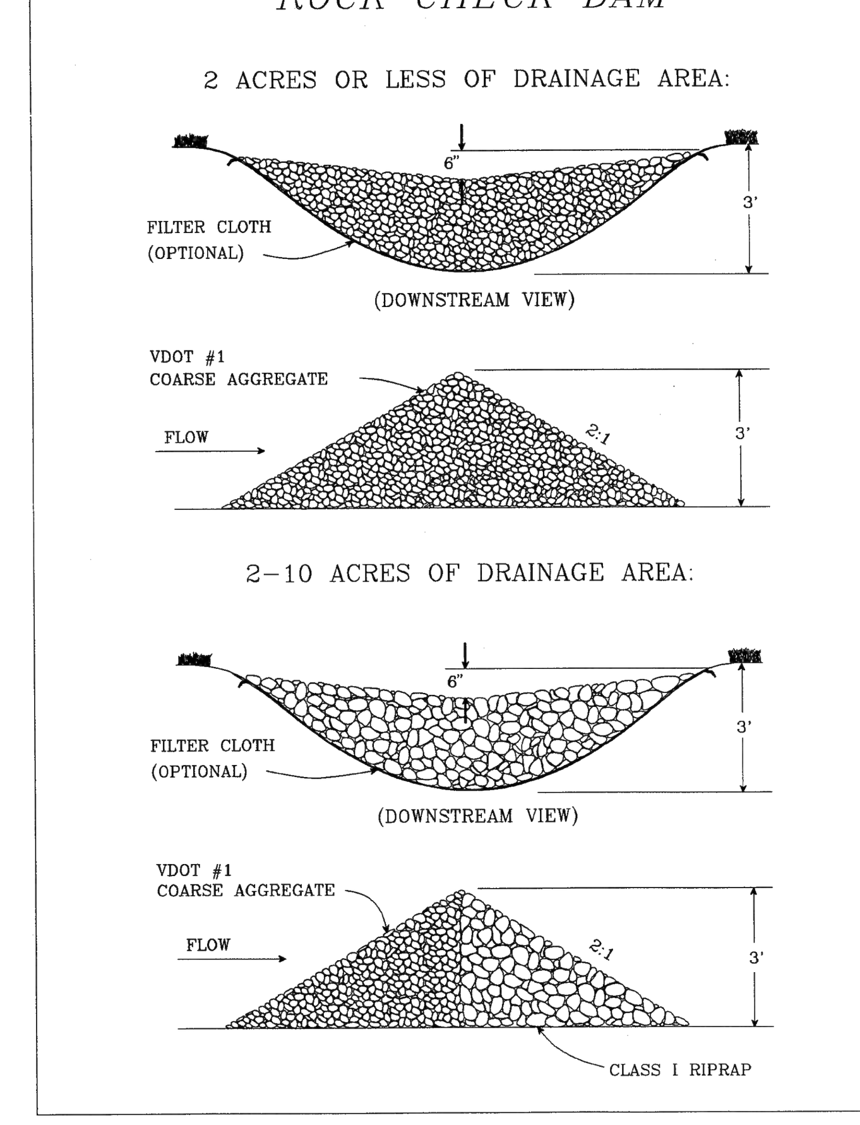
Grade

The channel behind the dike shall have a positive grade to a stabilized outlet. If the channel slope is less than or equal to 2%, no stabilization is required. If the slope is greater than 2%, the channel shall be stabilized in accordance with Std. & Spec. 3.17, STORMWATER CONVEYANCE CHANNEL.

Outlet

1. The diverted runoff, if free of sediment, must be released through a stabilized outlet or channel.

ROCK CHECK DAM



Source: Va. DSWC Plate 3.20-1

TABLE 3.35-A

ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES:		NOTES:
	Per Acre	Per 1000 sq. ft.	
Straw or Hay*	1½ - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 - 70 cu. yds.	1-2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.

Source: Va. DSWC

*STRAW/HAY WILL BE USED TO MULCH SEEDING AREAS IF NECESSARY PER TIME OF YEAR.

APPROVAL BLOCK

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7/7/25	SIGNATURE SET

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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL DETAILS

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	NONE
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581–4
PLAN NO.	ST23-0006

STORMWATER QUANTITY NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT IS BEST SUMMARIZED AS A CONSTRUCTION PLAN FOR A SALES OFFICE FOR OUTDOOR SHED SALES AND SUPPORTING INFRASTRUCTURE. THE PARCEL IS OWNED BY 11100 PIERSON LLC AND IS CURRENTLY USED VACANT LAND. THE OVERALL IMPERVIOUS COVER WILL INCREASE 0.47 ACRES FROM EXISTING TO PROPOSED CONDITIONS.

THE TOTAL SITE AREA IS 2.03 ACRES AND DISTURBED AREA FOR THE PROPOSED PROJECT IS 1.77 ACRES. DRAINAGE PATTERNS FOR FLOW LEAVING THE DEVELOPED SITE WILL BE SIMILAR TO THE PRE-DEVELOPMENT CONDITIONS.

QUANTITY
STORMWATER QUANTITY IS ANALYZED IN ACCORDANCE WITH 9VAC25-875-600 FOR THE PROPOSED DEVELOPMENT.

UNDER 9VAC25-875-600D, CHANNEL PROTECTION COMPLIANCE IS MET DUE TO THE IMPLEMENTATION OF TWO HENRICO LEVEL SPREADERS TO CREATE SHEET FLOW.

CHANNEL PROTECTION HAS ALSO BEEN ANALYZED UNDER 9VAC25-875-600-B.1. UPON LEAVING THE SITE, DRAINAGE ENTERS INTO A MANMADE CONVEYANCE CHANNEL. THE CHANNEL HAS BEEN ANALYZED FOR THE 2 AND 10 YEAR STORM EVENTS TO THE 1%. IT HAS BEEN DETERMINED THAT IT HAS ADEQUATE VOLUME FOR THE 10 YEAR STORM AND THERE SHALL BE NO EROSION AS A RESULT OF PROPOSED CONSTRUCTION. PER CROSS SECTION A-A ON THE FOLLOWING SHEET, THE SITE DOES NOT EXPERIENCE LOCALIZED FLOODING AS THE 10 YEAR STORM IS CONTAINED WITHIN THE MANMADE CONVEYANCE CHANNEL.

UNDER 9VAC25-870-66., FLOOD PROTECTION COMPLIANCE IS MET. INCREASED FLOWS THAT ARE PHYSICALLY SPREAD HAVE NO DELETERIOUS EFFECT TO EROSION, DEPOSITION OF SEDIMENT, OR FLOODING TO DOWNSTREAM PROPERTIES.

N/F
CIVIL WAR PRESERVATION TRUST
TM 25-A-27A
ZONED: I-1
USE: VACANT

N/F
11040 PIERSON DRIVE LLC
TM 25-6-16
ZONED: C-3
USE: FLEX OFFICE

Q @ HENRICO LEVEL SPREADER = 2.42 cfs
MIN. LENGTH REQ'D. = 31.46 FT.
LENGTH PROVIDED = 32 FT.

LEVEL SPREADER A
CONSERVATION AREA
32'
35'
38.261919
-77.437777
HENRICO LEVEL SPREADER DESIGN A (SEE DETAIL)

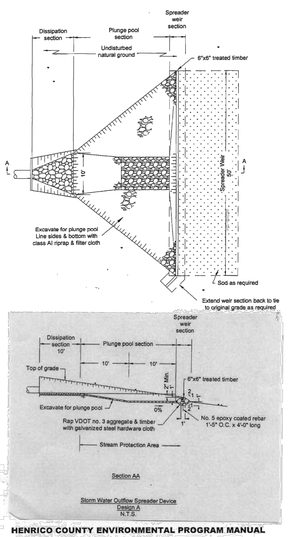
Q @ HENRICO LEVEL SPREADER = 2.22 cfs
MIN. LENGTH REQ'D. = 28.86 FT.
LENGTH PROVIDED = 29 FT.

LEVEL SPREADER B
CONSERVATION AREA
29'
35'
38.262356
-77.437040
HENRICO LEVEL SPREADER DESIGN A (SEE DETAIL)

11100 PIERSON LLC
TM 25-6-17
ZONED: C-2
EX. USE: VACANT
2.12 ACRES (PRE ROW DEDICATION)
2.03 (POST ROW DEDICATION)

EX. 18" RCP
EX. E.P.
EX. F.H.
EX. TRANSFORMER
EX. SIDEWALK
EX. CG-6
MATCH EX. TOP OF CURB
EX. 39" - 15" RCP
INLET 2
15" OUT = 71.38
INLET 1
15" IN = 71.13
18" IN = 70.78
24" OUT = 70.69
FIRE LANE
1%
5.5%
PIERSON DRIVE
SR 1504 - 25 MPH
TIDEWATER TRAIL - ROUTE 2 - MINOR ARTERIAL - 45 MPH
SCALE: 1" = 20'
APPROVAL BLOCK

MINIMUM DESIGN STANDARDS CHAPTER 9



HENRICO COUNTY ENVIRONMENTAL PROGRAM MANUAL
9.01 - 3

REVISIONS	
DATE	
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGH
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PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT - QUANTITY

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

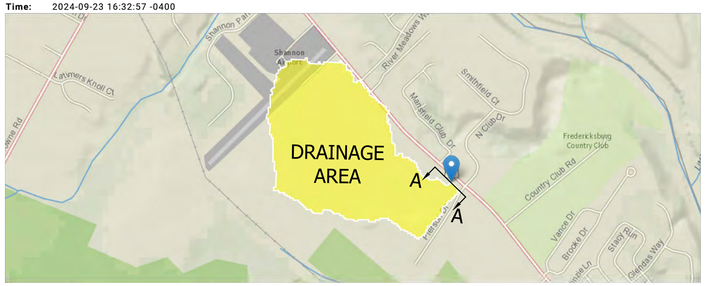
DATE:	3/1/2023
SCALE:	1" = 20'
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

10

G:\20581-4 Pierson dr\Engineering\Major\Pierson Dr Site Plan_4.14.25.dwg Wed, Nov 5 2025 ross

StreamStats Report

Region ID: VA
Workspace ID: VA20240923203239881000
Clicked Point (Latitude, Longitude): 38.26246, -77.43722
Time: 2024-09-23 16:32:57 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.23	square miles

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Coastal Plain 2011 5144]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.23	square miles	0.06	7866

Peak-Flow Statistics Flow Report [Coastal Plain 2011 5144]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
20-percent AEP flood	32.1	ft^3/s	44
10-percent AEP flood	51	ft^3/s	47
4-percent AEP flood	84.4	ft^3/s	51
2-percent AEP flood	120	ft^3/s	55
1-percent AEP flood	161	ft^3/s	58
0.5-percent AEP flood	215	ft^3/s	64

Peak-Flow Statistics Citations

Austin, S.H., Krstolic, J.L., and Wiegand, Ute,2011, Peak-flow characteristics of Virginia streams: U.S. Geological Survey Scientific Investigations Report 2011–5144, 106 p. + 3 tables and 2 appendixes on CD. (http://pubs.usgs.gov/sir/2011/5144/)

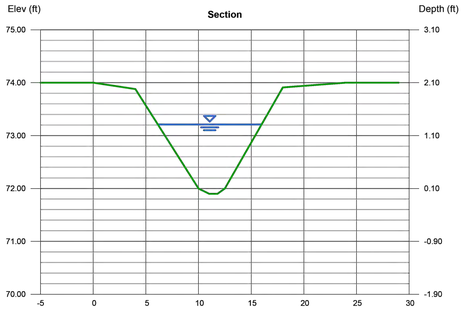
Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Sep 24 2024

Cross Section A-A 2 Year Storm

User-defined		Highlighted	
Invert Elev (ft)	= 71.90	Depth (ft)	= 1.31
Slope (%)	= 0.50	Q (cfs)	= 21.70
N-Value	= 0.030	Area (sqft)	= 7.63
		Velocity (ft/s)	= 2.84
Calculations		Wetted Perim (ft)	= 10.25
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.01
Known Q (cfs)	= 21.70	Top Width (ft)	= 9.85
		EGL (ft)	= 1.44

(Sta, El, n)-(Sta, El, n)...
(0.00, 74.00)-(4.00, 73.88, 0.030)-(10.00, 72.00, 0.030)-(11.00, 71.90, 0.030)-(11.80, 71.90, 0.030)-(12.50, 72.00, 0.030)-(18.00, 73.91, 0.030) -(24.00, 74.00, 0.030)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Sep 24 2024

Cross Section A-A 10 Year Storm

User-defined		Highlighted	
Invert Elev (ft)	= 71.90	Depth (ft)	= 1.89
Slope (%)	= 0.50	Q (cfs)	= 51.00
N-Value	= 0.030	Area (sqft)	= 14.37
		Velocity (ft/s)	= 3.55
Calculations		Wetted Perim (ft)	= 13.96
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.51
Known Q (cfs)	= 51.00	Top Width (ft)	= 13.37
		EGL (ft)	= 2.09

(Sta, El, n)-(Sta, El, n)...
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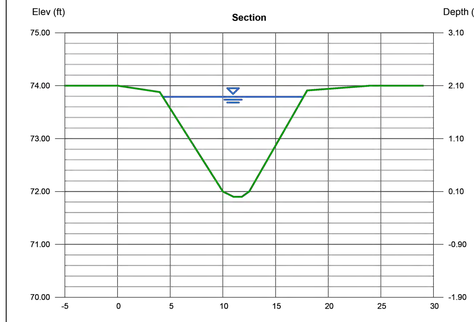

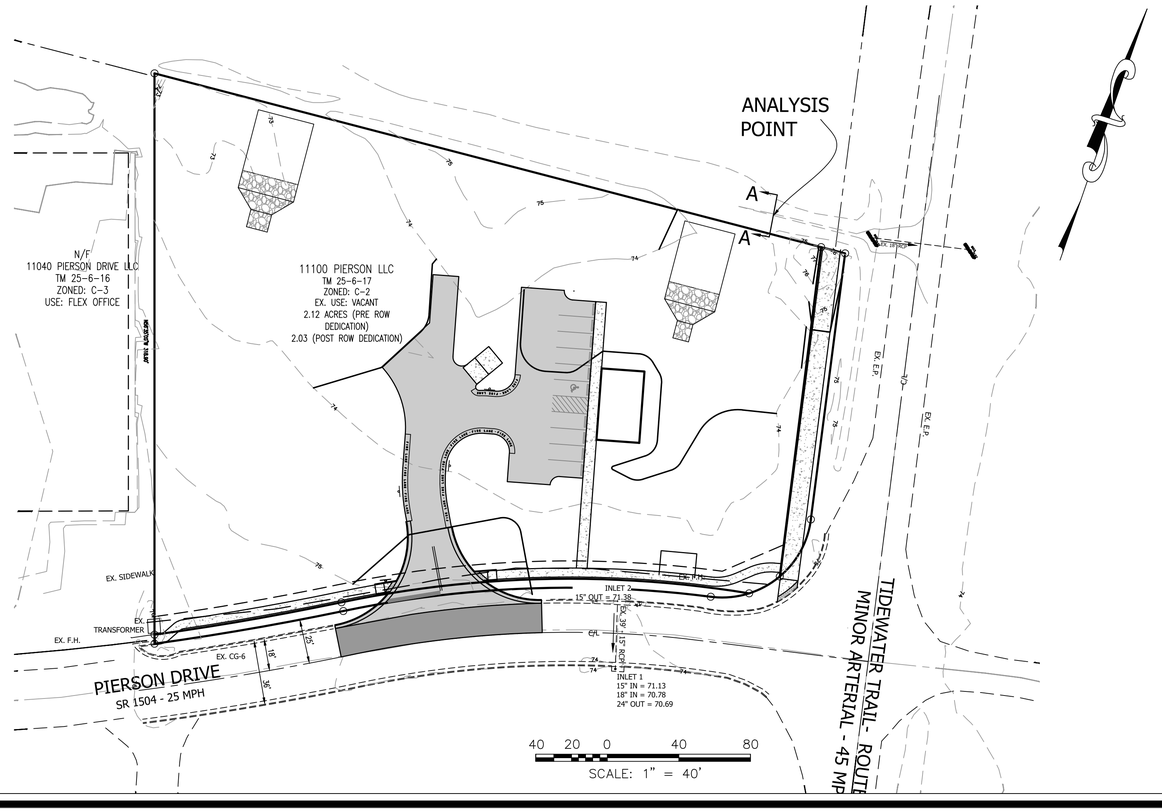

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PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT PLAN - CROSS SECTION A-A

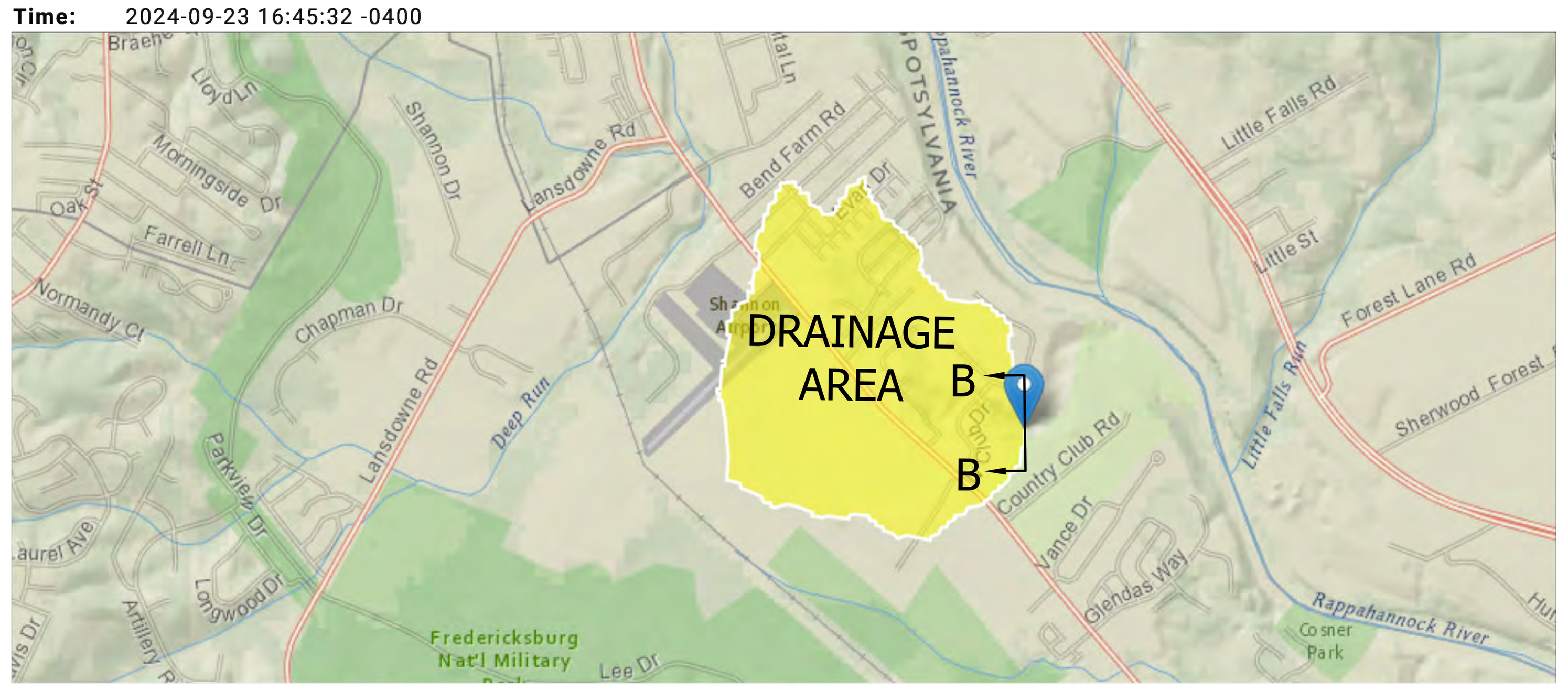
GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	1" = 40'
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

G:\20581-4 Pierson dr\Engineering\Major\Pierson Dr Site Plan_4.14.25.dwg Wed, Nov 5 2025 ross

StreamStats Report

Region ID: VA
Workspace ID: VA20240923204514656000
Clicked Point (Latitude, Longitude): 38.26418, -77.43278
Time: 2024-09-23 16:45:32 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.63	square miles

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Coastal Plain 2011 5144]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.63	square miles	0.06	7866

Peak-Flow Statistics Flow Report [Coastal Plain 2011 5144]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
20-percent AEP flood	61.5	ft^3/s	44
10-percent AEP flood	95.8	ft^3/s	47
4-percent AEP flood	156	ft^3/s	51
2-percent AEP flood	218	ft^3/s	55
1-percent AEP flood	290	ft^3/s	58
0.5-percent AEP flood	383	ft^3/s	64

Peak-Flow Statistics Citations

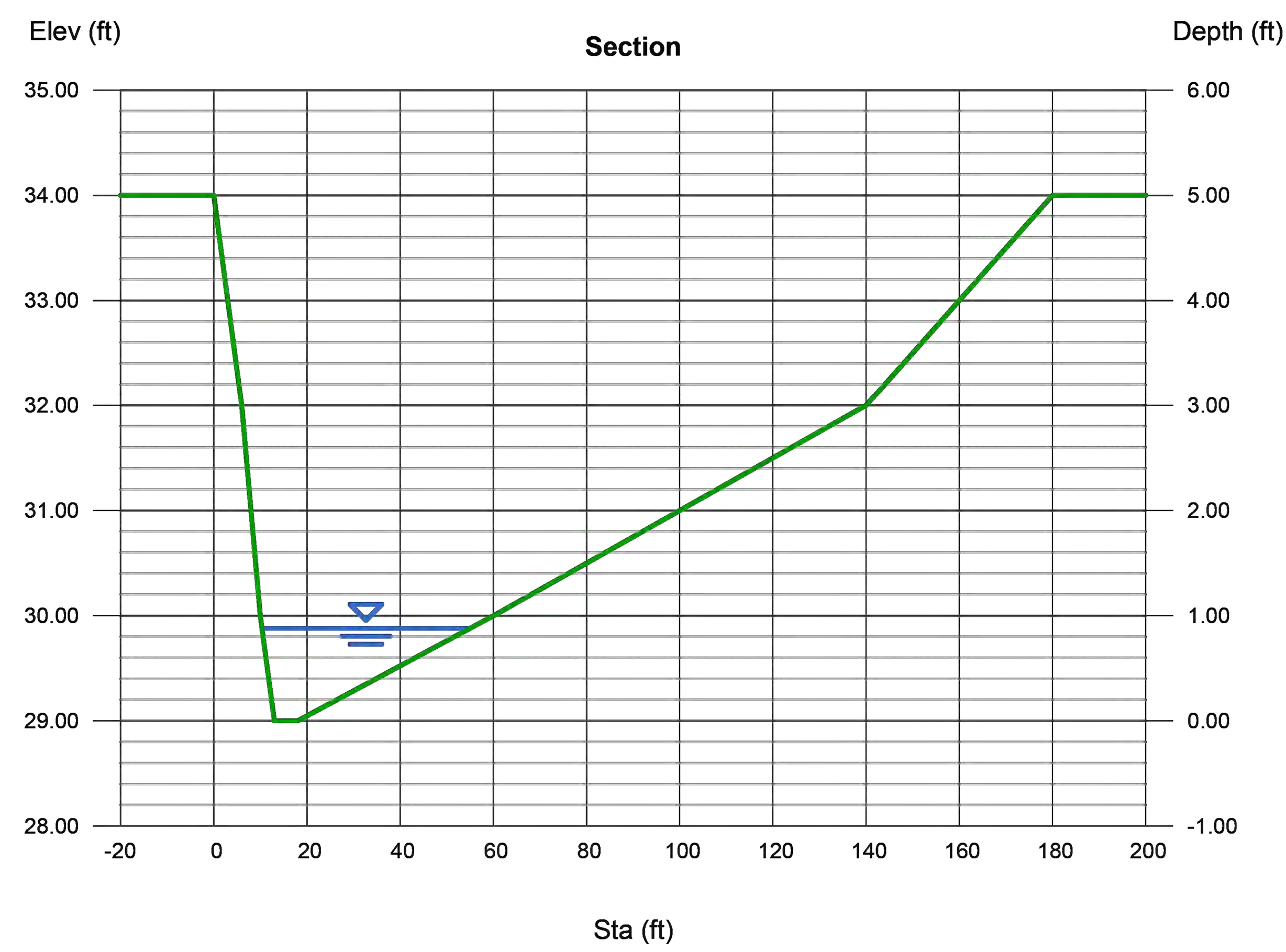
Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Sep 24 2024

Cross Section B-B 2 Year Storm

User-defined		**Highlighted**	
Invert Elev (ft)	= 29.00	Depth (ft)	= 0.88
Slope (%)	= 0.40	Q (cfs)	= 42.10
N-Value	= 0.030	Area (sqft)	= 21.82
		Velocity (ft/s)	= 1.93
Calculations		Wetted Perim (ft)	= 44.75
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.64
Known Q (cfs)	= 42.10	Top Width (ft)	= 44.60
		EGL (ft)	= 0.94

(Sta, El, n)-(Sta, El, n)...
(0.00, 34.00)-(6.00, 32.00, 0.030)-(10.00, 30.00, 0.030)-(13.00, 29.00, 0.030)-(18.00, 29.00, 0.030)-(60.00, 30.00, 0.030)-(140.00, 32.00, 0.030)-(180.00, 34.00, 0.030)



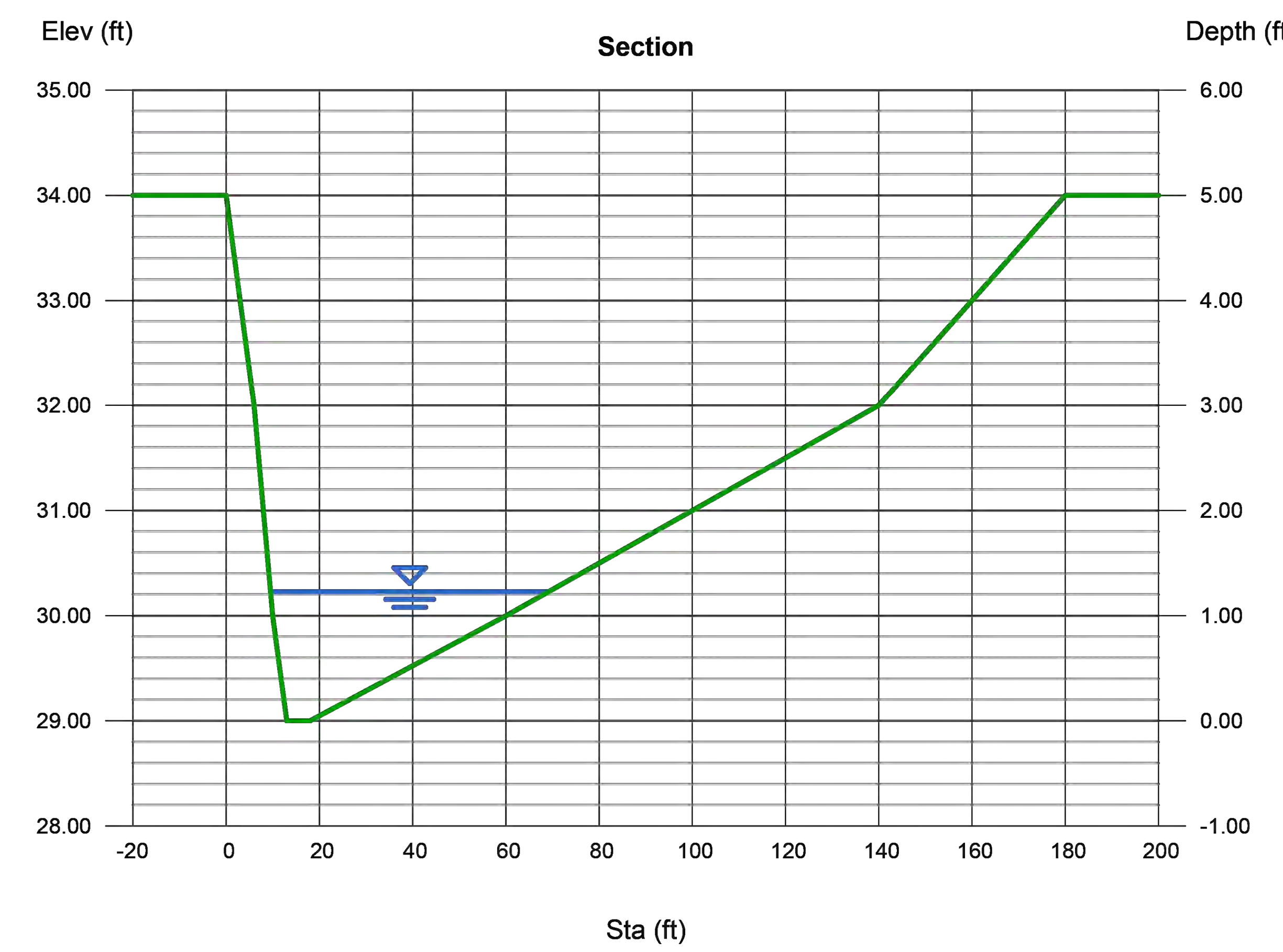
Channel Report

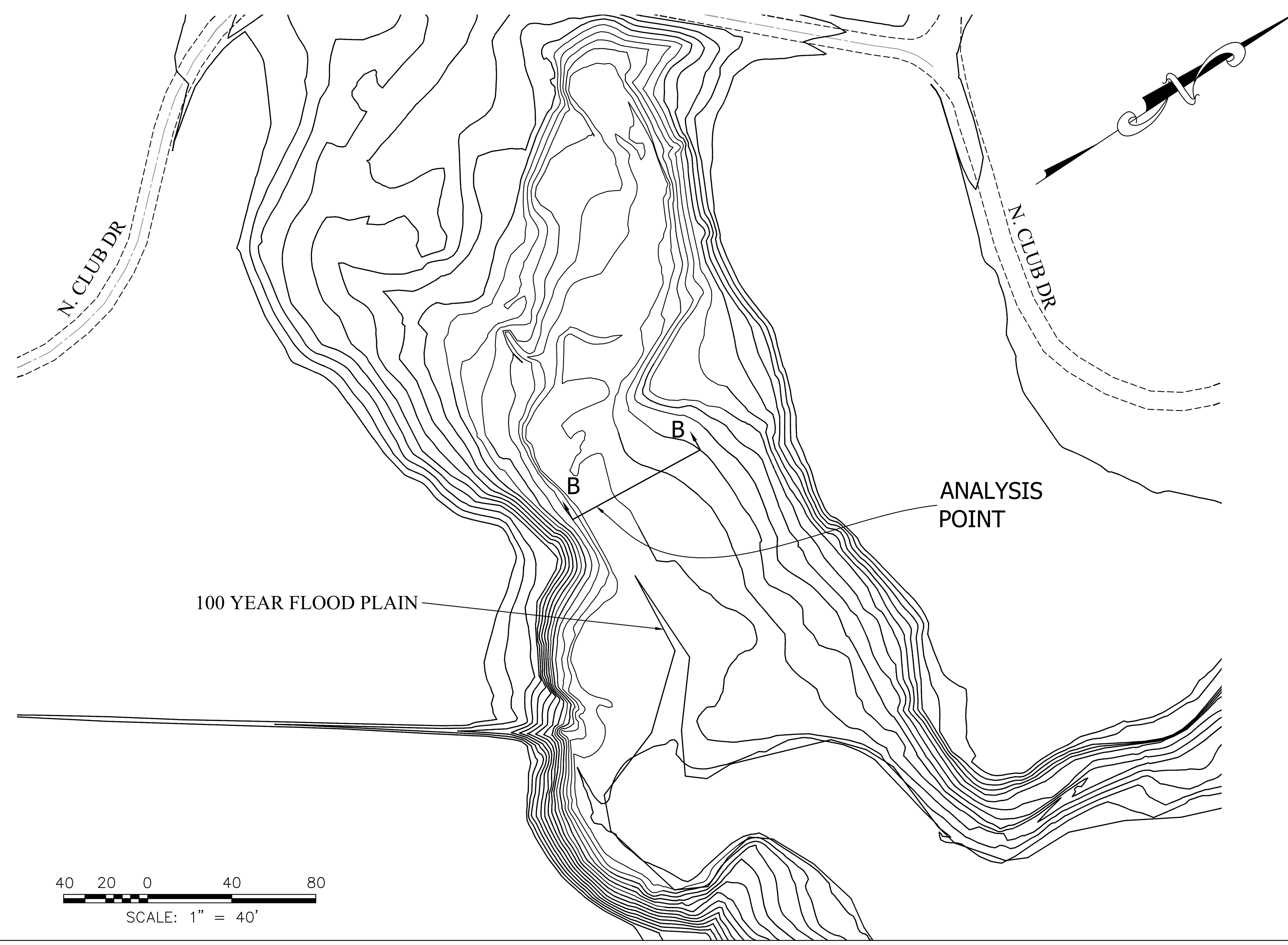
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Sep 24 2024

Cross Section B-B 10 Year Storm

User-defined		**Highlighted**	
Invert Elev (ft)	= 29.00	Depth (ft)	= 1.23
Slope (%)	= 0.40	Q (cfs)	= 95.80
N-Value	= 0.030	Area (sqft)	= 40.11
		Velocity (ft/s)	= 2.39
Calculations		Wetted Perim (ft)	= 59.89
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.93
Known Q (cfs)	= 95.80	Top Width (ft)	= 59.66
		EGL (ft)	= 1.32

(Sta, El, n)-(Sta, El, n)...
(0.00, 34.00)-(6.00, 32.00, 0.030)-(10.00, 30.00, 0.030)-(13.00, 29.00, 0.030)-(18.00, 29.00, 0.030)-(60.00, 30.00, 0.030)-(140.00, 32.00, 0.030)-(180.00, 34.00, 0.030)





APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BFG
BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22408
TELEPHONE: (540) 373-5178
WEBSITE: BFGENG.COM

COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT PLAN - CROSS SECTION B-B

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	1" = 20'
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

G:\20581-4 Pierson dr\Engineering\Major\Pierson Dr Site Plan_4.14.25.dwg Wed, Nov 5 2025 ross

Project Name: Great Outdoors of Spotsylvania
Date: 2/12/2025
BMP Design Specifications List: 2013 Draft Stds & Specs

CLEAR ALL (Ctrl+Shift+R)

data input cells
constant values
calculation cells
final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be		0.98	0.58		1.56
Impervious Cover (acres)		0.42	0.05		0.47
					2.03

Constants

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

Runoff Coefficients (Rv)

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

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr): 0.92

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	0.18	0.22	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.18	0.22	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.87	0.67	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.87	0.67	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3): 2,795

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft^3)	820	934	0	0	0	1,754
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	0.81	0.78	0.00	0.00	0.00	1.59
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.51	0.59	0.00	0.00	0.00	1.10
TP LOAD REMAINING (lb/yr)	0.30	0.20	0.00	0.00	0.00	0.49
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	3.68	4.19	0.00	0.00	0.00	7.87

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	1.76
TP LOAD REDUCTION REQUIRED (lb/yr)	0.92
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.10
TP LOAD REMAINING (lb/yr):	0.66
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **

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

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	12.56
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	7.87
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	4.69

Drainage Area A

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)		0.32	0.55		0.87	0.21
Impervious Cover (acres)		0.13	0.05		0.18	0.95
				Total	1.05	

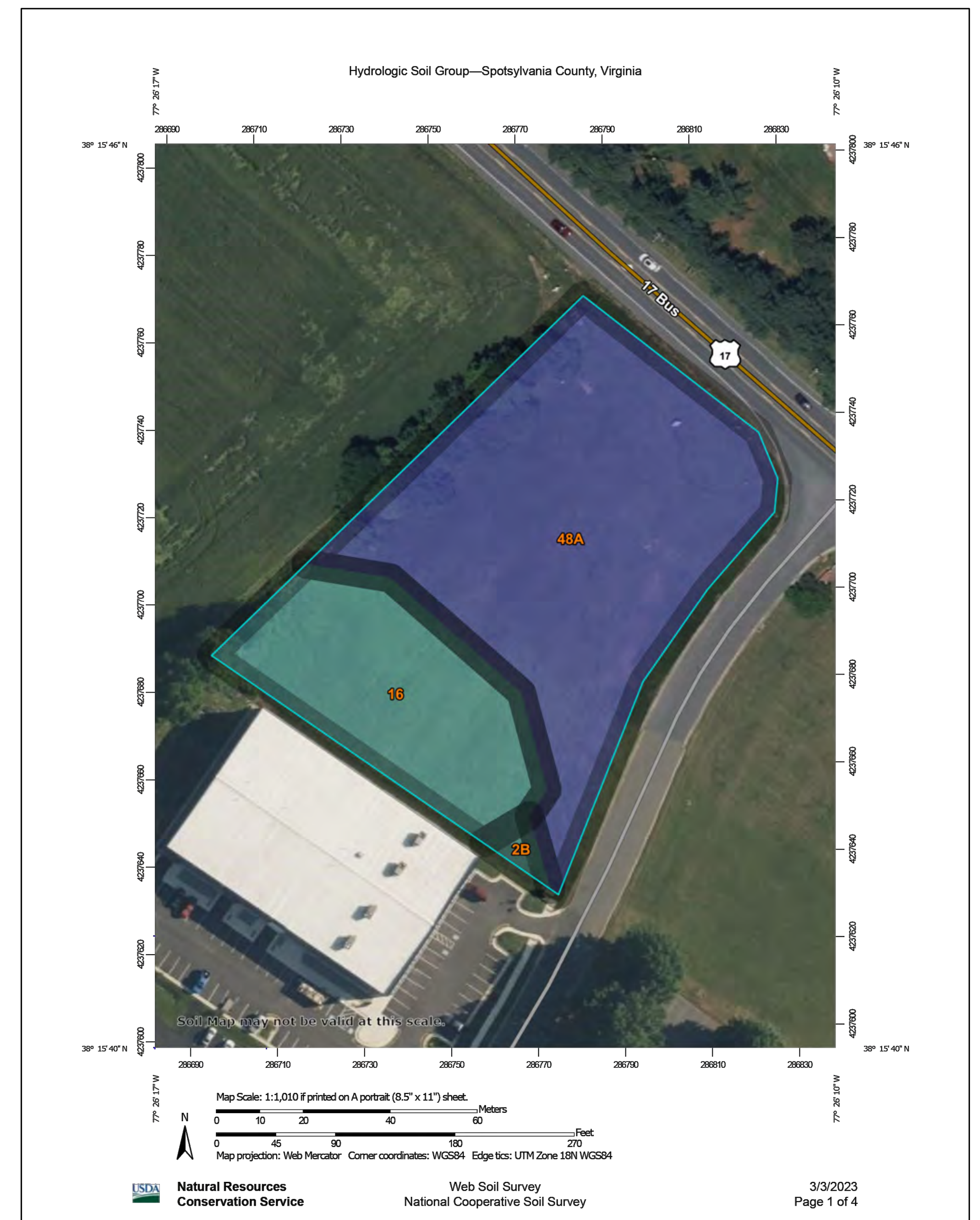
Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)
9. Sheetflow to Filter/Open Space (RR)												
9.a. Sheetflow to Conservation Area, A/B Soils (Spec #2)	75	0.32	0.13	0	521	174	695	0	0.00	0.44	0.33	0.11
9.b. Sheetflow to Conservation Area, C/D Soils (Spec #2)	50	0.55	0.05	0	298	298	597	0	0.00	0.37	0.19	0.19

Drainage Area B

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)		0.67			0.67	0.20
Impervious Cover (acres)		0.22			0.22	0.95
				Total	0.89	

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)
9. Sheetflow to Filter/Open Space (RR)												
9.a. Sheetflow to Conservation Area, A/B Soils (Spec #2)	75	0.67	0.22	0	934	311	1,245	0	0.00	0.78	0.59	0.20



Hydrologic Soil Group—Spotsylvania County, Virginia

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2B	Altavista sandy loam, 0 to 4 percent slopes	C	0.0	1.2%
16	Dogue loam	C	0.6	29.0%
48A	Wickham loam, 0 to 2 percent slopes	B	1.5	69.8%
Totals for Area of Interest			**2.2**	**100.0%**

ADDITIONAL SOILS DATA

	K FACTOR	PERMEABILITY	SHRINK/SWELL
2B	0.20	0.12-0.20 IN/IN	LOW
16	0.49	0.05-0.20 IN/IN	LOW
48A	0.43	0.10-0.16 IN/IN	LOW

STORMWATER QUALITY NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT IS BEST SUMMARIZED AS A CONSTRUCTION PLAN FOR A SALES OFFICE FOR OUTDOOR SHED SALES AND SUPPORTING INFRASTRUCTURE. THE PARCEL IS OWNED BY 11100 PIERSON LLC AND IS CURRENTLY USED VACANT LAND. THE OVERALL IMPERVIOUS COVER WILL INCREASE 0.47 ACRES FROM EXISTING TO PROPOSED CONDITIONS.

THE TOTAL SITE AREA IS 2.03 ACRES AND DISTURBED AREA FOR THE PROPOSED PROJECT IS 1.77 ACRES. DRAINAGE PATTERNS FOR FLOW LEAVING THE DEVELOPED SITE WILL BE SIMILAR TO THE PRE-DEVELOPMENT CONDITIONS.

CALCULATION METHOD
STORMWATER QUALITY CALCULATIONS WERE PERFORMED USING VIRGINIA RUNOFF REDUCTION METHOD SPREADSHEET VERSION 3.0 FOR A NEWLY DEVELOPED SITE. DRAINAGE AREAS A AND B CALCS ARE BASED ON THE ENTIRE DRAINAGE AREA, DISTURBED AND UNDISTURBED. BASED ON THE VRRM SPREADSHEET, TOTAL PHOSPHOROUS REMOVAL HAS BEEN EXCEEDED BY 0.18 LB/YR THROUGH A TWO LEVEL SPREADERS. THEREFORE, THE PROJECT WILL BE IN COMPLIANCE WITH WATER QUALITY REQUIREMENTS OF 9VAC25-875-590.

APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22408
TELEPHONE: (540) 373-5178
WEBSITE: BFGENG.COM

COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT PLAN - QUALITY

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	NONE
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

N/F
CIVIL WAR PRESERVATION TRUST
TM 25-A-27A
ZONED: I-1
USE: VACANT

N/F
11040 PIERSON DRIVE LLC
TM 25-6-16
ZONED: C-3
USE: FLEX OFFICE

N53°30'06"W 316.90'

D.A. A
C = (.18*.9)+(.87*.4) / 1.05 = 0.49
I2 = 5.09
A = 45930 sf 1.05 ac.
Q2 = 2.62 cfs

11100 PIERSON LLC
TM 25-6-17
ZONED: C-2
EX. USE: VACANT
2.12 ACRES (PRE ROW DEDICATION)
2.03 (POST ROW DEDICATION)

D.A. B
C = (.22*.9)+(.67*.4) / .89 = 0.52
I2 = 5.09
A = 38563 sf 0.89 ac.
Q2 = 2.36 cfs

FIRE LANE

MATCH EX. TOP OF CURB

MATCH EX. TOP OF CURB

PIERSON DRIVE
SR 1504 - 25 MPH

TIDEWATER TRAIL - ROUTE 2 - MINOR ARTERIAL - 45 MPH

SCALE: 1" = 20'

APPROVAL BLOCK

REVISIONS	
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6/22/23	PER COUNTY & VDOT COMMENTS
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7/7/25	SIGNATURE SET

BAGBY, FOROUGHI and GOODPASTURE, PLLC
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125 OLDE GREENWICH DRIVE, SUITE 115
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

DRAINAGE AREA

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

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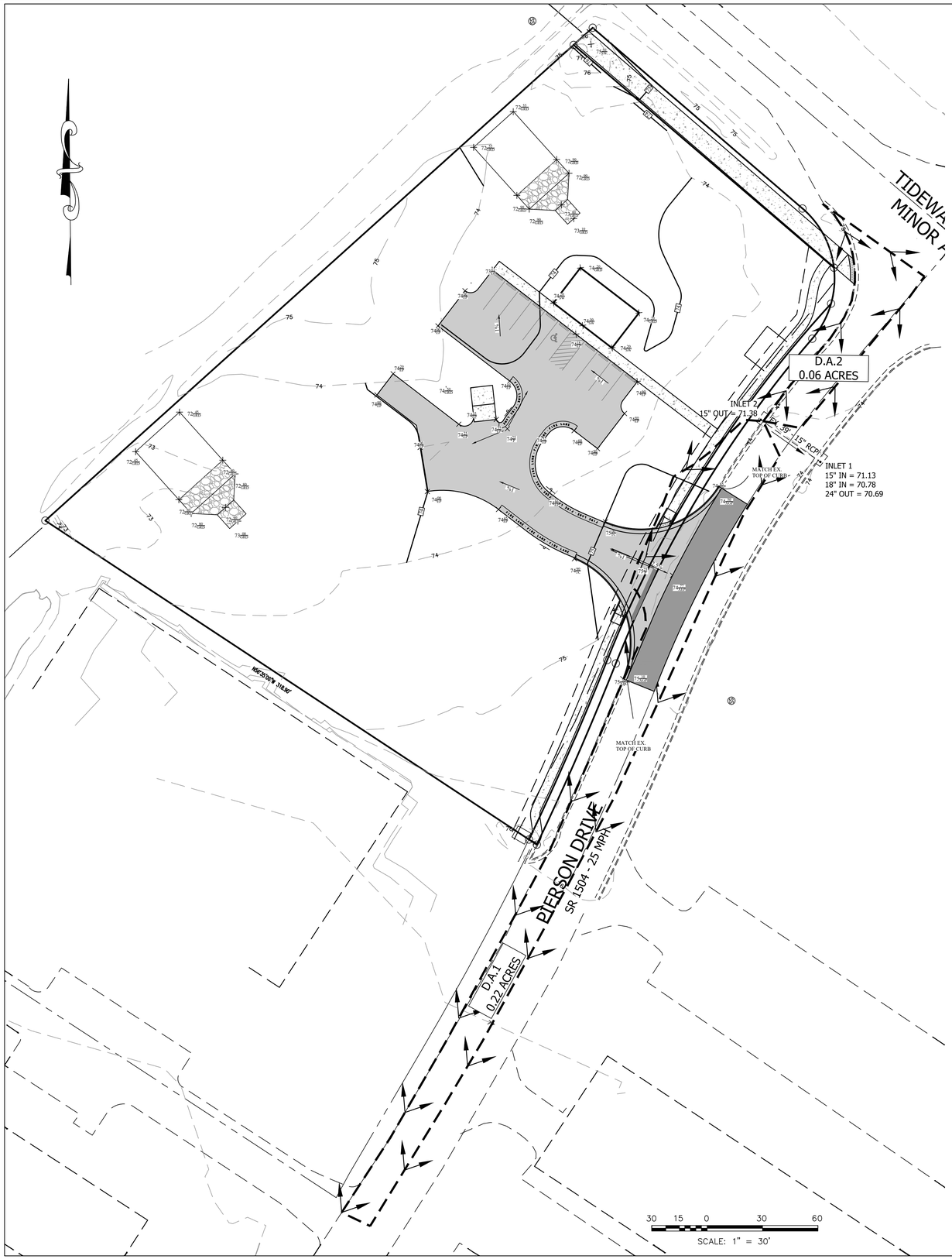
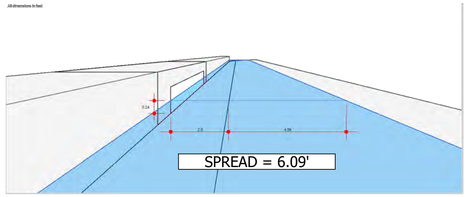


Inlet Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Jun 2 2023

Inlet 2 - Pre

Curb Inlet		Calculations	
Location	= Sag	Compute by:	Known Q
Curb Length (ft)	= 6.00	Q (cfs)	= 0.94
Throat Height (in)	= 6.00		
Grate Area (sqft)	= -0-	**Highlighted**	
Grate Width (ft)	= -0-	Q Total (cfs)	= 0.94
Grate Length (ft)	= -0-	Q Capt (cfs)	= 0.94
		Q Bypass (cfs)	= -0-
Gutter		Depth at Inlet (in)	= 2.90
Slope, Sw (ft/ft)	= 0.080	Efficiency (%)	= 100
Slope, Sx (ft/ft)	= 0.020	Gutter Spread (ft)	= 6.09
Local Depr (in)	= -0-	Gutter Vel (ft/s)	= -0-
Gutter Width (ft)	= 2.00	Bypass Spread (ft)	= -0-
Gutter Slope (%)	= -0-	Bypass Depth (in)	= -0-
Gutter n-value	= -0-		

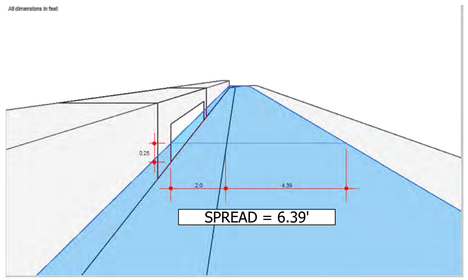


Inlet Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Jun 2 2023

Inlet 2 - Post

Curb Inlet		Calculations	
Location	= Sag	Compute by:	Known Q
Curb Length (ft)	= 6.00	Q (cfs)	= 1.01
Throat Height (in)	= 6.00		
Grate Area (sqft)	= -0-	**Highlighted**	
Grate Width (ft)	= -0-	Q Total (cfs)	= 1.01
Grate Length (ft)	= -0-	Q Capt (cfs)	= 1.01
		Q Bypass (cfs)	= -0-
Gutter		Depth at Inlet (in)	= 2.97
Slope, Sw (ft/ft)	= 0.080	Efficiency (%)	= 100
Slope, Sx (ft/ft)	= 0.020	Gutter Spread (ft)	= 6.39
Local Depr (in)	= -0-	Gutter Vel (ft/s)	= -0-
Gutter Width (ft)	= 2.00	Bypass Spread (ft)	= -0-
Gutter Slope (%)	= -0-	Bypass Depth (in)	= -0-
Gutter n-value	= -0-		

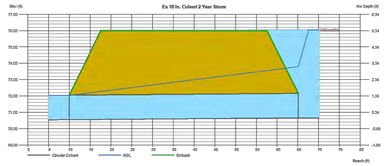


Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Sep 24 2024

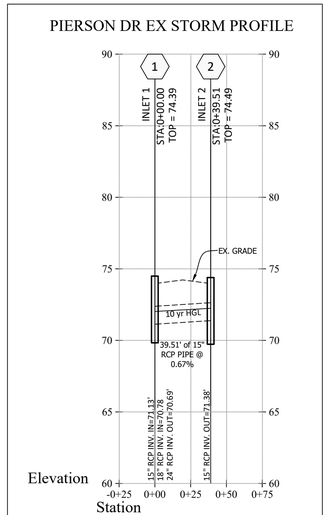
Ex 18 in. Culvert 2 Year Storm

		Calculations	
Invert Elev Dn (ft)	= 70.55	Qmin (cfs)	= 21.70
Pipe Length (ft)	= 55.10	Qmax (cfs)	= 21.70
Slope (%)	= 0.20	Tailwater Elev (ft)	= (dc+D)/2
Invert Elev Up (ft)	= 70.66		
Rise (in)	= 18.0	**Highlighted**	
Shape	= Circular	Qtotal (cfs)	= 21.70
Span (in)	= 18.0	Qpipe (cfs)	= 20.71
No. Barrels	= 1	Qovertop (cfs)	= 0.99
n-Value	= 0.012	Veloc Dn (ft/s)	= 11.74
Culvert Type	= Circular Concrete	Veloc Up (ft/s)	= 11.72
Culvert Entrance	= Groove end projecting (C)	HGL Dn (ft)	= 72.04
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.2	HGL Up (ft)	= 73.80
		Hw Elev (ft)	= 76.05
Embankment		Hw/D (ft)	= 3.59
Top Elevation (ft)	= 76.00	Flow Regime	= Inlet Control
Top Width (ft)	= 40.00		
Crest Width (ft)	= 40.00		



THE EXISTING 18" CULVERT IS UNDERSIZED FOR THE EXISTING CONDITIONS. PER USGS STREAM STATS, 147.2 ACRES DRAINS TO THE EXISTING CULVERT. THE PROJECT SITE IS 1.4% OF THE OVERALL DRAINAGE AREA. THE SMALL INCREASE IN IMPERVIOUS SURFACE WILL HAVE NO PRACTICAL INCREASE IN RUNOFF TO THE EXISTING CULVERT. THE ABOVE CULVERT CALCULATIONS FOR THE 2 YEAR STORM ARE REFLECTIVE OF THE EXISTING AND PROPOSED CONDITIONS, AS THERE IS NO WAY TO EFFECTIVELY ILLUSTRATE PRE/POST CONDITIONS BECAUSE SITE AREA IS SUCH A SMALL PERCENT OF THE DRAINAGE AREA. IT OUR BELIEF THAT ONLY A PORTION OF THE OVERALL DRAINAGE AREA ACTUALLY REACHES THE EXISTING CULVERT, AS NO LOCALIZED FLOODING HAS BEEN RECORDED IN PRIOR STORMS. FOR THIS REASON, WE BELIEVE THE EXISTING CULVERT TO BE ADEQUATE FOR THE EXISTING AND PROPOSED CONDITIONS FOR THE 2 YEAR STORM EVENT.

PIERSON DR EX STORM PROFILE



50 25 0 50 100
SCALE: 1" = 50'

		AREA		RUN OFF COEF.	CA		INLET TIME	RAIN FALL	RUNOFF "Q" C.F.S.		INVERT ELEV.		LENGTH	SLOPE	DIAM.	VELO.	CAPAC.	PIPE TIME
FROM	TO	INC. AC.	TOTAL AC.	C	INCR.	ACCUM.	MINUTES	INCHES	INCREM	ACCUM	UPPER	LOWER	FT.	FT/FT	IN.	FT/S	C.F.S.	MIN.
2	1	0.28	0.28	0.9	0.25	0.25	5	7.1	1.79	1.79	71.38	71.13	39.517	0.63%	15	3.811	5.143	0.17

Struct. ID	D	Q	L	V	d	dc	v^2/2g	EGLo	HGLo	Sf	Total Pipe Loss	EGLi	HGLi	Ea	EGLa	U/S TOC	Surface Elev
	(ft)	(cu. ft/sec)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1								72.021	72.021							72.63	74.39
2	1.25	1.79	39.517	3.811	0.509	0.532	0.226	72.304	72.247	0	0	72.304	72.078	0.924	72.304	---	74.49

APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

VDOT ROAD DRAINAGE & CALCS

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE: 3/1/2023
SCALE: AS SHOWN
DESIGNED BY: MRB
DRAWN BY: MRB
CHECKED BY: RKF
PRINT DATE: 11/5/2025
JOB NO. 20581-4
PLAN NO. ST23-0006

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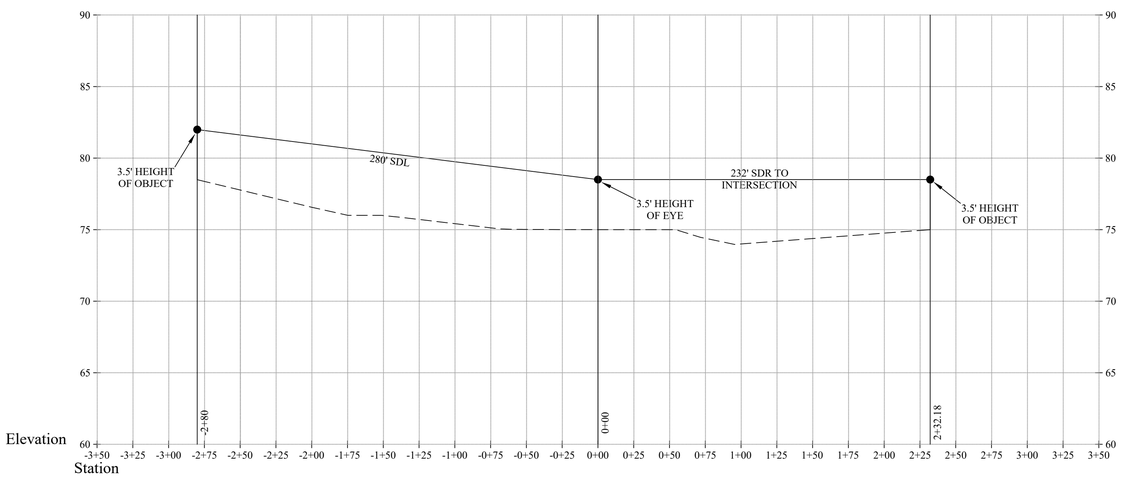
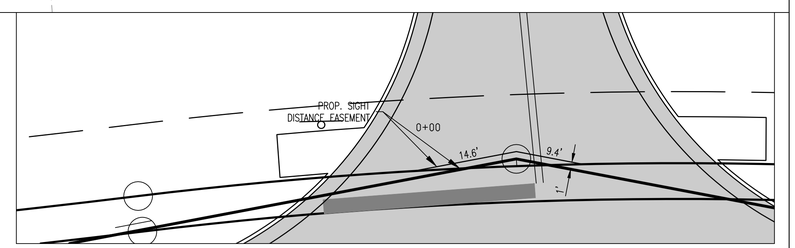
PIERSON DRIVE SIGHT DISTANCE PROFILE





SIGHT DISTANCE EASEMENT DETAIL

50 25 0 50 100
SCALE: 1" = 50'

APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
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7/7/2025
PROFESSIONAL ENGINEER

SIGHT DISTANCE PROFILE

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	AS SHOWN
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

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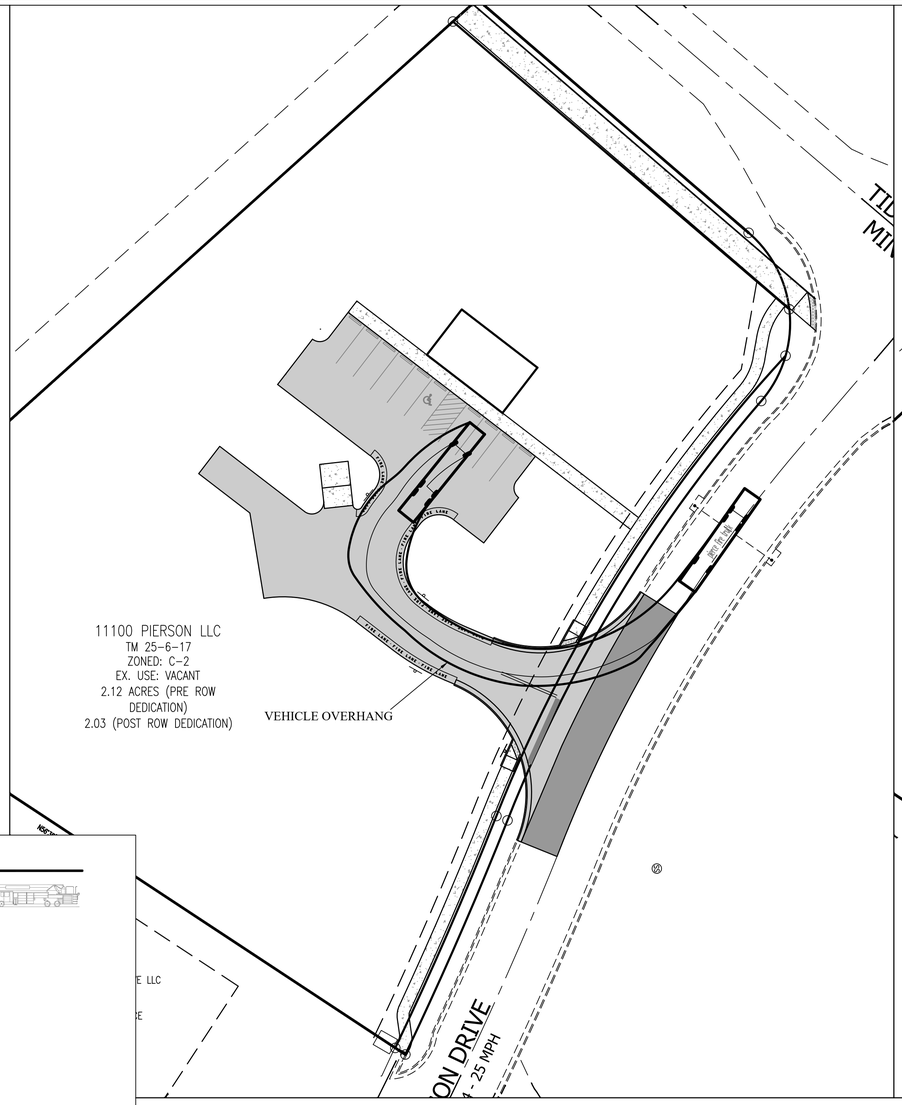
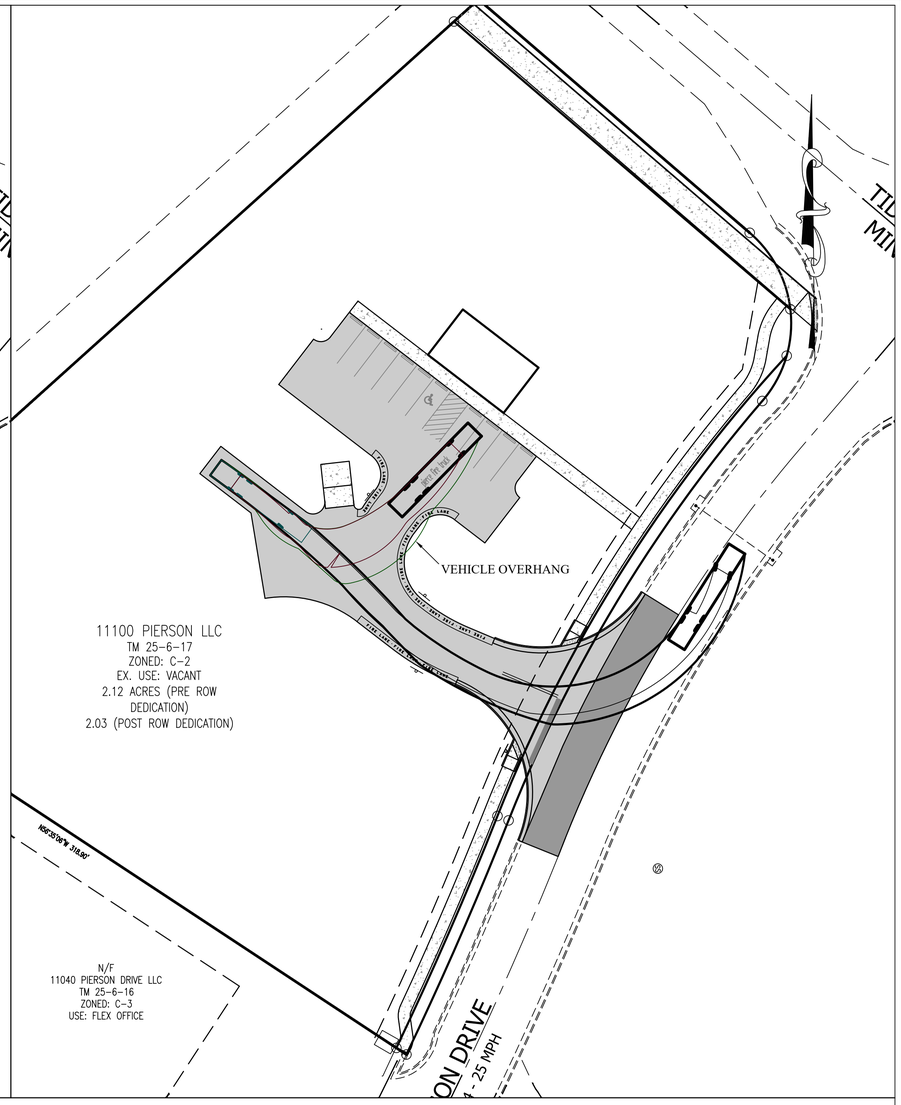


FIRE TRUCK PATH IN

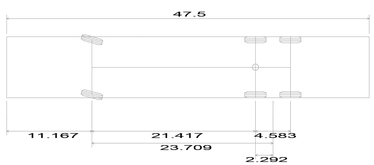


FIRE TRUCK PATH OUT

Vehicle Tracking v24.00 - Pool

Vehicle Tracking Vehicle Details **Ref:**

Vehicle Name:	**pierce fire truck**
Type:	Rigid vehicle
Category	(Unspecified)
Classification	(Unspecified)
Source:	
Description:	
Notes:	
Unit 1 Name:	pierce fire truck Tractor



pierce fire truck	
Overall Length	47.500ft
Overall Width	8.000ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.000ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	36.583ft

Every Effort Has Been Made To Ensure The Accuracy Of This Information
Please Check Data From Your Own Sources

⊗ INDICATES GRAPH RESULTS

Road Design Manual Appendix F Page F-89

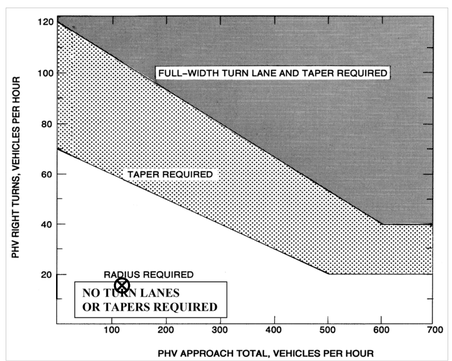


FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

⊗ INDICATES GRAPH RESULTS

Road Design Manual Appendix F Page F-69

WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY

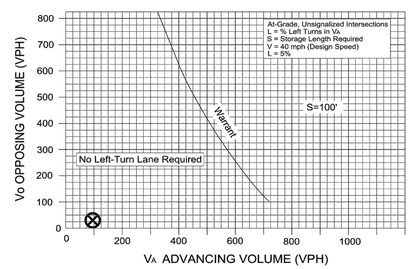


FIGURE 3-4 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

TRANSPORTATION

AM PEAK:	18.86
PM PEAK:	21.29
RIGHT TURN IN:	80%
LEFT TURN IN:	20%
AADT:	1108

TURN LANE WARRANT ANALYSIS

RIGHT LANE:	NONE REQUIRED
PHV RIGHT TURNS:	21.71 * 80% ENTERING = 17.37
PHV APPROACH TOTAL:	1108 AADT * .11 = 121.88
LEFT LANE:	NONE REQUIRED
PHV APPROACH TOTAL	1108 * .11 = 121.88
Va	121.88 * 0.8 = 97.50
Vo	121.88 * 0.2 = 24.38

30 15 0 30 60

SCALE: 1" = 30'

APPROVAL BLOCK

REVISIONS	DATE
PER COUNTY & VDOT COMMENTS	6/22/23
PER COUNTY & VDOT COMMENTS	6/27/24
PER COUNTY & VDOT COMMENTS	9/27/24
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7/7/2025
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LARGE VEHICLE PATH / TURN LANE ANALYSIS

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
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PLAN NO.	ST23-0006

G:\20581-4 Pierson dr\Engineering\Major\Pierson Dr Site Plan_4.14.25.dwg Wed, Nov 5 2025 ross

TRANSPORTATION MANAGEMENT PLAN

TEMPORARY TRAFFIC CONTROL GENERAL NOTES:

1. THE WORK ZONE OF THE CONTRACT IS ALONG PIERSON DR AT A POINT 0.04 MILES SOUTHWEST OF TIDEWATER TRAIL. THIS IS A TYPE 'A' TRAFFIC MANAGEMENT PLAN. OFF SITE DETOURS ARE NOT NEEDED.

2. Unless otherwise approved or directed by the Engineer (VDOT), the Contractor shall plan and prosecute the work in accordance with the following:

   a. Generally, construction activities will be conducted while highway travel is temporarily limited. Notification shall be in accordance with the VDOT permit.

   B. IT IS ANTICIPATED THAT THE FOLLOWING 2011 VIRGINIA WORK AREA PROTECTION MANUAL REVISION2 TYPICAL TRAFFIC CONTROL APPLICATIONS WILL BE USED TO PERFORM THE CONTRACT WORK: TTC-5.2 & TTC-23.2 DURING PERIODS THAT OPERATIONS ARE PERFORMED UNDER TRAFFIC, THE SPEED LIMIT SHALL BE, AS POSTED. IN ADDITION, "ROAD WORK AHEAD" SIGNS SHALL BE PLACED IN ADVANCE OF THE WORK ZONE.

   c. The contractor shall submit a maintenance of traffic schedule, including all proposed lane and shoulder closures, at least two weeks prior the actual closures are to begin for review and approval.

   d. The contractor shall submit the final plan of all proposed lane and shoulder closures by close of business Wednesday for work in the following week requiring the lane or shoulder closures in order for the Department to notify the general public, appropriate public entities, Traffic Management Center, and the District Traffic Engineer.

   e. An onsite review of the project's work zone traffic control by the project management team, District Traffic Engineer and contractor shall be conducted within 24 hours of any fatal incident/crash within the work zone.

   f. Periodic work zone reviews shall be conducted jointly by the project management team, District Traffic Engineer and contractor.

   g. All traffic control devices and signs necessary for the maintenance of traffic are to be supplied, installed, maintained and removed by the contractor.

   h. All traffic control device locations shall be marked by the Contractor and reviewed by the Engineer prior to installation.

   i. Construction signs shall be fabricated and installed in accordance with the Manual of Uniform Traffic Control Devices 2009 Edition, Standard Highway Sign Manual 2011 Edition, Virginia Work Area Protection Manual 2011 Edition Revision 2, 2016 Road and Bridge Standards and the 2020 Road and Bridge Specifications.

   j. All signs will be either removed from the roadway when not needed or covered per section 6F.04 of the Virginia Work Area Protection Manual, 2011 Edition Revision 2.

   k. Some sketches and drawings are not to scale and shall be used for reference only.

   l. TRAFFIC CONSISTS OF RESIDENTS, COMMERCIAL AND DELIVERY TRUCKS. (RESIDENTS, COMMUTERS, DELIVERY TRUCKS, SCHOOL BUSSES, ETC)

   m. Sidewalk closures shall be in accordance with TTC-35.1 and TTC-36.2, if applicable.

3. Group 2 channelizing devices are to be placed as directed by the Va. WAPM, page A-7.

4. Work activity in the roadway will be allowed from 9:00AM and 3:30PM Monday thru Friday. For alternate work hours the contractor must submit in writing the proposed alternate hours to the Fredericksburg District Permit Office for review and approval. Holiday restrictions outlined in the 2020 Road and Bridge Specifications Section 108.02.

5. Lane closures WILL be permitted.

6. Temporary lane widths are not to be less than the existing lane width (desirable 11' minimum) without concurrence of the District Traffic Engineer.

7. No objects, equipment, or stored materials may interfere with sight distance of entrances and intersections.

8. Portable changeable message signs shall be placed per the Virginia Work Area Protection Manual or as directed by the Engineer.

9. VDOT will not assist contractor in securing staging area for equipment and materials within the State R/W.

10. Contractor shall maintain access to private entrances during operations.

11. The Contractor shall call 1-800-FOR-ROADS for mark-out and locating of all VDOT owned utilities when working within 1,000 feet of a traffic signal in the Fredericksburg District. This contact shall be made a minimum of 72 hours prior to the beginning of work. The Contractor shall maintain these markings until work is completed.
    When working on the following routes, the Contractor shall call 1-800-FOR-ROADS regardless of the distance to a traffic signal.
    - Stafford County I-95, Rte. 1, Rte. 17, Rte. 610, Rte. 637, Rte. 789 and Rte. 8900
    - Spotsylvania County I-95, Rte. 1, Rte. 3, Rte. 17 Rte. 608 and Rte. 628
    - Caroline County I-95, Rte. 1 and Rte. 207
    - Gloucester County Rte. 17
    - Essex County (Tappahannock Area) Rte. 17
    The Contractor shall contact the Engineer immediately if there is an expected conflict with the proposed work.

12. All areas excavated below existing pavement surfaces at the conclusion of each workday shall be backfilled to form a 4:1 wedge against pavement surface for the safety and protection of vehicular traffic.

13. The contractor shall provide temporary drainage as required to prevent ponding of water on the roadway and adjacent properties at no cost to VDOT.

14. Contractor shall protect any existing guardrail and supports within construction area from damage. Any guardrail or supports damaged during construction operations shall be repaired or replaced to pre-construction conditions by the contractor.

15. Maintenance of traffic shall be done in accordance with the Virginia Work Area Protection Manual dated 2011 Revision 2 and the 2009 Edition of the Manual of Uniform Traffic Control Devices.

16. All coordination for maintenance of traffic shall be performed by the Fredericksburg District Land Use Permits Office. The contact numbers are:

    Carolyn Oster, PE, VDOT (Fredericksburg Residency Land Use Engineer) 540-654-1973

    VDOT Permit Inspector:

    540-374-3398 Tracey White (Spotsylvania)

    540-907-5107 Ryan Reigleman (South Stafford)

    540-654-1612 John Pataky (North Stafford)

    540-940-9833 Andy Smith (Caroline)

17. THIS TRAFFIC MANAGEMENT PLAN WAS PREPARED BY RYAN FOROUGHI WHO SUCCESSFULLY COMPLETED THE ADVANCED WZTC IN 09/30/2028.

PUBLIC COMMUNICATIONS PLAN

Notification of construction start/end dates and work zone information will be entered into the VA. Traffic system.

Transportation Operations Plan

1. The process to notify the Regional Traffic Operation Center to place lane closure information on the 511 system and LCAMS will be:
   a. Contractor is to advise the VDOT project inspector and/or Construction Manager of planned lane closures a minimum of 24 hours in advance of proposed lane closure.
   b. Construction Manager is to advise the Residency Maintenance Manager of proposed lane/road closure. RMA is to have (VA. Traffic) operator enter data into (LCAMS) and also advise TOC.
2. The following is a list of Local Emergency contact agencies:
   a. Virginia State Police—800-572-2260
   b. Haz-Mat Center (if Spill Involved) 911
3. Procedures to respond to Traffic Incidents that may occur in the work zone:
   a. Contractor to notify Virginia State Police and VDOT inspector in charge and Regional Traffic Operation Center.
   b. Depending upon severity of incident, contractor may have to shut down work.

   c. Upon arrival on scene, Virginia State Police will determine response necessary to allow traveling public around incident.
   d. Inspector to notify Construction Manager/Residency Administrator of incident and take pictures as necessary, especially pictures of contractor's work zone to verify the proper setup.
4. Process of notification of incident to followed is:
   Contractor to call:
   a. Regional Traffic Operations Center: SPOTSYLVANIA 540-658-4340
   b. District Work Zone safety coordinator: Jeffrey Stone 540-899-4547 or 540-226-7107
   c. District Traffic Operations Director – Michael Corwin P.E. (757) 818-1993
   d. District Traffic Engineer – Robert Weber, P.E. (540) 315-5698
   e. Engineer Senior Supervisor Signals – Jizhan Gou P.E. (Jason) (571) 350-2020
   f. Incident Management Coordinator - Floyd Ellmore (Boots) (703) 539-9143
   g. District Communications Manager – Kelly Hannon (540) 374-3344
   H. SPOTSYLVANIA COUNTY SHERIFF'S OFFICE 540-582-7115
5. The Virginia State Police report of the incident will be reviewed by the Residency Administrator to determine if any modification of the Temporary Control Plan is necessary. If it is necessary to alter the plan, then a meeting will be called with the contractor, VDOT personnel, VDOT safety representatives and the Virginia State Police (If Necessary) to discuss modification and implementation of an approved Traffic Control Plan.

Typical Traffic Control
Shoulder Operation with Minor Encroachment
(Figure TTC-5.2)

NOTES

Standard

1. **For required sign assemblies for multi-lane roadways see Note 1, TTC-4.**[1]

Guidance

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
3. *When work takes up part of a lane on a high volume roadway; vehicular traffic volumes, vehicle mix, speed and capacity should be analyzed to determine whether the affected lane should be closed. Unless the lane encroachment analysis permits a remaining lane width of 10 feet, the lane should be closed. If the closure operation is on a Limited Access highway, the minimum lane width is 11 feet.*

Option:

4. The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.

Standard:

5. **A shadow vehicle with either an arrow board operating in the caution mode, or at least one high-intensity amber rotating, flashing, or[3] oscillating light shall be parked 80' - 120' in advance of the first work crew.**
6. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or[3] oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or[3] oscillating lights.**
7. **Taper length (L) and channelizing device spacing shall be at the following:**

Taper Length L

Speed Limit (mph)	Lane Width (Feet) 9	10	11	12	Remarks
25	95	105	115	125	L=WS/60
30	135	150	165	180	L=WS/60
35	185	205	225	245	L=WS/60
40	240	270	295	320	L=WS/60
45	405	450	495	540	L=SW

Speed Limit (mph)	Lane Width (Feet) 9	10	11	12	Remarks
50	450	500	550	600	L=SW
55	495	550	605	660	L= SW
60	540	600	660	720	L=SW
65	585	650	715	780	L=SW
70	630	700	770	840	L=SW

Limited Access highways shall use a 1000' merging taper regardless of the posted speed, a 750' shifting taper for posted speeds < 65 mph and a 1000' shifting taper for posted speeds ≥ 65 mph.[3]
Shoulder Taper = ½ L Minimum

8. **Channelizing device spacing shall be at the following:**

Channelizing Device Spacing

Location Spacing	Speed Limit (mph) 0 -35	36 +	Location Spacing	Speed Limit (mph) 0 -35	36 +	Location Spacing	Speed Limit (mph) 0 -35	36 +
Tapers	20'	40'	Traveltway	40'	80'	*Construction Access	80'	120'

*Construction access spacing may be increased to this distance, but shall not exceed one access per ¼ mile.

9. **On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.**[2]
10. **The buffer space length The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
11. **A truck-mounted attenuator (TMA) shall be used on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph.**
12. **When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.**

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Shoulder Operation with Minor Encroachment
(Figure TTC-5.2)

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)

NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.*
3. *To maintain efficient traffic flow in a flagging operation on a two-lane roadway, the maximum time motorists should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E.07.*[3]

Standard:

4. **Portable Temporary Rumble Strips (PTRS) shall be used as noted in Section 6F.99.**
5. **Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).**
6. **All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).**
7. **Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.**[1]
8. **A shadow vehicle with at least one high intensity amber rotating, flashing, or[3] oscillating light shall be parked 80'-120' in advance of the first work crew.**

Option:

8. A SLOW (W21-V10) sign[2] may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. *If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the PTRS[3] should be readjusted at greater distances.*
10. *When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).*

Standard:

11. **At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).**

Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

Standard:[2]

14. **When used[4], three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.**

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019
3: Revision 2.1 – 11/1/2020

CONSTRUCTION NOTES FOR VDOT
(Revised 9/19/2017)

1. Subdivisions only – These requirements were prepared in accordance with the requirements of (select one):
   - VDOT's 2005 Subdivision Street Requirements (SSR)
   - VDOT's 2009 Secondary Street Acceptance Requirements (SSAR)
   - VDOT's 2011 Secondary Street Acceptance Requirements (SSAR 2011)
2. All work shown hereon shall be in strict accordance with the current Standards and Specifications of the Virginia Department of Transportation (VDOT) and County Ordinances.
3. It is the intent of these drawings to show all necessary work. Any item of work not specifically shown, but necessary to eligibility for acceptance is hereby implied.
4. A VDOT permit must be obtained prior to starting construction within any State Highway Rights-of-Way.
5. The contractor/owner shall perform CBR testing on the subgrade in accordance with VDOT specifications by a certified geotechnical engineer to determine base and pavement designs, and this information must be forwarded to VDOT and reviewed prior to placement of aggregate base.
6. The contractor/owner must specify in writing to VDOT prior to construction, the type of subbase, base and surface pavement to be utilized on each street for each traffic group.
7. The contractor shall notify VDOT 72 hours prior to placement of base materials and prior to the placement of asphalt material to ensure VDOT's ability to perform testing, such as proof-rolling, depth checks, compaction, and contamination. Option: A certified analysis from a private engineering/testing firm may be submitted within 7 working days of the required tests. **72 hours notice is still required prior to each activity.**
8. All culvert and driveway pipes shall be of a type approved by VDOT and the Locality. Note that the use of corrugated metal pipe in any location will only be considered after the requirements of standard PC-1, Tables C and D of the *2016 Road and Bridge Standards* are addressed.
9. All entrance pipes for driveways shall be a minimum of 12" in diameter, and 30' in length (concrete culverts may be 28' in length), unless otherwise approved by VDOT. Driveway culverts in cul-de-sacs shall be concrete. See approved road plans for the proper culvert sizes.
10. Contractor must verify all dimensions and elevations in the field before starting construction and notify the design engineer of any discrepancies.
11. The contractor shall erect street signs and traffic control signs as indicated on the subdivision construction plans. The signs shall conform to VDOT and County specifications. All proposed signs are to be installed per STP-1 of the *2016 Road and Bridge Standards*. All pavement markings installed within VDOT Right-of-way will be Type B Class I Thermoplastic.
12. A minimum 35' pavement fillet radius is recommended.
13. The contractor shall do such overlot grading as necessary to preclude the ponding of water adjacent to the roadway.
14. Slope easements will be required at all locations where the top of the cut or the toe of the fill exceeds the proposed dedication of right-of-way. See plat for exact location.
15. If running water is present in any outlet channel during construction where ditch protection is required, the bottom of the channel shall be lined with rip-rap stone with EC-1 placement. Further, EC-2 or EC-3 must have a minimum width of 4' in fill sections, and 5' in cut sections.
16. The contractor shall be responsible to see that all erosion and sediment control standards are met, and the contractor must seed and mulch all disturbed areas along with all graded areas within the proposed right-of-way in accordance with VDOT standards and specifications.
17. Final location of manholes, valves, fire hydrants, and other appurtenances shall not conflict with or constrict roadway drainage. Contractor shall adjust manholes and/or ditch alignment to ensure proper roadside drainage, compatible with existing field conditions.
18. All water, sanitary sewer, and storm sewer trenches shall be compacted to 95% density in 6" layers. Compaction tests may be required by VDOT.
19. VDOT will require density tests from a certified engineering firm for all culvert installations with a diameter of 36" or larger.
20. Video inspection may be required on all storm sewer systems prior to final construction approval. A VDOT inspector must be on-site during the video inspection process.
21. The contractor needs to contact Fredericksburg District Traffic Signals at (855) 475-2335 for a mark out of the traffic signal equipment a minimum of 72 hours prior to work beginning when working within a 1,000 feet of a traffic signal.
22. The final footage and location for VDOT standard guardrail is to be established prior to the completion of fine grading by joint inspection with the contractor, VDOT, and the owner's representative. **Any guardrail installation, removal, or adjustments must be made by a VDOT-certified guardrail contractor.**
23. Whenever tying in to an existing road, VDOT's WP-2 standard will apply, which include milling and overlay of the adjacent travel lane.
24. A pavement leveling course may be required to meet the intended cross-slope and typical section.
25. All storm structures shall have IS-1 invert shaping, and SL-1's (safety landings) will be required in all structures with a depth over 12'. ST-1's (steps) are required in any structure with a depth of 4' or greater.

NOTE:
AT THE TIME OF CONSTRUCTION, THE DEVELOPMENT SHALL BE CONSTRUCTED TO MEET THE LATEST CURRENT VDOT STANDARD DETAIL IN AFFECT.

APPROVAL BLOCK

REVISIONS	
DATE	
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22408
TELEPHONE (540) 373-5178
WEBSITE BFGENG.COM

COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

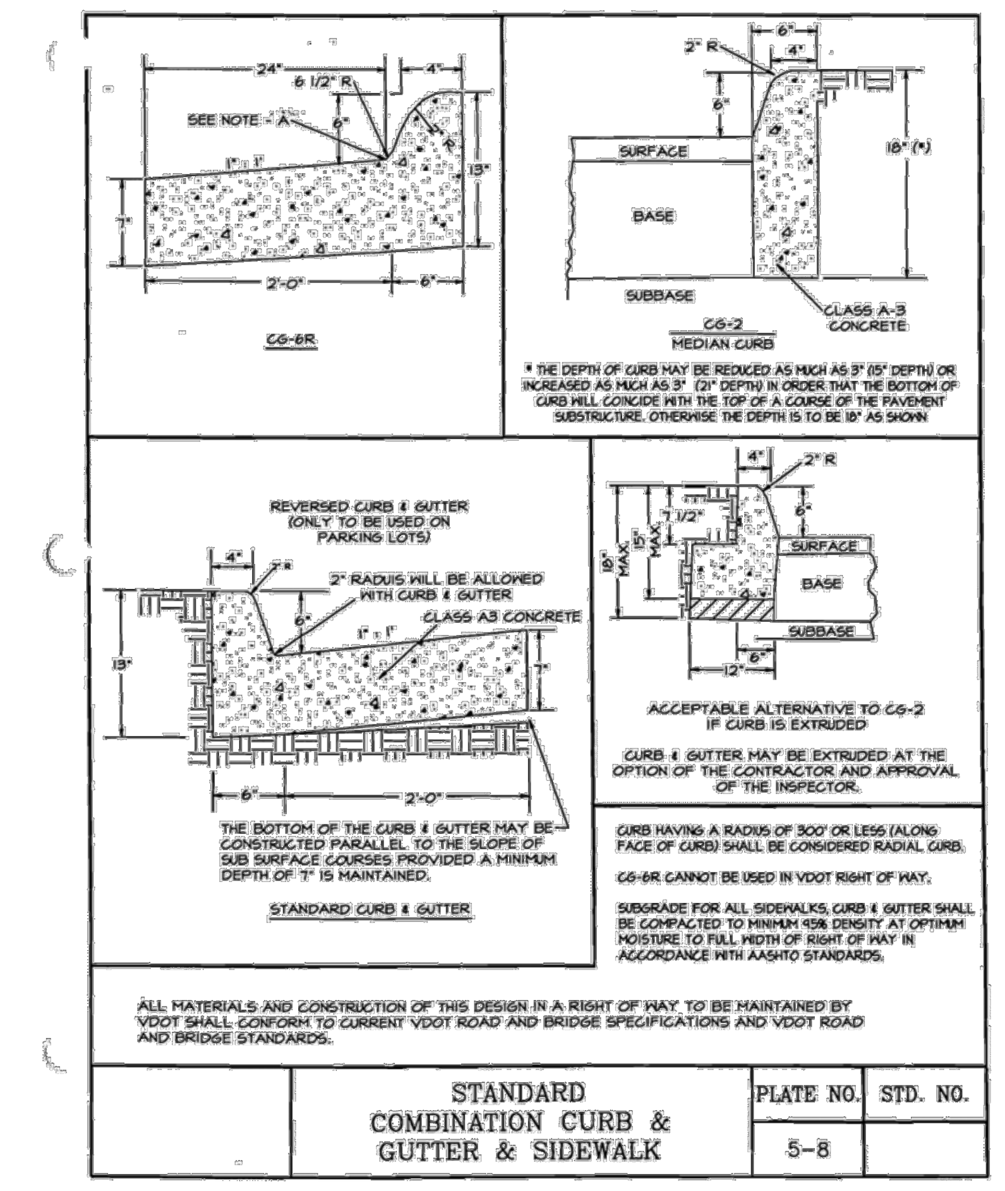
TRAFFIC MANAGEMENT PLAN

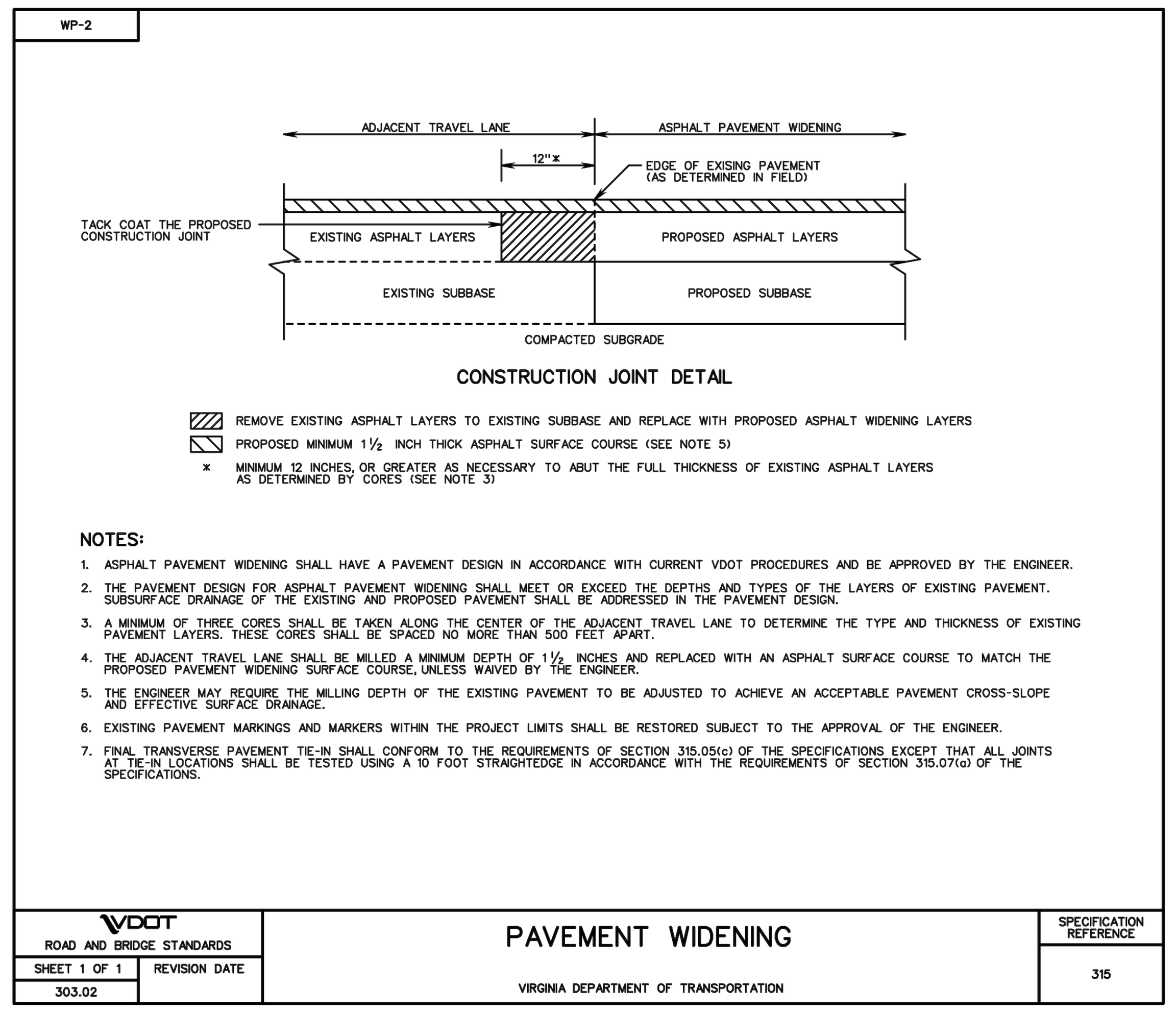
GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT

SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	NONE
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

ARTICLE 5 – STREETS, PARKING AND DRIVEWAYS





Commercial Entrance Design along Local Streets with Curb and Gutter or Shoulders

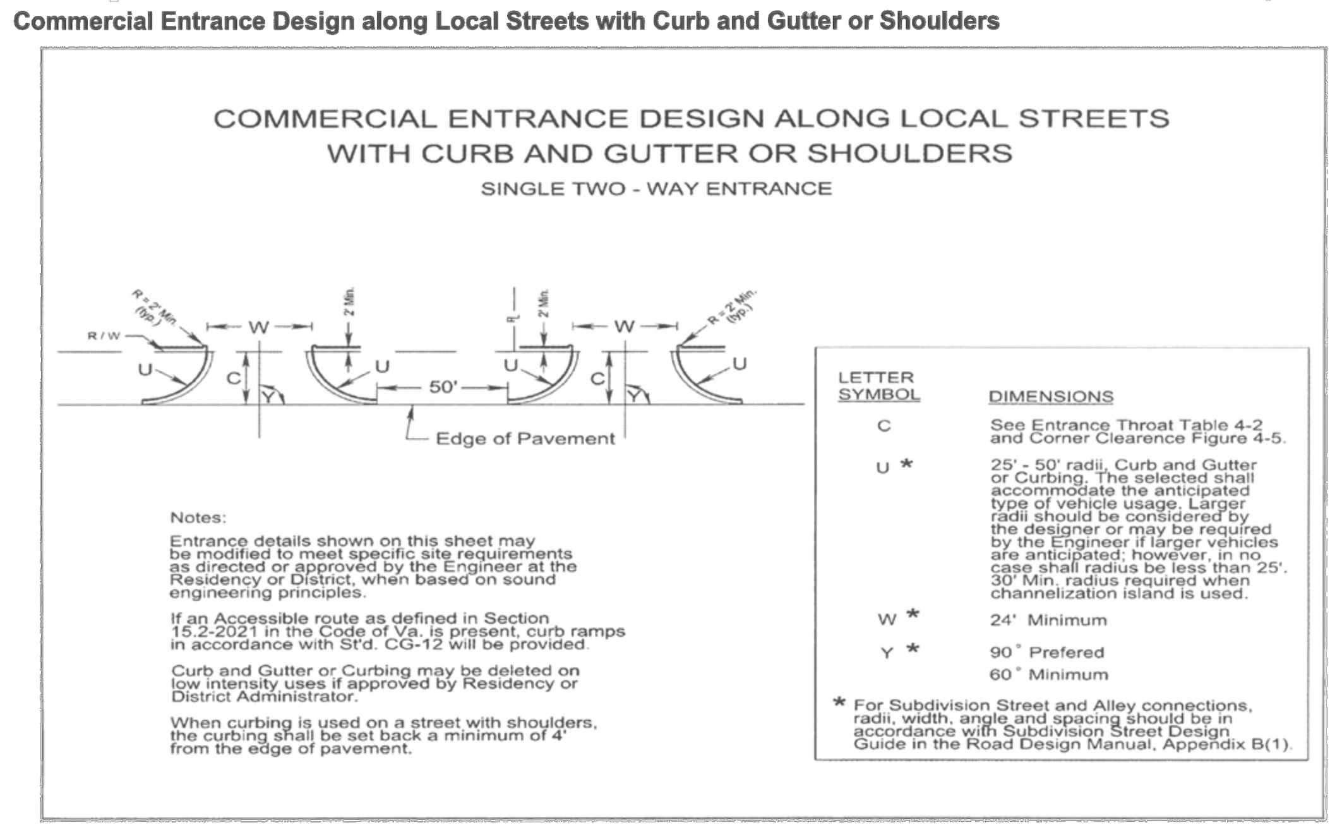
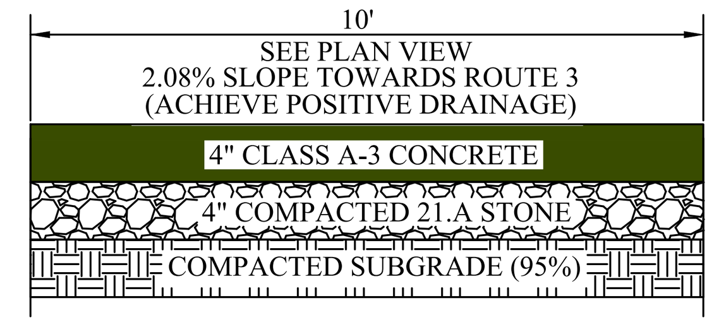


FIGURE 4-11 COMMERCIAL ENTRANCE DESIGNS ALONG LOCAL STREETS*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

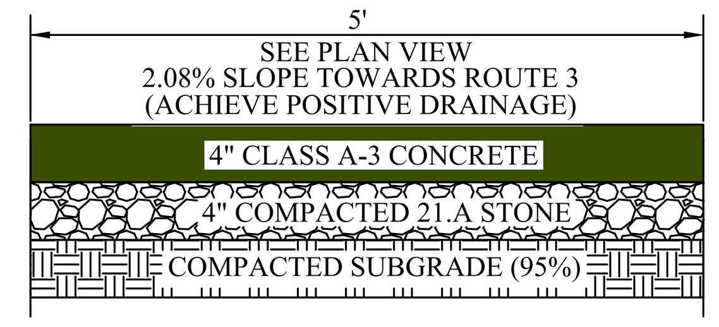
* Rev. 7/12



TYPICAL SECTION CONCRETE SHARED USE PATH

NO SCALE

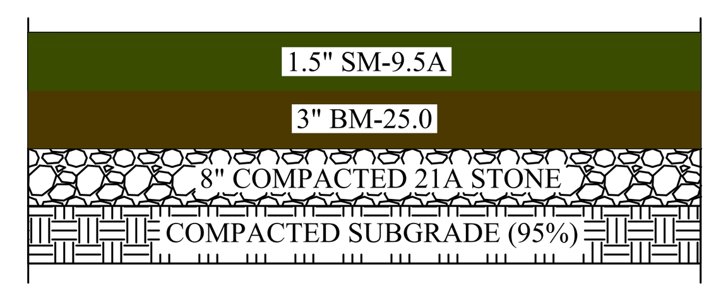
JOINTS IN ACCORDANCE W/ VDOT STANDARDS



TYPICAL SECTION CONCRETE SIDEWALK

NO SCALE

JOINTS IN ACCORDANCE W/ VDOT STANDARDS

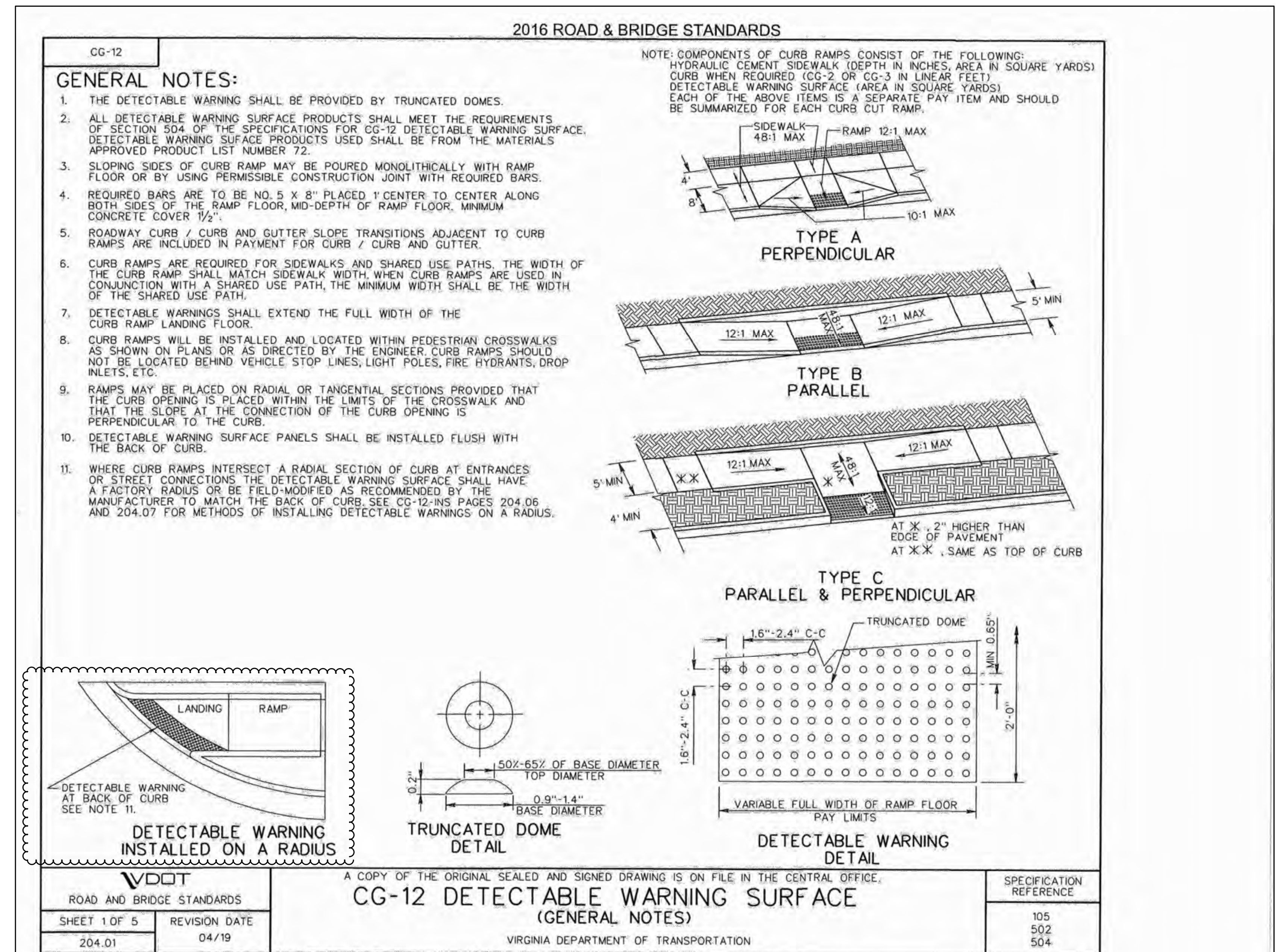


TYPICAL PAVEMENT SECTION PARKING SPACES & TRAVELWAY OR APPROVED EQUAL

NO SCALE

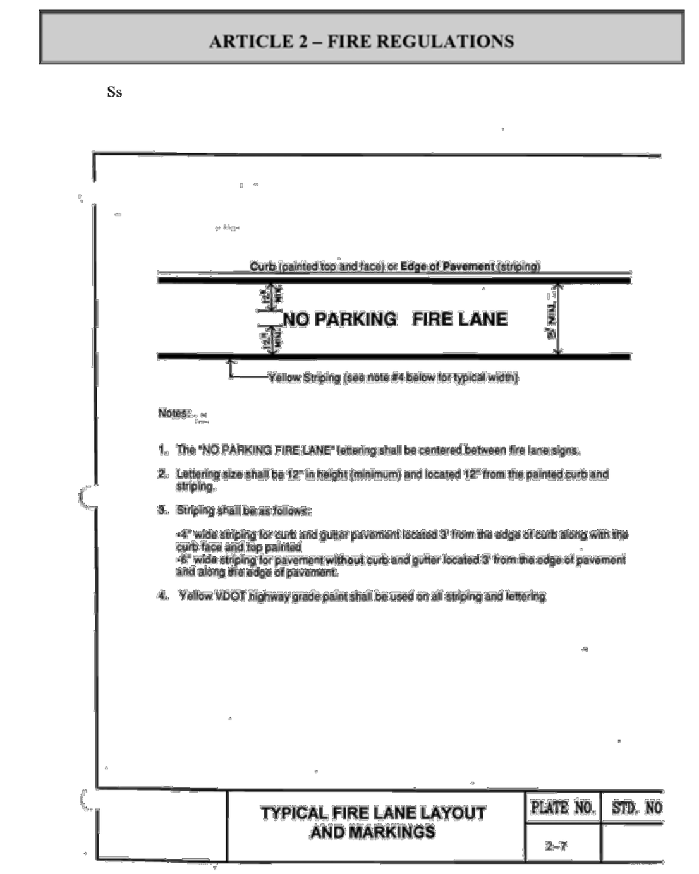
ALL TIE IN REQUIRE MINIMUM 2' MILL & OVERLAY

2016 ROAD & BRIDGE STANDARDS

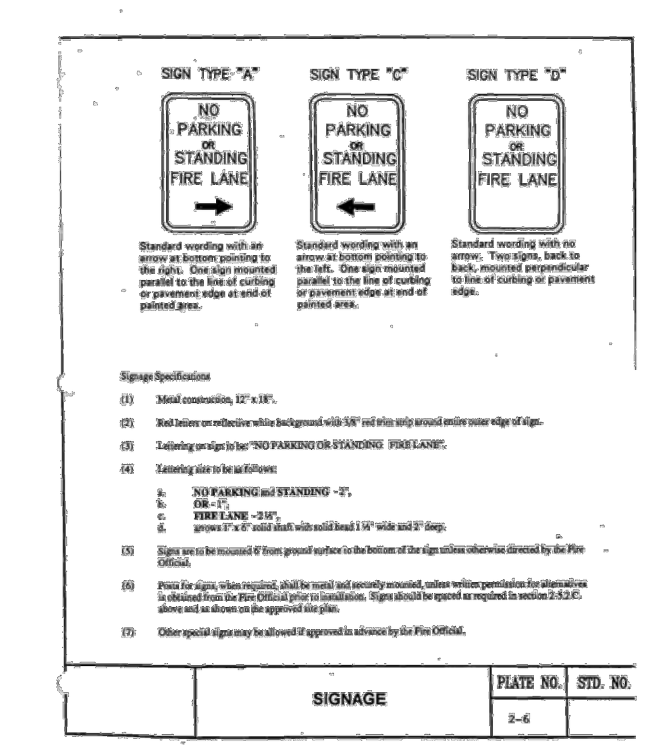


2016 ROAD & BRIDGE STANDARDS

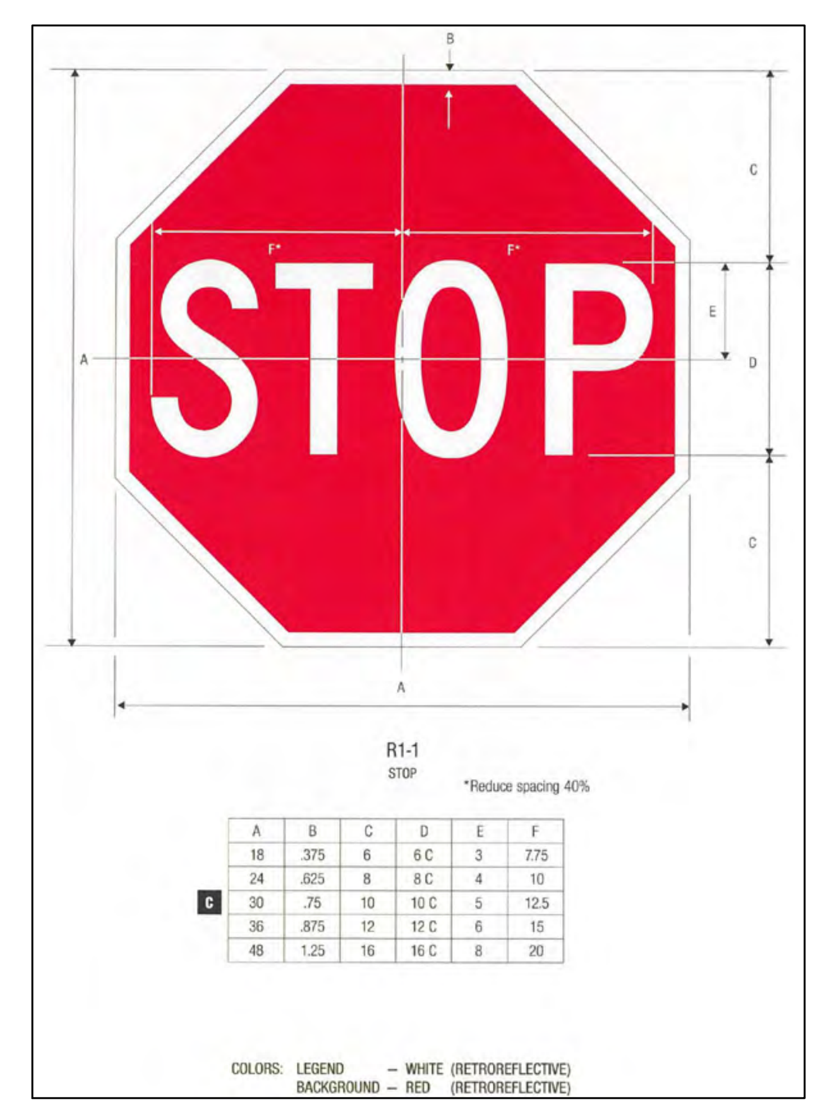
ARTICLE 2 – FIRE REGULATIONS



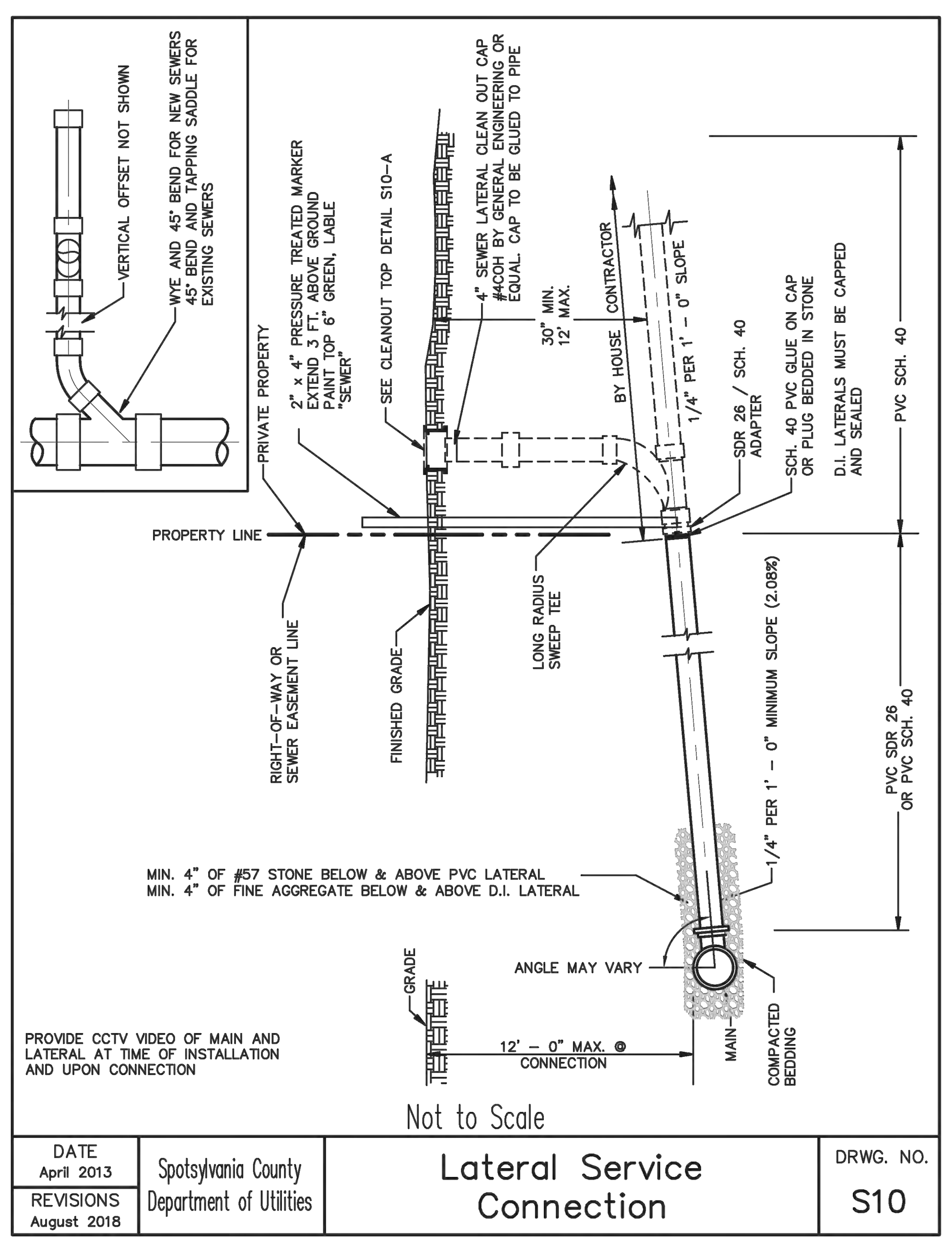
ARTICLE 2 – FIRE REGULATIONS

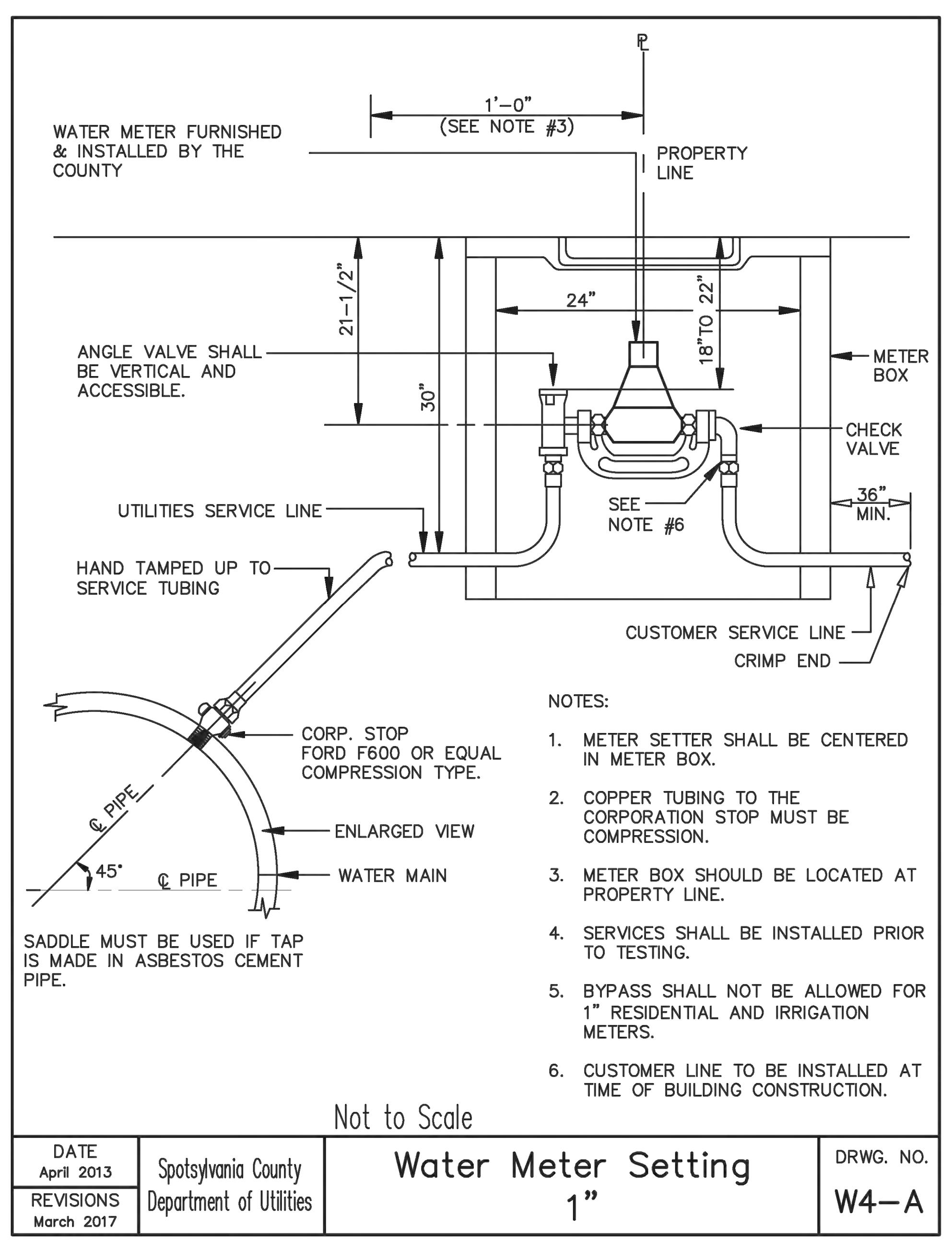


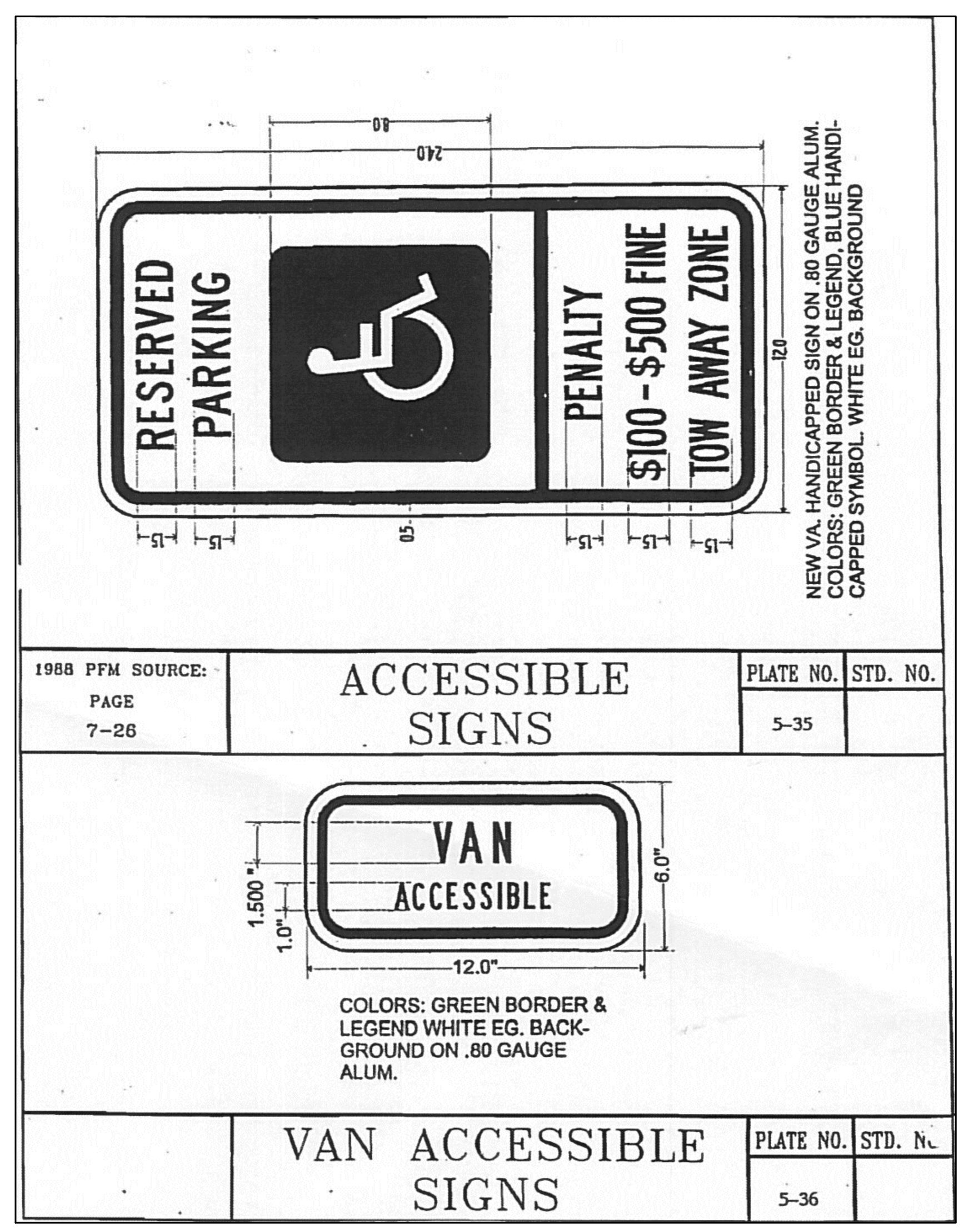
FIRE LANE NOTE:
USE TPYE D SIGNS INSTALLED BACK-TO-BACK PERPENDICULAR TO THE ROADWAY



APPROVAL BLOCK







NOTE:
AT THE TIME OF CONSTRUCTION, THE DEVELOPMENT SHALL BE CONSTRUCTED TO MEET THE LATEST CURRENT VDOT STANDARD DETAIL IN AFFECT.

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BFG
BAGBY, FOROUGHI and GOODPASTURE, PLLC
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

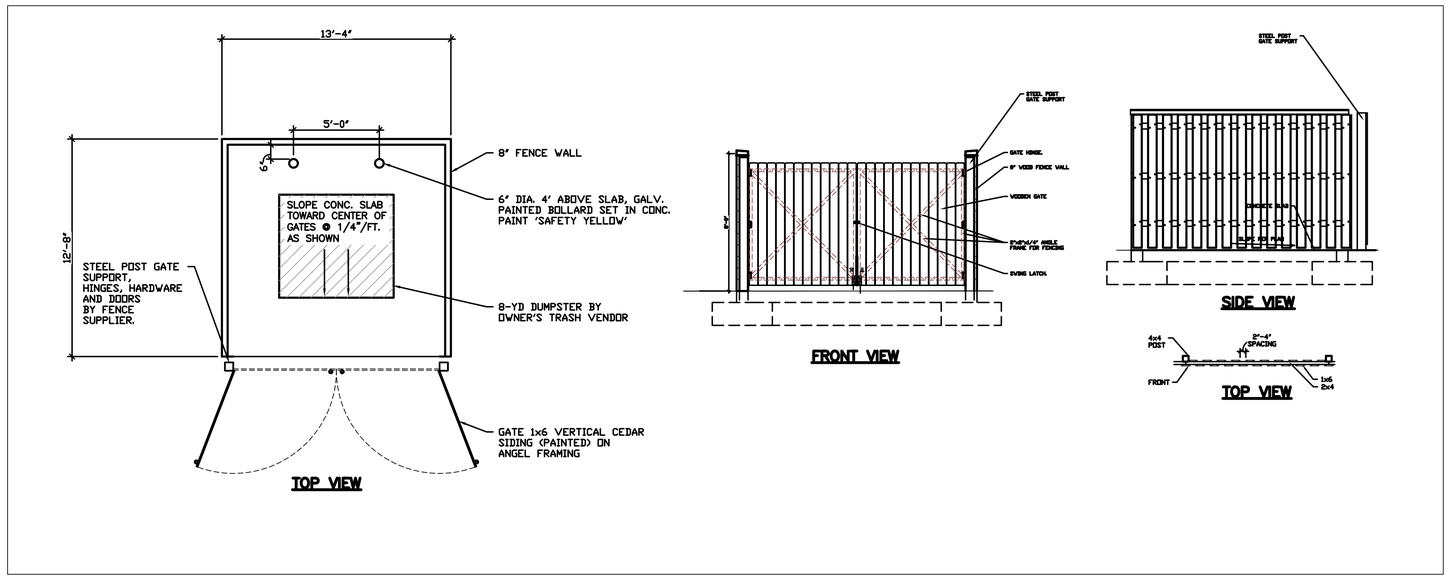
DETAILS

GREAT OUTDOORS OF SPOTSYLVANIA DALMATIAN SERVICES, INC 11100 PIERSON DRIVE LEE HILL MAGISTERIAL DISTRICT

SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	NONE
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

19



APPROVAL BLOCK

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
121 OLDE GREENWICH DRIVE, SUITE 115
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

DUMPSTER DETAIL

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	NONE
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

19A

Tree Cover Calculations Pollo Campero (DSM 6-1.2)	
Tree Cover Required:	
Gross Site Area:	92,347 s.f.
Building Footprint Area:	960 s.f.
Grading Area	0.00 s.f.
Adjusted Gross Site Area:	91,387 s.f.
Percent Tree Cover Required:	10%
Total Area of Tree Cover Required:	9,139 s.f.
Tree Cover Provided:	
Tree Cover From Preservation:	4,200 s.f.
Tree Cover From Landscaping:	6,400 s.f.
Total Tree Cover Provided:	10,600 s.f.

Parking Lot Interior Landscaping
(DSM 6-6.1)

NOT REQUIRED. LESS THAN TWENTY PARKING SPACES.

PERIPHERAL PARKING LOT LANDSCAPING
(DSM 6-2.2A)

NOT REQUIRED. LESS THAN TWENTY PARKING SPACES.

Street Buffer
(DSM 6-8.1)

Tidewater Trail - Arterial - 185' length

Street Buffer 'B' Required:
20' Buffer - 1.2 Canopy and 0.4 Understory / 100'
@ 185' = 3 Canopy Trees and 1 Understory Trees

Street Buffer Provided @ 20':
3 Canopy Trees @ 300 S.F. = 900 S.F.
9 Understory Trees @ 200 S.F. = 1,800 S.F.
Total Provided = 2,700 S.F.

LEGEND

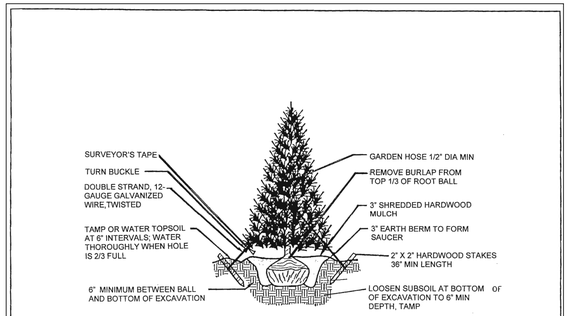
ACER RUBRUM / RED MAPLE (CANOPY 3" CAL & 12' HT)

CERCIS CANADENSIS / REDBUD (UNDERSTORY 8' HT)

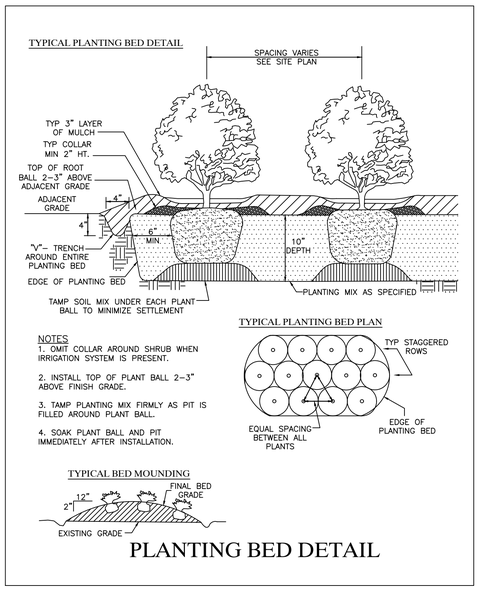
LEYLANDII / LEYLAND CYPRUS (EVERGREEN 5'–6' HT)

NOTES:

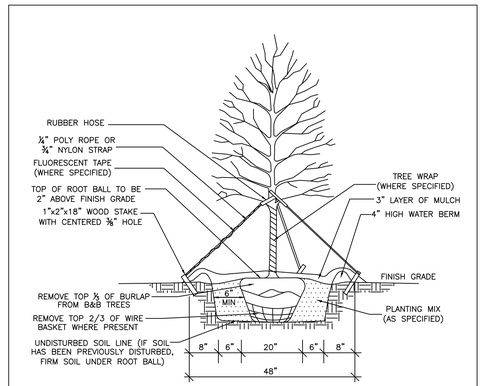
1. LANDSCAPING SHOWN HEREON SHALL NOT INTERFERE WITH PROPOSED PARKING LOT
2. LANDSCAPE PLAN IS SUBJECT TO REVIEW AND APPROVAL AT TIME OF SITE PLAN.



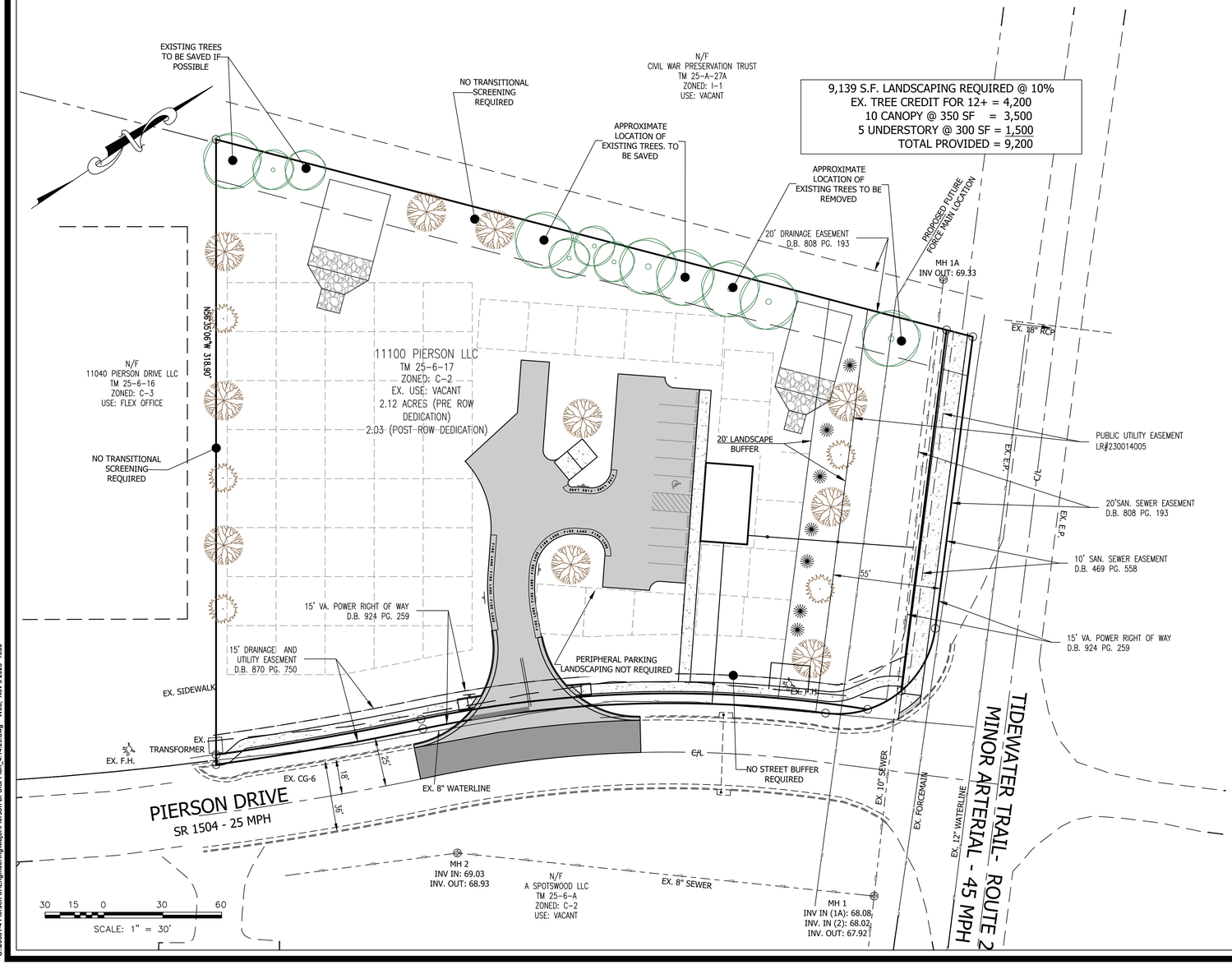
EVERGREEN TREE | REVISION DATE



PLANTING BED DETAIL



SINGLE STEM TREE PLANTING DETAIL



BFG
Bagby, Foroughi & Goodpasture, PLLC
125 Olde Greenwich Drive, Suite 115
Fredericksburg, Va 22408

LANDSCAPING BOND
GREAT OUTDOORS OF SPOTSYLVANIA - SP23-0006
IMPROVEMENTS

DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
Understory Tree	EA	$200.00	12	$2,400.00
Canopy Tree	EA	$400.00	10	$4,000.00
			10% ADMIN FEE	$640.00
			TOTAL	$7,040.00

APPROVAL BLOCK

REVISIONS	DATE
PER COUNTY & VDOT COMMENTS	6/22/23
PER COUNTY & VDOT COMMENTS	6/27/24
PER COUNTY & VDOT COMMENTS	9/27/24
PER COUNTY COMMENTS	3/3/25
PER COUNTY & VDOT COMMENTS	5/20/25
SIGNATURE SET	7/7/25

BFG
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TELEPHONE: (540) 373-8178
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COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

LANDSCAPING PLAN

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE: 3/1/2023
SCALE: 1" = 30'
DESIGNED BY: MRB
DRAWN BY: MRB
CHECKED BY: RKF
PRINT DATE: 11/5/2025
JOB NO. 20581-4
PLAN NO. ST23-0006

G:\20581-4 Pierson dr\Engineering\Major\Pierson Dr Site Plan_4.14.25.dwg Wed, Nov 5 2025 ross

Evolve® LED Area Light
Compact Low Wattage (EACL)

Project Name
Date Type
Notes

Current's EAL Series of Area Light Luminaires offer a wide range of optical patterns, color temperatures, lumen packages, and mounting configurations to optimize area light applications, as well as provide versatility in lighting design within the same form factor.

CONSTRUCTION

Housing:	Die-cast aluminum housing with integral heat sink for maximum heat transfer
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze Gray, White (RAL & custom colors available) Optional coastal finish available.
Weight:	18 lbs (8.16 kg) Max depending on configuration

OPTICAL SYSTEM

Lumens:	2,900 - 20,400
Distribution:	Asymmetric Forward Type IV Asymmetric Wide Type III Asymmetric Narrow/Auto Type II
Efficacy:	123 - 143 LPW
CCT:	3000K, 4000K, 5000K
CRI:	≥70

ELECTRICAL

Input Voltage:	120-277V & 347-480V
Input Frequency:	50/60Hz
Power Factor:	> 90% at rated watts
Total Harmonic Distortion:	< 20% at rated watts

SURGE PROTECTION*

Typcial (120 Strikes)	Enhanced (40 Strikes)	Extreme (40 Strikes)
6kV/3kA*	10kV/5kA*	20kV/10kA*

*Per ANSI C136.2-2015

LUMEN MAINTENANCE

Projected Lxx per IES TM-21-11 at 25°C

Lumen Codes	LXX(10K) @ Hours 25,000 HR	50,000 HR	60,000 HR
A2, A3, A4, B2, B3, B4, C2, C3, C4D2, D3, D4, E2, E3, E4, F2, F3, F4	L94	L90	L88
H2,H3, H4	L97	L96	L96

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

LUMINAIRE AMBIENT TEMPERATURE FACTOR

Ambient Temp (°C)	Initial Flux Factor	Ambient Temp (°C)	Initial Flux Factor
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

RATINGS

Operating Temperature:	-40°C to 50°C
Vibration:	3G vibration per ANSI C136.31-2018
LM-79:	Testing in accordance with IESNA Standards

CONTROLS

Dimming:	Standard - 0-10V Optional - DALI (Option U)
Sensors:	Photo Electric Sensors (PE) available LightGrid and Daintree Compatiable

WARRANTY

5 Year (Standard)

GE current
a Daintree company

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

Evolve® LED Area Light
Compact Low Wattage (EACL)

Project Name
Date Type
Notes

Catalog Logic

EACL 01 _ _ _ 7 _ _ _ _ _ _

PROD. ID	GEN	VOLTAGE	OPTIC CODE	DISTRIBUTION	CRI (min)	CCT	DIMMING[2]	CONTROLS	MOUNTING ARM	COLOR	OPTIONS
E = Evolve	01	0 = 120-277[1]	Ax=3000	AF = Asymmetric Forward	7 = 70	30 = 3000K[11]	N = Dimming thru PE receptacle[13]	1 = None	C1 = Integral Slip-fitter for 1.25"- 2" Pipe (1.66in. OD - 2.378 in. OD)[4]	GRAY = Gray	F = Fusing
AC = Compact Area Light		H = 347-480[1]	Bx=5000	AW = Asymmetric Wide		40 = 4000K	D = External Dimming 18/2-3ft cable[3]	A = ANSI 7-pin PE receptacle (no control)	D1 = Universal Mounting Arm, fitted for round or square pole mounting[5]	BLCK = Black	H = Motion Sensor (Sensor Switch)[8]
L = Low Voltage			Cx=7500	AN = Asymmetric Narrow/Auto		50 = 5000K	X = No PE receptacle, no external dimming leads[9]	D = ANSI 7-pin PE receptacle with shorting cap provided	K1 = Knuckle Slipfitter for 1.9 in - 2.3in. OD Tenon[5,6]	DKBZ = Dark Bronze	H1 = Motion Sensor w/LightGrid
		1 = 120	Dx=10000					E = ANSI C136.41 7-pin with Non-Dimming PE Control[7]	S1 = Knuckle Slipfitter for 2.3in. - 3.0in OD Tenon[5,6]	WHTE = White	H2 = Motion Sensor (Daintree)[8]
		2 = 208	Dx=10000						V1 = Knuckle Wall Mount[5,6]		H4 = Motion Sensor (Wattstopper)
		3 = 240	Ex=12500								J = cUL/Canada
		4 = 277	Fx=15000								L = Tool-Less Entry
		5 = 480	Hx=20000								R= Enhanced Surge Protection (10kV/5kA)
		D = 347									U = DALI dimming[7]
											V0 = 3-Position Terminal Block
											V1 = Variable output via Field Adjustable Module
											Y = Coastal Finish[10]
											XXX = Special Options

1 Not Available with Fusing, Must Choose a Discrete Voltage with "F" Option Code
2 Note Standard Dimming is 0-10V
3 PE Control only available for 120-277V, 347V or 480V Discrete Voltage
4 Supplied with 3ft leads
5 Supplied with 16/3 ft Cable
6 Restricted Aiming Angle of 0-45°
7 Compatible with LightGrid Wireless Control Nodes, Not Compatible with Motion Sensor Control
8 Not available in 347V, 480V or 347-480V
10 Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
11 Select 3000K CCT for IDA approved fixtures.
12 Can only be ordered with Controls A, D or E
13 Can be used with controls option 1

GE current
a Daintree company

Evolve® LED Wall Pack
A Series (EWAS)

Project Name
Date Type
Notes

The **Evolve**® LED A Series Wall Pack (EWAS), offers Type II, III and IV optical patterns with lumen levels ranging from 3,000 to 17,000 lumens, and is a designed replacement for 50W to 400W HID including an optional Emergency Battery Backup.

CONSTRUCTION

Housing:	Aluminum die cast enclosure. Integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze, Gray & White (RAL & custom colors available)
Weight:	8 - 10 lbs.

OPTICAL SYSTEM

Lumens:	3,000 - 17,000
Distribution:	Type II, III, IV
CCT:	3000K, 4000K, 5000K
CRI:	≥70

ELECTRICAL

Input Voltage:	120-277V & 347-480V
Input Frequency:	50/60Hz
Power Factor:	> 90% at rated watts
Total Harmonic Distortion:	< 20% at rated watts

SURGE PROTECTION

Typcial (120 Strikes)	Enhanced (40 Strikes)	Extreme (40 Strikes)
6kV/3kA*	10kV/5kA*	20kV/10kA*

*Per ANSI C136.2-2015

WARRANTY

5 Year (Standard)

LUMEN MAINTENANCE

Projected Lxx per IES TM-21-11 at 25°C

Distribution	LXX(10K) @ Hours 25,000 HR	50,000 HR	60,000 HR
A2, A3, A4, B2, B3, B4, C2, C3, C4, D2, D3, D4	L95	L93	L92
E2, E3, E4, F2, F3, F4, G2, G3, G4	L96	L94	L94

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

LUMINAIRE AMBIENT TEMPERATURE FACTOR

Ambient Temp (°C)	Initial Flux Factor	Ambient Temp (°C)	Initial Flux Factor
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

RATINGS

Operating Temperature:	-40°C to 50°C
Vibration:	3G per ANSI C136.31-2010
LM-79:	Testing in accordance with IESNA Standards

CONTROLS

Dimming:	Standard - 0-10V Optional - DALI (Option U)
Sensors:	Photo Electric Sensors (PE) available LightGrid and Daintree Compatiable

EMERGENCY BATTERY BACKUP

Provides reliable emergency operations when there is a loss to normal power, supported by Independent Secondary Battery and LED Board.
Powers luminaire for a minimum of 90 minutes @ 1,000 lumens.
Available on A* and B* Optical Code Packages only
Operating Temperature (for EMBB models) -20° to 40°C
3kV/1.5kA surge protection for EMBB models.

GE current
a Daintree company

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

Evolve® LED Wall Pack
A Series (EWAS)

Project Name
Date Type
Notes

Catalog Logic

EWAS 01 _ _ _ 7 _ _ _ FM _ _

PROD. ID	GEN	VOLTAGE	OPTIC CODE	DISTRIBUTION	CRI (min)	CCT	CONTROLS	PE FUNCTION	MOUNTING	COLOR	OPTIONS
E = Evolve	01	0 = 120-277	Ax = 3000	AF = Asymmetric Forward	7 = 70 CRI	30 = 3000K[11]	A = ANSI C136.41 7-Pin Receptacle	1 = None	FM = Flush Mount	BLCK = Black	EMBB = Emergency Batter Backup[4]
W = Wallpack		H = 347-480	Bx = 5000	AN = Asymmetric Narrow		40 = 4000K	D = No PE Receptacle, with external dimming leads	3 = Button PE[1,2,3]		DKBZ = Dark Bronze	F = Fusing[2]
AS = A-Series			Cx = 7500	AW = Asymmetric Wide		50 = 5000K	N = No PE Receptacle, with no external dimming leads	A = ANSI C136.41 7-Pin Receptacle		GRAY = Gray	R = Enhanced Surge Protection (10kV/5kA)
		1 = 120	Dx = 10000					D = ANSI C136.417-Pin Receptacle with Shorting Cap		WHTE = White	T = Extreme Surge Protection (20kV/10kA)
		2 = 208	Ex = 12200					E = ANSI C136.41 7-Pin with Non-Dimming PE Control[12]			H = Motion Sensor[5,6]
		3 = 240	Fx = 14400								H2 = Daintree Motion Sensor[7,8,9]
		4 = 277	Gx = 17000								Y = Coastal Finish[10]
		D = 347									XXX = Special Options
		5 = 480									

1 Button PE not available with motion sensor option.
2 Only available with discreet voltages.
3 Not available with voltage options 0, H, or 5.
4 Available with A and B Optical Codes Only
5 H Motion Sensor Bottom mount available with A, B, C, D, & E Optical Codes Only
6 H Motion Sensor Side Mount available with F & G Optical Codes Only
7 H2 Daintree Motion SensorBottom mount available with A, B, C, D, & E Optical Codes Only
8 H2 Not Available with F & G Optical Codes
9 Not available in 347V, 480V or 347-480V
10 Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
11 Select 3000K CCT for IDA approved fixtures.
12 PE Control only available for 120-277V, 347V or 480V Discrete Voltage.

GE current
a Daintree company

Cutoff Colonial

These Cutoff luminaire options are a dark-skies friendly alternative to various fixture styles.

Comparable HID Wattage	Finish Color	Initial Lamp Lumens	Lighting Pattern	Correlated Color Temperature (CCT)	Input Wattage	Billing Tier	Basic / Premium	Recommended Mounting Height (ft)	BUG Rating	Luminaire Stock #	WMIS CU Code
70	Black	3656	Type III	3000K	41	2	Basic	10 - 12	1-0-1	42315981	LEDCLCO0333BXXX
70	Black	3960	Type III	4000K	41	2	Basic	10 - 12	1-0-1	42331285	LEDCLCO0334BXXX
100	Black	7124	Type III	3000K	66	3	Basic	12 - 16	1-0-2	42315979	LEDCLCO0533BXXX
100	Black	7668	Type III	4000K	66	3	Basic	12 - 16	1-0-2	42331286	LEDCLCO0534BXXX
150	Black	9415	Type III	3000K	94	4	Basic	12 - 16	2-0-2	42315980	LEDCLCO0733BXXX
150	Black	10135	Type III	4000K	94	4	Basic	12 - 16	2-0-3	42331487	LEDCLCO0734BXXX

Dominion Energy

Outdoor Lighting Pole Specifications

Smooth Round Tapered Composite for Post Top Luminaires

Smooth round tapered composite poles constructed of heavy duty fiberglass reinforced pigmented polyester resin for single pole top luminaires. Poles are directly embedded for use with underground supplied conductors only.

Light fixtures that match well with this pole include:

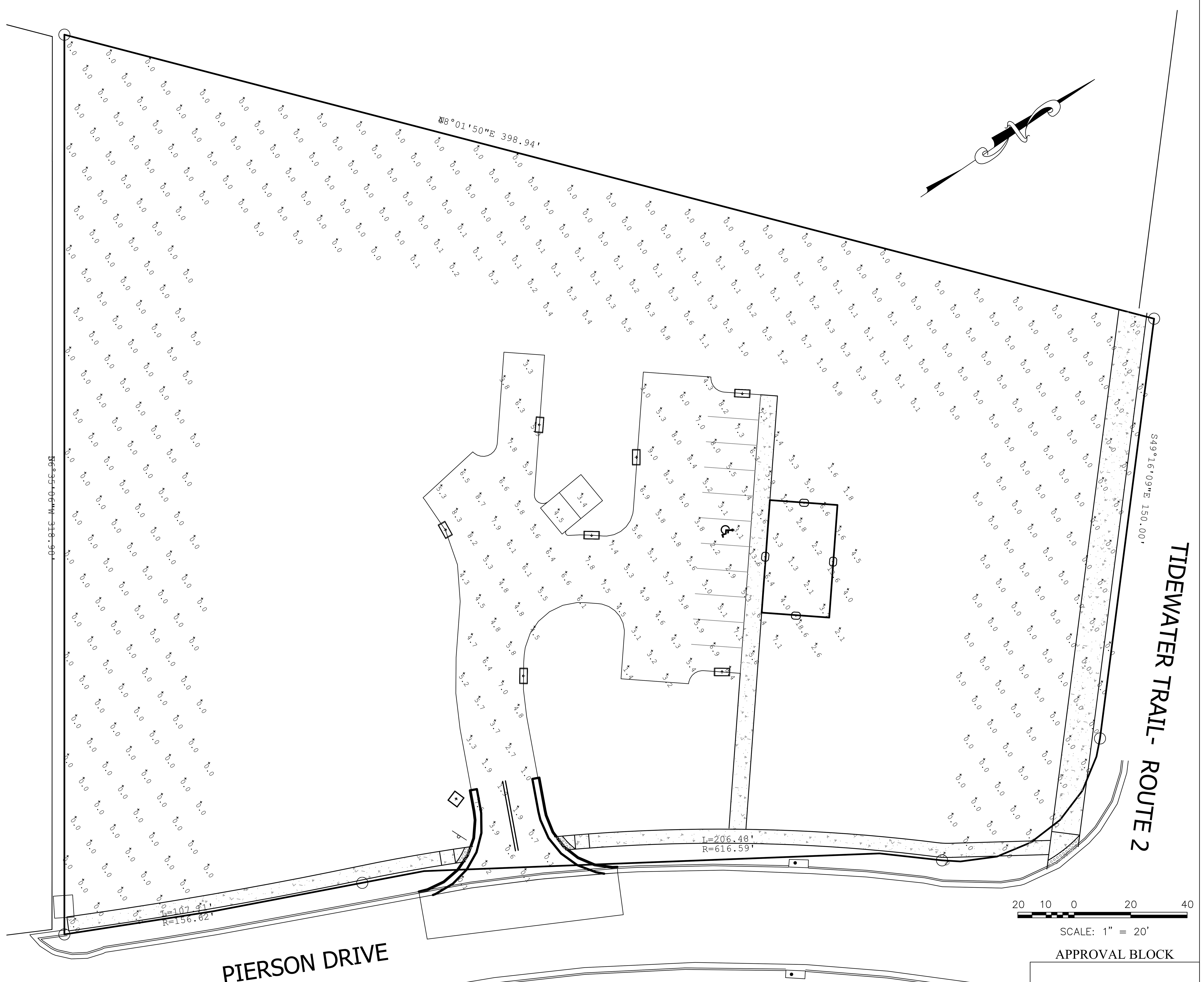
- All LED Acorn styles
- All LED Colonial styles
- Premium LED Cutoff styles
- Premium LED Lantern styles

POLE SPECIFICATIONS

FIXTURE MOUNTING HEIGHT (ft)	TOTAL POLE LENGTH (ft)	BUTT DIAMETER (in)	GROUNDLINE DIAMETER (in)	EMBED or ANCHOR BASE	FINISH COLOR	WMIS CU	POLE ONLY STOCK #
8.0	11.0	5.2	4.7	Embed	Black RAL-9017	PF11	50499800
10.0	13.0	5.6	5.0	Embed	Black RAL-9017	PF13	50500000
12.0	16.0	6.3	5.4	Embed	Black RAL-9017	PF16	42124132
14.0	18.0	6.7	5.8	Embed	Black RAL-9017	PF18	50501000

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Max/Avg
boundary	Illuminance	Fc	0.04	1.2	0.0	N.A.	N.A.	N.A.
CalcPts_1	Illuminance	Fc	5.38	18.6	1.3	4.14	14.31	N.A.

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	1	ARDCL_P102_XXXX_30K_R3	Single	ARDCL P102 XXXX 30K R3	street light	1.000	4101	40.0505	40.05
	7	EACL01_E3AW730________	Single	EACL01_E3AW730________	cobra	1.000	12400	95	665
	4	EWAS01_A2AN730________-120-27	Single	EWAS01_A2AN730________-120-277V	wall	1.000	2900	21	84



20 10 0 20 40
SCALE: 1" = 20'

APPROVAL BLOCK

NOTE:
ALL OUTDOOR LIGHTING SHALL BE FULLY SHIELDED OR FULL CUTOFF.

DATE	REVISIONS
6/22/23	PER COUNTY & VDOT COMMENTS
6/27/24	PER COUNTY & VDOT COMMENTS
9/27/24	PER COUNTY & VDOT COMMENTS
3/3/25	PER COUNTY COMMENTS
5/20/25	PER COUNTY & VDOT COMMENTS
7/7/25	SIGNATURE SET

BFG
BAGBY, FOROUGHI and GOODPASTURE, PLLC
CIVIL ENGINEERS AND LAND SURVEYORS
125 OLDE GREENWICH DRIVE, SUITE 115
FREDERICKSBURG, VIRGINIA 22408
TELEPHONE: (540) 373-5178
WEBSITE: BFGENG.COM

COMMONWEALTH OF VIRGINIA
RYAN K. FOROUGHI
Lic. No. 41245
7/7/2025
PROFESSIONAL ENGINEER

LIGHTING PLAN

GREAT OUTDOORS OF SPOTSYLVANIA
DALMATIAN SERVICES, INC
11100 PIERSON DRIVE
LEE HILL MAGISTERIAL DISTRICT
SPOTSYLVANIA COUNTY, VIRGINIA

DATE:	3/1/2023
SCALE:	1" = 20'
DESIGNED BY:	MRB
DRAWN BY:	MRB
CHECKED BY:	RKF
PRINT DATE:	11/5/2025
JOB NO.	20581-4
PLAN NO.	ST23-0006

G:\20581-4 Pierson dr\Engineering\Major\Pierson Dr Site Plan_4.14.25.dwg Wed, Nov 5 2025 ross