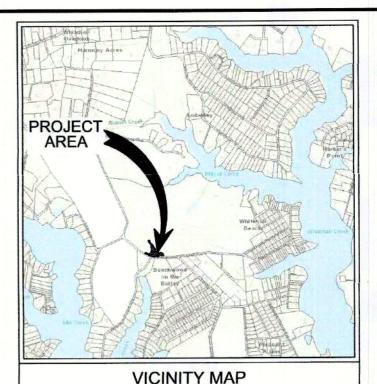
SHEET INDEX

DESCRIPTION TITLE SHEET LEGEND . **EXISTING CONDITIONS PLAN** PROPOSED CONDITIONS AND SEDIMENT EROSION CONTROL STANDARD DETAILS STANDARD DETAILS SEDIMENT AND EROSION CONTROL NOTES AND DETAILS PLANTING PLAN. PLANTING DETAILS DRAINAGE AREA MAP

HIDDEN POINT ROAD LINED WATERWAY OR OUTLET - CPS 468



VICINITY MAP SCALE: 1"=2000'

COPYRIGHT: ADC THE MAP PEOPLE PERMITTED USE NO. 20113300

DAVID J. WALLACE P.E.

701 CHESAPEAKE AVENUE

BUSINESS PH. 410.544-1225

ANNAPOLIS, MARYLAND 21403

INFORMATION STATEMENT

UNDERWOOD & ASSOCIATES

ANNAPOLIS, MARYLAND 21401

BUSINESS PH. (OFFICE) 410.849.3211

Note: Cut and Fill quantities provided do not represent bid quantities. These quantities do not distinguish between topsoil, structural fill or embankment material, nor do they reflect consideration of undercutting or removal of unsuitable material. The contractor shall familiarize himself with site

1753 EBLING TRAIL

CONSULTANT'S CERTIFICATION The Developer's plan to control silt and erosion is adequate to contain the silt and erosion on the property DAVID J. WALLACE City ANNAPOLIS State MD Zip Code 21403 within the Severn River Watershed. To the best of my professional knowledge, judgment, and belief, the design, construction drawings, and specifications meet applicable Maryland NRCS standards and specifications. Furthermore, to the best of my knowledge, judgment, and belief, the proposed work complies with all total, State, and Federal laws, rules, and regulations.

covered by the plan. I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of this site, and was prepared in accordance with the requirements of the AASCD Plan Submittal Guidelines and the current Maryland Standards and Specifications for Soil Erosion and Sediment Control. I have reviewed this erosion and sediment control plan with the owner/developer.

MD Land Surveyor License # MD Landscape Architect #

Address 701 CHESAPEAKE AVENUE

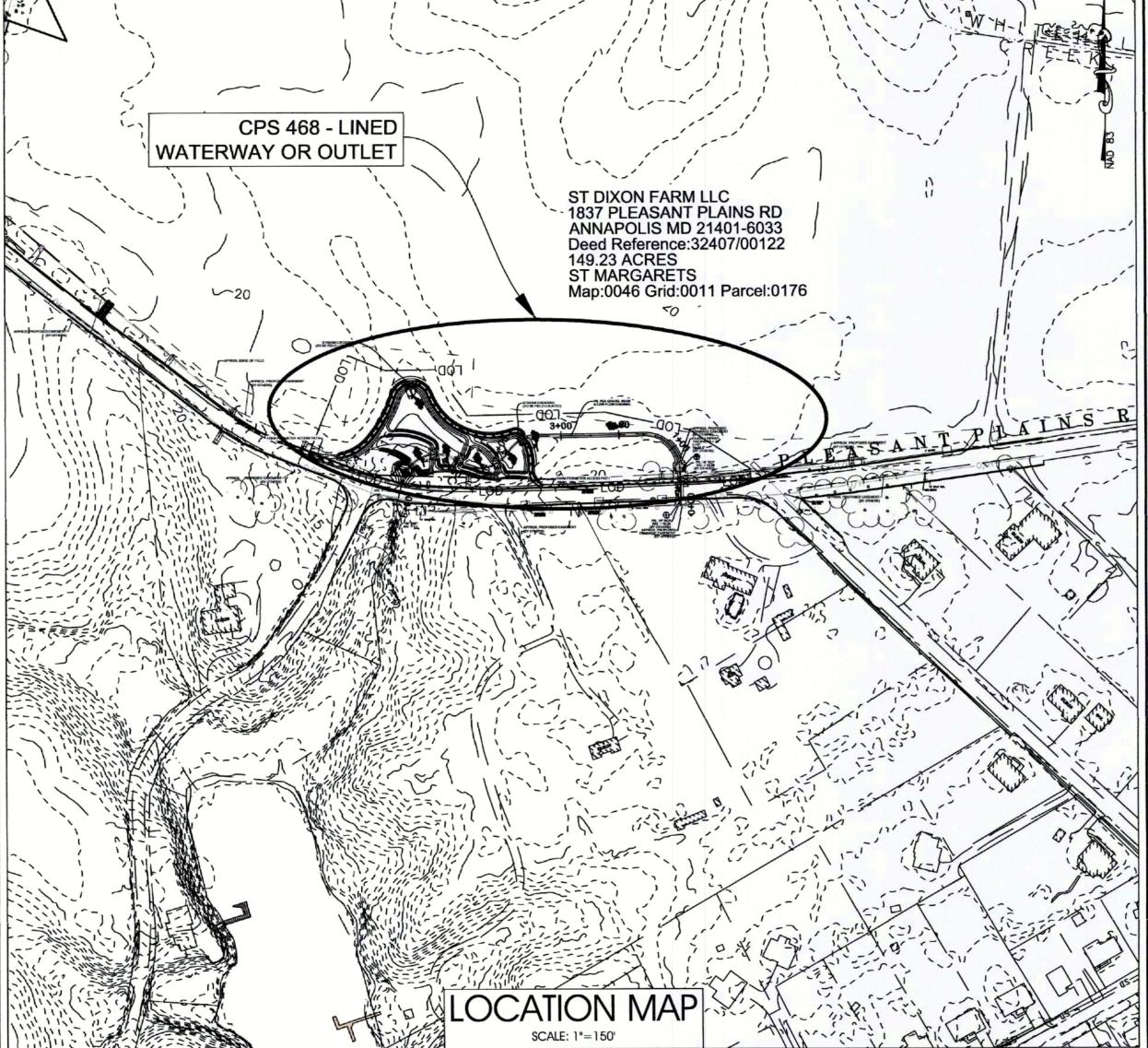
NOTE: The consultant's certification must be signed and sealed by a professional engineer if the site lie

SEQUENCE OF CONSTRUCTION

THE BELOW NOTED TIMES ARE APPROXIMATE AND REPRESENT WORKING DAYS. TASKS #4, #5, #6, AND #7 MAY BE WORKED ON SIMULTANEOUSLY. THE SEQUENCE MAY BE ALTERED WITH APPROVAL FROM THE ENGINEER AND ANNE ARUNDEL SEDIMENT CONTROL INSPECTOR.

- STAKE OUT, FLAG, OR OTHERWISE DELINEATE THE LIMIT OF DISTURBANCE. (1 DAY)
- NOTIFY ANNE ARUNDEL SOIL CONSERVATION DISTRICT AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT TO REVIEW
- INSTALL STABILIZED CONSTRUCTION ENTRANCE(S) AND ANY OTHER PERIMETER SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON
- THE APPROVED PLANS. (1 DAY) AFTER OBTAINING APPROVAL FROM THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT, COMMENCE ANY NECESSARY CLEARING & GRUBBING OR OTHER SITE PREPARATION WORK AS SHOWN ON PLAN. ONLY CLEAR THAT AREA WHICH CAN BE STABILIZED IN ONE DAY (10 DAYS)
- CONSTRUCT STREAM RESTORATION IN ACCORDANCE WITH THE APPROVED PLANS. (20 DAYS)
- 6. STABILIZE ALL REMAINING DISTURBED AREAS ACCORDING TO 2019 STABILIZATION FOR STREAM RESTORATION ACTIVITY AND VEGETATIVE ESTABLISHMENT GUIDELINES AND PREPARE FOR PLANTING. (2 DAYS)
- PLANT SITE ACCORDING TO PLANTING PLAN AND SPECIFICATIONS. (3 DAYS) 8. RESTORE REMAINING AREAS TEMPORARILY DISTURBED BY CONSTRUCTION TRAFFIC [ROADS, FIELDS, ETC] TO PRE-CONSTRUCTION
- ONCE THE SITE IS 95% STABILIZED AND WITH APPROVAL OF THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT, REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROL DEVICES. (1 DAY)

TOTAL PROJECT DURATION: 41 DAYS



NOTE TO CONTRACTOR: EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.

1A. OWNER/ DEVELOPER:

ST DIXON FARM LLC

1837 PLEASANT PLAINS RD

ANNAPOLIS MD 21401-6033

Hydrologic Soil Group Rating - D.

2. GENERAL DESCRIPTION OF PREDOMINATE SOIL TYPE:

CxA - Cumberstone-Mattapex complex, 0 to 2 percent Slopes

3. EXISTING ZONING IS OPEN SPACE AND RESIDENTIAL LOW DENSITY

5. Total area of site is: 11,582,082.34 square feet = 265.89 Acres

Total area disturbed is: 99,914.74 sauare feet = 2.29 Acres±

6. Total cut on site: 196.07 CU YDS Total fill: 1,295.03 CU YDS

conditions which may affect the work.

STORED IN THE STOCKPILE AREA UNTIL USED ON-SITE.

4. PROPERTY CAN BE FOUND AT TAX MAP 5295, GRID H8, H9, J8 & J9, PARCEL 0176/0400.

STOCKPILE NOT TO EXCEED 15' IN HEIGHT OR HAVE SIDE SLOPES STEEPER THAN 2:1

PROJECT OUTO	COMES
STREAM RESTORATION	598 LINEAR FEET
WETLAND CREATION / RESTORATION	82,093.0 SF / 1.88 ACRES
SHALLOW AQUATIC BEDS	38,738.5 SF / 0.89 ACRES
NATIVE PLANTINGS	3,400 PLANTS

PERMITS	PERMITS #
ANNE ARUNDEL COUNTY SOIL CONSERVATION DISTRICT	xxxx
MDE NON-TIDAL WETLANDS & WATERWAY CONSTRUCTION	NA-NON-
USACE	JURISDICTIONAL

APPROVALS

UNDERWOOD & ASSOCIATES A DESIGN/BUILD Co. 1753 EBLING TRAIL + ANNAPOLIS, MD 21401 tel. 410-849-3211 fax. 410-849-2136

DAVID J. WALLACE, P.E. PROFESSIONAL CERTIFICATION

I, DAVID J. WALLACE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 11466 EXPIRATION DATE: MAY 28, 2025.

> DAVID J. WALLACE, P.E. 701 CHESAPEAKE AVENUE ANNAPOLIS, MARYLAND 21403 BUSINESS PH. 410.544.1225

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	Scale	AS SHOWN
	Drawn By	J.K./B.L./A.
	Approved By	K.E
	Sheet No.	1 Of 1
-	Project No.	23-04
-	Proposal No.	

TITLE SHEET HIDDEN POINT ROAD

JANUARY 26, 2024

LINED WATERWAY OR OUTLET MAP 5295, GRID H-8, H-9, J-8 & J-9, PARCEL 0400 FORMERLY MAP 0046, GRID 0011, PARCEL 0176 FORMERLY MAP 0046, GRID 0005, PARCEL 0400 3TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

35' CHANNELWARD

MINOR CONTOURS

MAJOR CONTOURS

TRAVERSE POINT

BENCH MARK

STREAMLINE

BUILDING

RIPRAP

ROAD EDGE

ROCK OUTCROP

WOOD FENCE

CHAIN LINK FENCE

PROPERTY BOUNDARY

ENCROACHMENT LINE

- 2. EXISTING TOPOGRAPHY AND SURFACE FEATURES ARE SHOWN BASED ON LIDAR PROVICED BY AACO, COLLECTED 2020.
- 3. THE COORDINATES, BEARINGS, AND ELEVATIONS SHOWN HEREON ARE BASED ON THE MARYLAND STATE SYSTEM OF PLANE COORDINATES NAD 83.
- 4. EXISTING UTILITIES AND OBSTRUCTIONS HAVE BEEN SHOWN FROM AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. OWNER/DEVELOPER, NOR UNDERWOOD & ASSOCIATES WARRANTS OR GUARANTEES THE ACCURACY OR NEITHER THE ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS. THE COMPLETENESS OF THE EXISTING UTILITY INFORMATION SHOWN HEREON. CONTRACTOR SHALL TAKE ANY AND ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO EXISTING UTILITIES, AND ANY DAMAGE TO THEM RESULTING FROM HIS OPERATIONS SHALL BE IMMEDIATELY REPAIRED AT HIS EXPENSE. AS A MINIMUM PRECAUTION, CONTRACTOR SHALL NOTIFY MISS UTILITY (800-257-7777) AT LEAST FIVE DAYS PRIOR TO ANY EXCAVATION, BORING, PILE DRIVING, DIGGING, OR OTHER CONSTRUCTION ACTIVITY TO OBTAIN FIELD LOCATIONS OF EXISTING GAS, ELECTRIC, WATER, SEWER, OR TELEPHONE LINES, SHALL DETERMINE THE LOCATION OF ANY TELEVISION CABLES IN THE VICINITY OF THE WORK AREA, AND SHALL PROVIDE ANY REQUIRED BRACING OF POWER POLES IN THE VICINITY OF THE WORK AREA AT HIS EXPENSE. UTILITIES SHALL BE RELOCATED AT OWNER'S EXPENSE ONLY WITH OWNER'S SPECIFIC WRITTEN APPROVAL.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR RESTORING TO ORIGINAL CONDITION ANY EXISTING FENCES, PAVED AREAS, SIDEWALKS, MAILBOXES, ETC. THAT ARE REMOVED OR DAMAGED DURING CONSTRUCTION AND ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION, UNLESS OTHERWISE INDICATED.
- 6. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST ANNE ARUNDEL COUNTY DETAILS AND SPECIFICATIONS.
- 7. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK THAT WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
- 8. THESE DRAWINGS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE MOST CURRENT VERSION OF OSHA STANDARDS AND/OR REGULATIONS.
- 9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION TO THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY CHANGE IN THIS PLAN WITHOUT WRITTEN AUTHORIZATION FOR SAID CHANGE FROM THE ENGINEER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR. SAID CHANGES MAY WARRANT COUNTY REVIEW AND APPROVAL.
- 10. THE CONTRACTOR SHALL NOTE THAT IN THE CASE OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSION SHALL GOVERN.
- 11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF HIS CONSTRUCTION WITH THE CONSTRUCTION BY OTHER CONTRACTORS.
- 12. THESE DRAWINGS SHALL BE USED ONLY FOR:
- -- INSTALLATION OF SEDIMENT CONTROL MEASURES
- -- CLEARING AND GRADING INSTALLATION OF ONSITE STREAM RESTORATION.
- 13. ALL EXISTING UTILITIES SHALL BE TEST PITTED/LOCATED AS NECESSARY AND IN ADVANCE OF THE PROPOSED CONSTRUCTION. IN ORDER TO PROPERLY MAKE ALL REQUIRED UTILITY CROSSINGS AND/OR CONNECTIONS. ANY DISCREPANCIES OR UTILITY CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
- 14. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO COMPLETE SUCH WORK.
- 15. THE CONTRACTOR SHALL IMMEDIATELY ALERT THE COUNTY OF ANY DISCREPANCIES BETWEEN THE PROJECT DOCUMENTS AND FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT APPROVAL OF THE COUNTY.
- 17. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INCLUDING THE FOLLOWING AGENCIES AT LEAST FIVE (5) WORKING DAYS PRIOR TO WORK:

ANNE ARUNDEL COUNTY DEPT. PUBLIC WORKS ANNE ARUNDEL COUNTY DEPT. PLANNING AND ZONING ANNE ARUNDEL COUNTY DEPT. RECREATION AND PARKS

410.222.8400 410.222.7347 410.222.7317 410.222.7780

ANNE ARUNDEL COUNTY DEPT. OF INSPECTIONS AND PERMITS BALTIMORE GAS AND ELECTRIC COMPANY 410.234.5691

17. DISTURBANCE WITHIN EXISTING PAVING MUST BE STABILIZED IMMEDIATELY USING COLD - PATCH BITUMINOUS MATERIAL. PERMANENT PAVEMENT PATCHING IN THESE AREAS WITH HOT-MIX BITUMINOUS MATEERIAL MUST BE COMPLETED WITHIN 14-30 DAYS AND MATCH THE EXISTING PAVING SECTION.

19. PIPE ELEVATIONS REFER TO THE INVERT PIPES UNLESS OTHERWISE NOTED.

APPROX APPROXIMATELY CRZ CRITICAL ROOT ZOON CWD CLEAR WATER DIVERSION CUBIC YARD CY DIAMETER AT BREAST HEIGHT DRAINAGE PIPE **ELEVATION** FEET INCH INVERT LIMIT OF DISTURBANCE LOD MAX MAXIMUM MINIMUM MANHOLE ocs **OUTLET CONTROL STRUCTURE** PRE-FORMED SCOUR POOL **PSP** RCP REINFORCED CONCRETE PIPE RIP RAP SWALE REGENERATIVE STREAM CONVEYANCE RSC SQUARE FEET SILT FENCE SSF SUPER SILT FENCE TYPICAL WETLAND

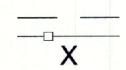
ABBREVIATIONS

PROPOSED DEMOLITION LEGEND

WATER SURFACE ELEVATION

ROCK REMOVAL FENCE REMOVAL TREE REMOVAL

WETLAND BUFFER



WB

WSEL

GRADING NOTES:

- UTILIZE TREE MOUNDS/WELLS AS REASONABLE TO PROMOTE THE SURVIVAL OF MATURE, NATIVE FOREST
- BOULDER OUTCROPS SHALL BE UTILIZED TO STABILIZE STEEP SLOPES (<2:1) EQUAL OR GREATER THAN 3 FEET IN HEIGHT COARSE WOODY MATERIAL IS TO BE SECURELY PLACED AT CONTRACTOR'S DISCRETION TO PROMOTE HABITAT DIVERSITY
- IRRIGATION CURTAIN INSTALL AS NEEDED TO PROMOTE BASEFLOW OVER INSTALLED COBBLE RIFFLES. IRRIGATION CURTAINS SHALL BE LOCATED IMMEDIATELY UPSTREAM OF A WEIR/BERM IN THE EXISTING DITCH/CHANNEL. AN IRRIGATION CURTAIN IS INSTALLED BY DISRUPTING THE INSTALLED PEA GRAVEL TREATMENT SEAM AND INSTALLING LESS POROUS MATERIALS (EG. CLAY) AS DETERMINED TO BE NECESSARY. CONSULT WITH
- WHILE GRADING IS REPRESENTED ON THIS PLAN AS PERFECT SLOPES AND ARCS, IT SHOULD BE NOTED THAT ROUGH GRADES THAT PROMOTE MICRO-TOPOGRAPHY ARE DESIRABLE FOR HABITAT RESTORATION.
- STREAM CROSSING SHALL BE INSTALLED AS NECESSARY (FIELD LOCATED) TO FACILITATE EXISTING USES.
- REMOVE AND REPLACE EXISTING FENCE AS NEEDED. PROPOSED FENCE SHALL MATCH THE STYLE AND QUALITY OF EXISTING FENCE.

SEDIMENT AND EROSION CONTROL NOTES:

- STABILIZE SURFACE WITH WOOD CHIPS AND NATIVE WARM SEASON GRASS SEED BLEND AT THE END OF EACH DAY. ONLY DISTURB THAT AREA WHICH CAN BE STABILIZED IN ONE WORKING DAY.
- MINIMIZE CLEARING WITHIN THE APPROVED LIMITS OF DISTURBANCE AND TAKE SPECIAL CARE TO AVOID IMPACTS TO MATURE, NATIVE FOREST
- PUMPS, HOSES, AND FILTER BAGS FOR LOCALIZED DEWATERING WITHIN THE WORK AREA SHALL BE LOCATED AT CONTRACTORS DISCRETION. REFER TO DETAILS FOR MORE INFORMATION.
- STOCKPILE NOT TO EXCEED 15' IN HEIGHT OR HAVE SIDE SLOPES STEEPER THAN 2:1.

PLANTING NOTES:

- SEE PLANTING DETAILS FOR PLANT SCHEDULE
- CONTRACTOR TO USE TOTALS IN PLANT SCHEDULE FOR MITIGATION PURPOSES
- SUBSTITUTIONS AND ADDITIONS OF SIMILAR PLANTS FROM THE USFWS CHESAPEAKE NATIVE PLANT GUIDE ARE ACCEPTABLE
- PLANT LOCATIONS APPROXIMATE PLANTINGS SHALL BE PLACED BASED ON FINAL SITE CONDITIONS
- CONTRACTOR TO LEAVE A 6' WIDE PATH ALONG THE TOPS OF BERMS TO ALLOW FOR ADAPTIVE MANAGEMENT

MINOR CONTOURS MAJOR CONTOURS PROPOSED SPOT ELEVATION RIFFLE GRADE CONTROL STRUCTURE

PROPOSED COBBLE STRUCTURE

CHANNEL FILL AND WOODY DEBRIS

BOULDER STABILIZATION

PROPOSED SAND FILL

----- 10 -----

THE RESERVE STREET STREET, STREET

- - - -12 - - - -

DRAINAGE AREA BOUNDARY SOIL TYPE BOUNDARY -----MdE-----EX 100-YR FLOODPLAIN (HEC-RAS) ——— FP ——— EX 100-YR FLOODPLAIN BUFFER ----- FB -----GEOTECHNINCAL SOIL BORING

____ _____ 08 50 80

REINFORCED CONCRETE PIPE ELECTRIC LINE (APPROX. EXTENTS) — E — E — -----// ------____x ___ _____

 $\bigcirc = \bigcirc = \bigcirc = \bigcirc$

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XXXX

—— мнw ——

----- MLW ----

GUARD RAIL ELECTRIC LINE (APPROX. EXTENTS) — E — E TREE LINE

WETLANDS ----- WL -----WETLAND BUFFER ----- WB -----STREAM EASEMENT ____ EXISTING PIER SPECIMEN TREE

BUCKHEAD EXISTING STORM DRAIN UTILITY POLE **BIORETENTION AREA**

SPOT ELEVATION MEAN HIGH WATER MEAN LOW WATER

----12---- ——10 — 880

PROPOSED BOULDER OUTCROP PROPOSED MEAN HIGH WATER PROPOSED MEAN LOW WATER

PROPOSED GRAVEL CROSS SECTION LINE SPARTINA ALTERNIFLORA

(LOW MARSH) SPARTINA PATENS (HIGH MARSH) LOG SILL WITH COBBLE FILL

BOULDER OUTCROP SPARTINA PATENS SPARTINA ALTERNIFLORA

SAND/WOOD CHIP MIX SUBMERGED COBBLE

PROPOSED GRADE PROPOSED 100 YR FLOOD WSEL PROPOSED BASEFLOW WSEL PROPOSED COBBLE WEIR PROPOSED CASCADE

EXISTING GRADE

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2000

PROPOSED LOG SILL **EXCAVATION AREA BOULDER STRUCTURES** ROAD EMBANKMENT STABILIZATION 000000

COMMON BORROW FILL MATERIAL EPHEMERAL VALLEY RESTORATION (EVR) CLAY BLOCK (CB)

LIMIT OF DISTURBANCE (L.O.D.) ---- LOD-----REINFORCED SILT FENCE FILTER LOG — FL-12 — TREE PROTECTION FENCING _____TPF____ STABILIZED CONSTRUCTION ENTRANCE S.C.E. 14/1/1/1/ STABILIZED CONSTRUCTION ACCESS TEMPORARY SAND BAG DIKE MODIFIED RIPRAP SEDIMENT TRAP PROPOSED 6" SLOTTED HDPE PIPE &

PEA GRAVEL UNDERDRAIN **DEWATERING PUMP & DIVERSION PIPE** SILT FENCE (SF) ----- SF -----SUPER SILT FENCE (SSF) PROPOSED STAGING AND STOCKPILE AREA

FILTER BAG SANDBAG DIVERSION PIPE TURBIDITY CURTAIN with ANCHOR AND BUOY

---- SSF----**>>>>>>**

PLANTING SCHEDULE

Planting Zone	Symbol	Total Area (Sq.Ft.)	Common Name	Scientific Name	Туре	Size	Distribution	Avg Spacing (ft)	Quantity	Credit Area (SF per plant)	Total Credit Area (SF)	Description					
	0 0 0 0 0 0 0		Water Lily	Nymphae odorata	Herbaceous	Qt	Random	5	168	2	336						
Shallow Watlanda	0 0 0 0 0 0 0 0	16.757	Bladderwort	Utricularia spp.	Herbaceous	Qt	Random	5	168	2	336	Within shallow perrenially					
Shallow Wetlands	8 8 8 8 8 8 8 8	16,757	Redhead Grass	Potamogeton perfoliatus	Herbaceous	Qt	Random	5	168	2	336	intermittently flooded ar					
			Golden Club	Orontium aquaticum	Herbaceous	Qt	Random	5	168	2	336						
			Virginia Iris	Iris virginica	Herbaceous	Qt	Random	5	200	2	400						
			Cardinal Flower	Lobelia cardinalis	Herbaceous	Qt	Random	5	200	2	400						
			Cinnamon Fern	Osmunda cinnamomea	Herbaceous	Qt	Random	5	200	2	400						
			Dense Blazing Star	Liatris spicata	Herbaceous	Qt	Random	5	200	2	400						
			Little Bluestem	Schizachryium scoparium	Herbaceous	Qt	Random	5	200	2	400						
			Path Rush	Juncus tenuis	Herbaceous	Qt	Random	5	200	2	400						
			Royal Fern	Osmunda regalis	Herbaceous	Qt	Random	5	200	2	400	1					
			New England Aster	Symphotrichum novae angliae	Herbaceous	Qt	Random	5	200	2	400	1					
			Swamp Milkweed	Asclepias incarnata	Herbaceous	Qt	Random	5	200	2	400						
			American Cranberry	Vaccinium macrocarpon	Shrub	Gal, 4'	Random	8	140	50	7,000						
			Dwarf Huckleberry	Gaylussacia dumosa	Shrub	Gal, 4'	Random	8	140	50	7,000						
		44,795	Black Huckleberry	Gaylussacia baccata	Shrub	Gal, 4'	Random	8	140	50	7,000						
			Inkberry	Ilex glabra	Shrub	Gal, 4'	Random	8	140	50	7,000						
Riparian Wetlands			44,795	44,795	44,795	44,795	44,795	Swamp Azalea	Rhododendron viscosum	Shrub	Gal, 4'	Random	8	140	50	7,000	
•			Smooth Alder	Alnus serrulata	Understory tree	6'	Random	36	9	75	675						
			Summersweet	Clethra alnifolia	Understory tree	6'	Random	36	9	75	675						
				Swamp Bayberry	Myrica heterophylla	Understory tree	6'	Random	36	9	75	675					
				Wax Myrtle	Myrica cerifera	Understory tree	6'	Random	36	9	75	675					
			Bald Cypress	Taxodium distichum	Tree	1" calip., 6'	Random	23	10	100	1,000						
			American Beech	Fagus grandifolia	Tree	1" calip., 6'	Random	23	10	100	1,000						
			American Persimmon	Diospyros virginiana	Tree	1" calip., 6'	Random	23	10	100	1,000						
			Atlantic White Cedar	Chamaecyparis thyoides	Tree	1" calip., 6'	Random	23	10	100	1,000	1					
			Fringe Tree	Chionanthus retusa	Tree	1" calip., 6'	Random	23	10	100	1,000						
			Pitch Pine	Pinus rigida	Tree	1" calip., 6'	Random	23	10	100	1,000	1					
			Serviceberry	Amelanchier canadensis	Tree	1" calip., 6'	Random	23	10	100	1,000						
			Black Gum	Nyssa sylvatica	Tree	1" calip., 6'	Random	23	10	100	1,000						
			Sweetbay Magnolia	Magnolia virginiana	Tree	1" calip., 6'	Random	23	10	100	1,000						
			Bladder Sedge	Carex intumescens	Herbaceous	Qt	Random	3	20	2	40						
	+ + + + + + +		Fringed Sedge	Carex crinita	Herbaceous	Qt	Random	3	20	2	40	Within the footprint					
Weirs	+ + + + + + +	860	Bushy Bluestem	Andropogon glomeratus	Herbaceous	Qt	Random	3	20	2	40	constructed riffle weirs					
	[+] +] +] +] +] +]		Broomsedge	Andropogon virginicus	Herbaceous	Qt	Random	3	20	2	40	limits of baseflow, bet cobbles					
	++++++		Tussock Sedge	Carex stricta	Herbaceous	Qt	Random	3	20	2	40	COSSICS					
Turf		71,874		Chewings Red Fescure	Grass	1 lb per 5000 SF	Spread	Spread	14.37	-		Restore lawn after construction					

DAVID J. WALLACE, P.E. PROFESSIONAL CERTIFICATION UNDERWOOD & ASSOCIATES , DAVID J. WALLACE, CERTIFY THAT THESE LANDSCAPE ARCHITECTURE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED A DESIGN/BUILD Co. PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 11466 EXPIRATION DATE: MAY 28, 2025.

1753 EBLING TRAIL . ANNAPOLIS, MD 21401

DAVID J. WALLACE, P.E. 701 CHESAPEAKE AVENUE ANNAPOLIS, MARYLAND 21403 BUSINESS PH. 410.544.1225



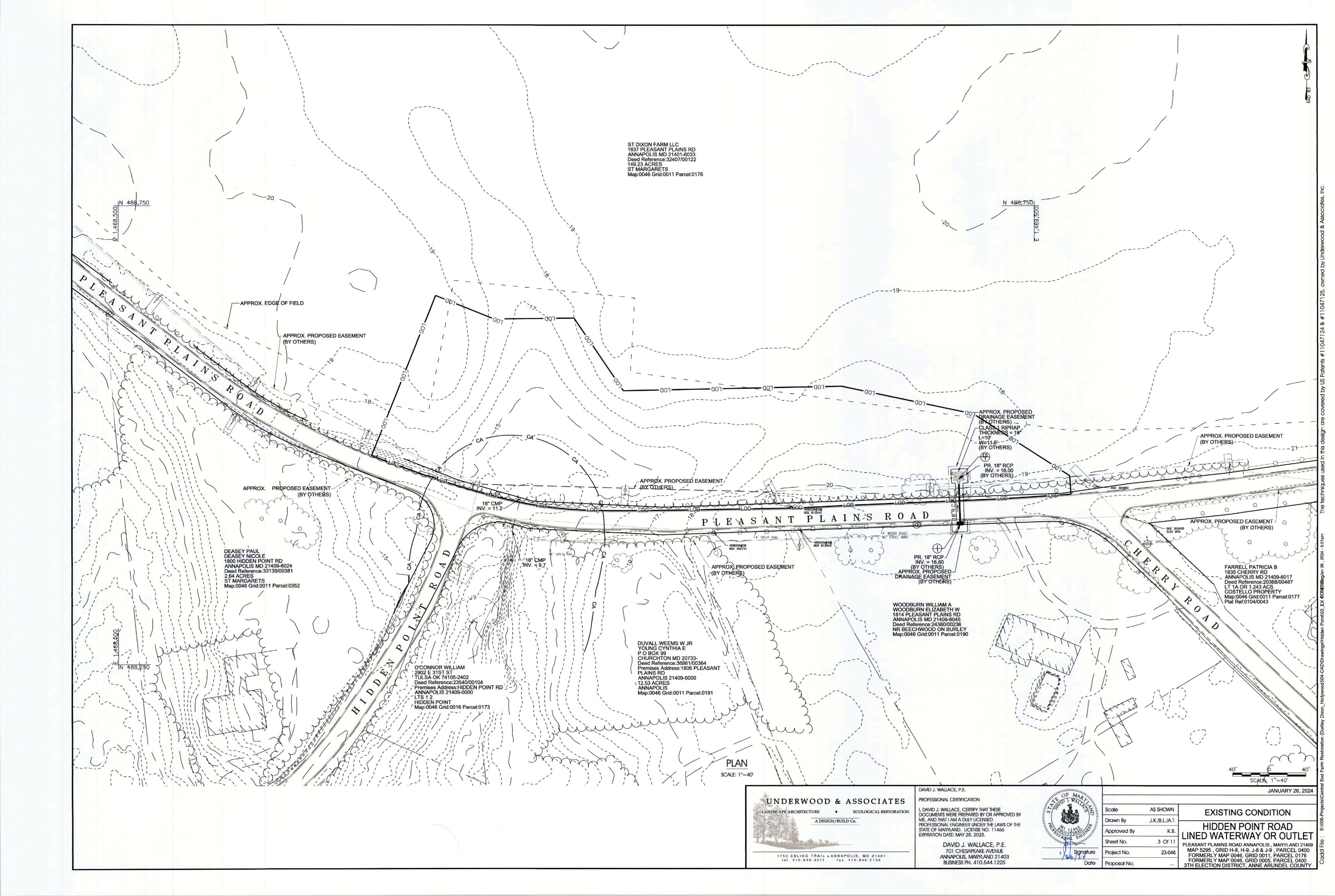
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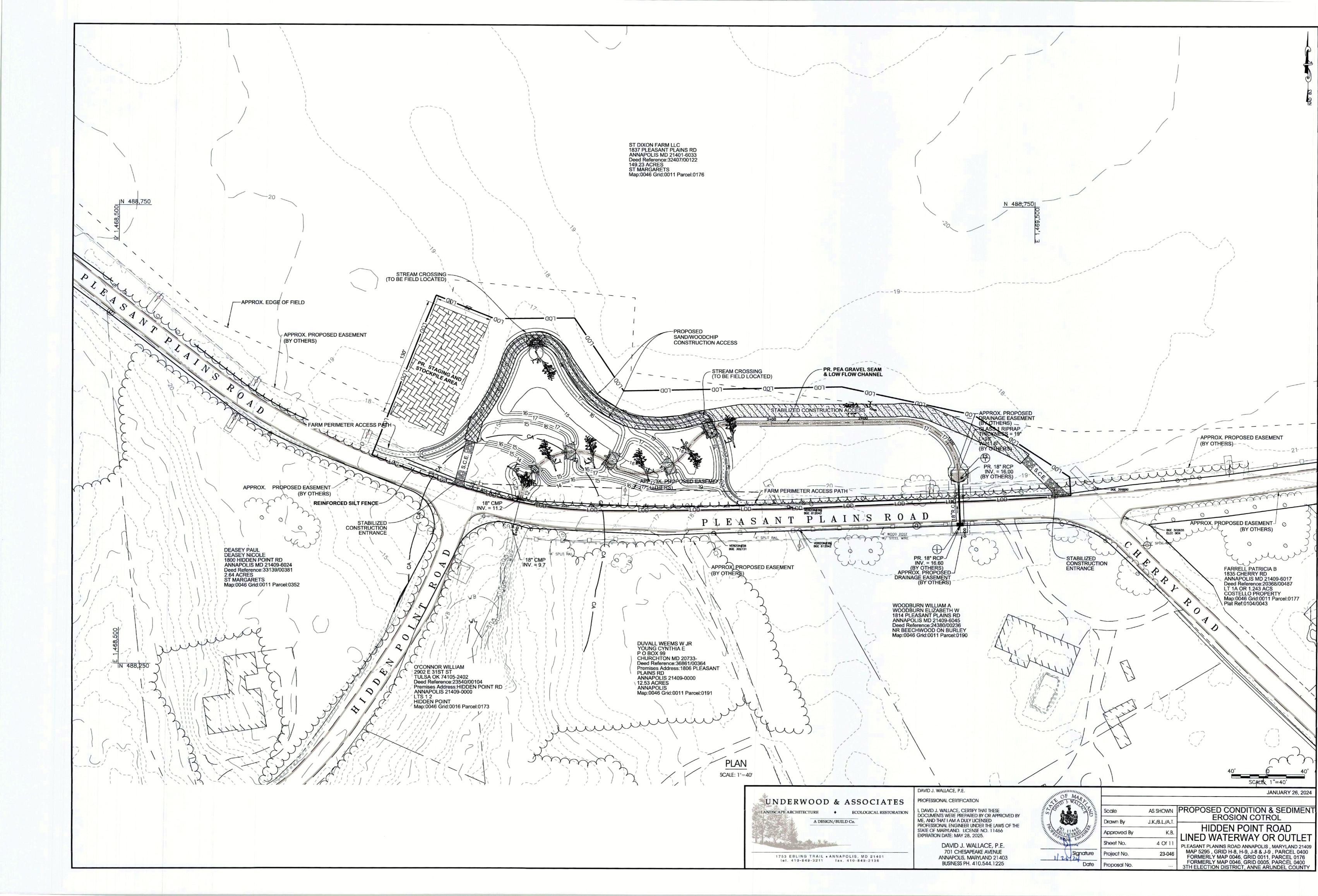
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Hudinin,	Sheet No.	
Signature	Project No.	
Date	Proposal No.	

AS SHOWN J.K./B.L./A.T. 2 Of 11

LEGEND HIDDEN POINT ROAD

LINED WATERWAY OR OUTLE PLEASANT PLANINS ROAD ANNAPOLIS, MARYLAND 21409 MAP 5295, GRID H-8, H-9, J-8 & J-9, PARCEL 0400 FORMERLY MAP 0046, GRID 0011, PARCEL 0176 FORMERLY MAP 0046, GRID 0005, PARCEL 0400 3TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

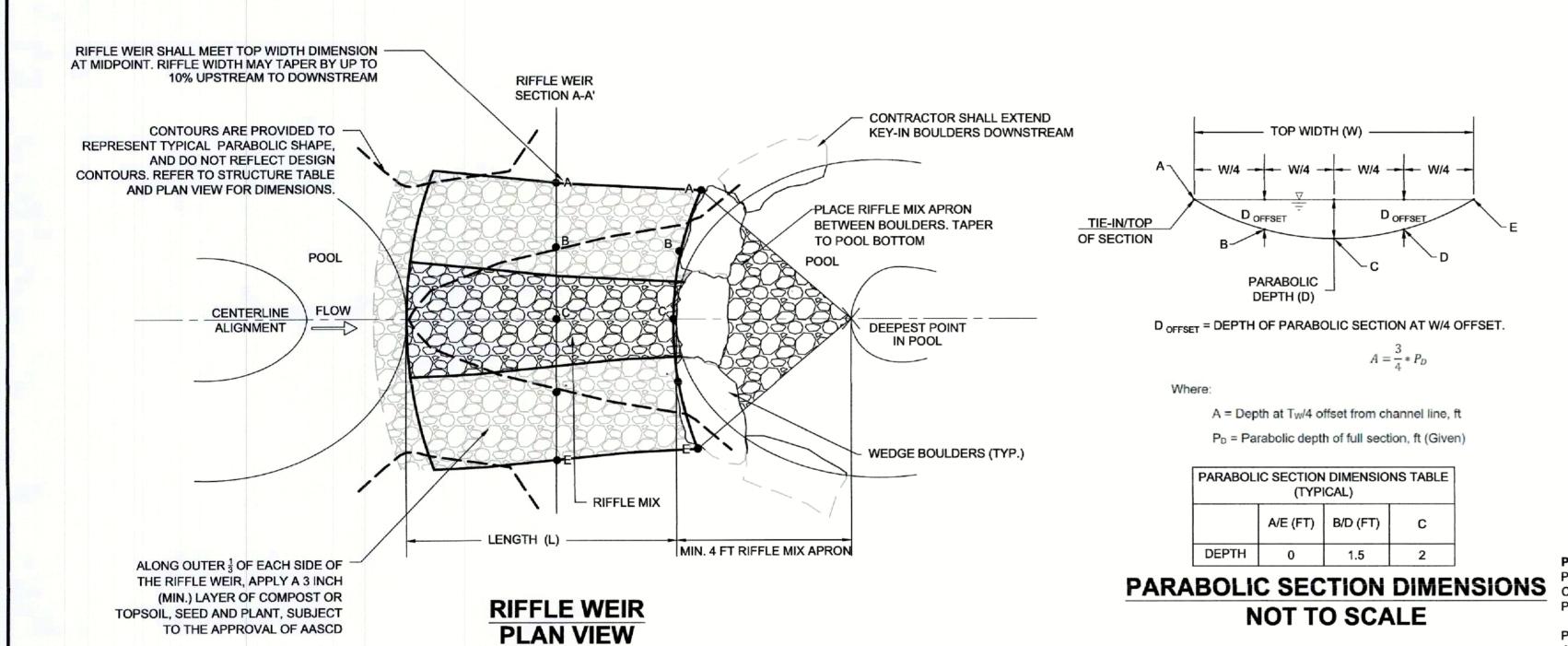


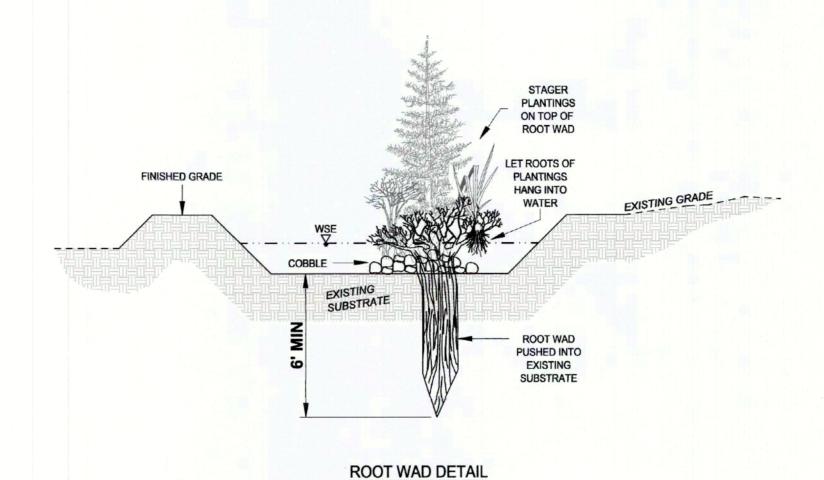


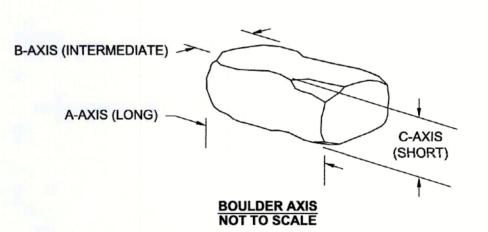
LOW-FLOW WSEL IS 2:1. ANY SLOPES STEEPER THAN 3:1 REQUIRE SOIL LOW-FLOW WSEL STABILIZATION MATTING TOP WIDTH (W) (ELEVATION BACKWATERED BY DOWNSTREAM RIFFLE WEIR OR CASCADE WEIR) PR. 100-YR WSEL (REFER TO DESIGN REPORT) MAXIMUM POOL MIN. 4 FT WIDTH FILTER BED MIX BOX UNDER STRUCTURE - FILTER BED MIX

POOL TYPICAL SECTION B-B' NOT TO SCALE

RIFFLE WEIRCENTERLINE PROFILE **NOT TO SCALE**







MAX ALLOWABLE TIE-IN SLOPE ABOVE

STANDARD SPSC STABILIZATION NOTES

PERMANENT STABILIZATION NOTES (INCLUDE ONE OF THE FOLLOWING):

PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE AREA IS COVERED WITH 2 TO 4 INCHES OF COMPOST (APPLIED OVER WOODCHIPS TRACKED INTO SOIL AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED, REGARDLESS OF SOIL TREATMENT.

PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE BANKS AND FLOODPLAIN ARE COVERED WITH FULLY BIODEGRADABLE STABILIZATION MATTING INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED.

ALL DISTURBED AREAS SHALL RECEIVE HYDROSEEDING OR FLEXIBLE GROWTH MEDIUM (FGM) AFTER THE ESTABLISHMENT OF FINAL GRADES AND MICROTOPOGRAPHY (IF APPLICABLE) IN ACCORDANCE WITH THE PROJECT LANDSCAPING PLANS.

BOU	LDER DIMEN	SION (IN)	
	A-AXIS	B-AXIS	C-AXIS
WEIR AND CASCADE (SURFACE BOULDER)	24-36"	24-36"	12-24"
FOOTTER BOULDERS (SUBSURFACE)	24-36"	24-36"	24-36"

1. THE MEDIAN A-AXIS DIMENSION AVERAGED ACROSS THE FULL STRUCTURE SHALL EQUAL A MINIMUM OF 30".

2. BOULDERS SHALL HAVE MINIMUM UNIT WEIGHT OF 165 LBS/CF. IT IS THE RESPONSIBILITY OF THE CONTRACOR TO SELECT MATERIAL THAT IS APPROPRIATELY SIZED TO ALLOW FOR ECONOMICAL CONSTRUCTION OF CASCADE STRUCTURES MEETING THE DESIGN DIMENSIONS DESCRIBED IN THIS PLAN.

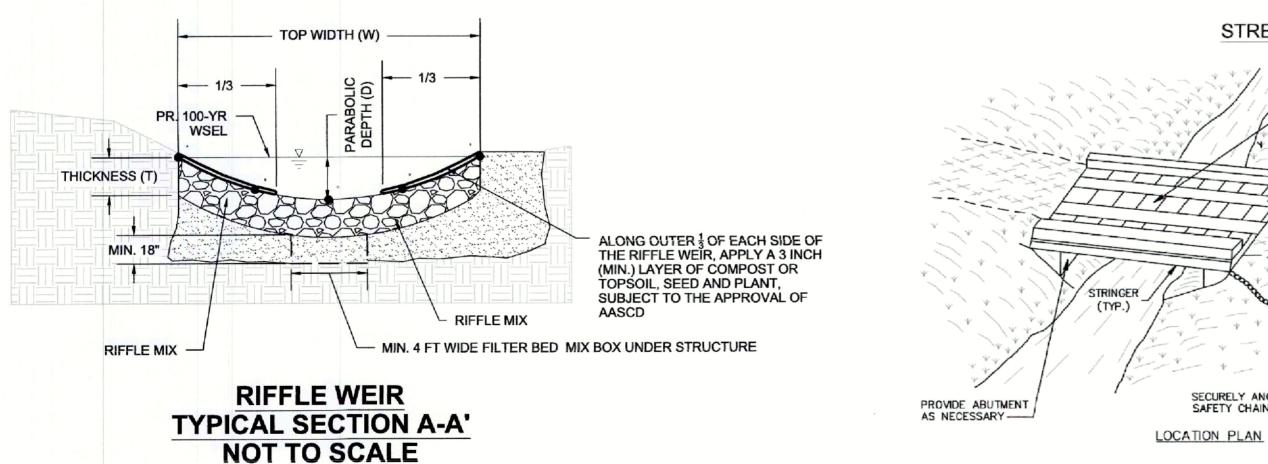
TABULAR IN SHAPE

STANDARD SPSC STABILIZATION NOTES (AASCD)

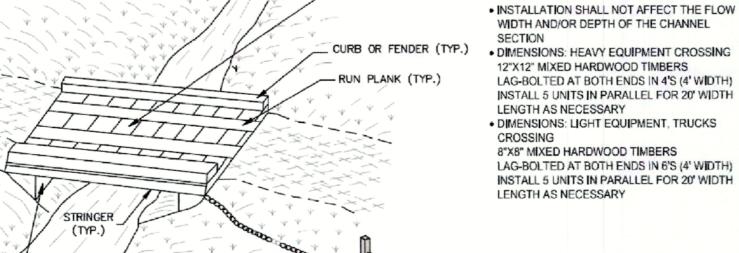
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PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE BANKS AND FLOODPLAIN ARE COVERED WITH FULLY BIODEGRADABLE STABILIZATION MATTING INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED.

ALL DISTURBED AREAS SHALL RECEIVE HYDROSEEDING OR FLEXIBLE GROWTH MEDIUM (FGM) AFTER THE ESTABLISHMENT OF FINAL GRADES AND MICROTOPOGRAPHY (IF APPLICABLE) IN ACCORDANCE WITH THE PROJECT LANDSCAPING PLANS.



NOT TO SCALE



SECURELY ANCHOR BRIDGE WITH --

SAFETY CHAIN OR STEEL CABLE

STREAM CROSSING DETAIL

% OF TYPICAL TYPICAL MATERIAL IN STONE STONE D50 MEDIAN STONE RELATIVE **EQUIVALENT** WEIGHT SIZE (INCHES) SIZE TO DIAMETER (POUNDS)* **TYPICAL** (INCHES) STONE 70 - 100 21 440 50 - 70 18 275 35 - 50 12 85 2 - 10 4 3 *ASSUMED UNIT WEIGHT OF 165 肾

RIFFLE MIX GRADATION TABLE

ILTER BED MIX (BY VOLUME

80%

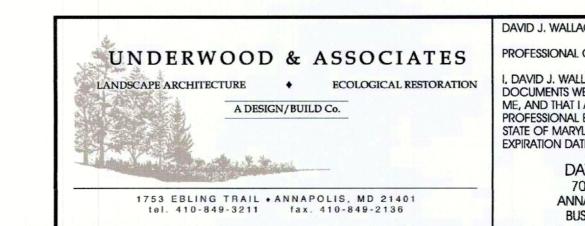
20%

CLEAN SAND

WOODCHIPS

RIFFLE MIX SHALL BE STREAM SILICA COBBLE RANGING FROM ROUNDED TO SUB-ANGULAR SHAPE.

2. ALL RIFFLE MIX SHALL BE WASHED WITH PEA GRAVEL AND CLEAN SAND TO CHOKE VOIDS PRIOR TO FINAL STABILIZATION. THE PEA GRAVEL AND SAND ARE AN INCIDENTAL SUPPLEMENT TO THE RIFFLE MIX FOR NATURALIZATION AND ARE NOT CONSIDERED PART OF THE MIX WHEN CALCULATING D50.



DAVID J. WALLACE, P.E.	umanimum OF
PROFESSIONAL CERTIFICATION	THE OF A
I, DAVID J. WALLACE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 11466 EXPIRATION DATE: MAY 28, 2025.	TO THE STATE OF TH

DAVID J. WALLACE, P.E.

701 CHESAPEAKE AVENUE

ANNAPOLIS, MARYLAND 21403

BUSINESS PH. 410.544.1225

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Signature Date

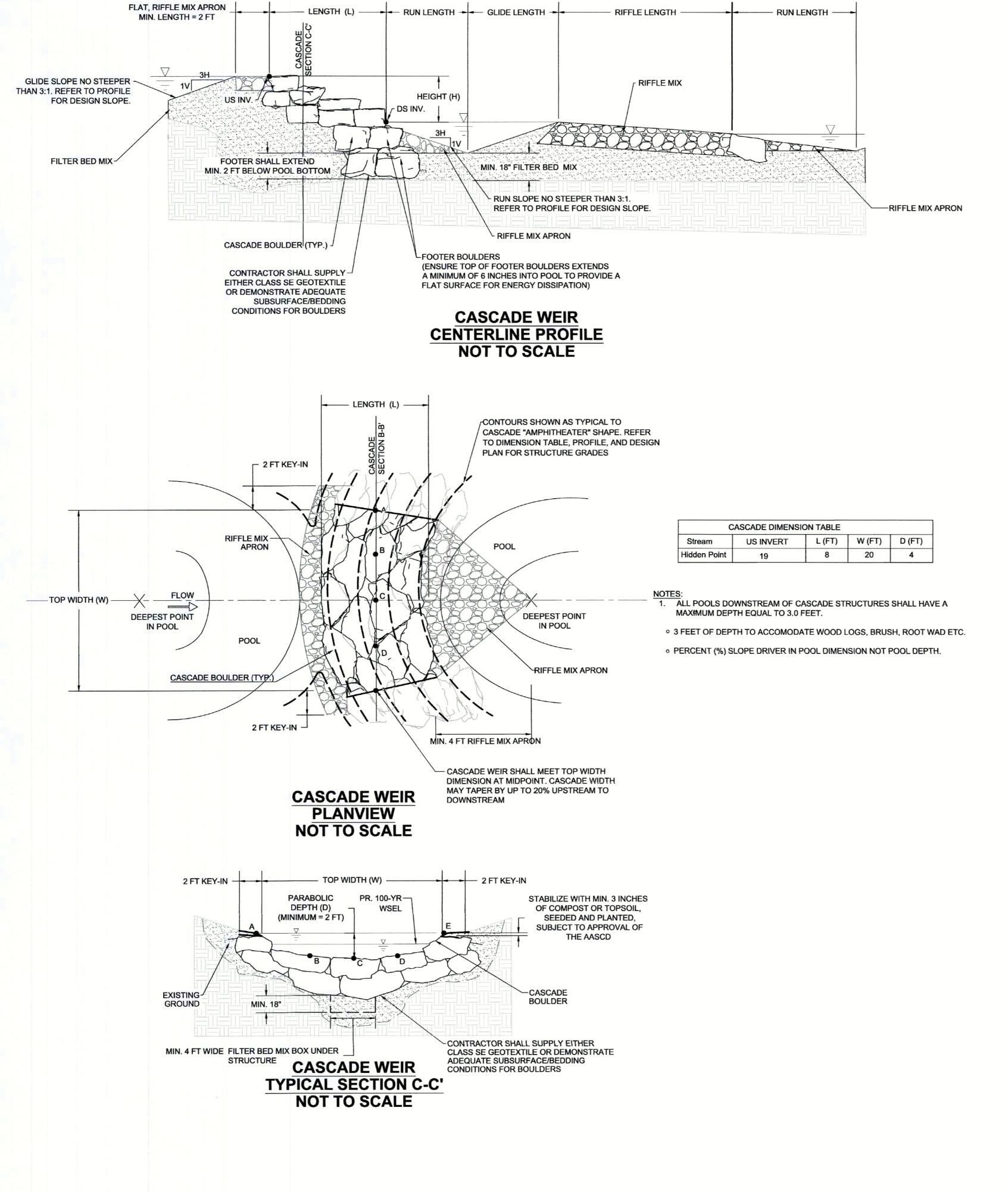
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	Drawn By	J.K./B.L./A.T.	
	Approved By	K.B.	HIDDE
	Sheet No.	5 Of 11	LINED WATE
-	Project No.	23-046	MAP 5295 , GRID H-8 FORMERLY MAP 00
-	Proposal No.		FORMERLY MAP 00 3TH ELECTION DISTR

DARD DETAILS POINT ROAD RWAY OR OUTLET

JANUARY 26, 2024

DAD ANNAPOLIS , MARYLAND 21409 -8, H-9, J-8 & J-9, PARCEL 0400 046, GRID 0011, PARCEL 0176 046, GRID 0005, PARCEL 0400 RICT, ANNE ARUNDEL COUNTY



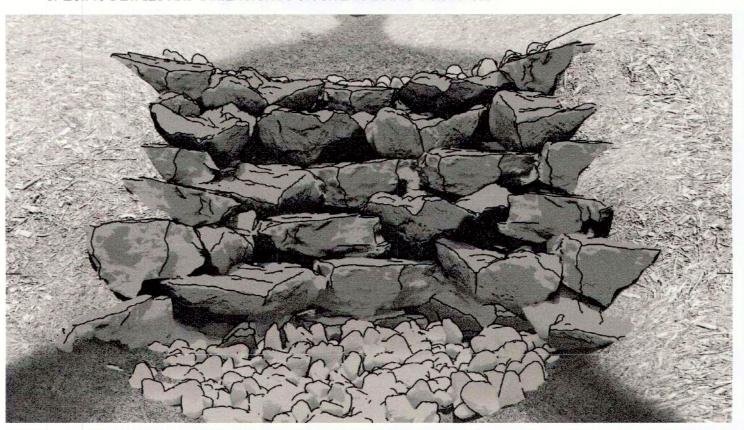
CASCADE WEIR NOTES:

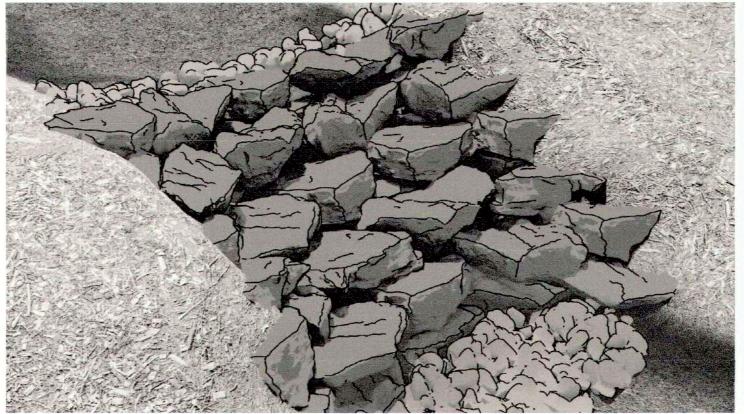
1. BOULDERS AS DISPLAYED REFLECT VARIABILITY IN STONE DIMENSION WITHIN THE MINIMUM SIZE REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING APPROPRIATE MATERIAL TO MEET THE LENGTH, WIDTH, DEPTH, AND SLOPE REQUIREMENTS AS OUTLINED ON THIS SHEET. THE NUMBER OF BOULDERS AND THEIR CONFIGURATION MAY VARY FROM THIS

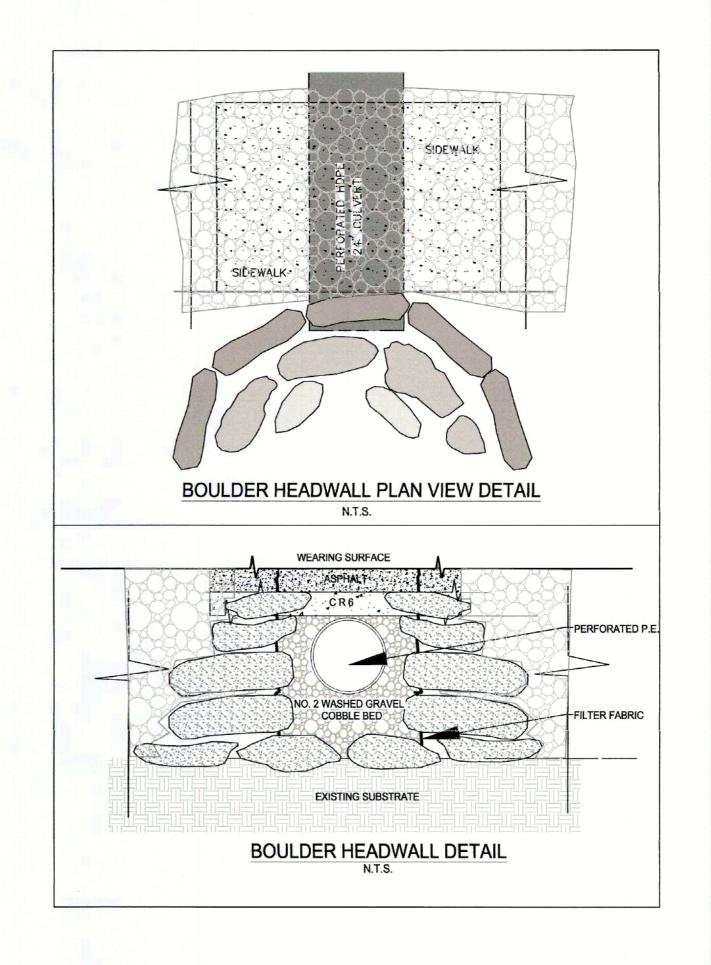
ALL BOULDERS SHALL BE PLACED WITH EDGES ALIGNED TIGHTLY TO MINIMIZE VOID SPACE.

CASCADE WEIR RENDERINGS

THESE IMAGES ARE PROVIDED FOR INFORMATIONAL PURPOSES TO HELP VISUALIZE A CONSTRUCTED CASCADE WEIR. THE CONTRACTOR SHALL REFER TO THE PROJECT SPECIFIC DETAILS AND DIMENSIONS FOR SITE-SPECIFIC GUIDANCE.







UNDERWOOD & ASSOCIATES LANDSCAPE ARCHITECTURE

• ECOLOGICAL RESTORATION A DESIGN/BUILD Co.

1753 EBLING TRAIL • ANNAPOLIS, MD 21401 tel. 410-849-3211 fax. 410-849-2136

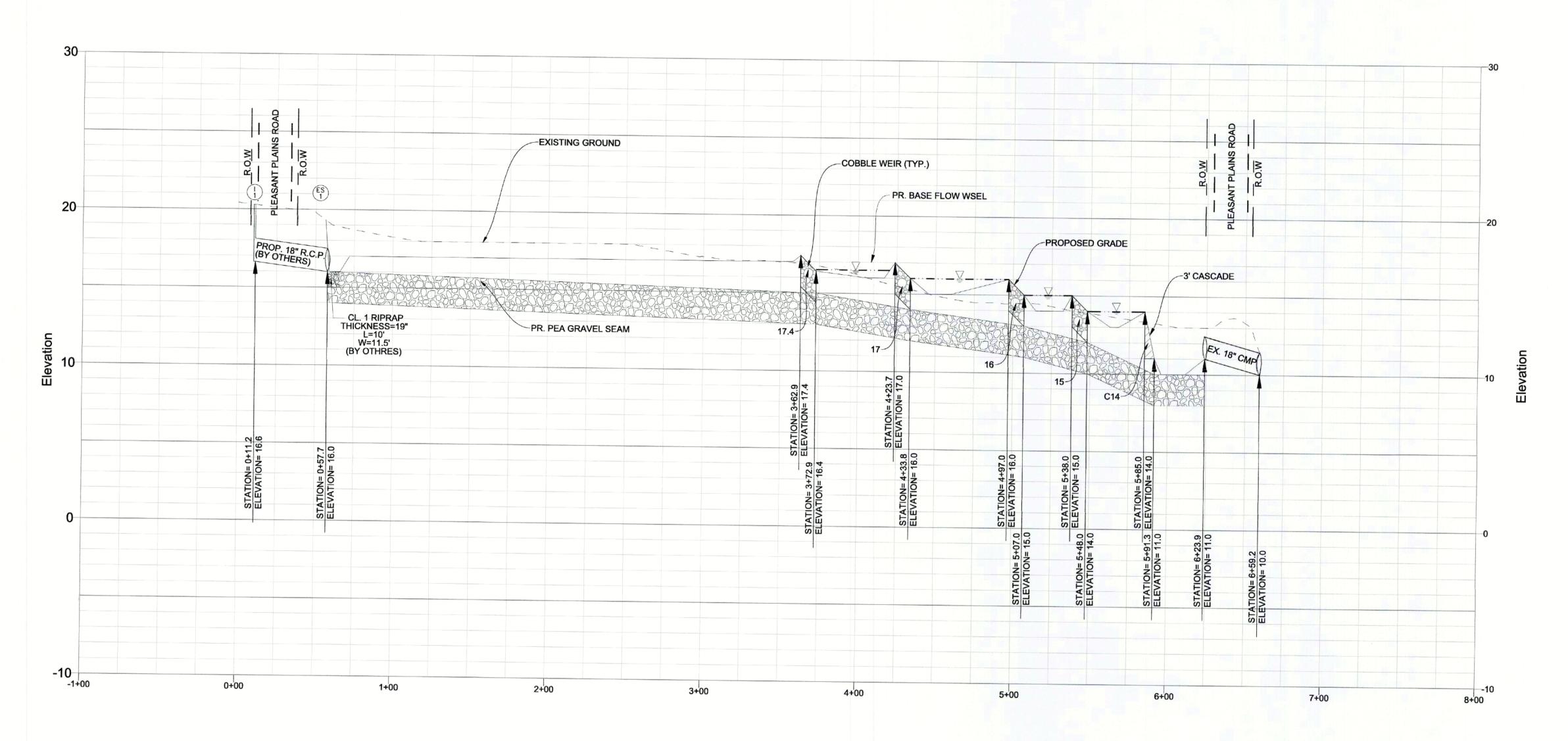
DAVID J. WALLACE, P.E. PROFESSIONAL CERTIFICATION

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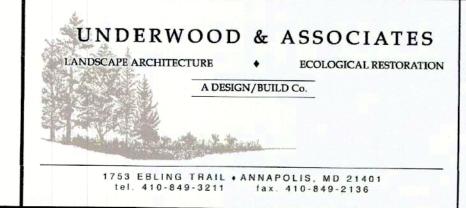
> DAVID J. WALLACE, P.E. 701 CHESAPEAKE AVENUE ANNAPOLIS, MARYLAND 21403 BUSINESS PH. 410.544.1225



NIIIII			JANUARY 26, 2024
CH ZONE	Scale	AS SHOWN	STANDARD DETAILS
	Drawn By	J.K./B.L./A.T.	LUDDEN DOINT DOAD
	Approved By	K.B.	HIDDEN POINT ROAD LINED WATERWAY OR OUTLET
	Sheet No.	6 Of 11	PLEASANT PLANINS ROAD ANNAPOLIS, MARYLAND 21409
nature	Project No.	23-046	MAP 5295 , GRID H-8, H-9, J-8 & J-9 , PARCEL 0400 FORMERLY MAP 0046, GRID 0011, PARCEL 0176
Date	Proposal No.		FORMERLY MAP 0046, GRID 0005, PARCEL 0400 3TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



LEGEND EXISTING GRADE PROPOSED GRADE EXISTING SD PROPOSED SD MEAN HIGH WATER ----MHW----MEAN LOW WATER PROPOSED BASEFLOW WSEL PROPOSED 100 YR FLOOD WSEL - - -PROPOSED COBBLE WEIR PROPOSED CASCADE



DAVID J. WALLACE, P.E. PROFESSIONAL CERTIFICATION

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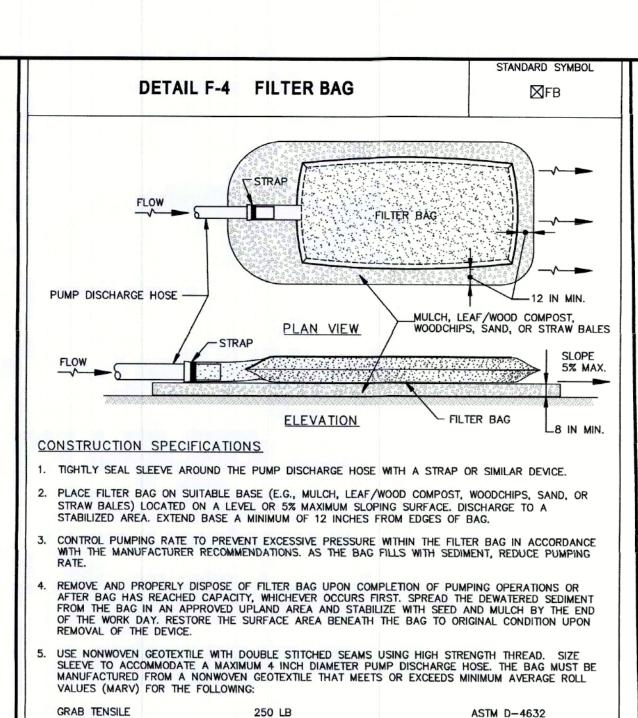
DAVID J. WALLACE, P.E. 701 CHESAPEAKE AVENUE ANNAPOLIS, MARYLAND 21403 BUSINESS PH. 410.544.1225



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	JANUARY 26, 2024
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J.K./B.L./A.T.	HIDDEN POINT ROAD
K.B.	LINED WATERWAY OR OUTLET
7 Of 11	PLEASANT PLANINS ROAD ANNAPOLIS . MARYLAND 21409
23-046	MAP 5295 , GRID H-8, H-9, J-8 & J-9 , PARCEL 0400 FORMERLY MAP 0046, GRID 0011, PARCEL 0176
	FORMERLY MAP 0046, GRID 0005, PARCEL 0400 3TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



70 GAL/MIN/FT2

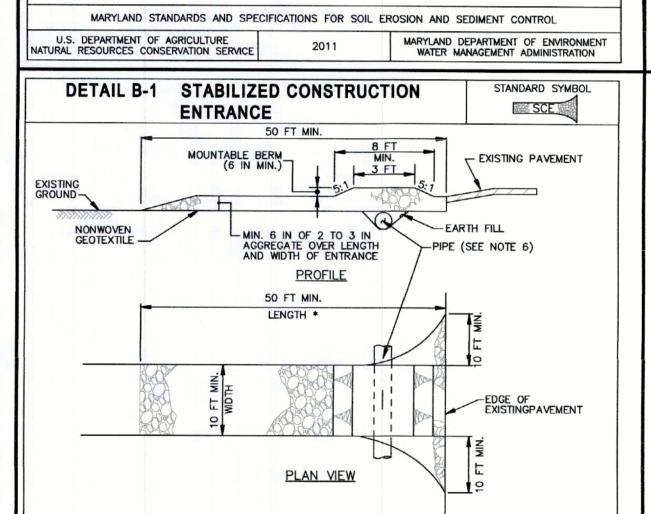
0.15-0.18 MM

70% STRENGTH @ 500 HOURS

REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP

CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES

1.2 SEC-1



ASTM D-4833

ASTM D-4491

ASTM D-4491

ASTM D-4355

ASTM D-4751

CONSTRUCTION SPECIFICATIONS

FLOW RATE

PERMITTIVITY (SEC-1)

APPARENT OPENING SIZE (AOS)

UV RESISTANCE

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- 4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE

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

REINFORCED SILT FENCE RSF ----- 48 IN. MINIMUM LENGTH FENCE POST, 8 FT. MAXIMUM CENTER TO DRIVEN A MINIMUM OF 16' INTO - CENTER 16 IN. MINIMUM HEIGHT OF WELDED -WIRE FENCING AND GEDTEXTILE ABOVE GROUND - 8 IN. MINIMUM DEPTH OF WELDED WIRE FENCING AND GEDTEXTILE BACKFILL AND COMPACT ELEVATION BOTH SIDES OF FABRIC 48 IN. MINIMUM FENCE-FILTER FENCE POST SECTION CLOTH MINIMUM 20 IN. ABOVE UNDISTURBED EMBED WELDED FENCING AND GEOTEXTILE FABRIC A MINIMUM OF 8 IN. VERTICALLY INTO THE GROUND FENCE POST DRIVEN A BACKFILL & COMPACT BOTH SIDES MINIMUM OF 16 IN. INTO THE GROUND FASTEN TO FENCING WITH WIRE OR ZIP TIE @ 6 IN. D. C. FILTER FARRIC ATTACH W/ WIRE ∠WELDED WIRE FENCE OR ZIP TIES JOINING TWO ADJACENT FABRIC SECTIONS TOP VIEW CONSTRUCTION SPECIFICATIONS 1. Metal fence post shall be a minimum of 48 inches long, driven 16 inches minimum into the ground and no more than 8 feet apart. Post shall be standard T or U section weighing not less than 1.00 pound per linear foot. Reinforcement shall be 14 guage welded wire fencing with 2 inch X 4 inch mesh openings. Geotextile shall be fastened securely to each fence post with wire ties or zip ties at top and mid section. Where ends of geotextile fabric come together, they shall be overlapped, folded and wire tied or zip tied to post to prevent 3. Use a woven geotextile, as specified in section H-1 materials, and fasten to the upslope side of the fence posts with wire or zip ties at top and midsection. The Manufacturer's certification that the fabric meets the requirements in section H-1 must be made available to the inspection/enforcement authority 4. Extend both ends of reinforced silt fence a minimum of five (5) horizontal feet upslope at 45 degrees to the main fence alignment to prevent runoff from going 5. Remove accumulated sediment and debris when bulges develop in the reinforced silt fence fabric or when sediment reaches 25% of the fence height. Replace

2019 Step Pool Storm Conveyance (SPSC) Stabilization Notes:

geotextile if torn. If undermining occurs, reinstall fence.

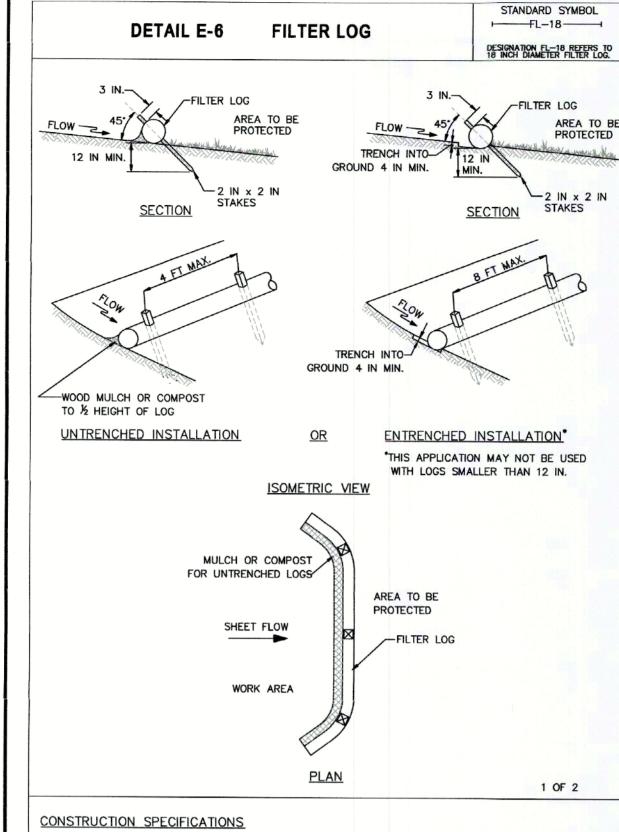
ANNE ARUNDEL SOIL

CONSERVATION DISTRICT

- Temporary stabilization notes (include one of the following):
 - Temporary stabilization for any area of earth disturbance around the pools and riffle zones of a SPSC (e.g., Step Pool Storm Conveyance System) shall be considered achieved when uniformly covering the area with 2 to 4 inches of wood chips. Annual rye may be utilized for the temporary seeding application period found under the Anne Arundel Soil Conservation District's (AASCD) Vegetative Establishment Specification or 2011 Standards and Specifications for Soil Erosion and Sediment
- Permanent stabilization notes (include one of the following):
 - Permanent stabilization for an area of earth disturbance around the pools and riffle zones of a SPSC shall be considered achieved when the area is covered with 2 to 4 inches of compost (applied over any wood chips used for temporary stabilization) or 2 to 4 inches of wood chips tracked into soil and a (Native Plants) planting plan has been implemented, regardless of soil treatment.
 - Permanent stabilization for an area of earth disturbance of a SPSC shall be considered achieved when the banks and floodplain are covered with fully biodegradable stabilization matting installed per manufacturer's instructions and a (Native Plants) planting plan has been implemented.
 - All disturbed areas shall receive hydroseeding or flexible growth medium (FGM) after the establishment of final grades and microtopography (if applicable) in accordance with the project Landscaping Plans.

MATERIAL DISPOSAL REQUIREMENTS

- TREES, SHRUBS, AND BRANCHES DISTURBED WITHIN THE APPROVED LIMIT OF DISTURBANCE SHALL
- BE USED AS ORGANIC MATERIAL WITHIN THE REGENERATIVE STREAM CHANNEL. STOCKPILE NOT TO EXCEED 15' IN HEIGHT OR HAVE SIDE SLOPES STEEPER THAN 2:1
- STOCKPILES SHALL BE COMPLETELY REMOVED AT PROJECT COMPLETION.

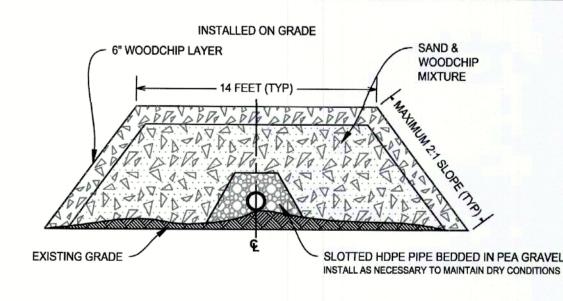


- PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG
- FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
- INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
- 4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE
- STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
- 6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
- WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
- 8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF 1/2 THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH

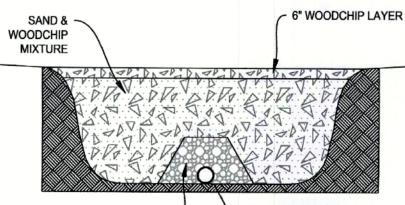
SECTION B-4 VEGETATIVE STABILIZATION

		2 OF 2	
MARYLAND STANDARDS AND SPE	CIFICATIONS FOR SOIL ER	ROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

E.16



INSTALLED IN CHANNEL



EXISTING STREAM INVERT SLOTTED HDPE PIPE BEDDED IN PEA GRAVEL

> CHANNEL FILL/STABILIZED CONSTRUCTION ACCESS **CROSS-SECTION DETAIL** N.T.S.

2018 VEGETATIVE ESTABLISHMENT

Following initial soil disturbances or redisturbance, permanent or temporary stabilization shall be completed within three calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and seven days for all other disturbed or graded areas on the project site.

Permanent Seeding:

- Soil Tests: Lime and fertilizer will be applied per soil tests results for sites greater than 5 acres. Soil tests will be done at completion of initial rough grading or as recommended by the sediment control inspector. Rates and analyses will be provided to the grading inspector as well as the contractor.
- Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6-week incubation period to allow oxidation of

The minimum soil conditions required for permanent vegetative establishment are:

- a. Soil pH shall be between 6.0 and 7.0.
- b. Soluble salts shall be less than 500 parts per million (ppm).
- c. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
- d. Soil shall contain 1.5% minimum organic matter by weight.
- e. Soil must contain sufficient pore space to permit adequate root penetration.
- f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with the Standard and Specification for Soil Preparation, Topsoiling and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or amendments made as recommended by a certified agronomist.
- Seedbed Preparation: Area to be seeded shall be loose and friable to a depth of at least 3-5 inches. The top layer shall be loosened by raking, disking or other acceptable means before seeding occurs. For sites less than 5 acres, apply 100 pounds dolomitic limestone and 21 pounds of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3-5 inches on slopes flatter than 3:1.
- Seeding: Apply 5-6 pounds per 1,000 square feet of tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist firm seedbed with a cyclone seeder, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be ¼ inch in clayey soils and ½ inch in sandy soils when using other than the hydroseeder method. Irrigate where necessary to support adequate growth until vegetation is firmly established. If other seed mixes are to be used, select from Table B3 and B5 of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
- Mulching: Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading. Mulch shall be unrotted, unchopped, small grain straw applied at a rate of 2 tons per acre or 90 pounds per 1,000 square feet (2 bales). Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch-anchoring tool is used, apply 2.5 tons per acre. Mulch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mulch uniformly, mechanically or by hand, to a depth of 1-2 inches.
- E. Securing Straw Mulch: Straw mulch shall be secured immediately following mulch application to minimize movement by wind or water. The following methods are permitted:
- i. Use a mulch-anchoring tool which is designed to punch and anchor mulch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mulch, however, it is limited to relatively flat areas where equipment can operate safely
- ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. If mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.
- iii. Liquid binders may be used. Apply at higher rates at the edges where wind catches mulch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.
- iv. Lightweight plastic netting may be used to secure mulch. The netting will be stapled to the ground according to manufacturer's recommendations.

2. Temporary Seeding:

100 pounds of dolomitic limestone per 1,000 square feet. 15 pounds of 10-10-10 per 1,000 square feet. Fertilizer:

Perennial rye - 0.92 pounds per 1,000 square feet (February 1 through April 30 or August

15 through October 31).

Millet – 0.92 pounds per 1,000 square feet (May 1 through August 15).

Same as 1 D and E above. No fills may be placed on frozen ground. All fill is to be placed in approximately horizontal layers, each

layer having a loose thickness of not more than 8 inches. All compaction requirements are in accordance to Anne Arundel County Standard Specifications for Construction as well as the AA County Design Manual and Standard Details. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and

Permanent Sod:

Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted in section (B) above. Permanent sod is to be tall fescue, state approved sod; lime and fertilizer per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional watering for establishment may be required. Sod is not to be installed on frozen ground. Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to ensure establishment of sod.

. Mining Operations:

Sediment control plans for mining operations must include the following seeding dates and mixtures:

For seeding dates of February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and sericea lespedeza at the minimum rate of 0.5 pounds per 1,000 square feet.

. Topsoil shall be applied as per the Standard and Specifications for Soil Preparation, Topsoiling, and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

. Use of these Vegetative Establishment Specifications does not preclude the permittee or contractor from meeting all of the requirements set forth in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

UNDERWOOD & ASSOCIATES LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION A DESIGN/BUILD Co.

1753 EBLING TRAIL . ANNAPOLIS, MD 21401

DAVID J. WALLACE, P.E.

PROFESSIONAL CERTIFICATION

, DAVID J. WALLACE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT LAM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 11466 EXPIRATION DATE: MAY 28, 2025.

> DAVID J. WALLACE, P.E. 701 CHESAPEAKE AVENUE ANNAPOLIS, MARYLAND 21403 BUSINESS PH. 410.544.1225

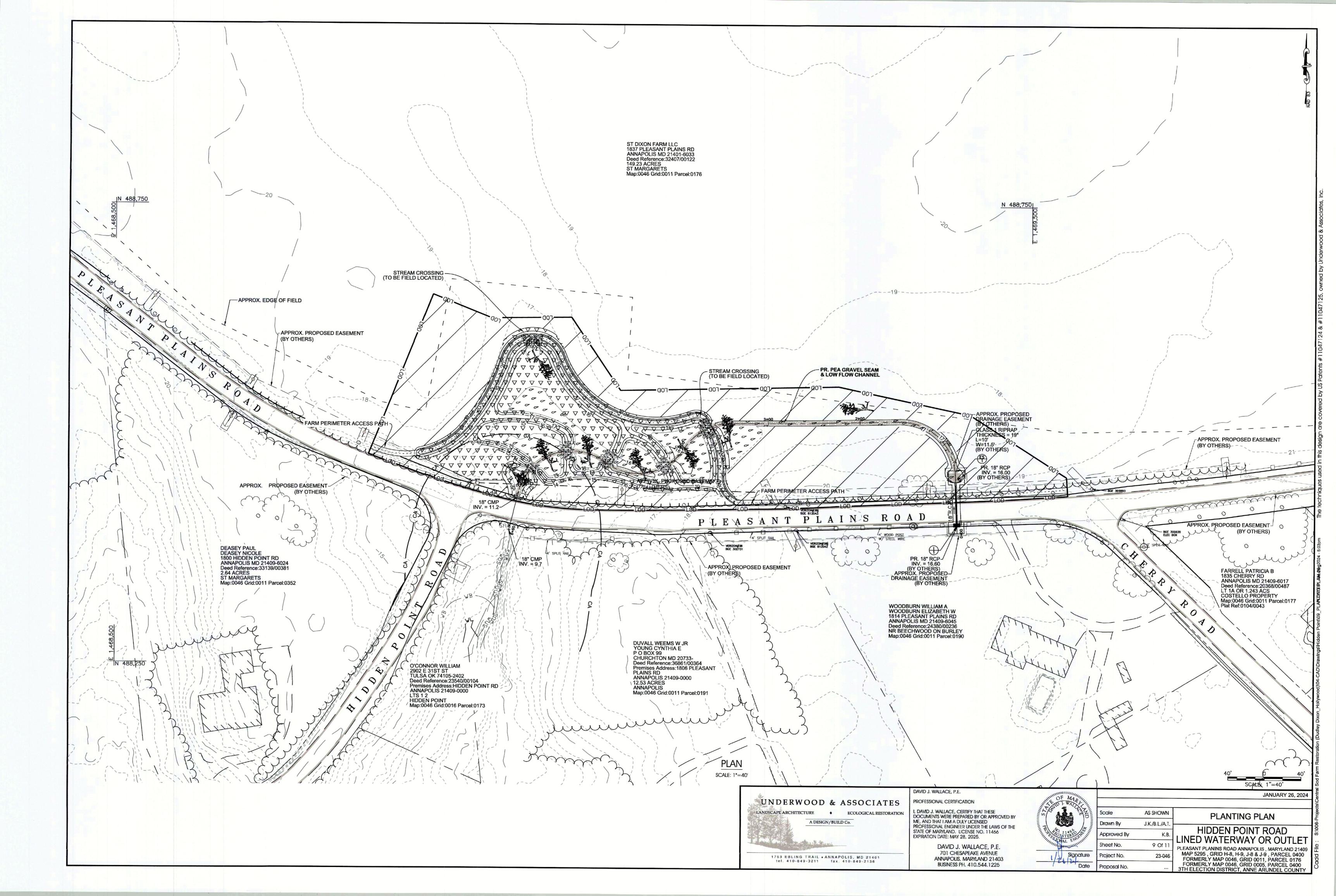


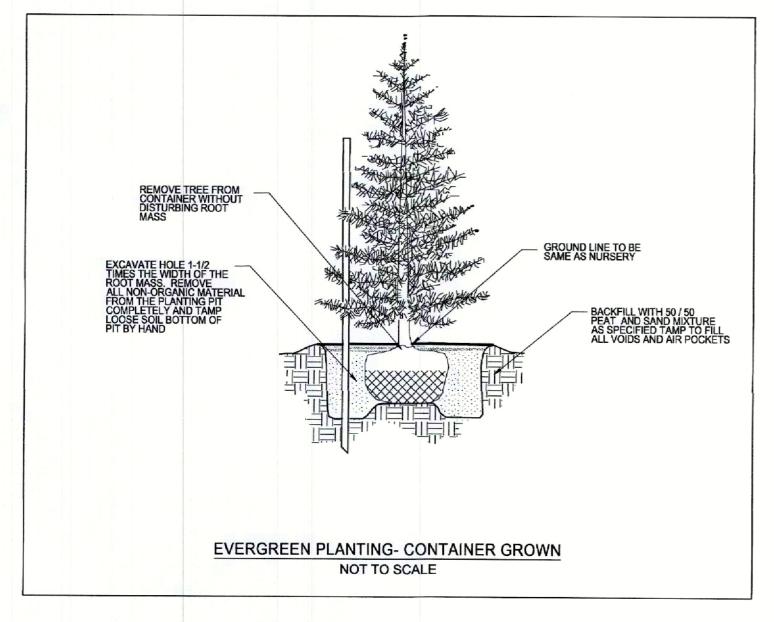
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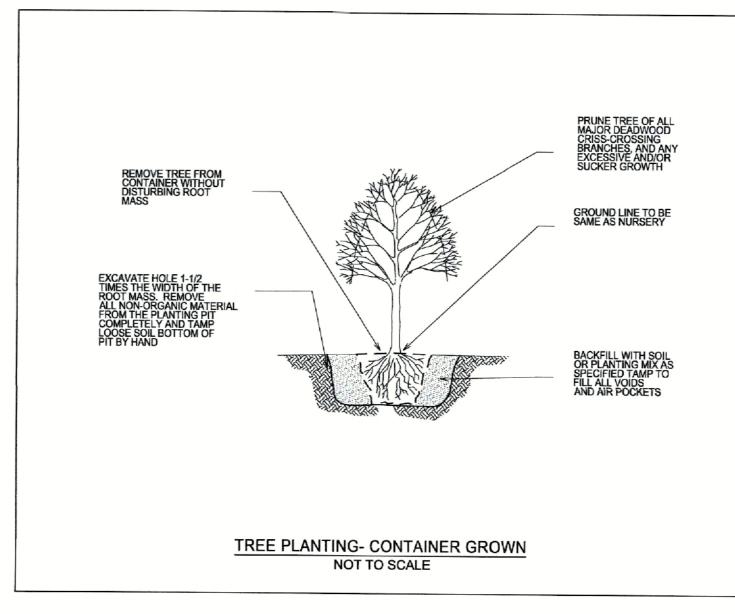
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awn By	J.K./B.L./A.T.	NOTES AND DETAILS
proved By	К.В.	HIDDEN POINT ROAD
		LINED WATERWAY OR OUTLET
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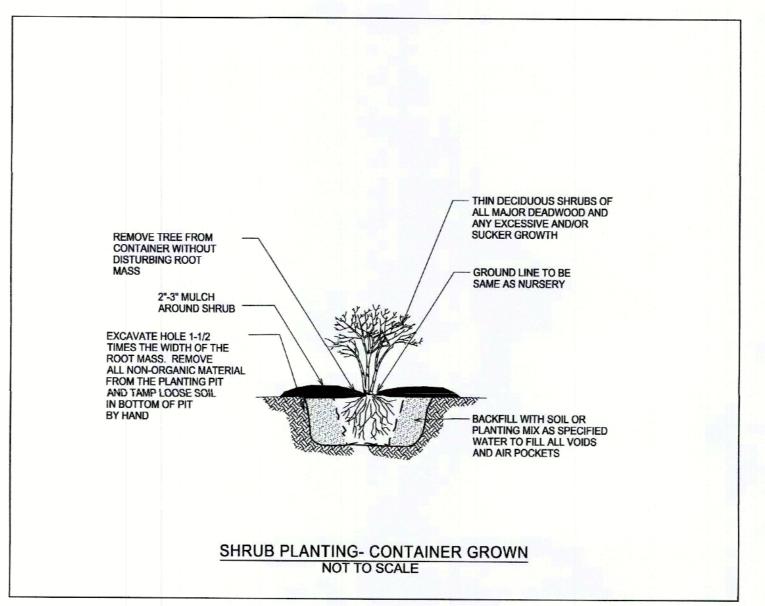
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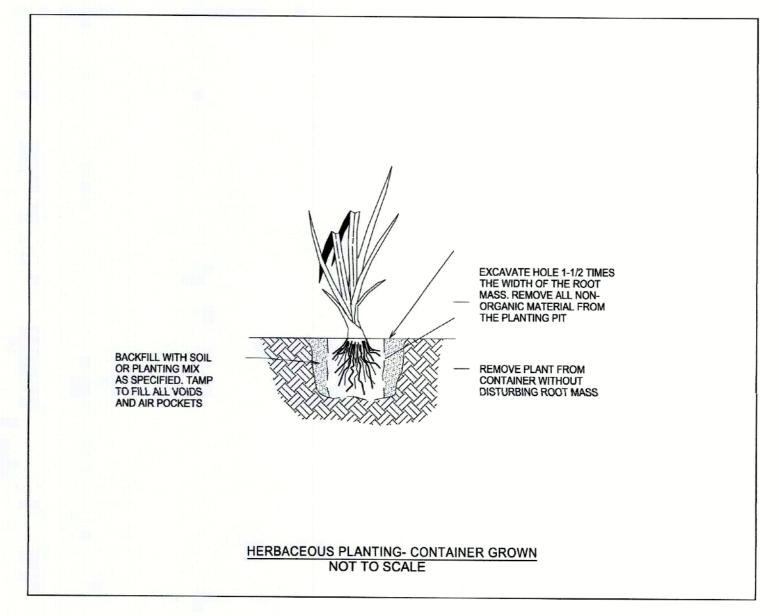
FORMERLY MAP 0046, GRID 0011, PARCEL 0400 FORMERLY MAP 0046, GRID 0005, PARCEL 0400 3TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

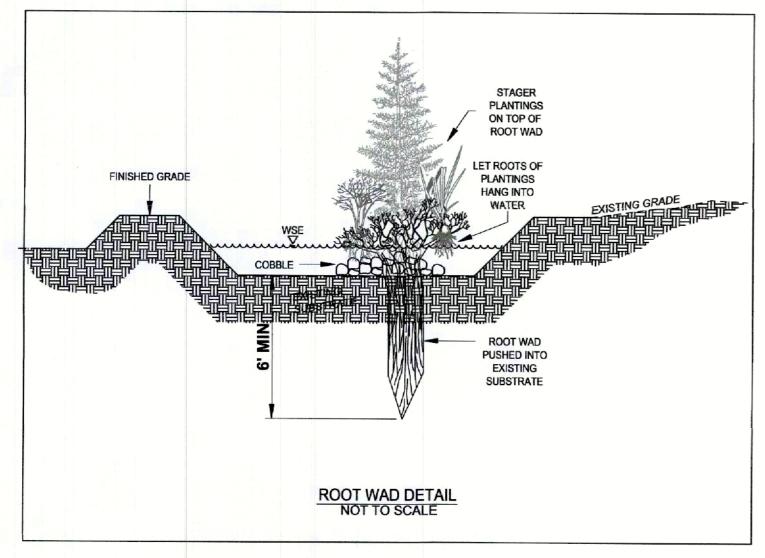


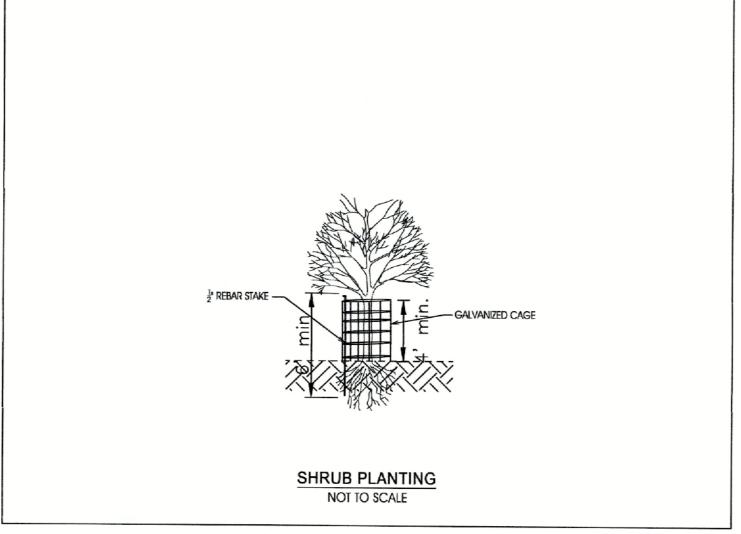


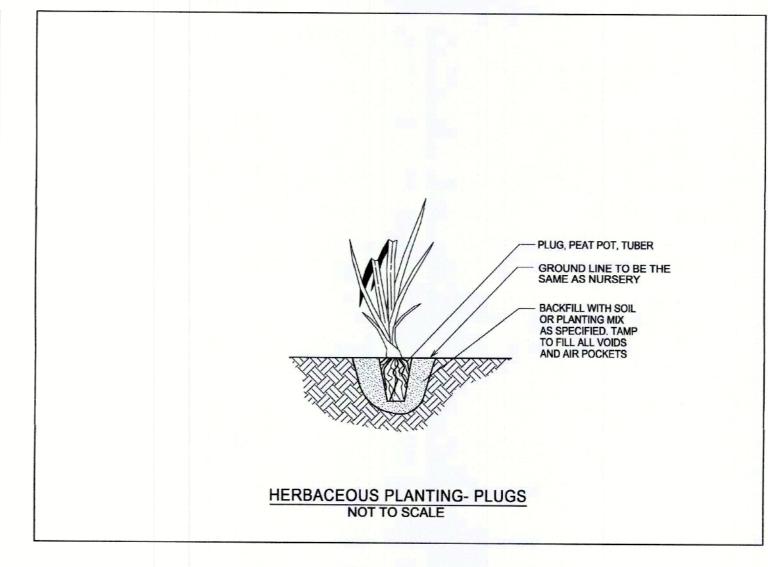


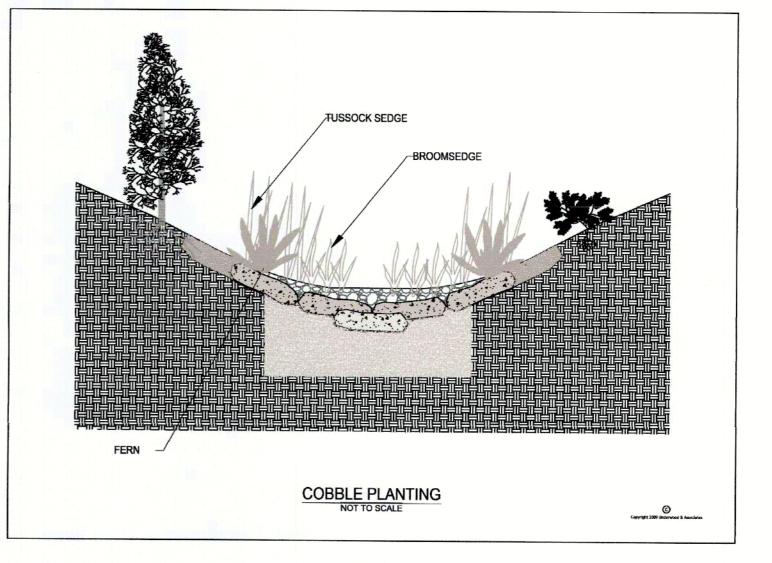


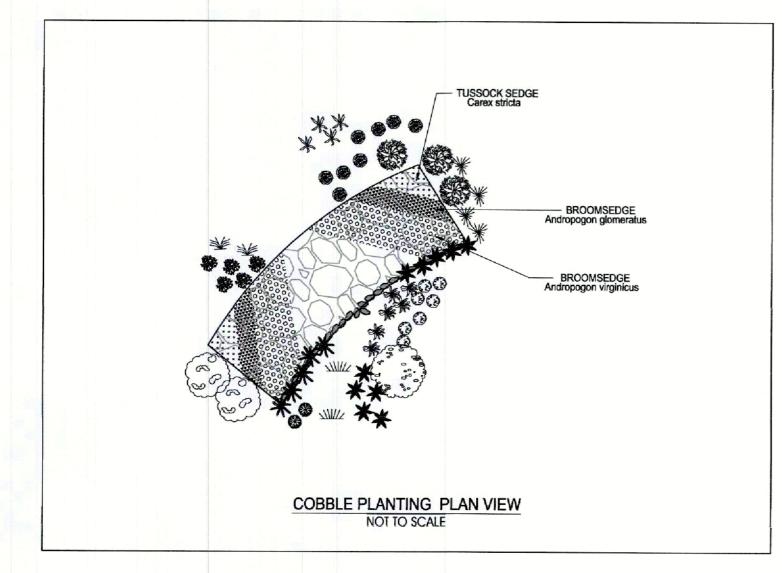


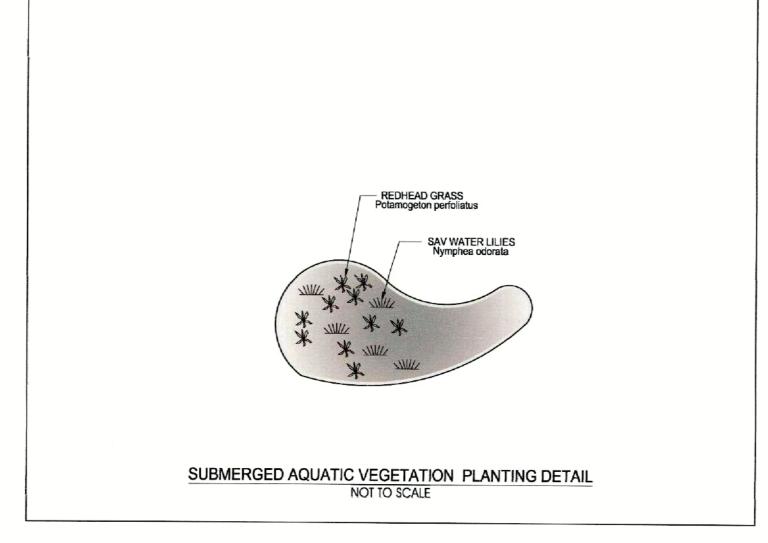


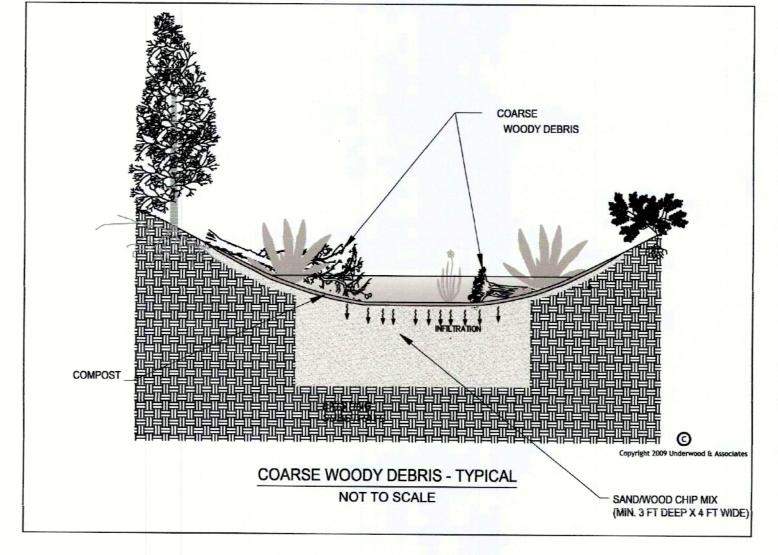


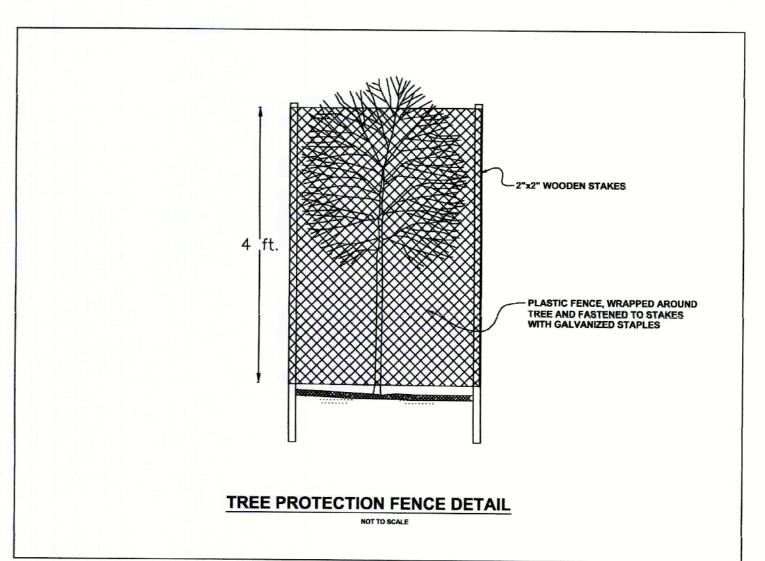




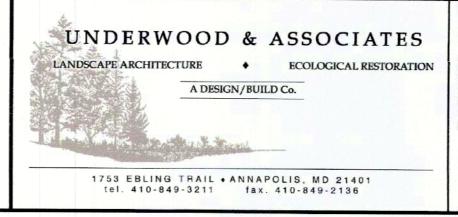








PLAN SCALE: AS SHOWN



200	DAVID J. WALLACE, P.E.
	PROFESSIONAL CERTIFICATION
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DAVID J. WALLACE, P.E. 701 CHESAPEAKE AVENUE ANNAPOLIS, MARYLAND 21403

BUSINESS PH. 410.544.1225

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