REVISED ON 01/07/2021

ARLINGTON
VIRGINIA

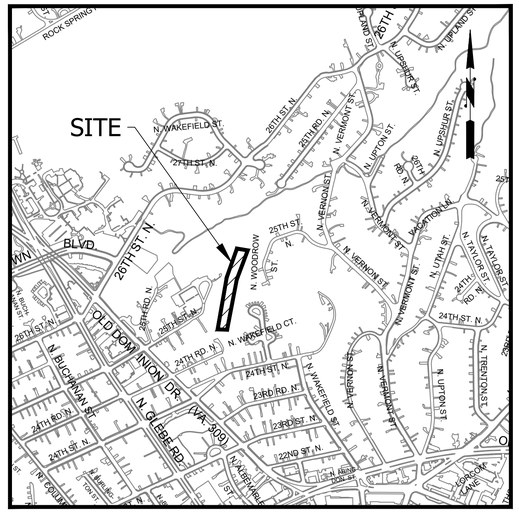
ENGINEER
DEPARTMENT OF
ENVIRONMENTAL SERVICES

FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629 FAX: 703.228.3606
WWW.ARLINGTONVA.US

OWNER
DES/OSEM/WTRSHD

CONTRACTOR
TO BE DETERMINED

LOCATION MAP



0 600 1200
GRAPHIC SCALE

CONSTRUCTION DRAWINGS FOR:

STREAM STABILIZATION
DONALDSON RUN HEADWATERS

PROJECT NUMBER: S42D

GENERAL NOTES:

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION WORK FOR THIS PROJECT SHALL CONFORM TO THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES, CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND WHERE APPLICABLE THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS, AND ROAD AND BRIDGE STANDARDS. THE LATEST EDITIONS OF EACH RELEVANT MANUAL SHALL BE USED.
2. ALL CONSTRUCTION AND WORK ACTIVITIES SHALL COMPLY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL AND ALL OTHER RELEVANT WORK SAFETY REQUIREMENTS, LATEST EDITIONS.
3. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT OFFICER OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE APPROVED PLANS.
4. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 811 FOR MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES (i.e. WATER, SEWER, GAS, TELEPHONE, ELECTRIC, AND CABLE TV) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO IDENTIFY AND PROTECT ALL OTHER UTILITY LINES FOUND IN THE WORK SITE AREA BELONGING TO OTHER OWNERS THAT ARE NOT MEMBERS OF "MISS UTILITY". PRIVATE WATER, SEWER AND GAS LATERALS WILL NOT BE MARKED BY MISS UTILITY OR THE COUNTY. THE CONTRACTOR SHALL LOCATE AND PROTECT THESE SERVICES DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT THE WORK AND SHALL RETAIN A PROFESSIONAL LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA TO PROVIDE ALL NECESSARY CONSTRUCTION LAYOUTS AND ESTABLISH ALL CONTROL LINES, GRADES, AND ELEVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A COPY OF ALL CUT SHEETS FOR REVIEW, PER THE SPECIFICATIONS. THE COST OF ALL NECESSARY SURVEYING SERVICES SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND, UNLESS OTHERWISE SPECIFIED, THE COST SHALL BE INCORPORATED INTO THE COSTS FOR RELEVANT ITEMS.
6. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS ARE FROM BEST AVAILABLE RECORDS AND SHALL BE CONSIDERED TO BE APPROXIMATE. WHEN CONSTRUCTION ACTIVITY REACHES IN PROXIMITY TO EXISTING UTILITIES, THE TRENCH(ES) SHALL BE OPENED A SUFFICIENT DISTANCE AHEAD OF THE WORK OR TEST PITS SHALL BE MADE TO VERIFY THE EXACT LOCATION AND INVERTS OF THE UTILITY TO ALLOW FOR POSSIBLE CHANGES IN THE LINE OR GRADE AS DIRECTED BY OFFICER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING UTILITIES AND THE RELATED STRUCTURES. ALL EXISTING UTILITY SYSTEMS SHALL BE PROTECTED TO PREVENT DAMAGE DURING THE CONTRACTOR'S OPERATIONS. ANY SYSTEM DAMAGED SHALL BE PROMPTLY REPAIRED AT NO COST TO THE OWNER.
7. EXISTING MANHOLE FRAMES, COVERS, VALVE BOXES, AND OTHER APPURTENANCES SHALL BE ADJUSTED TO THE FINAL GRADE OR REPLACED, AS NECESSARY. UNLESS OTHERWISE SPECIFIED, THE COST FOR THIS SHALL BE CONSIDERED INCIDENTAL TO THE WORK, AND SHALL BE INCORPORATED INTO THE COSTS FOR RELEVANT ITEMS.
8. THE CONTRACTOR SHALL PROVIDE ADA COMPLIANT ACCESS THROUGH OR AROUND THE SITE AT ALL TIMES AND SHALL ENSURE THE SAFETY OF ALL THOSE PASSING THROUGH OR ADJACENT TO THE SITE.
9. ALL SIDEWALK AND CURB AND GUTTER DEMOLITION SHALL BEGIN AND END AT THE CONSTRUCTION JOINT NEAREST TO THE DEPICTED DEMOLITION EXTENTS WITH A NEAT SAWCUT LINE TO FULL DEPTH OF PAVEMENT SECTION.

STORMWATER AND ENVIRONMENTAL PROTECTION

10. THE CONTRACTOR SHALL CONFINE ALL ACTIVITIES AT THE SITE ASSOCIATED WITH CONSTRUCTION ACTIVITIES, TO INCLUDE STORAGE OF EQUIPMENT AND OR MATERIALS, ACCESS TO THE WORK, FORMWORK, ETC. TO WITHIN THE DESIGNATED LIMITS OF DISTURBANCE (LOD).

TREE PROTECTION

11. TREES SHALL BE PROTECTED PER THE REQUIREMENTS OF ARLINGTON PARKS & RECREATION STANDARD.

TRAFFIC CONTROL

12. CONTRACTOR SHALL NOTIFY THE PROJECT OFFICER AT LEAST 3 WORKING DAYS PRIOR TO DISTURBING ANY EXISTING, OR INSTALLING ANY NEW, TRAFFIC SIGNS, SIGNALS, OR OTHER TRAFFIC CONTROL DEVICES.
13. THE CONTRACTOR SHALL PREMARK THE LAYOUT OF ANY PERMANENT TRAFFIC CONTROL STRIPING, INDICATING THE PROPOSED LOCATION AND TYPE OF MARKING TO BE INSTALLED. THE PREMARKING MAY CONSIST OF TYPE D TAPE, CHALK, OR LUMBER CRAYONS. THE CONTRACTOR SHALL ALLOW 3 WORKING DAYS FOR THE INSPECTION AND APPROVAL OF THE PREMARKINGS PRIOR TO PLACING THE PERMANENT MARKINGS.
14. THE CONTRACTOR SHALL SUBMIT ANY REQUESTS FOR TEMPORARY "NO PARKING" RESTRICTIONS TO THE PROJECT OFFICER AT LEAST 5 BUSINESS DAYS PRIOR TO THE DESIRED ONSET OF RESTRICTIONS. PRIOR TO A REQUEST FOR THE REMOVAL OF ACCESS TO ANY ADA PARKING SPACE THE CONTRACTOR MUST HAVE MADE PROVISION FOR ALTERNATIVE ADA PARKING AS INDICATED ON THE APPROVED PLAN OR AS DIRECTED BY THE PROJECT OFFICER.
15. WHEN THE APPROVED PLAN CALLS FOR THE REMOVAL OF ANY PARKING METER THE CONTRACTOR MUST MAKE A REQUEST TO THE PROJECT OFFICER AT LEAST ONE WEEK IN ADVANCE OF THE DESIRED REMOVAL. THE PROJECT OFFICER WILL THEN COORDINATE THE PARKING METER REMOVAL WITH TRAFFIC ENGINEERING AND OPERATIONS.
16. THE CONTRACTOR SHALL PRESERVE ALL BUS STOPS, INCLUDING MAINTAINING ADEQUATE ACCESSIBILITY THROUGH AND ADJACENT TO THE CONSTRUCTION FOR BUSES AND THEIR PASSENGERS. THE CONTRACTOR SHALL NOT CLOSE, RELOCATE, OR OTHERWISE MODIFY A BUS STOP WITHOUT PRIOR REQUEST OF THE PROJECT OFFICER. ANY RELOCATION OR CLOSURE OF A BUS STOP SHALL REQUIRE AT LEAST FOUR WEEKS ADVANCE NOTICE FOR COORDINATION WITH THE COUNTY'S BUS STOP COORDINATOR - 703-228-3049.
17. WHEN CONDITIONS WARRANT DUE TO TRAFFIC VOLUMES, PATTERNS, OR SPECIAL EVENTS, THE COUNTY MAY SUSPEND OR OTHERWISE DIRECT THE CONTRACTOR'S ACTIVITIES TO PROTECT THE PUBLIC AND OR THE COUNTY'S TRANSPORTATION NETWORK.

WATER DISTRIBUTION, STORM AND SANITARY SEWER SYSTEMS

18. UNLESS OTHERWISE DIRECTED, CONTRACTORS ARE EXPRESSLY PROHIBITED FROM OPERATING ANY WATER VALVES OR APPURTENANCES. CONTRACTORS SHALL SUBMIT ALL REQUESTS FOR VALVE OPERATIONS TO THE PROJECT OFFICER AT LEAST 1 WEEK IN ADVANCE OF THE REQUIRED OPERATION.
19. IN THE EVENT OF A WATER OR SEWER EMERGENCY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY'S WATER CONTROL CENTER AT 703-228-6555 AND THE PROJECT OFFICER.
20. THE CONTRACTOR SHALL COORDINATE ALL UTILITY SHUTOFFS, DISCONNECTS, AND/OR ABANDONMENT WITH UTILITY OWNER AND PROJECT OFFICER AT LEAST 1 WEEK IN ADVANCE OF THE REQUIRED INTERRUPTION.

FIRE DEPARTMENT NOTES:

21. ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
22. ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
23. IN THE EVENT THAT EXISTING FIRE DEPARTMENT CONNECTIONS OR FIRE APPARATUS ACCESS ROADS (FIRE LANES) MUST BE OBSTRUCTED TO FACILITATE CONSTRUCTION ACTIVITIES, CONTACT THE ARLINGTON COUNTY FIRE DEPARTMENT FIRE PREVENTION OFFICE AT 703-228-4644 TO COORDINATE REVIEW AND APPROVAL OF TEMPORARY FIRE DEPARTMENT CONNECTIONS AND/OR FIRE APPARATUS ACCESS ROADS PRIOR TO CREATING THE OBSTRUCTION.

SHEET LIST

SWM#
SWM# 15-2037

ADT
NOT APPLICABLE

STREET CLASSIFICATION
NOT APPLICABLE

POSTED SPEED
NOT APPLICABLE

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ANKUR B. PATEL
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7/6/2022
PROFESSIONAL ENGINEER

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Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

COVER SHEET

DESIGNED: ML
DRAWN: ML
CHECKED: AP

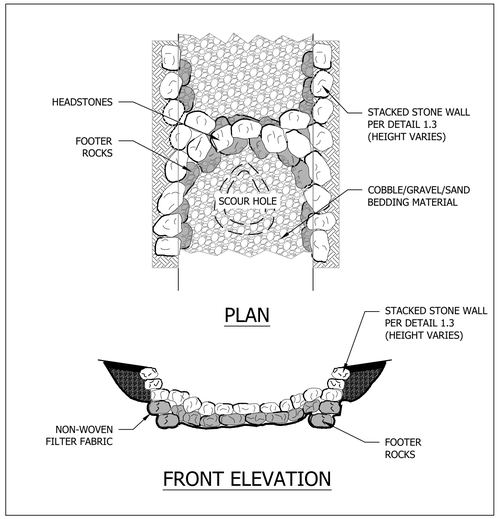
PLOTTED: DECEMBER 29 2022

SCALE: AS SHOWN

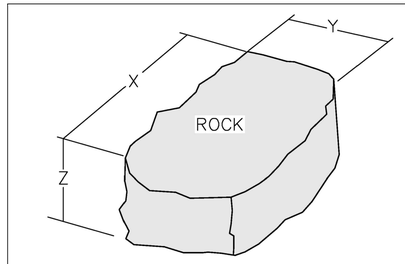
C000.1

FILENAME: S42D-200-COVER.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021



CROSS VANE - IMBRICATED WALL COMBINATION
(CROSS VANES C, D, E, F, K, N, S)
(NTS)



*** MINIMUM X–Y–Z DIMENSIONS FOR ALL STRUCTURE STONES SHALL BE AS FOLLOWS UNLESS OTHERWISE APPROVED BY THE ENGINEER: ***

STRUCTURE TYPE	DIMENSION X	Y	Z
PLUNGE–POOL	3' – 6'	2.0' – 4'	1.0' – 2.5'
STACKED STONE WALL	3' – 6'	2.0' – 4'	1.0' – 2.5'

Rock Axis Detail (NTS)

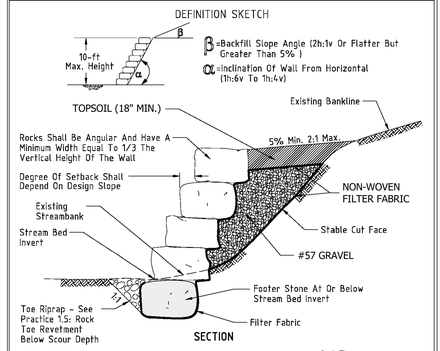
Cumulative Percent of particles finer than indicated particle size	PARTICLE SIZE (inches)	PARTICLE TYPE
D10	< 0.04in	sand
D16	1.0–2.0in	gravel
D35	3.0–4.0in	cobble
D50	8.0–10.0in	cobble
D84	14.0–16.0in	boulder

DESCRIPTION	SIZE	BUCKETS	PERCENT
ROCK/BOULDER	WELL GRADED 12-16"	0.5	7 - 12%
ROCK/COBBLE	WELL GRADED 8 - 12"	2	35 - 40%
BANK RUN GRAVEL	0.08 - 2.5"	2	35 - 40%
COURSE SAND	0.04 - 0.08" (1 - 2 MM)	0.75	12 - 17%

ALL IMPORTED BEDDING MATERIAL SHALL CONSIST OF FIELD STONE OR NATURAL RIVER ROCK SIMILAR IN COLOR AND APPEARANCE TO IN–SITU MATERIALS. CRUSHED STONE SHALL NOT BE PERMITTED.
BANK RUN GRAVEL MAY INCLUDE UP TO 5% CLAY, SILT, AND/OR SAND, AND UP TO 25% COBBLE AND SHALL HAVE NATURAL COLOR (BROWN, TAN, YELLOW, OR WHITE)
SAND SHALL BE WELL MIXED AND PREDOMINANTLY 1.0 TO 2.0 MILLIMETERS IN SIZ AND HAVE NATURAL COLOR (BROWN, TAN, YELLOW, OR WHITE)
THE GRADATION OF IMPORTED MATERIALS SHALL FALL WITHIN THE ENVELOPE AS INDICATED IN THE TABLE ABOVE.
COBBLE–GRAVEL VOID RATIO IS ESTIMATED AT 20%. THEREFORE, 20% BY VOLUME OF CL MATERIAL SHALL BE ADDED TO THE COBBLE–GRAVEL–SAND MATERIAL PRIOR TO PLACEMENT IN THE DESIGNATED AREAS. SEE CONSTRUCTION SPECIFICATIONS FOR DETAILS RELATIVE TO MIXING, PLACING, AND COMPACTING STREAMBED MATERIAL.

Streambed Material

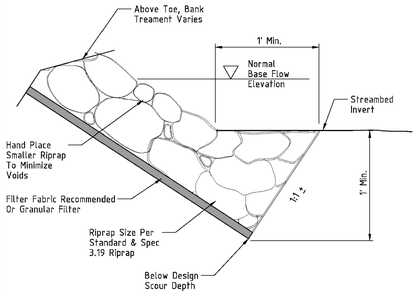
The Virginia Stream Restoration & Stabilization Best Management Practices Guide
DETAIL 1.3: STACKED STONE



Apated From Maryland's Waterway Construction Guidelines

BANK PROTECTION GUIDELINES	DECEMBER 2003	VIRGINIA DEPARTMENT OF CONSERVATION RECREATION (MODIFIED)

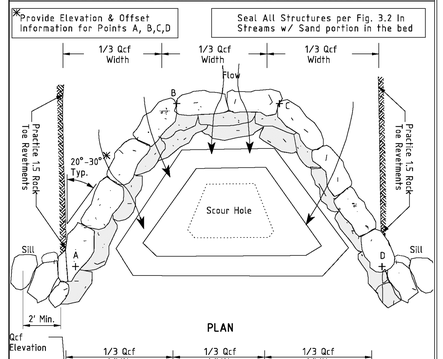
The Virginia Stream Restoration & Stabilization Best Management Practices Guide
DETAIL 1.5: ROCK TOE REVETMENT



Adapted
Virginia Erosion and Sediment Manual Standard and Specification 3.19

BANK PROTECTION GUIDELINES	DECEMBER 2003	VIRGINIA DEPARTMENT OF CONSERVATION RECREATION

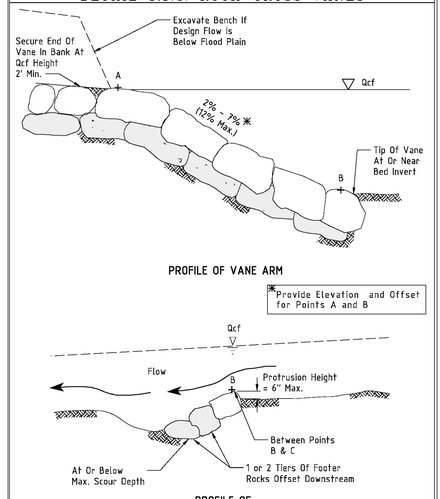
The Virginia Stream Restoration & Stabilization Best Management Practices Guide
DETAIL 3.1(a): ROCK CROSS VANES



Source: Rosgen, 2001

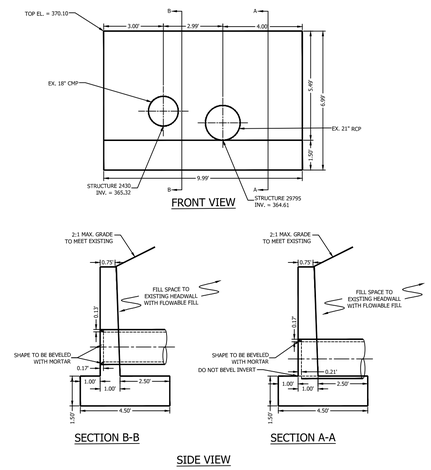
GRADE CONTROL STRUCTURES GUIDELINES	DECEMBER 2003	VIRGINIA DEPARTMENT OF CONSERVATION RECREATION (MODIFIED)

The Virginia Stream Restoration & Stabilization Best Management Practices Guide
DETAIL 3.1(b): ROCK CROSS VANES



Source: Rosgen, 2001

GRADE CONTROL STRUCTURES GUIDELINES	DECEMBER 2003	VIRGINIA DEPARTMENT OF CONSERVATION RECREATION



NOTES:
1. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE.
2. THIS ITEM MAY BE PRECAST OR CAST–IN–PLACE.
3. ALL CAST–IN–PLACE CONCRETE TO BE CLASS A3. PRECAST CONCRETE SHALL BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH.
4. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OCCURS.
5. HEADWALL AT THE OUTLET END MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
6. 3/4" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.
7. CONTRACTOR SHALL SUBMIT A SIGNED SHOP DRAWING, INCLUDING ANY REQUIRED REINFORCING, FOR APPROVAL PRIOR TO CONSTRUCTION.

HEADWALL
(STA 10+03.42)
N.T.S.

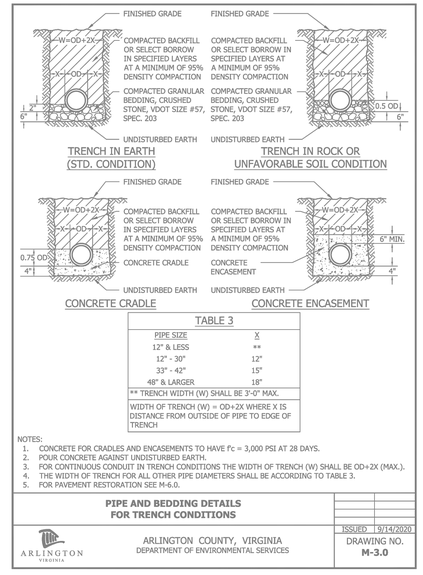


TABLE 3

PIPE SIZE	X
12" & LESS	**
12" - 30"	12"
33" - 42"	15"
48" & LARGER	18"

** TRENCH WIDTH (W) SHALL BE 3'-0" MAX.
WIDTH OF TRENCH (W) = OD+2X WHERE X IS DISTANCE FROM OUTSIDE OF PIPE TO EDGE OF TRENCH

NOTES:
1. CONCRETE FOR CRADLES AND ENCASEMENTS TO HAVE f'c = 3,000 PSI AT 28 DAYS.
2. POUR CONCRETE AGAINST UNDISTURBED EARTH.
3. FOR CONTINUOUS CONDUIT IN TRENCH CONDITIONS THE WIDTH OF TRENCH (W) SHALL BE OD+2X (MAX.).
4. THE WIDTH OF TRENCH FOR ALL OTHER PIPE DIAMETERS SHALL BE ACCORDING TO TABLE 3.
5. FOR PAVEMENT RESTORATION SEE M-6.0.

PIPE AND BEDDING DETAILS FOR TRENCH CONDITIONS

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

ISSUED 9/14/2020
DRAWING NO. M-3.0

ARLINGTON
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Amy Pflaum, QUALITY CONTROL ENGINEER	08/04/22
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Dennis M. Leach, TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad, PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

DETAILS

DESIGNED: ML
DRAWN: ML
CHECKED: AP

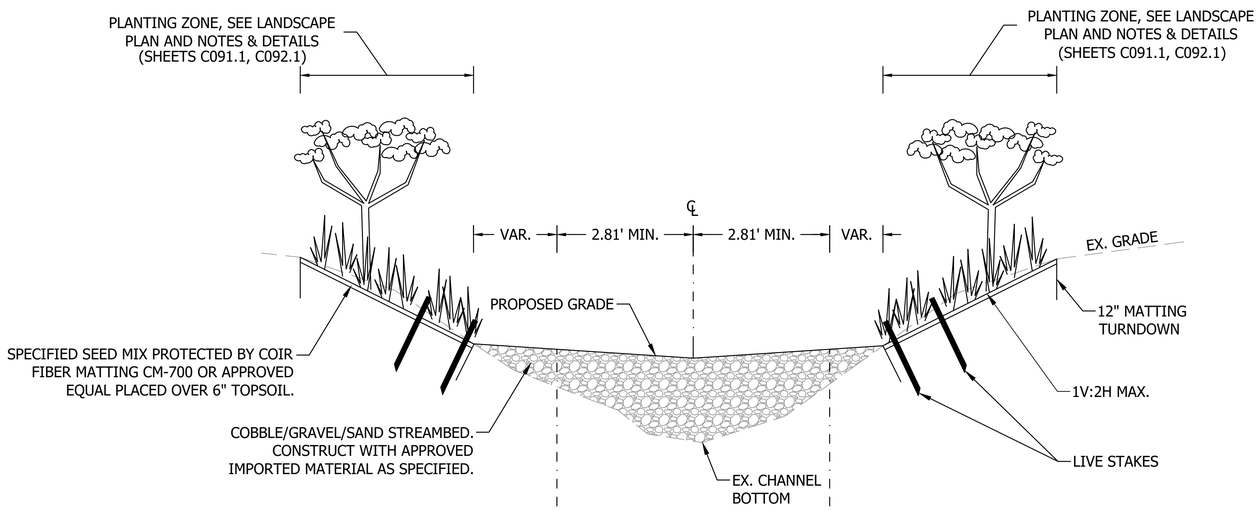
PLOTTED: NOVEMBER 30 2022

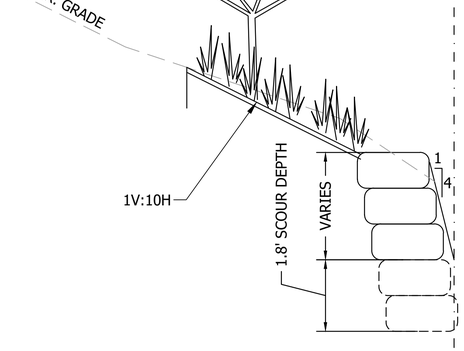
SCALE: AS SHOWN

C002.1

FILENAME: S42D-204-DETAILS.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021



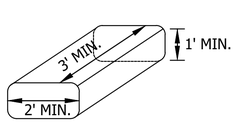


DISTANCE VARIES WITH GRADING

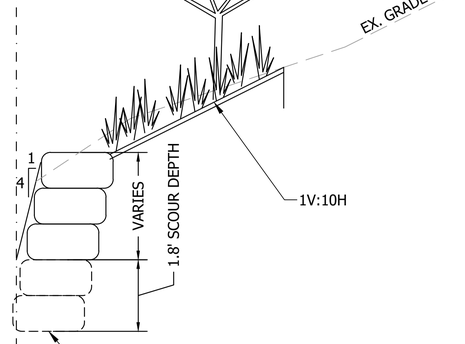
STA.	TO	STA.
10+00.00'		10+39.08'
10+60.56'		11+80.75'
12+96.53'		13+80.70'

CHANNEL BED SPECIFICATIONS:
D_{10} = < 0.04"
D_{16} = 1.0 - 2.0"
D_{35} = 3.0 - 4.0"
D_{50} = 8.0 - 10.0"
D_{84} = 14.0 - 16.0"

THICKNESS = 1.0'



IMBRICATED RIP RAP
MIN. SIZE = 3' X 2' X 1 '



STACKED STONE, DETAIL 1.3 (SHEET C002.1)

DISTANCE VARIES WITH GRADING

STA.	TO	STA.
10+00.00'		10+39.08'
10+60.56'		11+80.75'
12+96.53'		13+80.70'
14+44.38'		14+69.90'

NOTES

1. THE TYPICAL CROSS SECTIONS AS SHOWN AND DIMENSIONED ON THIS SHEET WERE USED TO GUIDE THE PROPOSED GRADING INDICATED ON THE GRADING PLAN SHEETS. CROSS SECTIONS CUT FROM THE GRADING PLAN AS DRAWN ON THE CROSS SECTION SHEETS REPRESENT THE PROPOSED DESIGN DIMENSIONS AT ANY GIVEN STATION ALONG THE STREAM.
2. FOR DETAILS REGARDING THE VEGETATIVE MATERIALS PROPOSED AND THE LIMITS OF PLANTING ZONES, SEE THE LANDSCAPE PLAN ON SHEET C091.1.

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STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B (ANALOSTAN BRANCH)

TYPICAL SECTIONS

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C004.1

FILENAME: S42D-210-TYPICAL_SECTIONS.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

LINETYPE LEGEND

FEATURE	EXISTING	PROPOSED
BUILDING		
CENTERLINE / BASELINE		
COMMUNICATIONS CABLE	COM COM	COM COM
CONTOURS - MAJOR, MINOR	250 250	250
CRITICAL ROOT ZONE	CRZ CRZ	CRZ CRZ
EASEMENT		
ELECTRIC (UNDERGROUND)	UGE UGE	UGE UGE
FENCE (MATERIAL NOTED)	X X X X X	X X X X X
FIBER OPTIC	FO FO	FO FO
GAS LINE	GAS GAS	GAS GAS
X" GAS LINE (SIZE INCLUDED IF AVAILABLE)	#" g #" g #" g	#" G #" G
GUARDRAIL		
HARDSCAPE FEATURE (MATERIAL NOTED)		
LIMITS OF DISTURBANCE	LOD LOD	LOD LOD
LIMITS OF WORK	LOW LOW	LOW LOW
OVERHEAD WIRES		
PAVEMENT MINI SKIP LINE		
PAVEMENT SKIP LINE		
PROPERTY LINE		
RIGHT-OF-WAY LINE		
ROOT PRUNING	RP RP	RP RP
SANITARY SEWER	SAN	SAN
SANITARY SEWER UNDER 20" (SIZE INCLUDED IF AVAILABLE)	#" s #" s	
SANITARY SEWER OVER 20"		
SILT FENCE	X X X X X	X X X X X
STORM (SIZE NOTED)	STM STM	
STREAM		
STREET LIGHT CONDUIT	SL SL	SL SL
TELEPHONE (UNDERGROUND)	UGT UGT	UGT UGT
TREE LINE		
TREE PROTECTION FENCE	TP TP	TP TP
WALL		
WATERLINE UNDER 20" (SIZE INCLUDED IF AVAILABLE)	#" w #" w	
WATERLINE OVER 20"		

SYMBOL LEGEND

EXISTING FEATURE	PROPOSED FEATURE
EX CABLE PEDESTAL	
EX ELECTRIC BOX	
EX FIRE HYDRANT	PROP FIRE HYDRANT
EX GAS VALVE	PROP GAS VALVE
EX GROUND LIGHT	
EX GUY WIRES	
EX IRON PIPE OR PIN	
EX LIGHT POLE	PROP LIGHT POLE
EX MAILBOX	
EX MONUMENT	
EX PARKING METER	
EX PAY STATION	PROP PAY STATION
EX SANITARY MANHOLE	PROP SANITARY MANHOLE
EX STORM BASIN	PROP STORM CATCH BASIN (TO SCALE)
EX STORM MANHOLE	PROP STORM MANHOLE
EX TELEPHONE PEDESTAL	
EX TRAFFIC CONTROL BOX	
EX TRAFFIC SIGN	PROP TRAFFIC SIGN
EX TRASH CAN	PROP TRASH CAN
EX TRAVERSE	
EX TREES, WOODED AREA	PROPOSED TREE
	PROPOSED TREE REMOVAL
EX UTILITY MANHOLE TYPE INDICATED ELEC, TELE, ETC	
EX UTILITY POLE	PROP UTILITY POLE
EX WATER MANHOLE	PROP WATER MANHOLE
EX WATER METER	PROP WATER METER
EX WATER VALVE	PROP WATER VALVE
EX YARD INLET	PROP YARD INLET (TO SCALE)
EX BENCHMARK	CONSTRUCTION NOTES (LEADER TO AREA AFFECTED)
	DETAIL NUMBER (SEE NOTE)
NORTH ARROW	CURVE NUMBER (SEE CURVE TABLE)
	LINE NUMBER (SEE LINE TABLE)
	TEST HOLE

SYMBOL LEGEND

EXISTING FEATURE	PROPOSED FEATURE
EX STRIPING	PROP STRIPING
EX BUS STOP	PROP BUS STOP

LABEL LEGEND

EXISTING	PROPOSED
EXISTING SANITARY STRUCTURE NUMBER (XXXX)	PROPOSED SANITARY SEWER STRUCTURE NUMBER (XXXX)
EXISTING STORM SEWER STRUCTURE NUMBER (XXXX)	PROPOSED STORM SEWER STRUCTURE NUMBER (XXXX)

HATCH LEGEND

- PROP MILL & OVERLAY SEE TYPICAL SECTION FOR DETAILS
- PROP FULL DEPTH ASPHALT SEE TYPICAL SECTION FOR DETAILS
- PROP CONCRETE
- REPLACE & MATCH EXISTING DRIVEWAY OR LEADWALK. SEE CONSTRUCTION NOTES
- DEMOLITION AREA

ARLINGTON
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SEAL

COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy P Flaum — QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach — TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad — PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

LEGEND

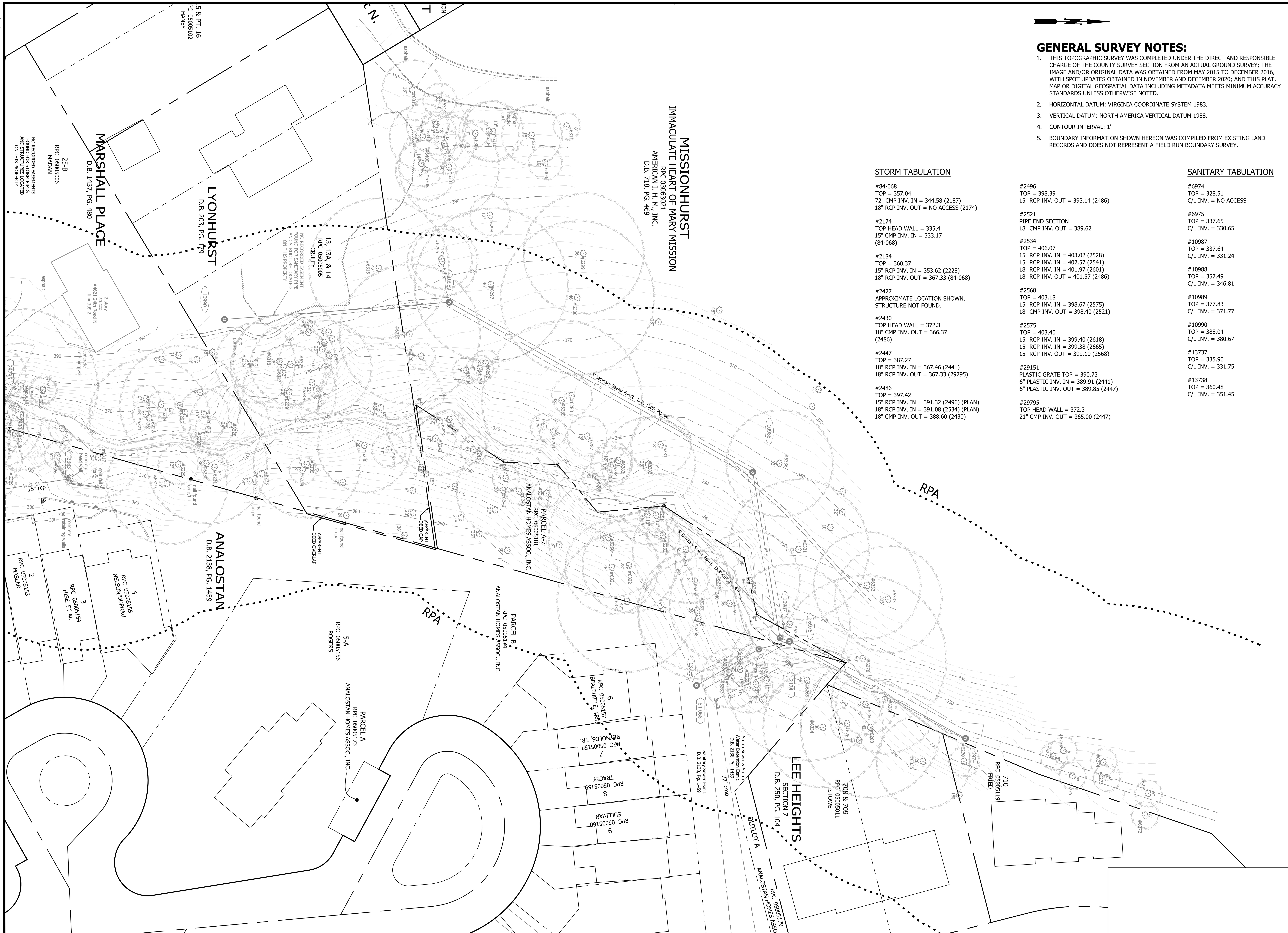
DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: N/A

C006.1

FILENAME: S42D-202-LEGEND.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1



GENERAL SURVEY NOTES:

1. THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF THE COUNTY SURVEY SECTION FROM AN ACTUAL GROUND SURVEY; THE IMAGE AND/OR ORIGINAL DATA WAS OBTAINED FROM MAY 2015 TO DECEMBER 2016, WITH SPOT UPDATES OBTAINED IN NOVEMBER AND DECEMBER 2020; AND THIS PLAT, MAP OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
2. HORIZONTAL DATUM: VIRGINIA COORDINATE SYSTEM 1983.
3. VERTICAL DATUM: NORTH AMERICA VERTICAL DATUM 1988.
4. CONTOUR INTERVAL: 1'
5. BOUNDARY INFORMATION SHOWN HEREON WAS COMPILED FROM EXISTING LAND RECORDS AND DOES NOT REPRESENT A FIELD RUN BOUNDARY SURVEY.

STORM TABULATION

#84-068
TOP = 357.04
72" CMP INV. IN = 344.58 (2187)
18" RCP INV. OUT = NO ACCESS (2174)

#2174
TOP HEAD WALL = 335.4
15" CMP INV. IN = 333.17
(84-068)

#2184
TOP = 360.37
15" RCP INV. IN = 353.62 (2228)
18" RCP INV. OUT = 367.33 (84-068)

#2427
APPROXIMATE LOCATION SHOWN.
STRUCTURE NOT FOUND.

#2430
TOP HEAD WALL = 372.3
18" CMP INV. OUT = 366.37
(2486)

#2447
TOP = 387.27
18" RCP INV. IN = 367.46 (2441)
18" RCP INV. OUT = 367.33 (29795)

#2486
TOP = 397.42
15" RCP INV. IN = 391.32 (2496) (PLAN)
18" RCP INV. IN = 391.08 (2534) (PLAN)
18" CMP INV. OUT = 388.60 (2430)

#2496
TOP = 398.39
15" RCP INV. OUT = 393.14 (2486)

#2521
PIPE END SECTION
18" CMP INV. OUT = 389.62

#2534
TOP = 406.07
15" RCP INV. IN = 403.02 (2528)
15" RCP INV. IN = 402.57 (2541)
18" RCP INV. IN = 401.97 (2601)
18" RCP INV. OUT = 401.57 (2486)

#2568
TOP = 403.18
15" RCP INV. IN = 398.67 (2575)
18" CMP INV. OUT = 398.40 (2521)

#2575
TOP = 403.40
15" RCP INV. IN = 399.40 (2618)
15" RCP INV. IN = 399.38 (2665)
15" RCP INV. OUT = 399.10 (2568)

#29151
PLASTIC GRATE TOP = 390.73
6" PLASTIC INV. IN = 389.91 (2441)
6" PLASTIC INV. OUT = 389.85 (2447)

#29795
TOP HEAD WALL = 372.3
21" CMP INV. OUT = 365.00 (2447)

SANITARY TABULATION

#6974
TOP = 328.51
C/L INV. = NO ACCESS

#6975
TOP = 337.65
C/L INV. = 330.65

#10987
TOP = 337.64
C/L INV. = 331.24

#10988
TOP = 357.49
C/L INV. = 346.81

#10989
TOP = 377.83
C/L INV. = 371.77

#10990
TOP = 388.04
C/L INV. = 380.67

#13737
TOP = 335.90
C/L INV. = 331.75

#13738
TOP = 360.48
C/L INV. = 351.45

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[signature] — CONSTRUCTION SECTION SUPERVISOR	8/5/22
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REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

EXISTING CONDITIONS PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE:
0 25 50
GRAPHIC SCALE

C011.1

REVISED ON 01/07/2021

Tree Number	DBH (inches)	Tree Species (common name)	Tree Species (scientific name)	Condition Rating	Species Rating	Replacement Value	Replacement Trees	CRZ Impact	Remove	Comments
6201	36	White Oak	*Quercus alba*	100	95	34.2		0		
6202	10	Honey Locust	*Gleditsia triacanthos*	80	65	5.2		0		
6203	6	Honey Locust	*Gleditsia triacanthos*	60	65	2.3		0		
6203-1	10	Red Maple	*Acer rubrum*	60	75	4.5		0		
6204	6	Hawthorn	*Crataegus sp.*	20	60	0.7		0		Dead
6204-1	12	Red Maple	*Acer rubrum*	60	75	5.4		0		
6205	12	River Birch	*Betula nigra*	80	75	7.2		0		
6206	6	Sugar Maple	*Acer saccharum*	80	80	3.8		0		
6207	28	Yellow Poplar	*Liriodendron tulipifera*	80	60	13.4		15		
6208	10	Red Bud	*Cercis canadensis*	80	45	3.6		0		
6209	16	Red Maple	*Acer rubrum*	80	75	9.6		0		
6210	28	Yellow Poplar	*Liriodendron tulipifera*	100	60	16.8	4	32	X	
6211	12	Yellow Poplar	*Liriodendron tulipifera*	80	60	5.8	2	63	X	
6212	8	Yellow Poplar	*Liriodendron tulipifera*	80	60	3.8		19		
6213	12	Yellow Poplar	*Liriodendron tulipifera*	80	60	5.8	2	95	X	
6214	14	Slippery Elm	*Ulmus rubra*	60	50	4.2		26		Canopy Removed
6215	46	White Oak	*Quercus alba*	20	75	6.9	0	19	X	Canopy Removed; Dead
6216	38	Yellow Poplar	*Liriodendron tulipifera*	100	60	22.8	5	34	X	
6217	6	Black Gum	*Nyssa sylvatica*	80	80	3.8	1	78	X	
6218	3	American Beech	*Fagus grandifolia*	60	90	1.6	1	83	X	
6219	8	Slippery Elm	*Ulmus rubra*	40	60	1.9	1	92	X	Leaning into the stream
6220	6	Pin Cherry	*Prunus pensylvanica*	80	55	2.6	1	100	X	
6221	8	Pin Cherry	*Prunus pensylvanica*	60	55	2.6		5		Covered in ivy
6222	36	Red Oak	*Quercus rubra*	20	65	4.7	0	36	X	Canopy Removed; Dead
6223	6	Sugar Maple	*Acer saccharum*	80	80	3.8		0		
6224	7	Pin Cherry	*Prunus pensylvanica*	80	55	3.1		0		
6225	36	Yellow Poplar	*Liriodendron tulipifera*	100	60	21.6		18		
6226	15	Yellow Poplar	*Liriodendron tulipifera*	100	60	9.0		23		
6227	8	American Beech	*Fagus grandifolia*	60	90	4.3	1	75	X	
6228	24	Yellow Poplar	*Liriodendron tulipifera*	100	60	14.4	3	43	X	
6229	12	Sugar Maple	*Acer saccharum*	80	80	7.7	2	37	X	
6230	36	Yellow Poplar	*Liriodendron tulipifera*	100	60	21.6		23		
6231	8	Black Gum	*Nyssa sylvatica*	60	80	3.8	1	51	X	
6232	48	Yellow Poplar	*Liriodendron tulipifera*	20	60	5.8		16		Dead
6233	28	Yellow Poplar	*Liriodendron tulipifera*	20	60	3.4		23		Dead
6234	8	Sugar Maple	*Acer saccharum*	60	80	3.8		0		
6235	35	Yellow Poplar	*Liriodendron tulipifera*	100	60	21.0		20		
6236	28	Yellow Poplar	*Liriodendron tulipifera*	100	60	16.8		27		
6237	22	Yellow Poplar	*Liriodendron tulipifera*	20	60	2.6		26		Dead
6238	20	Yellow Poplar	*Liriodendron tulipifera*	20	60	2.4	0	33	X	Dead
6239	28	Yellow Poplar	*Liriodendron tulipifera*	80	50	11.2		24		Covered in poison ivy
6240	38	Yellow Poplar	*Liriodendron tulipifera*	100	60	22.8	5	42	X	
6241	10	Black Gum	*Nyssa sylvatica*	60	80	4.8		22		Leaning
6242	12	Yellow Poplar	*Liriodendron tulipifera*	60	60	4.3		9		
6243	32	Yellow Poplar	*Liriodendron tulipifera*	100	60	19.2	4	39	X	
6244	8	Black Gum	*Nyssa sylvatica*	60	80	3.8	1	93	X	
6245	5	Pin Cherry	*Prunus pensylvanica*	60	55	1.7	1	41	X	
6246	28	White Oak	*Quercus alba*	100	95	26.6		17		
6247	8	Black Gum	*Nyssa sylvatica*	60	80	3.8		17		
6248	6	Pin Cherry	*Prunus pensylvanica*	60	55	2.0		0		
6249	8	Black Gum	*Nyssa sylvatica*	60	80	3.8		32		
6250	36	Yellow Poplar	*Liriodendron tulipifera*	100	60	21.6		20		
6251	10	Black Gum	*Nyssa sylvatica*	80	80	6.4	2	87	X	
6252	18	Pin Cherry	*Prunus pensylvanica*	80	55	7.9	1	60	X	
6253	10	Sugar Maple	*Acer saccharum*	80	85	6.8		21		
6254	32	Yellow Poplar	*Liriodendron tulipifera*	100	60	19.2		27		
6255	6	White Oak	*Quercus alba*	100	95	5.7		24		
6256	10	Pin Cherry	*Prunus pensylvanica*	80	55	4.4	1	100	X	
6257	28	White Oak	*Quercus alba*	100	95	26.6		14		
6258	36	White Oak	*Quercus alba*	100	95	34.2		12		
6259	36	Yellow Poplar	*Liriodendron tulipifera*	100	60	21.6	5	34	X	
6260	6	Yellow Poplar	*Liriodendron tulipifera*	60	60	2.2		12		
6261	10	Yellow Poplar	*Liriodendron tulipifera*	60	60	3.6		0		
6262	10	Yellow Poplar	*Liriodendron tulipifera*	60	60	3.6		3		
6263	8	Yellow Poplar	*Liriodendron tulipifera*	80	60	3.8		0		
6264	10	Pin Cherry	*Prunus pensylvanica*	20	40	0.8		18		Canopy Removed; Barely alive
6265	48	Yellow Poplar	*Liriodendron tulipifera*	100	60	28.8		15		
6266	18	Yellow Poplar	*Liriodendron tulipifera*	80	60	8.6		29		
6267	30	Yellow Poplar	*Liriodendron tulipifera*	100	60	18.0	4	100	X	
6268	42	Sycamore	*Platanus occidentalis*	40	60	10.1		10		Covered in ivy
6269	10	Red Maple	*Acer rubrum*	60	75	4.5		0		

Tree Number	DBH (inches)	Tree Species (common name)	Tree Species (scientific name)	Condition Rating	Species Rating	Replacement Value	Replacement Trees	CRZ Impact	Remove	Comments
6270	9	Pin Cherry	*Prunus pensylvanica*	80	55	4.0		0		
6271	6	Sycamore	*Platanus occidentalis*	80	60	2.9		0		
6272	6	Alder	*Alnus sp.*	80	55	2.6		0		
6273	6	Pin Cherry	*Prunus pensylvanica*	80	55	2.6		0		
6274	4	Red Oak	*Quercus rubra*	80	95	3.0		0		
6275	7	Slippery Elm	*Ulmus rubra*	80	65	3.6		0		
6276	3	Slippery Elm	*Ulmus rubra*	80	65	1.6		0		
6277	8	Black Gum	*Nyssa sylvatica*	80	80	5.1		0		
6278	30	Yellow Poplar	*Liriodendron tulipifera*	100	60	18.0	4	36	X	
6279	36	Yellow Poplar	*Liriodendron tulipifera*	100	60	21.6	5	61	X	
6280	30	Yellow Poplar	*Liriodendron tulipifera*	100	60	18.0	4	62	X	
6281	18	Black Locust	*Robinia pseudoacacia*	80	60	8.6		16		
6282	23	Yellow Poplar	*Liriodendron tulipifera*	80	60	11.0		23		
6283	4	Sugar Maple	*Acer saccharum*	80	80	2.6		0		
6284	12	Yellow Poplar	*Liriodendron tulipifera*	80	60	5.8		15		
6285	12	Red Maple	*Acer rubrum*	80	75	7.2		25		
6286	3	Pin Cherry	*Prunus pensylvanica*	80	55	1.3		0		
6287	12	Pin Cherry	*Prunus pensylvanica*	80	55	5.3		0		
6288	12	White Oak	*Quercus alba*	80	95	9.1		0		
6289	48	Yellow Poplar	*Liriodendron tulipifera*	100	65	31.2		12		
6290	6	Red Maple	*Acer rubrum*	80	75	3.6		12		
6291	6	Red Maple	*Acer rubrum*	80	75	3.6		14		
6292	8	Black Locust	*Robinia pseudoacacia*	80	65	4.2		0		
6293	8	Sugar Maple	*Acer saccharum*	80	80	5.1		0		
6294	8	Sugar Maple	*Acer saccharum*	80	80	5.1		0		
6295	21	Sycamore	*Platanus occidentalis*	100	60	12.6		0		
6296	14	White Oak	*Quercus alba*	40	90	5.0		0		Leaning
6297	46	Yellow Poplar	*Liriodendron tulipifera*	100	60	27.6		0		
6298	12	White Oak	*Quercus alba*	80	95	9.1		0		Outside RPA
6299	36	Pine	*Pinus sp.*	80	50	14.4		0		Broken branches; Outside RPA
6300	46	Yellow Poplar	*Liriodendron tulipifera*	100	60	27.6		0		
6301	30	Yellow Poplar	*Liriodendron tulipifera*	80	60	14.4		0		Outside RPA
6302	10	Sugar Maple	*Acer saccharum*	80	75	6.0		0		Outside RPA
6303	10	Juniper	*Juniperus sp.*	80	35	2.8		0		Outside RPA
6304	18	Crape Myrtle	*Lagerstroemia sp.*	60	25	2.7		0		Outside RPA
6305	4	Weeping Willow	*Salix babylonica*	60	55	1.3		0		Outside RPA
6306	8	Sugar Maple	*Acer saccharum*	80	80	5.1		0		Outside RPA
6307	18	White Oak	*Quercus alba*	80	95	13.7		0		Outside RPA
6308	12	Black Locust	*Robinia pseudoacacia*	80	60	5.8		0		Outside RPA
6309	20	Black Locust	*Robinia pseudoacacia*	80	60	9.6		0		Leaning; Outsiden RPA
6310	18	Crape Myrtle	*Lagerstroemia sp.*	60	25	2.7		0		Outside RPA
6311	8	American Holly	*Llex opaca*	80	45	2.9		0		Outside RPA
6312	8	Sugar Maple	*Acer saccharum*	80	80	5.1		0		Outside RPA
6313	8	Sugar Maple	*Acer saccharum*	80	80	5.1		0		Outside RPA
6314	10	Catalpa	*Catalpa sp.*	80	50	4.0		0		Outside RPA
6315	18	Catalpa	*Catalpa sp.*	80	50	7.2		0		Outside RPA
6316	42	Norway Spruce	*Picea abies*	80	60	20.2		1		
6317	24	Yellow Poplar	*Liriodendron tulipifera*	40	60	5.8	2	43	X	Large Dead Branches
6318	28	Yellow Poplar	*Liriodendron tulipifera*	80	60	13.4		7		
6319	36	Yellow Poplar	*Liriodendron tulipifera*	80	60	17.3		17		
6320	42	Yellow Poplar	*Liriodendron tulipifera*	80	60	20.2		15		
6321	28	White Oak	*Quercus alba*	100	95	26.6		10		
6322	28	White Oak	*Quercus alba*	100	95	26.6		12		
6323	28	Yellow Poplar	*Liriodendron tulipifera*	100	60	16.8		14		
6324	24	Yellow Poplar	*Liriodendron tulipifera*	80	60	11.5		5		
6325	24	Yellow Poplar	*Liriodendron tulipifera*	100	60	14.4		4		
6326	8	Yellow Poplar	*Liriodendron tulipifera*	80	60	3.8		30		
6327	32	Yellow Poplar	*Liriodendron tulipifera*	100	60	19.2		16		
6328	8	Red Maple	*Acer rubrum*	80	75	4.8		0		Covered in Ivy
6329	10	River Birch	*Betula nigra*	80	75	6.0		0		Leaning
6330	42	White Oak	*Quercus alba*	80	95	31.9		1		
6331	42	Yellow Poplar	*Liriodendron tulipifera*	100	60	25.2		14		
6332	32	Yellow Poplar	*Liriodendron tulipifera*	100	60	19.2		0		
6333	32	Yellow Poplar	*Liriodendron tulipifera*	100	60	19.2		0		
6334	36	White Oak	*Quercus alba*	100	95	34.2		13		
6335	28	White Oak	*Quercus alba*	100	95	26.6		4		
6336	32	Yellow Poplar	*Liriodendron tulipifera*	80	60	15.4		0		
6337	18	White Oak	*Quercus alba*	100	95	17.1		8		
6398	42	White Oak	*Quercus alba*	100	95	39.9		0		Leaning
6400	14	Black Locust	*Robinia pseudoacacia*	80	65	7.3		0		Outside RPA

NOTES:

1. TREE INVENTORY WAS PERFORMED BY ROBERT HAYLER OF DEWBERRY ENGINEERS, INC. (ISA CERTIFIED ARBORIST #MA-5751).
2. 28 TREES WILL BE REMOVED. 63 REPLACEMENT TREES ARE REQUIRED.
3. DEAD TREES WITHIN THE LIMIT OF DISTURBANCE THAT ARE NOT INDICATED TO BE REMOVED SHALL BE TOPPED TO A 20-30 FOOT STUB AND REMAIN AS WILDLIFE SNAGS.
4. ALL TREES ARE LOCATED WITHIN THE RPA LIMITS UNLESS OTHERWISE NOTED. ALL TREES INDICATED FOR REMOVAL ARE LOCATED WITHIN THE RPA LIMITS.

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REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

TREE INVENTORY

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: N/A

C011.2

FILENAME: S42D-220-E_AND_S_PLAN.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

EXISTING TREE STUMP TO BE GROUND, AREA TO BE RESTORED WITH SEED (APPROX. LOCATION SHOWN)

TEMPORARY CONSTRUCTION EASEMENT

CONTRACTOR TO RESTORE ASPHALT HUMP (APPROX. LOCATION SHOWN)

EX. GRATE INLET TO REMAIN (APPROX. LOCATION SHOWN)

HAUL ROUTE

CONTRACTOR SHALL RESTORE CURB TO EXISTING CONDITIONS AT COMPLETION OF THE PROJECT

CONTRACTOR SHALL MILL AND RE-PAVE THE LOOP DRIVEWAY AT THE COMPLETION OF CONSTRUCTION

EX. STR. 10989 TO REMAIN UNDISTURBED

CONTRACTOR STAGING AND STORAGE AREA

CONTRACTOR SHALL PLACE WOODEN DECK MATS TO PROTECT TREE ROOTS DURING CONSTRUCTION, SEE DETAIL (TO BE LOCATED WHERE THERE IS NO NEED FOR EXCAVATION)

PREVIOUSLY CONSTRUCTED PIPES

TREE PROTECTION AREA TO REMAIN UNDISTURBED, SEE NOTE 4

PUMP AROUND, TYP. SEE NOTE 2.

APPROXIMATE LIMIT OF DISTURBANCE (±1.03 AC)

SANDBAG DIVERSION (TYP.)

WATERS OF THE U.S. BOUNDARY, TYP. SEE SHEET C081.1 FOR MORE DETAIL.

PUMP AROUND, TYP. SEE NOTE 2.

TREE REMOVAL (TYP.). SEE SHEET C011.2 FOR TREE REMOVAL LIST AND REPLACEMENT REQUIREMENTS.

TEMPORARY CONSTRUCTION EASEMENT

THIS PORTION OF THE LOD WAS REQUIRED FOR STORM PIPE REALIGNMENT WORK (CONSTRUCTION ALREADY COMPLETED)

TS ALL DENUDED AREAS WITHIN PROJECT LIMITS

PS SEE LANDSCAPE PLAN NOTES & DETAILS (SHEET C092.1)

NOTES:

1. IN THE EVENT THAT A TREE NOT ALREADY DESIGNATED FOR REMOVAL IS DAMAGED OR DIES DURING CONSTRUCTION, REPLACEMENTS WILL BE PROVIDED ACCORDING TO THE TREE REPLACEMENT CALCULATIONS AND GUIDELINES.
2. PUMP AROUND DEWATERING HOURS OF OPERATION AND EQUIPMENT SELECTION TO COMPLY WITH ARLINGTON COUNTY NOISE CONTROL ORDINANCE. THE PUMP AROUND LINEWORK IS ILLUSTRATIVE ONLY AND PUMPING IS TO BE ACCOMPLISHED ACCORDING TO THE PREVAILING SITE CONDITIONS. THE PUMP AROUND SHOULD NOT BE RUN THROUGH AREAS PROTECTED BY TREE PROTECTION FENCING.
3. VEHICLE TRAFFIC BELOW THE CANOPY OF PRESERVED TREES IS TO BE PROHIBITED EXCEPT FOR AREAS WHERE MATTING IS USED.
4. TOPSOIL IS NOT TO BE SPREAD IN TREE PRESERVATION AREAS OR CRITICAL ROOT ZONES UNDISTURBED BY EXCAVATION (INCLUDING AREAS PROTECTED BY MATTING). WHERE FILL IN A CRITICAL ROOT ZONE IS UNAVOIDABLE, WORK WITH THE URBAN FORESTER TO SELECT AN APPROPRIATE SOIL TEXTURE AND AERATION MATTING. IN SUCH CASES THE INSTALLATION OF SOILS SHOULD BE BACKED OUT, WITH NO TRAFFIC OVER THE AREA AFTER INSTALLATION.
5. ROOT PRUNING EXTENTS TO BE ESTABLISHED AT THE DISCRETION OF THE URBAN FORESTER.
6. INSTALL SILT FENCE ON GRADE WITH NO TRENCH PER ROOT MATTING DETAIL (311300.7NS) ON SHEET C032.2.

EROSION AND SEDIMENT CONTROL LEGEND

3.02	TEMPORARY CONSTRUCTION ENTRANCE	CE	
3.05	TEMPORARY SILT FENCE (SEE NOTE 6)	SF	—X—X—
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.38	TREE PROTECTION	TP	— TP —
	ROOT PRUNING (SEE NOTE 5)	RP	— RP —
	ACCESS ROAD DECK MAT (SEE NOTE 4)	DM	
	ROOT PROTECTION MATTING (SEE NOTE 4)	RM	
	PUMP AROUND		
	SANDBAG DIVERSION		
	CRITICAL ROOT ZONE		— CRZ —
	LIMITS OF DISTURBANCE		— LOD —

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PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy P Flaum QUALITY CONTROL ENGINEER	08/04/22
 CONSTRUCTION SECTION SUPERVISOR	8/5/22
 WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS S42D
HEADWATERS DONALDSON RUN TRIBUTARY B (ANALOSTAN BRANCH)

SILTATION AND EROSION CONTROL PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE:
0 25 50
GRAPHIC SCALE

C031.1

FILENAME: S42D-220-E_AND_S_PLAN.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THE STREAM STABILIZATION PROJECT FOR DONALDSON RUN HEADWATERS IS NEAR 25TH STREET N, 24TH ROAD N, AND N WAKEFIELD CT JUST EAST OF OLD DOMINION DRIVE. THE PROJECT WILL DISTURB 1.03 ACRES WITHIN THE DONALDSON RUN WATERSHED. THE EXISTING HEADWATERS OF DONALDSON RUN HAVE HAD SIGNIFICANT EROSION AND REQUIRED A STABILIZATION PROJECT ALONG ROUGHLY 650 LINEAR FEET OF THE STREAM. THE LENGTH OF PROJECT WAS DETERMINED BY THE 1% RULE FOR DRAINAGE - FOR CALCULATIONS SEE SHEET C075.1.

EXISTING SITE CONDITIONS:
THE EXISTING SITE IS THE HEADWATERS OF DONALDSON RUN WITH A SMALL BUT STEEP VALLEY ON EITHER SIDE WITH RESIDENCES SURROUNDING THE STREAM. THERE ARE TWO PIPES (18" CMP AND 21" RCP) THAT CREATE THE HEADWATERS OF THE STREAM (THE SOUTH SIDE OF THE PROJECT SITE). THE SITE IS WOODED ALONG BOTH SIDES OF THE STREAM.

ADJACENT PROPERTIES:
SINGLE-FAMILY RESIDENTIAL PROPERTIES (CRULEY, MADAN, STOWE, FRIED) AND TOWNHOUSES (ANALOSTAN) ARE LOCATED ON BOTH SIDES OF THE STREAM. A GENERAL COMMERCIAL PROPERTY (MISSIONHURST) IS LOCATED ON THE NORTHWEST SIDE OF THE STREAM.

OFF-SITE AREAS:
THERE WILL BE NO OFFSITE AREAS USED BUT THE STAGING / STORING LOCATION WILL BE LOCATED ON THE MISSIONHURST PROPERTY NEAR THE CONSTRUCTION ENTRANCE OF THE SITE.

CRITICAL AREAS:
THE PROJECT IS LOCATED WITHIN LIMITS OF A RESOURCE PROTECTION AREA. STEEP SLOPES EXIST ALONG THE EXISTING STREAM BANK.

EROSION AND SEDIMENT CONTROL MEASURES:
THE EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT AREA INCLUDE SAFETY FENCE, TREE PROTECTION, ROOT MATTING, AND DEWATERING MEASURES. INLET PROTECTION IS REQUIRED OUTSIDE THE PROJECT LIMITS WHEN/WHERE WATER FROM DISTURBED AREA FLOWS.

PERMANENT STABILIZATION:
ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH GRASS, MULCH OR SOD. SEE THE PROPOSED PLANS FOR ADDITIONAL INFORMATION.

STORMWATER RUNOFF CONSIDERATIONS:
NO ADDITIONAL IMPERVIOUS AREA WILL BE ADDED TO THIS PROJECT.

TOTAL LAND DISTURBANCE......................= 44,993 SF (1.03 ACRES)
PRE-IMPROVEMENT IMPERVIOUS AREA.....= 0 SF (0.0 ACRES)
POST-IMPROVEMENT IMPERVIOUS AREA...= 0 SF (0.0 ACRES)
INCREASED IMPERVIOUS AREA.................= 0 SF (0.0 ACRES)

SOILS INFORMATION:
THE FOLLOWING SOILS ARE FOUND ON SITE (SEE SOILS MAP ON SHEET C071.1 FOR LOCATION)

SOIL#:	SOIL NAME:	HYDROLOGIC GROUP:	ERODABILITY:
7D	GLENELG-URBANLAND COMPLEX	VARIES	N/A

FLOODPLAIN AND RESOURCE PROTECTION AREA (RPA):
THE SITE IS WITHIN A RESOURCE PROTECTION AREA BUT HAS NO FLOODPLAIN.

EROSION & SEDIMENT CONTROL PROJECT PHASING

1. PHASE I:

a. PRE-CONSTRUCTION MEETING WITH THE PROJECT OFFICER, CONTRACTOR, AND COUNTY INSPECTOR.

b. INSTALL THE TEMPORARY CONSTRUCTION ENTRANCE IN THE LOCATION SHOWN ON THE E&S PLAN. MUD AND DEBRIS SHALL BE WASHED FROM ALL TRUCKS EXISTING THE SITE.

c. INSTALL PERIMETER TREE DEMARCATION FENCING IN THE FORM OF TREE PROTECTION FENCE (TP) AS SHOWN ON E&S PLAN. INSTALL DECK MATTING AND/OR PERFORM ROOT PRUNING AS INDICATED ON THE PLANS.

d. PERFORM INITIAL PERIMETER CLEARING TO INSTALL REMAINDER OF PERIMETER CONTROLS SUCH AS PUMP AROUND, AS PER THE PLAN.

e. SEED AND MULCH ALL EARTHEN CONTROLS.

f. CONTACT ARLINGTON COUNTY PROJECT OFFICER FOR A PERIMETER INSPECTION PRIOR TO CLEARING THE REMAINDER OF THE SITE IN ORDER TO OBTAIN PHASE II GRADING PERMIT.

g. CLEAR THE SITE TO THE LIMITS AS SHOWN ON THE CONSTRUCTION PLANS.

2. PHASE II:

a. ALL WORK SHALL BE DONE SECTION-BY-SECTION IN DEWATERED AREAS.

b. BEGINNING AT THE DOWNSTREAM END AND WORKING UPSTREAM, PERFORM INITIAL SITE GRADING.

c. ONCE THE SITE IS BROUGHT TO NEAR FINAL GRADE, INSTALL STREAM STABILIZATION MEASURES (IMBRICATED ROCK WALL, CROSS-VANES, ETC.).

d. THE CONTROL MEASURES MAY NOT BE REMOVED UNTIL ALL OF THE DISTURBED AREAS HAVE BEEN STABILIZED AND ONLY AS APPROVED AND DIRECTED BY THE INSPECTOR.

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

1. STRUCTURAL PRACTICES

a. TEMPORARY CONSTRUCTION ENTRANCE - VESCH 3.02

a.a. A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK SHALL BE INSTALLED AT THE EXISTING ACCESS POINT TO THE SITE. DURING MUDDY CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE RE-ENTERING THE LOCAL ROADWAYS.

a.b. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC WASHING OF THE MATS AND/OR REPLACEMENT OF WOOD CHIPS AS NECESSARY.

a.c. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

a.d. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED INTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

b. SILT FENCE - VESCH 3.05

b.a. SILT FENCE WILL BE INSTALLED WITH THE E&S PLAN TO FILTER RUNOFF FROM DISTURBED AREAS. RUNOFF SHALL NOT BE DIRECTED PARALLEL TO THE INSTALLATION OF SILT FENCE.

b.b. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

b.c. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM UNDERCUTTING.

b.d. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, THE FABRIC SHALL BE REPLACED IMMEDIATELY.

b.e. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

b.f. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, THEN PREPARED AND SEEDED.

c. DEWATERING STRUCTURE - VESCH 3.26

c.a. SEDIMENT LADEN OR TURBID WATER SHALL BE FILTERED, SETTLED OR SIMILARLY TREATED PRIOR TO DISCHARGE.

c.b. THE FILTERING DEVICES MUST BE INSPECTED FREQUENTLY AND REPAIRED OR REPLACED ONCE THE SEDIMENT BUILD-UP PREVENTS THE STRUCTURE FROM FUNCTIONING AS DESIGNED.

c.c. THE ACCUMULATED SEDIMENT WHICH IS REMOVED FROM A DEWATERING DEVICE MUST BE SPREAD ON-SITE AND STABILIZED OR DISPOSED OF AT AN APPROVED DISPOSAL SITE AS PER THE APPROVED PLAN.

d. TREE PROTECTION - VESCH 3.38

d.a. ALL TREES ARE TO BE PROTECTED UNLESS OTHERWISE DIRECTED BY THE COUNTY INSPECTOR AND URBAN FORESTER. THE COUNTY'S URBAN FORESTER (703-228-1863) SHALL INSPECT ALL TREE PROTECTION 72 HOURS PRIOR TO THE START OF CONSTRUCTION. IN SPITE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES, THE FOLLOWING MAINTENANCE GUIDELINES SHALL BE FOLLOWED:

d.a.a. SOIL AERATION: IF THE SOIL HAS BECOME COMPACTED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHALL BE AERATED BY PUNCHING HOLES WITH AN IRON BAR. THE BAR SHALL BE DRIVEN 1-FOOT DEEP AND THEN MOVED BACK AND FORTH UNTIL THE SOIL IS LOOSENED. THIS PROCEDURE SHALL BE REPEATED EVERY 18 INCHES UNTIL ALL OF THE COMPACTED SOIL BENEATH THE CROWN OF THE TREE HAS BEEN LOOSENED.

d.a.b. REPAIR OF DAMAGE:

d.a.A.a. ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM OF ANY TREE RETAINED ON THE SITE SHALL BE REPAIRED IMMEDIATELY.

d.a.A.b. WHENEVER MAJOR ROOT OR BARK DAMAGE OCCURS, REMOVE SOME FOLIAGE TO REDUCE THE DEMAND FOR WATER AND NUTRIENTS.

d.a.A.c. DAMAGED ROOTS SHALL IMMEDIATELY BE CUT OFF CLEANLY INSIDE THE EXPOSED OR DAMAGED AREA. CUT SURFACES SHALL BE PAINTED WITH APPROVED TREE PAINT, AND MOIST PEAT MOSS, BURLAP, OR TOPSOIL SHALL BE SPREAD OVER THE EXPOSED AREA.

d.a.A.d. TO TREAT BARK DAMAGE, CAREFULLY CUT AWAY ALL LOOSENED BARK BACK INTO THE UNDAMAGED AREA, TAPER THE CUT AT THE TOP AND BOTTOM, AND PROVIDE DRAINAGE AT THE BASE OF THE WOUND.

d.a.A.e. ALL TREE LIMBS DAMAGED DURING CONSTRUCTION OR REMOVED FOR ANY OTHER REASON SHALL BE CUT OFF ABOVE THE COLLAR AT THE PRECEDING BRANCH JUNCTION.

d.a.A.f. CARE FOR SERIOUS INJURIES SHALL BE PRESCRIBED BY A FORESTER OR A TREE SPECIALIST.

d.b. FERTILIZATION: BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHALL RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY.

d.b.a. TREES SHALL BE FERTILIZED IN THE LATE FALL (AFTER OCTOBER 1) OR THE EARLY SPRING (FROM THE TIME FROST IS OUT OF THE GROUND UNTIL MAY 1). FALL APPLICATIONS ARE PREFERRED, AS THE NUTRIENTS WILL BE MADE AVAILABLE OVER A LONGER PERIOD OF TIME.

d.b.b. FERTILIZER SHALL BE APPLIED TO THE SOIL OVER THE FEEDER ROOTS. IN NO CASE SHALL IT BE APPLIED CLOSER THAN 3 FEET TO THE TRUNK. THE ROOT SYSTEM OF CONIFERS EXTENDS SOME DISTANCE BEYOND THE DRIP LINE. INCREASE THE AREA TO BE FERTILIZED BY ONE FOURTH THE AREA OF THE CROWN.

d.b.c. FERTILIZER SHALL BE APPLIED USING APPROVED FERTILIZATION METHODS AND EQUIPMENT.

d.b.d. FORMULATIONS AND APPLICATION RATES SHALL CONFORM TO THE GUIDELINES GIVEN IN TABLE 3.38-A OF VESCH.

2. VEGETATIVE PRACTICES

e. TEMPORARY SEEDING - VESCH 3.31

e.a. ALL DENUDED AREAS, WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

e.b. SEE SHEET III-288 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) FOR ALLOWABLE PLANTING MATERIAL, SEEDING RATES, AND DATES. THE PLANTING REQUIREMENTS OF THE "SOUTH" SHALL BE FOLLOWED. LIMING SHALL BE BASED ON TABLE 3.31-A OF VESCH. FERTILIZERS SHALL BE APPLIED AS 600 LB/ACRE. THE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2-4" OF SOIL. SEED SHALL BE EVENLY APPLIED AND SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1.5" DEEP. SEEDING MADE IN FALL FOR WINTER COVER AND DURING HOT SUMMER MONTHS SHALL BE MULCHED.

f. EROSION CONTROL BLANKET AND MULCHING - VESCH 3.36 AND 3.35

f.a. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. SEE SPECIFICATION FOR COIR FIBER MATTING PERFORMANCE STANDARDS. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN SEEDING OPERATION.

g. DUST CONTROL - VESCH 3.39

g.a. DUST SHALL BE CONTROLLED USING A VARIETY OF METHODS SUCH AS VEGETATIVE COVER, MULCH, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE BARRIERS, AND CALCIUM CHLORIDE. THE IMPLEMENTATION OF THE DUST CONTROL METHODS SHALL BE INSTALLED PER SECTION 3.39 OF VESCH

h. PERMANENT SEEDING - VESCH 3.32

h.a. SEE THE UPLAND WOODLAND SEED MIX ON THE LANDSCAPE NOTES AND DETAILS (SHEET C092.1).

THE EROSION AND SEDIMENT CONTROL INSPECTOR SHALL HAVE THE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD. IN ADDITION, NO SEDIMENT TRAPS OR BASINS MAY BE REMOVED WITHOUT PRIOR APPROVAL OF THE INSPECTOR.

EROSION AND SEDIMENT CONTROL MANAGEMENT MEASURES

LANDSCAPE / TREE PRESERVATION NOTES
PRIOR TO ANY LAND DISTURBING ACTIVITY, THE CONTRACTOR SHALL CONTACT THE ARLINGTON COUNTY ARBORIST TO SCHEDULE AN INSPECTION.

LAND CONSERVATION NOTES:
1. NO DISTURBED AREA WILL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
3. ALL STORM AND SANITARY SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 100 FEET ARE TO BE OPEN AT ANY ONE TIME.
4. ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 5 DAYS AFTER BACKFILLING.
5. ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS ARE TO BE MULCHED AND SEEDED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. THE SAME APPLIES TO ALL SOIL STOCKPILES.
6. DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION.
7. ANY DISTURBED AREA NOT COVERED BY NOTE 1 ABOVE AND NOT PAVED, SODDED OR BUILT UPON BY NOV. 1, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED IMMEDIATELY WITH HAY OR STRAW MULCH AT THE RATE OF 2 TONS/ACRE AND OVER-SEEDED BY APRIL 15.
8. AT THE COMPLETION OF ANY PROJECT CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED.

EROSION & SEDIMENT CONTROL PROGRAM:
1. THE EROSION CONTROL PLAN IS INTENDED TO ESTABLISH ENTRANCES AND PERIMETER CONTROL MEASURES WHICH INCLUDES SILT FENCE (SF), INLET PROTECTION (IP), AND OTHER CONTROLS SPECIFIED ON THE PLANS.
2. WHERE CONSISTENT WITH JOB SAFETY REQUIREMENTS, ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. NO MATERIAL SHALL BE PLACED IN STREAMBEDS. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN 7 DAYS SHALL BE SEEDED AND MULCHED. WHEN SPOIL IS PLACED ON THE DOWNHILL SIDE OF TRENCH, IT SHALL BE BACKSLOPED TO DRAIN TOWARD THE TRENCH. WHEN NECESSARY TO DEWATER THE TRENCH, THE PUMP DISCHARGE HOSE SHALL OUTLET IN A STABILIZED AREA OR A SEDIMENT TRAPPING DEVICE.
3. ALL PRACTICES AND CONTROL DEVICES DESCRIBED HEREIN SHALL CONFORM TO THE CURRENT VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). IN ADDITION, THE CONTRACTOR SHALL TAKE THE FOLLOWING STEPS TO MINIMIZE THE VOLUME OF SILT:
   a. CONTRACTOR SHALL EVALUATE THE SITE TO DETERMINE EXTENSIVE CUT AND FILL AREAS, AND SHALL WORK THOSE AREAS TO MINIMIZE THE USE OF HEAVY EQUIPMENT. CONTRACTOR SHALL BRING DISTURBED AREAS TO GRADE (ROUGH OR FINISHED) AND STABILIZE THOSE AREAS WITH TEMPORARY OR PERMANENT VEGETATION. THESE DISTURBED AREAS SHALL BE STABILIZED PRIOR TO BEGINNING WORK IN ANOTHER AREA.
   b. FILL AREAS SHALL BE COMPACTED COMPLETELY PRIOR TO THE END OF EACH WORK DAY. FILL SLOPE SURFACES SHALL BE KEPT ROUGH TO REDUCE SHEET EROSION OF THE SLOPES. CONTRACTOR SHALL RE-DIRECT CONCENTRATED RUNOFF, BY EARTH BERMS OR OTHER DEVICES, AROUND ACTIVELY DISTURBED AREAS TO STABILIZED OUTLETS.
   c. CUT SLOPES SHALL BE PROTECTED FROM CONCENTRATED FLOW BY BERMS (ABOVE THE SLOPE) AND DIRECTED AROUND THE DISTURBED AREA TO STABILIZED OUTLETS.
4. MEASURES TO CONTROL EROSION AND SILTATION SHALL BE PROVIDED PURSUANT TO AND IN COMPLIANCE WITH CURRENT STATE AND LOCAL REGULATIONS. THE INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND/OR THE APPROVAL OF THE PLANS SHALL IN NO WAY RELIEVE THE CONTRACTOR OR HIS AGENT OF ANY LEGAL RESPONSIBILITY WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA AND CHAPTER 57 OF THE ARLINGTON COUNTY CODE.
5. ALL AREAS, ON OR OFF-SITE, THAT ARE DISTURBED BY THIS CONSTRUCTION AND WHICH ARE NOT PAVED OR BUILT UPON SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION. ACCEPTABLE STABILIZATION SHALL CONSIST OF PERMANENT GRASS SEED MIXTURE OR SOD THAT IS INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. ALL SLOPES 3:1 AND GREATER SHALL BE RECEIVE SOIL STABILIZATION IN ACCORDANCE WITH THE SPECIFICATIONS.
6. WHERE STREAM CROSSINGS ARE REQUIRED FOR EQUIPMENT, TEMPORARY CULVERTS SHALL BE PROVIDED.
7. FOR FURTHER REQUIREMENTS AND DETAILS OF TREE PRESERVATION, PLANTING, EROSION AND SEDIMENT CONTROL, SEE COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS AND/OR THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

GENERAL EROSION AND SEDIMENT CONTROL NOTES
1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.
2. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN THE AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
6. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
7. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
8. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
9. THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
10. ALL BIOFILTERS SHALL BE KEPT OFF-LINE UNTIL CONSTRUCTION IS COMPLETED AND ALL AREAS HAVE BEEN PROPERLY STABILIZED. THIS SHALL BE ACHIEVED BY USING INLET PROTECTION AT THE CURB CUTS AND STORMWATER CATCH BASINS LEADING DIRECTLY INTO THE BIOFILTERS.
11. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

PRE-STORM EROSION & SEDIMENTATION CHECKLIST:
PER GENERAL EROSION AND SEDIMENT CONTROL NOTE 6, THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL (ESC) MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE COUNTY. THESE SUPPLEMENTARY PRACTICES ARE IN ADDITION TO THOSE SHOWN IN AN EROSION AND SEDIMENT CONTROL PLAN. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MODIFIED AS NEEDED TO ENSURE ONLY CLEAR WATER IS DISCHARGED FROM THE SITE.

THE FOLLOWING ACTIONS SHALL BE TAKEN PRIOR TO STORM EVENTS WITH PREDICTED HEAVY AND/OR LARGE VOLUME RAINFALL TO PREVENT SEDIMENT DISCHARGES FROM A CONSTRUCTION SITE. A TYPICAL SUMMER THUNDERSTORM IS AN EXAMPLE OF A STORM EVENT WITH PREDICTED HEAVY AND/OR LARGE VOLUME RAINFALL.

1. PERIMETER CONTROLS
   a. SILT FENCE SHALL BE CHECKED FOR UNDERMINING, HOLES, OR DETERIORATION OF THE FABRIC. FENCING SHALL BE REPLACED IMMEDIATELY IF THE FABRIC IS DAMAGED OR WON. SILT FENCE MUST BE TRENCHED INTO THE GROUND PER STATE SPECIFICATIONS (VESCH STD & SPEC 3.09).
   b. WOODEN STAKES OR STEEL POSTS SHALL BE PROPERLY SECURED UPRIGHT INTO THE GROUND. DAMAGED POSTS OR STAKES MUST BE REPLACED.
   c. SEDIMENT THAT HAS ACCUMULATED AGAINST THE SILT FENCE SHALL BE REMOVED. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE LEVEL REACHES ONE-HALF THE HEIGHT OF THE FENCING.
   d. HAY BALES OR A STONE BERM SHALL BE PLACED ACROSS THE CONSTRUCTION ENTRANCE TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
2. EXPOSED SLOPES AND SOIL
   a. EXPOSED SLOPES NOT AT THE FINAL STABILIZATION PHASE SHALL BE COVERED WITH TARPS, PLASTIC SHEETING, OR EROSION CONTROL MATTING. COVERING MATERIAL SHALL BE PROPERLY SECURED/ANCHORED.
   b. CONTROLS SHALL BE INSTALLED TO PREVENT CONCENTRATED FLOW DOWN AN EXPOSED SLOPE. BERMS OR DIVERSION DIKES SHALL BE INSTALLED AT THE TOP OF CUT/EXPOSED SLOPES TO DIRECT STORM FLOW AROUND THE DISTURBED AREA.
   c. EXPOSED SLOPES AT THE FINAL STABILIZATION PHASE SHALL BE STABILIZED USING SLOPE STABILIZATION PRACTICES SUCH AS SOIL STABILIZATION BLANKETS OR MATTING AS SPECIFIED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH STD & SPEC 3.36). BLANKETS OR MATS MUST BE PROPERLY SECURED AND ANCHORED TO THE SLOPE USING STAPLES, PINS, OR STAKES.
   d. SEEDED AREAS SHALL BE CHECKED AND RESEEDED AS NECESSARY TO COVER EXPOSED SOIL. RECENTLY SEEDED AREAS SHALL BE PROTECTED BY STRAW OR SOIL STABILIZATION BLANKETS TO PREVENT SEEDING FROM BEING WASHED AWAY.
3. STOCKPILES
   a. STOCKPILED SOIL AND OTHER LOOSE MATERIALS THAT CAN BE WASHED AWAY SHALL BE COVERED WITH A TARP, PLASTIC SHEETING, OR OTHER STABILIZATION MATTING. THE COVER MUST BE PROPERLY SECURED/ANCHORED DOWN TO PREVENT IT FROM BEING BLOWN OFF AND EXPOSING MATERIALS TO RAIN. CONTROLS SUCH AS HAY BALES OR BOOMS SHALL BE PLACED ALONG THE PERIMETER OF THE STOCKPILE (DOWNHILL SIDE).
4. INLET PROTECTION
   a. INLET PROTECTION CONTROLS SHALL BE INSPECTED TO ENSURE THEY ARE FUNCTIONING PROPERLY AND FLOODING WILL NOT OCCUR. CLOGGED OR DAMAGED CONTROLS MUST BE REPLACED IMMEDIATELY. ENSURE CONTROLS ALLOW FOR OVERFLOW/BYPASS OF STORMWATER RUNOFF DURING SIGNIFICANT STORM EVENTS.

IN ADDITION TO THESE PRE-STORM ACTIONS, ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES MUST BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL.

POLLUTION PREVENTION PLAN NOTES (STORMWATER MANUAL - SECTION 2.4)
1. ONLY THE FOLLOWING NON-STORMWATER DISCHARGES ARE AUTHORIZED BY ARLINGTON COUNTY'S MS4 PERMIT, UNLESS THE STATE WATER CONTROL BOARD, THE VIRGINIA SOIL AND WATER CONSERVATION BOARD (BOARD), OR ARLINGTON COUNTY DETERMINES THE DISCHARGE TO BE A SIGNIFICANT SOURCE OF POLLUTANTS TO SURFACE WATERS:
   a. WATER LINE FLUSHING; LANDSCAPE IRRIGATION; DIVERTED STREAM FLOWS; RISING GROUND WATERS; UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)); UNCONTAMINATED PUMPED GROUND WATER; DISCHARGES FROM POTABLE WATER SOURCES; FOUNDATION DRAINS; AIR CONDITIONING CONDENSATION; IRRIGATION WATER; SPRINGS; WATER FROM CRAWL SPACE PUMPS; FOOTING DRAINS; LAWN WATERING; INDIVIDUAL RESIDENTIAL CAR WASHING; FLOWS FROM RIPARIAN HABITATS AND WETLANDS; DECHLORINATED SWIMMING POOL DISCHARGES; DISCHARGES OR FLOWS FROM FIREFIGHTING; AND, OTHER ACTIVITIES GENERATING DISCHARGES IDENTIFIED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AS NOT REQUIRING VPDES AUTHORIZATION.
2. APPROPRIATE CONTROLS MUST BE IMPLEMENTED TO PREVENT ANY NON-STORMWATER DISCHARGES NOT INCLUDED ON THE ABOVE LIST (E.G., CONCRETE WASH WATER, PAINT WASH WATER, VEHICLE WASH WATER, DETERGENT WASH WATER, ETC.) FROM BEING DISCHARGED INTO ARLINGTON COUNTY'S MS4 SYSTEM, WHICH INCLUDES THE CURB AND GUTTER SYSTEM, AS WELL AS CATCH BASINS AND OTHER STORM DRAIN INLETS, OR STREAM NETWORK.
3. PER CHAPTER 26 OF THE ARLINGTON COUNTY CODE, IT SHALL BE UNLAWFUL FOR ANY PERSON TO DISCHARGE DIRECTLY OR INDIRECTLY INTO THE STORM SEWER SYSTEM OR STATE WATERS, ANY SUBSTANCE LIKELY, IN THE OPINION OF THE COUNTY MANAGER, TO HAVE AN ADVERSE EFFECT ON THE STORM SEWER SYSTEM OR STATE WATERS.

UTILITY INSTALLATION:
UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

1. NO MORE THAN 100 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
2. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
3. 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.
4. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
5. STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
6. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
9. ANY DISTURBED AREA NOT COVERED BY NOTE #1 ABOVE AND PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED NO LATER THAN MAY 15TH.
10. AT THE COMPLETION OF THE CONSTRUCTION PROJECT AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED. ARLINGTON COUNTY INSPECTOR TO APPROVE REMOVAL OF ALL TEMPORARY SILTATION MEASURES.

MAINTENANCE PROGRAM:
THE FOLLOWING IS A PROGRAM OF MAINTENANCE FOR THE MECHANICAL CONTROLS SPECIFIED IN THIS NARRATIVE AND ON THE PLAN:

1. THE SITE SUPERINTENDENT OR HIS/HER REPRESENTATIVE SHALL MAKE A VISUAL INSPECTION OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREA (I.E. SEEDED AND MULCHED AND/OR SODDED AREAS) ON A DAILY BASIS; ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO ENSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING OR RE-SODDING IF NECESSARY.
2. ALL SEDIMENT TRAPPING DEVICES SHALL BE CLEARED OUT AT 50% TRAP CAPACITY AND THE SEDIMENT SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR IF NOT SUITABLE FOR FILL, HAULING AWAY AND DEPOSITING AT AN ACCEPTABLE DUMP SITE.
3. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT MUD AND/OR OTHER DEBRIS FROM BEING ENTERED ONTO EXISTING SWM/BMP FACILITIES OR DOWNSTREAM WATER WAYS. SHOULD OFF-SITE AREAS BECOME POLLUTED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE AFFECTED AREAS TO THE SATISFACTION OF THE INSPECTOR.
4. AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ANY REMAINING DENUDED AREAS SHALL BE STABILIZED. CERTAIN DEVICES MAY BE REMOVED PRIOR TO CONSTRUCTION COMPLETION BUT ONLY WITH THE APPROVAL OF THE COUNTY INSPECTOR.
5. AFTER CONSTRUCTION OPERATIONS HAVE ENDED, ALL DISTURBED AREAS SHALL BE STABILIZED. UPON APPROVAL OF THE COUNTY INSPECTOR, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED AND THE GROUND PERMANENTLY STABILIZED WITH VEGETATION WITHIN 30 DAYS.

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ENGINEERING BUREAU
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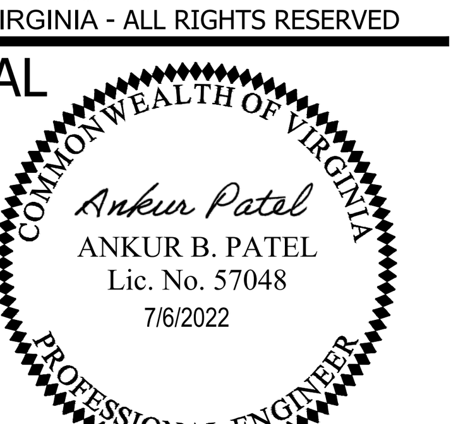
SEAL



APPROVALS	DATE
Amy Pflaum — QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach — TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad — PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

SILTATION AND SEDIMENT CONTROL NARRATIVE

DESIGNED: ML
DRAWN: ML
CHECKED: AP

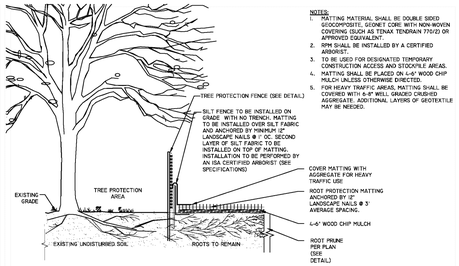
PLOTTED: NOVEMBER 30 2022

SCALE: N/A

C032.1

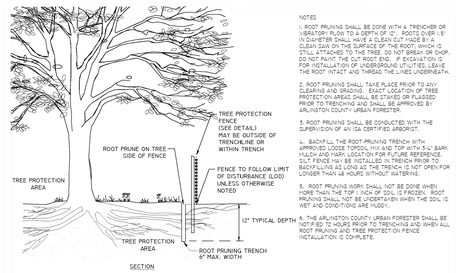
FILENAME: S42D-220-E_AND_S_NOTES_SWPPP.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021



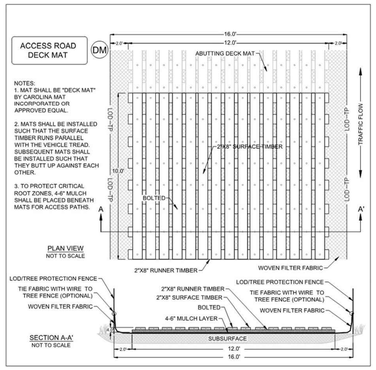
NOTES:
1. MATTING MATERIAL SHALL BE DOUBLE SIDED GEOCOMPOSITE, SEDNET C3BC WITH NON-WOVEN COVERING (SUCH AS TENAX TENDRAIN 770/2) OR APPROVED EQUIVALENT.
2. RPM SHALL BE INSTALLED BY A CERTIFIED ARBORIST.
3. TO BE USED FOR DESIGNATED TEMPORARY CONSTRUCTION ACCESS AND STOCKPILE AREAS.
4. MATTING SHALL BE PLACED ON 4-6" WOOD CHIP MULCH UNLESS OTHERWISE DIRECTED.
5. FOR HEAVY TRAFFIC AREAS, MATTING SHALL BE COVERED WITH 6-8" WELL GRADED CRUSHED AGGREGATE. ADDITIONAL LAYERS OF GEOTEXTILE MAY BE NEEDED.

TEMPORARY ROOT PROTECTION MATTING WITHIN CRZ
311300.7NS
NOT TO SCALE



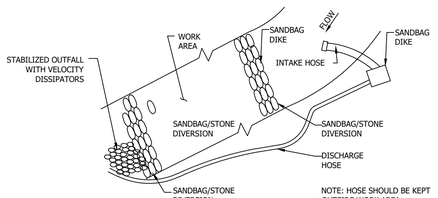
NOTES
1. ROOT PRUNING SHALL BE DONE WITH A TRENCHER OR VIBRATORY PLOW TO A DEPTH OF 12". ROOTS OVER 1.5" IN DIAMETER SHALL HAVE A CLEAN CUT MADE BACK TO SOUND WOOD WITH A SAW OR PRUNING SHEARS. ROOTS SHALL BE DETACHED TO THE TREE. DO NOT BREAK OR CHOP. DO NOT PAINT THE CUT ROOT END. IF EXCAVATION IS FOR INSTALLATION OF UNDERGROUND UTILITIES, LEAVE THE ROOT INTACT AND THREAD THE LINES UNDERNEATH.
2. ROOT PRUNING SHALL TAKE PLACE PRIOR TO ANY CLEARING AND GRADING. EXACT LOCATION OF TREE PROTECTION AREAS SHALL BE STAKED OR FLAGGED PRIOR TO TRENCHING AND SHALL BE APPROVED BY ARLINGTON COUNTY URBAN FORESTER.
3. ROOT PRUNING SHALL BE CONDUCTED WITH THE SUPERVISION OF AN ISA CERTIFIED ARBORIST.
4. BACKFILL THE ROOT-PRUNING TRENCH WITH APPROVED LOOSE TOPSOIL MIX AND TOP WITH 3-4" BARK MULCH AND YARN LOCATION FOR FUTURE REFERENCE. SILT FENCE MAY BE INSTALLED IN TRENCH PRIOR TO BACKFILLING AS LONG AS THE TRENCH IS NOT OPEN FOR LONGER THAN 48 HOURS WITHOUT WATERING.
5. ROOT PRUNING WORK SHALL NOT BE DONE WHEN MORE THAN 2 INCH OF SOIL IS FROZEN. ROOT PRUNING SHALL NOT BE UNDERTAKEN WHEN THE SOIL IS WET AND CONDITIONS ARE MUDDY.
6. THE ARLINGTON COUNTY URBAN FORESTER SHALL BE NOTIFIED 72 HOURS PRIOR TO TRENCHING AND WHEN ALL ROOT PRUNING AND TREE PROTECTION FENCE INSTALLATION IS COMPLETE.

ROOT PRUNING
311300.5 (2019)
N.T.S.
DPR



NOTES:
1. MAT SHALL BE "DECK MAT" BY CAROLINA MAT INCORPORATED OR APPROVED EQUAL.
2. MATS SHALL BE INSTALLED SUCH THAT THE SURFACE TIMBER RUNS PARALLEL WITH THE VEHICLE TREAD. SUBSEQUENT MATS SHALL BE INSTALLED SUCH THAT THEY BUTT UP AGAINST EACH OTHER.
3. TO PROTECT CRITICAL ROOT ZONES, 4-6" MULCH SHALL BE PLACED BENEATH MATS FOR ACCESS PATHS.

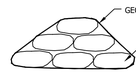
WOODEN DECK MAT
N.T.S.



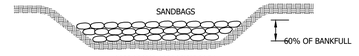
NOTE: HOSE SHOULD BE KEPT OUTSIDE WORK AREA

STREAM WORK MAY EMPLOY PUMPING OF STREAM FLOW IN LIEU OF DIVERSION PIPES OR CHANNELS AS LONG AS THE WORK IS OF SHORT DURATION. (I.E. - PUMP DURING DAYLIGHT, ALLOW FLOW THROUGH WORK AREA AT NIGHT AFTER STABILIZED: OR TWO OR THREE DAYS OF CONTINUOUS 24HR /DAY PUMPING.) IN ADDITION, THIS PRACTICE IS ACCEPTABLE IN CLASS I, III OR IV STREAMS AS LONG AS ALL APPLICABLE STREAM CLOSURE DATES ARE ADHERED TO. ALONG WITH THIS MEASURE, SANDBAG/ STONE DIVERSIONS WOULD BE NECESSARY UPSTREAM AND DOWNSTREAM OF WORK AREA IN CONJUNCTION WITH A DEWATERING BASIN TO KEEP WORK AREAS DRY. (PER GENE COPENKO, SECTION CHIEF OF FLOOD PLAIN MANAGEMENT, W.R.A.)

PUMP AROUND
N.T.S.



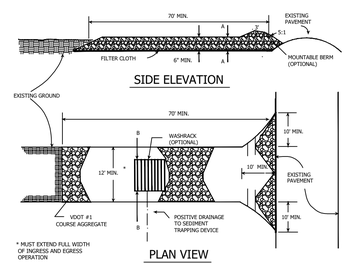
PROFILE



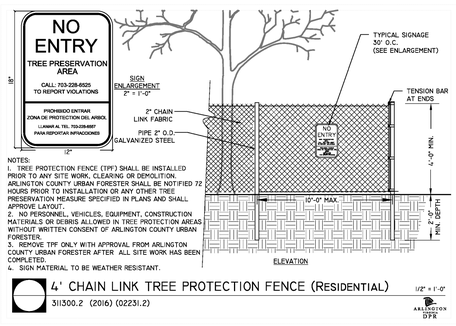
CROSS SECTION

SAND BAG DIVERSION
N.T.S.

STONE CONSTRUCTION ENTRANCE



SOURCE: ADAPTED from 1983 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC
Plate 3.02-1



NOTES:
1. TREE PROTECTION FENCE (TPF) SHALL BE INSTALLED PRIOR TO ANY SITE WORK, CLEARING OR DEMOLITION. ARLINGTON COUNTY URBAN FORESTER SHALL BE NOTIFIED 72 HOURS PRIOR TO INSTALLATION OR ANY OTHER TREE PRESERVATION MEASURE SPECIFIED IN PLANS AND SHALL APPROVE LAYOUT.
2. NO PERSONNEL, VEHICLES, EQUIPMENT, CONSTRUCTION MATERIALS OR DEBRIS ALLOWED IN TREE PROTECTION AREAS WITHOUT WRITTEN CONSENT OF ARLINGTON COUNTY URBAN FORESTER.
3. REMOVE TPF ONLY WITH APPROVAL FROM ARLINGTON COUNTY URBAN FORESTER AFTER ALL SITE WORK HAS BEEN COMPLETED.
4. SIGN MATERIAL TO BE WEATHER RESISTANT.

4' CHAIN LINK TREE PROTECTION FENCE (RESIDENTIAL)
311300.2 (2016) (02231.2)
1/2" = 1'-0"
DPR

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

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SEAL
COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy Pflaum	08/04/22
QUALITY CONTROL ENGINEER	
	8/5/22
CONSTRUCTION SECTION SUPERVISOR	
	8/4/22
WATER, SEWER, STREETS BUREAU CHIEF	
Dennis M. Leach	08/03/22
TRANSPORTATION DIRECTOR	
Jennifer Tastad	08/17/22
PROJECT MANAGER	

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

EROSION AND SEDIMENT CONTROL DETAILS

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C032.2

FILENAME: S42D-220-E_AND_S_NOTES_SWPPP.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
Arlington County Projects
(Linear Development / Stormwater Retrofit)

For Construction Activities At:

Donaldson Run Headwaters – Stream Stabilization
4621 24th Rd N
Arlington, VA 22207

Latitude: 38.9028N (decimal degrees)

Longitude: 77.1232 W (decimal degrees)

Construction Activity Operator:

Arlington County Government DES
OSEM
2100 Clarendon Blvd. Suite 505
Arlington, VA 22201
703-228-3363
ethurber@arlingtonva.us
703-558-2222

SWPPP Preparation Date:

April 7, 2021

CERTIFICATION

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator Name: _____

Title: _____

Signature: _____

Date: _____

1.0 SWPPP Documents Located Onsite & Available for Review

SWPPP Document Type	Located Onsite & Available for Review?	
Registration Statement	☒ Yes	☐ NA
Notice of Coverage Letter	☒ Yes	☐ NA
Construction General Permit	☒ Yes	☐ NA
Pollution Prevention Plan	☒ Yes	☐ NA
Erosion & Sediment Control Plan	☒ Yes	☐ NA
Stormwater Management Plan	☐ Yes	☒ NA
LDA Permit	☒ Yes	☐ NA

Required documents must be kept at a centralized location on the project site (i.e. in a mail box or other container)

2.0 Authorized Non-Stormwater Discharges

Type of Authorized Non-Stormwater Discharges	Likely Present at Your Project Site?	
Uncontaminated excavation dewatering	☒ Yes	☐ No
Landscape irrigation	☐ Yes	☒ No
Others [describe]	☐ Yes	☒ No

3.0 Pollution Prevention Awareness

Employees will be given a "walk through" of the site identifying areas of possible pollution and will be shown Erosion and Sediment Controls and Pollution Prevention Practices (identified in Sections 4.0 and 5.0 of this SWPPP) that are applicable to their assigned job duties. A refresher meeting and "walk through" will be conducted on an as needed basis.

4.0 Erosion & Sediment Controls

Select all that apply	Erosion & Sediment Control	Estimated Installation Date	Estimated Removal Date	Responsible Party
☒	Construction Entrance (Std. & Spec. 3.02)	NTP	March 2024	Construction Activity Operator (See Cover Page)
☐	Silt Fence (Std. & Spec. 3.05)			
☐	Culvert Inlet Protection (Std. & Spec. 3.08)			
☒	Outlet Protection (Std. & Spec. 3.19)	NTP	March 2024	
☒	Temporary Seeding (Std. & Spec. 3.31)	As required	NA	
☒	Permanent Seeding (Std. & Spec. 3.32)	NTP	NA	
☐	Sodding (Std. & Spec. 3.33)		NA	
☐	Mulching (Std. & Spec. 3.35)		NA	
☐	Safety Fence (Std. & Spec 3.01)			
☐	Storm Drain Inlet Protection (Std. & Spec 3.08 and/or Arlington County Std. & Spec from approved ESC plan)			
☒	Dewatering (Std. & Spec 3.26 and/or Arlington County Std. & Spec from approved ESC plan)	NTP	March 2024	
☐	Turbidity Curtain (Std. & Spec 3.27 and/or Arlington County Std. & Spec from approved ESC plan)			
☒	Tree Protection (Arlington County Std. & Spec from approved ESC plan)	NTP	March 2024	
☐	Stream Crossing / Cofferdams (Std. & Spec 3.25 or on plan)			
☒	Pump Around System (detail on approved plan)	NTP	March 2024	
☒	Rip Rap (Std. & Spec. 3-19)	NTP	March 2024	
☐	Other(s) [describe]	NA	NA	

Pre-Storm Erosion and Sediment Control Checklist
The following actions shall be taken prior to storm events with predicted heavy and/or large volume rainfall to prevent sediment discharges from a construction site. A typical summer thunderstorm is an example of a storm event with predicted heavy and/or large volume rainfall.

☒ Perimeter controls (silt fence, hay bales, stone berms) used to prevent sediment from leaving the site shall be checked for undermining, holes, or deterioration and repaired/replaced if needed.

☒ Sediment that has accumulated against perimeter controls shall be removed if the depth exceeds more than 1/2 of the silt fence height.

☒ Exposed soil or slopes shall be covered with straw, tarps, plastic sheeting, or erosion control matting. Covering material shall be properly secured/anchored.

☒ Stockpiled soil and other loose materials that can be washed away shall be covered with a tarp, plastic sheeting, or other stabilization matting. The cover must be properly secured / anchored down to prevent it from being blown off and exposing materials to rain. Controls such as hay bales or booms should be placed along the perimeter of the stock pile (downhill side). Stockpiled materials should not obstruct flow along the curb line.

☒ Inlet protection controls shall be inspected to ensure they are installed per approved ESC plan, are functioning properly, and maintained as needed.

5.0 Potential Sources of Pollution & Pollution Prevention Practices

Pollutant Generating Activity	Likely Present at your Project Site?	Pollutants: Sediment	Nutrients	Heavy Metals	pH (acids and bases)	Pesticides & Herbicides	Oil & Grease	Bacteria & Viruses	Trash, Debris, Solids	Other Toxic Chemicals	Pollution Prevention Practice	Responsible Party
Clearing, grading, excavating, and un-stabilized areas	☒ Yes ☐ No	X	X						X		(1)	Construction Activity Operator (See Cover Page of this SWPPP)
Paving and saw cutting operations	☐ Yes ☒ No	X					X		X		(2)	
Concrete operations, washout, and cement waste	☐ Yes ☒ No			X	X				X		(3)	
Washing / cleaning	☐ Yes ☒ No	X	X	X	X		X		X	X	(4)	
Dewatering operations	☒ Yes ☐ No	X	X						X		(5)	
Material / chemical use and storage	☒ Yes ☐ No	X	X	X	X	X	X		X	X	(6)	
Equipment and vehicle maintenance	☐ Yes ☒ No				X		X		X	X	(7)	
Waste management / disposal	☐ Yes ☒ No								X	X	(8)	
Sanitary waste	☐ Yes ☒ No		X		X			X			(9)	
Nutrient management	☐ Yes ☒ No	X	X						X	X	(10)	

Pollution Prevention Practices:

(1) **Clearing, grading, excavating, and un-stabilized areas** – Maintain as much existing vegetation as practicable. Utilize erosion and sediment controls to prevent sediment from leaving the construction site. Dispose of clearing debris at acceptable disposal sites. Apply permanent or temporary stabilization, sodding and/or mulching to denuded areas in accordance with the erosion and sediment control specifications and the general VPDES permit for discharges of stormwater from construction activities. Plastic sheeting, tarps, 2" deep straw cover, and/or erosion matting can be used for temporary slope stabilization.

(2) **Paving and saw cutting operations** – Cover storm drain inlets during paving and saw cutting operations. Use pollution prevention materials such as drip pans and absorbent/oil dry for all paving machines to limit leaks and spills of paving materials and fluids. Slurry from saw cutting operations may not enter a storm drain; it must be captured and disposed of properly.

Temporary controls (i.e. tarp and block, sand berms, booms, and/or filter fabric) shall be used to cover storm drains during paving and saw cutting operations to prevent any discharges from entering the storm drain. These temporary controls SHALL BE REMOVED AT THE END OF EACH DAY. Inlet protection specified in the approved ESC plan shall be installed or reinstalled following the completion of paving or saw cutting work.

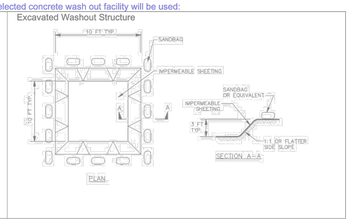
☐	Method of covering / protecting storm drains:
☐	Method for containment, collection, disposal of saw cut slurry:

(3) **Concrete operations, washout, and cement waste** – Direct concrete wash water into a leak-proof container or leak-proof settling basin that is designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes.

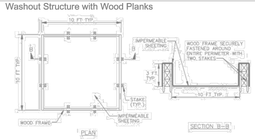
- ☐ Washouts must be sized appropriately for the needs of the project.
- ☐ Do not locate washouts near storm drains. Concrete wash water is not allowed to enter a storm drain.
- ☐ Concrete washout areas cannot be used for the purpose of dewatering.
- ☐ Set up and operate small mixers on top of plywood that is covered by tarps or heavy plastic drop cloths.
- ☐ Wash out mixers and truck chutes in designated contained washout areas
- ☐ No tracking from washout areas may occur.
- ☐ Place plastic sheeting, boards, or tarps under concrete truck chutes during pouring

The selected concrete wash out facility will be used:

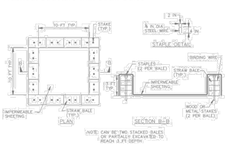
☐ Excavated Washout Structure



☐ Washout Structure with Wood Planks



☐ Washout Structure with Straw Bales



☐ Prefabricated Containment System
Type: _____

☐ Other:

(4) **Washing / cleaning** – Prevent the discharge of wash water to the storm drain system or surface waters.

- ☐ Wash water or liquid wastes may not enter a storm drain or surface waters.
- ☐ Provide a suitable containment system for cleaning equipment such as a drum, prefabricated system, lined container, or portable wash pad.
- ☐ The wash / containment area must be sized appropriately for the needs of the project.
- ☐ Locate wash / containment areas away from storm drains.

(5) **Dewatering operations** – Construction site dewatering may not be discharged without treatment. Sediment laden or turbid water shall be filtered, settled or similarly treated prior to discharge.

- ☐ Dewatering detail on approved ESC plan will be used.
- ☐ Dewatering option from Planning & Field Guide for Pollution Prevention (P2):
  - ☐ Filter Box
  - ☐ Straw Bale/Silt Fence Pit
  - ☐ Portable Sediment Tank
  - ☐ Filter Bag
- ☐ Pump from Settling Pit
- ☐ Manufactured System: _____
- ☐ Other: _____

(6) **Material / chemical use and storage** –Designate areas of the construction site for material delivery and storage. Locate these areas near construction entrances and away from waterways and storm drains. Enclose, cover or berm construction material storage areas if susceptible to stormwater.

- ☐ Stockpiled soil and other loose materials that can be washed away shall be covered with a tarp, plastic sheeting, or other stabilization matting. The cover must be properly secured / anchored down to prevent it from being blown off and exposing materials to rain. Controls such as hay bales or booms should be placed along the perimeter of the stock pile (downhill side).

Stockpiled materials located on the edge of roadways should not obstruct flow along the curb line (gutter). Leave at least a one (1) foot space away from the curb to allow stormwater to flow along the curb line. Boards with cinder blocks and/or bricks may be used to create the flow through space.

☐	Method used to ensure flow through:

- ☐ Provide secondary containment for paint, pesticides, cleaners, solvents, and/or other chemicals and keep these items secured and covered when not in use
- ☐ Regularly inspect containers.

(7) **Equipment and vehicle maintenance** – Use a designated area, away from storm drains and surface waters, to refuel vehicle or equipment or perform maintenance.

- ☐ Regularly inspect vehicles and equipment for leaks. Clean up all spills and leaks upon discovery.
- ☐ Use containment measures when conducting fueling (e.g. place spill pad, board, plastic sheeting on ground)
- ☐ Regularly inspect fuel containers.
- ☐ Provide secondary containment and secure storage for fuel, oil, and/or lubricants
- ☐ Keep drip pans, sheeting, and/or absorbent pads under heavy equipment when not in use (i.e. overnight) to capture leaks.

(8) **Waste management / disposal** – Designate a waste collection area on the construction site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterway. Ensure that waste containers have lids so they can be covered before periods of rain. Schedule waste collection to prevent the containers from overfilling.

- ☐ A sufficient number of waste containers must be kept on a site to handle the quantity of waste produced.
- ☐ Keep roll off containers covered and/or dumpster / trash lids closed.
- ☐ Check waste containers frequently for damage / leaks and clean using DRY methods when necessary. Never clean out a dumpster by power washing or hosing it out.
- ☐ Replace containers that are leaking, cracked, corroded, or otherwise deteriorating.
- ☐ Do not bury waste material. Dispose of excess dry concrete, grout and mortar in the trash.

(9) **Sanitary waste** – Prevent the discharge of sanitary waste by providing convenient and well-maintained portable sanitary facilities.

- ☐ Locate portable lavatories away from storm drains and surface waters.
- ☐ Keep portable lavatories level and provide secondary containment (i.e. trays)
- ☐ Regularly inspect facilities for leaks
- ☐ Schedule routine maintenance

(10) **Nutrient management** – Apply nutrients in accordance with manufacturer's recommendations. Do not apply during rainfall events or windy conditions. Provide secondary containment and keep fertilizer properly secured when not being used.

Additional information and details can be found in the Arlington County Planning & Field Guide for Pollution Prevention (P2).

6.0 Stormwater Management Controls

Select all that apply	Stormwater Management Control	Estimated Installation Date	Responsible Party
☒	Exempted – stormwater management retrofit facility or stream restoration project	NA	NA
☒	Linear development project per Arlington County Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan[1]	NA	NA
☐	Post-development Stormwater Management Controls provided by a Larger Common Plan of Development or Sale	NA	Common Plan Construction Activity Operator
☐	Rooftop Disconnection		Construction Activity Operator

[1] *In accordance with Arlington County's Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan, approved by the Virginia Department of Environmental Quality (DEQ) on September 1, 2015, linear development projects conducted by the County are administered and tracked as follows consistent with 9VAC25-870-69.A.4, 9VAC25-870-76, and 9VAC25-870-92:*

- *Pollutant load changes will be computed as described in Section 3.A of the Action Plan.*
- *Retrofit opportunities will be evaluated for each project, using the screening and selection criteria applied and described in the adopted Stormwater Master Plan.*
- *Retrofit projects that meet the screening criteria and are determined by Arlington to be feasible and cost-effective will be implemented with specific linear development projects. Pollutant load reductions from retrofit projects will be computed as described in Section 5 of the Action Plan.*
- *In cases where retrofit projects are not feasible and cost-effective for a particular linear project, any POC load increases that might occur for that project will be addressed by larger overall POC load reductions in place or added through TMDL action plan implementation.*

In the above manner Arlington, as the MS4 operator and the construction site operator for its linear development projects, implements linear projects and retrofit projects in a manner that achieves the most TMDL POC reduction for the least cost, while fully accounting for load changes that occur with linear development project activity consistent with the DEQ Chesapeake Bay TMDL Special Condition Guidance.

07/22/2022
date

Qianqian Li, P.E.
ESC Program Administrator
Department of Environmental Sevices
2100 Clarendon Boulevard, Suite 813
Arlington, Virginia 22201

Re: Erosion and Sediment Control Permit Application for:

Headwaters Donaldson Run Tributary B (Analostan Branch)
street address

_____
lot, block, section subdivision

_____
permit number

Dear Mrs. Li:

I hereby certify that I accept the responsibilities of Responsible Land Disturber for the above referenced project. I understand that these responsibilities include:

1. Reviewing the erosion and sedimentation (E&S) plan for the project.
2. Walking the site prior to construction to identify critical areas.
3. Conducting a pre-construction briefing with earth moving and site contractors to present the E&S plan and highlight the presence of critical areas, the limits of clearing and the required E&S controls and tree protection measures to be installed. Call 703-228-0760 to schedule pre-construction meeting.
4. Regularly inspecting the site during construction to ensure that all E&S controls are functioning and are adequate to address erosion and sedimentation. Inspect the site 48 hours after a runoff-generating storm, and provide a copy of the inspection findings to the county.
5. Reporting to the owner the presence inadequate or non functioning E&S controls when they are observed.
6. Ensuring that temporary soil stabilization is applied within 7 days to areas denuded that will remain undisturbed for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
7. Calling (703) 228-0760 at least 80 hours before demolishing any structure.

I may be reached at (703) 228-7595 with questions about this plan or my execution of the duties of
telephone number
Responsible Land Disturber.

Sincerely,

Ankur Patel
signed

Ankur Patel
name printed

PE, Lic. No. 57048
professional registration (type and number)

ARLINGTON
VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

SEAL
COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy Pflaum QUALITY CONTROL ENGINEER	08/04/22
_____ CONSTRUCTION SECTION SUPERVISOR	8/5/22
_____ WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

STORMWATER POLLUTION PREVENTION PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: N/A

C035.1

FILENAME: S42D-220-E_AND_S_NOTES_SWPPP.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

☐	Sheet flow to Vegetated Filter (1 or 2)		(See Cover Page of this SWPPP)
☐	Grass Channel		
☐	Rainwater Harvesting		
☐	Permeable Pavement (1 or 2)		
☐	Infiltration (1 or 2)		
☐	Bio-retention (1 or 2)		
☐	Others [describe]		

7.0 Spill Prevention & Response

Most spills can be cleaned up using a spill kit. Absorbent/oil dry, sealable containers, plastic bags, and shovels/brooms are suggested minimum spill response items that should be available at the project site.

1st Priority: Protect all people
2nd Priority: Protect equipment and property
3rd Priority: Protect the environment

1. Check for hazards (flammable material, noxious fumes, cause of spill) – if flammable liquid, turn off engines and nearby electrical equipment. If serious hazards are present leave the area and call 911. LARGE SPILLS ARE LIKELY TO PRESENT A HAZARD.
2. Ensure the spill area is safe to enter and that it does not pose an immediate threat to health or safety of any person.
3. Stop the spill source.
4. Call co-workers and supervisor for assistance and to make them aware of the spill and potential dangers.
5. If possible, stop spill from spreading and/or entering storm drains (use absorbent or other materials as necessary).
6. If spilled material has entered a storm drain; contact Arlington County Fire Department and project manager.
7. Clean up spilled material according to manufacturer specifications, for liquid spills use absorbent materials and do not flush area with water.
8. Properly dispose of cleanup materials and used absorbent material according to manufacturer specifications.

Emergency Contacts:

Local Contacts

Arlington County Fire & Police	703-558-2222
DES Water, Sewer, Streets 24-Hour Emergency	703-228-6555
Washington Gas Emergency	703-750-1400

Nights, Holidays & Weekends

VA Dept. of Emergency Management	804-674-2400
24 Hour Reporting Service	

Spill kit on site: ☐ Yes ☐ No

Location(s) of spill kit: _____

INSTRUCTIONS for COMPLETING the SINGLE FAMILY RESIDENCE, COMMON PLAN of DEVELOPMENT or SALE STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

General
A Stormwater Pollution Prevention Plan (SWPPP) must be developed prior to obtaining locality (e.g., City, County, Town) authorization to commence land disturbance.

SWPPP Cover Page
For a construction activity, enter the project/site name and physical address (if available), including city (or town), state and zip code. Enter the latitude and longitude in decimal degrees of the construction activity.

Enter the Construction Activity Operator's company/organization name, the Operator's name and mailing address, including city (or town), state, and zip code, telephone number, email address (if available), and a 24-hour emergency contact.

Enter the SWPPP preparation date.

The Construction Activity Operator identified on the cover page of the SWPPP is responsible for certifying the information contained therein. Please sign the certification in INK. Please note that state statues require the SWPPP to be signed as follows:
(1) For a corporation: by a responsible corporate officer;
(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
(3) For a municipality, state, federal, or other public agency; by either a principal executive officer or ranking elected official.

Section 1.0 SWPPP Documents Located Onsite & Available for Review
Utilize the provided checklist to ensure that the required SWPPP documents are located onsite and are available for review, if applicable.

Section 2.0 Authorized Non-Stormwater Discharges
Identify the authorized non-stormwater discharges likely to be present at the project site. If an unlisted authorized non-stormwater discharge is likely to be present at the project site, provide it here.

Section 3.0 Pollution Prevention Awareness
Provide employees with a "walk through" of the project site and identify areas of possible pollution, erosion and sediment controls, and pollution prevention practices which are applicable to their assigned job duties. Conduct refresher meetings and perform additional "walk throughs" on an as needed basis.

Section 4.0 Erosion & Sediment Controls
Identify the erosion and sediment controls to be implemented at the project site. For each erosion and sediment control, enter the estimated installation date and estimated removal date. If an unlisted erosion and sediment control will be implemented at the project site, provide the applicable information here.

Section 5.0 Potential Sources of Pollution & Pollution Prevention Practices
Identify the pollutant-generating activities likely to be present at the project site; implement and maintain the corresponding pollution prevention practices. If an unlisted pollutant-generating activity is likely to be present at the project site, describe it, identify the associated pollutant(s), and provide the corresponding pollution prevention practice(s) to be implemented and maintained.

Section 6.0 Stormwater Management Controls
Identify the stormwater management controls to be implemented at the project site, if applicable. For each stormwater management control, enter the estimated installation date. If an unlisted stormwater management control will be implemented at the project site, provide the applicable information here.

Section 7.0 Spill Prevention & Response
Most spills can be cleaned up following manufacturer specifications. The priority should be to protect all people, equipment, property, and the environment. Enter the telephone number of your local fire and police departments.

Section 8.0 Inspections & Corrective Action Log
Enter the qualified inspector's company/organization name, the inspector's name, telephone number, and qualifications. Select the applicable inspection schedule, enter the construction activity inspection date, and enter the date and rainfall amount of the last measurable storm event (if applicable). Identify if the implemented best management practices are in compliance with the SWPPP. Enter corrective actions needed; the party responsible for implementing the corrective actions, and the date corrective actions were taken, if applicable. Make additional copies of the inspection and corrective action log as necessary.

Section 9.0 Grading & Stabilization Activities Log
Enter the date grading activities were initiated, a description of the grading activities including location, the date grading activities ceased, the date stabilization measures were initiated, and a description of the stabilization measures including location.

Section 10.0 SWPPP Modification & Update Log
Enter the SWPPP modification date, description of the SWPPP modification/update, and the name and title of the SWPPP modification preparer, if applicable.

8.0 Self Inspection Report & Corrective Action Log (make additional copies as necessary)

Company/Organization:
Name of Inspector:
Telephone Number:
Qualifications:

Inspection Schedule

Discharges to impaired waters, surface waters within a TMDL watershed, or exceptional waters:

☒ Once every 4 business days

Inspection Date: _____

Describe phase of construction: _____

Is a copy of the SWPPP available on site? ☐ Yes ☐ No Is the SWPPP complete? ☐ Yes ☐ No

Erosion & Sediment Controls/ Pollution Prevention Practices	In Compliance?	Corrective Action Needed & Notes	Date Corrective Action Taken
Are controls in place to prevent sediment from being tracked off site or onto the street?	☐ Yes ☐ No ☐ NA		
Are perimeter controls adequately installed and properly maintained?	☐ Yes ☐ No ☐ NA		
Are storm drains properly protected / approved inlet protection is in place?	☐ Yes ☐ No ☐ NA		
Are all slopes and disturbed areas, including stockpiles, not actively being worked properly stabilized?	☐ Yes ☐ No ☐ NA		
Are dewatering operations working properly?	☐ Yes ☐ No ☐ NA		
Is construction dust properly controlled?	☐ Yes ☐ No ☐ NA		
Are mature trees and/or natural areas properly protected?	☐ Yes ☐ No ☐ NA		
Are washout facilities (concrete, paint) available, labeled, and properly maintained?	☐ Yes ☐ No ☐ NA		
Are trash and waste materials properly managed and disposed of?	☐ Yes ☐ No ☐ NA		
Are trash receptacles covered and not leaking?	☐ Yes ☐ No ☐ NA		
Are non-stormwater discharges (i.e. wash water, saw cut slurry) properly managed?	☐ Yes ☐ No ☐ NA		
Are vehicle and equipment fueling, maintenance, and/or staging areas free of spills and leaks?	☐ Yes ☐ No ☐ NA		
Are materials that are potential stormwater contaminants stored properly (covered / have secondary containment)?	☐ Yes ☐ No ☐ NA		
Are portable lavatories level, in good condition, and located away from storm drains?	☐ Yes ☐ No ☐ NA		
Is a spill kit accessible onsite?	☐ Yes ☐ No ☐ NA		

Are there any unauthorized discharges at the time of this inspection? ☐ Yes ☐ No
If yes, describe:

Has any unauthorized discharge occurred since the last inspection? ☐ Yes ☐ No
If yes, describe:

Non – Compliance Issues
Describe any incidents of non-compliance not described above (use another page if necessary)

Certification
"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator or Assigned Qualified Personnel Name: _____

Signature: _____

Date: _____

9.0 Grading & Stabilization Activities Log

Date Grading Activity Initiated	Description of the Grading Activity (including location)	Date Grading Activity Ceased	Date Stabilization Measures Initiated	Description of the Stabilization Measure (including location)

10.0 SWPPP Modification & Update Log

Modification Date	Description of the Modification / Update	Modification Prepared By (name & title)

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES (VAR10)
REGISTRATION STATEMENT 2019

PERMIT #:_____
PLAN/ID #:_____
TECHNICAL CRITERIA: **IIB** ☐ **IIC** ☐

Application type. (CHOOSE ONE)
☒ **NEW PERMIT ISSUANCE**
☐ **MODIFICATION WITH ACREAGE INCREASE**
☐ **MODIFICATION WITHOUT ACREAGE INCREASE**
☐ **EXISTING PERMIT RE-ISSUANCE**

Section I. Operator/Permittee Information.

A. Construction Activity Operator (Permittee). The person or entity that is applying for permit coverage and will have operational control over construction activities to ensure compliance with the general permit. A person with signatory authority for this operator must sign the certification in Section V. (per Part III. K. of the VAR10 Permit).	
Operator Name:	Arlington County Department of Environmental Services
Contact person:	Ankur Patel
Address:	2100 Clarendon Blvd. Suite 813
City, State and Zip Code:	Arlington, VA 22201
Phone Number:	703-228-7595
Primary and CC Email:	apatel@arlingtonva.us, jtastad@arlingtonva.us, etlurber@arlingtonva.us
B. Electronic correspondence. To receive an emailed coverage letter or to pay by credit card, you must choose **YES** and include a valid email. May we transmit correspondence electronically? **YES** ☒ **NO** ☐	

Section II. Construction Activity Information.

A. Include a site map showing the location of the existing or proposed land-disturbing activities, the limits of land disturbance, construction entrances and all waterbodies receiving stormwater discharges from the site.	
B. Project site location information.	
Construction Activity Name:	Headwaters Donaldson Run Tributary B (Analostan Branch)
Address:	Headwaters of Donaldson Run Tributary B near 25th St N
City and/or County and Zip Code:	Arlington, VA 22207
Construction Activity Entrance Location (description, street address and/or latitude/longitude in decimal degrees):	Project site access provided by a construction entrance near 4675 25th St N.
Latitude and Longitude (6-digit, decimal degrees format):	38.9026, -77.1232
C. Acreage totals for all land-disturbing activities to be included under this permit coverage. Report to the nearest one-hundredth of an acre.	
Total land area of development (include entire area to be disturbed as approved in the Stormwater Management Plan):	1.03 ac
Primary estimated area to be disturbed (include portions with Erosion and Sediment Control Plan approval only):	1.03 ac
Off-site estimated area to be disturbed (if applicable):	
D. Property Owner Status:	**FEDERAL** ☐ **STATE** ☐ **PUBLIC** ☐ **PRIVATE** ☒
E. Nature of the Construction Activity Description (i.e. commercial, industrial, residential, agricultural, environmental, utility):	Environmental - Stream Stabilization
F. Municipal Separate Storm Sewer System (MS4) name(s) (if the site is discharging to a MS4):	Arlington County
G. Estimated Project Dates (MM/DD/YYYY).	
Start Date:	04/14/2023
Completion Date:	03/06/2024
H. Is this construction activity part of a larger common plan of development or sale?	**YES** ☐ **NO** ☒

CONSTRUCTION GENERAL PERMIT (VAR10) REGISTRATION STATEMENT 2019

I. 6th Order Hydrologic Unit Code (HUC) and Receiving Water Name(s). Include additional areas on a separate page.	
HUC	**NAME(S) OF RECEIVING WATERBODY**
PL24	Potomac River - Pimmit Run

Section III. Off-site Support Activity Location Information.

List all off-site support activities and excavated material disposal areas being utilized for this project. Include additional areas on a separate page.	
Off-site Activity Name:	
Address:	
City or County:	
Off-site Activity Entrance Location (description, street address and/or latitude/longitude in decimal degrees):	
Latitude and Longitude (6-digit, decimal degrees format):	
Is this off-site activity an excavated material disposal area?	**YES** ☐ **NO** ☐
If this off-site activity is an excavated material disposal area, list the contents of the excavated fill material:	
Will a separate VPDES permit cover this off-site activity?	**YES** ☐ **NO** ☐

Section IV. Other Information.

A. A stormwater pollution prevention plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities prior to submitting the Registration Statement. By signing the Registration Statement, the operator is certifying that the SWPPP has been prepared.	
B. Has an Erosion and Sediment Control Plan been submitted to the VESC Authority for review?	**YES** ☒ **NO** ☐
Erosion and Sediment Control Plan Approval Date (for the estimated area to be disturbed MM/DD/YYYY):	
C. Has land-disturbance commenced?	**YES** ☐ **NO** ☒
D. Annual Standards and Specifications. If this project is utilizing approved Annual Standards and Specifications (AS&S), attached the completed AS&S Entity Form.	
AS&S Entity Name (if different from the Operator identified in Section I):	
E. Billing information (leave blank if same as the Operator identified in Section I. above). This entity will receive Annual Permit Maintenance and Permit Modification Fee invoices (if applicable).	
Billing Name:	Arlington County Governent
Contact Name:	Jennifer Tastad
Address:	2100 Clarendon Blvd. Suite 705
City, State and Zip Code:	Arlington VA 22201
Phone Number:	703.228.3081
Primary and CC Email:	jtastad@arlingtonva.us, etlurber@arlingtonva.us

CONSTRUCTION GENERAL PERMIT (VAR10) REGISTRATION STATEMENT 2019

Section V. Certification. A person representing the operator as identified in Section I. A. and meeting the requirements of 9VAC25-880-70. Part III. K must physically sign this certification. A typed signature is not acceptable. Please note that operator is defined in 9VAC25-870-10 as follows:

"Operator" means the owner or operator of any facility or activity subject to the Act and this chapter. In the context of stormwater associated with a large or small construction activity, operator means any person associated with a construction project that meets either of the following two criteria: (i) the person has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or (ii) the person has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other state permit or VSMP authority permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the stormwater pollution prevention plan or comply with other permit conditions). In the context of stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s), operator means the operator of the regulated MS4 system.

9VAC25-880-70. Part III. K. Signatory Requirements. *Registration Statement. All Registration Statements shall be signed as follows:*
a. For a corporation: by a responsible corporate officer. For the purpose of this chapter, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes: (i) the chief executive officer of the agency or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

Certification: "I certify under penalty of law that I have read and understand this Registration Statement and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Printed Name: Ankur Patel

Signature (signed in ink): *Ankur Patel*

Date Signed: 07/22/2022

Section VI. Submittal Instructions. Submit this form to the VSMP Authority. If the locality is the VSMP Authority, please send your Registration Statement submittal directly to the locality; do NOT send this form to DEQ. A list of local VSMP Authorities is available here: VSMP Authorities.

If DEQ is the VSMP Authority, please send to:

Department of Environmental Quality
Office of Stormwater Management Suite 1400
PO Box 1105
Richmond VA 23218
constructiongp@deq.virginia.gov

If the locality is the VSMP Authority, please send to:

The Local VSMP Authority *(insert address below)*
Department of Environmental Services
Development Services Bureau
2100 Clarendon Blvd., Suite 800
Arlington, VA 22201

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SEAL
COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
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CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

STORMWATER POLLUTION PREVENTION PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

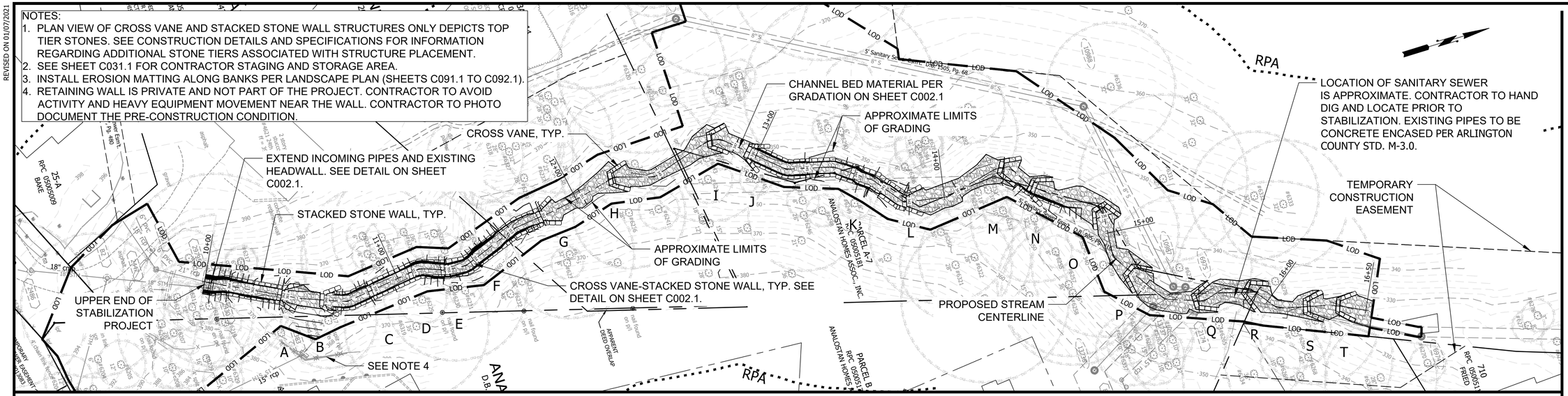
PLOTTED: NOVEMBER 30 2022

SCALE: N/A

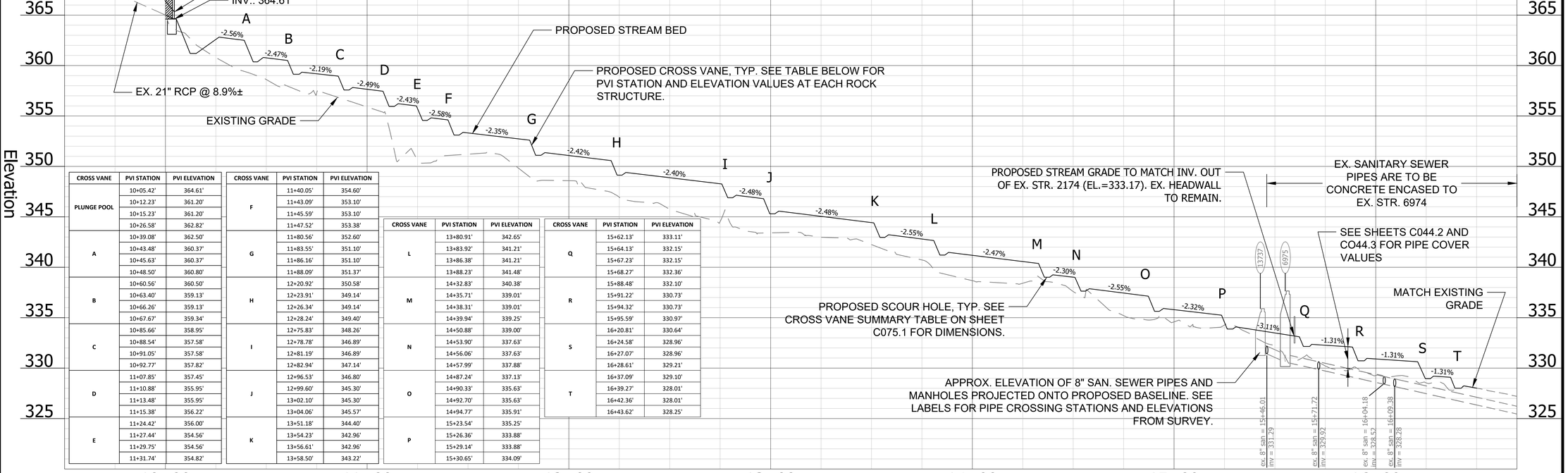
C035.2

REVISED ON 01/07/2021

NOTES:
1. PLAN VIEW OF CROSS VANE AND STACKED STONE WALL STRUCTURES ONLY DEPICTS TOP TIER STONES. SEE CONSTRUCTION DETAILS AND SPECIFICATIONS FOR INFORMATION REGARDING ADDITIONAL STONE TIERS ASSOCIATED WITH STRUCTURE PLACEMENT.
2. SEE SHEET C031.1 FOR CONTRACTOR STAGING AND STORAGE AREA.
3. INSTALL EROSION MATTING ALONG BANKS PER LANDSCAPE PLAN (SHEETS C091.1 TO C092.1).
4. RETAINING WALL IS PRIVATE AND NOT PART OF THE PROJECT. CONTRACTOR TO AVOID ACTIVITY AND HEAVY EQUIPMENT MOVEMENT NEAR THE WALL. CONTRACTOR TO PHOTO DOCUMENT THE PRE-CONSTRUCTION CONDITION.



PHASE I AND II



8" PUBLIC SEWER DEPICTED ON THE PROFILE ONLY FOR THE PORTION WITHIN THE FOOTPRINT OF THE PROPOSED CHANNEL OR ASSOCIATED ROCK STRUCTURES. REFER TO CROSS SECTIONS SHEETS C044.1 THROUGH C044.3.

CROSS VANE	PVI STATION	PVI ELEVATION
PLUNGE POOL	10+05.42'	364.61'
	10+12.23'	361.20'
	10+15.23'	361.20'
	10+26.58'	362.82'
A	10+39.08'	362.50'
	10+43.48'	360.37'
	10+45.63'	360.37'
	10+48.50'	360.80'
B	10+60.56'	360.50'
	10+63.40'	359.13'
	10+66.26'	359.13'
	10+67.67'	359.34'
C	10+85.66'	358.95'
	10+88.54'	357.58'
	10+91.05'	357.58'
	10+92.77'	357.82'
D	11+07.85'	357.45'
	11+10.88'	355.95'
	11+13.48'	355.95'
	11+15.38'	356.22'
E	11+24.42'	356.00'
	11+27.44'	354.56'
	11+29.75'	354.56'
	11+31.74'	354.82'

CROSS VANE	PVI STATION	PVI ELEVATION
F	11+40.05'	354.60'
	11+43.09'	353.10'
	11+45.59'	353.10'
	11+47.52'	353.38'
G	11+80.56'	352.60'
	11+83.55'	351.10'
	11+86.16'	351.10'
	11+88.09'	351.37'
H	12+20.92'	350.58'
	12+23.91'	349.14'
	12+26.34'	349.14'
	12+28.24'	349.40'
I	12+75.83'	348.26'
	12+78.78'	346.89'
	12+81.19'	346.89'
	12+82.94'	347.14'
J	12+96.53'	346.80'
	12+99.60'	345.30'
	13+02.10'	345.30'
	13+04.06'	345.57'
K	13+51.18'	344.40'
	13+54.23'	342.96'
	13+56.61'	342.96'
	13+58.50'	343.22'

CROSS VANE	PVI STATION	PVI ELEVATION
L	13+80.91'	342.65'
	13+83.92'	341.21'
	13+86.38'	341.21'
	13+88.23'	341.48'
M	14+32.83'	340.38'
	14+35.71'	339.01'
	14+38.31'	339.01'
	14+39.94'	339.25'
N	14+50.88'	339.00'
	14+53.90'	337.63'
	14+56.06'	337.63'
	14+57.99'	337.88'
O	14+87.24'	337.13'
	14+90.33'	335.63'
	14+92.70'	335.63'
	14+94.77'	335.91'
P	15+23.54'	335.25'
	15+26.36'	333.88'
	15+29.14'	333.88'
	15+30.65'	334.09'

CROSS VANE	PVI STATION	PVI ELEVATION
Q	15+62.13'	333.11'
	15+64.13'	332.15'
	15+67.23'	332.15'
	15+68.27'	332.36'
R	15+88.48'	332.10'
	15+91.22'	330.73'
	15+94.32'	330.73'
	15+95.59'	330.97'
S	16+20.81'	330.64'
	16+24.58'	328.96'
	16+27.07'	328.96'
	16+28.61'	329.21'
T	16+37.09'	329.10'
	16+39.27'	328.01'
	16+42.36'	328.01'
	16+43.62'	328.25'

VERT. SCALE 0 5 10

HORIZ. SCALE 0 25 50

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SEAL

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Ankur Patel
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7/6/2022
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Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B (ANALOSTAN BRANCH)

PLAN AND PROFILE

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

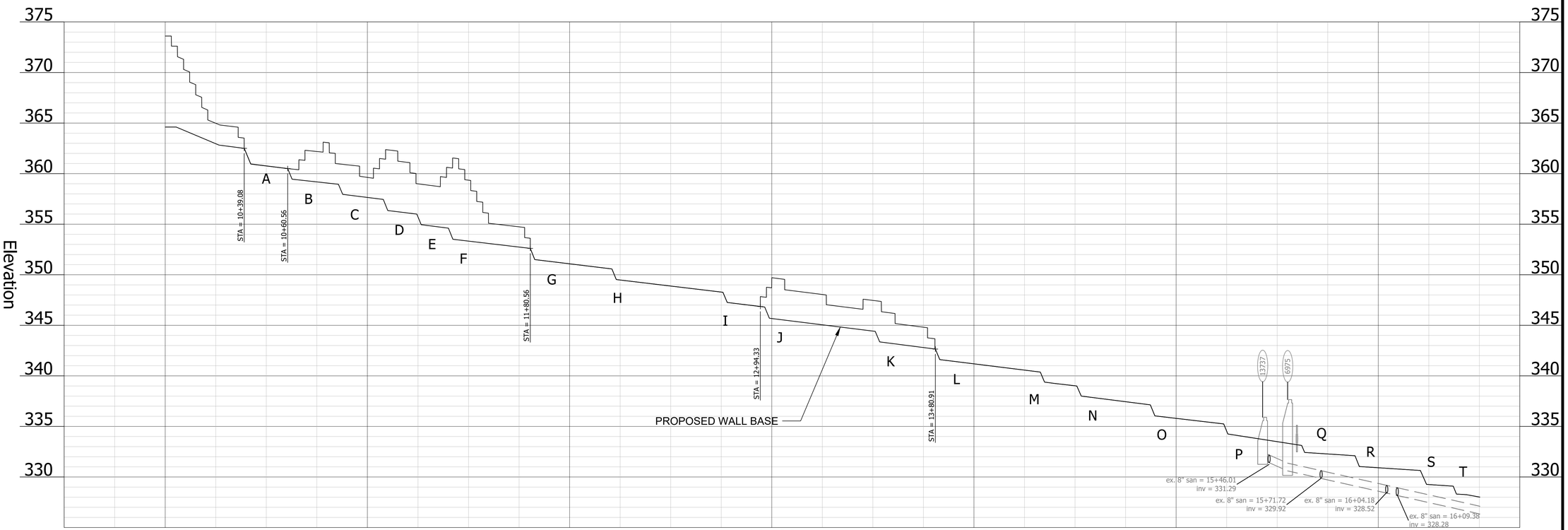
SCALE: AS SHOWN

C042.1

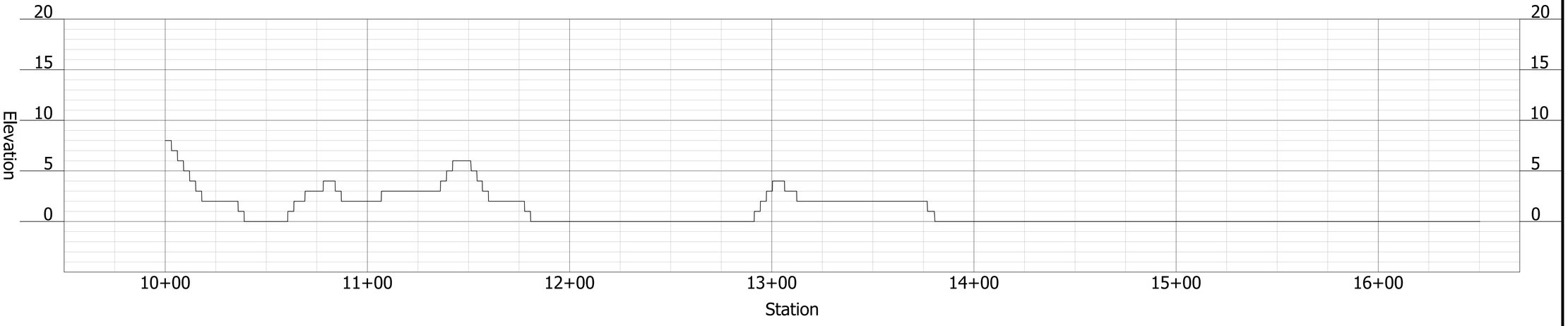
FILENAME: S42D-230-PLAN_PROFILE.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

WALL PROFILE ALONG LEFT SIDE OF CHANNEL



WALL HEIGHT ABOVE LEFT SIDE OF CHANNEL



VERT. SCALE 0 5 10

HORIZ. SCALE 0 25 50

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STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

CHANNEL WALL PROFILE LEFT

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

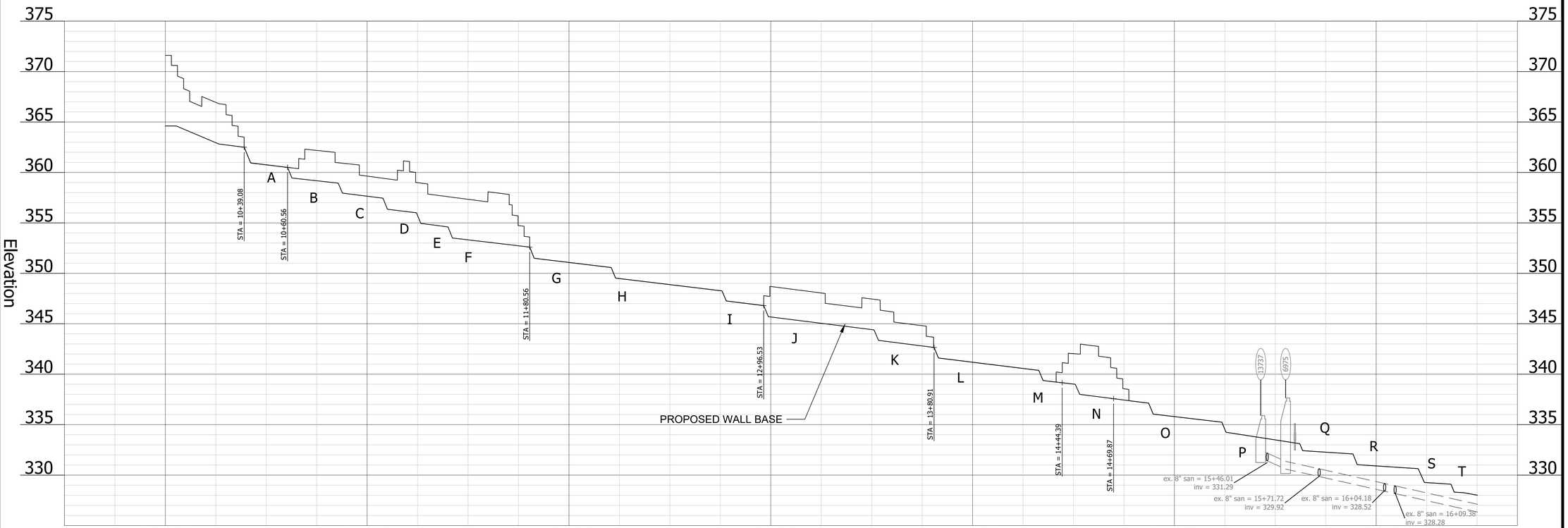
SCALE: AS SHOWN

C043.1

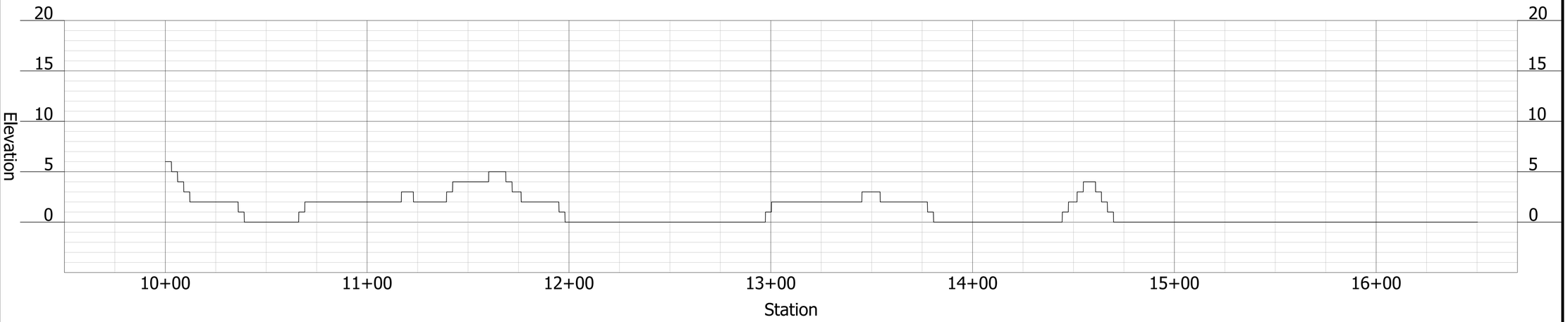
FILENAME: S42D-230-PLAN_PROFILE.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

WALL PROFILE ALONG RIGHT SIDE OF CHANNEL



WALL HEIGHT ABOVE RIGHT SIDE OF CHANNEL



VERT. SCALE 0 5 10

HORIZ. SCALE 0 25 50

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STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

CHANNEL WALL PROFILE RIGHT

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C043.2

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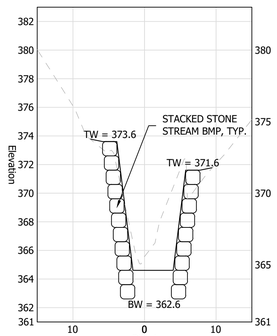
REVISED ON 01/07/2021



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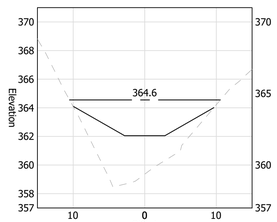

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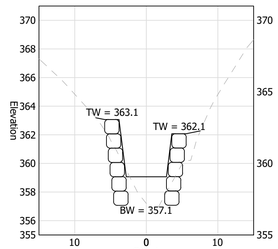

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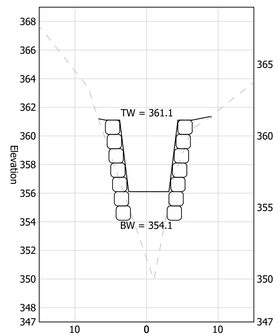

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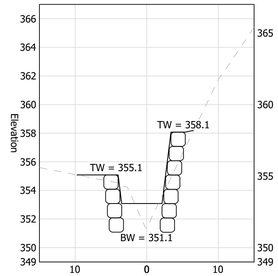

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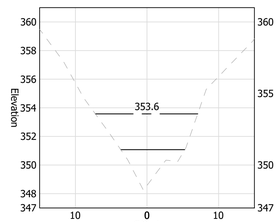

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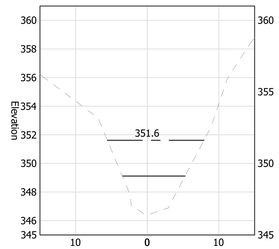

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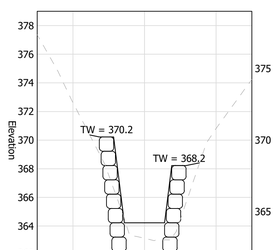

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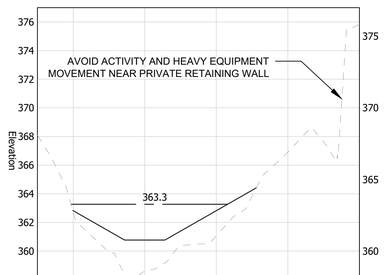

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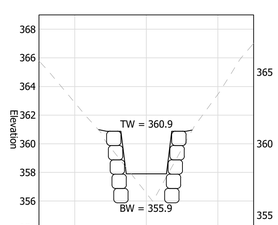

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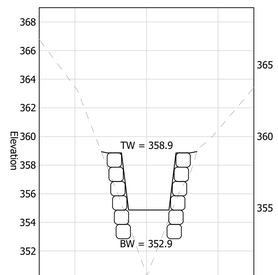

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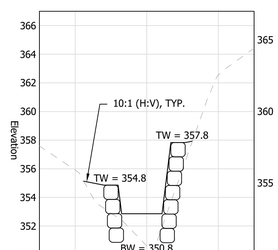

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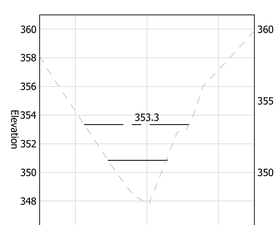

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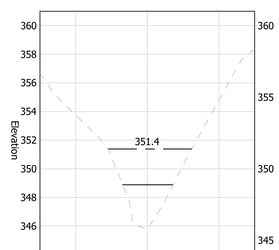

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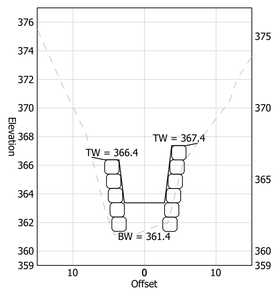

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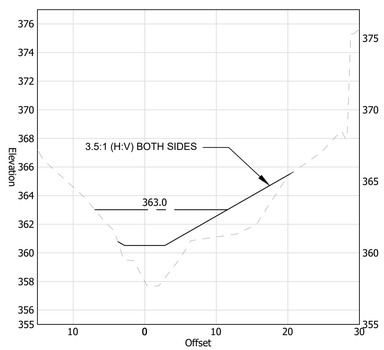

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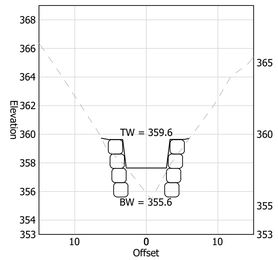

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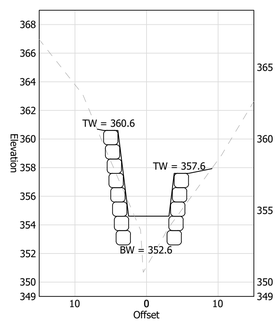

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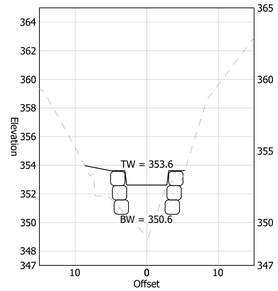

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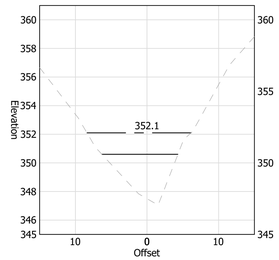

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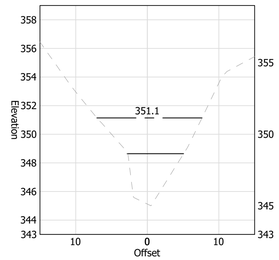

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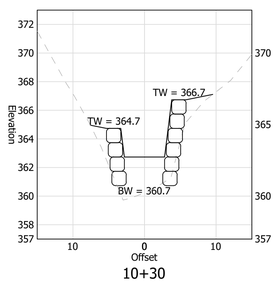

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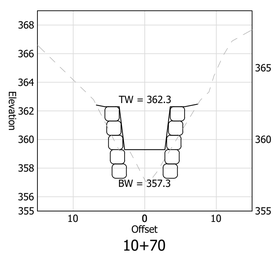

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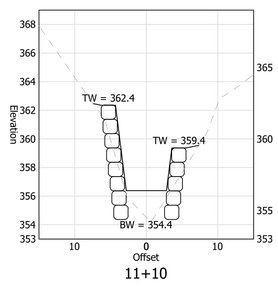

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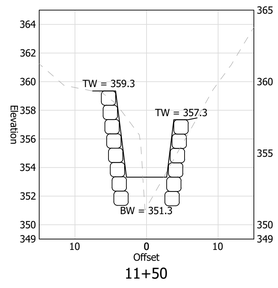

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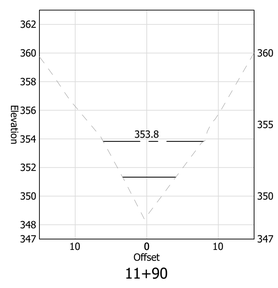

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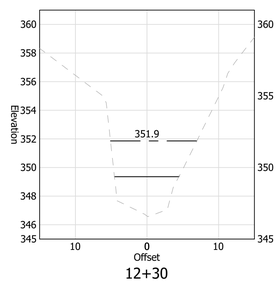

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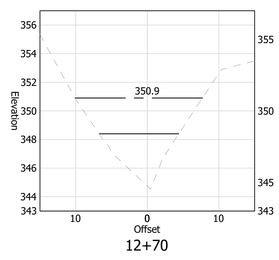

12+70

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- RECP INSTALLATION EL.

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VERT. SCALE 0 5 10

HORIZ. SCALE 0 10 20

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SEAL

COMMONWEALTH OF VIRGINIA
Ankur Patel
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7/6/2022
PROFESSIONAL ENGINEER

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REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

CROSS SECTIONS STA 10+00 TO 12+70

DESIGNED: ML
DRAWN: ML
CHECKED: AP

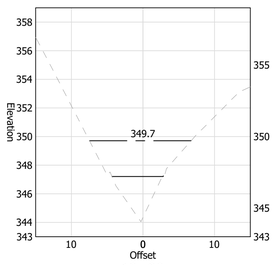
PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C044.1

FILENAME: S42D-234-CROSS_SECTIONS.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021



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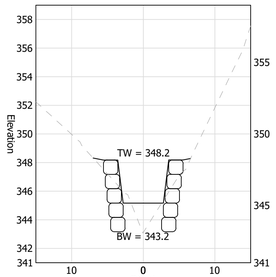

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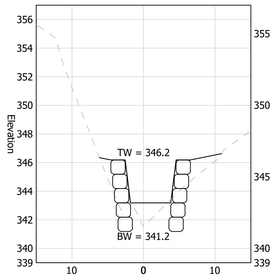

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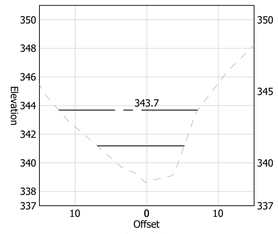

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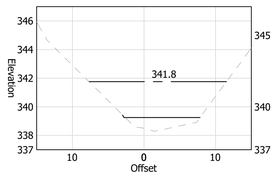

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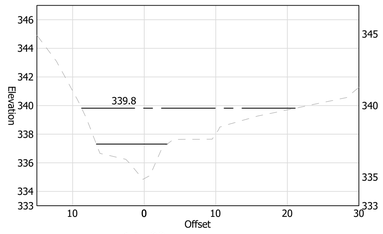

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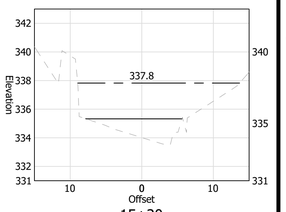

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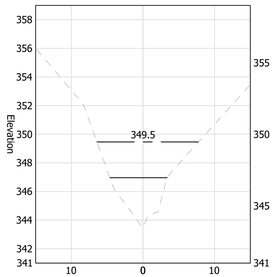

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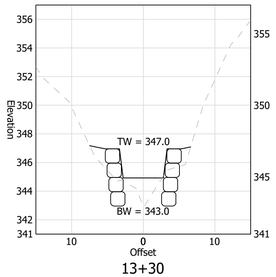

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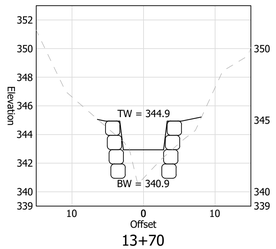

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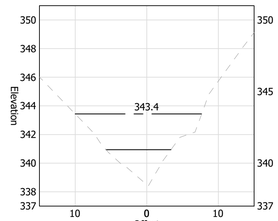

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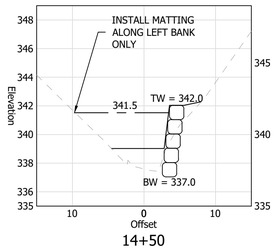

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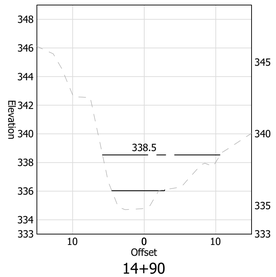

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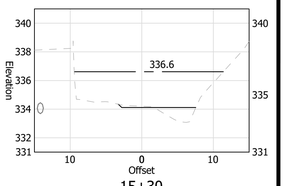

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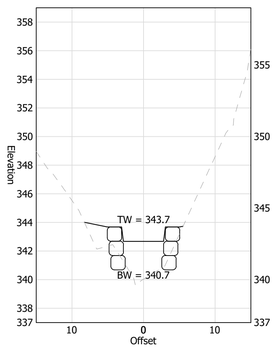

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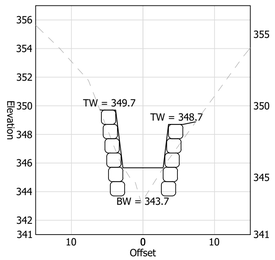

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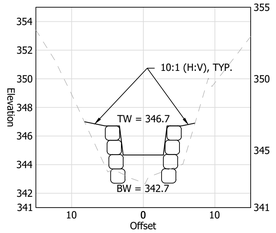

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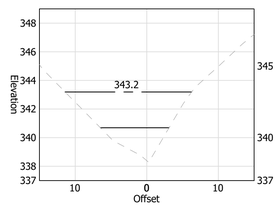

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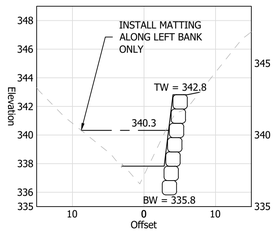

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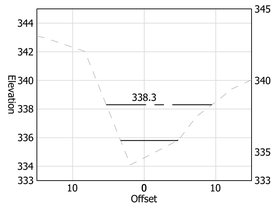

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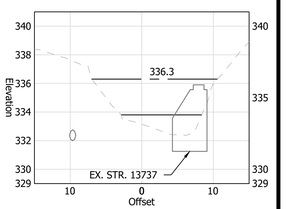

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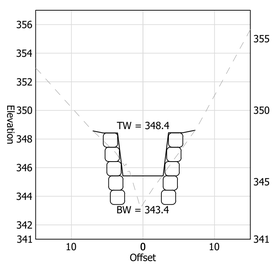

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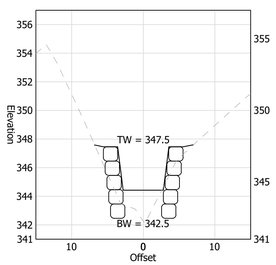

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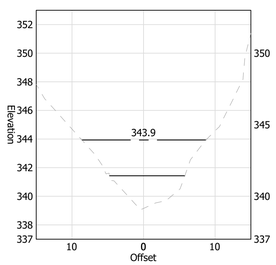

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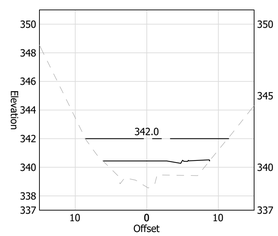

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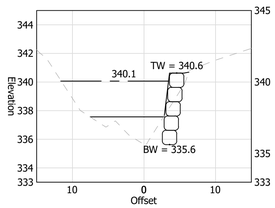

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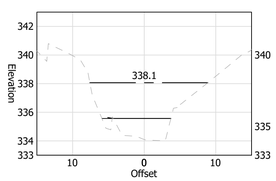

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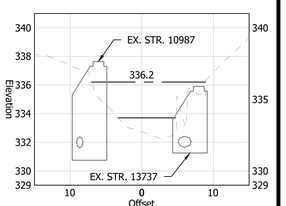

15+43

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- RECP INSTALLATION EL.

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VERT. SCALE 0 5 10

HORIZ. SCALE 0 10 20

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Jennifer Tastad, PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

CROSS SECTIONS STA 12+80 TO 15+43

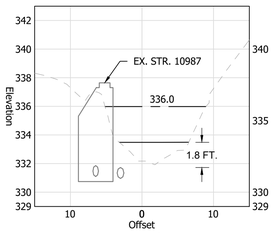
DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C044.2

FILENAME: S42D-234-CROSS_SECTIONS.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1



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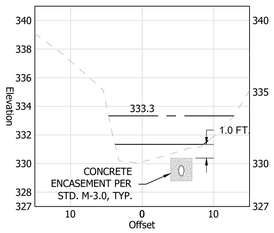

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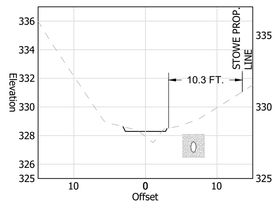

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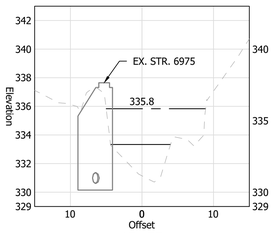

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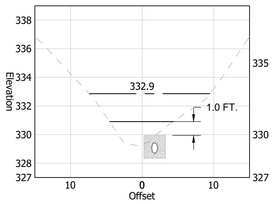

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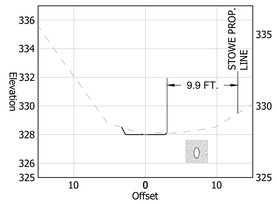

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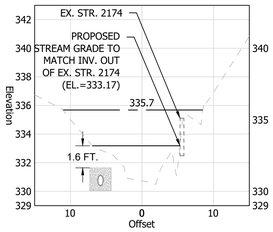

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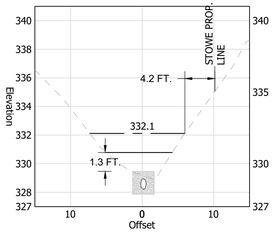

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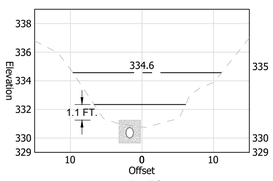

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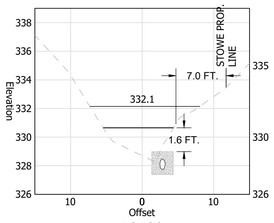

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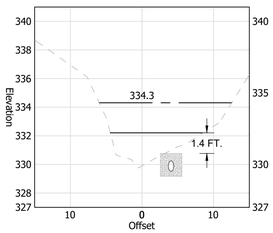

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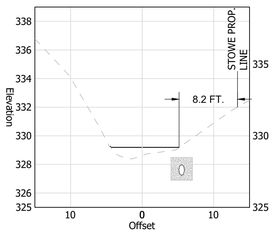

16+30

INSTALL CM-700 TO THE ELEVATION INDICATED ON THE CROSS SECTIONS IN THE VICINITY OF THE STOWE PROPERTY (APPROX. CROSS SECTIONS 16+10 TO DOWNSTREAM PROJECT LIMITS).

LEGEND

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- PROPOSED GRADE
- RECP INSTALLATION EL.

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0 5 10
VERT. SCALE
0 10 20
HORIZ. SCALE

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SEAL

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CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

CROSS SECTIONS STA 15+50 TO 16+50

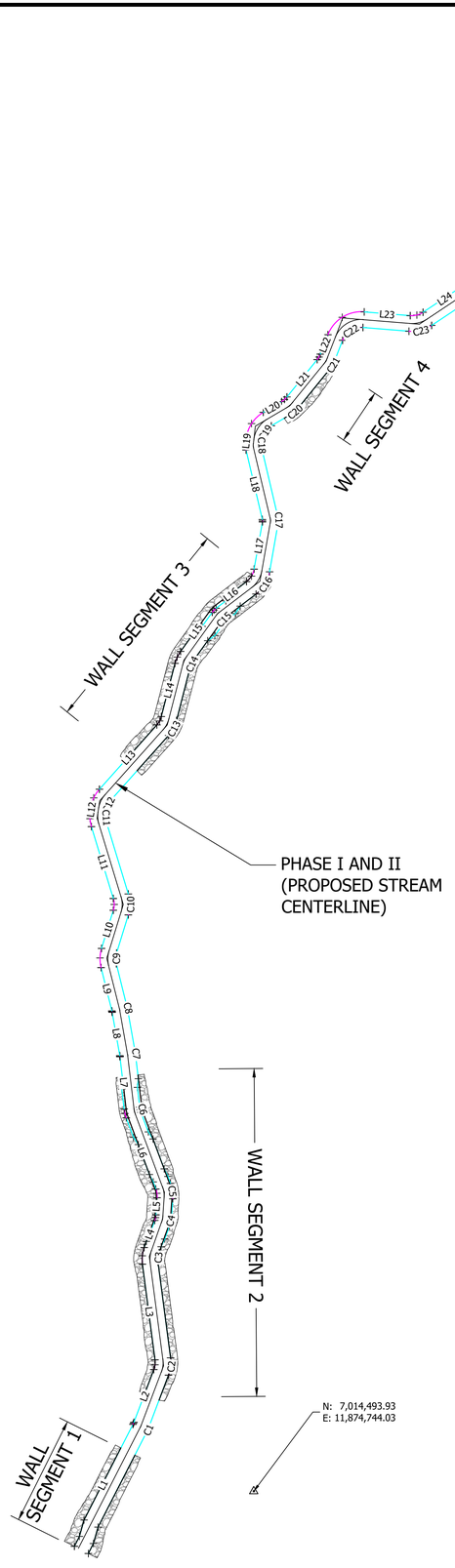
DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C044.3

REVISED ON 01/07/2021



ALIGNMENT: Phase I and II

Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
C1	1.10'	10.00'	N23° 52' 42.77"E	1.10'	6° 19' 43"	0.55	10+48.45	10+49.55	7014516.62, 11874703.34	7014517.63, 11874703.79
C2	4.92'	10.00'	N6° 36' 54.86"E	4.87'	28° 11' 53"	2.51	10+69.74	10+74.66	7014536.51, 11874710.93	7014541.35, 11874711.49
C3	4.73'	10.00'	N6° 04' 19.43"E	4.69'	27° 06' 42"	2.41	11+09.20	11+13.94	7014575.60, 11874706.99	7014580.26, 11874707.48
C4	2.75'	10.00'	N11° 44' 52.56"E	2.74'	15° 45' 36"	1.38	11+24.35	11+27.10	7014590.07, 11874710.98	7014592.75, 11874711.54
C5	4.24'	10.00'	N8° 17' 04.52"W	4.21'	24° 18' 18"	2.15	11+33.25	11+37.49	7014598.89, 11874711.95	7014603.06, 11874711.35
C6	2.40'	10.00'	N13° 33' 27.17"W	2.40'	13° 45' 33"	1.21	11+65.06	11+67.47	7014628.89, 11874701.72	7014631.22, 11874701.16
C7	0.58'	10.00'	N8° 20' 28.13"W	0.58'	3° 19' 35"	0.29	11+86.22	11+86.80	7014649.85, 11874698.98	7014650.42, 11874698.89
C8	0.70'	10.00'	N12° 00' 32.58"W	0.70'	4° 00' 34"	0.35	12+02.58	12+03.28	7014665.96, 11874696.15	7014666.65, 11874696.01
C9	5.43'	10.00'	N1° 33' 18.06"E	5.37'	31° 08' 15"	2.79	12+19.25	12+24.68	7014682.14, 11874692.14	7014687.50, 11874692.28
C10	5.94'	10.00'	N0° 06' 07.19"E	5.85'	34° 02' 37"	3.06	12+38.96	12+44.90	7014701.15, 11874696.49	7014707.00, 11874696.50
C11	4.47'	10.00'	N4° 06' 35.72"W	4.43'	25° 37' 11"	2.27	12+71.84	12+76.31	7014732.77, 11874688.66	7014737.20, 11874688.34
C12	5.76'	10.00'	N25° 12' 51.55"E	5.69'	33° 01' 43"	2.96	12+77.44	12+83.20	7014738.32, 11874688.51	7014743.46, 11874690.94
C13	4.77'	10.00'	N28° 03' 27.65"E	4.73'	27° 20' 31"	2.43	13+14.07	13+18.84	7014766.49, 11874711.48	7014770.66, 11874713.70
C14	3.74'	10.00'	N25° 05' 22.26"E	3.71'	21° 24' 20"	1.89	13+38.49	13+42.23	7014789.70, 11874718.58	7014793.06, 11874720.16
C15	1.47'	5.00'	N44° 11' 52.14"E	1.46'	16° 48' 40"	0.74	13+60.21	13+61.68	7014807.65, 11874730.68	7014808.70, 11874731.70
C16	7.44'	10.00'	N31° 18' 04.16"E	7.27'	42° 36' 16"	3.90	13+76.10	13+83.54	7014817.46, 11874743.16	7014823.67, 11874746.93
C17	2.03'	5.00'	N1° 36' 41.46"W	2.01'	23° 13' 16"	1.03	14+00.69	14+02.72	7014840.56, 11874749.91	7014842.57, 11874749.85
C18	1.73'	5.00'	N3° 16' 58.85"W	1.73'	19° 52' 41"	0.88	14+28.27	14+30.01	7014867.45, 11874744.01	7014869.17, 11874743.91
C19	9.21'	10.00'	N33° 01' 45.01"E	8.88'	52° 44' 47"	4.96	14+31.29	14+40.49	7014870.44, 11874744.06	7014877.89, 11874748.90
C20	3.55'	10.00'	N49° 13' 37.34"E	3.53'	20° 21' 02"	1.79	14+48.06	14+51.62	7014881.75, 11874755.42	7014884.05, 11874758.09
C21	3.14'	10.00'	N30° 02' 47.77"E	3.13'	18° 00' 37"	1.58	14+68.83	14+71.97	7014897.42, 11874768.94	7014900.13, 11874770.51
C22	12.85'	10.00'	N57° 50' 56.15"E	11.98'	73° 36' 54"	7.48	14+79.45	14+92.30	7014907.11, 11874773.19	7014913.49, 11874783.34
C23	6.68'	10.00'	N75° 31' 01.60"E	6.56'	38° 16' 43"	3.47	15+08.82	15+15.50	7014912.15, 11874799.80	7014913.79, 11874806.15
C24	6.32'	10.00'	N38° 17' 06.44"E	6.21'	36° 11' 07"	3.27	15+42.06	15+48.37	7014928.50, 11874828.26	7014933.37, 11874832.11
C25	6.32'	10.00'	N2° 05' 58.95"E	6.21'	36° 11' 07"	3.27	15+61.61	15+67.92	7014945.79, 11874836.68	7014952.00, 11874836.91
C26	5.65'	10.00'	N0° 10' 57.37"E	5.57'	32° 21' 04"	2.90	15+73.19	15+78.84	7014957.06, 11874835.46	7014962.63, 11874835.47
C27	6.40'	10.00'	N34° 41' 20.34"E	6.29'	36° 39' 42"	3.31	15+86.08	15+92.48	7014969.59, 11874837.52	7014974.76, 11874841.10
C28	6.82'	10.00'	N33° 28' 39.81"E	6.69'	39° 05' 03"	3.55	16+02.57	16+09.39	7014980.83, 11874849.16	7014986.41, 11874852.85
L1	48.45'		N27° 02' 34.11"E				10+00.00	10+48.45	7014473.47, 11874681.31	7014516.62, 11874703.34
L2	20.19'		N20° 42' 51.42"E				10+49.55	10+69.74	7014517.63, 11874703.79	7014536.51, 11874710.93
L3	34.54'		N7° 29' 01.71"W				10+74.66	11+09.20	7014541.35, 11874711.49	7014575.60, 11874706.99
L4	10.41'		N19° 37' 40.56"E				11+13.94	11+24.35	7014580.26, 11874707.48	7014590.07, 11874710.98
L5	6.15'		N3° 52' 04.56"E				11+27.10	11+33.25	7014592.75, 11874711.54	7014598.89, 11874711.95
L6	27.57'		N20° 26' 13.60"W				11+37.49	11+65.06	7014603.06, 11874711.35	7014628.89, 11874701.72
L7	18.75'		N6° 40' 40.75"W				11+67.47	11+86.22	7014631.22, 11874701.16	7014649.85, 11874698.98
L8	15.78'		N10° 00' 15.51"W				11+86.80	12+02.58	7014650.42, 11874698.89	7014665.96, 11874696.15
L9	15.97'		N14° 00' 49.65"W				12+03.28	12+19.25	7014666.65, 11874696.01	7014682.14, 11874692.14
L10	14.28'		N17° 07' 25.78"E				12+24.68	12+38.96	7014687.50, 11874692.28	7014701.15, 11874696.49
L11	26.94'		N16° 55' 11.39"W				12+44.90	12+71.84	7014707.00, 11874696.50	7014732.77, 11874688.66
L12	1.13'		N8° 41' 59.95"E				12+76.31	12+77.44	7014737.20, 11874688.34	7014738.32, 11874688.51
L13	30.86'		N41° 43' 43.15"E				12+83.20	13+14.07	7014743.46, 11874690.94	7014766.49, 11874711.48
L14	19.65'		N14° 23' 12.15"E				13+18.84	13+38.49	7014770.66, 11874713.70	7014789.70, 11874718.58
L15	17.98'		N35° 47' 32.36"E				13+42.23	13+60.21	7014793.06, 11874720.16	7014807.65, 11874730.68
L16	14.43'		N52° 36' 11.92"E				13+61.68	13+76.10	7014808.70, 11874731.70	7014817.46, 11874743.16
L17	17.15'		N9° 59' 56.41"E				13+83.54	14+00.69	7014823.67, 11874746.93	7014840.56, 11874749.91
L18	25.56'		N13° 13' 19.32"W				14+02.72	14+28.27	7014842.57, 11874749.85	7014867.45, 11874744.01
L19	1.28'		N6° 39' 21.62"E				14+30.01	14+31.29	7014869.17, 11874743.91	7014870.44, 11874744.06
L20	7.57'		N59° 24' 08.41"E				14+40.49	14+48.06	7014877.89, 11874748.90	7014881.75, 11874755.42
L21	17.21'		N39° 03' 06.27"E				14+51.62	14+68.83	7014884.05, 11874758.09	7014897.42, 11874768.94
L22	7.48'		N21° 02' 29.27"E				14+71.97	14+79.45	7014900.13, 11874770.51	7014907.11, 11874773.19
L23	16.52'		S85° 20' 36.98"E				14+92.30	15+08.82	7014913.49, 11874783.34	7014912.15, 11874799.80
L24	18.55'		N56° 22' 40.18"E				15+15.50	15+34.05	7014913.79, 11874806.15	7014924.06, 11874821.59
L25	8.01'		N56° 22' 40.18"E				15+34.05	15+42.06	7014924.06, 11874821.59	7014928.50, 11874828.26
L26	13.23'		N20° 11' 32.69"E				15+48.37	15+61.61	7014933.37, 11874832.11	7014945.79, 11874836.68
L27	5.27'		N15° 59' 34.79"W				15+67.92	15+73.19	7014952.00, 11874836.91	7014957.06, 11874835.46
L28	7.25'		N16° 21' 29.54"E				15+78.84	15+86.08	7014962.63, 11874835.47	7014969.59, 11874837.52
L29	10.09'		N53° 01' 11.14"E				15+92.48	16+02.57	7014974.76, 11874841.10	7014980.83, 11874849.16
L63	21.32'		N13° 56' 08.49"E				16+09.39	16+30.71	7014986.41, 11874852.85	7015007.10, 11874857.98
L64	4.62'		N19° 20' 00.61"E				16+30.71	16+35.33	7015007.10, 11874857.98	7015011.46, 11874859.51
L65	11.20'		N26° 26' 00.88"E				16+39.05	16+50.26	7015014.88, 11874860.95	7015024.92, 11874865.94

NOTES

1. CROSS SECTIONS OF THE STREAM SHOWING VERTICAL INFORMATION FOR WALL SEGMENTS CAN BE FOUND ON SHEETS C044.1 TO C044.3
2. REFER TO SHEET C002.1 FOR STACKED STONE WALL DETAIL AND SHEET C042.1 TO C042.3 FOR PLAN AND PROFILE VIEWS

BENCHMARK TABLE

BM#	NORTHING	EASTING
NA	7,014,493.93	11,874,744.03

ARLINGTON
VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
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SEAL

COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy P Flaum QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

GEOMETRIC CONTROL PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE:

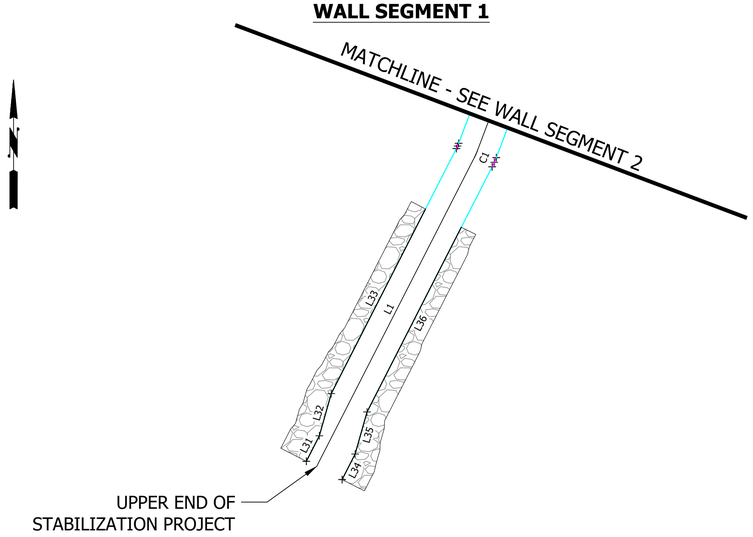
0 25 50
GRAPHIC SCALE

C045.1

FILENAME: S42D-216-GEOMETRIC_CONTROL.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

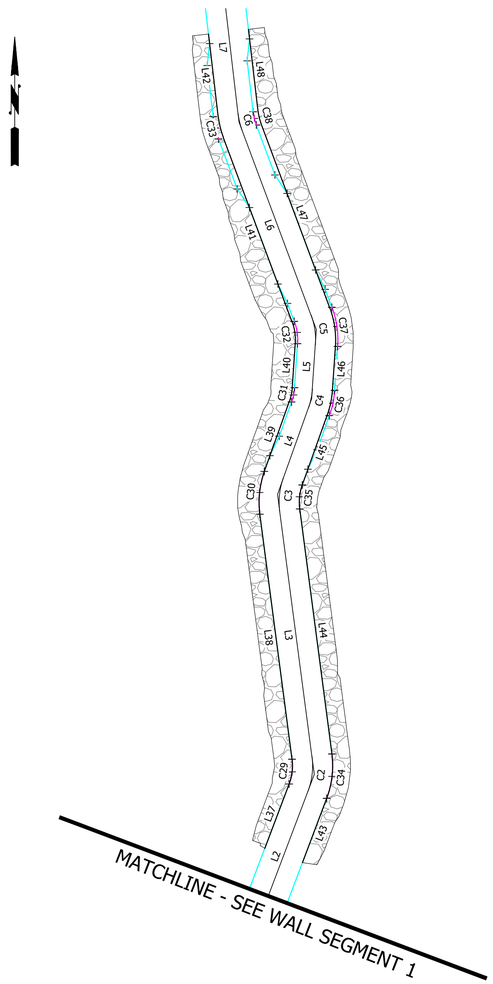
WALL SEGMENT 1



ALIGNMENT: WALL SEGMENT 1 LT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
L31	4.00'		N27° 02' 34.11"E				10+00.00	10+04.00	7014474.20, 11874679.87	7014477.77, 11874681.69
L32	6.12'		N15° 45' 42.35"E				10+04.00	10+10.12	7014477.77, 11874681.69	7014483.65, 11874683.35
L33	28.96'		N27° 02' 34.11"E				10+10.12	10+39.08	7014483.65, 11874683.35	7014509.45, 11874696.52

ALIGNMENT: WALL SEGMENT 1 RT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
L34	4.00'		N27° 02' 34.11"E				10+00.00	10+04.00	7014471.65, 11874684.87	7014475.21, 11874686.69
L35	6.12'		N15° 51' 13.08"E				10+04.00	10+10.12	7014475.21, 11874686.69	7014481.10, 11874688.36
L36	28.96'		N27° 02' 34.11"E				10+10.12	10+39.08	7014481.10, 11874688.36	7014506.90, 11874701.53

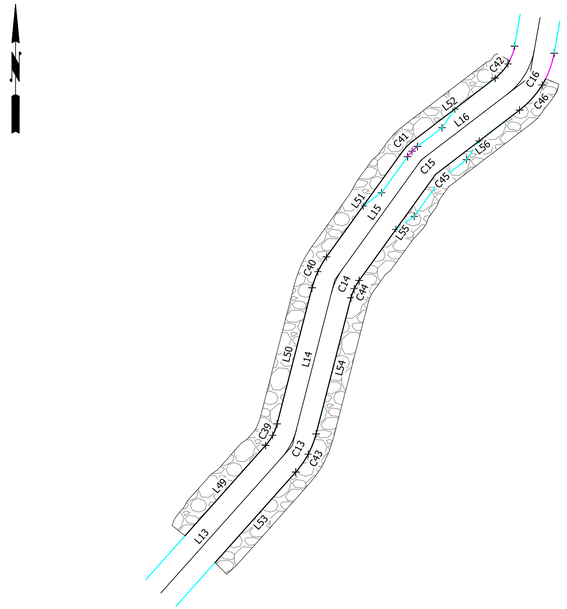
WALL SEGMENT 2



ALIGNMENT: WALL SEGMENT 2 LT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
C29	3.54'	7.19'	N6° 36' 54.86"E	3.50'	28° 11' 53"	1.81	10+69.55	10+73.09	7014537.51, 11874708.30	7014540.99, 11874708.70
C30	6.06'	12.81'	N6° 04' 19.43"E	6.01'	27° 06' 42"	3.09	11+07.63	11+13.69	7014575.23, 11874704.20	7014581.21, 11874704.84
C31	1.98'	7.19'	N11° 44' 52.56"E	1.97'	15° 45' 36"	1.00	11+24.10	11+26.08	7014591.01, 11874708.33	7014592.94, 11874708.73
C32	3.05'	7.19'	N8° 17' 04.52"W	3.03'	24° 18' 18"	1.55	11+32.23	11+35.28	7014599.08, 11874709.15	7014602.08, 11874708.71
C33	3.08'	12.81'	N13° 33' 27.17"W	3.07'	13° 45' 33"	1.55	11+62.85	11+65.93	7014627.91, 11874699.09	7014630.90, 11874698.37
L37	9.61'		N20° 42' 51.42"E				10+59.94	10+69.55	7014528.52, 11874704.90	7014537.51, 11874708.30
L38	34.54'		N7° 29' 01.71"W				10+73.09	11+07.63	7014540.99, 11874708.70	7014575.23, 11874704.20
L39	10.41'		N19° 37' 40.56"E				11+13.69	11+24.10	7014581.21, 11874704.84	7014591.01, 11874708.33
L40	6.15'		N3° 52' 04.56"E				11+26.08	11+32.23	7014592.94, 11874708.73	7014599.08, 11874709.15
L41	27.57'		N20° 26' 13.60"W				11+35.28	11+62.85	7014602.08, 11874708.71	7014627.91, 11874699.09
L42	11.52'		N6° 40' 40.75"W				11+65.93	11+77.45	7014630.90, 11874698.37	7014642.34, 11874697.03

ALIGNMENT: WALL SEGMENT 2 RT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
C34	6.30'	12.81'	N6° 36' 54.86"E	6.24'	28° 11' 53"	3.22	10+70.17	10+76.47	7014535.52, 11874713.55	7014541.72, 11874714.27
C35	3.40'	7.19'	N6° 04' 19.43"E	3.37'	27° 06' 42"	1.73	11+11.01	11+14.42	7014575.97, 11874709.77	7014579.32, 11874710.13
C36	3.52'	12.81'	N11° 44' 52.56"E	3.51'	15° 45' 36"	1.77	11+24.83	11+28.35	7014589.12, 11874713.63	7014592.56, 11874714.34
C37	5.43'	12.81'	N8° 17' 04.52"W	5.39'	24° 18' 18"	2.76	11+34.50	11+39.94	7014598.70, 11874714.76	7014604.04, 11874713.98
C38	1.73'	7.19'	N13° 33' 27.17"W	1.72'	13° 45' 33"	0.87	11+67.51	11+69.24	7014629.87, 11874704.35	7014631.55, 11874703.95
L43	9.61'		N20° 42' 51.42"E				10+60.56	10+70.17	7014526.53, 11874710.16	7014535.52, 11874713.55
L44	34.54'		N7° 29' 01.71"W				10+76.47	11+11.01	7014541.72, 11874714.27	7014575.97, 11874709.77
L45	10.41'		N19° 37' 40.56"E				11+14.42	11+24.83	7014579.32, 11874710.13	7014589.12, 11874713.63
L46	6.15'		N3° 52' 04.56"E				11+28.35	11+34.50	7014592.56, 11874714.34	7014598.70, 11874714.76
L47	27.57'		N20° 26' 13.60"W				11+39.94	11+67.51	7014604.04, 11874713.98	7014629.87, 11874704.35
L48	11.52'		N6° 40' 40.75"W				11+69.24	11+80.75	7014631.55, 11874703.95	7014642.99, 11874702.61

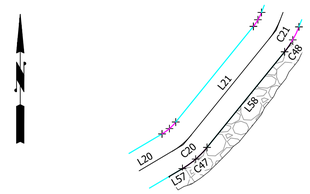
WALL SEGMENT 3



ALIGNMENT: WALL SEGMENT 3 LT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
C39	3.43'	7.19'	N28° 03' 27.65"E	3.40'	27° 20' 31"	1.75	13+14.91	13+18.34	7014768.36, 11874709.38	7014771.36, 11874710.98
C40	4.79'	12.81'	N25° 05' 22.26"E	4.76'	21° 24' 20"	2.42	13+37.99	13+42.77	7014790.40, 11874715.86	7014794.71, 11874717.88
C41	2.29'	7.81'	N44° 11' 52.14"E	2.28'	16° 48' 40"	1.15	13+60.76	13+63.05	7014809.29, 11874728.40	7014810.93, 11874729.99
C42	3.22'	7.19'	N39° 46' 36.75"E	3.19'	25° 39' 10"	1.64	13+77.48	13+80.70	7014819.69, 11874741.45	7014822.15, 11874743.49
L49	16.93'		N41° 43' 43.15"E				12+97.97	13+14.91	7014755.73, 11874698.11	7014768.36, 11874709.38
L50	19.65'		N14° 23' 12.15"E				13+18.34	13+37.99	7014771.36, 11874710.98	7014790.40, 11874715.86
L51	17.98'		N35° 47' 32.36"E				13+42.77	13+60.76	7014794.71, 11874717.88	7014809.29, 11874728.40
L52	14.43'		N52° 36' 11.92"E				13+63.05	13+77.48	7014810.93, 11874729.99	7014819.69, 11874741.45

ALIGNMENT: WALL SEGMENT 3 RT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
C43	6.11'	12.81'	N28° 03' 27.65"E	6.06'	27° 20' 31"	3.12	13+13.46	13+19.58	7014764.62, 11874713.58	7014769.97, 11874716.42
C44	2.69'	7.19'	N25° 05' 22.26"E	2.67'	21° 24' 20"	1.36	13+39.23	13+41.91	7014789.00, 11874721.31	7014791.42, 11874722.44
C45	0.64'	2.19'	N44° 11' 52.14"E	0.64'	16° 48' 40"	0.32	13+59.90	13+60.54	7014806.01, 11874732.96	7014806.47, 11874733.40
C46	5.74'	12.81'	N39° 46' 36.75"E	5.69'	25° 39' 10"	2.92	13+74.97	13+80.70	7014815.23, 11874744.86	7014819.60, 11874748.50
L53	16.93'		N41° 43' 43.15"E				12+96.53	13+13.46	7014751.98, 11874702.30	7014764.62, 11874713.58
L54	19.65'		N14° 23' 12.15"E				13+19.58	13+39.23	7014769.97, 11874716.42	7014789.00, 11874721.31
L55	17.98'		N35° 47' 32.36"E				13+41.91	13+59.90	7014791.42, 11874722.44	7014806.01, 11874732.96
L56	14.43'		N52° 36' 11.92"E				13+60.54	13+74.97	7014806.47, 11874733.40	7014815.23, 11874744.86

WALL SEGMENT 4



ALIGNMENT: WALL SEGMENT 4 RT BASE OF WALL										
Curve/Line #	Length	Radius	Line/Chord Bearing	Chord Length	Delta (Δ)	Tangent	STA (Start)	STA (End)	Northing, Easting (Start)	Northing, Easting (End)
C47	4.55'	12.81'	N49° 13' 37.34"E	4.53'	20° 21' 02"	2.30	14+46.59	14+51.14	7014879.33, 11874756.85	7014882.28, 11874760.28
C48	1.53'	12.81'	N35° 38' 14.94"E	1.53'	6° 49' 43"	0.76	14+68.36	14+69.88	7014895.65, 11874771.12	7014896.89, 11874772.01
L57	2.20'		N59° 24' 08.41"E				14+44.39	14+46.59	7014878.21, 11874754.95	7014879.33, 11874756.85
L58	17.21'		N39° 03' 06.27"E				14+51.14	14+68.36	7014882.28, 11874760.28	7014895.65, 11874771.12

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Ankur Patel
ANKUR B. PATEL
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7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy P Flaum QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

GEOMETRIC CONTROL PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE:

0 10 20

GRAPHIC SCALE

C045.2

FILENAME: S42D-216-GEOMETRIC_CONTROL.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

PROJECT BACKGROUND NARRATIVE

THE DONALDSON RUN STREAM STABILIZATION PROJECT CONSISTS OF THE STABILIZATION OF THE EXISTING STREAM BANKS AND OUTFALL PIPES ALONG DONALDSON RUN. STABILIZATION WILL BEGIN AT THE OUTFALL THAT IS LOCATED ON 4621 24TH RD AND WILL EXTEND SOUTH OF THE MISSIONHURST PROPERTY, AS SHOWN ON THE PLANS.

THE SEVERITY OF EROSION OF THE EXISTING STREAM BANKS HAS UNDERMINED OUTFALL PIPES AND PRIVATELY-OWNED RETAINING WALLS ALONG THE ANALOSTAN SUBDIVISION, AND WILL EVENTUALLY TAKE ITS TOLL ON LARGER STRUCTURES, IF NOT IMMEDIATELY ADDRESSED. SINCE THE BANKS TO BE STABILIZED ARE ON PRIVATE PROPERTY, TEMPORARY EASEMENTS HAVE BEEN ACQUIRED. ALSO, THIS PROJECT MEETS REGULATORY REQUIREMENTS FOR AN ADEQUATE OUTFALL. THE PLANS INCLUDE AN OUTFALL LOCATION MAP, CONTRIBUTING DRAINAGE AREAS, AND DETAILED HYDROLOGIC AND HYDRAULIC CALCULATIONS.

OUTFALL ANALYSIS NARRATIVE

THE IMPROVEMENTS ON THIS PLAN IMPACT THE DRAINAGE AREA SERVED BY SEVERAL EXISTING STORM DRAINAGE SYSTEMS (ALONG 25TH ST N, 24TH RD N, AND N. WAKEFIELD CT).

THESE STORM SEWERS DISCHARGE INTO THE HEADWATERS OF DONALDSON RUN TRIBUTARY B, APPROXIMATELY 600LF UPSTREAM OF A COUNTY STREAM RESTORATION PROJECT CONSTRUCTED IN 2007. STRUCTURE #2430 IS THE OUTFALL STRUCTURE AND CONSISTS OF A HEADWALL CONSTRUCTED OF CONCRETE RUBBLE. THE NATURAL CHANNEL HAS BEEN EVALUATED USING THE ROSGEN CLASSIFICATION AS A4 DUE TO THE CHANNEL SLOPE OF 2.44% - 7.9%, LOW SINUOSITY, ENRICHMENT RATIO. THE NATURAL CHANNEL BED MATERIALS CONSIST OF EASILY ERODED SILTY SAND WITH GRAVEL AND COBBLES. THERE WERE NO RECORDED DRAINAGE EASEMENTS FOR PORTIONS OF THE PIPED SYSTEM, THE OUTFALL, OR STREAM CHANNEL. AS PART OF THIS PLAN, A COMBINATION OF TEMPORARY AND PERMANENT EASEMENTS HAVE ALREADY BEEN RECORDED.

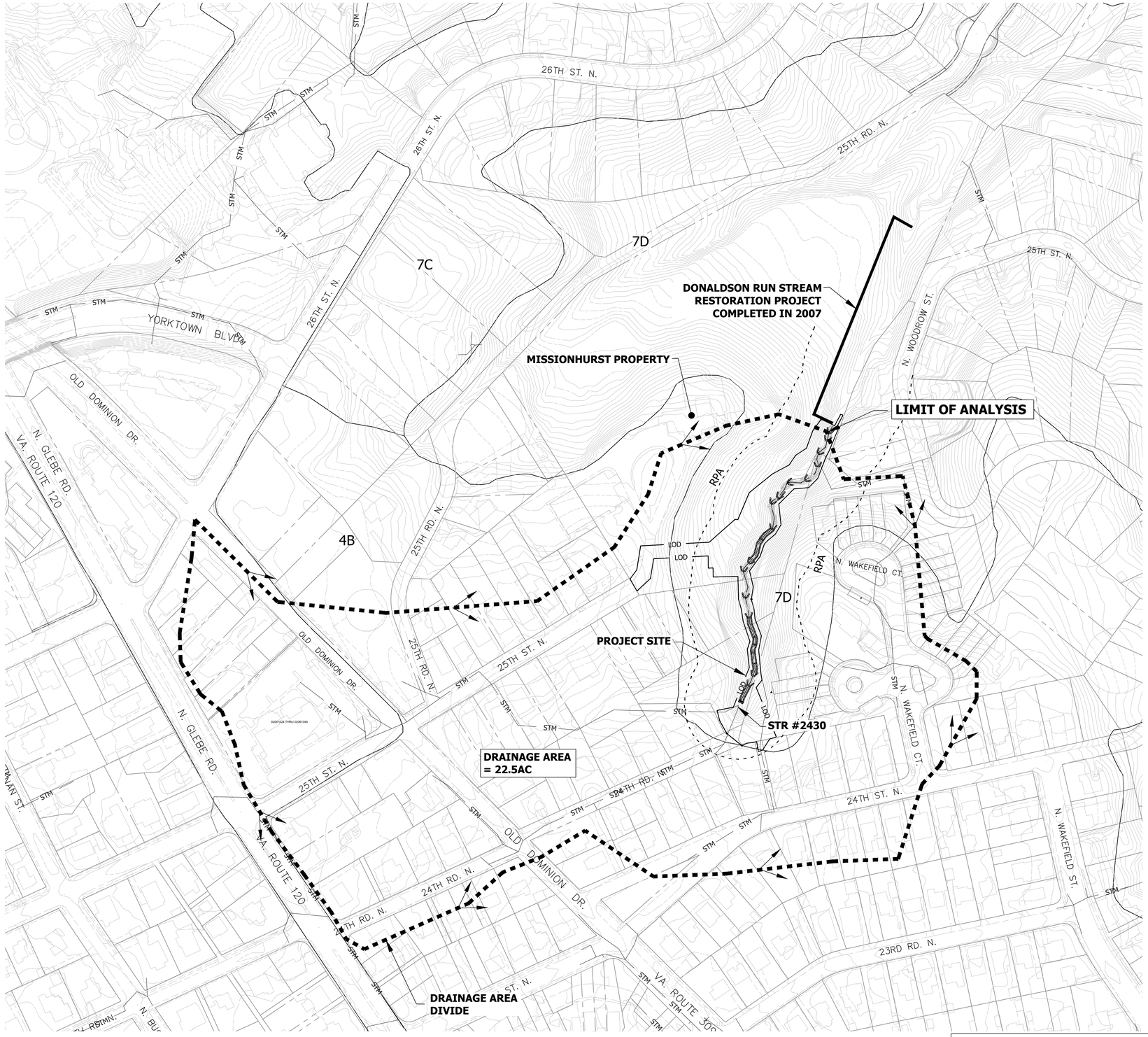
THE TOTAL AREA DRAINING TO THE OUTFLOW CHANNEL IS 22.5 ACRES. THIS AREA IS MOSTLY URBAN SINGLE FAMILY HOMES WITH THE ASSOCIATED LAWNS. HOWEVER, A SIGNIFICANT LAND AREA CONSISTS OF WOODLANDS. CLEARING FOR THE CONSTRUCTION OF THE CHANNEL IMPROVEMENTS WILL CONVERT SOME LAND FROM "WOODS-FAIR" TO "WOODS-POOR". THE PLANTING AND LANDSCAPING ON THIS LAND WILL EVENTUALLY RESTORE THE WOODED CONDITION, BUT IMMEDIATELY AFTER THE CONSTRUCTION, THE TREES WILL BE SMALL AND IMMATURE; HENCE THE HYDROLOGIC COMPUTATIONS TREATED THE AREA AS "WOODS-POOR", SEE SHEET C075.1 FOR ALL STORM COMPUTATIONS.

UPON COMPLETION OF THE IMPROVEMENTS PROPOSED HEREIN, THE OUTFALL FROM #2430 WILL BE STABILIZED AGAINST THE EXPECTED EROSIVE VELOCITIES.

DOWNSTREAM ANALYSIS - 1% RULE

ANALYSIS OF THE DOWNSTREAM CHANNEL WAS COMPLETED USING THE FLOW CRITERION. SINCE THE Q10 FOR THE LOD ONLY IN THE POST DEVELOPED CONDITION IS 0.68 CFS, THE DOWNSTREAM CHANNEL WAS ANALYZED TO A POINT WHERE THE FLOW EXCEEDED 68 CFS. THE 0.68 CFS WAS CALCULATED USING THE TR55 METHOD. A WEIGHTED CURVE NUMBER OF 59 WAS USED FOR THE ORIGINAL LOD OF 0.4 ACRES AND A TIME OF CONCENTRATION OF 0.1 HOURS. THE ORIGINAL PROJECT LIMITS OF DISTURBANCE IS SIGNIFICANTLY SMALLER THAN SHOWN AS THE SCOPE ONLY INCLUDED WORK TO INSTALL A NEW STORM SEWER PIPE TO THE HEADWATERS AS WELL AS WORK ON THE TURNAROUND AT THE END OF 24TH RD NORTH (THE TURNAROUND HAS SINCE BEEN REMOVED FROM THE PROPOSED IMPROVEMENTS) AND ~150FT OF STREAM RESTORATION.

THIS POINT WHERE THE TOTAL DRAINAGE AREA EQUALS 22.5 ACRES - SEE ON THIS SHEET - GIVES A Q10 OF 85CFS. THE POINT CHOSEN IS AT THE BEGINNING OF THE PREVIOUS STREAM RESTORATION PROJECT CONSTRUCTED UNDER CONTRACT 313-06. THE ANALYSIS OF THE STREAM SECTIONS IS SHOWN ON SHEET C075.1. BY THE START OF THE PREVIOUSLY CONSTRUCTED PROJECT THE Q10 FLOW IS 85 CFS, WHICH IS GREATER THAN THE 1% RULE FLOW NEEDED OF 68CFS. SINCE THE PROJECT HAD INITIALLY ONLY CONSIDERED A PORTION OF THE STREAM UPSTREAM OF THAT POINT, THE PROJECT SCOPE WAS CHANGED TO INCLUDE THE STABILIZATION FROM THE HEADWATERS TO THAT POINT. THE PLANS INCLUDE THE ENTIRETY OF THE STREAM STABILIZATION NEEDED TO SATISFY AN ADEQUATE OUTFALL ANALYSIS.



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Jennifer Tastad, PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

DRAINAGE DIVIDES

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE:
0 100 200
GRAPHIC SCALE

C071.1

FILENAME: S42D-250-DRAINAGE_DIVIDES.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

HEADWATERS DONALDSON RUN TRIBUTARY B (ANALOSTAN BRANCH)

REVISED ON 01/07/2021

OUTFALL ANALYSIS

THE IMPROVEMENTS IN THIS PLAN IMPACT THE DRAINAGE AREA SERVED BY EXISTING STORM DRAINAGE SYSTEMS:

1. STRUCTURE #22631 TO #2430 – SERVES 25TH ST. N AND AREAS TO THE NORTH
2. STRUCTURE #2663 TO #2430 – SERVES 24TH RD. N AND AREAS SOUTH OF ITEM #1 ABOVE
3. STRUCTURE # 2665 TO # 2521 – DRAINS OVERLAND AND VIA ERODED CHANNELS TO THE OPEN CHANNEL LOCATED AT THE OUTFALL #2430 – SERVES 24TH ST. N.

THESE STORM DRAINS DISCHARGE INTO THE HEADWATERS OF DONALDSON RUN TRIBUTARY B, APPROXIMATELY 600 LF. UPSTREAM OF A COUNTY STREAM RESTORATION PROJECT CONSTRUCTED IN 2007. STRUCTURE #2430 IS THE OUTFALL STRUCTURE AND CONSISTS OF A HEADWALL CONSTRUCTED OF CONCRETE RUBBLE. THE NATURAL CHANNEL HAS BEEN EVALUATED USING THE ROSGEN CLASSIFICATION AS A4 DUE TO THE CHANNEL SLOPE OF 2.44% - 7.9%, LOW SINUOSITY, ENTRENCHMENT RATIO. THE NATURAL CHANNEL BED MATERIALS CONSIST OF EASILY ERODED SILTY, SAND WITH GRAVEL AND COBBLES. FLOW EXITING THE EXISTING STORM DRAIN SYSTEM AT #2521, FLOWS AS CONCENTRATED FLOW ACROSS OPEN SPACE LAND OWNED BY THE ANALOSTAN TOWNHOMES HOMEOWNERS ASSOCIATION. EROSION OF THE EMBANKMENT LEADING TO THE NATURAL CHANNEL HAS OCCURRED. THERE WERE NO RECORDED DRAINAGE EASEMENTS FOR PORTIONS OF THE PIPED SYSTEM, THE OUTFALL OR STREAM CHANNEL. AS PART OF THIS PLAN, A COMBINATION OF TEMPORARY AND PERMANENT EASEMENTS HAVE ALREADY BEEN RECORDED.

THE TOTAL AREA DRAINING TO THE OUTFLOW CHANNEL IS 22.5 ACRES. THIS AREA IS MOSTLY URBAN SINGLE FAMILY HOMES WITH THE ASSOCIATED LAWNS. HOWEVER, A SIGNIFICANT LAND AREA CONSISTS OF WOODLANDS. CLEARING FOR THE CONSTRUCTION OF THE CHANNEL IMPROVEMENTS WILL CONVERT SOME LAND FROM WOODS – FAIR TO WOODS – POOR. THE PLANTING AND LANDSCAPING ON THIS LAND WILL EVENTUALLY RESTORE THE WOODED CONDITION, BUT IMMEDIATELY AFTER THE CONSTRUCTION, THE TREES WILL BE SMALL AND IMMATURE; HENCE THE HYDROLOGIC COMPUTATIONS TREATED THE AREA AS WOODS – POOR.

THE TIME OF CONCENTRATION WAS UNAFFECTED BY THE LAND USE CHANGES AND WAS COMPUTED TO BE 0.227 HRS. FOR BOTH PRE AND POST CONDITIONS. THE CURVE NUMBER CHANGED FROM 64 TO 65 DUE TO THE LAND USE CHANGES. FLOWS FOR THE PRE AND POST CONDITION ARE LISTED BELOW:

RETURN PERIOD	PRE-DEVELOPMENT Q	POST-DEVELOPED Q	V POST
2 YR	34.07 CFS	35 CFS	4.3 FPS
10 YR	64.81 CFS	65 CFS	5.3 FPS
100 YR	131.43 CFS	131 CFS	6.4 FPS

IT CAN BE SEEN THAT THE PRE AND POST FLOWS DO NOT CHANGE BY MUCH. HOWEVER, THE VELOCITY IN THE CHANNEL EXCEEDS 4 FPS AND WILL ERODE THE SILTY SANDY CHANNEL BOTTOM. HENCE THE CHANNEL IS PROPOSED TO BE STABLIZED WITH A PLUNGE POOL AT THE OUTFALL STRUCTURE, CHANNEL SIDES LINED WITH IMBRICATED RIP RAP AND GRAVEL/COBBLE CHANNEL BED OF SUFFICIENT SIZE TO RESIST THE EXPECTED CHANNEL VELOCITY.

UPON COMPLETION OF THE IMPROVEMENTS PROPOSED HEREIN, THE OUTFALL FROM STRUCTURE #2430 WILL BE STABILIZED AGAINST THE EXPECTED EROSIVE VELOCITIES. IN ADDITION, THE STORM SYSTEM WILL HAVE CONTIGUOUS DRAINAGE EASEMENTS MAKING FUTURE MAINTENANCE POSSIBLE.

DOWNSTREAM ANALYSIS – 1% RULE

ANALYSIS OF THE DOWNSTREAM CHANNEL WAS COMPLETED USING THE FLOW CRITERION. SINCE THE Q 10 FOR THE LOD ONLY IN THE POST DEVELOPED CONDITION IS 0.68 CFS, THE DOWNSTREAM CHANNEL WAS ANALYZED TO A POINT WHERE THE FLOW EXCEEDED 68 CFS. THE POINT CHOSEN WAS AT THE BEGINNING OF THE PREVIOUS STREAM RESTORATION PROJECT CONSTRUCTED BEHIND THE FRIED PROPERTY UNDER CONTRACT 313-06. THE PEAK FLOWS USED TO EVALUATE THE DOWNSTREAM CHANNEL ARE SHOWN BELOW:

RETURN PERIOD	POST-DEVELOPED Q	V POST
2 YR	43 CFS	4.6 FPS
10 YR	85 CFS	5.65FPS
100 YR	185 CFS	-------

IN SOME AREAS, BUT NOT ALL, THE V 2 OR V 10 FOR THE EXISTING CHANNEL IS NOT STABLE AND SO PHASE II WILL BE REQUIRED TO COMPLETE THE STABILIZATION OF THE ENTIRE STREAM.

HYDROLOGIC AND HYDRAULIC ANALYSIS

HYDROLOGIC ANALYSIS

THE RATIONAL METHOD WAS USED TO DEVELOPED THE PEAK DESIGN FLOWS INTO THE STREAM. SEE THE SPREADSHEET PRINTOUT BELOW FOR THE PEAK 1YR, 2YR, AND 10YR FLOWS.

Drainage Area	979,493 sf	22.5 acres
Pervious	560,545 sf	12.9 acres
Impervious	418,948 sf	9.6 acres
Weighted C	0.56	
Intensity (1-year)	4.40	
Intensity (2-year)	5.21	
Intensity (10-year)	6.79	
Intensity (100-year)	9.1	

Q=c*i*A

Flow (1-year) 55.44 cfs
Flow (2-year) 65.65 cfs
Flow (10-year) 85.55 cfs

HYDRAULIC ANALYSIS

THE EXISTING CHANNEL IS HIGHLY ERODED. SELECTION OF A SUITABLE CHANNEL LINING MATERIAL TO DECREASE EROSION AND LOCAL INSTABILITY IS KEY TO STABILIZING THE CHANNEL. FILLING IN THE CHANNEL AND FLATTENING THE CHANNEL GRADE ARE TWO STRATEGIES IMPLEMENTED IN THE PROPOSED STABILIZATION. ROCK CROSS VANES ARE PROPOSED AS GRADE CONTROL STRUCTURES TO MAINTAIN A FLATTENED CHANNEL GRADE. THE CROSS VANES PROVIDE AN ADDITIONAL BENEFIT OF ENERGY DISSIPATION AND CREATION OF RIFFLE-POOL SEQUENCES ALONG THE LENGTH OF THE CHANNEL.

TO FULLY ANALYZE THE EFFECT OF THE PROPOSED CHANNEL DIMENSIONS, PROFILE, AND GRADE CONTROL STRUCTURES ON THE STABILITY OF THE PROPOSED CHANNEL FOR THE DESIGN FLOWS, A HEC-RAS HYDRAULIC MODEL WAS DEVELOPED. TYPICAL SECTIONS USED IN THE HEC-RAS MODEL ARE PROVIDED ON THIS SHEET WITH BANK STATIONS AND THE DESIGN 10YR WATER SURFACE ELEVATION ALSO SHOWN. MANNING'S ROUGHNESS COEFFICIENTS SELECTED FOR THE PROPOSED CHANNEL LINING MATERIALS WERE BASED ON THE RANGE OF VALUES LISTED IN TABLE 7-2A FROM THE VDOT DRAINAGE MANUAL CH. 7.

CROSS SECTIONS WERE CUT AT EACH CROSS VANE AND THE PLUNGE POOL AT THE UPSTREAM END OF THE REACH. FOUR CROSS SECTIONS WERE CUT FOR EACH CROSS VANE, CORRESPONDING TO THE FOUR PVI POINTS LISTED FOR EACH VANE ON SHEET C042.1. TO MORE ACCURATELY CAPTURE THE WATER SURFACE ELEVATION THROUGH THE GRADE CONTROL STRUCTURES, CROSS SECTIONS WERE INTERPOLATED BETWEEN EACH OF THE FOUR CROSS VANE SECTIONS. CROSS SECTIONS WERE ALSO CUT IN THE RIFFLE SEQUENCES BETWEEN GRADE CONTROL STRUCTURES AND COINCIDE WITH THE PROPOSED STREAM CENTERLINE STATIONING.

THE 'CROSS-SECTION SUMMARY' TABLE BELOW LISTS VELOCITY AND SHEAR VALUES IN THE CHANNEL AT THESE LOCATIONS.

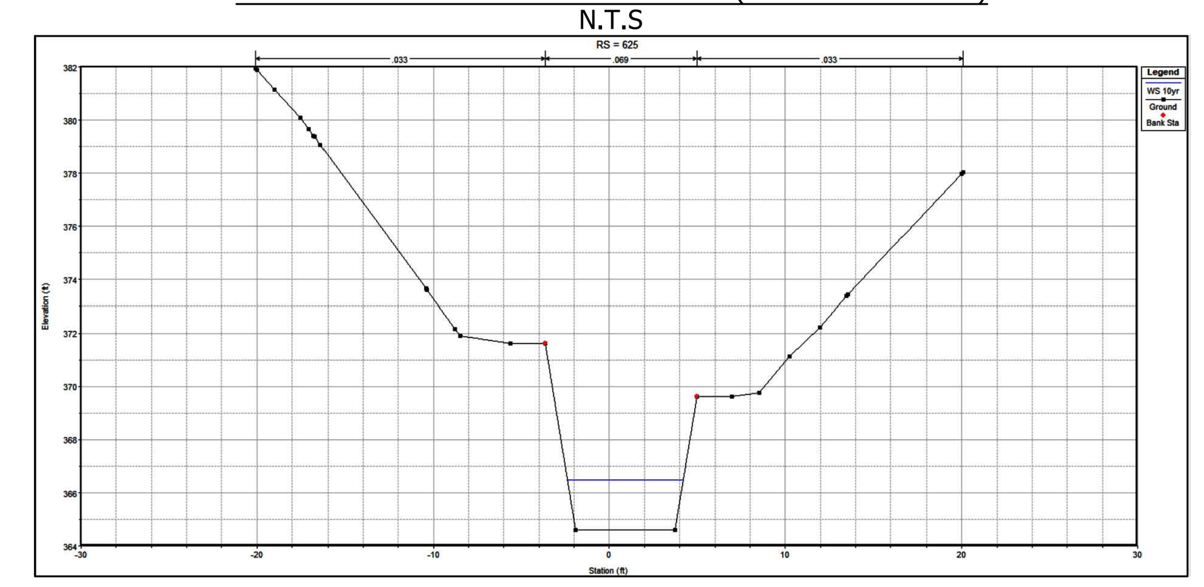
CROSS-SECTION SUMMARY

RAS River Station	Stream Station	Channel Invert (ft)	1-Year Storm: Water Surface Elevation (ft)	Velocity (ft/s)	Shear Stress (lb/sf)	D_{50} (in)	2-Year Storm: Water Surface Elevation (ft)	Velocity (ft/s)	Shear Stress (lb/sf)	D_{50} (in)	10-Year Storm: Water Surface Elevation (ft)	Velocity (ft/s)	Shear Stress (lb/sf)	D_{50} (in)
651	10+39	364.61	366.69	4.32	2.30	7.3	366.90	4.61	2.57	8.2	367.27	5.09	3.04	9.8
624	10+40	362.82	364.66	4.91	3.06	9.8	364.86	5.20	2.39	7.6	365.33	4.70	1.89	6.0
602	10+49	360.80	361.98	2.72	0.81	2.5	362.08	2.94	0.90	2.8	362.26	3.31	1.08	3.3
590	10+61	360.50	361.43	4.76	2.06	6.5	361.55	4.83	1.96	6.2	361.97	3.95	1.05	3.2
583	10+68	359.34	361.37	3.42	0.92	2.8	361.58	3.47	0.89	2.7	361.93	3.57	0.85	2.6
571	10+80	359.07	360.83	5.17	3.43	11.1	360.96	5.67	4.06	13.2	361.16	6.55	4.27	13.9
558	10+93	357.82	359.89	4.19	1.60	5.0	360.06	4.34	1.72	5.4	360.38	4.52	1.73	5.4
551	11+00	357.64	359.65	4.41	1.68	5.3	359.87	4.29	1.59	5.0	360.26	4.17	1.39	4.3
535	11+15	356.22	358.20	4.54	2.58	8.2	358.44	4.59	2.10	6.7	358.87	4.58	2.00	6.3
531	11+20	356.11	358.00	4.77	2.88	9.2	358.20	5.07	3.17	10.2	358.56	5.57	3.71	12.0
519	11+32	354.82	356.82	4.49	2.08	6.6	357.04	4.57	2.11	6.7	357.42	4.71	2.14	6.8
503	11+48	353.38	355.50	4.22	2.20	7.0	355.67	4.61	2.57	8.2	355.94	5.30	3.33	10.8
491	11+60	353.09	355.10	4.47	1.50	4.7	355.34	4.15	1.38	4.3	355.76	3.66	0.98	3.0
470	11+81	352.60	354.01	4.93	2.05	6.5	354.09	5.28	2.27	7.2	354.24	5.86	2.62	8.4
463	11+88	351.37	352.67	4.67	2.04	6.5	352.79	4.96	2.18	6.9	353.02	5.43	2.41	7.7
451	12+00	351.08	352.45	3.80	1.36	4.2	352.59	4.01	1.43	4.5	352.85	4.33	1.53	4.8
435	12+16	350.70	351.64	5.26	3.20	10.3	351.75	5.53	3.35	10.8	351.90	6.21	3.97	12.9
428	12+23	349.53	350.81	5.35	2.64	8.4	350.94	5.65	2.79	8.9	351.17	6.11	2.99	9.6
421	12+30	349.36	350.79	3.69	1.29	4.0	350.94	3.90	1.36	4.2	351.21	4.24	1.48	4.6
411	12+40	349.12	350.64	3.53	1.13	3.5	350.79	3.73	1.20	3.7	351.07	4.07	1.32	4.1
401	12+50	348.88	350.22	4.90	2.23	7.1	350.35	5.22	2.41	7.7	350.57	5.77	2.73	8.7
391	12+69	348.64	349.82	5.02	2.49	7.9	349.90	5.47	2.84	9.1	350.06	6.20	3.42	11.1
381	12+70	348.40	349.28	5.10	3.15	10.1	349.38	5.37	3.30	10.7	349.53	5.95	3.79	12.3
374	12+77	347.28	348.61	4.34	1.45	4.5	348.74	4.64	1.59	5.0	348.96	5.14	1.84	5.8
361	12+90	346.96	348.44	3.75	1.21	3.7	348.56	4.00	1.32	4.1	348.80	4.42	1.49	4.7
354	12+97	346.80	347.99	5.36	2.96	9.5	348.10	5.65	3.17	10.2	348.30	6.16	3.51	11.4
347	13+04	345.57	347.70	4.11	1.73	5.4	347.87	4.37	1.94	6.1	348.14	4.84	2.29	7.3
341	13+10	345.42	347.55	4.12	1.74	5.5	347.70	4.41	1.99	6.3	347.94	4.98	2.44	7.8
331	13+20	345.17	347.30	4.06	1.50	4.7	347.44	4.29	1.67	5.2	347.68	4.74	1.95	6.2
321	13+30	344.92	347.04	4.05	1.35	4.2	347.21	4.11	1.38	4.3	347.48	4.27	1.45	4.5
311	13+51	344.68	346.75	4.21	1.49	4.7	346.97	4.07	1.29	4.0	347.33	3.89	1.14	3.5
292	13+59	343.22	345.30	4.21	1.55	4.8	345.50	4.16	1.46	4.6	345.87	4.09	1.31	4.1
262	13+88	341.48	342.61	4.14	1.83	5.8	342.72	4.41	1.98	6.3	342.92	4.86	2.23	7.1
251	14+00	341.19	342.46	3.03	0.90	2.8	342.58	3.23	0.97	3.0	342.81	3.54	1.08	3.3
241	14+10	340.94	342.18	3.93	1.41	4.4	342.28	4.21	1.55	4.8	342.47	4.67	1.78	5.6
229	14+22	340.65	341.58	5.11	2.83	9.1	341.69	5.32	2.91	9.3	341.87	5.75	3.11	10.0
222	14+29	339.50	340.96	2.56	0.59	1.8	341.11	2.68	0.61	1.8	341.39	2.87	0.63	1.9
200	14+51	339.00	340.12	5.62	3.54	11.5	340.25	5.89	3.70	12.0	340.48	6.32	3.93	12.8
193	14+58	337.88	339.17	5.81	3.30	10.7	339.31	6.05	3.39	11.0	339.58	6.38	3.46	11.2
171	14+80	337.31	338.36	3.46	0.93	2.8	338.45	3.70	1.02	3.1	338.63	4.08	1.15	3.6
166	14+85	337.20	338.06	4.78	2.38	7.6	338.15	5.03	2.51	8.0	338.29	5.50	2.76	8.8
159	14+92	335.98	337.36	3.39	1.00	3.1	337.50	3.58	1.06	3.3	337.75	3.90	1.16	3.6
151	15+00	335.80	337.03	4.67	2.10	6.7	337.14	4.99	2.29	7.3	337.31	5.63	2.71	8.7
141	15+23	335.56	336.58	4.89	2.48	7.9	336.67	5.27	2.76	8.8	336.84	5.80	3.10	10.0
127	15+24	335.25	335.92	4.45	2.58	8.2	335.99	4.69	2.72	8.7	336.12	5.17	3.07	9.9
120	15+31	334.09	335.22	3.23	0.83	2.5	335.35	3.36	0.85	2.6	335.59	3.57	0.88	2.7
111	15+40	333.80	335.08	3.34	1.12	3.5	335.22	3.51	1.18	3.6	335.47	3.80	1.27	3.9
108	15+43	333.69	334.90	4.21	1.76	5.5	335.02	4.48	1.89	6.0	335.23	4.95	2.12	6.7
89	15+62	333.13	333.91	4.84	3.04	9.8	334.00	5.11	3.22	10.4	334.16	5.52	3.48	11.3
82	15+68	332.11	333.19	3.87	1.67	5.2	333.29	4.15	1.84	5.8	333.46	4.64	2.15	6.8
71	15+80	331.81	332.89	3.64	1.33	4.1	332.99	3.93	1.48	4.6	333.15	4.39	1.72	5.4
62	15+88	331.60	332.40	4.87	2.91	9.3	332.50	5.10	3.03	9.7	332.66	5.50	3.26	10.5
55	15+96	330.47	331.88	3.23	0.69	2.1	332.02	3.39	0.72	2.2	332.27	3.65	0.78	2.4
41	16+10	330.11	331.65	3.75	1.08	3.3	331.78	4.02	1.18	3.6	332.01	4.46	1.34	4.2
34	16+17	329.95	331.24	5.32	2.69	8.6	331.35	5.60	2.88	9.2	331.55	6.10	3.19	10.3
27	16+24	328.83	330.22	5.48	2.67	8.5	330.24	6.40	3.62	11.7	330.45	6.78	3.70	12.0
20	16+30	329.19	330.34	4.04	1.54	4.8	330.43	4.16	1.72	5.4	330.58	4.72	2.09	6.6
11	16+39	328.30	329.12	4.78	2.49	7.9	329.20	7.47	2.61	8.3	329.36	7.46	4.96	16.3
0	16+50	328.00	329.26	3.48	1.71	5.4	329.37	3.68	1.86	5.9	329.55	4.01	2.12	6.7

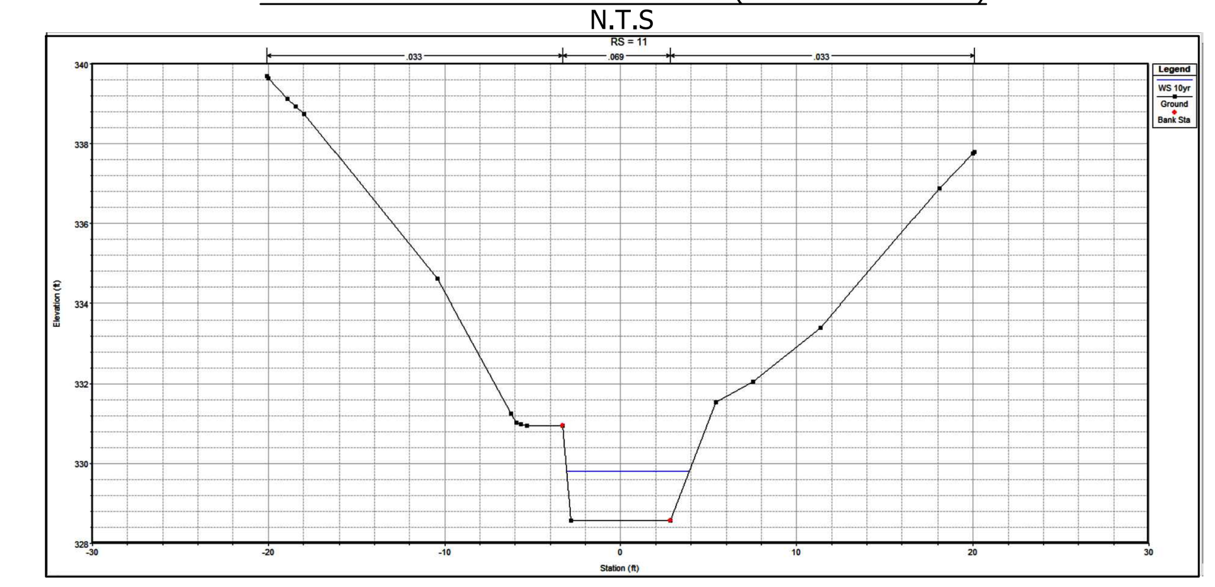
TYPICAL HEC-RAS CROSS-SECTIONS

SEE SHEET C042.1 FOR PROPOSED STREAM STATIONING

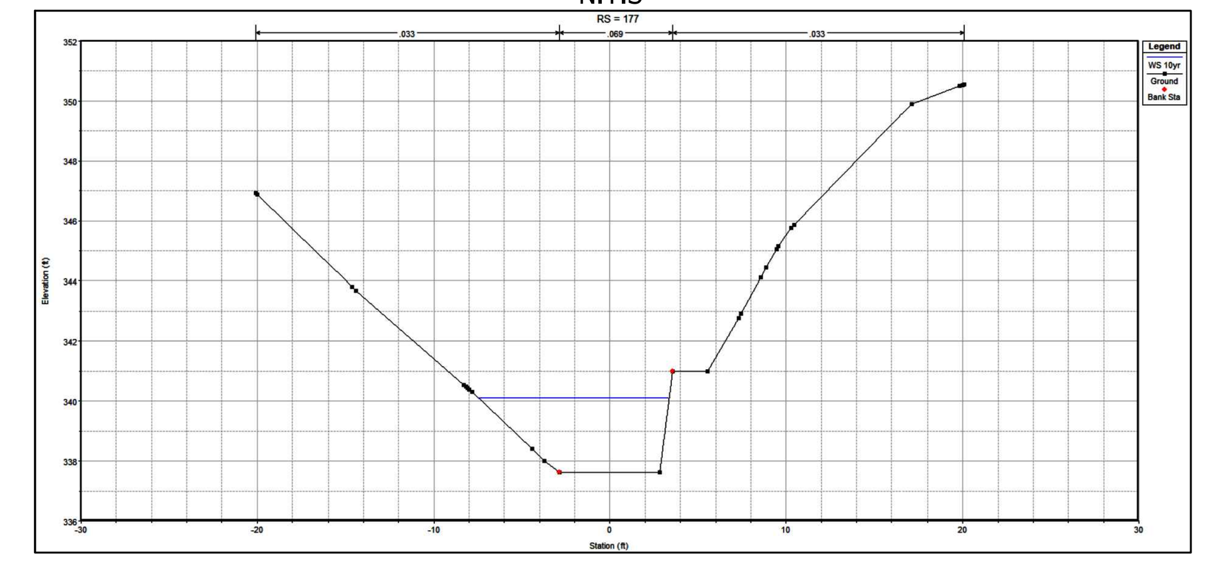
WALLS ALONG BOTH SIDES OF CHANNEL (STA 10+05 SHOWN)
N.T.S



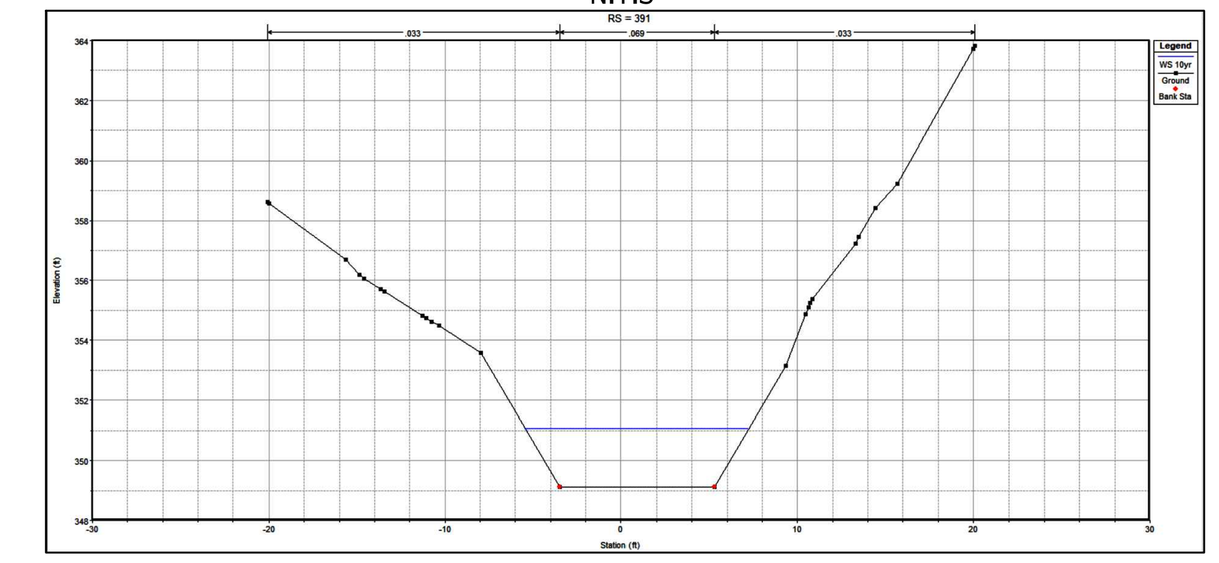
WALLS ALONG LEFT SIDE OF CHANNEL (STA 16+20 SHOWN)
N.T.S



WALLS ALONG RIGHT SIDE OF CHANNEL (STA 14+54 SHOWN)
N.T.S



NO WALLS (STA 12+40 SHOWN)
N.T.S



EXISTING CONDITIONS (STA 10+43 SHOWN)
N.T.S

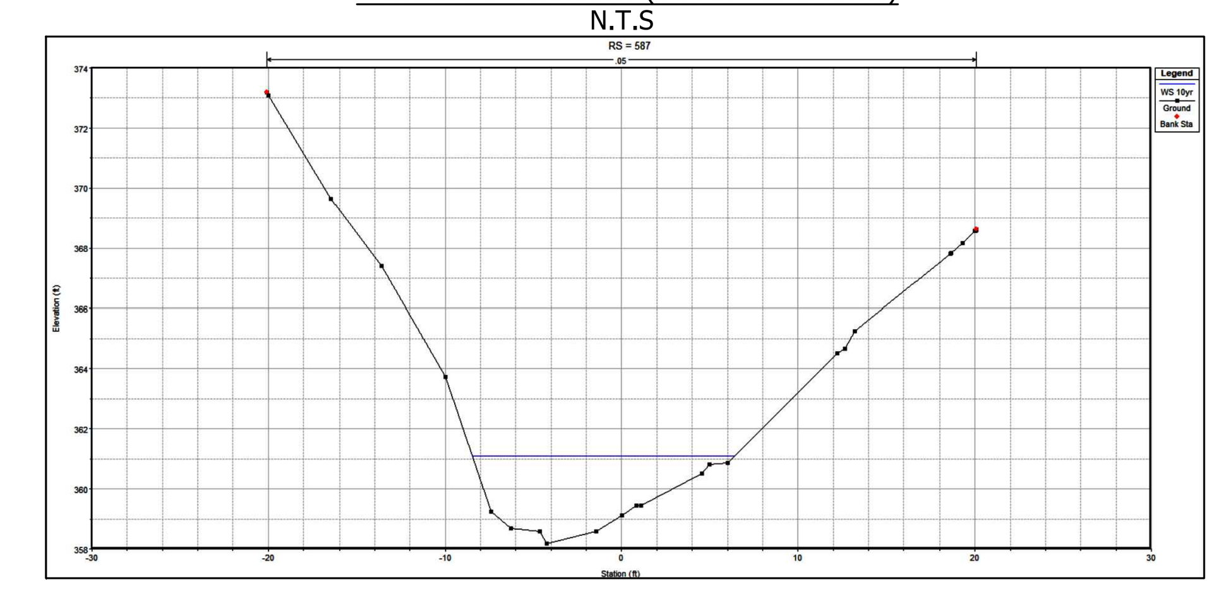


Table 7-1 Allowable Velocity and Shear Stress Values for Lined Ditches

Type of Lining	Maximum Allowable Velocity (fps)	Maximum Allowable Shear Stress (lb/ft^2)
Bare Earth (See Appx 7D-2)	Varies	Varies
VDOT EC-2 Type-1	4.0	1.5
VDOT EC-2 Type-2	4.0	1.75
VDOT EC-2 Type-3	4.0	2.0
VDOT EC-2 Type-4	4.0	2.25
VDOT EC-3 Type 1	7.0	6.0
VDOT EC-3 Type 2	10.0	8.0
VDOT EC-3 Type-3	N/A	10.0
Concrete	NA	NA
VDOT Riprap	Based on Shear Stress	Varies

Table 7-2A Recommended Manning's n-Values for Lined Ditches

Lining Category	Lining Type	Manning's n: Maximum	Typical	Minimum
Unlined	Bare Soil	0.025	0.020	0.16
	Rock Cut	0.045	0.035	0.025
Temporary RECP/ EC-2 [1]	Type 1	0.045	0.045 – 0.028	0.028
	Type 2	0.045	0.045 – 0.028	0.028
	Type 3	0.045	0.045 – 0.028	0.028
	Type 4	0.022	0.022 – 0.014	0.014
Permanent RECP/EC-3 Type 1 thru Type 3 [1]	Unvegetated	0.036	0.036 – 0.024	0.024
Riprap [2,3]	Class A1	0.124	0.072	0.038
	Class I	0.153	0.086	0.041
	Class II	0.181	0.095	0.042
Rigid	Concrete	0.015	0.013	0.013

[1] General values based on approved product list. Consult with individual manufactures for more specific information

[2] Values interpolated from data provided in HEC-15

[3] In general, $n=0.0395(d_{50})^{0.167}$, where d_{50}=median stone diameter

CHANNEL SUBSTRATE AND SEDIMENT TRANSPORT

CHANNEL BED AND BANK LINING MATERIALS WERE SELECTED BASED ON THE ANTICIPATED RANGE OF TRACTIVE FORCES IN THE CHANNEL. THE MEDIAN STONE SIZE (D50) FOR THE CHANNEL BED MATERIAL WAS SELECTED USING THE SHIELD'S EQUATION (SEE SAMPLE CALCULATION TO THE RIGHT). SHEAR STRESSES WITHIN EACH GRADE CONTROL STRUCTURE WERE NOT CONSIDERED IN THE MATERIAL SELECTION SINCE THE SHARP CHANGE IN GRADE AND RESULTING HYDRAULIC JUMP PRODUCE SHEAR STRESS VALUES THAT ARE NOT REFLECTIVE OF THE OVERALL CHANNEL PROFILE. FURTHER, A SCOUR HOLE IS PROVIDED AT EACH CROSS VANE TO ACCOMMODATE THE HIGHER SHEAR STRESSES. SEE THE 'CROSS-VANE SUMMARY' TABLE ON THIS SHEET FOR SCOUR HOLE DIMENSIONS AND ADDITIONAL DETAILS FOR EACH PROPOSED GRADE CONTROL STRUCTURE.

THE AVERAGE 2-YR AND 10-YR TRACTIVE FORCES IN THE RIFFLE SEQUENCES OF THE CHANNEL ARE APPROX. 2.0 LB/SF AND 2.2 LB/SF, RESPECTIVELY. THE AVERAGE 10YR SHEAR STRESS YIELDS A D50 OF 7.6 INCHES FROM THE SHIELD'S EQUATION. SHEAR STRESSES VARY DUE TO THE EFFECTS OF THE GRADE CONTROL STRUCTURES ON THE WATER SURFACE ELEVATION. TO ACCOUNT FOR THE VARIATION, A D50 OF 8-10 INCHES IS SPECIFIED FOR THE CHANNEL BED MATERIAL. A D50 OF 10 INCHES IS APPROX. ONE STANDARD DEVIATION ABOVE THE AVERAGE AND SUFFICIENT FOR THE MAJORITY OF ANTICIPATED SHEAR STRESSES.

A PERMANENT ROLLED EROSION CONTROL PRODUCT (RECP) WILL BE USED TO STABILIZE THE CHANNEL BANKS IN SECTIONS OF THE CHANNEL WITHOUT STACKED STONE WALLS. VDOT EC-3 TYPE 1 IS APPROPRIATE FOR TRACTIVE FORCES OF APPROX. 2.25 TO 6 LB/SF (VDOT DRAINAGE MANUAL 7.4.6.3.1, SEE TABLE 7-1 ON THIS SHEET). THE SHEAR AND VELOCITY VALUES SHOWN IN THE CROSS-SECTION SUMMARY TABLE FALL WITHIN THE PERMISSIBLE RANGE FOR THE EC-3 TYPE 1 LINING.

THE AVERAGE DEPTH OF FLOW IN THE CHANNEL FOR THE 10YR STORM IS APPROX. 2.1 FT. THE RECP LINING FOR CHANNEL BANKS WITHOUT WALLS WILL BE INSTALLED 2.5 FT ABOVE THE PROPOSED STREAM INVERT (ELEVATIONS INDICATED ON THE CROSS SECTIONS ON SHEETS C044.1 TO C044.3).

SHIELD'S EQUATION

$\tau_o = shear\ stress = \gamma RS$

where:

$\gamma = specific\ weight\ of\ water\ (lb/ft^3)$

$R = hydraulic\ radius = A/P\ (ft)$

$A = cross-sectional\ flow\ area\ (ft^2)$

$P = wetted\ perimeter\ (ft)$

$S = maximum\ riffle\ slope\ (ft/ft)$

STABLE MEAN DIAMETER BED MATERIAL

$D_{50} = 3.07\tau_o^{1.042}$

EXAMPLE

$\tau_o = \gamma RS = \left(62.4\frac{lb}{ft^3}\right)\left(\frac{18\,ft^2}{16.5\,ft}\right)(0.0244)$

$\tau_o = 1.66\ lb/ft^2$

$D_{50} = 3.07\tau_o^{1.042} = (3.07)(1.66\ lb/ft^2)^{1.042}$

$D_{50} = 5.2\ in$

CROSS-VANE SUMMARY

Station	Cross-Vane ID	Elevation (Upper)	Elevation (Lower)	Height (ft)	Scour Hole Length (ft)	Scour Hole Depth (ft)
10+39.08	A	362.50	360.80	1.70	10.06	2.34
10+60.56	B	360.50	359.34	1.16	7.78	1.59
10+85.66	C	358.95	357.82	1.13	7.66	1.55
11+07.85	D	357.45	356.22	1.23	8.08	1.69
11+24.42	E	356.00	354.82	1.18	7.87	1.62
11+40.05	F	354.60	353.38	1.22	8.03	1.67
11+80.56	G	352.60	351.37	1.23	8.08	1.69
12+20.92	H	350.58	349.40	1.18	7.87	1.62
12+75.83	I	348.26	347.14	1.12	7.61	1.53
12+96.53	J	346.80	345.57	1.23	8.08	1.69
13+51.18	K	344.40	343.22	1.18	7.87	1.62
13+80.91	L	342.65	341.48	1.17	7.82	1.60
14+32.83	M	340.38	339.25	1.13	7.66	1.55
14+50.88	N	339.00	337.88	1.12	7.61	1.53
14+87.24	O	337.13	335.91	1.22	8.03	1.67
15+23.54	P	335.25	334.09	1.16	7.78	1.59
15+62.13	Q	333.11	332.36	0.75	6.05	1.02
15+88.48	R	332.10	330.97	1.13	7.66	1.55
16+20.81	S	330.64	329.21	1.43	8.92	1.96
16+37.09	T	329.10	328.25	0.85	6.48	1.16

STORM SEWER ANALYSIS

STORM SEWER COMPUTATIONS

Structure: FROM	TO	Drainage Area (acre): Incr.	Accum.	C	CA: Incr.	Accum.	Tc (min)	I (in/hr)	Q (cfs)	Slope (%): (min)	(actual)	n	DIA (in)	DISCHARGE CAPACITY CFS	VELOCITY FPS: F.F.	ACT	LENGTH FEET	TIME IN PIPE SEC	Upper Inv	Lower Inv	Remarks	TOP	Q/QFULL
2	3	8	24	9	25	26	10	11	27			7	6				8		9	10			
2568N	**B1**	1.79	1.79	0.60	1.07	1.07	5.00	6.79	7.29	1.27	0.056	0.013	15	15.20	12.42	12.14	126.00	10.38	399.72	392.71		404.40	0.48
B1	**B1N**	0.00	1.79	0.60	0.00	1.07	5.00	6.79	7.29	1.27	0.144	0.013	15	18.20	14.83	13.80	31.00	2.25	392.51	388.05		396.20	0.40
B1N	**B2**	0.00	1.79	0.60	0.00	1.07	5.00	6.79	7.29	1.27	0.224	0.013	15	33.24	27.09	20.77	44.00	2.12	388.05	378.20		392.00	0.22
B2	**2430**	3.81	5.60	0.64	2.44	3.51	5.00	6.79	23.85	5.15	0.295	0.013	18	57.02	32.26	30.37	39.00	1.28	378.20	366.71		391.00	0.42
2430	**0**	0.00	5.60	0.00	0.00	3.51	5.00	6.79	23.85			0.013											

HYDRAULIC GRADELINE COMPUTATIONS

Structure Number	Surface Flow	Inlet Shaping	Outlet W.S.E.	'n' Factor	Do	Qo	Lo	Sf %	Hf	H.G.L. @ Struct. Outlet	Vo	Ho	Qi	Vi	QiVi	Vi^2/2g	Hi	Angle 'K' Value	Ha	Ht	Ht (1.3) (Adjust. Surface Flow)	Ht(0.5) (Adjust. Inlet Shaping)	Final H	H.G.L. @ Struct. Inlet	RIM Top Struct. or Throat Elev.	HGL Elev. Below Top Struct.
1			2		3	4	5.00	6	7.00		8	9	10	11.00	12		13	14	15	16	17	18	19	20.00		
2568N	Y	Y	393.71	0.013	15	7.29	126.00	1.27	1.61		12.14	0.57								0.57	0.74				404.40	
B1	N	Y	391.05	0.013	15	7.29	31.00	1.27	0.40		13.80	0.74	7.29	12.14			0.8	0	0	1.54	1.54				396.20	
B1N	N	Y	379.2	0.013	15	7.29	44.00	1.27	0.56		20.77	1.67	7.29	13.80			1.03	0.38	1.12	3.83	3.83				392.00	
B2	N	Y	367.91	0.013	18	23.85	39.00	5.15	2.01		30.37	3.58	7.29	20.77			2.34	0.7	4.69	10.61	10.61				391.00	
2430	N	---	366.65	0.013	---							0	23.85	30.37			5.01	0	0	5.01	5.01				372.00	

ARLINGTON
VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES
FACILITIES & ENGINEERING DIVISION
ENGINEERING BUREAU
2100 CLARENDON BOULEVARD, SUITE 813
ARLINGTON, VA 22201
PHONE: 703.228.3629
FAX: 703.228.3606

SEAL

COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy Pflaum — QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach — TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad — PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

STORM SEWER COMPUTATIONS

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C075.1

FILENAME: S42D-251-STORM_COMPS.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

Appendix C. Water Quality Impact Assessment Data Sheet

Project Address: DONALDSON RUN HEADWATERS, ARLINGTON, VA	Date: 05/24/2022
Applicant Name/Affiliation: ARLINGTON COUNTY DES 2100 CLARENDON BLVD STE. 813 ARLINGTON, VA 22201	Applicant Contact Information (phone and email): (703) 228-7586 (apatel@arlingtonva.us)
Owner/Client Name: ARLINGTON COUNTY DES	Owner/Client Contact Information (phone and email):

Section 1: Type of activity proposed

Activity type (check all that apply):

- ☒ New construction (residential, commercial, public, etc.)
- ☐ Alteration of non-residential structure
- ☐ Residential addition
- ☐ Detached residential structure
- ☐ Deck, patio, or retaining wall
- ☐ Landscaping (includes tree removal)
- ☐ Utility work
- ☐ Fence
- ☒ Other (please describe): Stream Stabilization

Section 2: Key details of the proposed activity

Complete all that apply		Explanation
Total area of disturbance on parcel (sf)	44,993	Includes building footprint plus a 10 foot buffer. Also includes all soil disturbance, ingress/egress areas, stockpiling areas, etc.
Area of disturbance within RPA (sf)	40,271	Includes removal of trees ≥ 3" in diameter
Area of disturbance on slopes greater than or equal to 15 percent located adjacent to landward RPA boundary (sf)	2,175	Does not apply to RPA parcels along Chain Bridge Road (15 percent and greater slopes are included as part of RPA)

Complete all fields		Existing condition	Proposed condition	Explanation
RPA encroachment (ft)	Left third of parcel or site	0	0	The **distance** (in feet) from the existing or proposed structure to the designated RPA feature (edge of stream or open channel, wetland, etc.). Encroachments of zero (0) indicate the project will impact the stream or other RPA feature.
	Middle third of parcel or site	0	0	
	Right third of parcel or site	0	0	
Total development footprint in RPA (sf)		21,698	21,698	The existing footprint includes the **area** of any existing structures, patios, decks, walkways, etc. Proposed footprint is the anticipated post-project area of all impervious surfaces, including walkways, regraded area behind a retaining wall, etc.
Impervious footprint in RPA (sf)		0	0	Total **area** of impervious surfaces within the RPA (rooftops, pavement, etc.)

(OVER)

STAFF USE ONLY

Building/demolition/LDA/Fence permit number(s):

Major WQIA required? ☐ Yes ☐ No

Date WQIA/Exception request information complete:

Date Chesapeake Bay Preservation Ordinance and E/S ordinance (if applicable) approvals issued in Permits Plus: -- --

Section 3: Plan and Narrative

Provide a plan showing the location of the proposed activity, along with the RPA boundary Briefly describe the proposed project, including any potential water quality impacts and mitigation measuresproposed. The narrative mud address three impact categories 1. Tree/vegetation impacts, 2. Stormwater and runoff 3. Erosion and sediment control. Please refer to the WQIA plan/narrative checklist for additional information.

THE PROJECT CONSISTS OF STABILIZING A PORTION OF DONALDSON RUN TRIBUTARY B STREAM CORRIDOR FROM THE HEADWATERS AT 24TH RD N TO THE BEGINNING OF THE PREVIOUSLY-RESTORED PORTION APPROXIMATELY 650 LINEAR FEET DOWNSTREAM. STABILIZATION ACTIVITIES INCLUDE: INSTALLING IMBRICATED ROCK WALLS ALONG THE CHANNEL BANKS TO REDUCE EROSION AND STABILIZE THE STEEP SLOPES, INSTALLING NATURAL ROCK BOULDER STRUCTURES (CROSS-VANES) TO PROVIDE FOR GRADE CONTROL AND REDUCE THE OVERALL SLOPE OF THE STREAM CHANNEL, AND LINING THE BANKS WITH EROSION CONTROL MATTING. THE EXISTING SANITARY SEWER WILL BE CONCRETE ENCASED WHERE IT FALLS WITHIN THE FOOTPRINT OF THE PROPOSED STREAM CHANNEL IMPROVEMENTS. THE DISTURBED AREA WILL BE PLANTED WITH A VARIETY OF NATIVE TREES AND GROUNDCOVER TO FURTHER PROMOTE SLOPE STABILIZATION. THE WORK WILL BE CONDUCTED IN AN ENVIRONMENTALLY-SENSITIVE AREA (i.e. RPA, AND WATERS OF THE US). THE LANDSCAPING WORK CONSISTS OF FURNISHING AND INSTALLING THE REPLACEMENT TREES AND GROUNDCOVER AS DESCRIBED IN THE PLANTING PLAN (SHEETS C091.1 AND C092.1). EXISTING TREES WILL BE SAVED WHERE PRACTICALLY POSSIBLE. THE PROPOSED LANDSCAPING WILL REPLACE TREES REMOVED FOR THE STREAM STABILIZATION WORK FOR THE PROJECT. 28 TREES WILL BE REMOVED. TREES NEAR THE STREAM WORK BUT NOT IDENTIFIED TO BE REMOVED WILL BE PROTECTED DURING CONSTRUCTION USING TREE PROTECTION FENCING, ROOT MATTING AND ROOT PRUNING, AND ARE LIKELY TO SURVIVE CONSTRUCTION. A TOTAL OF 83 REPLACEMENT TREES ARE REQUIRED. THE QUANTITY OF PROPOSED PLANTS MAY BE INCREASED AS DIRECTED. SUCH VARIATIONS IN QUANTITY WILL NOT BE CONSIDERED AS ALTERATIONS IN THE DETAILS OF CONSTRUCTION OR A CHANGE IN THE CHARACTER OF THE WORK. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), CURRENT EDITION. THERE IS NO INCREASE IN IMPERVIOUS AREA DUE TO THE PROJECT, AND NO CHANGES TO IMPERVIOUS AREA WITHIN THE RPA. SEE SHEETS C031.1, C032.1, AND C032.2 FOR THE EROSION AND SEDIMENT CONTROLS WITHIN THE RPA AND SHEETS C031.1, C091.1, AND C092.1 FOR TREE REMOVAL AND PLANTING WITHIN THE RPA.

Additional Water Quality Impact Assessment Information

The information supplied on this form satisfies the minimum requirements for a Minor Water Quality Impact Assessment. For projects that disturb over 2500 square feet, elements of a Major Water Quality Impact Assessment may also be required, depending on the nature and extent of the proposed RPA encroachment, as outlined in Section 61-12 of the ordinance.

Appendix D. Exception Request Form

Applicant:	Project address:
N/A	N/A

Section 1: Brief description of exception request

N/A

Section 2: Parcel, structure, and ownership information

Date parcel ownership began: N/A

Date existing principal structure built: N/A

Will existing principal structure remain intact? ☐ Yes ☐ No

Date(s) of construction of any prior work by current owner (alterations, additions, decks, patios, etc.) – list individually

Date	Type of prior work
1.	
2.	
3.	
4.	

STAFF USE ONLY

- ☐ Allowable development in RPA (§ 61-7.A)
- ☐ Allowable modification in RPA (§ 61-7.B)
- ☐ Allowable encroachment in RPA (§ 61-7.C)
- ☐ Expansion of nonconforming structure or use in RPA (§ 61-14) (exception request required)
- ☐ New development in the RPA, redevelopment that increases impervious area in the RPA or encroaches further into the RPA, or any other proposed disturbance of any RPA component (exception request required)
- ☐ Exempted activity in RPA (§ 61-15) _____
- ☐ Proposed development in RMA on 15 percent slopes adjacent to RPA
- ☐ Other RMA activity _____

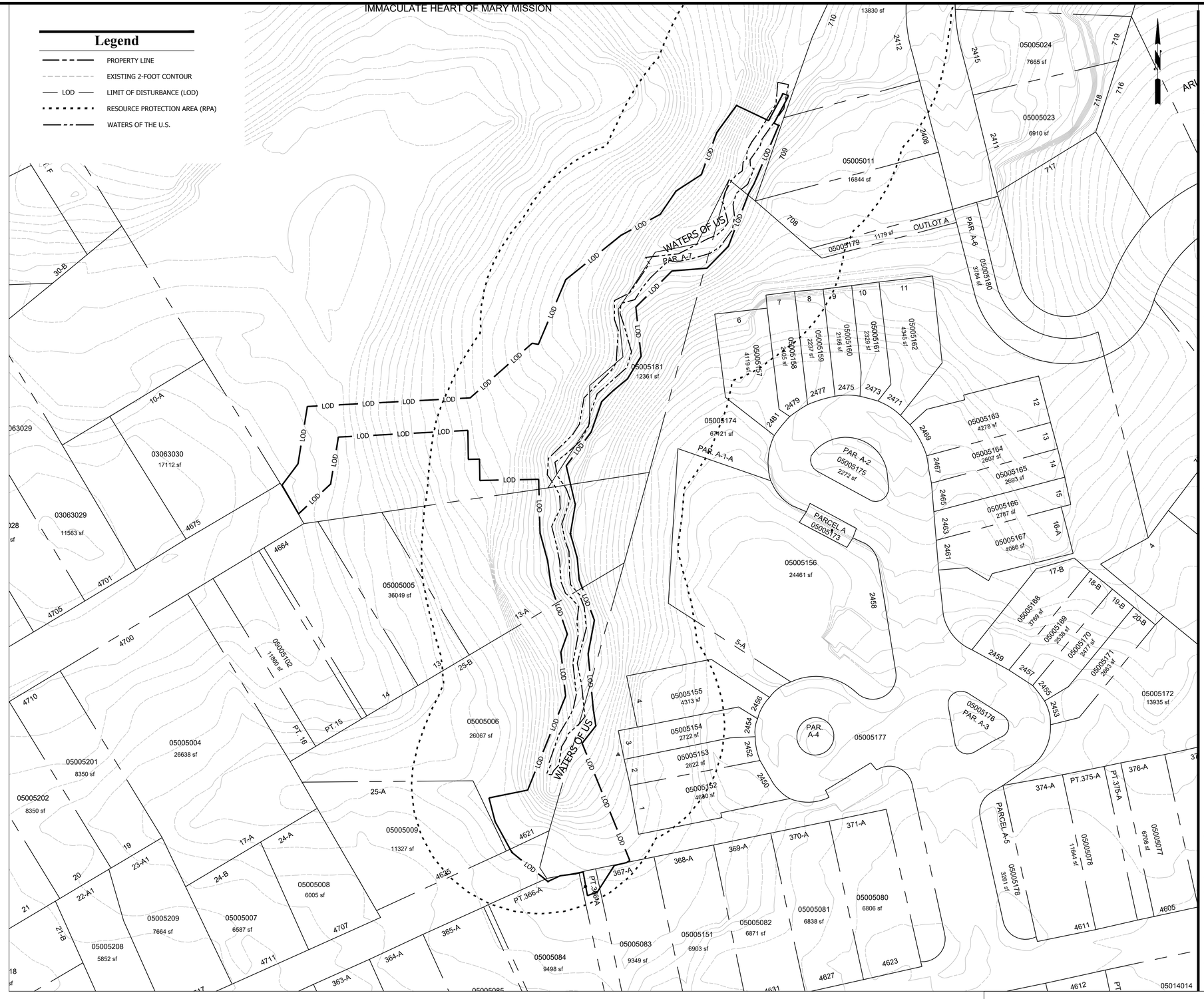
CBORC hearing required? ☐ Yes ☐ No

Date public notification sent certified mail:

Hearing date:

CBORC decision: ☐ Approved ☐ Not approved

Date of final approval letter:



ARLINGTON
VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES
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SEAL

COMMONWEALTH OF VIRGINIA
Ankur Patel
ANKUR B. PATEL
Lic. No. 57048
7/6/2022
PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy Pflaum QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

WATER QUALITY IMPACT ASSESSMENT PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

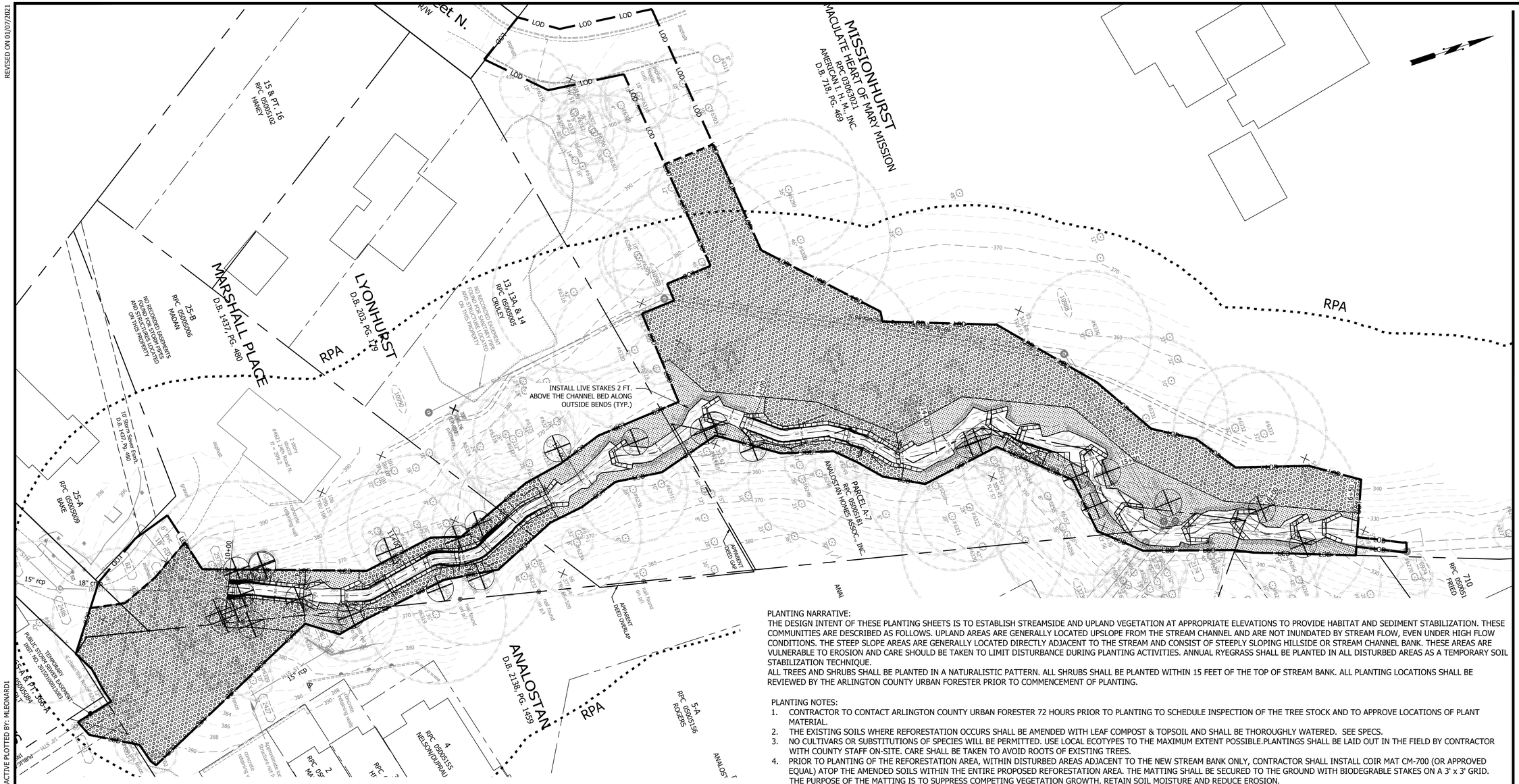
SCALE: N/A

0 40 80
GRAPHIC SCALE

C081.1

FILENAME: S42D-22D-E_AND_S_NOTES_SWPPP.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021



PLANTING NARRATIVE:
THE DESIGN INTENT OF THESE PLANTING SHEETS IS TO ESTABLISH STREAMSIDE AND UPLAND VEGETATION AT APPROPRIATE ELEVATIONS TO PROVIDE HABITAT AND SEDIMENT STABILIZATION. THESE COMMUNITIES ARE DESCRIBED AS FOLLOWS. UPLAND AREAS ARE GENERALLY LOCATED UPSLOPE FROM THE STREAM CHANNEL AND ARE NOT INUNDATED BY STREAM FLOW, EVEN UNDER HIGH FLOW CONDITIONS. THE STEEP SLOPE AREAS ARE GENERALLY LOCATED DIRECTLY ADJACENT TO THE STREAM AND CONSIST OF STEEPLY SLOPING HILLSIDE OR STREAM CHANNEL BANK. THESE AREAS ARE VULNERABLE TO EROSION AND CARE SHOULD BE TAKEN TO LIMIT DISTURBANCE DURING PLANTING ACTIVITIES. ANNUAL RYEGRASS SHALL BE PLANTED IN ALL DISTURBED AREAS AS A TEMPORARY SOIL STABILIZATION TECHNIQUE.
ALL TREES AND SHRUBS SHALL BE PLANTED IN A NATURALISTIC PATTERN. ALL SHRUBS SHALL BE PLANTED WITHIN 15 FEET OF THE TOP OF STREAM BANK. ALL PLANTING LOCATIONS SHALL BE REVIEWED BY THE ARLINGTON COUNTY URBAN FORESTER PRIOR TO COMMENCEMENT OF PLANTING.

PLANTING NOTES:
1. CONTRACTOR TO CONTACT ARLINGTON COUNTY URBAN FORESTER 72 HOURS PRIOR TO PLANTING TO SCHEDULE INSPECTION OF THE TREE STOCK AND TO APPROVE LOCATIONS OF PLANT MATERIAL.
2. THE EXISTING SOILS WHERE REFORESTATION OCCURS SHALL BE AMENDED WITH LEAF COMPOST & TOPSOIL AND SHALL BE THOROUGHLY WATERED. SEE SPECS.
3. NO CULTIVARS OR SUBSTITUTIONS OF SPECIES WILL BE PERMITTED. USE LOCAL ECOTYPES TO THE MAXIMUM EXTENT POSSIBLE.PLANTINGS SHALL BE LAID OUT IN THE FIELD BY CONTRACTOR WITH COUNTY STAFF ON-SITE. CARE SHALL BE TAKEN TO AVOID ROOTS OF EXISTING TREES.
4. PRIOR TO PLANTING OF THE REFORESTATION AREA, WITHIN DISTURBED AREAS ADJACENT TO THE NEW STREAM BANK ONLY, CONTRACTOR SHALL INSTALL COIR MAT CM-700 (OR APPROVED EQUAL) ATOP THE AMENDED SOILS WITHIN THE ENTIRE PROPOSED REFORESTATION AREA. THE MATTING SHALL BE SECURED TO THE GROUND WITH BIODEGRABLE STAKES ON A 3' x 3' GRID. THE PURPOSE OF THE MATTING IS TO SUPPRESS COMPETING VEGETATION GROWTH, RETAIN SOIL MOISTURE AND REDUCE EROSION.
5. WHEN PLANTING PROPOSED TREES AND SHRUBS, WHERE MATTING IS USED, CONTRACTOR SHALL CUT-OUT A SMALL SECTION OF THE MATTING IN ORDER TO DIG A HOLE TO RECEIVE THE PLANT. PERENNIALS AND GRASSES SHALL BE PLANTED BETWEEN THE GRID OF THE MATTING.
6. TREES MAY BE SPACED CLOSER THAN OPTIMAL SPACING THAN TYPICAL AS NOTED ON PLANTING LIST TO ENCOURAGE LESS VEGETATION COMPETITION AND MAINTENANCE. THIS SPACING WILL BE DETERMINED IN THE FIELD. DO NOT STAKE NEWLY PLANTED TREES.
7. TREES MAY BE PLANTED OUTSIDE OF THE LOD AREA (SHOWN ABOVE). THIS WILL BE DETERMINED AT THE TIME OF INSTALLATION UNDER DIRECTION OF ARLINGTON COUNTY URBAN FORESTER.
8. PLANTS SHALL BE PLANTED ON THE DAY OF DELIVERY IF/WHEN PRACTICAL. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD. ANY PLANTS NOT INSTALLED DURING THIS PERIOD SHALL BE REJECTED, UNLESS ARLINGTON COUNTY FORESTER AND CONTRACTOR PROVIDE OTHERWISE BY WRITTEN AGREEMENT.
9. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ARLINGTON COUNTY PLANTING STANDARDS.
10. PLANTS SHALL BE PLANTED IN IN-SITU SOIL THAT IS THOROUGHLY WATERED.
11. SET ALL PLANTS PLUMB AND STRAIGHT AT SUCH LEVEL THAT NORMAL OR NATURAL RELATIONSHIP BETWEEN THE PLANT AND THE GROUND SURFACE SHALL BE ESTABLISHED.
12. LEADERS OF TREES SHALL NOT BE CUT BACK.
13. AFTER PLANTING TREES AND SHRUBS, THE CONTRACTOR SHALL OVERSEED WITH ERNST SEED MIX "ARLINGTON VIRGINIA UPLAND WOODLAND SLOPE MIX" (OR APPROVED EQUAL). SEE SEED MIX ON DETAIL SHEET. UPLAND, STREAMSIDE AND STEEP SLOPE AREAS SHALL BE SEEDED BETWEEN MARCH 1ST AND MAY 31ST OR OCTOBER 1ST AND NOVEMBER 15TH.
14. SEED SHALL BE APPLIED USING ONE OF THE FOLLOWING METHODS: 1) HYDROSEEDING, OR 2) BROADCASTING THE SEED, THEN SPRAYING A 1/4 TO 1/2 INCH LAYER OF MOIST COMPOST ON TOP.
15. SEED SHOULD BE TRACKED INTO THE SOIL AFTER BROADCASTING.
16. GENERAL CONTRACTOR OR SUBCONTRACTOR TO THE GENERAL CONTRACTOR SHALL EMPLOY A LICENSED CERTIFIED ARBORIST TO OVERSEE TREE PROTECTION AND TREE PLANTING. ARBORIST SHALL BE ON SITE DURING ALL PLANTING ACTIVITIES.
17. NEWLY PLANTED TREES TO BE WATERED FOR UNTIL FINAL COMPLETION OF PROJECT BY GENERAL CONTRACTOR.
18. DEER PROTECTION CAGES SHALL BE INSTALLED FOR ALL TREES AND SHRUBS (TO BE CONFIRMED AT PRE-CONSTRUCTION MEETING). CAGES SHALL BE CONSTRUCTED OF 12 GUAGE WELDED WIRE MESH WITH A 2" X 4" OPENING. MESH WILL BE ATTACHED TO ONE METAL U-POST, WITH GALVANIZED WIRE. TREE PROTECTION SHALL BE A MINIMUM OF 4-5 FEET TALL. SHRUB PROTECTION SHALL BE A MINIMUM OF 3 FEET TALL.

Planting List
Donaldson Run Phase 1 and 2
11/30/2022

Key	Botanical Name	Common Name	Category	Remarks	Size	Quantity
	Trees:					
AA	Amelanchier arborea	Downy Serviceberry	Understory Deciduous	Upland	1 gal/3-4'	30
BN	Betula nigra	River Birch	Overstory Deciduous	Low lying areas/Floodplain with sun	1 gal/3-4'	20
CG	Carya glabra	Pignut Hickory	Overstory Deciduous	Upland	1 gal/3-4'	50
CT	Carya tomentosa	Mockernut Hickory	Overstory Deciduous	Upland	1 gal/3-4'	50
CF	Cornus florida	American Dogwood	Understory Deciduous	Upland	1 gal/3-4'	40
FG	Fagus grandifolia	American Beech	Overstory Deciduous	Upland	1 gal/3-4'	60
LT	Liriodendron tulipifera	Tulip Poplar	Overstory Deciduous	Upland	1 gal/3-4'	50
NS	Nyssa sylvatica	Blackgum	Overstory Deciduous	Upland	1 gal/3-4'	50
PO	Platanus occidentalis	American Sycamore	Overstory Deciduous	Low lying areas/Floodplain with sun	1 gal/3-4'	20
QB	Quercus bicolor	Swamp White Oak	Overstory Deciduous	Low lying areas/Floodplain with sun	1 gal/3-4'	20
QM	Quercus marilandica	Black Jack Oak	Overstory Deciduous	Upland	1 gal/3-4'	60
QP	Quercus prinus	Chestnut Oak	Overstory Deciduous	Upland	1 gal/3-4'	60
QS	Quercus shumardi	Shumardi Oak	Overstory Deciduous	Upland	1 gal/3-4'	60
SA	Sassafras albidum	Sassafrass	Overstory Deciduous	Upland	1 gal/3-4'	60
	Note: ALL trees shall have two-thirds (2/3) minimum canopy by height. Trees should have a single, straight leader (unless noted as a multi-stem stree) and all trees and shrubs shall have quality roots which meet ANSI specifications for plant size.					630
Key:	**Shrubs:**					
CA	Corylus americana	American Hazelnut			1 gal	35
CO	Cephalanthus occidentalis	Buttonbush			1 gal	43
LB	Lindera benzoin	American Spicebush			1 gal	35
SC	Sambucus canadensis	Elderberry			1 gal	40
VP	Viburnum prunifolium	Blackhaw viburnum			1 gal	35
	Total Shrubs Planted with reforestation calculation (.047 AC)					188
	Total required shrubs to be planted 15' from stream bank					188
Key:	**Live Stakes:**					
CO	Cephalanthus occidentalis	Buttonbush		Plant 3-6' apart on triangular spacing	3' stake	
SD	Cornus amomum	Silky Dogwood		Plant 3-6' apart on triangular spacing	3' stake	
PO	Platanus occidentalis	American Sycamore		Plant 3-6' apart on triangular spacing	3' stake	

Note: Install stakes during their dormancy (late fall to early spring). Do not allow them to dry out. Soaking prior to planting significantly increases survival.

Legend

- REFORESTATION 40,064 SF
- UPLAND PLANTINGS 26,019 SF
- STEEP SLOPE PLANTINGS 6,933 SF
- LIVE STAKES (APPROX. 150 STAKES REQUIRED)

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7/6/2022
PROFESSIONAL ENGINEER

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STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

LANDSCAPE PLAN

DESIGNED: BG
DRAWN: KV
CHECKED: KV

PLOTTED: NOVEMBER 30 2022

SCALE:
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GRAPHIC SCALE

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FILENAME: S42D-260-LANDSCAPE_PLAN_DETAILS 2022.05.DWG PATH: Q:\DATA\S42D\DESIGN\CAD\ACTIVE PLOTTED BY: MLEONARD1

REVISED ON 01/07/2021

ERNST SEED MIX -ARLINGTON VIRGINIA

UPLAND WOODLAND SLOPE MIX

(OR APPROVED EQUAL)

SEEDING RATE: 60 LB. PER ACRE

MIX COMPOSITION

16.7% *Agrostis hyemalis (Winter Bentgrass)*
18.8% *Agrostis perennans (Autumn Bentgrass)*
1.0% *Chamaecrista fasciculata, PA Ecotype (Partridge Pea)*
16.7% *Elymus virginicus (Virginia Wildrye)*
20.0% *Lolium multiflorum (Annual Rygrass)*
13.3% *Panicum anceps (Beaked Panicgrass)*
13.3% *Panicum clandestinum (Deertongue)*
0.1% *Solidago juncea (Early Goldenrod)*
0.1% *Solidago odora (Licorice Scented Goldenrod)*

100.0%

99.8% Grass-like species by seed count
0.2% Wildflower by seed count

Apply this mix at 60lbs/acre. The cover crop is part of the mix. Where slopes are 3:1 or steeper, use erosion control plankets to stabilize soil while plants establish.

NOTES

1. PLANTS SHALL BE FURNISHED AND INSTALLED AS INDICATED ON THE APPROVED LANDSCAPE PLAN.

2. PLANTS SHALL BE TYPICAL OF SPECIES AND VARIETY, AND COMPLY WITH THE MOST RECENT ANSI Z60.1 STANDARDS.

3. TREES SHALL BE NURSERY GROWN SPECIMENS THAT MEET THE LATEST EDITION OF THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60). BALLED AND BURLAPPED TREES SHALL BE SECURELY HELD IN PLACE BY UNTREATED BURLAP AND STOUT ROPE (NYLON ROPE IS NOT ACCEPTABLE). LOOSE, BROKEN OR MANUFACTURED BALLS ARE UNACCEPTABLE.

4. CALL MISS UTILITY AT (800) 552-7001 FOR UTILITY LOCATIONS PRIOR TO EXCAVATION.

5. AT TIME OF PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS. THE LEADER OF THE TREE SHALL NOT BE CUT BACK. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS. INJURED ROOTS SHALL BE PRUNED TO CLEAN ENDS WITH CLEAN, SHARP TOOLS PRIOR TO PLANTING.

6. PLANTS SHALL BE PLANTED ON THE DAY OF DELIVERY. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED AND NOTIFY PROJECT OFFICER. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD SHALL BE REJECTED. ALL PLANTS KEPT ON SITE FOR ANY PERIOD SHOULD BE WATERED AND CARED FOR USING ANSI A300 STANDARDS.

7. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE ROOT BALL ONLY. REMOVE ALL TAGS AND TAPE FROM THE PLANTS AFTER PLANTING.

8. SITE CHARACTERISTICS, SUCH AS OVERHEAD POWER LINES, EXISTING VEGETATION, AND INFRASTRUCTURE ITEMS SUCH AS CURBS, SIDEWALKS AND UTILITIES SHALL BE CONSIDERED. TREES THAT GROW TALLER THAN 25 FEET SHOULD NOT BE PLANTED DIRECTLY UNDER POWER LINES. WHEN POSSIBLE THE TREE LEADER SHALL BE OFFSET FROM POWER LINES. PLANTS, OTHER THAN GROUNDCOVER, SHALL NOT BE PLANTED WITHIN 2 FT OF A SIDEWALK. TREE SHALL NOT BE PLANTED WITHIN 5 FT OF A FENCE OR 10 FT OF A BUILDING.

9. BACKFILL SOIL MIXTURE SHALL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL(COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE COUNTY URBAN FORESTER. PEAT MOSS MAY NOT BE USED. PLANTS SHALL BE PLANTED IN HEALTHY, UNCOMPACTED SOIL.

10. REFER TO PLANTING DETAILS AND SPECIFICATIONS FOR SPECIFIC INSTRUCTIONS. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH LOCAL ACCEPTED PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOP SOIL THAT IS MUDDY OR IN FROZEN CONDITION. TREES AND SHRUBS SHALL BE INSTALLED BETWEEN SEPTEMBER 15TH AND DECEMBER 15TH OR BETWEEN MARCH 15TH AND JUNE 15TH. CONTACT THE ARLINGTON COUNTY FORESTER TO OBTAIN A DEFERRAL OR APPROVAL FOR PLANTING OUT OF SEASON.

11. TREES PLANTED SHALL RECEIVE A 3-INCH LAYER OF SHREDDED HARDWOOD MULCH, IN A 6-FOOT RING SURROUNDING THE TREES, WITH A 6-INCH CLEAR AREA NEAR THE TRUNK. REFERENCE TREE PLANTING DETAIL. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.

12. TREES MAY ONLY BE STAKED IF REQUIRED BY THE COUNTY URBAN FORESTER. REFER TO ARLINGTON COUNTY STANDARD STAKING DETAILS.

13. MULCH SHALL BE CLEAN, SCREENED, DOUBLE-HAMMERED HARDWOOD BARK MULCH, UNIFORM IN SIZE AND FREE OF STONES, CLODS, NON-ORGANIC DEBRIS AND OTHER FOREIGN MATERIAL.

14. ALL PLANTS SHALL BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION. EACH WATERING WILL CONSIST OF 20 GALLONS PER TREE.

15. CONTRACTOR SHALL LEGALLY REMOVE EXCESS SOIL & DEBRIS FROM SITE.

16. AT PROJECT COMPLETION, PRIOR TO FINAL ACCEPTANCE, PRESERVED AND PLANTED TREES SHALL BE INSPECTED BY AN ARLINGTON COUNTY URBAN FORESTER.

GENERAL PLANTING NOTES

329300.14 (2019)

ARLINGTON VIRGINIA DPR

NOTES

1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS per ANSI STANDARD A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.

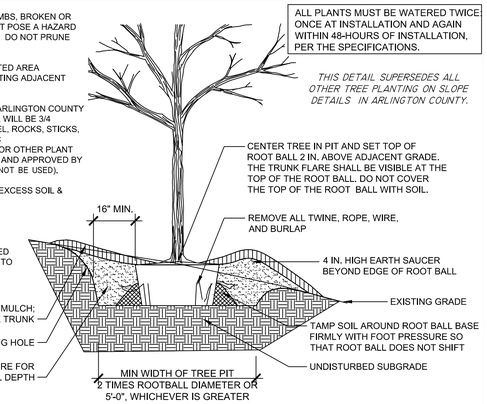
2. CONTRACTOR SHALL MAXIMIZE EXCAVATED AREA FOR TREE PIT WITHOUT ADVERSELY IMPACTING ADJACENT SITE FEATURES.

3. UNLESS OTHERWISE DIRECTED BY THE ARLINGTON COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL(COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE URBAN FORESTER; PEAT MOSS SHALL NOT BE USED).

4. CONTRACTOR SHALL LEGALLY REMOVE EXCESS SOIL & DEBRIS FROM SITE.

5. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.

6. TREES MAY ONLY BE STAKED IF REQUIRED BY THE COUNTY URBAN FORESTER. REFER TO STAKING DETAILS.

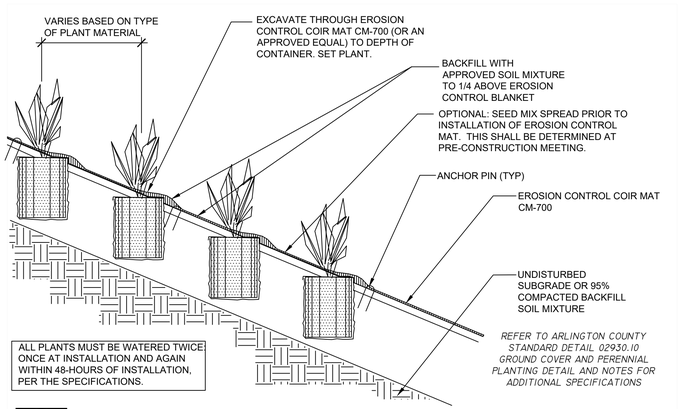


TREE PLANTING ON SLOPE

1/2" = 1'-0"

FOR OPEN PLANTING AREAS FREE OF PAVING OR GRATES
329300.2 (2019)

ARLINGTON VIRGINIA DPR



PLANTING ON SLOPE WITH ESC FABRIC

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ELEVATION
329300.12

ARLINGTON VIRGINIA DPR

NOTES

1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES PER ANSI 300 STANDARD.

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS IN THE CENTER OF THE PLANTING PIT. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

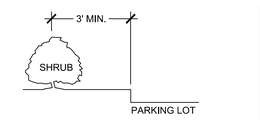
4. UNLESS OTHERWISE DIRECTED BY COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL(COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE COUNTY URBAN FORESTER. PEAT MOSS MAY NOT BE USED).

5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

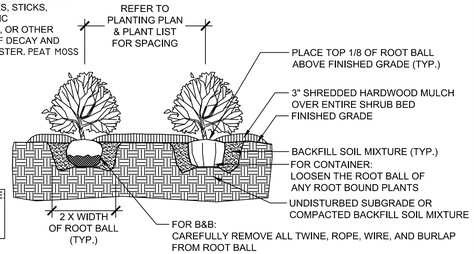
6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF SHRUBS

THIS DETAIL SUPERSEDES ALL OTHER SHRUB PLANTING DETAILS IN ARLINGTON COUNTY.

ALL PLANTS MUST BE WATERED TWICE ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.



TYPICAL SHRUB PLACEMENT NEAR PARKING LOTS
NOT TO SCALE



SHRUB PLANTING

NOT TO SCALE

ELEVATION
329300.8 (2021)

ARLINGTON VIRGINIA DPR

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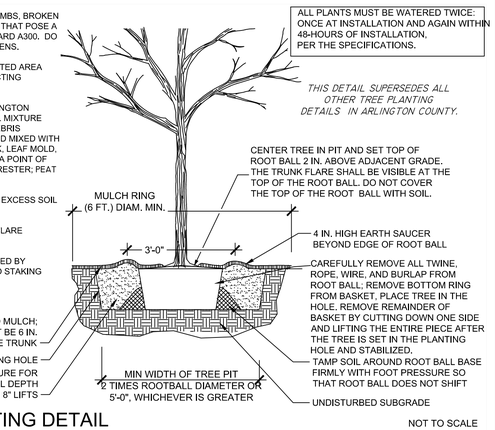

TREE PLANTING DETAIL

NOT TO SCALE

FOR OPEN PLANTING AREAS FREE OF PAVING OR GRATES
329300.1 (2021)

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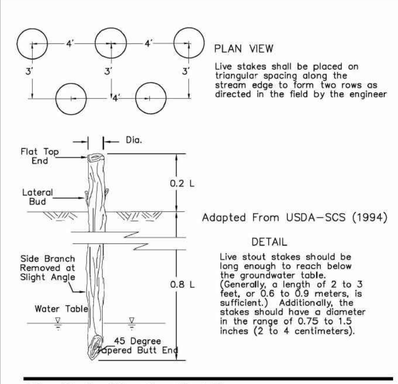
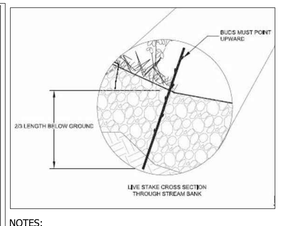


Live Stake Planting Detail

N.T.S.



NOTES:
1. A PLANTING BAR MAY BE USED TO PUNCH A HOLE FOR THE CUTTING. IN SOFTER SOILS, LIVE STAKES MAY BE DIRECTLY PUSHED OR HAMMERED, PROVIDED THE STAKE IS NOT DAMAGED.
2. INSTALL THE LIVE STAKE WITH THE CORRECT SIDE UP, BUDS MUST POINT UPWARD. LIVE STAKES SHOULD BE CUT ON AN ANGLE ON THE BOTTOM AND FLAT ON THE TOP.
3. TWO-THIRDS OF THE LIVE STAKE LENGTH SHALL BE PLANTED BELOW GRADE.
4. TAMP IN AROUND THE CUTTING TO ENSURE THAT THERE ARE NO AIR POCKETS ALONG THE STEM.

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S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

LANDSCAPE NOTES AND DETAILS

DESIGNED: BG
DRAWN: KV
CHECKED: KV

PLOTTED: NOVEMBER 30 2022

SCALE: AS SHOWN

C092.1

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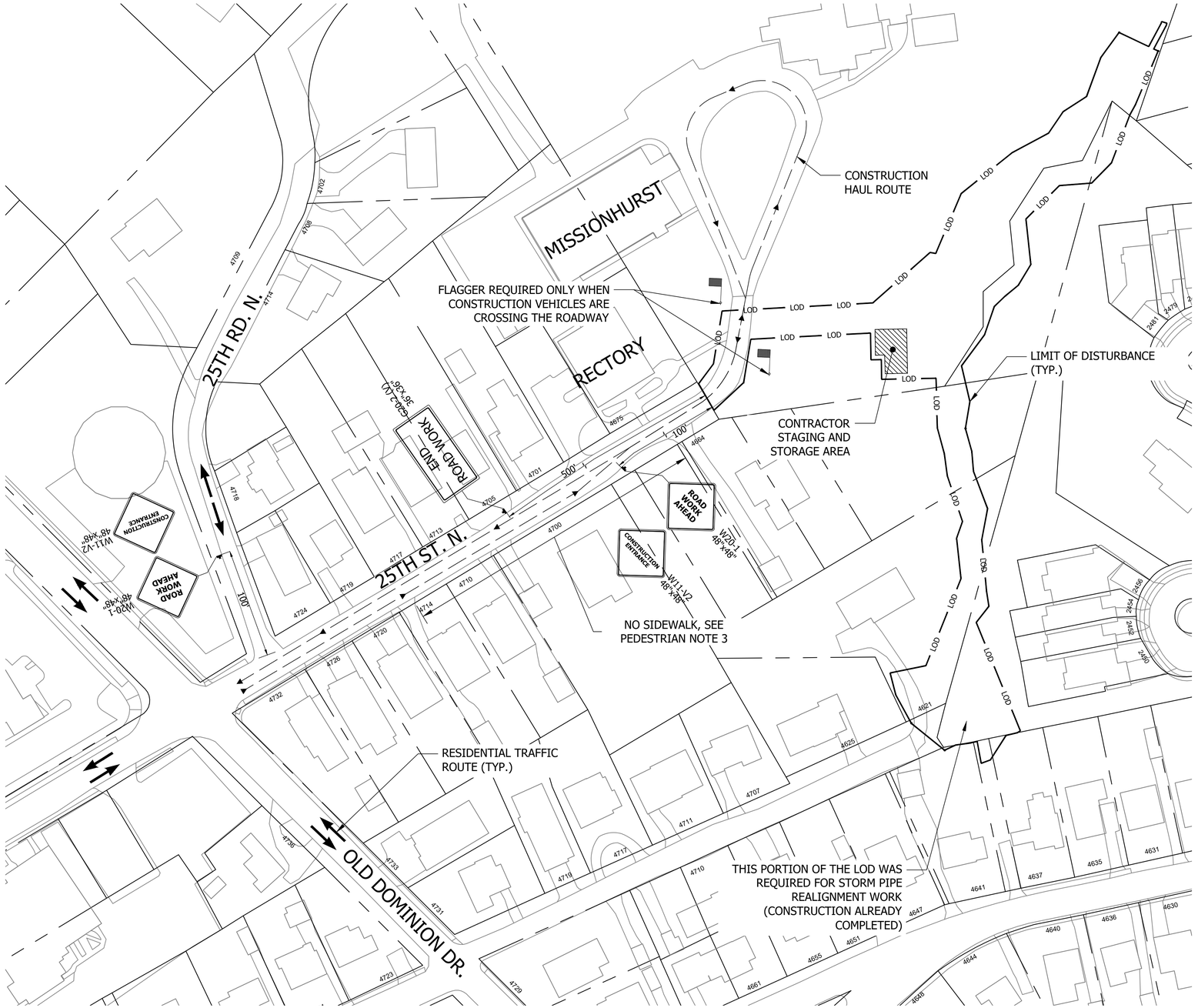

MAINTENANCE OF TRANSPORTATION PLAN

Legend

- TRAFFIC CONTROL SIGN
- FLAGGER
- TRAFFIC DIRECTION
- PEDESTRIAN ROUTE
- CONSTRUCTION HAUL ROUTE

CONSTRUCTION NOTES

1. FOR ALL ARTERIAL STREETS, PORTABLE VARIABLE MESSAGE SIGNS WITH CLOSURE INFORMATION MUST BE INSTALLED AHEAD OF THE PROJECT SITE AT EACH VEHICULAR APPROACH 3 WEEKS PRIOR TO STREET CLOSURE IN LOCATIONS DIRECTED BY THE PROJECT OFFICER.
2. CONTRACTOR SHALL REMOVE EXISTING PAVEMENT MARKINGS IN CONFLICT WITH TEMPORARY PAVEMENT MARKINGS.
3. CONTACT TRANSPORTATION ENGINEERING OPERATIONS AT 703-228-6598 OR 571-437-1077 AND THE PROJECT OFFICER TO APPROVE MARKING LAYOUT 48 HOURS PRIOR TO INSTALLATION OF MARKINGS.
4. ONE LANE CLOSURE IN EACH DIRECTION OF TRAFFIC WILL BE PERMITTED FOR FINAL PAVEMENT OVERLAY.
5. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN THE FLOW OF TRAFFIC ON ANY INTERSECTION WITHIN THE WORK AREA.
6. THE CONTRACTOR SHALL NOTIFY ARLINGTON COUNTY PUBLIC SCHOOLS TWO WEEKS PRIOR TO STARTING CONSTRUCTION.
7. THE CONTRACTOR SHALL SUBMIT ANY REQUESTS FOR TEMPORARY "NO PARKING" RESTRICTIONS TO THE PROJECT OFFICER AT LEAST 3 WORKING DAYS PRIOR TO THE DESIRED ONSET OF RESTRICTIONS. PRIOR TO A REQUEST FOR THE REMOVAL OF ACCESS TO ANY ADA PARKING SPACE THE CONTRACTOR MUST HAVE MADE PROVISION FOR ALTERNATIVE ADA PARKING AS INDICATED ON THE APPROVED PLAN OR AS DIRECTED BY THE PROJECT OFFICER
8. WHEN THE APPROVED PLAN CALLS FOR THE REMOVAL OF ANY PARKING METER THE CONTRACTOR MUST MAKE A REQUEST TO THE PROJECT OFFICER AT LEAST ONE WEEK IN ADVANCE OF THE DESIRED REMOVAL. THE PROJECT OFFICER WILL THEN COORDINATE THE PARKING METER REMOVAL WITH TRAFFIC ENGINEERING AND OPERATIONS.
9. THE CONTRACTOR SHALL MINIMIZE THE DURATION OF ANY BLOCKAGE TO PRIVATE ENTRANCES AND DRIVEWAYS. THE AFFECTED PROPERTY OWNER SHALL BE NOTIFIED A MINIMUM OF 24 HOURS IN ADVANCE OF SUCH ACTIVITIES, AND THE CONTRACTOR SHALL MAKE ALL PRIVATE ENTRANCES AND DRIVEWAYS ACCESSIBLE AT THE CONCLUSION OF EACH WORKDAY.
10. ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
11. ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
12. IN THE EVENT THAT EXISTING FIRE DEPARTMENT CONNECTIONS OR FIRE APPARATUS ACCESS ROADS (FIRE LANES) MUST BE OBSTRUCTED TO FACILITATE CONSTRUCTION ACTIVITIES, CONTACT THE ARLINGTON COUNTY FIRE DEPARTMENT FIRE PREVENTION OFFICE AT 703-228-4644 TO COORDINATE REVIEW AND APPROVAL OF TEMPORARY FIRE DEPARTMENT CONNECTIONS AND/OR FIRE APPARATUS ACCESS ROADS PRIOR TO CREATING THE OBSTRUCTION.
13. PROJECT WORK HOURS SHALL BE AS FOLLOWS: IN ARLINGTON RIGHT-OF-WAY 9:00AM TO 4:00PM (MON-FRI).
14. COORDINATE WITH ARLINGTON COUNTY TRANSIT BUREAU, 703-228-3049, AT LEAST 2 WEEKS PRIOR TO COMMENCEMENT OF WORK APPROVAL, IF TRANSIT IS AFFECTED.
15. CONSTRUCTION DURATION IS EXPECTED TO BE APPROXIMATELY 10 MONTHS.

MOT NOTES:

1. PARKING SHALL BE RESTRICTED BY THE COUNTY AS PART OF THE RIGHT OF WAY PERMIT. CONTACT DES-PERMITTING SECTION, 703-228-4798, AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF WORK.
2. ALL TEMPORARY BUS TRAVEL LANES MUST BE MINIMUM 11' WIDE.
3. THE CONTRACTOR SHALL MAINTAIN ADA ACCESSIBLE PARKING SPACES AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT DES - PERMITING, 703-228-4798, TO COORDINATE RELOCATION OF EXISTING ADA ACCESSIBLE PARKING SPACES OR TO INSTALL TEMPORARY SIGNAGE OUT OF AND ADJACENT TO THE WORK ZONE AS CONSTRUCTION PROGRESSES. MULTIPLE RELOCATIONS MAY BE NECESSARY DURING EACH PHASE.

PEDESTRIAN NOTE:

1. PEDESTRIANS SHALL BE APPROPRIATELY DIRECTED WITH ADVANCED WARNING SIGNS PLACED AT INTERSECTIONS, TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY IN ORDER TO PREVENT CONFLICT WITH MIDBLOCK WORK SITES.
2. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, INCLUDING ACCESS TO BUS STOP SHELTERS.
3. PEDESTRIAN TRAFFIC SHALL BE SEPARATED FROM WORK ZONES WITH APPROPRIATE MEASURES IN ACCORDANCE WITH MUTCD.
4. PEDESTRIANS SHALL NOT BE LED INTO CONFLICT WITH WORK SITE EQUIPMENT, OPERATIONS, AND/OR VEHICLES MOVING THROUGH OR AROUND THE WORK SITE.

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PROFESSIONAL ENGINEER

APPROVALS	DATE
Amy P Flaum QUALITY CONTROL ENGINEER	08/04/22
CONSTRUCTION SECTION SUPERVISOR	8/5/22
WATER, SEWER, STREETS BUREAU CHIEF	8/4/22
Dennis M. Leach TRANSPORTATION DIRECTOR	08/03/22
Jennifer Tastad PROJECT MANAGER	08/17/22

REVISIONS	DATE

STORM DRAINAGE IMPROVEMENTS
S42D
HEADWATERS DONALDSON RUN TRIBUTARY B
(ANALOSTAN BRANCH)

MAINTENANCE OF TRAFFIC PLAN

DESIGNED: ML
DRAWN: ML
CHECKED: AP

PLOTTED: NOVEMBER 30 2022

SCALE:
0 25 50
GRAPHIC SCALE

C121.1

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