

HOWARD COUNTY

Capital Project #D-1178

Gwynn Park Drive Outfall Stabilization

STORMWATER MANAGEMENT DIVISION
BUREAU OF ENVIRONMENTAL SERVICES

SURVEYOR'S CERTIFICATE

I hereby certify that the as-constructed information shown hereon and the field survey work associated with it is, to the best of my knowledge information and belief, accurate, and was prepared by me or under my direct supervision in compliance with COMAR 09.13.06.12.

Christopher S. Adams 03/03/21

Christopher S. Adams
Professional Land Surveyor
Maryland Registration No. 21569
License Expires: 06/29/2022



SHEET INDEX

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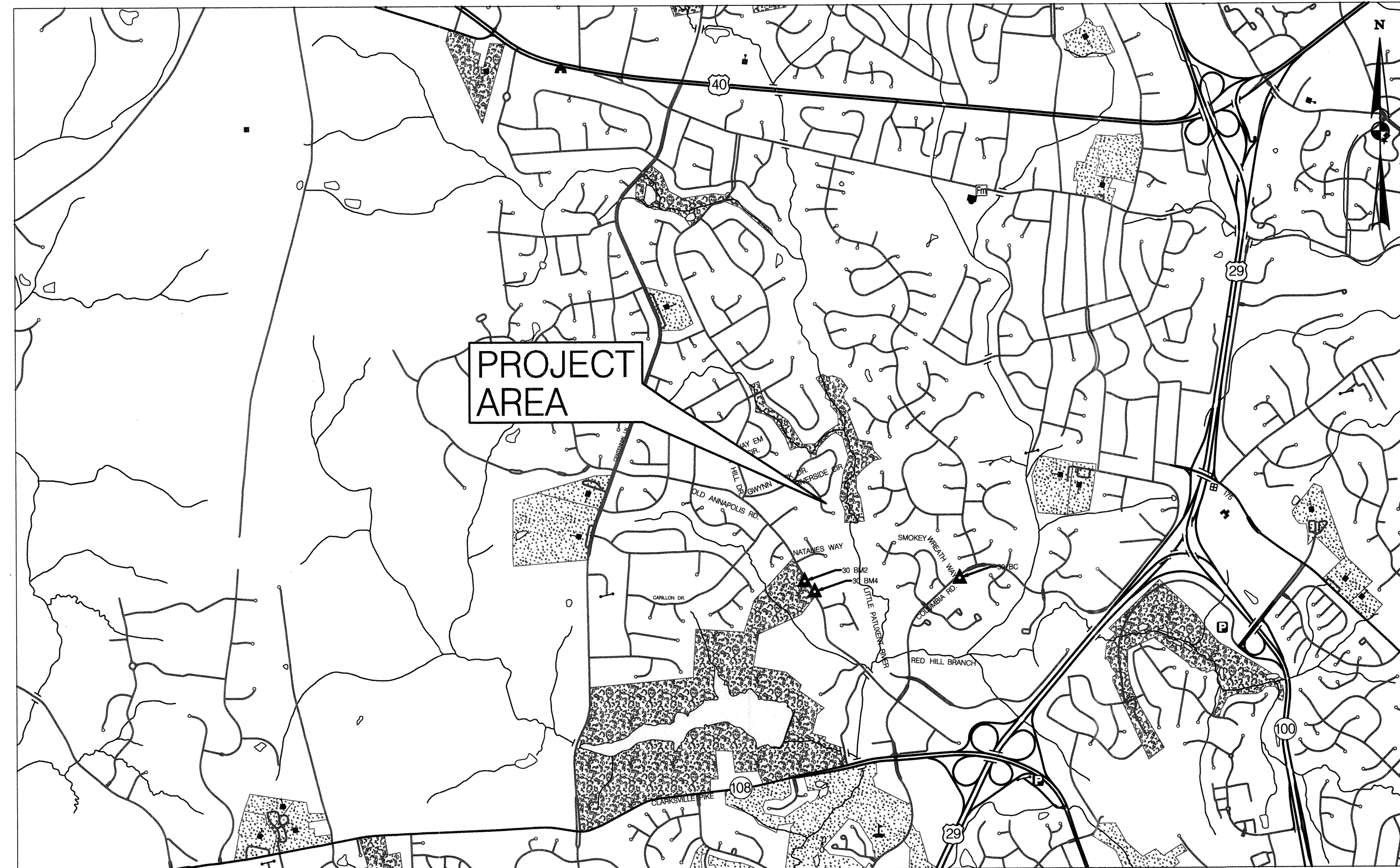
NOTE:

THE GWYNN PARK DRIVE OUTFALL STABILIZATION PROJECT IS DESIGNED TO PROTECT AND ENHANCE EXISTING NATURAL RESOURCES WITHIN AN ACTIVELY ERODING TRIBUTARY TO THE LITTLE PATUXENT RIVER. THE PURPOSE OF THE WORK IS TO STABILIZE EXISTING BED AND BANKS, ACCOMPLISHED BY INSTALLING STONE MATERIALS SIZED AND PLACED TO ACCOMMODATE HIGH SHEAR STRESS IN THE CHANNEL NATURAL FLOW PATTERNS WILL BE MAINTAINED IN THE CHANNEL AND THE WORK AREA NO INCREASE IN IMPERVIOUS AREA IS ANTICIPATED. EROSION AND SEDIMENT CONTROLS INCLUDING PUMP AROUND OF STREAM FLOWS HAVE BEEN DEVELOPED TO ADDRESS DOWNSTREAM DELIVERY OF DISTURBED MATERIALS DURING CONSTRUCTION.

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MDSA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
- THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
- SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS, INC.-OCTOBER 2018.
- THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY AB CONSULTANTS, INC.
- WETLANDS AND WATERS OF THE US WERE DELINEATED BY STANTEC-SEPTEMBER 2018.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND STANTEC DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
- THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
- THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY. ALL UTILITIES SHALL HAVE A CLEARANCE BY A MINIMUM OF 6 INCHES VERTICALLY AND A MINIMUM OF 5 FEET HORIZONTALLY.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS. THE CONTRACTOR SHALL NOTIFY STANTEC IMMEDIATELY TO RESOLVE THE SITUATION.
- ALL PIPE ELEVATION SHOWN ARE INVERT ELEVATIONS.
- STREAM IS NOT CONSIDERED TIER II. RECEIVING STREAM IS LISTED ON THE 303D LIST FOR THE FOLLOWING TMDL IMPAIRMENTS: TOTAL SUSPENDED SOLIDS, PHOSPHORUS, SEDIMENTATION, CHLORIDE.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- A JOINT PERMIT APPLICATIONS FOR THIS PROJECT HAS BEEN APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT. (TRACKING NUMBER AI164427)
- PROJECT IMPACTS INCLUDE WORK IN A USE IV-P STREAM. WORK MAY NOT BE CONDUCTED DURING THE PERIOD BETWEEN MARCH 1 AND MAY 31, INCLUSIVE.
- AN ALTERNATIVE COMPLIANCE APPLICATION #WP-20-037 WAS SUBMITTED TO THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING FOR THIS PROJECT ON 10/18/2019 WITH THE FOLLOWING CONDITIONS AS SHOWN ON AB-01.

APPROVALS / PERMITS			
AGENCY	PERMIT #	DATE APPLIED	DATE APPROVED
MDE Wetland/Waterway Authorization	19-NT-328/201961813	10/9/2019	12/3/2019
Howard County Soil Conservation District	EP-19-23	1/17/2020	TBD
Howard County DPZ Alternative Compliance	WP-20-037	10/18/2019	11/20/2019
MDE General Discharge Permit	TBD	TBD	TBD



HORIZONTAL DATUM	NAD 83 /91	ADC MAP COORDINATES
VERTICAL DATUM	NAVD 88	HOWARD COUNTY MAP 11 COLUMN J, ROW R

2000' 0 2000' 4000'
SCALE: 1" = 2000'

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Guy S. Adams 4/21/20
HOWARD SOIL CONSERVATION DISTRICT DATE

EP-19-023

DEPARTMENT OF RECREATION AND PARKS, HOWARD COUNTY, MD

A. A. Deane 4/17/2020
DIRECTOR OF DEPARTMENT OF RECREATION AND PARKS DATE

DESIGN CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS. THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENT OF THE HOWARD SOIL CONSERVATION DISTRICT

Elizabeth T. Kanner 4/16/2020
DESIGNERS SIGNATURE DATE

ELIZABETH TANE KANNER MD REGISTRATION NO. 33330
PRINTED NAME P.E., R.L.S. OR R.L.A.

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 33330, EXPIRATION DATE: 06/29/2020

OWNERS/DEVELOPERS CERTIFICATE

"I/WE HEREBY CERTIFY THAT ANY CLEARING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN. INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO THE BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

John S. Deane *Shirley*
OWNER/DEVELOPER SIGNATURE DATE

Jane M. Deane
PRINTED NAME AND TITLE

T-01

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John S. Deane 4/19/20 *Mark Deane* 4/19/20
DIRECTOR OF PUBLIC WORKS DATE CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

Mark Deane 4/19/20
CHIEF STORMWATER MANAGEMENT DIVISION DATE

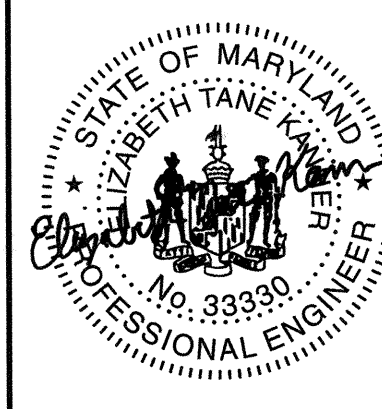
PREPARED BY:

Stantec **STRAUGHAN ENVIRONMENTAL**
a joint venture

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10245 OLD COLUMBIA ROAD COLUMBIA, MD 21046 TEL: 301.362.9200 FAX: 301-362-9245 info@straughanenvironmental.com

HOWARD COUNTY MARYLAND
STORMWATER MANAGEMENT DIVISION
BUREAU OF ENVIRONMENTAL SERVICES
HOWARD COUNTY GOVERNMENT
9801 BROKEN LAND PARKWAY
COLUMBIA, MD 21046
(410) 313-0522



BY	NO.	REVISIONS	DATE	ADVERTISED DATE	NA

CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

TITLE SHEET

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

BY: ddonorizio - U:\202830003\03_data\gis_cad\sheet_files\p\GN-T000_Gwynn-Park.dgn PLOTTED: Thursday, April 02, 2020 AT 11:37 AM

ABBREVIATIONS

AASHTO American Association of State Highway Transportation Officials	HDWL Headwall	RW or RW... Right of Way
ADT.....Average Daily Traffic	HERCP.....Horizontal Elliptical Reinforced Concrete Pipe	RCP Reinforced Concrete Pipe
AHD.....Ahead	HP.....High Point	RCPP.....Reinforced Concrete Pressure Pipe
APPROX.....Approximate	IN.....Inch	R.Q.D.....Rock Quality Designation
B or BL.....Baseline	I.S.T.....Inlet Sediment Trap	R.M.....Rootmat
BK.....Back /Book	INV.....Invert	S.....South
BIT.....Bituminous	J.B.....Junction Box	SAN.....Sanitary Sewer
B.C.....Bituminous Concrete	K.....K Inlet	SB or S/B.....Southbound
B.M.....Bench Mark	L.....Length	S.D.....Storm Drain
BOT.....Bottom	LF.....Linear Feet	S.D.D.....Surface Drain Ditch
C.C.....Center of Curve	L.L.....Liquid Limit	S/E.....Super Elevation
CAP.....Corrugated Aluminum Pipe	LP.....Low Point	SF.....Silt Fence
CAPA.....Corrugated Aluminum Pipe Arch	L.P.....Light Pole	SF.....Square Feet
CATV.....Cable Television	LT.....Left	SHT.....Sheet
C.B.B.....California Bearing Ratio	MAC.....Macadam	SPP.....Structural Steel Plate Pipe
CL or CL.....Centerline	M.C.....Moisture Content	SPPA.....Structural Steel Plate Pipe Arch
CL.....Class	MAX.....Maximum	S.P.T.....Standard Penetration Testing
CLF.....Chainlink Fence	M.D.D.....Maximum Dry Content	SRP.....Steel Spiral Rib Pipe -
CMP.....Corrugated Metal Pipe	MOD.....Modified	SRPA.....Steel Spiral Rib Pipe Arch -
C.O.....Cleanout	MIN.....Minimum	Aluminized Type 2
COMB.....Combination	N.....North	Aluminized Type 2
CONC.....Concrete	NB.....Northbound	SSD.....Stopping Sight Distance
CONSTR.....Construction	NE.....Northeast	SSF.....Super Silt Fence
COR.....Corner	N.P.....Non-Plastic	STD.....Standard
CORR.....Correction	O.C.....On Center	STA.....Station
CPP-S.....Corrugated Polyethylene Pipe - Type 'S'	OHE.....Overhead Electric	SO.....Single Opening
CSP.....Corrugated Steel Pipe - Aluminized Type 2	O.M.....Optimum Moisture	SY.....Square Yards
CSPA.....Corrugated Steel Pipe Arch -	PAV T.....Pavement	SWM.....Stormwater Management
Aluminized Type 2	PC.....Point of Curvature	T.....Tangent
DC.....Degree of Curve	PCC.....Point of Compound Curvature	T.....Telephone
D.H.V.....Design Hourly Volume	PC.....Point of Crown	T.C.....Top of Cover
D.I.....Drop Inlet	PGE.....Profile Grade Elevation	T.G.....Top of Grate
DIA.....Diameter	P.G.E.....Profile Ground Elevation	T or TL.....Traverse Line
D.O.....Double Opening	P.G.L.....Profile Grade Line	T.M.....Top of Manhole
E.....East	P.G.L.....Profile Ground Line	TRAV.....Traverse
E.....Electric	PR.....Point of Rotation	TS.....Temporary Swale
E.....External Distance	P.I.....Plasticity Index	T.S.....Top of Slab
EA.....Each	PI.....Point of Intersection	T.S.....Topsoil
EB.....Eastbound	POC.....Point On Curve	TYP.....Typical
ELEV.....Elevation	POT.....Point On Tangent	U.D.....Under Drain
ES.....End Section	PPWP.....Polyvinyl Chloride Profile Wall Pipe	U.G.....Underground
EX or EXIST.....Existing	PROP.....Proposed	U.P.....Utility Pole
FT.....Feet	PRC.....Point of Reverse Curve	USDA.....United States Department
F or FL.....Flowline	PT.....Point	of Agriculture
F.B.D.....Flat Bottom Ditch	PT.....Point of Tangency	VCL.....Vertical Clearance
F.H.....Fire Hydrant	PVC.....Point of Vertical Curve	V.C.L.....Vertical Curve Length
FWD.....Forward	PVC.....Polyvinyl Chloride	W.....Water
G.....Gas	PVI.....Point of Vertical Intersection	W.....West
G.V.....Gas Valve	PVRC.....Point of Vertical Reverse Curve	WB.....Westbound
H.B.....Handbox	PVT.....Point of Vertical Tangency	WB.....Wetland Buffer
HDPE.....High Density Polyethylene	R.....Radius	W.M.....Water Meter
	R.F.....Rock Fragments	W.S.....Wrapped Steel
	RT.....Right	WUS.....Waters of the United States
		W.V.....Water Valve

EXISTING LEGEND

	PARCEL BOUNDARY
	EASEMENT
	CURB
	METAL FENCE
	MAIL BOX
	MAJOR CONTOUR
	MINOR CONTOUR
	100 YEAR FLOODPLAIN
	TREE
	SPECIMEN TREE
	FOREST STAND
	STREAM BUFFER
	WETLAND BUFFER
	WATERS OF THE U.S.
	WETLANDS
	FENCE LINE
	SANITARY LINE
	DRAIN PIPE
	WATER UNDERGROUND
	ELECTRIC LINE OVER
	ELECTRIC UNDERGROUND
	UTILITY POLE
	SANITARY MH
	FIRE HYDRANT
	WATER VALVE
	INLET
	TELEPHONE PED
	EXIST. FENCE REMOVAL
	EXIST. TREE REMOVAL
	STEEP SLOPES 15% to 20%
	STEEP SLOPES 20% OR GREATER

PROPOSED LEGEND

	WOOD RAIL FENCE
	MAJOR CONTOUR
	MINOR CONTOUR
	100 YEAR FLOODPLAIN
	BOULDER SILL (BS)
	CASCADE MIX (CM)
	PROPOSED TOP OF BANK
	POOL MIX (PM)
	RIPRAP PLUNGE POOL (RPP)
	TEMPORARY EASEMENT
	PERMANENT DRAINAGE EASEMENT

CONDITIONS FOR ALTERNATIVE COMPLIANCE:

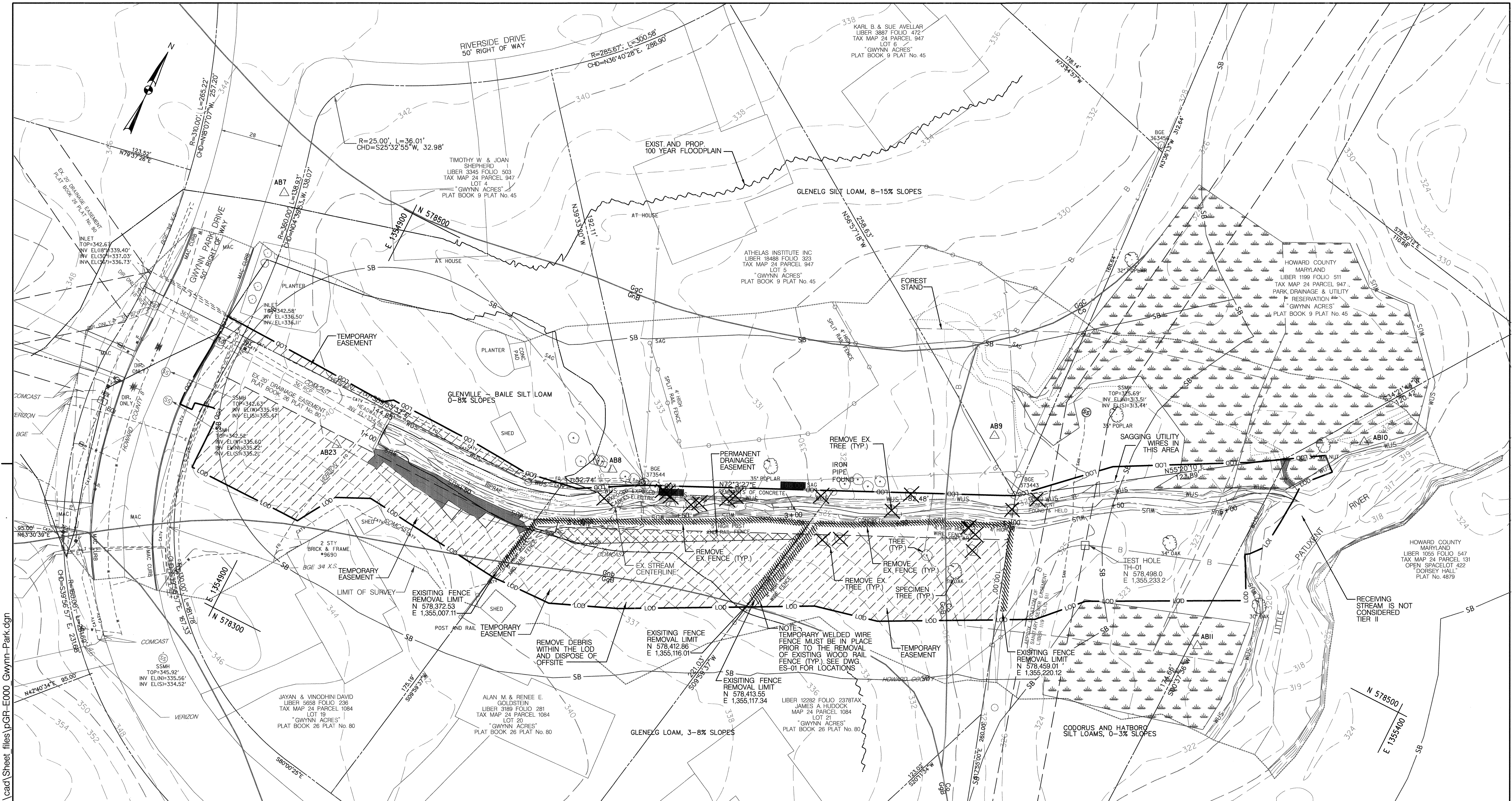
1. THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT SHALL SERVE AS THE SUBSTITUTE FOR A SITE DEVELOPMENT PLAN FOR DEVELOPMENT. NO DISTURBANCE IS PERMITTED BEYOND THE 0.650 ACRE LIMIT OF DISTURBANCE AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED.
2. THE REMOVAL OF THE 31" POPLAR TREE IS PERMITTED AS SHOWN ON THE PLAN EXHIBIT. THE REMOVAL OF ANY ADDITIONAL SPECIMEN TREE IS NOT PERMITTED UNDER THIS ALTERNATIVE COMPLIANCE REQUEST UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED. ALL THE EFFORTS SHALL BE MADE TO REDUCE IMPACTS TO SPECIMEN TREES DURING CONSTRUCTION, INCLUDING UTILIZING TREE PROTECTION FENCING OR SIMILAR MEASURES AS DETAILED ON THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT. THE PROPOSED CANOPY TREES, UNDERSTORY TREES, SHRUBS AND LIVE-STAKES WILL SERVE AS MITIGATION FOR REMOVAL OF THE SPECIMEN TREE, AS SHOWN ON THE ALTERNATIVE COMPLIANCE LANDSCAPE PLAN EXHIBIT.
3. ONCE THE PROPOSED OUTFALL STABILIZATION AND STREAM RESTORATION WORK IS COMPLETE, THE LIMIT OF DISTURBANCE SHALL BE RESTORED TO ITS PREVIOUS CONDITION IN ACCORDANCE WITH THE APPLICANT'S LANDSCAPING AND SEEDING PLAN.
4. THE APPLICANT SHALL OBTAIN ALL REQUIRED AUTHORIZATIONS AND PERMITS FROM MARYLAND DEPARTMENT OF THE ENVIRONMENT AND U.S. ARMY CORPS OF ENGINEERS IF APPLICABLE FOR DISTURBANCES WITHIN THE FLOODPLAIN, STREAMS, WETLANDS, AND THEIR BUFFERS. REFERENCE THE APPLICATION MDE OR USACE PERMITS OR TRACKING NUMBERS ON ALL BUILDING OR GRADING PERMITS.
5. PRIOR TO THE COMMENCEMENT OF THIS RESTORATION PROJECT, THE DEPARTMENT OF PUBLIC WORKS SHALL FORWARD ALL RIGHT-OF-ENTRY DOCUMENTS FOR THE FOUR PRIVATELY-OWNED LOTS TO THE DEPARTMENT OF PLANNING AND ZONING-DIVISION OF LAND DEVELOPMENT.
6. REVISE THE PLAN EXHIBIT TO ADDRESS THE FOLLOWING COMMENTS FROM THE DEPARTMENT OF RECREATION AND PARKS:
 - LD-03 PLANT SCHEDULE - SHADE TREE ZONE: WITCH HAZEL IS NOT AN UNDERSTORY TREE, PLEASE REPLACE WITH A NATIVE TREE SPECIES.
 - EN-05 EROSION AND SEDIMENT CONTROL DETAILS: TREE PROTECTION: #3 CALLS FOR LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN THE FIELD WITH ENGINEER. LANGUAGE SHOULD BE ADDED TO STATE THAT TREE PROTECTION FENCING SHALL BE INSTALLED TO PROTECT THE CRITICAL ROOT ZONE OF THE TREES, EXAMPLE: TREE PROTECTION FENCING SHALL BE INSTALLED AT THE DRIP LINE OF THE TREE TO PROTECT THE CRITICAL ROOT ZONE.
 - A TREE PROTECTION SIGNAGE DETAIL SHOULD BE ADDED TO THE PLANS.
 - REVISE THE TREE SHELTER SPECIFICATIONS, TREE SHELTERS SHALL BE A MINIMUM OF 48" TALL.

AB-01

BY: ddoronzo - U:\202830003\03_data\gis_cad\Sheet_files\GN-N000_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND a joint venture 6110 FROST PLACE LAUREL, MD 20707 TEL. 301.982.2800 FAX. 301.220.2619 www.stantec.com	PREPARED BY: STRAUGHAN ENVIRONMENTAL 10245 OLD COLUMBIA ROAD COLUMBIA, MD 21046 TEL. 301.362.9200 FAX. 301-362-9245 info@straughanenvironmental.com	 HOWARD COUNTY MARYLAND STORMWATER MANAGEMENT DIVISION BUREAU OF ENVIRONMENTAL SERVICES HOWARD COUNTY GOVERNMENT 9801 BROKEN LAND PARKWAY COLUMBIA, MD 21046 (410) 313-0522	BY	NO.	REVISIONS	DATE	ADVERTISED DATE	NA	CONSULTING, WATERSHED EVALUATION AND DESIGN GWYNN PARK DRIVE OUTFALL STABILIZATION CAPITAL PROJECT D-1178 9690 GWYNN PARK DRIVE ELLICOTT CITY, MD 21042
DESIGNED BY: JC DRAWN BY: CC CHECKED BY: GCB								DATE: 4/19/20 SHEET NO. 2 OF 20	ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

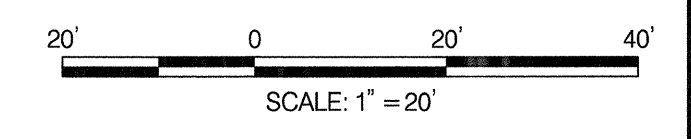
NOTES AND ABBREVIATIONS SHEET



SITE AREA I ACRES = 0.65

TRAVERSE POINTS				
NO.	NORTH	EAST	ELEV.	DESC.
AB7	578.482.0619	1,354,844.0210	343.49	R&C
AB8	578.437.6256	1,355,033.0060	334.95	R&C
AB9	578.529.2438	1,355,180.4500	326.10	R&C
AB10	578.602.0847	1,355,331.0910	323.31	R&C
AB11	578.485.6425	1,355,305.4200	323.54	R&C
AB23	578.391.0607	1,354,916.6290	339.92	R&C

SITE NOTE:
 1. NO CHANGE IN SITE USAGE IS PROPOSED.
 2. NO CHANGE IN IMPERVIOUS AREA IS PROPOSED.
 3. OFFICIAL EASEMENT TO BE PREPARED BY HOWARD COUNTY REAL ESTATE SERVICES DIVISION.
 4. EXISTING MATERIALS IN PRIVATE PROPERTY WILL BE RELOCATED PRIOR TO CONSTRUCTION CONTRACTOR TO REMOVE AND DISPOSE OF ADDITIONAL MATERIAL WITHIN LOD.



DM-01

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark S. Richmond
 CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
 DATE

PREPARED BY:

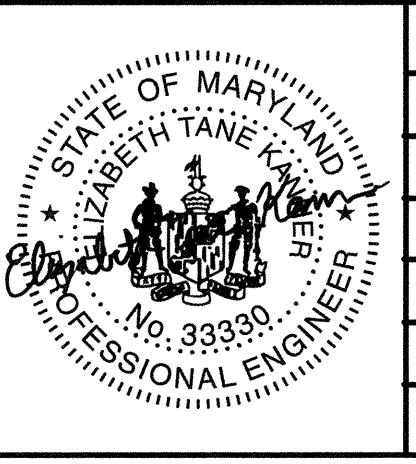
Stantec / **STRAUGHAN ENVIRONMENTAL**
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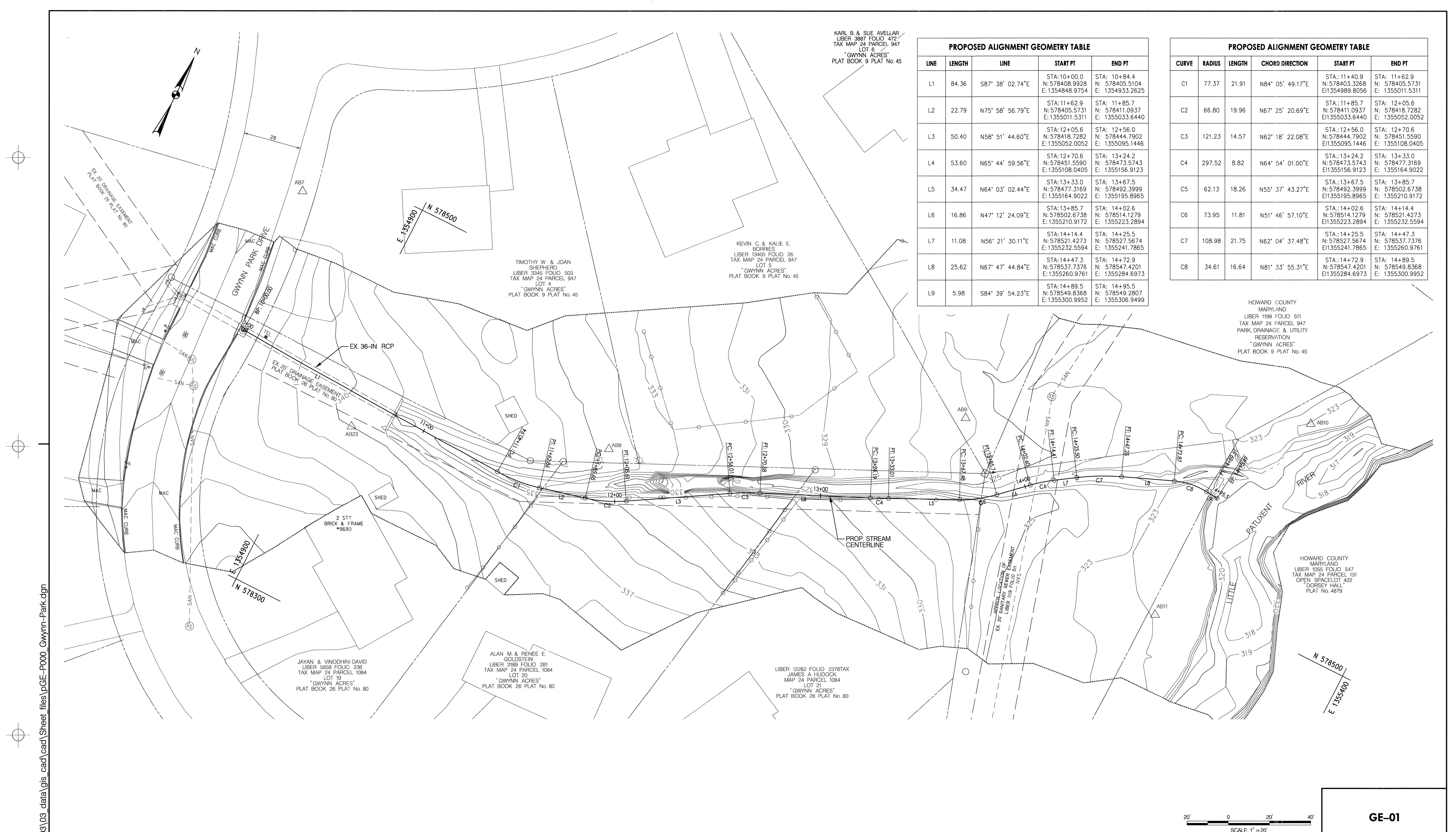


BY	NO.	REVISIONS	DATE	ADVERTISED DATE
				NA
				D-1178
				1" = 20'
				CC
				CC
				GB
			4/20	4/20

CONSULTING, WATERSHED EVALUATION AND DESIGN
 GWYNN PARK DRIVE OUTFALL STABILIZATION
 CAPITAL PROJECT D-1178
 9690 GWYNN PARK DRIVE
 ELLICOTT CITY, MD 21042

EXISTING CONDITIONS AND DEMOLITION PLAN

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8



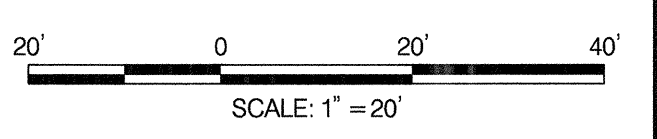
KARL B. & SUE AVELLAR
LIBER 3887 FOLIO 472
TAX MAP 24 PARCEL 947
LOT 6
"GWYNN ACRES"
PLAT BOOK 9 PLAT No. 45

PROPOSED ALIGNMENT GEOMETRY TABLE					
LINE	LENGTH	LINE	START PT	END PT	
L1	84.36	S87° 38' 02.74"E	STA: 10+00.0 N: 578408.9928 E: 1354848.9754	STA: 10+84.4 N: 578405.5104 E: 1354933.2625	
L2	22.79	N75° 58' 56.79"E	STA: 11+62.9 N: 578405.5731 E: 1355011.5311	STA: 11+85.7 N: 578411.0937 E: 1355033.6440	
L3	50.40	N58° 51' 44.60"E	STA: 12+05.6 N: 578418.7282 E: 1355052.0052	STA: 12+56.0 N: 578444.7902 E: 1355095.1446	
L4	53.60	N65° 44' 59.56"E	STA: 12+70.6 N: 578451.5590 E: 1355108.0405	STA: 13+24.2 N: 578473.5743 E: 1355156.9123	
L5	34.47	N64° 03' 02.44"E	STA: 13+33.0 N: 578477.3169 E: 1355164.9022	STA: 13+67.5 N: 578492.3999 E: 1355195.8965	
L6	16.86	N47° 12' 24.09"E	STA: 13+85.7 N: 578502.6738 E: 1355210.9172	STA: 14+02.6 N: 578514.1279 E: 1355223.2894	
L7	11.08	N56° 21' 30.11"E	STA: 14+14.4 N: 578521.4273 E: 1355232.5594	STA: 14+25.5 N: 578527.5674 E: 1355241.7865	
L8	25.62	N67° 47' 44.84"E	STA: 14+47.3 N: 578537.7376 E: 1355260.9761	STA: 14+72.9 N: 578547.4201 E: 1355284.6973	
L9	5.98	S84° 39' 54.23"E	STA: 14+89.5 N: 578549.8368 E: 1355300.9952	STA: 14+95.5 N: 578549.2807 E: 1355306.9499	

PROPOSED ALIGNMENT GEOMETRY TABLE					
CURVE	RADIUS	LENGTH	CHORD DIRECTION	START PT	END PT
C1	77.37	21.91	N84° 05' 49.17"E	STA: 11+40.9 N: 578403.3268 E: 1354989.8056	STA: 11+62.9 N: 578405.5731 E: 1355011.5311
C2	66.80	19.96	N67° 25' 20.69"E	STA: 11+85.7 N: 578411.0937 E: 1355033.6440	STA: 12+05.6 N: 578418.7282 E: 1355052.0052
C3	121.23	14.57	N62° 18' 22.08"E	STA: 12+56.0 N: 578444.7902 E: 1355095.1446	STA: 12+70.6 N: 578451.5590 E: 1355108.0405
C4	297.52	8.82	N64° 54' 01.00"E	STA: 13+24.2 N: 578473.5743 E: 1355156.9123	STA: 13+33.0 N: 578477.3169 E: 1355164.9022
C5	62.13	18.26	N55° 37' 43.27"E	STA: 13+67.5 N: 578492.3999 E: 1355195.8965	STA: 13+85.7 N: 578492.3999 E: 1355210.9172
C6	73.95	11.81	N51° 46' 57.10"E	STA: 14+02.6 N: 578514.1279 E: 1355223.2894	STA: 14+14.4 N: 578521.4273 E: 1355232.5594
C7	108.98	21.75	N62° 04' 37.48"E	STA: 14+25.5 N: 578527.5674 E: 1355241.7865	STA: 14+47.3 N: 578537.7376 E: 1355260.9761
C8	34.61	16.64	N81° 33' 55.31"E	STA: 14+72.9 N: 578547.4201 E: 1355284.6973	STA: 14+89.5 N: 578549.8368 E: 1355300.9952

HOWARD COUNTY
MARYLAND
LIBER 1199 FOLIO 511
TAX MAP 24 PARCEL 947
PARK, DRAINAGE & UTILITY
RESERVATION
"GWYNN ACRES"
PLAT BOOK 9 PLAT No. 45

HOWARD COUNTY
MARYLAND
LIBER 1055 FOLIO 547
TAX MAP 24 PARCEL 131
OPEN SPACELOT 422
"DORSEY HALL"
PLAT No. 4879



GE-01

BY: dctoronzo - U:\202830003\03_data\gis_cad\Sheet_files\pGE-P000_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond
CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
DATE

PREPARED BY:

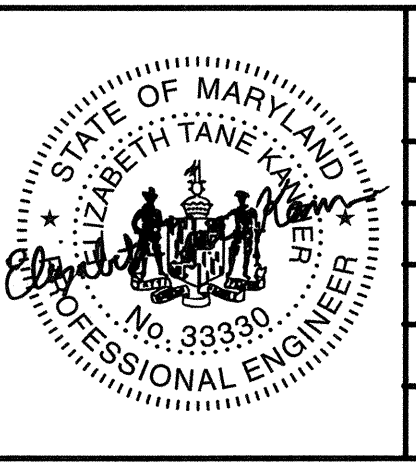
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HOWARD COUNTY
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HOWARD COUNTY GOVERNMENT
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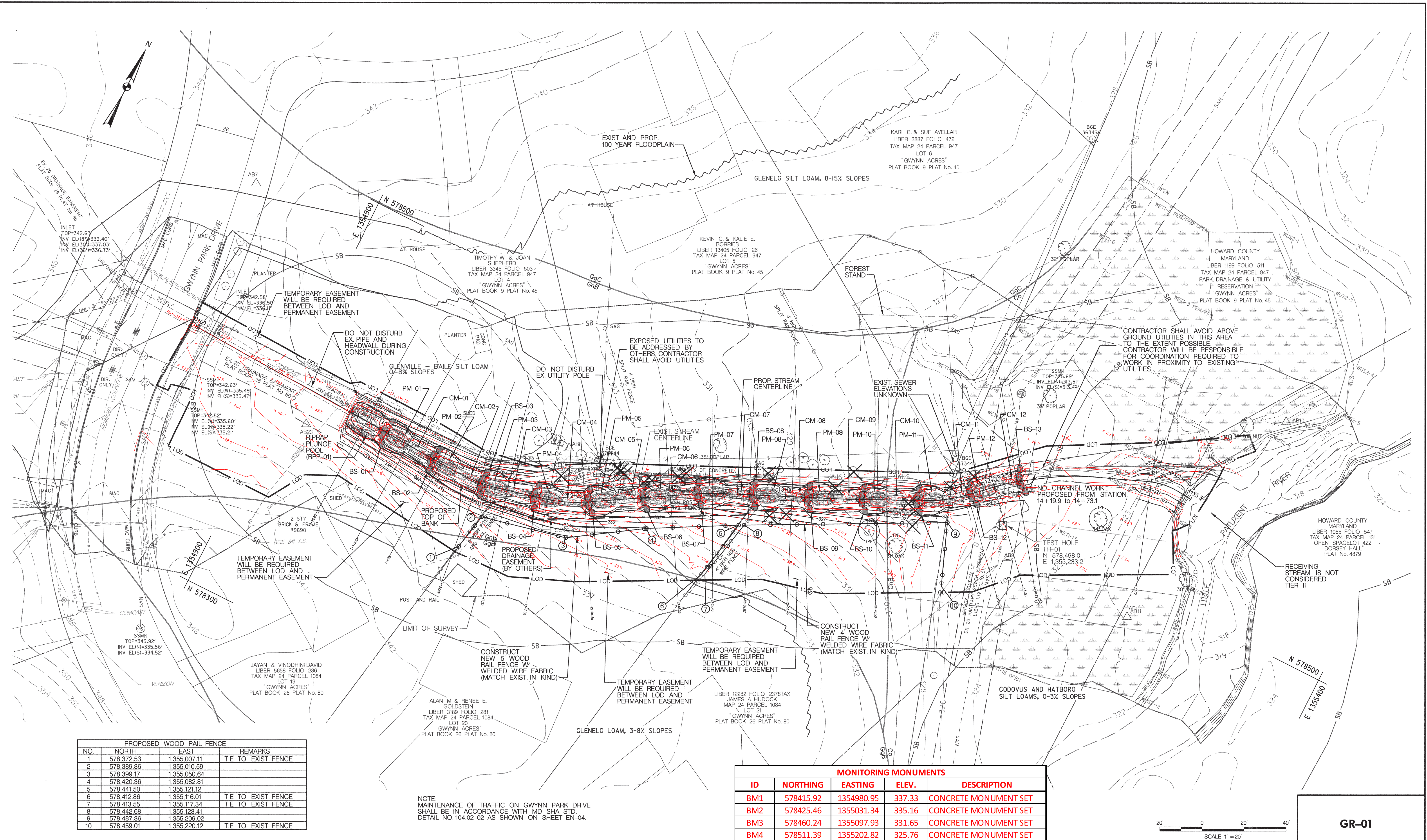
BY	NO.	REVISIONS	DATE

ADVERTISED DATE	N/A
CONTRACT NO.	D-1178
SCALE	1" = 20'
DESIGNED BY	CC
DRAWN BY	CC
CHECKED BY	GB
DATE	4/20
SHEET NO.	4 OF 20

CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

GEOMETRY PLAN

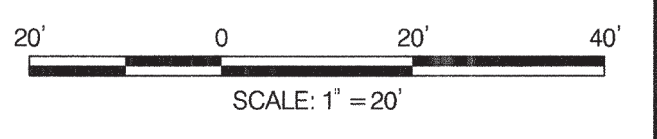
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8



PROPOSED WOOD RAIL FENCE			
NO.	NORTH	EAST	REMARKS
1	578,372.53	1,355,007.11	TIE TO EXIST. FENCE
2	578,389.86	1,355,010.59	
3	578,399.17	1,355,050.64	
4	578,420.36	1,355,082.81	
5	578,441.50	1,355,121.12	
6	578,412.86	1,355,116.01	TIE TO EXIST. FENCE
7	578,413.55	1,355,117.34	TIE TO EXIST. FENCE
8	578,442.68	1,355,123.41	
9	578,487.36	1,355,209.02	
10	578,459.01	1,355,220.12	TIE TO EXIST. FENCE

NOTE:
 MAINTENANCE OF TRAFFIC ON GWYNN PARK DRIVE
 SHALL BE IN ACCORDANCE WITH MD SHA STD.
 DETAIL NO. 104.02-02 AS SHOWN ON SHEET EN-04.

MONITORING MONUMENTS				
ID	NORTHING	EASTING	ELEV.	DESCRIPTION
BM1	578415.92	1354980.95	337.33	CONCRETE MONUMENT SET
BM2	578425.46	1355031.34	335.16	CONCRETE MONUMENT SET
BM3	578460.24	1355097.93	331.65	CONCRETE MONUMENT SET
BM4	578511.39	1355202.82	325.76	CONCRETE MONUMENT SET



GR-01

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4/9/20
 DATE

PREPARED BY:

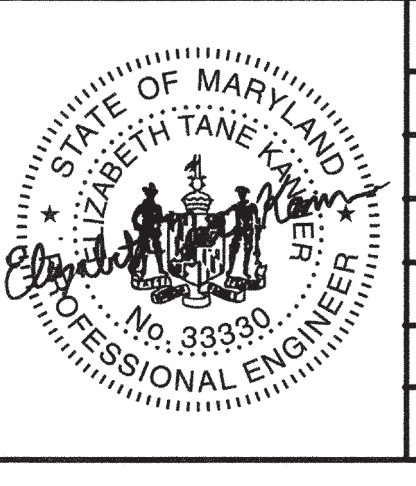
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BY	NO.	REVISIONS	DATE
CSA	1	AS-CONSTRUCTED SURVEY	02/25/21

ADVERTISED DATE	CONTRACT NO.	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
NA	D-1178	1" = 20'	JC	CC	GB

CONSULTING, WATERSHED EVALUATION AND DESIGN
 GWYNN PARK DRIVE OUTFALL STABILIZATION
 CAPITAL PROJECT D-1178
 9690 GWYNN PARK DRIVE
 ELLICOTT CITY, MD 21042

GRADING PLAN

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

BOULDER SILLS									
	Ref. Pt. A			Ref. Pt. B			Ref. Pt. C		
	Station	Elevation	Offset	Station	Elevation	Offset	Station	Elevation	Offset
BS-01	11+02.3	334.97	0	11+02.3	335.57	-7.1	11+02.3	335.57	7.1
BS-02	11+28.3	333.97	0	11+28.3	334.57	-7.1	11+28.3	334.57	7.1
BS-03	11+54.3	332.97	0	11+54.3	333.57	-7.1	11+54.3	333.57	7.1
BS-04	11+80.3	331.97	0	11+80.3	332.57	-7.1	11+80.3	332.57	7.1
BS-05	12+06.3	330.97	0	12+06.3	331.57	-7.1	12+06.3	331.57	7.1
BS-06	12+32.3	329.97	0	12+32.3	330.57	-7.1	12+32.3	330.57	7.1
BS-07	12+58.3	328.97	0	12+58.3	329.57	-7.1	12+58.3	329.57	7.1
BS-08	12+84.3	327.97	0	12+84.3	328.57	-7.1	12+84.3	328.57	7.1
BS-09	13+10.3	326.97	0	13+10.3	327.57	-7.1	13+10.3	327.57	7.1
BS-10	13+36.3	325.97	0	13+36.3	326.57	-7.1	13+36.3	326.57	7.1
BS-11	13+62.3	324.97	0	13+62.3	325.57	-7.1	13+62.3	325.57	7.1
BS-12	13+88.3	323.97	0	13+88.3	324.57	-7.1	13+88.3	324.57	7.1
BS-13	14+12.6	322.97	0	14+12.6	323.57	-7.1	14+12.6	323.57	7.1

Riprap Plunge Pool		
	Start Sta.	End Sta.
RPP-01	10+84.4	11+02.4

Cascade Mix		
	Start Sta.	End Sta.
CM-01	11+15.3	11+28.3
CM-02	11+41.3	11+54.3
CM-03	11+67.3	11+80.3
CM-04	11+93.3	12+06.3
CM-05	12+19.3	12+32.3
CM-06	12+45.3	12+58.3
CM-07	12+71.3	12+84.3
CM-08	12+97.3	13+10.3
CM-09	13+23.3	13+36.3
CM-10	13+49.3	13+62.3
CM-11	13+75.3	13+88.3
CM-12	14+01.3	14+12.6

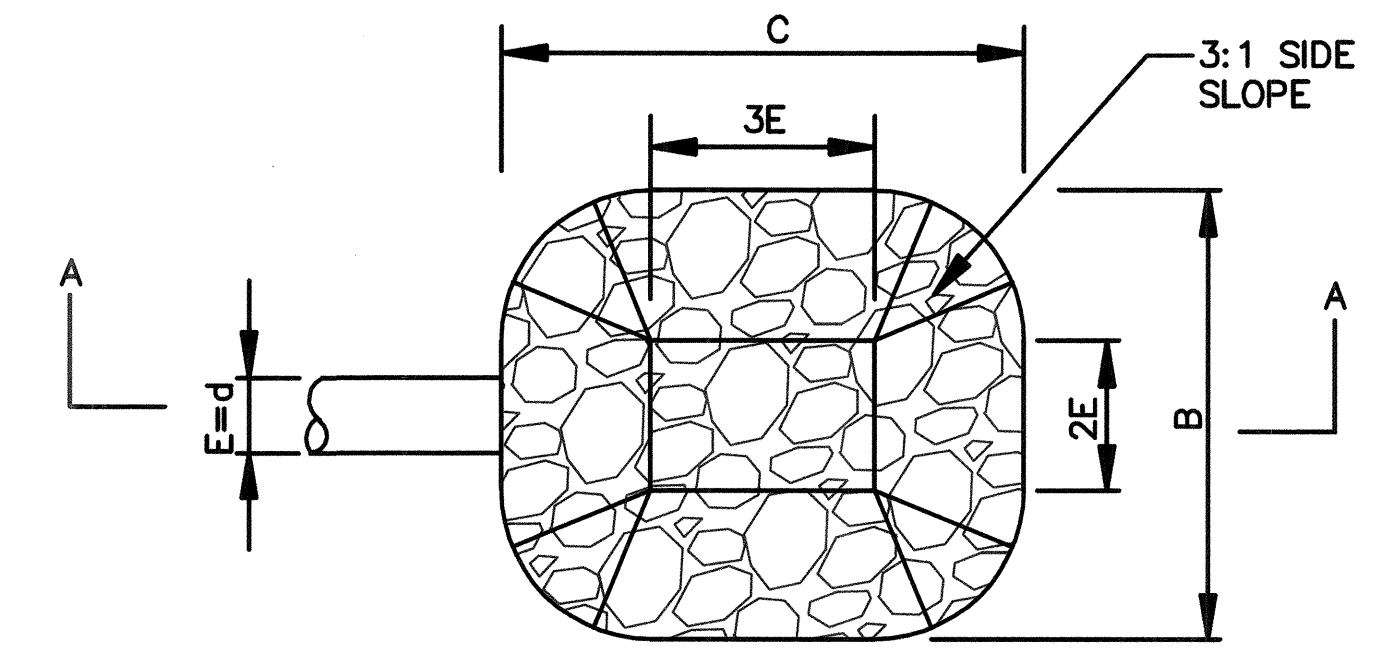
Pool Mix		
	Start Sta.	End Sta.
PM-01	11+02.3	11+15.3
PM-02	11+28.3	11+41.3
PM-03	11+54.3	11+67.3
PM-04	11+80.3	11+93.3
PM-05	12+06.3	12+19.3
PM-06	12+32.3	12+45.3
PM-07	12+58.3	12+71.3
PM-08	12+84.3	12+97.3
PM-09	13+10.3	13+23.3
PM-10	13+36.3	13+49.3
PM-11	13+62.3	13+75.3
PM-12	13+88.3	14+01.3

STRUCTURE TABLES

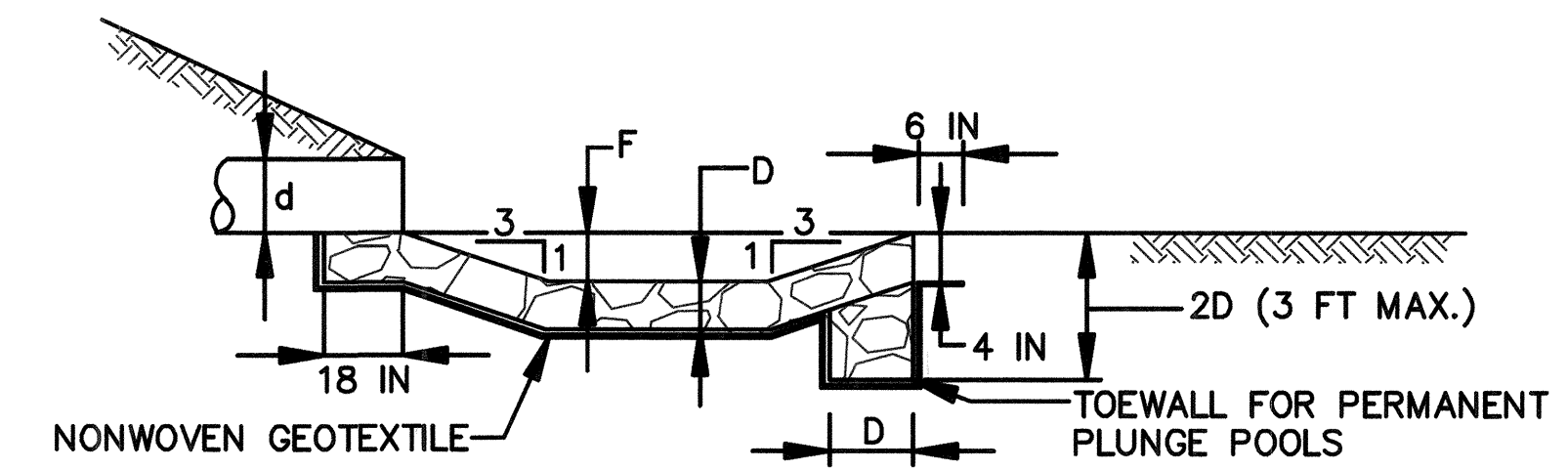
DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL

PP



PLAN VIEW



SECTION A-A

CONSTRUCTION SPECIFICATIONS

- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
- PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
- STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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RIPRAP PLUNGE POOL DIMENSIONS					
STRUCTURE	C	B	D	E	F
RPP	18'	15'	19'	36'	1.5'

CLASS I RIPRAP GRADATION STANDARDS	
d ₅₀	9.5"
d ₁₀₀	15"

DE-01

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

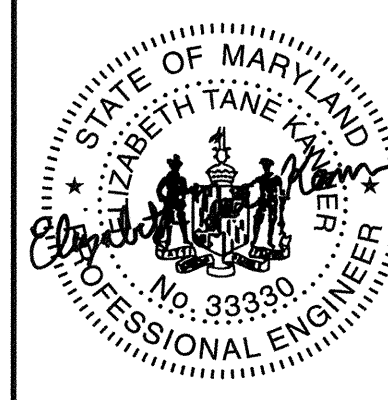
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BY	NO.	REVISIONS	DATE	ADVERTISED DATE
				N/A
				D-1178
				NTS.
				JC
				CC
				GCB
			DATE 4/12/20	SHEET NO. 6 OF 20

CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

STREAM DETAILS

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

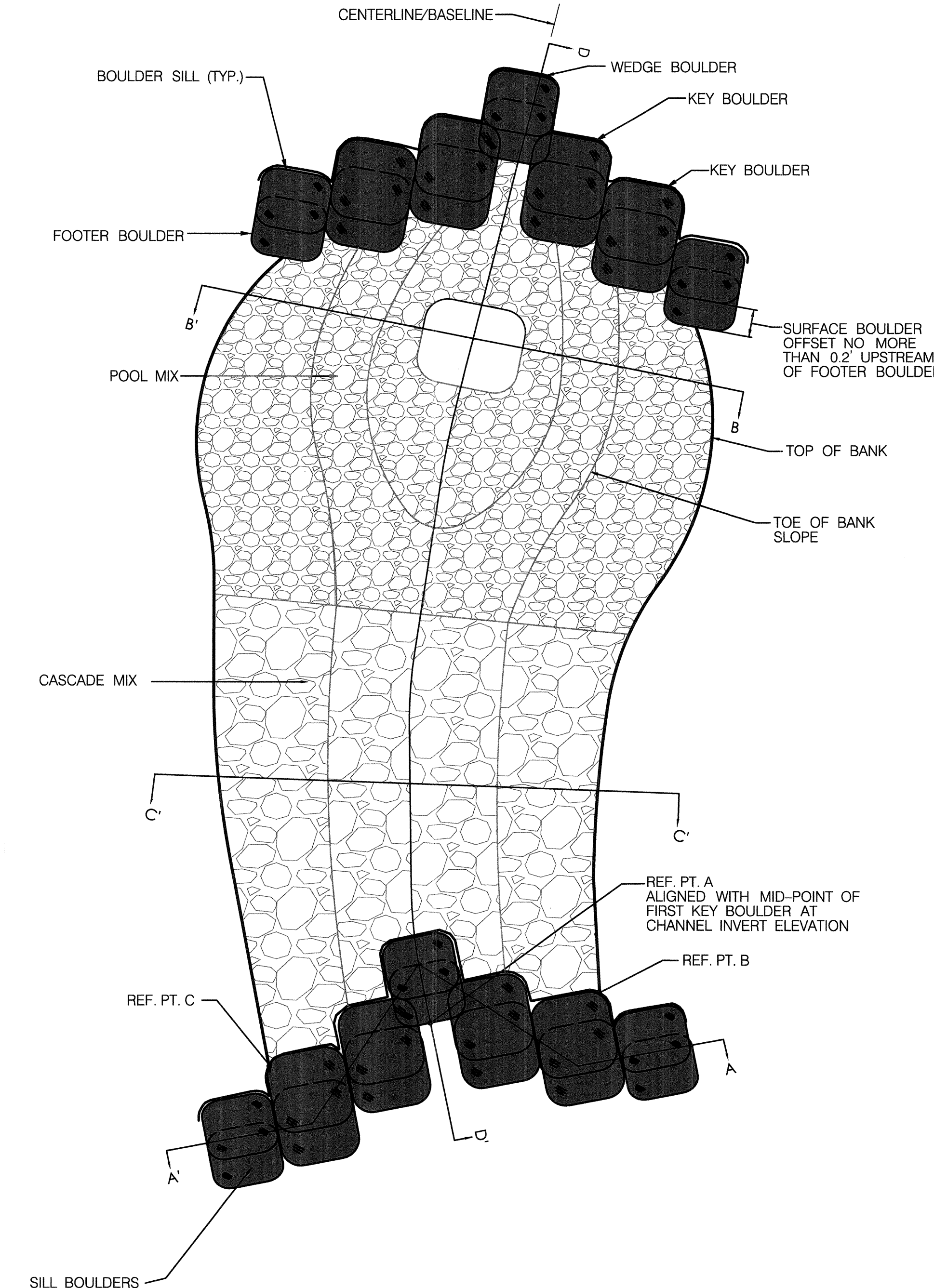
TABLE 1. CREST DIMENSIONS	
DIMENSION	VALUE
CREST TOP WIDTH	9.4'
D _{max}	0.9'
CREST BOTTOM WIDTH	4.0'
BENCH WIDTH	2.85'

TABLE 2. BOULDER DIMENSIONS			
	L	W	H
WEDGE BOULDER	2.5'	2.0'	1.5'
KEY BOULDER	3.5'	3.5'	2.5'
FOOTER BOULDER	3.5'	3.5'	2.5'
SILL BOULDER	2.5'	2.0'	1.5'

Table 3. CASCADE MIX	
D35	3"
D50	7.5"
D100	15"
Thickness	19"

Table 4. POOL MIX	
D35	3"
D50	6"
D100	9"
Thickness	12"

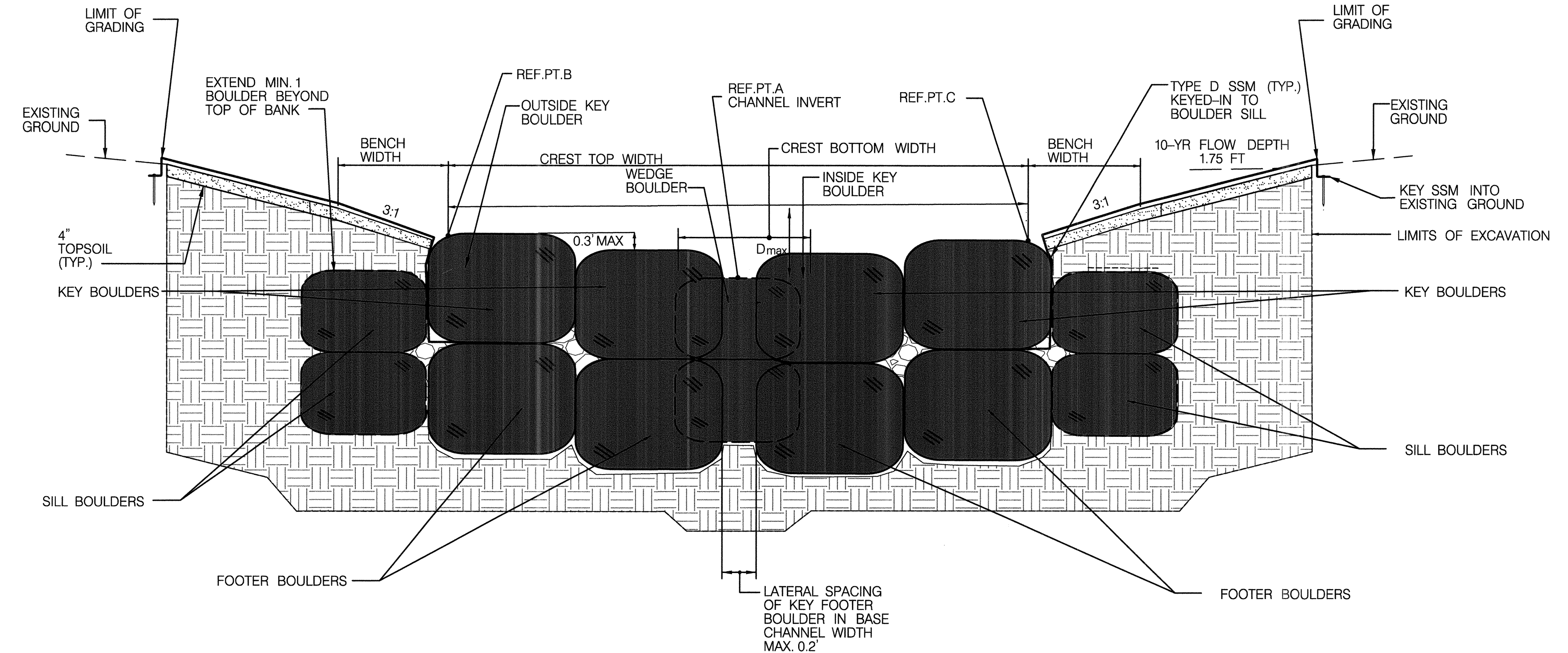
NOTES:
 1. CASCADE AND POOL MIX MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SO THAT 50 PERCENT OF THE PIECES, BY WEIGHT, ARE LARGER THAN THE D50 SPECIFIED. A WELL GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE MUST NOT EXCEED THE D100 SPECIFIED.
 2. CASCADE MIX SIZING IS DESIGNED FOR MAX. VELOCITY OF 10 FT/S AND MAX. DEPTH OF 1.75 FT. BOULDER SIZING IS BASED ON MAX. SHEAR STRESS OF 4.27 LBS/SQ.FT.
 3. SEE SHEET DE-03 FOR BOULDER DIMENSIONS DETAIL.



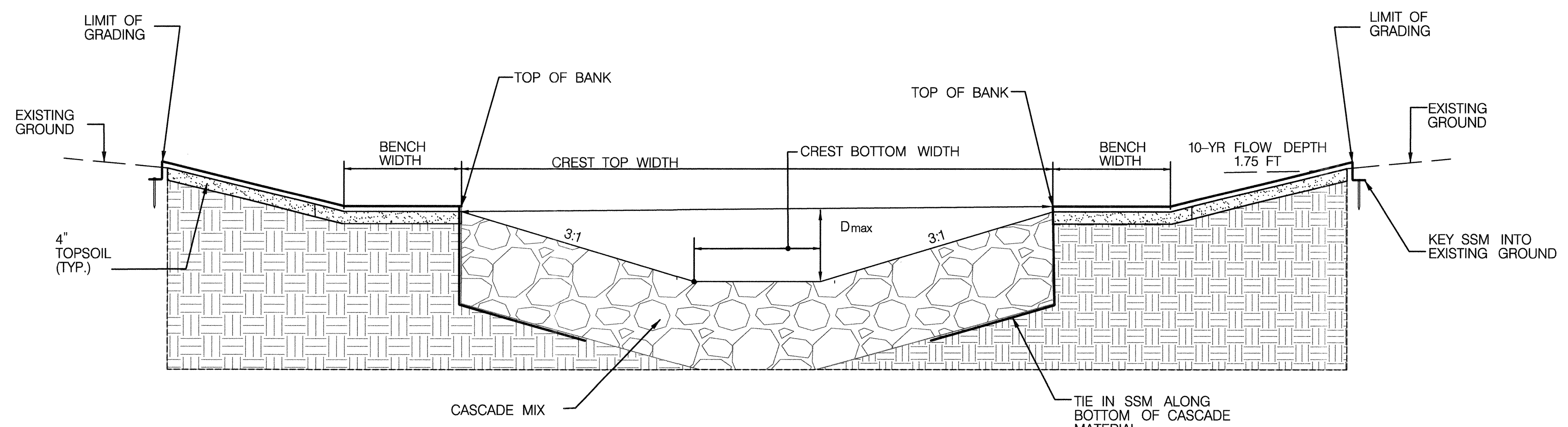
PLAN VIEW

STEP POOL CASCADE DETAIL

NTS.



BOULDER SILL SECTION A-A'



CASCADE SECTION C-C'

DE-02

BY: dcoronzo - U:\202830003\03_data\gis_cad\Sheet_files\pDD-D002_Gwynn-Park.dgn

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HOWARD COUNTY, MARYLAND

Mark S. Schmidt
CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
DATE

PREPARED BY:

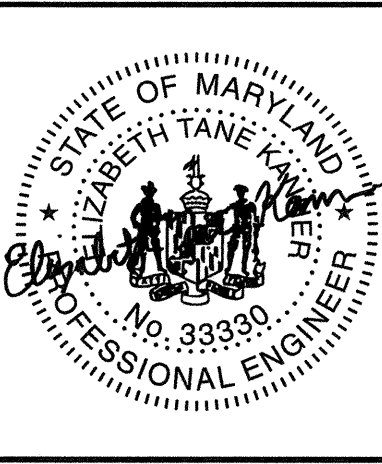
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BY	NO.	REVISIONS	DATE

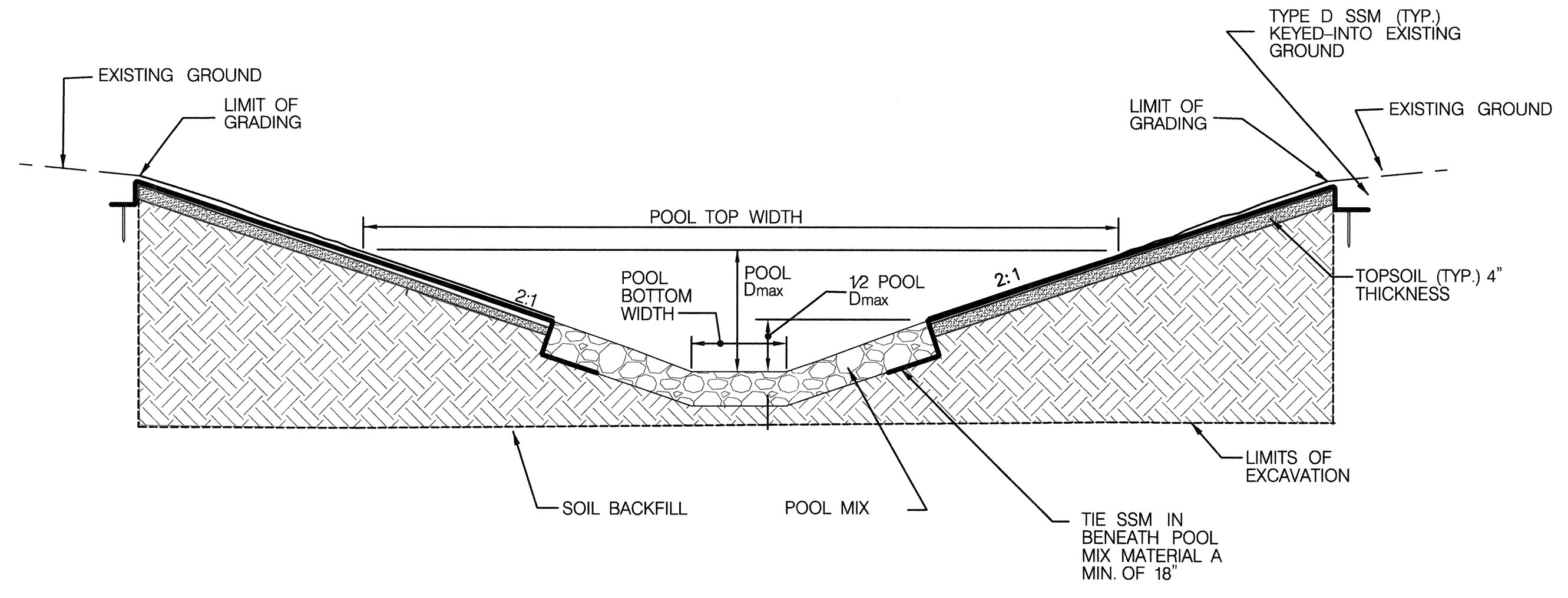
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OF	20

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STREAM DETAILS

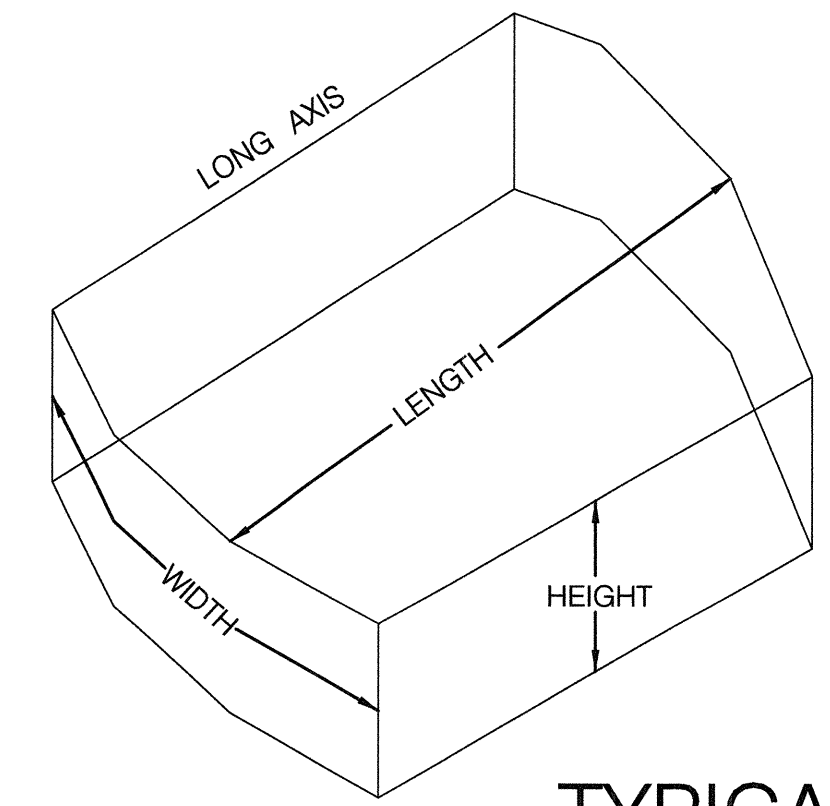
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

TABLE 3. POOL DIMENSIONS	
DIMENSION	VALUE
POOL TOP WIDTH	15.3'
D _{max} POOL	2.8'
POOL BOTTOM WIDTH	2.0'



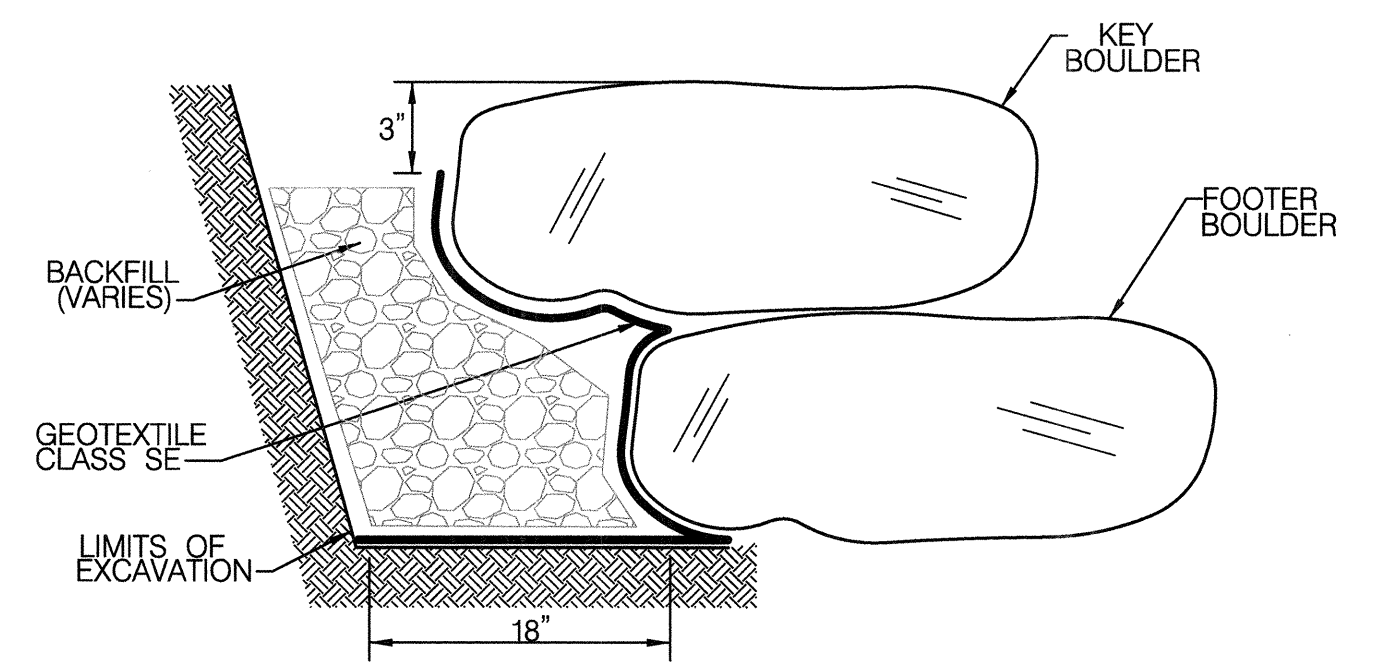
SCOUR POOL SECTION B-B'

- NOTES:
- BOULDER STEP POOLS TO BE CONSTRUCTED WITH THE BOULDER SILLS INSTALLED FIRST, BEGINNING WITH THE KEY BOULDERS, FOLLOWED BY TIGHTLY PLACING THE WEDGE BOULDERS AGAINST THE UPSTREAM FACE ONCE THE SILLS ARE INSTALLED, PLACE THE SPECIFIED MIX MATERIAL, BACKFILL AND TOPSOIL.
 - ONLY THE TOP OF THE BOULDERS WITHIN THE BASE CHANNEL WIDTH SHOULD BE VISIBLE AFTER CONSTRUCTION.
 - WEDGE BOULDERS ARE THE SMALLER BOULDERS IN THE SILL THAT ARE PLACED UPSTREAM ALONG THE CENTERLINE, 0.1 TO 0.2 FT BELOW THE TOP ELEVATION OF THE ADJACENT KEY BOULDERS TO CONVEY LOW BASEFLOW THROUGH THE STRUCTURE. KEY BOULDERS ARE THE SILL ARM BOULDERS LOCATED DOWNSTREAM OF THE WEDGE BOULDER AND PLACED IN A STAGGERED MANNER AS SHOWN. THE INSIDE KEY BOULDERS ARE SET AT THE CHANNEL INVERT ELEVATION, THE OUTSIDE KEY BOULDERS ARE SET SLIGHTLY HIGHER THAN THE INSIDE KEY BOULDERS AND EXTEND INTO THE BANKS OF THE CHANNEL. ALL ADJACENT BOULDERS MUST TOUCH IN SUCH A MANNER AS TO MINIMIZE GAPS.
 - EACH KEY AND WEDGE BOULDER IS PLACED ON A FOOTER BOULDER OF THE SAME SIZE, OFFSET THE WEDGE AND KEY BOULDERS HALF THE WIDTH OF THE BOULDER UPSTREAM OF THE FOOTER BOULDER, AND OFFSET THE INSIDE KEY BOULDER FROM THE OUTSIDE KEY BOULDER BY HALF THE WIDTH OF THE BOULDERS, AS SHOWN.
 - SET BOULDER INVERTS IN THE BOULDER SILLS AT ELEVATIONS SHOWN IN THE STRUCTURE TABLES ON THE PLAN SHEETS AND AS SHOWN ON THE PROFILE SHEETS, WITHIN A 0.1' TOLERANCE OF THE SPECIFIED ELEVATIONS.
 - ALL GAPS /VOIDS LARGER THAN 2-INCHES BETWEEN ADJACENT KEY BOULDERS AND THE FOOTER BOULDERS WITHIN THE SILLS SHALL BE CHINKED WITH BACKFILL MATERIAL AS SHOWN IN THE GEOTEXTILE PLACEMENT DETAIL.
 - PLACE A LAYER OF GEOTEXTILE CLASS SE FABRIC ALONG THE UPSTREAM SIDE OF THE BOULDERS IN THE SILLS FOR THE ENTIRE LENGTH OF THE SILLS, AS SHOWN IN THE GEOTEXTILE PLACEMENT DETAIL.
 - BACKFILL CASCADE PORTIONS OF THE STEP POOL WITH 12-INCHES OF CASCADE MIX, TIED INTO THE UPSTREAM SIDE OF THE SILL AND EXTENDING THE CASCADE MIX TO THE BANKFULL WIDTH, AS SHOWN ON THE TABLES ON SHEET DE-02. THE DEPTH OF THE SCOUR POOL IMMEDIATELY BELOW THE SILLS SHALL BE AS SHOWN ON THE PROFILE SHEETS.
 - CASCADE MIX AND SOIL BACKFILL MATERIAL SHALL BE COMPACTED SUCH THAT FUTURE SETTLEMENT OF THE MATERIAL IS KEPT TO A MINIMUM. A 4-INCH DEPTH OF TOPSOIL SHALL BE PLACED ON TOP OF THE SOIL BACKFILL MATERIAL. SECURE TOPSOIL WITH TYPE D SOIL STABILIZATION MATTING (SSM), KEYED-IN ABOVE THE BOULDERS OR CASCADE MIX MATERIAL TO THE LIMITS OF THE BURIED PORTION OF THE MATERIAL.
 - THE SURFACE OF THIS STRUCTURE SHALL BE FINISHED TO A SMOOTH AND COMPACT SURFACE IN ACCORDANCE WITH THE LINES, GRADES AND CROSS-SECTIONS OR ELEVATIONS SHOWN ON THE DRAWINGS.



TYPICAL BOULDER DIMENSIONS DETAIL
NTS.

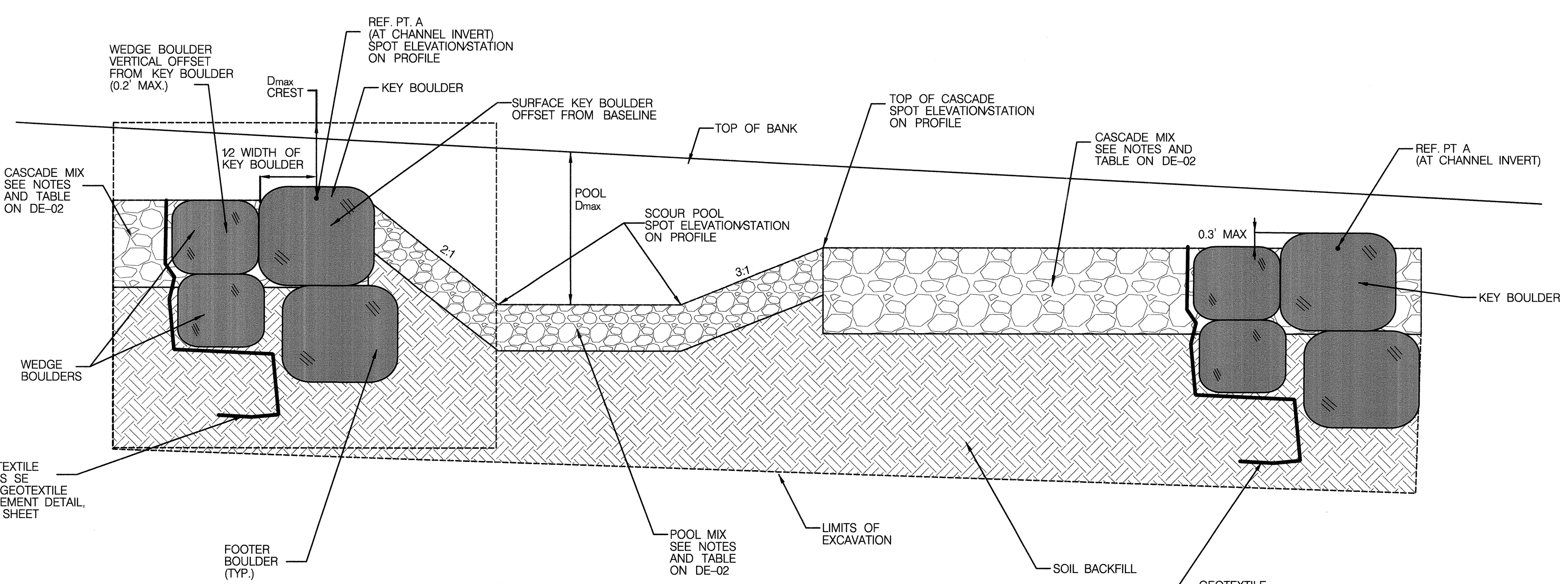
- NOTES:
- BOULDERS SHALL BE MODERATELY RECTANGULAR SHAPED AND MEET THE DIMENSIONS INDICATED FOR EACH BOULDER TYPE ON THE TABLES. BOULDERS SHALL NOT BE ROUND, SQUARE OR TRIANGULAR SHAPED.
 - BOULDERS SHALL BE OF A SIMILAR TEXTURE AND COLOR TO THE NATIVE ROCK PRESENT AT THE SITE AND OBTAINED FROM AN APPROVED SOURCE. WHITE STONES AND GRANULAR SEDIMENTARY STONES ARE NOT ACCEPTABLE.
 - BOULDERS SHALL BE FREE FROM LAMINATIONS AND WEAK CLEAVAGES, AND SHALL NOT DISINTEGRATE FROM AIR OR SALT WATER ACTION OR FROM HANDLING AND PLACING.
 - BOULDERS SHALL NOT BE HARVESTED FROM STREAM OR RIVERS OUTSIDE OF A COMMERCIAL QUARRY OPERATION.
 - UNLESS OTHERWISE STATED, BOULDERS SHALL HAVE A MINIMUM UNIT WEIGHT OF 165 LBS PER CUBIC FOOT.



BOULDER STRUCTURE SECTION

- NOTES:
- GEOTEXTILE CLASS SE FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF INSTREAM BOULDER STRUCTURES AS NOTED ON THE STRUCTURE DETAILS TO PREVENT UPSTREAM MATERIALS FROM PIPING THROUGH THE STRUCTURES.
 - GEOTEXTILE FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER OR THE BOTTOM OF THE UPSTREAM LIMITS OF EXCAVATION, WHICHEVER IS LOWER, UP TO 3-INCHES FROM THE TOP OF THE HEADER BOULDER, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - GEOTEXTILE FABRIC DOES NOT NEED TO BE SECURED TO BOULDER STRUCTURES BUT SHOULD BE HELD IN PLACE AGAINST THE HEADER BOULDER DURING PLACEMENT OF UPSTREAM BACKFILL MATERIALS.
 - UPON COMPLETION OF ANY STRUCTURE THERE SHALL BE ABSOLUTELY NO EXPOSED GEOTEXTILE FABRIC.

DETAIL: GEOTEXTILE PLACEMENT



LONGITUDINAL PROFILE D-D'

STEP POOL CASCADE DETAIL (CONT.)
NTS.

DE-03

BY: dcoronzo - U:\2023\0003\03_data\gis_cad\Sheet_files\pDD-D003_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Marks Richmond
CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
DATE

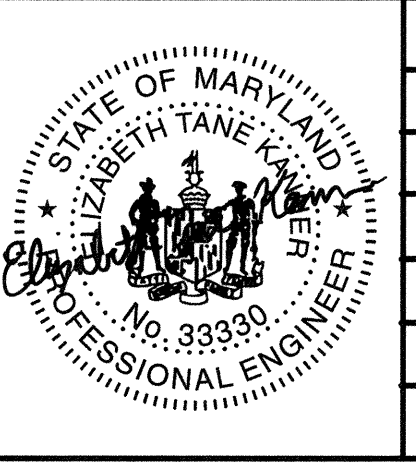
PREPARED BY:
Stantec / **STRAUGHAN ENVIRONMENTAL**
a joint venture

6110 FROST PLACE
LAUREL, MD 20707
TEL: 301.982.2800
FAX: 301.220.2819
www.stantec.com

10245 OLD COLUMBIA ROAD
COLUMBIA, MD 21046
TEL: 301.362.9200
FAX: 301-362-9245
info@straughanenvironmental.com

HOWARD COUNTY
MARYLAND

STORMWATER MANAGEMENT DIVISION
BUREAU OF ENVIRONMENTAL SERVICES
HOWARD COUNTY GOVERNMENT
9801 BROKEN LAND PARKWAY
COLUMBIA, MD 21046
(410) 313-0522



BY	NO.	REVISIONS	DATE	ADVERTISED DATE




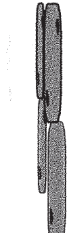
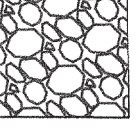
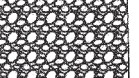
ADVERTISED DATE: N/A
CONTRACT NO.: D-1178
SCALE: NTS.
DESIGNED BY: JC
DRAWN BY: CC
CHECKED BY: GCB
DATE: 4/1/20 SHEET NO. 8 OF 20

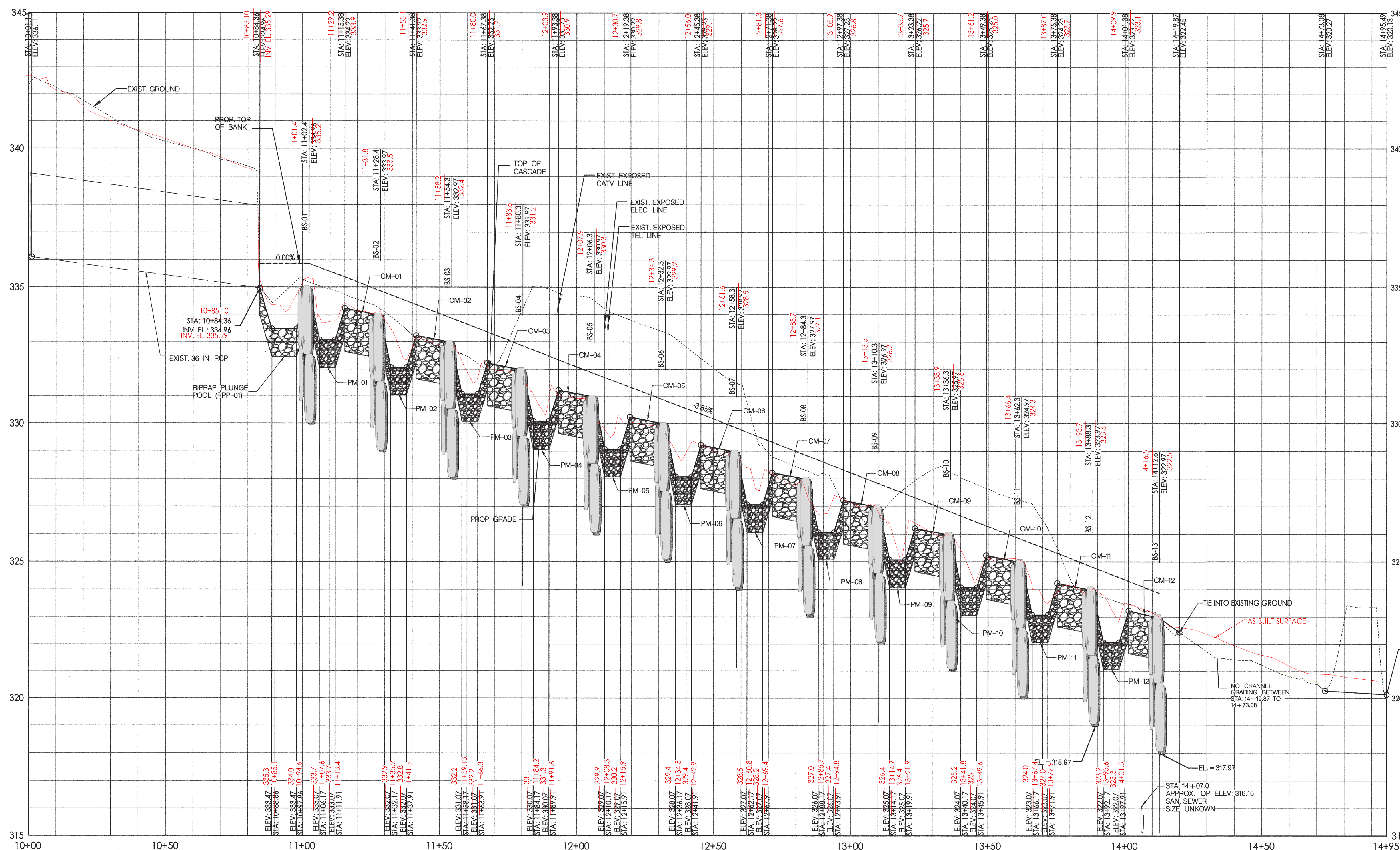
CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

STREAM DETAILS

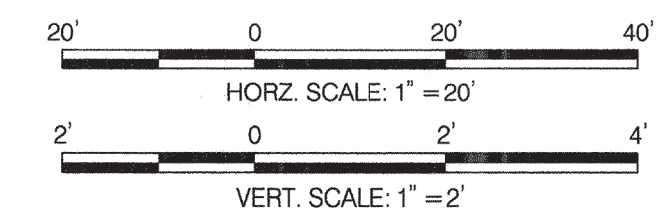
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

LEGEND

-  PROPOSED GRADE
-  EXISTING GRADE
-  EXISTING CULVERT
-  BOULDER SILL (BS)
-  CASCADE MIX (CM)
-  POOL MIX (PM)



**PROPOSED STREAM PROFILE
STA. 10+00 TO 14+95**



PP-01

BY: dctoronzo - U:\202830003\03_data\gis_cad\Sheet_files\pPR-0000_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond
CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
DATE

PREPARED BY:

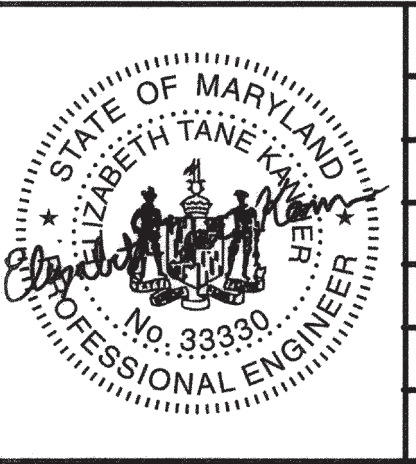
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COLUMBIA, MD 21046
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BY	NO.	REVISIONS	DATE
CSA	1	AS-CONSTRUCTED SURVEY	02/25/21

ADVERTISED DATE	N/A
CONTRACT NO.	D-1178
SCALE	AS SHOWN
DESIGNED BY	JC
DRAWN BY	CC
CHECKED BY	GB
DATE	4/20
SHEET NO.	9 OF 20

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STREAM PROFILE

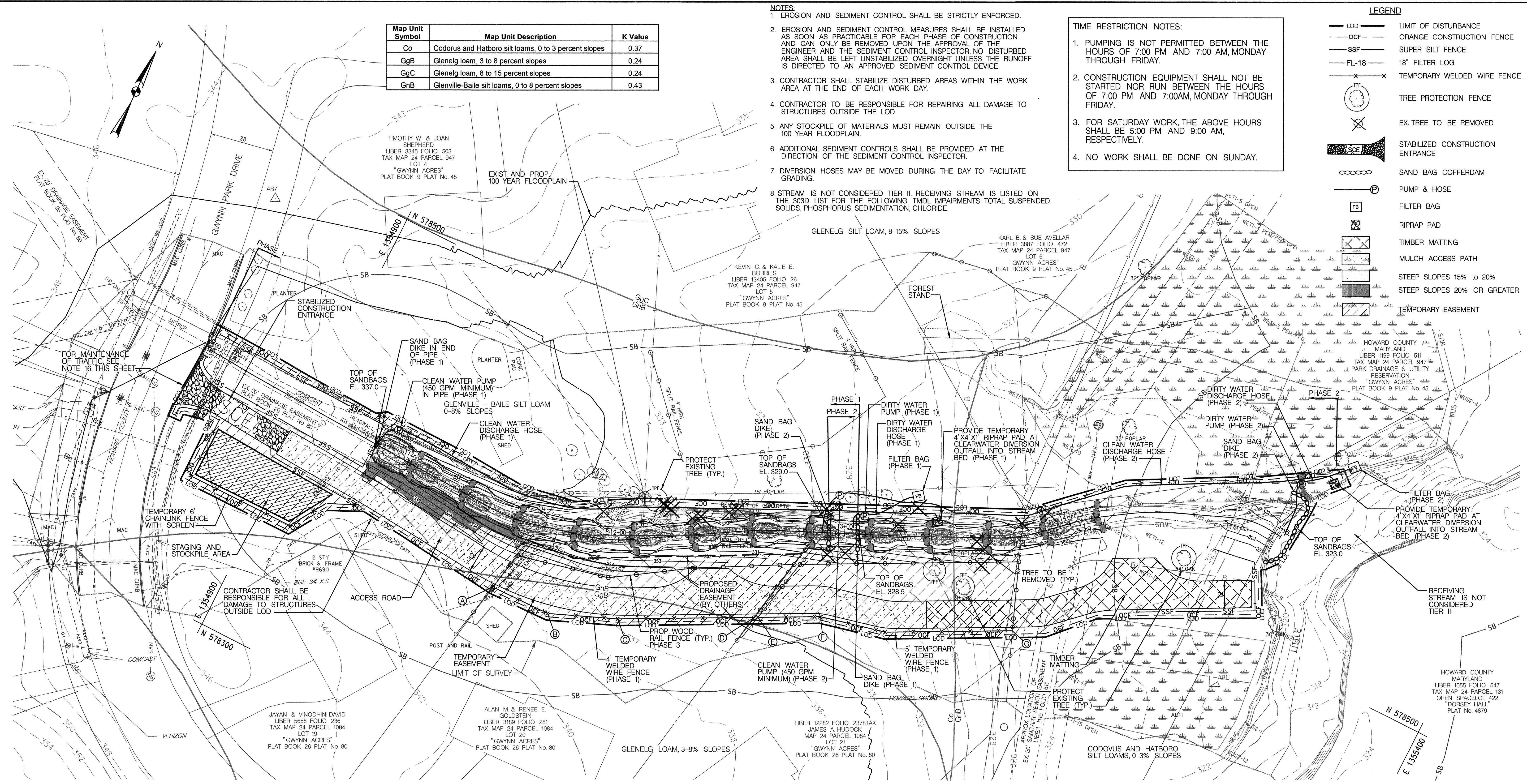
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

Map Unit Symbol	Map Unit Description	K Value
Co	Codorus and Hatboro silt loams, 0 to 3 percent slopes	0.37
GgB	Glenelg loam, 3 to 8 percent slopes	0.24
GgC	Glenelg loam, 8 to 15 percent slopes	0.24
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	0.43

- NOTES:**
- EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.
 - EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE FOR EACH PHASE OF CONSTRUCTION AND CAN ONLY BE REMOVED UPON THE APPROVAL OF THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
 - CONTRACTOR SHALL STABILIZE DISTURBED AREAS WITHIN THE WORK AREA AT THE END OF EACH WORK DAY.
 - CONTRACTOR TO BE RESPONSIBLE FOR REPAIRING ALL DAMAGE TO STRUCTURES OUTSIDE THE LOD.
 - ANY STOCKPILE OF MATERIALS MUST REMAIN OUTSIDE THE 100 YEAR FLOODPLAIN.
 - ADDITIONAL SEDIMENT CONTROLS SHALL BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 - DIVERSION HOSES MAY BE MOVED DURING THE DAY TO FACILITATE GRADING.
 - STREAM IS NOT CONSIDERED TIER II. RECEIVING STREAM IS LISTED ON THE 303D LIST FOR THE FOLLOWING TMDL IMPAIRMENTS: TOTAL SUSPENDED SOLIDS, PHOSPHORUS, SEDIMENTATION, CHLORIDE.

- TIME RESTRICTION NOTES:**
- PUMPING IS NOT PERMITTED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
 - CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7:00 PM AND 7:00AM, MONDAY THROUGH FRIDAY.
 - FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE 5:00 PM AND 9:00 AM, RESPECTIVELY.
 - NO WORK SHALL BE DONE ON SUNDAY.

- LEGEND**
- LOD LIMIT OF DISTURBANCE
 - OCF ORANGE CONSTRUCTION FENCE
 - SSF SUPER SILT FENCE
 - FL-18 18" FILTER LOG
 - X-X TEMPORARY WELDED WIRE FENCE
 - Tree Protection Fence
 - EX TREE TO BE REMOVED
 - SCF STABILIZED CONSTRUCTION ENTRANCE
 - SAND BAG COFFERDAM
 - PUMP & HOSE
 - FB FILTER BAG
 - RIPRAP PAD
 - TIMBER MATTING
 - MULCH ACCESS PATH
 - STEEP SLOPES 15% TO 20%
 - STEEP SLOPES 20% OR GREATER
 - TEMPORARY EASEMENT



- NOTES CONTINUED:**
- AREA OF LOD 0.65 ACRES
 - NO INCREASE IN IMPERVIOUS AREA IS ANTICIPATED
 - A DPZ WAIVER IS ANTICIPATED
 - THE STREAM WILL BE DEWATERED
 - DURING CONSTRUCTION USING STANDARD PUMP AROUND PRACTICES
 - NO CHANGE IN LAND USE IS PROPOSED
 - NO CHANGE TO EXISTING DRAINAGE AREA PROPOSED
 - LOD SHALL BE STABILIZED WITH SSM OVER PERMANENT SEED, EXCEPT WHERE OTHERWISE SPECIFIED.
 - MAINTENANCE OF TRAFFIC ON GWYNN PARK DRIVE SHALL BE IN ACCORDANCE WITH MD SHA STD. DETAIL NO. 104.02-02 AS SHOWN ON SHEET EN-04.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES STEEPER THEN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITES NOT UNDER ACTIVE GRADING.

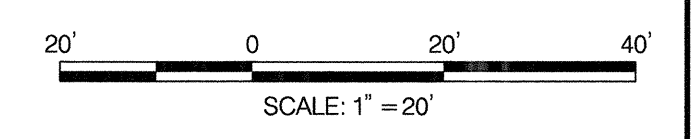
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 4/21/20
 HOWARD SOIL CONSERVATION DISTRICT EP-17-023 DATE

TEMPORARY WELDED WIRE FENCE			REMARKS
NO.	NORTH	EAST	
A	578,372.53	1,355,007.11	TIE TO EXIST. FENCE
B	578,373.15	1,355,033.83	
C	578,385.00	1,355,062.51	
D	578,412.86	1,355,116.01	TIE TO EXIST. FENCE
E	578,413.55	1,355,117.34	TIE TO EXIST. FENCE
F	578,426.33	1,355,141.86	
G	578,459.01	1,355,220.12	TIE TO EXIST. FENCE

NOTE: TEMPORARY WELDED WIRE FENCE TO BE INSTALLED PRIOR TO REMOVAL OF EXIST. WOOD RAIL FENCE.



ES-01

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

[Signature]
 MARK P. REICHMANN
 CHIEF, STORMWATER MANAGEMENT DIVISION

4-19-20
 DATE

PREPARED BY:

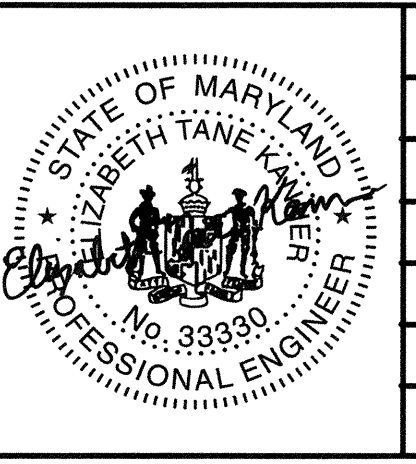
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 9801 BROKEN LAND PARKWAY
 COLUMBIA, MD 21046
 (410) 313-0522



BY	NO.	REVISIONS	DATE	ADVERTISED DATE
				NA
				D-1178
				SCALE 1" = 20'
				DESIGNED BY CC
				DRAWN BY CC
				CHECKED BY GB
				DATE 4/20 SHEET NO. 10 OF 20

CONSULTING, WATERSHED EVALUATION AND DESIGN
 GWYNN PARK DRIVE OUTFALL STABILIZATION
 CAPITAL PROJECT D-1178
 9690 GWYNN PARK DRIVE
 ELLICOTT CITY, MD 21042

EROSION AND SEDIMENT CONTROL PLAN

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

BY: dboronzo - U:\202830003\03_data\gis_cad\Sheet_files\ES-P000_Gwynn-Park.dgn

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

- A. PRIOR TO THE START OF EARTH DISTURBANCE,
- B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
- C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
- D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15° OF CUT AND/OR FILL STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	ACRES	0.65
AREA DISTURBED:	ACRES	0.65
AREA TO BE ROOFED OR PAVED:	ACRES	0
AREA TO BE VEGETATIVELY STABILIZED:	ACRES	0.65
TOTAL CUT:	CU. YDS.	400
TOTAL FILL:	CU. YDS.	135
OFFSITE WASTE/BORROW AREA LOCATION:	SEE NOTE 17	

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

- INSPECTION DATE
- INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
- NAME AND TITLE OF INSPECTOR
- WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
- BRIEF DESCRIPTION OF PROJECTS STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
- EVIDENCE OF SEDIMENT DISCHARGES
- IDENTIFICATION OF PLAN DEFICIENCIES
- IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
- IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
- COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
- PHOTOGRAPHS
- MONITORING/SAMPLING
- MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
- OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UP HILL BY 2' IN ELEVATION.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

- USE I AND IP MARCH 1 - JUNE 15
- USE III AND IIIP OCTOBER 1 - APRIL 30
- USE IV MARCH 1 - MAY 31

16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

17. OFFSITE WASTE/BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN AND PERMIT

SEQUENCE OF CONSTRUCTION (S.O.C.) (REFER TO S.O.C. PHASE NOTES BELOW FOR DURATION)

1. PHASE 1 STREAM WORK (PROP. STREAM CENTERLINE, STA. 10+84 TO STA. 13+06)

- a. PLACE ORANGE CONSTRUCTION FENCE ALONG THE ENTIRE LOD FOR THE ACTIVE WORKING SEGMENT, EXCEPT AT STREAM CROSSINGS, CONSTRUCTION ENTRANCES, AND ALONG OTHER FENCES (E.G., SUPER SILT FENCE, SILT FENCE, ETC.), 1 DAY
- b. INSTALL TRAFFIC CONTROL MEASURES AS SHOWN ON THE MAINTENANCE OF TRAFFIC DETAIL SHOWN ON SHEET EN-04. 1 DAY
- c. CLEAR FOR AND CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (SCE). UTILIZE CURB AND PAVING PROTECTION MEASURES WHERE NECESSARY ACCORDING TO THE PLANS. CLEAR FOR AND INSTALL SUPER SILT FENCE AS SHOWN ON THE PLANS. 1 DAY
- d. CONSTRUCT MULCH ACCESS ROAD AND PROPOSED TEMPORARY WELDED WIRE FENCE IN CONJUNCTION WITH THE REMOVAL OF EXISTING WOOD RAIL FENCE, ENSURING RESIDENTIAL FENCES REMAIN SECURE AT ALL TIMES. SEE PLANS DM-01 AND ES-01 FOR LOCATIONS. 2 DAYS
- e. CLEAR AND GRADE FOR INSTALLATION OF SEDIMENT CONTROL DEVICES, ONLY DISTURBING THE AREA NEEDED FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES. 2 DAYS
- f. INSTALL SEDIMENT CONTROL DEVICES INCLUDING TREE PROTECTION FENCE. TREE PROTECTION AREAS ARE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. IMMEDIATELY STABILIZE ANY DISTURBED AREAS DUE TO SEDIMENT CONTROL INSTALLATION. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING. 1 DAY
- g. INSTALL SANDBAG COFFERDAM AND CLEARWATER PUMP. CLEARWATER DIVERSION SHALL OUTFALL INTO THE STREAM BED DOWNSTREAM OF THE PHASE 1 STREAM WORK. PROVIDE A 4'X4' RIPRAP PAD AT THE DOWNSTREAM END OF THE CLEARWATER DIVERSION. 2 DAYS
- h. INSTALL SANDBAG COFFERDAM AND DIRTY WATER PUMP AT THE DOWNSTREAM END OF PHASE 1 STREAM WORK. PUMP SHALL DISCHARGE INTO A FILTER BAG LOCATED IN A STABLE, LEVEL AREA DOWNSTREAM OF THE COFFERDAM AND ADJACENT TO THE EXISTING STREAM AT A LOCATION TO BE ESTABLISHED AND AGREED UPON BY THE CONTRACTOR AND THE SEDIMENT CONTROL INSPECTOR. 1 DAY
- i. PERFORM STREAM CONSTRUCTION WORK IN THE WORK AREA. DEWATERING TO THE FILTER BAG AS NECESSARY. BASE FLOW MAY BE ALLOWED THROUGH THE WORK AREA AT THE END OF EACH WORK DAY PROVIDED THE STABILIZATION REQUIREMENTS NOTED IN THE GENERAL NOTES 11-14 HAVE BEEN MET. 10 DAYS
- j. PERMANENTLY STABILIZE ALL DISTURBED AREAS AS SHOWN ON THE LANDSCAPE PLANS. 1 DAY
- k. AT THE START OF EACH WORK DAY, RE-ESTABLISH THE SAND BAG COFFERDAMS AND PUMP AROUNDS.

2. PHASE 2 STREAM WORK (PROP. STREAM CENTERLINE, STA. 12+93 TO STA. 14+95.5)

- a. REPEAT STEPS PHASE 1, a-k FOR PHASE 2 STREAM WORK. 10 DAYS

3. PHASE 3 COMPLETION

- a. CONDUCT A PUNCH LIST WALK-THROUGH FOR STREAM WORK AREAS AND REPAIR ANY OUTSTANDING ITEMS. 5 DAYS
- b. REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES ALONG THE STREAM WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, INCLUDING ALL TREE PROTECTION MEASURES FOR ENTIRE SITE. 2 DAYS
- c. CONSTRUCT PERMANENT FENCE AND COMPLETE ANY OUTSTANDING GRADING ALONG THE STREAM IN THE ACCESS ROAD WHILE SIMULTANEOUSLY REMOVING TEMPORARY WELDED WIRE FENCE AND ACCESS ROAD. AT THIS TIME COMPLETE ANY REMAINING PLANTING DURING THE APPROPRIATE PLANTING SEASON AND REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR. ALL SITE CLEANUP, PLANTING AND PERMANENT FENCE CONSTRUCTION WORK SHOULD BEGIN AT THE DOWNSTREAM END OF THE PROJECT, WORKING SYSTEMATICALLY TOWARDS GWYNN PARK DRIVE. CONTRACTOR SHALL ENSURE RESIDENTIAL FENCES ARE SECURE AT ALL TIMES. 3 DAYS
- d. REPAIR ANY DAMAGED SIDEWALKS, ASPHALT OR CURBING AND ANY OTHER ITEMS IDENTIFIED IN THE PUNCH LIST. 1 DAY
- e. PROJECT COMPLETE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

2. THIS STREAM HAS BEEN DESIGNATED AS A MARYLAND USE CLASS IV-P STREAM AND IS THEREFORE SUBJECT TO STREAM CLOSURE FROM MARCH 1 THROUGH MAY 31 INCLUSIVE. NO STREAM WORK MAY BE PERFORMED DURING THIS TIME PERIOD.

3. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING RAINFALL RUNOFF EVENTS.

4. CONTRACTOR MAY COMPLETE WORK IN MULTIPLE SECTIONS CONCURRENTLY WITH PRIOR APPROVAL OF THE INSPECTOR AND ENGINEER AS LONG AS THE LOD IS STAKED OUT AND ALL SEDIMENT CONTROL DEVICES ARE IN PLACE.

5. CONTRACTOR MAY ADJUST THE PHASE LIMITS AND LOCATIONS OF COFFERDAMS AND PUMP AROUNDS WITH THE APPROVAL OF THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR.

6. OFFSITE WASTE /BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN AND PERMIT.

7. OBTAIN GRADING PERMIT AND MDE PERMIT.

8. PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF 5 DAYS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900 AND MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR AT (301) 865-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY.

9. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION OR OTHER LAND DISTURBING ACTIVITIES.

10. CONTRACTOR SHALL ONLY BEGIN STREAM WORK FOR AN AREA THAT CAN BE COMPLETED BY THE END OF THE WORK DAY, INCLUDING GRADING WITHIN AND ADJACENT TO THE CHANNEL.

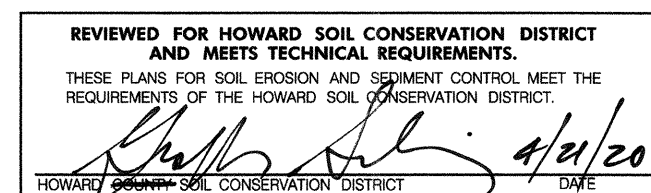
11. DISTURBED AREAS OUTSIDE OF THE CHANNEL BOTTOM SHALL HAVE EITHER PERMANENT OR TEMPORARY STABILIZATION AT THE END OF EACH WORK DAY. CHANNEL BED MATERIAL SHALL BE COMPACTED IN PLACE PRIOR TO ALLOWING BASE FLOW BACK INTO WORK AREA DURING OFF-WORK HOURS. THE PUMP AROUND SHALL BE REMOVED AT THE END OF EACH WORK DAY.

12. ALL STREAM RESTORATION MEASURES SHALL BE INSTALLED AS INDICATED ON THE PLANS, AND ALL BANKS AND AREAS ADJACENT TO THE BANKS SHOULD BE GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL SECTIONS.

13. STREAM WORK FOR EACH WORK AREA IS TO BE PERFORMED FROM UPSTREAM TO DOWNSTREAM. SOME FINAL GRADING TIE-INS MAY BE REQUIRED AS THE HAUL ROAD IS REMOVED FOLLOWING CONSTRUCTION.

14. THE CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (HCCIP) INSPECTOR PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL DEVICE. ANY AREAS DISTURBED DURING THE REMOVAL OF E&SC DEVICES SHALL BE IMMEDIATELY STABILIZED.

EN-01



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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Schmidt
CHIEF, STORMWATER MANAGEMENT DIVISION

4/2/20
DATE

PREPARED BY:

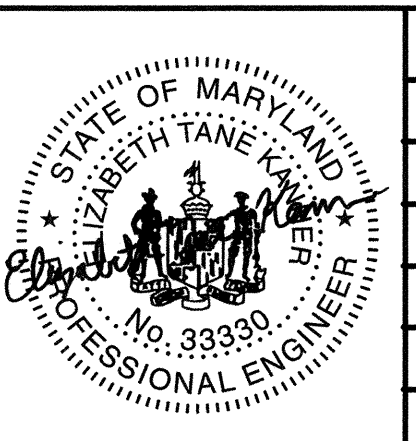
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HOWARD COUNTY GOVERNMENT
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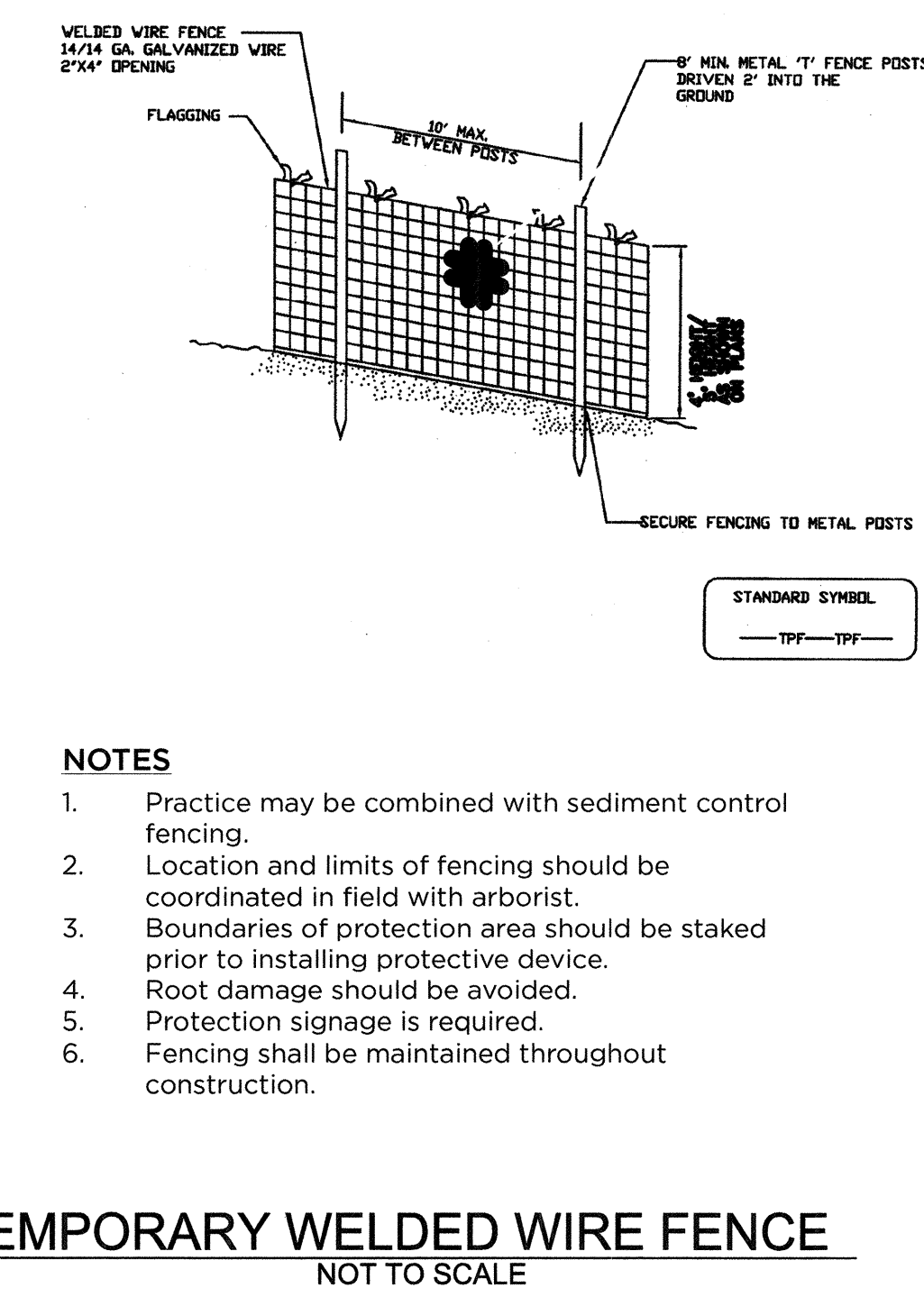
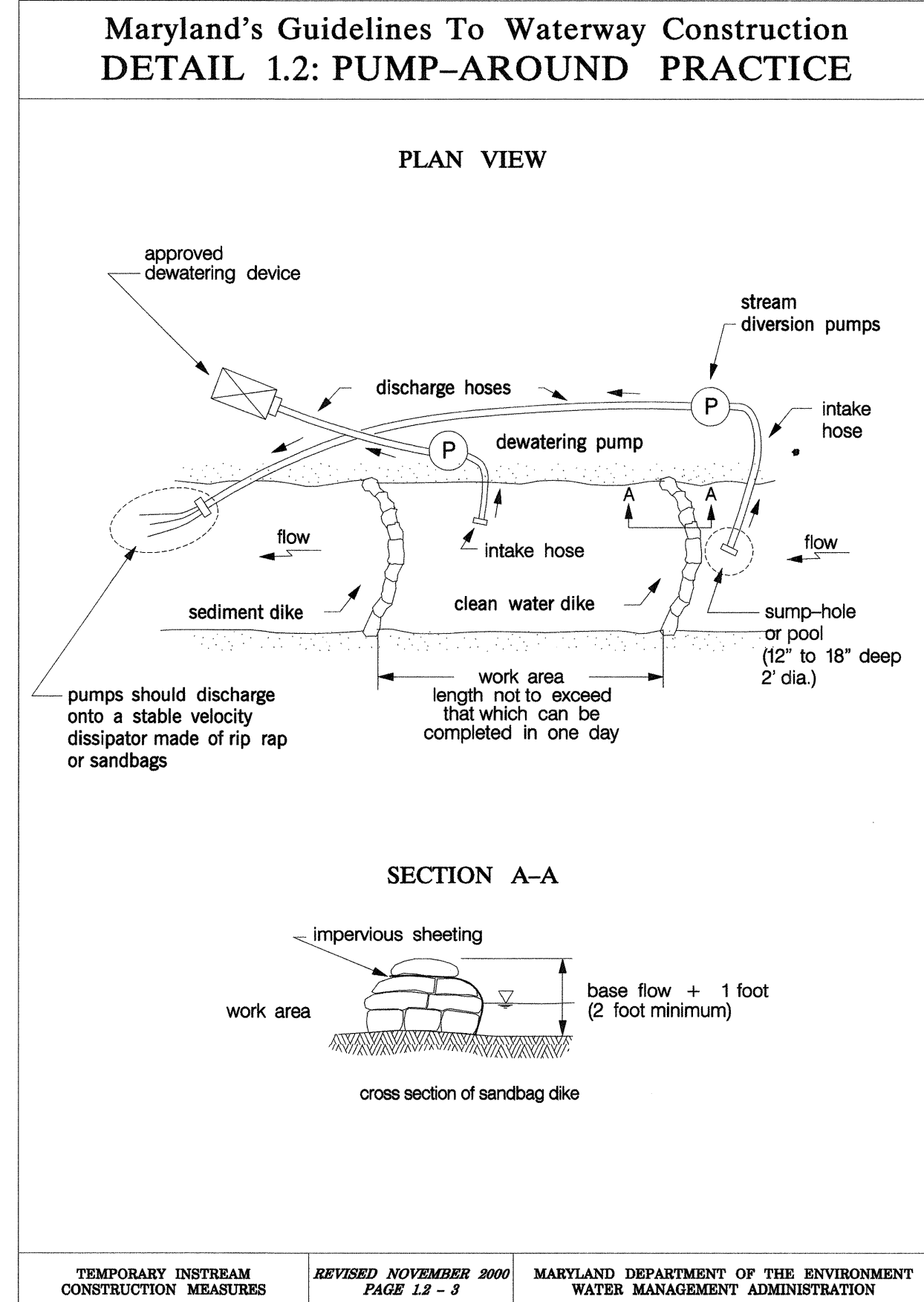
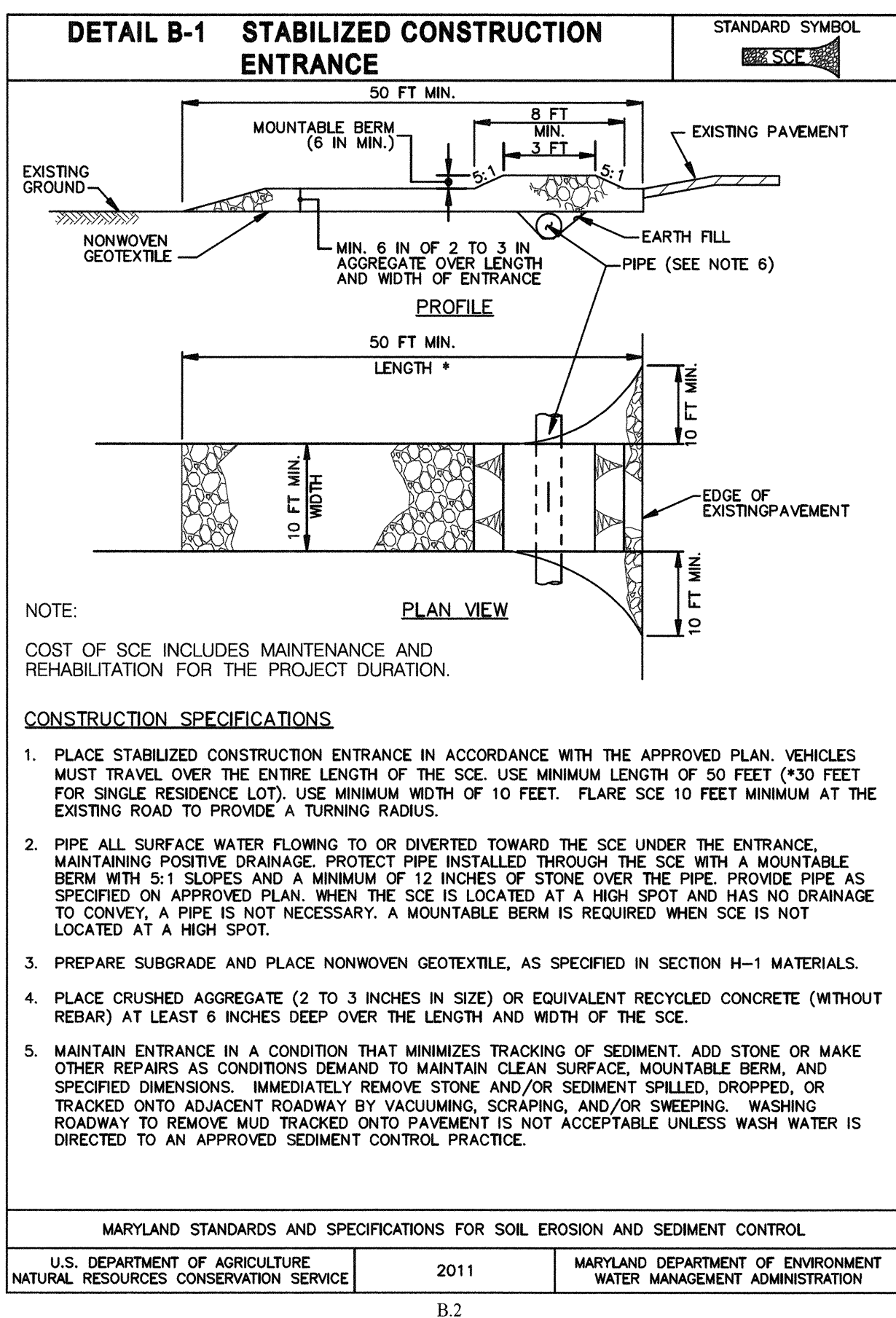
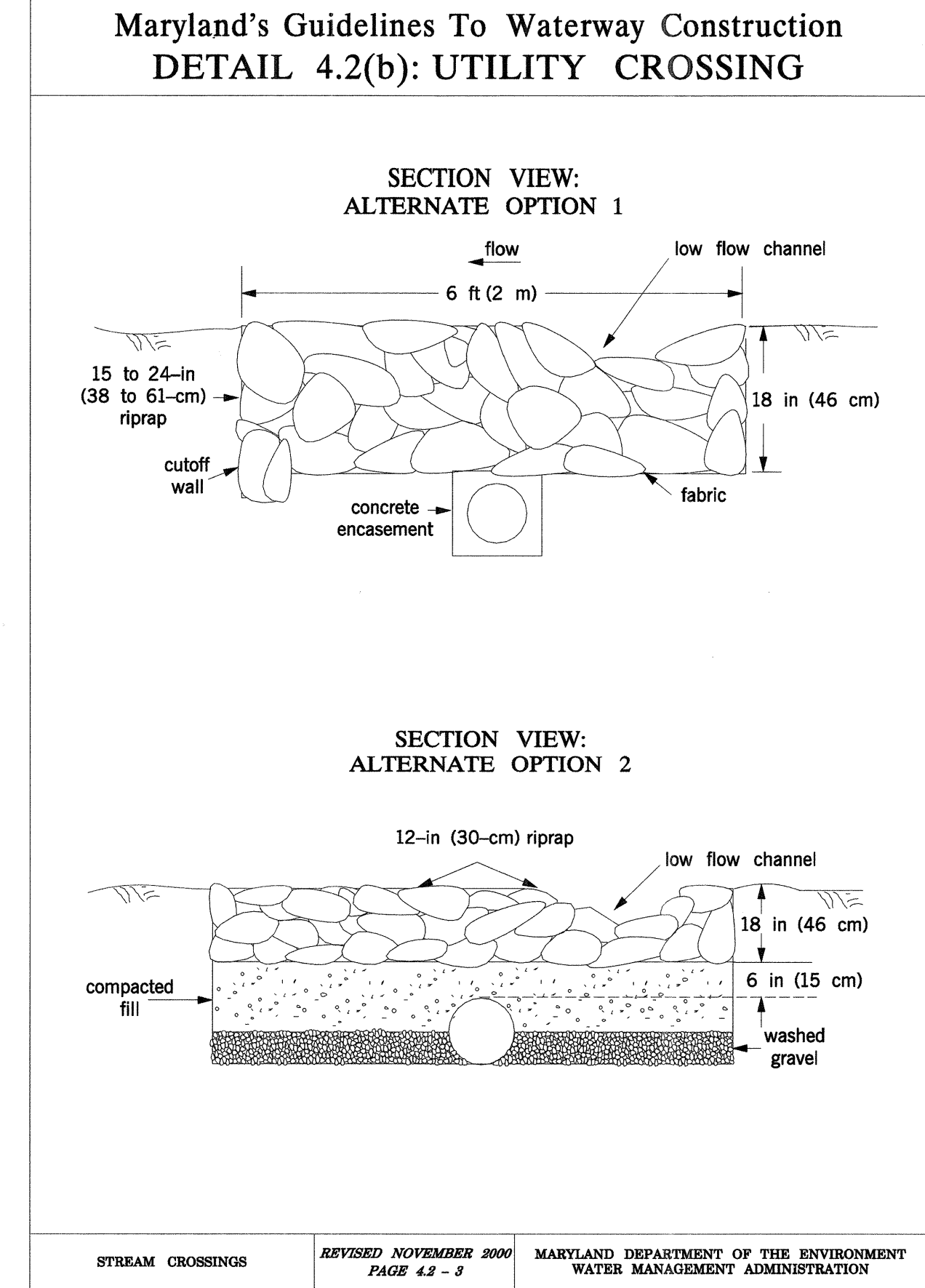
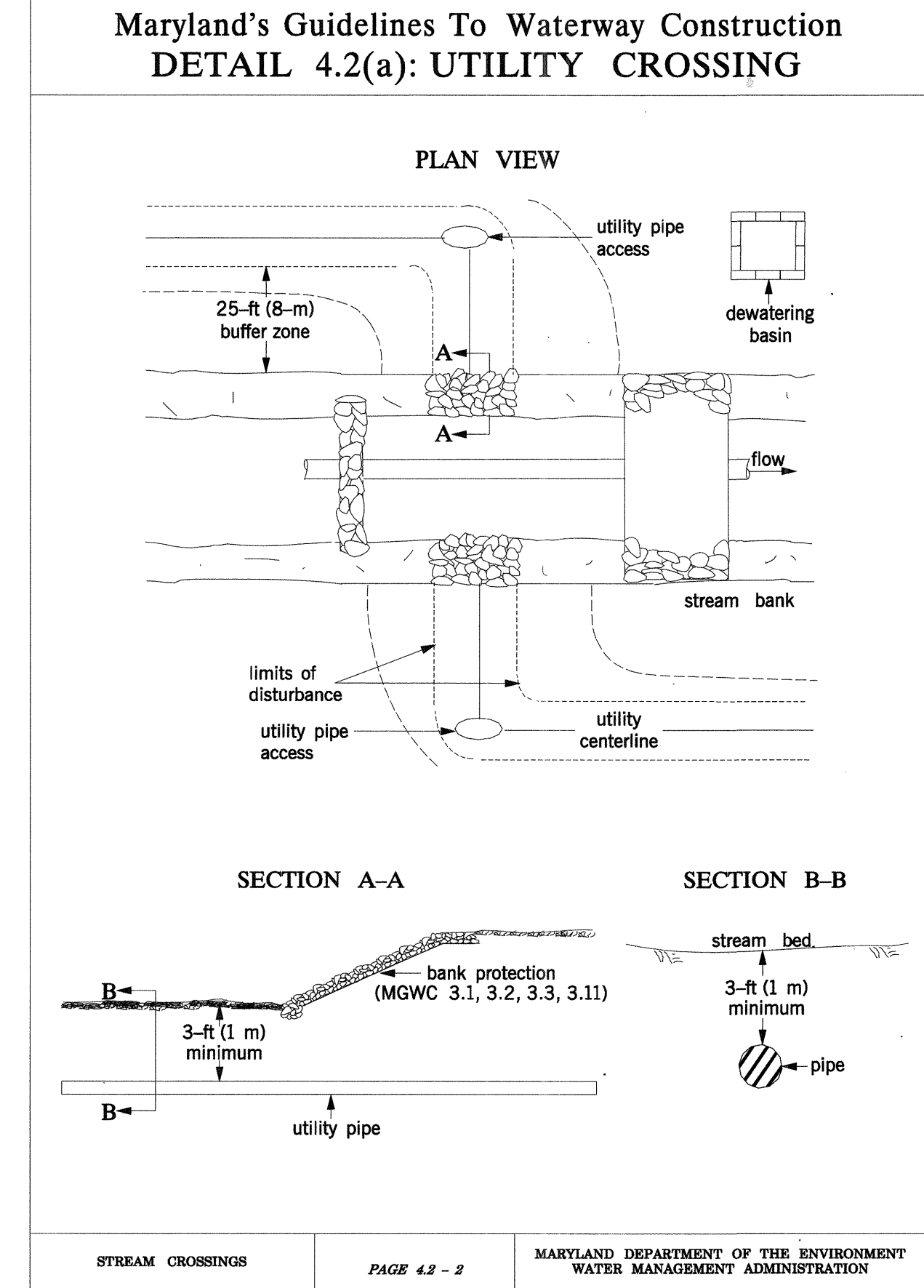
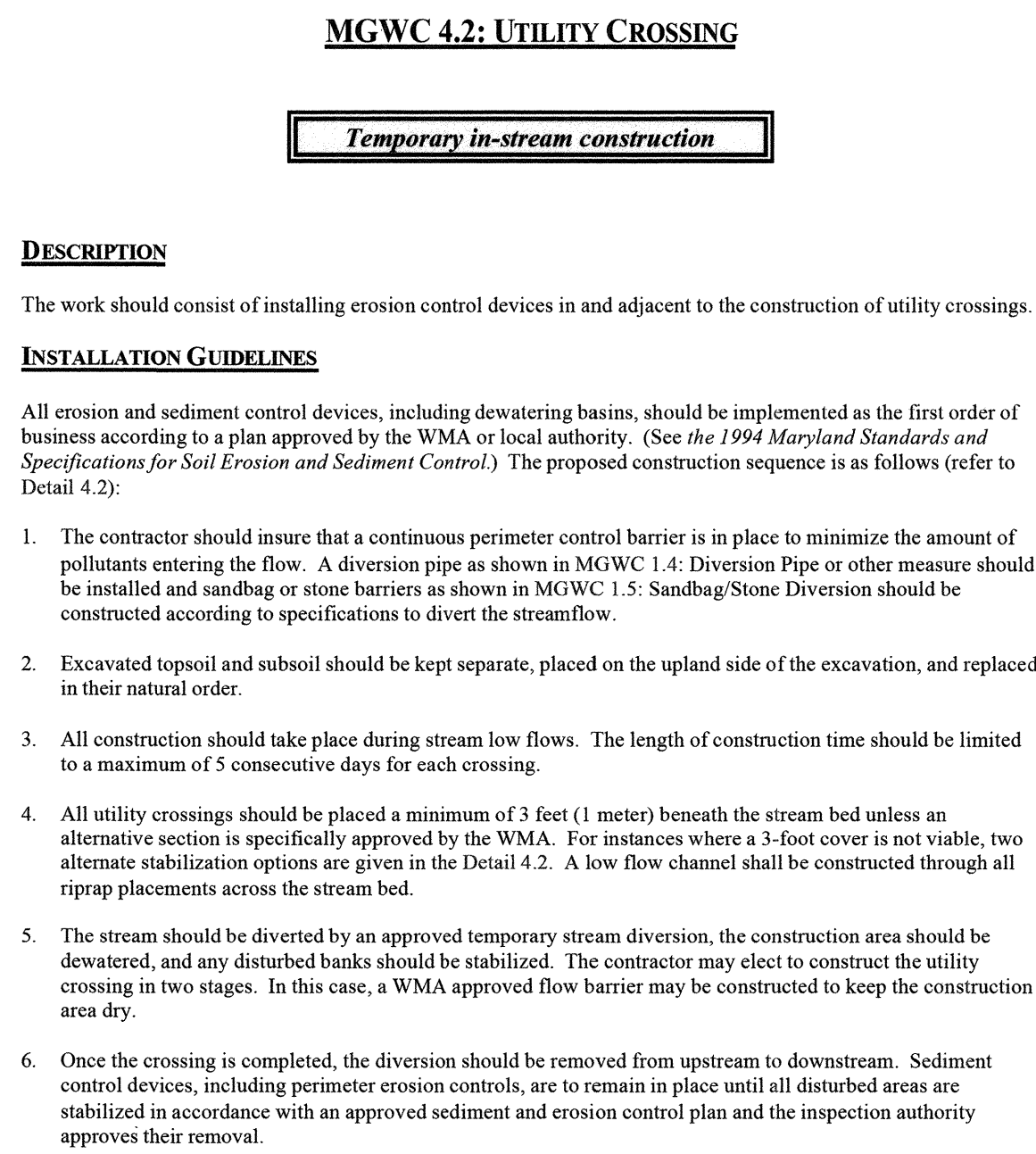
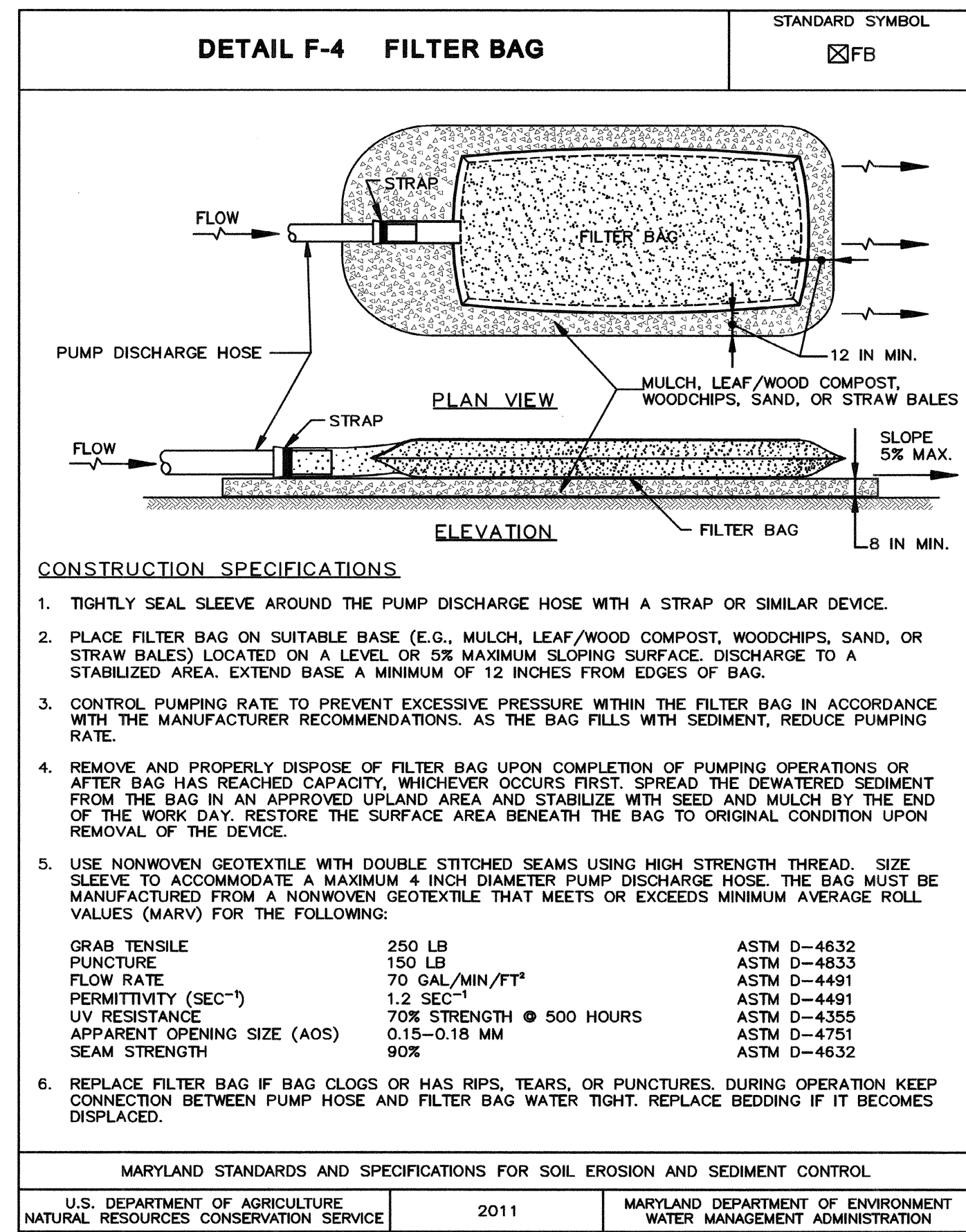
BY	NO.	REVISIONS	DATE

ADVERTISED DATE	N/A
CONTRACT NO.	D-1178
SCALE	N/A
DESIGNED BY	CC
DRAWN BY	CC
CHECKED BY	GCB
DATE	4/20
SHEET NO.	11
OF	20

CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

EROSION AND SEDIMENT CONTROL NOTES

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8



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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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(410) 313-0522

MARK S. SCHMIDT
CHIEF, STORMWATER MANAGEMENT DIVISION
4/9/20
DATE

STATE OF MARYLAND
ELIZABETH HANE KAUFMAN
PROFESSIONAL ENGINEER
No. 33930

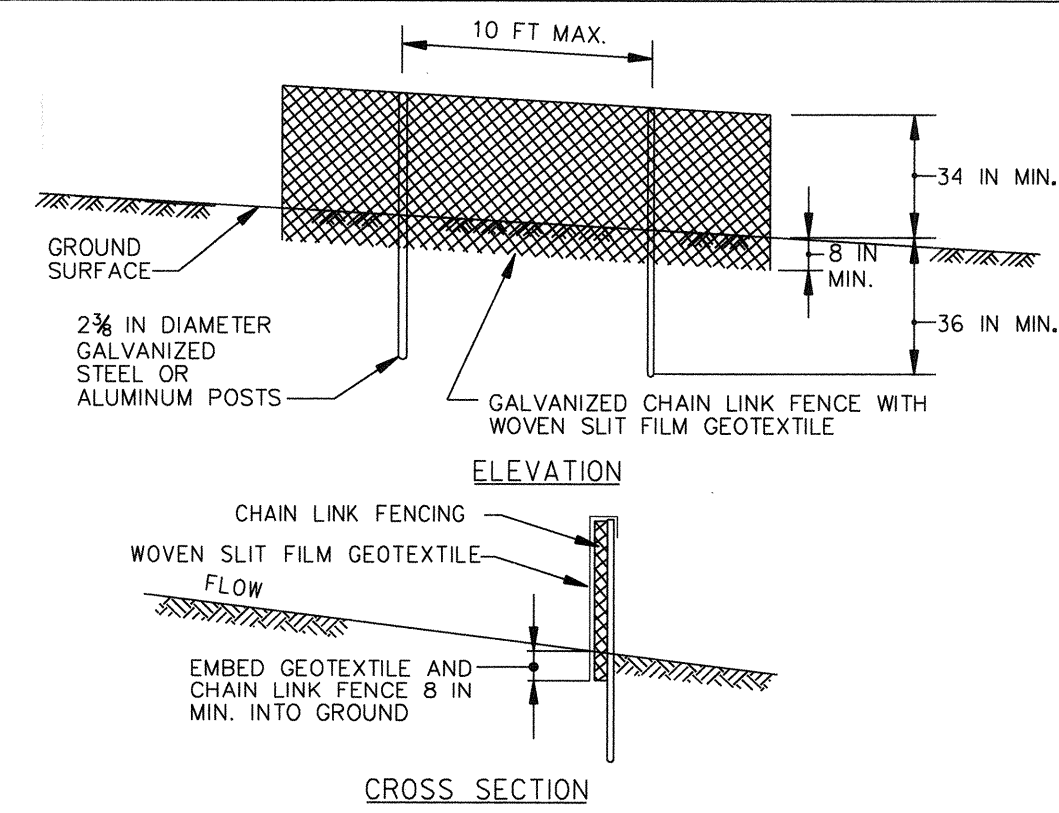
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GWYNN PARK DRIVE OUTFALL STABILIZATION
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9690 GWYNN PARK DRIVE
ELLICOTT CITY, MD 21042
EROSION AND SEDIMENT CONTROL DETAILS
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

EN-03

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL
SSF



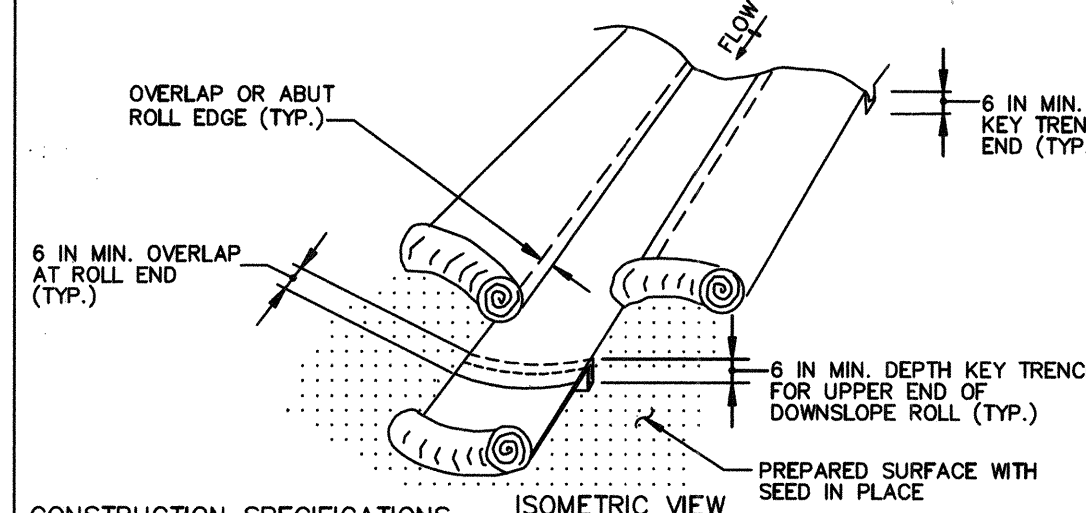
CONSTRUCTION SPECIFICATIONS

- INSTALL 2 3/4 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE 12 3/8 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL
TSSMC - * 4.5 lb/ft²
(* INCLUDE SHEAR STRESS)

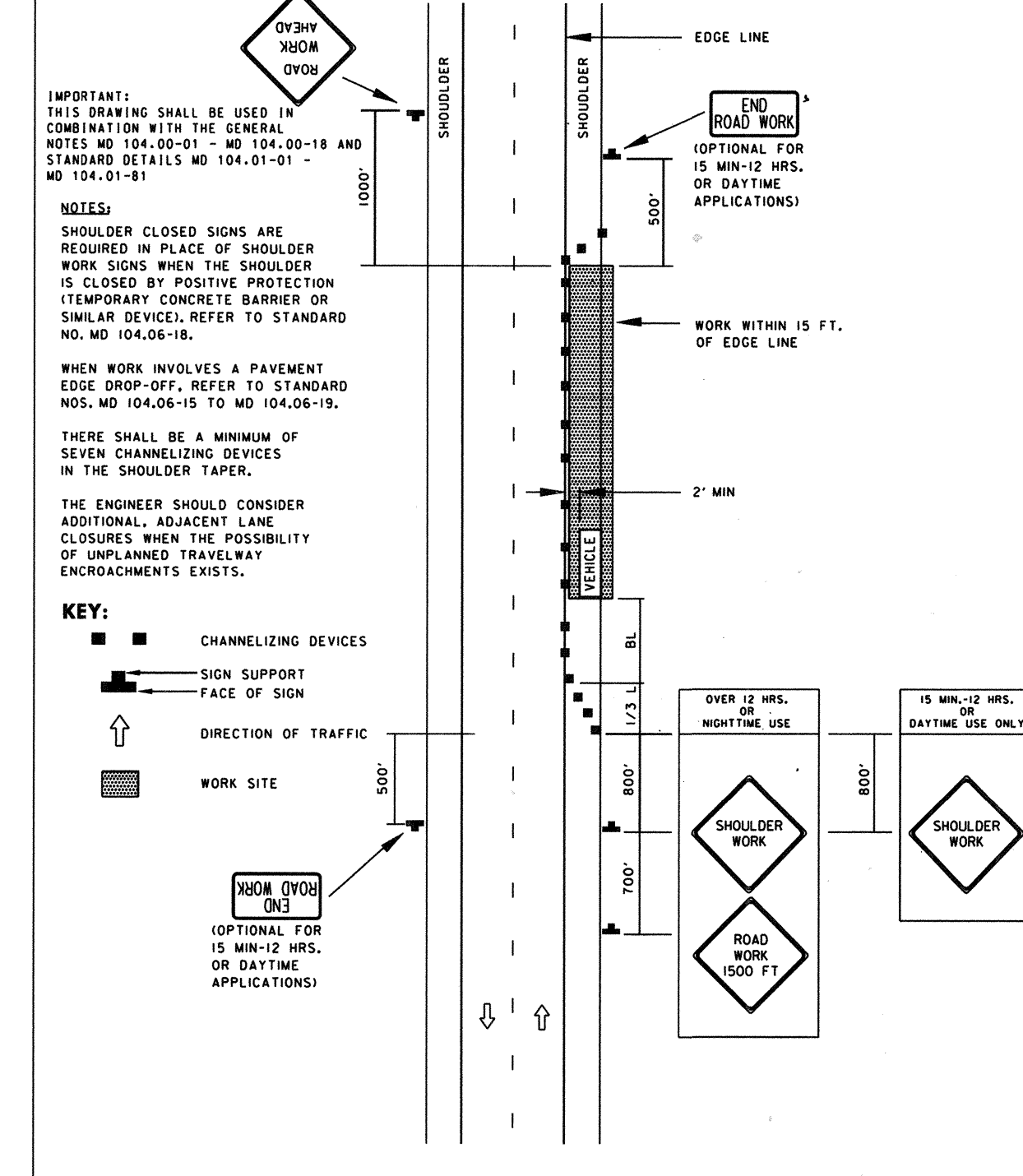


CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOULDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
- OVERLAP OR ADJUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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
2011	

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

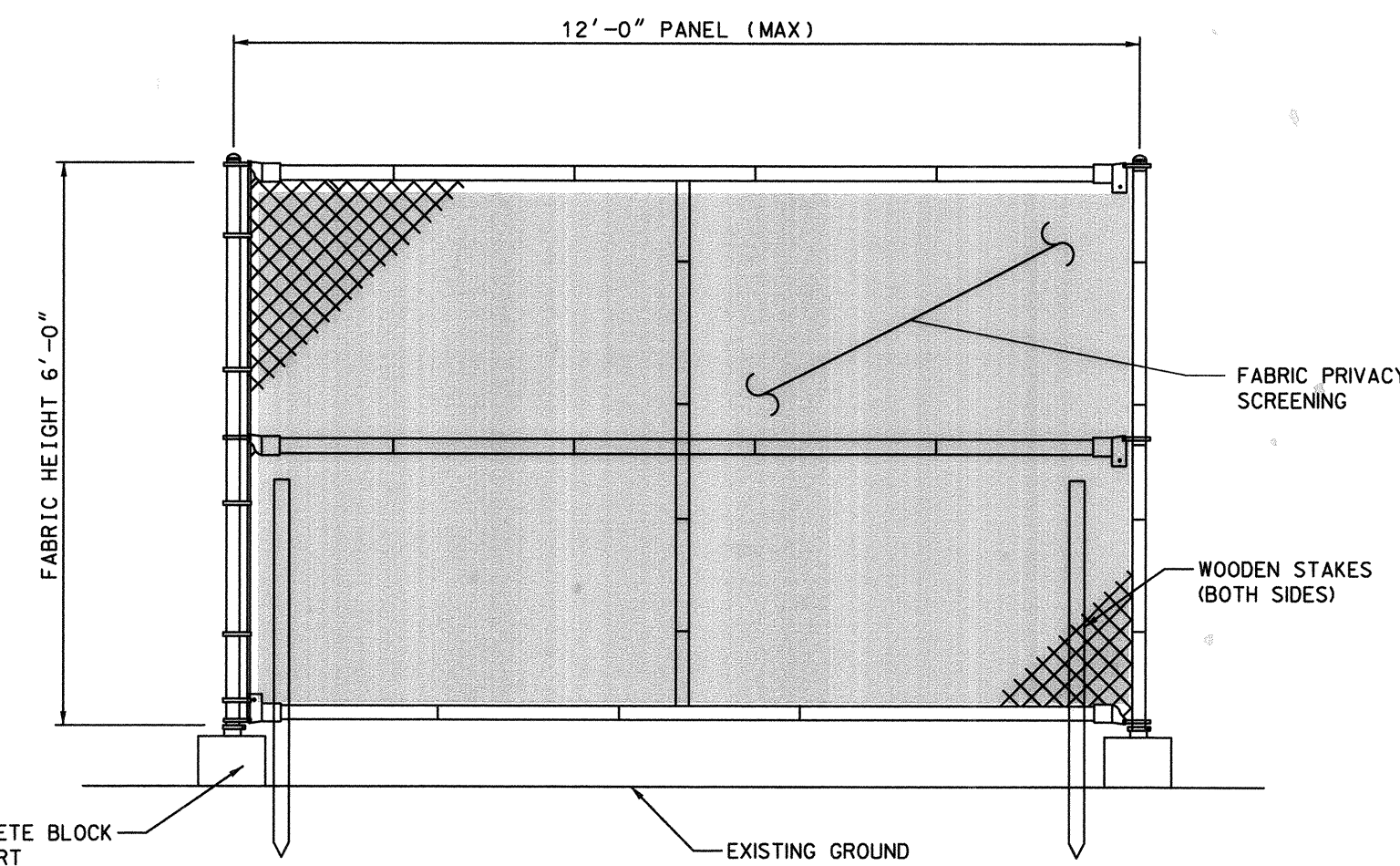
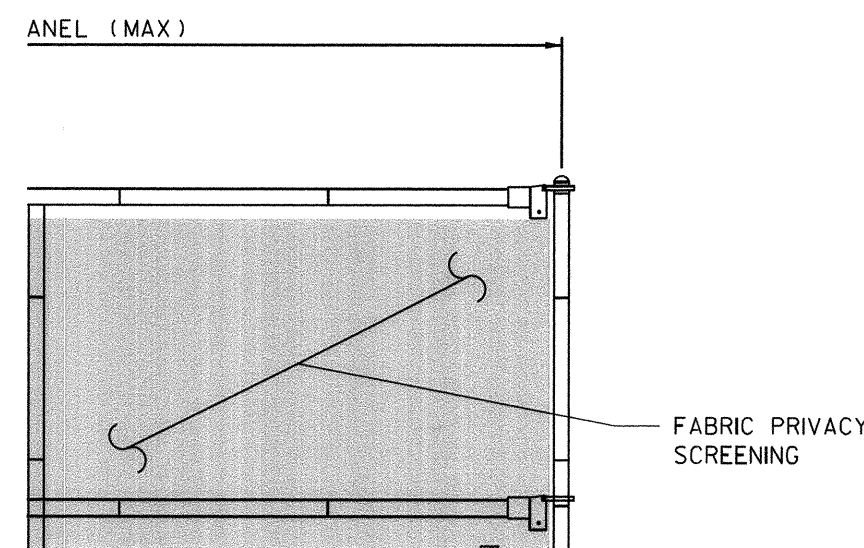


**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
**SHOULDER WORK/2-LANE, 2-WAY
EQ/Less THAN 40 MPH**
STANDARD NO. MD 104.02-02

B-4-8 STOCKPILE AREA

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
 - THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
 - RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
 - ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
 - CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
 - WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
 - STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-I INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
 - IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.
- MAINTENANCE**
- THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

DETAIL: PRIVACY FENCESCREEN



NOTES:

- CHAIN LINK FENCE FABRIC AND FITTINGS SHALL MEET THE FOLLOWING ASTM STANDARDS:
-F626 STANDARD SPECIFICATION FOR FENCE FITTINGS
- THE DESIGN OF THE CHAIN LINK HARDWARE MAY VARY FROM THE DETAILS SHOWN, HOWEVER, ALL HARDWARE AND MATERIALS USED IN A SINGLE INSTALLATION SHALL BE UNIFORM AND COMPATIBLE.
- FABRIC PRIVACY SCREENING SHALL BE TIED TO THE CHAINLINK FABRIC TO SHIELD CONSTRUCTION STAGING AND STOCKPILING.
- ADJUST THE POST TOP ELEVATIONS TO PROVIDE A SMOOTH VISUAL FENCE PROFILE.

DETAIL A
TEMPORARY CHAIN LINK FENCE PANEL

EN-04

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

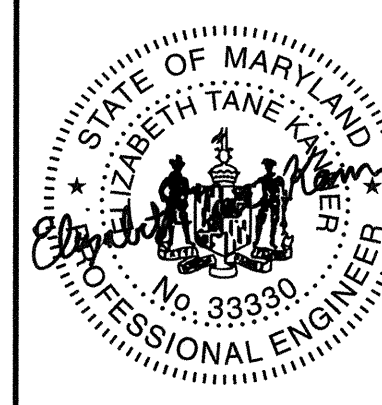
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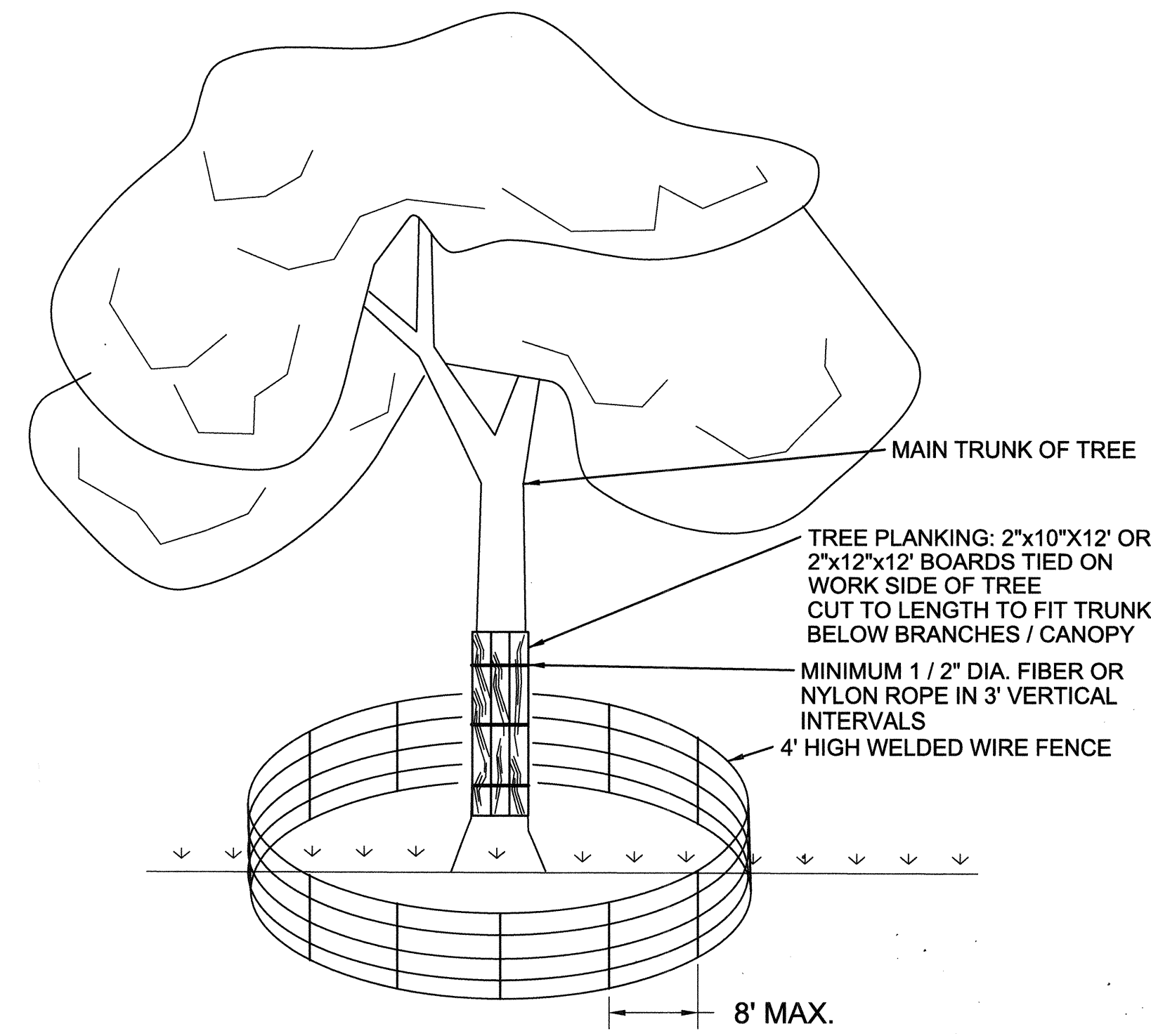
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CONTRACT NO.	D-1178
SCALE	N.T.S.
DESIGNED BY	CC
DRAWN BY	CC
CHECKED BY	JC
DATE	4/20
SHEET NO.	14 OF 20

CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

EROSION AND SEDIMENT CONTROL DETAILS

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

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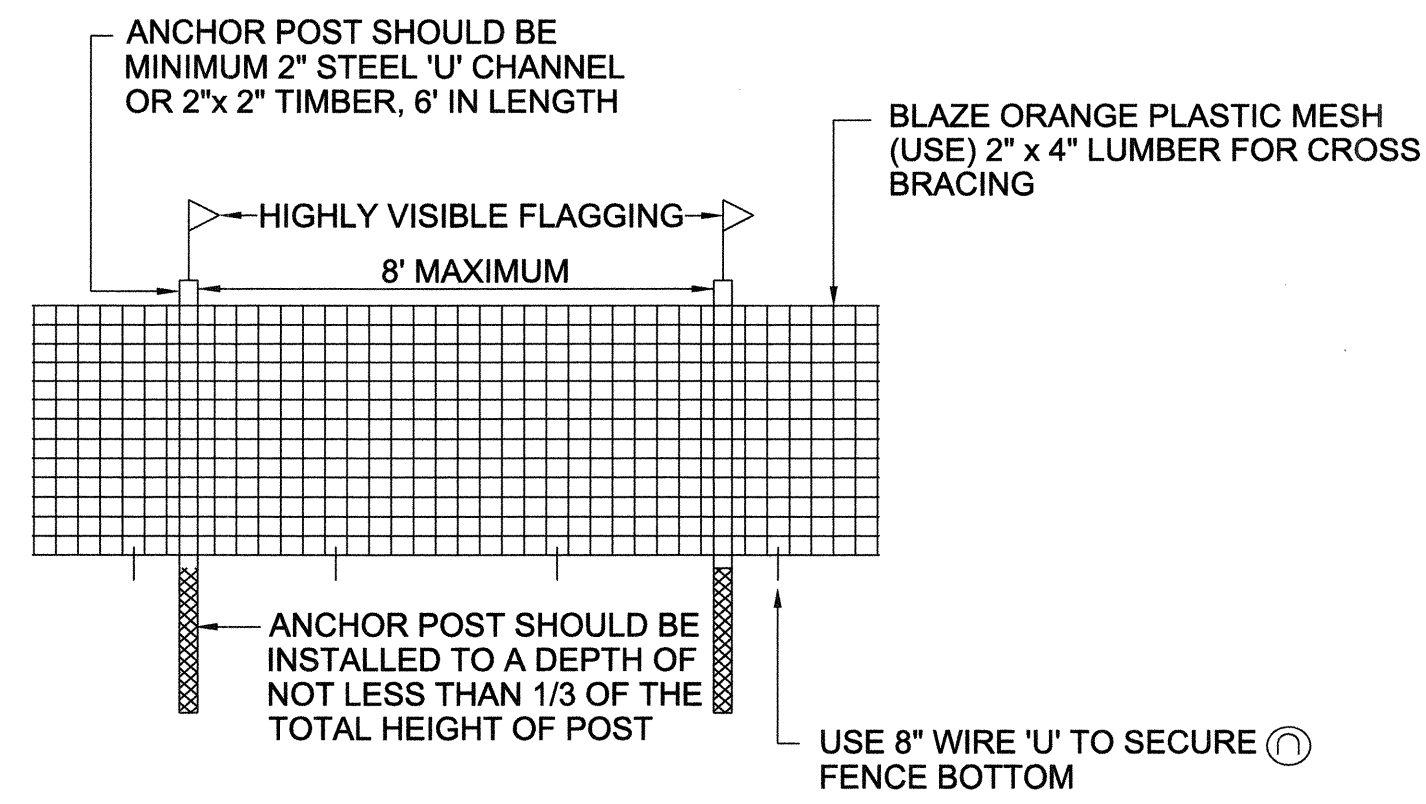


NOTES:

1. FOR TREE PROTECTION PLANKING, AS DIRECTED BY THE ENGINEER, TIE WITH 1/2" DIAMETER ROPE (FIBER OR NYLON), SUFFICIENT 2"x10"x12" OR 2"x12"x12" BOARDS AROUND MAIN TRUNK OF TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION.
2. FENCE POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE POST HEIGHT. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ENGINEER. TREE PROTECTION FENCING SHALL BE INSTALLED AT THE DRIP LINE OF THE TREE TO PROTECT THE CRITICAL ROOT ZONE.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE IS REQUIRED.
6. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

SPECIAL TREE PROTECTION DETAIL

NOT TO SCALE

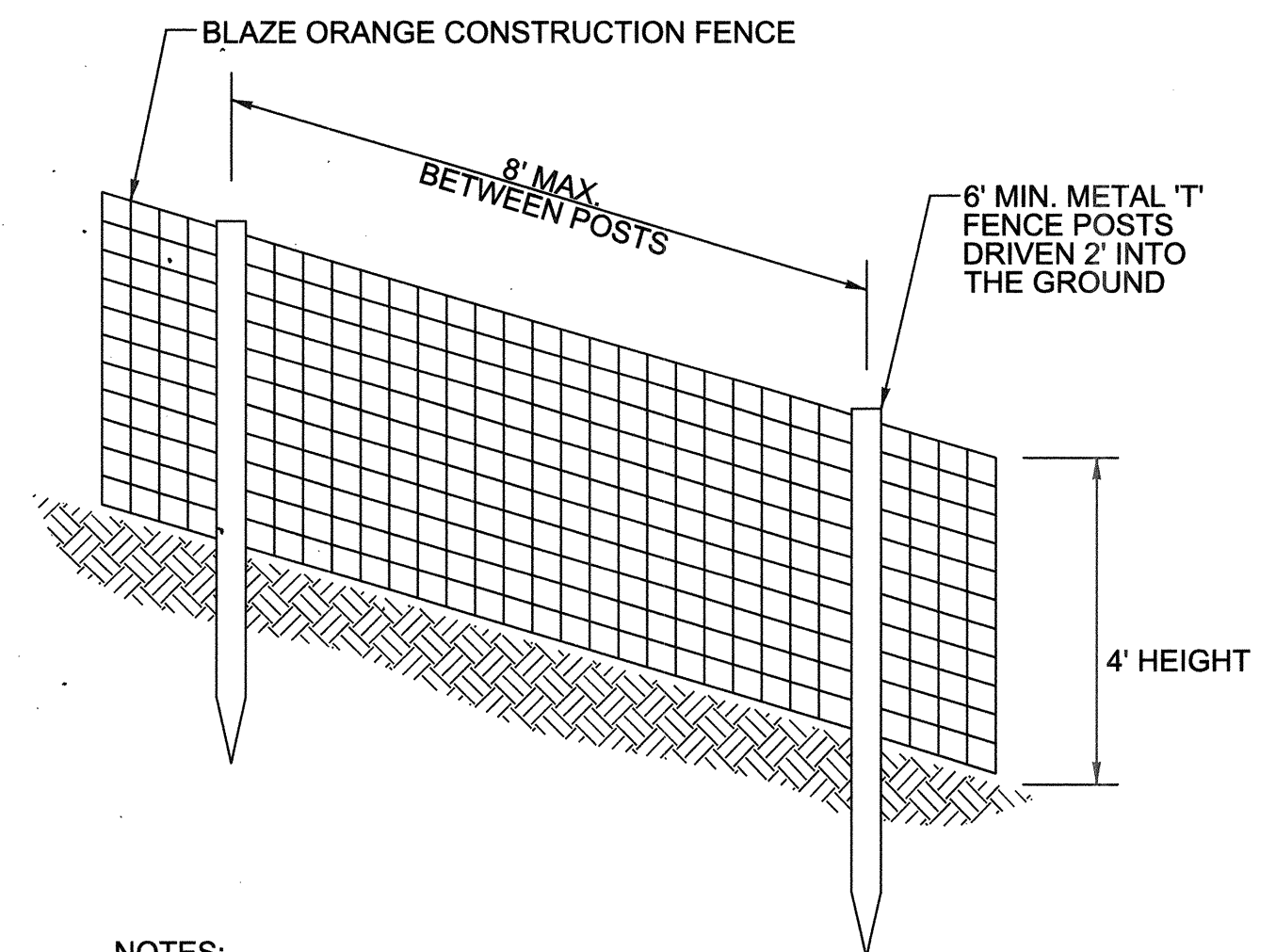


NOTES:

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED, PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TEMPORARY TREE PROTECTION FENCE

NOT TO SCALE

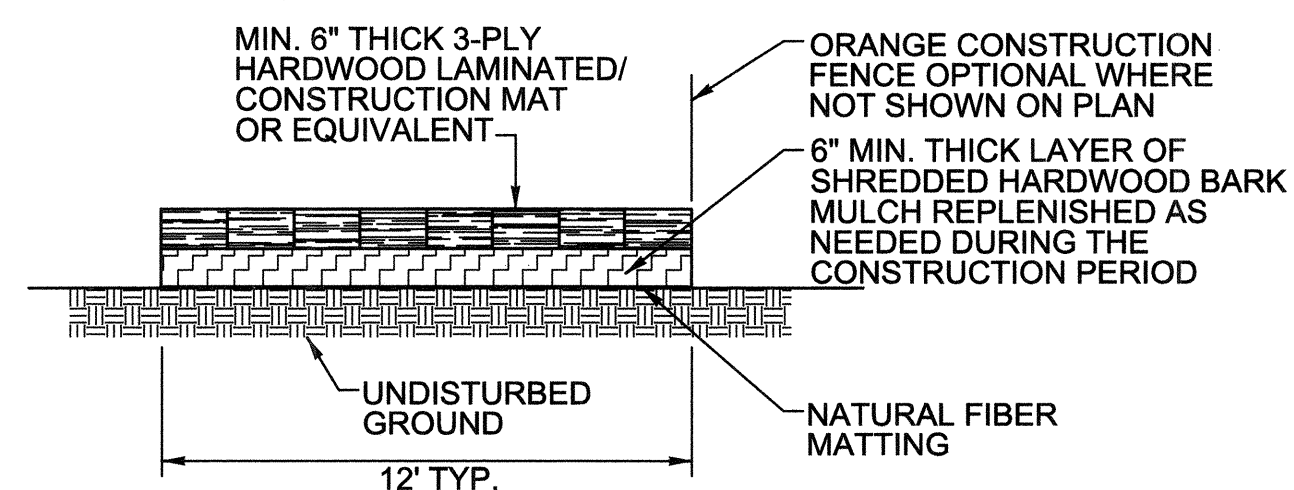


NOTES:

1. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL FENCING.
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ENGINEER.
3. BOUNDARIES OF PROTECTION AREA SHALL BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
5. ROOT DAMAGE SHALL BE AVOIDED.

ORANGE CONSTRUCTION FENCE DETAIL

NOT TO SCALE

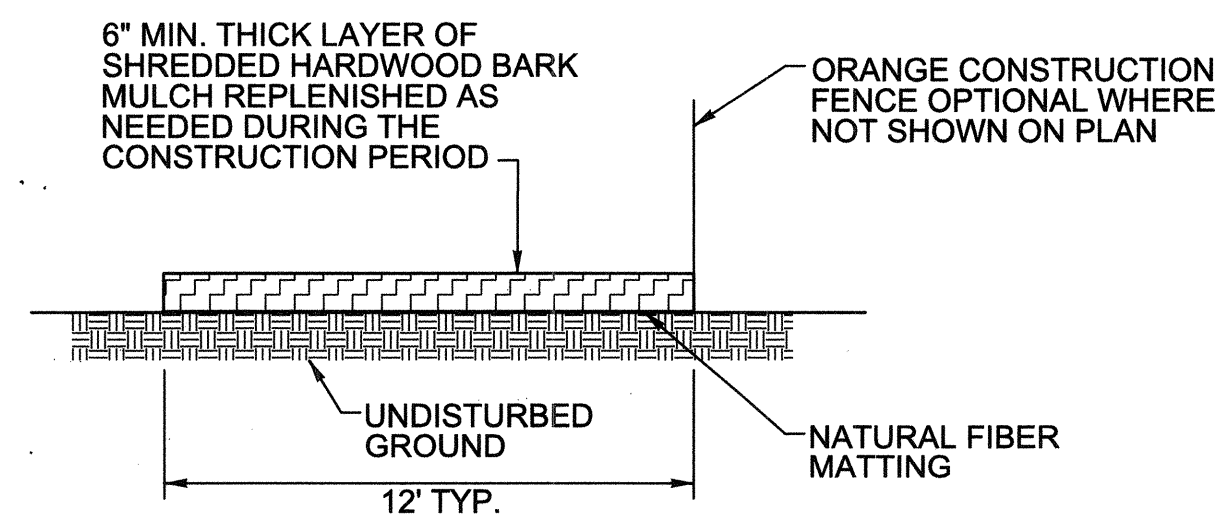


NOTES:

1. TIMBER MATS TO BE INSTALLED AS INDICATED ON PLANS IN CRITICAL ROOT ZONES OF TREES 24' AND GREATER, WETLANDS, AND OVER UNDERGROUND UTILITIES.
2. ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT PRE-CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED, AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
3. NATURAL FIBER MATTING SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC, OVERLAP FABRIC BY 18" MINIMUM AT SEAMS.
4. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD. UPON COMPLETION OF THE PROJECT, MULCH SHALL BE REMOVED TO A MAX. DEPTH OF 3" UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
5. TEMPORARY OCF SHALL BE INSTALLED ALONG THE EDGES OF THE ACCESS PATH. FENCING SHALL BE SUPPORTED BY 6" MINIMUM "T" STEEL POSTS DRIVEN 2' INTO THE GROUND AND SPACED A MAXIMUM OF 8' APART.

TIMBER MAT ACCESS PATH DETAIL

NOT TO SCALE

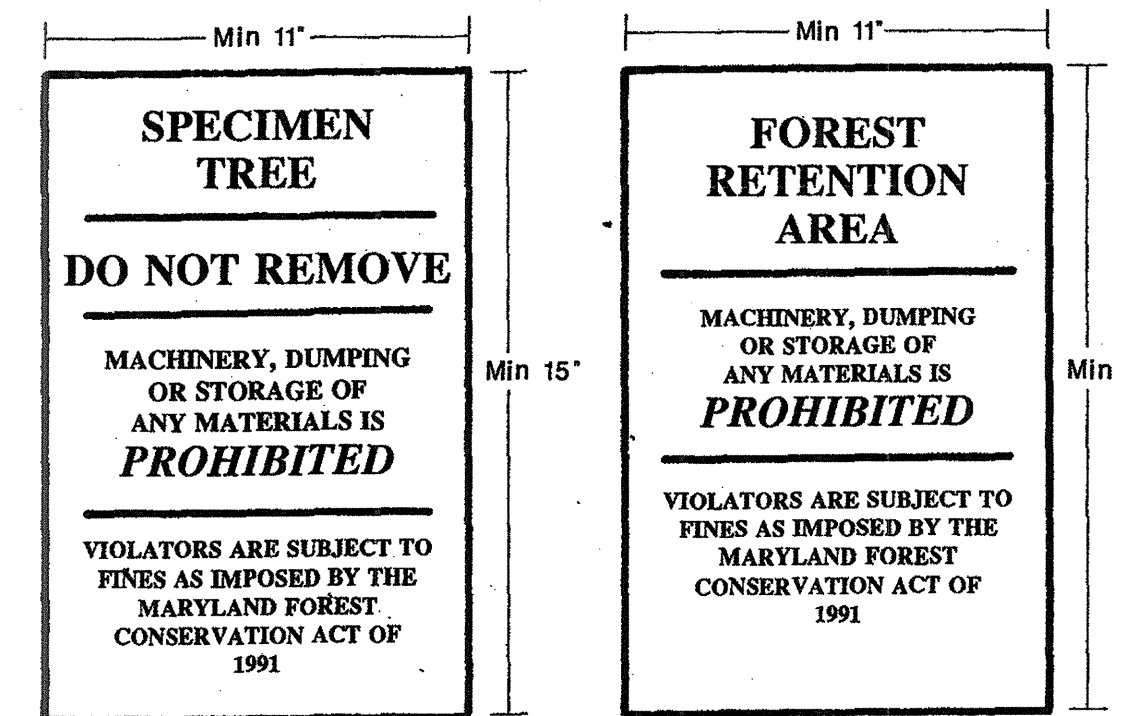


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MULCH ACCESS PATH DETAIL

NOT TO SCALE



TREE PROTECTION SIGNAGE

NOT TO SCALE

EN-05

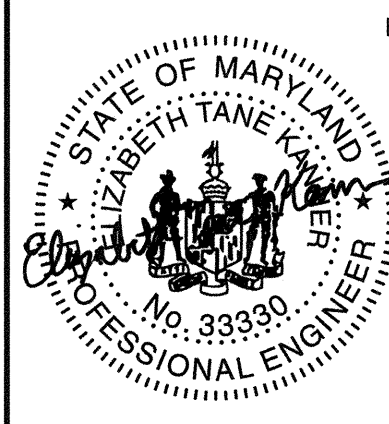
DEPARTMENT OF PUBLIC WORKS
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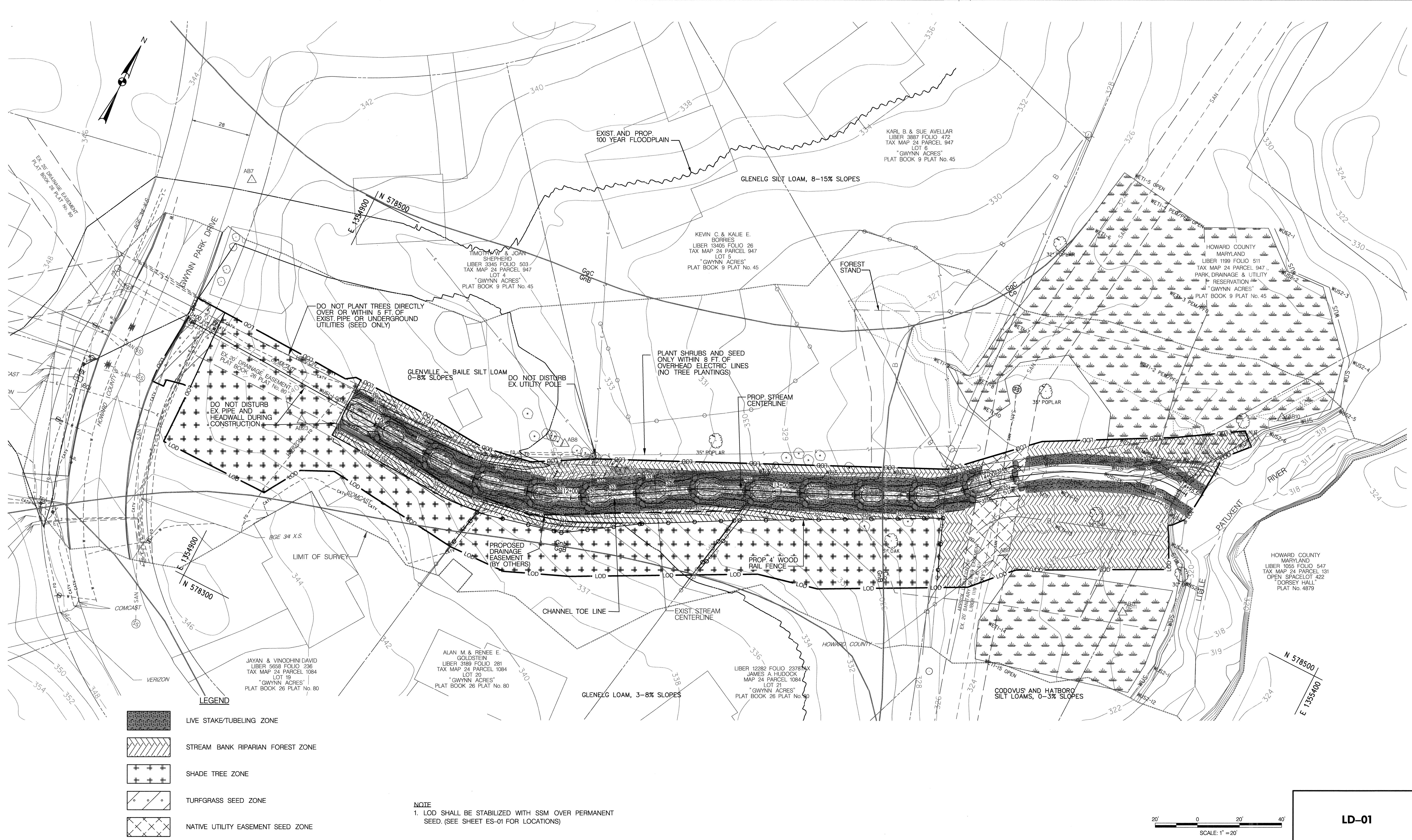


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DATE: 4/12/20 SHEET NO. 15 OF 20

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SCALE: 1" = 20'

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

PREPARED BY:

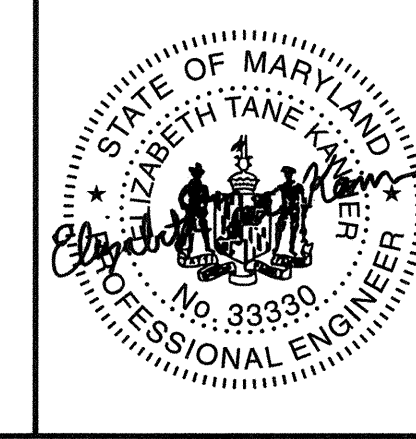
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HOWARD COUNTY
MARYLAND

STORMWATER MANAGEMENT DIVISION
BUREAU OF ENVIRONMENTAL SERVICES
HOWARD COUNTY GOVERNMENT
9801 BROKEN LAND PARKWAY
COLUMBIA, MD 21046
(410) 313-0522



BY	NO.	REVISIONS	DATE

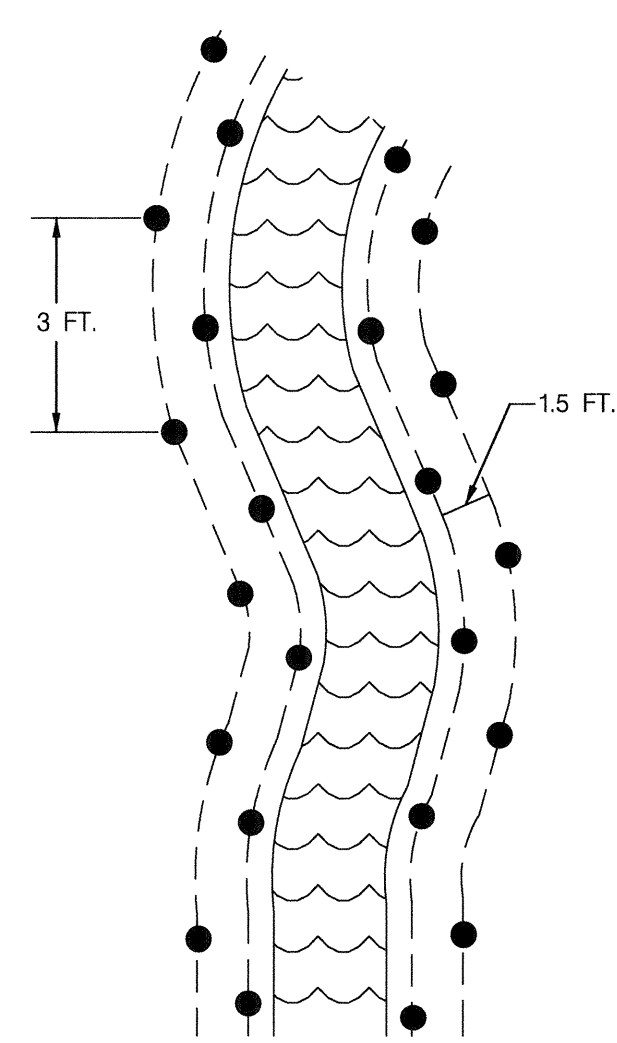
ADVERTISED DATE	N/A
CONTRACT NO.	D-1178
SCALE	1" = 20'
DESIGNED BY	RP
DRAWN BY	CC
CHECKED BY	GB
DATE	4/20 SHEET NO. 16 OF 20

CONSULTING, WATERSHED EVALUATION AND DESIGN
 GWYNN PARK DRIVE OUTFALL STABILIZATION
 CAPITAL PROJECT D-1178
 9690 GWYNN PARK DRIVE
 ELLICOTT CITY, MD 21042

LANDSCAPE PLAN

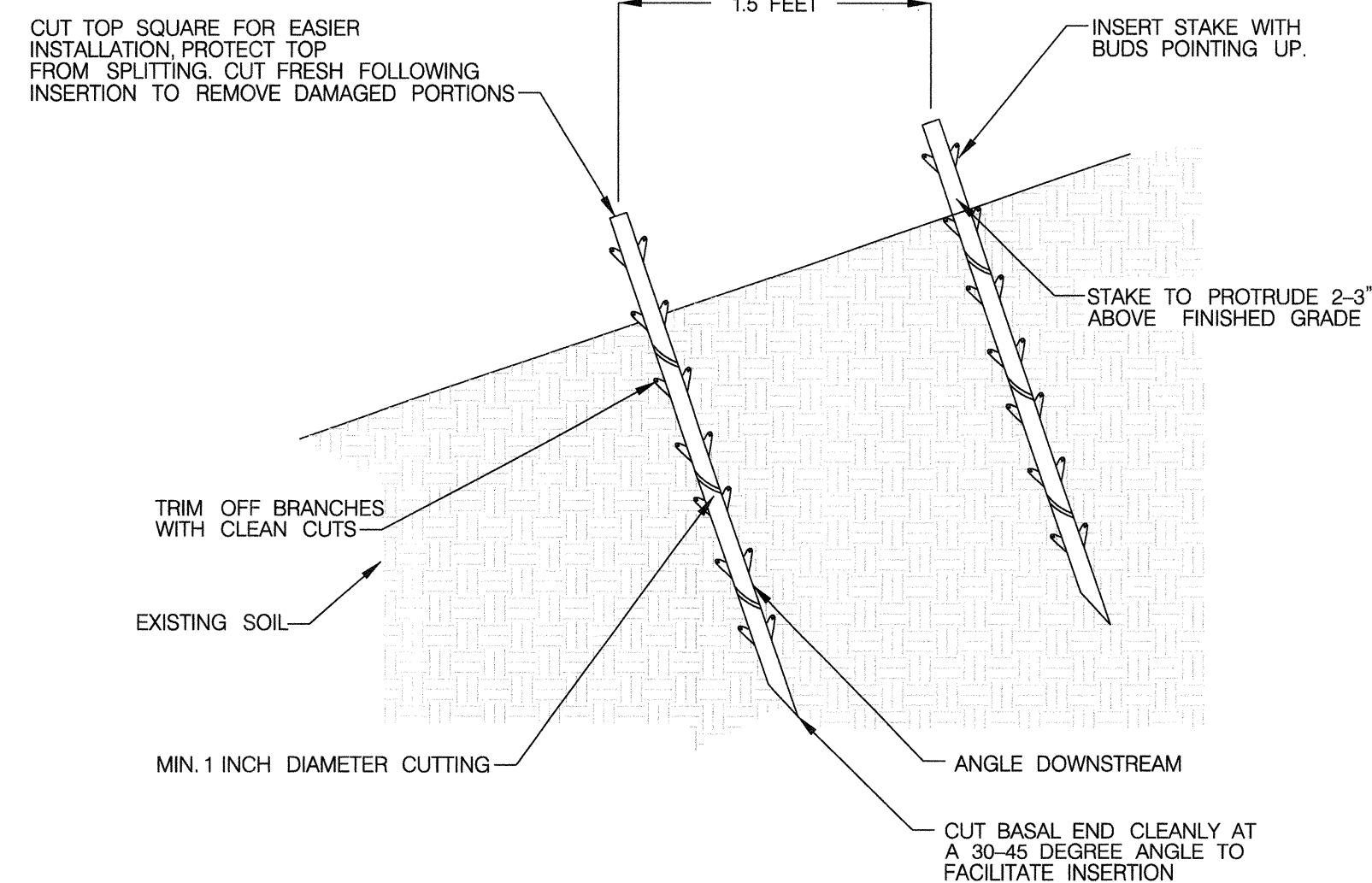
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

**PLAN VIEW
LIVE STAKE LAYOUT**

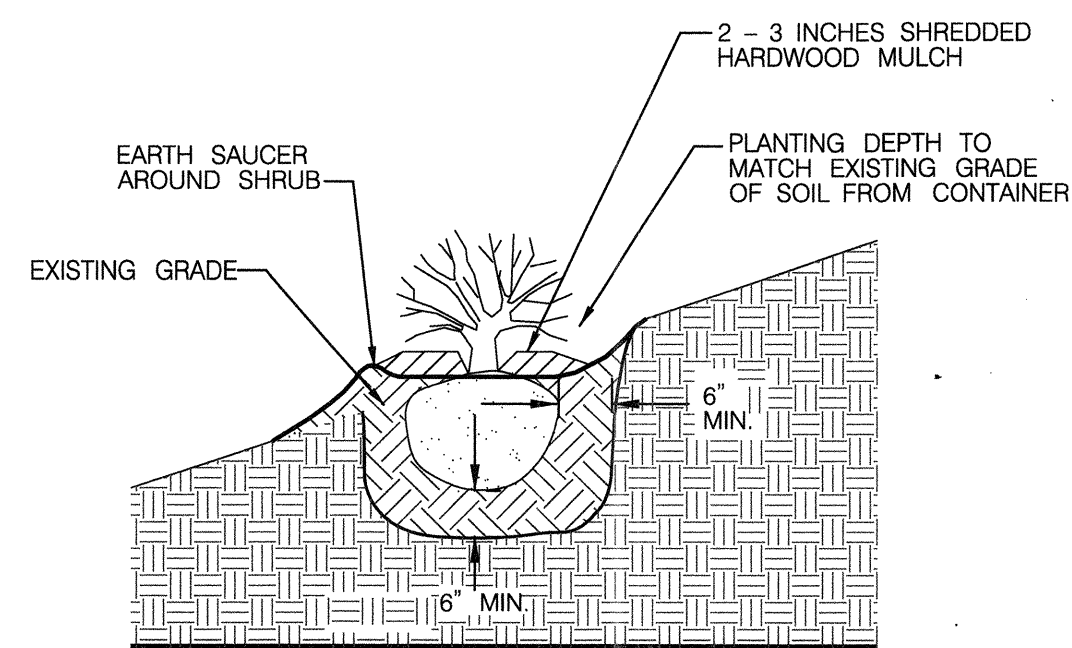


LIVE STAKE INSTALLATION

NOT TO SCALE



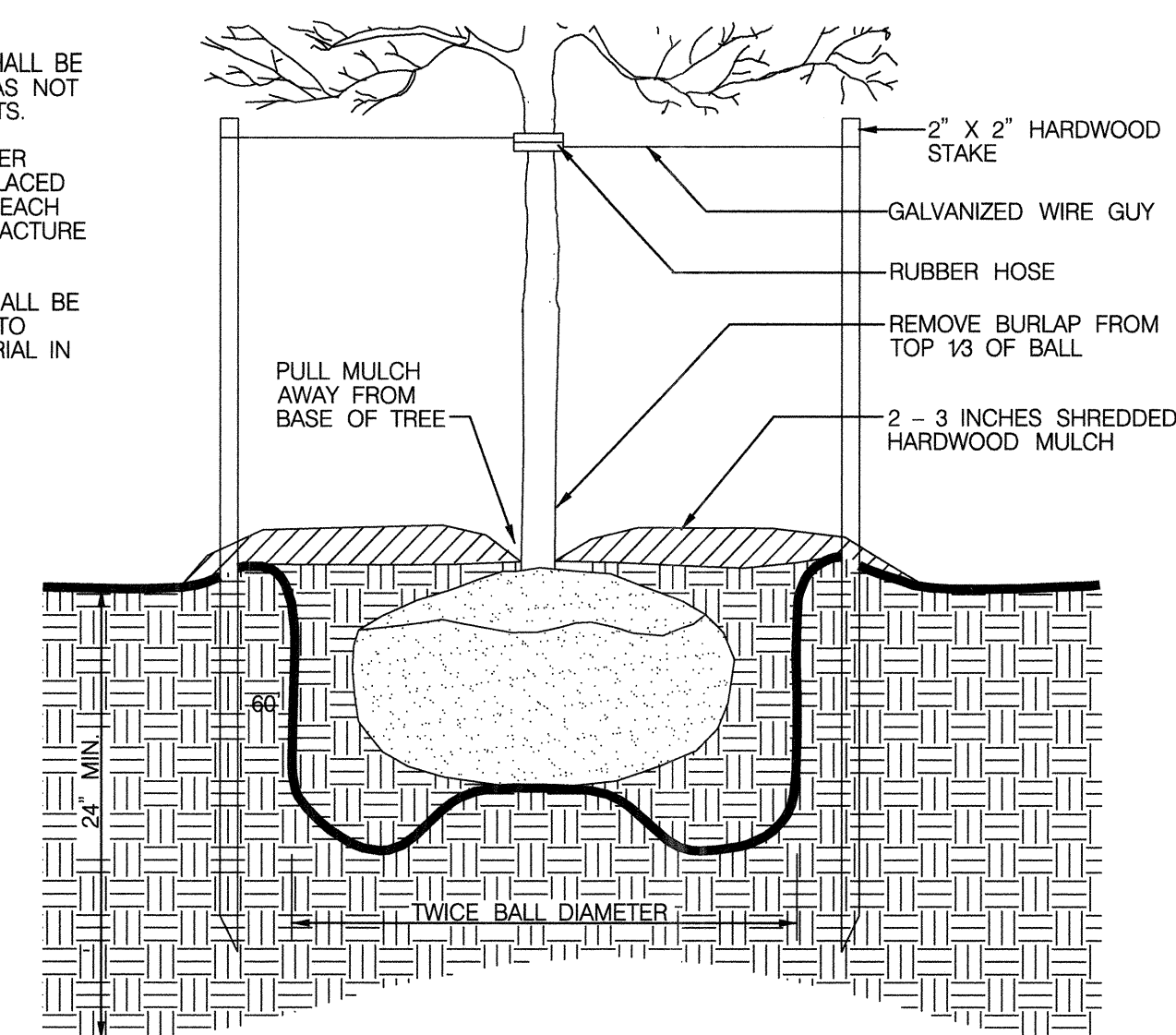
- NOTES:
1. PLANTING HOLE SHALL BE OF SUFFICIENT SIZE AS NOT TO CRAMP THE ROOTS.
 2. AGRIFORM FERTILIZER TABLETS SHALL BE PLACED AT THE BOTTOM OF EACH HOLE AS PER MANUFACTURE SPECIFICATIONS.
 3. PLANTING HOLE SHALL BE TAMPED WITH FOOT TO SECURE PLANT MATERIAL IN SOIL.



#1 CONTAINER PLANT INSTALLATION

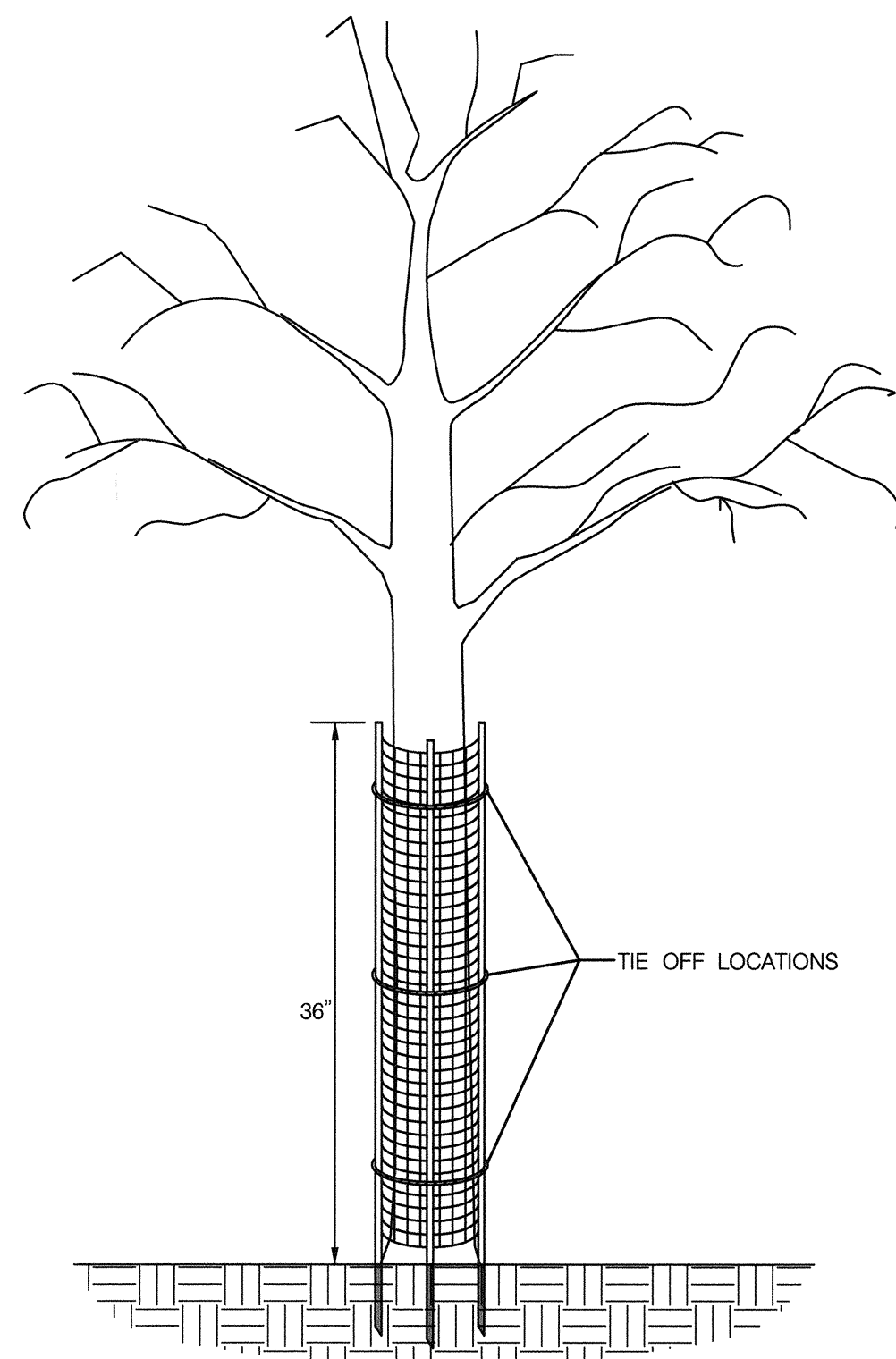
NOT TO SCALE

- NOTES:
1. PLANTING HOLE SHALL BE OF SUFFICIENT SIZE AS NOT TO CRAMP THE ROOTS.
 2. AGRIFORM FERTILIZER TABLETS SHALL BE PLACED AT THE BOTTOM OF EACH HOLE AS PER MANUFACTURE SPECIFICATIONS.
 3. PLANTING HOLE SHALL BE TAMPED WITH FOOT TO SECURE PLANT MATERIAL IN SOIL.



1 INCH CALIPER PLANT INSTALLATION

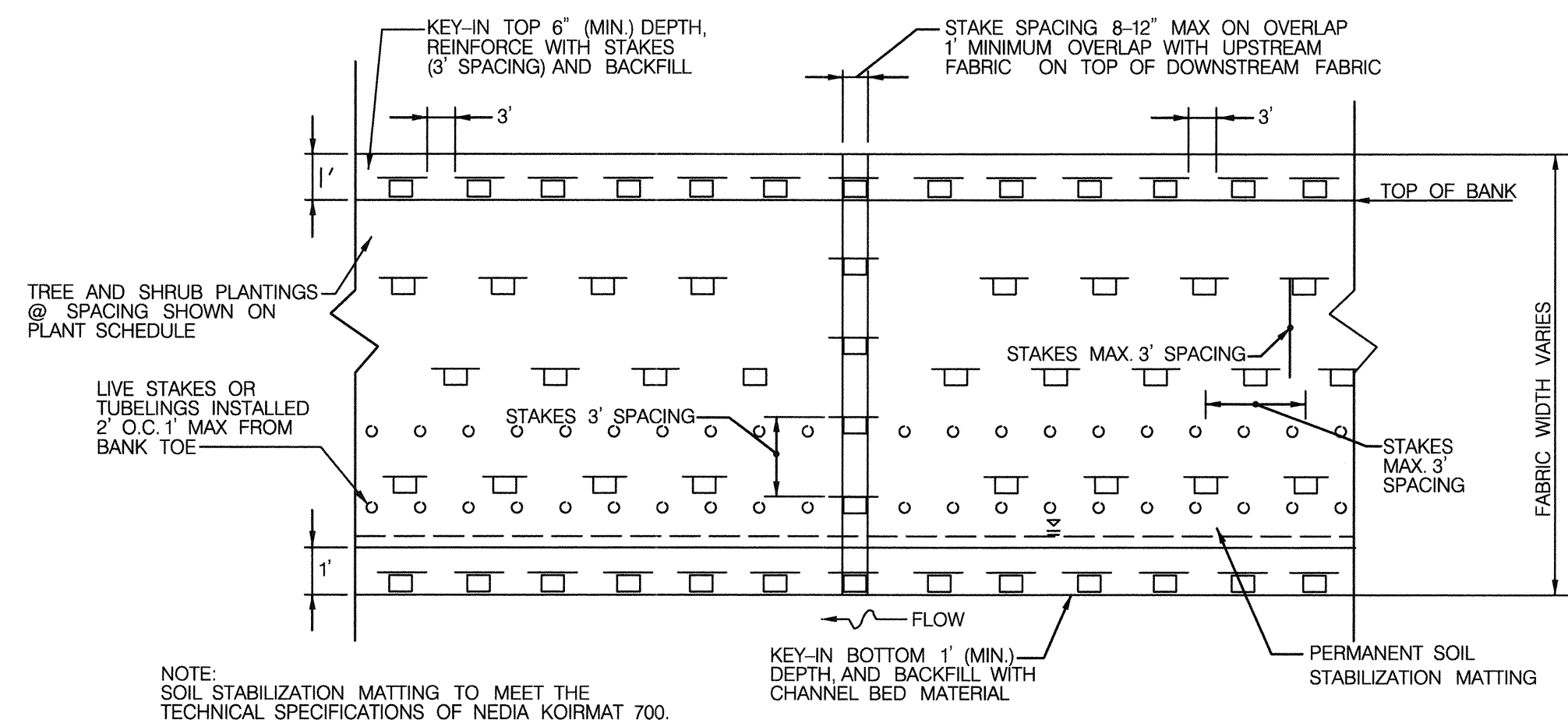
NOT TO SCALE



- INSTALLATION INSTRUCTIONS:
1. PLANT TREE ACCORDING TO STANDARD SPECIFICATIONS.
 2. PLACE THE SHELTER AROUND THE TREE.
 3. DRIVE LONGER STAKES INTO THE GROUND.
 4. TIE-OFF ROPE ENDS AROUND TREE.

- PRODUCT NOTES:
1. TREE SHELTER SHALL BE A.M. LEONARD TREE BARK PROTECTOR OR APPROVED EQUAL.
 2. TREE SHELTER MUST HAVE LONGER HARDY STAKES FOR INSERTION INTO GROUND TO PROVIDE SUPPORT.
 3. TREE SHELTER SHALL BE A MINIMUM OF 48" TALL.

TREE SHELTER DETAIL
NOT TO SCALE

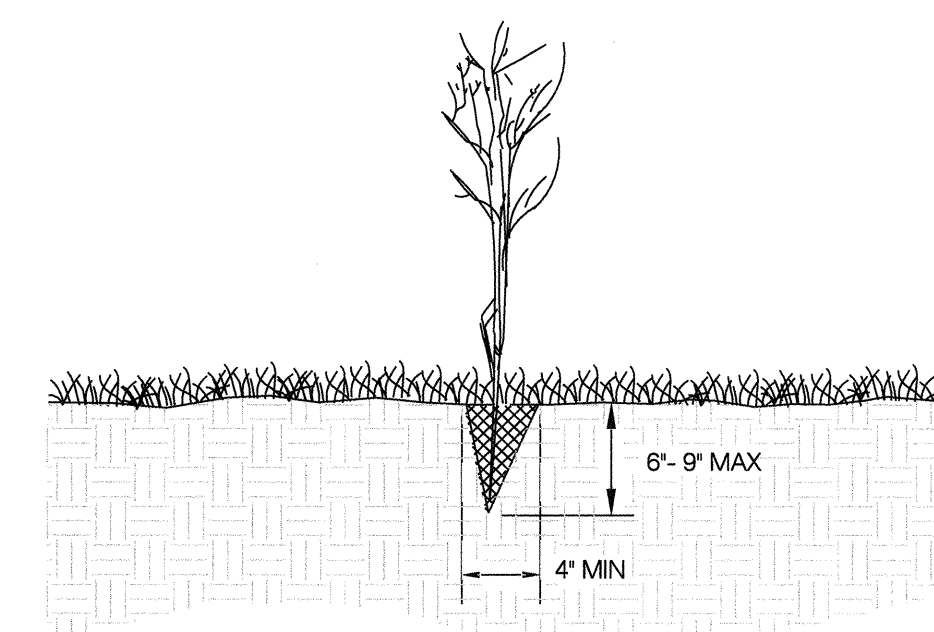


NOTE: SOIL STABILIZATION MATTING TO MEET THE TECHNICAL SPECIFICATIONS OF NEDIA KOIRMAT 700.

SOIL STABILIZATION - PLAN VIEW

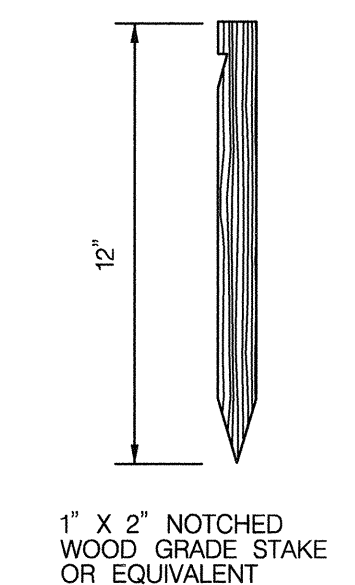
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- NOTES:
1. PLANTING HOLE SHALL BE OF SUFFICIENT SIZE AS NOT TO CRAMP THE ROOTS.
 2. AGRIFORM FERTILIZER TABLETS SHALL BE PLACED AT THE BOTTOM OF EACH HOLE AS PER MANUFACTURE'S SPECIFICATIONS.
 3. PLANTING HOLE SHALL BE TAMPED WITH FOOT TO SECURE QUART PLANT MATERIAL IN SOIL.
 4. ROOTS TO BE PLACED IN A MINIMUM OF 6" OF TOPSOIL.



BAREROOT/TUBELING INSTALLATION

NOT TO SCALE



ANCHOR STAKE

NOT TO SCALE

LD-02

BY: ddoronzio - U:\202830003\03_data\gis_cad\Sheet_files\pLS-D001_Gwynn-Park.dgn

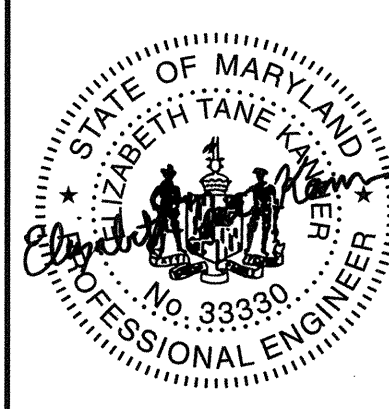
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BY	NO.	REVISIONS	DATE

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NA	D-1178	NTS	RP	CC	GCB	4/20

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LANDSCAPE DETAILS

ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

Mark S. Richmond
CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
DATE

STREAMBANK RIPARIAN FOREST ZONE, LIVE STAKE/TUBELING ZONE, AND NATIVE UTILITY EASEMENT SEED ZONE		SEEDING RATE/ACRE: 50 lbs				
TOTAL QTY. (lbs)		TOTAL ZONE SIZE: 19,623 SF/43,560 =		0.45 ACRES		
TOTAL QTY. (lbs)	FREQUENCY %	BOTANICAL NAME	COMMON NAME	REGIONAL INDICATOR STATUS	ROOT TYPE	COMMENTS
GRASS SPECIES						
0.68	3.0%	<i>Cinna arundinacea</i>	Wood Reedgrass	FACW	seed	Pure Live Seed
5.63	25.0%	<i>Dichanthelium clandestinum</i> , 'Tioga' (<i>Panicum c.</i>)	Deertongue, 'Tioga'	FAC	seed	Pure Live Seed
3.38	15.0%	<i>Elymus riparius</i>	Riverbank Wildrye	FACW	seed	Pure Live Seed
3.38	15.0%	<i>Elymus virginicus</i>	Virginia Wildrye	FACW	seed	Pure Live Seed
0.23	1.0%	<i>Glyceria striata</i>	Fowl Mannagrass	OBL	seed	Pure Live Seed
GRASS-LIKE SPECIES						
0.45	2.0%	<i>Carex frankii</i>	Frank's Sedge	OBL	seed	Pure Live Seed
0.68	3.0%	<i>Carex intumescens</i>	Bladder (Star) Sedge	FACW	seed	Pure Live Seed
0.68	3.0%	<i>Carex squarrosa</i>	Squarrose Sedge	FACW	seed	Pure Live Seed
1.13	5.0%	<i>Juncus tenuis</i>	Path Rush	FAC	seed	Pure Live Seed
0.23	1.0%	<i>Veratrum viride</i>	False Hellebore	FACW	seed	Pure Live Seed
HERBACEOUS FLOWERING SPECIES (FORBS)						
0.45	2.0%	<i>Aster umbellatus</i> (<i>Doellingeria umbellata</i>)	Flat Topped White Aster	FACW	seed	Pure Live Seed
0.23	1.0%	<i>Chelone glabra</i>	Turtlehead	OBL	seed	Pure Live Seed
0.90	4.0%	<i>Desmodium canadense</i>	Showy Ticktrefoil	FAC	seed	Pure Live Seed
0.45	2.0%	<i>Eupatorium perfoliatum</i>	Boneset	FACW	seed	Pure Live Seed
0.11	0.5%	<i>Gentiana clausa</i>	Meadow Bottle Gentian	FACW	seed	Pure Live Seed
0.23	1.0%	<i>Lobelia cardinalis</i>	Cardinal Flower	FACW	seed	Pure Live Seed
0.45	2.0%	<i>Lobelia siphilitica</i>	Great Blue Lobelia	FACW	seed	Pure Live Seed
1.13	5.0%	<i>Penstemon digitalis</i>	Tall White Beardtongue	FAC	seed	Pure Live Seed
0.11	0.5%	<i>Pycnanthemum muticum</i>	Bigleaf Mountainmint	FACW	seed	Pure Live Seed
0.23	1.0%	<i>Solidago rugosa</i>	Wrinkleleaf Goldenrod	FAC	seed	Pure Live Seed
0.45	2.0%	<i>Thalictrum pubescens</i> (<i>T. polygamum</i>)	Tall Meadow Rue	FACW	seed	Pure Live Seed
0.90	4.0%	<i>Verbena hastata</i>	Blue Vervain	FACW	seed	Pure Live Seed
0.45	2.0%	<i>Zizia aurea</i>	Golden Alexanders	FAC	seed	Pure Live Seed
22.56	100.0%	= Total				
13.50	Companion Cover Crop	Common Oat (Spring/Summer) or Grain Barley (Fall/Winter)		NA	seed	Pure Live Seed

SHADE TREE ZONE		SEEDING RATE/ACRE: 40 lbs				
TOTAL QTY. (lbs)		TOTAL ZONE SIZE: 12,613 SF/43,560 =		0.29 ACRES		
TOTAL QTY. (lbs)	FREQUENCY %	BOTANICAL NAME	COMMON NAME	REGIONAL INDICATOR STATUS	ROOT TYPE	COMMENTS
GRASS SPECIES						
1.74	15.0%	<i>Agrostis perennans</i>	Autumn Bentgrass	FACU	seed	Pure Live Seed
1.62	14.0%	<i>Chasmanthium latifolium</i>	River Oats	FACU	seed	Pure Live Seed
0.58	5.0%	<i>Elymus hystrix</i>	Bottlebrush Grass	UPL	seed	Pure Live Seed
2.20	19.0%	<i>Panicum virgatum</i> , 'Shawnee'	Switchgrass, 'Shawnee'	FAC	seed	Pure Live Seed
GRASS-LIKE SPECIES						
1.28	11.0%	<i>Juncus tenuis</i>	Path Rush	FAC	seed	Pure Live Seed
0.12	1.0%	<i>Tradescantia virginiana</i>	Virginia Spiderwort	FACU	seed	Pure Live Seed
HERBACEOUS FLOWERING SPECIES (FORBS)						
0.35	3.0%	<i>Anemone virginiana</i>	Thimbleweed	FACU	seed	Pure Live Seed
0.12	1.0%	<i>Apocynum cannabinum</i>	Indianhemp (Dogbane)	FACU	seed	Pure Live Seed
0.12	1.0%	<i>Aquilegia canadensis</i>	Eastern Columbine	FAC	seed	Pure Live Seed
0.35	3.0%	<i>Asclepias syriaca</i>	Common Milkweed	FACU	seed	Pure Live Seed
0.35	3.0%	<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI	seed	Pure Live Seed
0.12	1.0%	<i>Aster divaricatus</i> (<i>Eurybia divaricata</i>)	White Wood Aster	NI	seed	Pure Live Seed
0.12	1.0%	<i>Aster macrophyllus</i> (<i>Eurybia macrophylla</i>)	Bigleaf Aster	UPL	seed	Pure Live Seed
0.12	1.0%	<i>Aster sagittifolius</i> (<i>Symphotrichum urophyllum</i>)	Arrowleaf (Sagittate) Aster	NI	seed	Pure Live Seed
0.12	1.0%	<i>Coreopsis tripteris</i>	Tall Coreopsis	FAC	seed	Pure Live Seed
0.35	3.0%	<i>Desmodium paniculatum</i>	Panicledleaf Ticktrefoil	FACU	seed	Pure Live Seed
0.12	1.0%	<i>Eupatorium rugosum</i> (<i>Ageratina altissima</i>)	White Snakeroot	FACU	seed	Pure Live Seed
0.06	0.5%	<i>Euthamia graminifolia</i> (<i>Solidago g.</i>)	Grassleaf Goldenrod	FAC	seed	Pure Live Seed
0.17	1.5%	<i>Geum canadense</i>	White Avens	FACU	seed	Pure Live Seed
0.23	2.0%	<i>Helopsis helianthoides</i>	Oxeye Sunflower	FACU	seed	Pure Live Seed
0.35	3.0%	<i>Liatris spicata</i>	Marsh (Dense) Blazing Star (Spiked Gayfeather)	FAC	seed	Pure Live Seed
0.23	2.0%	<i>Monarda fistulosa</i>	Wild Bergamot	UPL	seed	Pure Live Seed
0.06	0.5%	<i>Penstemon hirsutus</i>	Hairy Beardtongue	NI	seed	Pure Live Seed
0.06	0.5%	<i>Pycnanthemum virginianum</i>	Virginia Mountainmint	FAC	seed	Pure Live Seed
0.23	2.0%	<i>Silphium perfoliatum</i>	Cup Plant	FAC	seed	Pure Live Seed
0.12	1.0%	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	FACU	seed	Pure Live Seed
0.35	3.0%	<i>Verbesina alternifolia</i>	Wingstem	FAC	seed	Pure Live Seed
11.64	100.0%	= Total				
8.70	Companion Cover Crop	Common Oat (Spring/Summer) or Grain Barley (Fall/Winter)		NA	seed	Pure Live Seed

NOTES:
 1 - Companion cover crop to be applied at a rate of 30 lbs/ac with custom seed mixes
 2 - Turfgrass establishment zone measures 676 sf/0.02 Ac. Apply permanent seed mix shown on the erosion and sediment control notes sheet throughout this zone at rates specified.
 3 - The rates shown are Pure Live Seed. Use germination and purity data from the seed tag to calculate the actual seeding rate needed to obtain the seeding rate in Pure Live Seed.

PLANT SCHEDULE		OVERALL QTY. TREES / SHRUBS PER ACRE: 109 / 194					
SHADE TREE ZONE		TOTAL ZONE SIZE: 12,613 SF/43,560 = 0.29 ACRES					
TOTAL QUANTITY	DESCRIPTION	ROOT TYPE	MINIMUM CONTAINER SIZE	WETLAND INDICATOR STATUS	SIZE / HEIGHT	APPROXIMATE SPACING	COMMENTS
BOTANICAL NAME		COMMON NAME					
19	CANOPY TREES (@60%)						
5	<i>Carya glabra</i>	NA	B&B	FACU	2" CAL.	20 FT. ON CENTER	
5	<i>Liriodendron tulipifera</i>	NA	B&B	FACU	2" CAL.	20 FT. ON CENTER	
5	<i>Quercus alba</i>	NA	B&B	FACU	2" CAL.	20 FT. ON CENTER	
4	<i>Quercus velutina</i>	NA	B&B	NI	2" CAL.	20 FT. ON CENTER	
13	UNDERSTORY TREES (@ 40%)						
7	<i>Cornus florida</i>	CONT.	#7	FACU	1" CAL.	20 FT. ON CENTER	
6	<i>Prunus serotina</i>	CONT.	#7	FACU	1" CAL.	20 FT. ON CENTER	
56	SHRUBS						
18	<i>Lindera benzoin</i>	CONT.	#5	FAC	5 FT. HT.	15 FT. ON CENTER	
19	<i>Sambucus racemosa</i>	CONT.	#5	FACU	5 FT. HT.	15 FT. ON CENTER	
19	<i>Viburnum prunifolium</i>	CONT.	#5	FACU	5 FT. HT.	15 FT. ON CENTER	

PLANT SCHEDULE		OVERALL QTY. LIVE STAKE/TUBELING PER ACRE: 10,890					
LIVE STAKE / TUBELING ZONE		TOTAL ZONE SIZE: 2,379 SF/43,560 = 0.05 ACRES					
TOTAL QUANTITY	DESCRIPTION	ROOT TYPE ¹	MINIMUM CONTAINER SIZE	WETLAND INDICATOR STATUS	SIZE / HEIGHT ¹	APPROXIMATE SPACING	COMMENTS
BOTANICAL NAME		COMMON NAME					
1045	LIVE STAKES						
175	<i>Alnus serrulata</i>	LS / T	NA	OBL	3 FT. HT.	2 FT. ON CENTER	
174	<i>Cornus amomum</i>	LS / T	NA	FACW	3 FT. HT.	2 FT. ON CENTER	
174	<i>Cornus sericea</i> (<i>C. stolonifera</i>)	LS / T	NA	FACW	3 FT. HT.	2 FT. ON CENTER	
174	<i>Salix sericea</i>	LS / T	NA	OBL	3 FT. HT.	2 FT. ON CENTER	
174	<i>Sambucus nigra</i> (<i>S. canadensis</i>)	LS / T	NA	FACW	3 FT. HT.	2 FT. ON CENTER	
174	<i>Viburnum dentatum</i>	LS / T	NA	FAC	3 FT. HT.	2 FT. ON CENTER	

NOTE: ¹ Tubelings measuring a minimum of 1-ft. height may be substituted for Live Stakes.

PLANT SCHEDULE		OVERALL QTY. TREES / SHRUBS PER ACRE: 194 / 1,742					
STREAMBANK RIPARIAN FOREST ZONE		TOTAL ZONE SIZE: 7,600 SF/43,560 = 0.17 ACRES					
TOTAL QUANTITY	DESCRIPTION	ROOT TYPE	MINIMUM CONTAINER SIZE	WETLAND INDICATOR STATUS	SIZE / HEIGHT	APPROXIMATE SPACING	COMMENTS
BOTANICAL NAME		COMMON NAME					
20	CANOPY TREES (@60%)						
5	<i>Acer saccharinum</i>	CONT.	#7	FACW	1" CAL.	15 FT. ON CENTER	Plant closer to stream
5	<i>Nyssa sylvatica</i>	CONT.	#7	FAC	1" CAL.	15 FT. ON CENTER	Plant further from stream
5	<i>Platanus occidentalis</i>	CONT.	#7	FACW	1" CAL.	15 FT. ON CENTER	Plant closer to stream
5	<i>Quercus bicolor</i>	CONT.	#7	FACW	1" CAL.	15 FT. ON CENTER	Plant closer to stream
13	UNDERSTORY TREES (@ 40%)						
5	<i>Amelanchier canadensis</i>	CONT.	#5	FAC	6 FT. HT.	15 FT. ON CENTER	Plant further from stream
5	<i>Carpinus caroliniana</i>	CONT.	#5	FAC	6 FT. HT.	15 FT. ON CENTER	Plant closer to stream
3	<i>Ulmus rubra</i>	CONT.	#5	FAC	6 FT. HT.	15 FT. ON CENTER	Plant closer to stream
296	SHRUBS						
60	<i>Aronia melanocarpa</i>	CONT.	#3	FAC	3 FT. HT.	5 FT. ON CENTER	Plant further from stream
59	<i>Cornus amomum</i>	CONT.	#3	FACW	3 FT. HT.	5 FT. ON CENTER	Plant closer to stream
59	<i>Ilex verticillata</i>	CONT.	#3	FACW	3 FT. HT.	5 FT. ON CENTER	Plant closer to stream
59	<i>Vaccinium corymbosum</i>	CONT.	#3	FACW	3 FT. HT.	5 FT. ON CENTER	Plant closer to stream
59	<i>Viburnum dentatum</i>	CONT.	#3	FAC	3 FT. HT.	5 FT. ON CENTER	Plant further from stream

LD-03

BY: ddcronzio - U:\202880003\03_data\gis_cad\Sheet_files\pl_S-D002_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS
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STATE OF MARYLAND
LIZBETH TANEY
No. 39330
PROFESSIONAL ENGINEER

BY: _____ NO. _____ REVISIONS _____ DATE _____

ADVERTISED DATE: NA
CONTRACT NO.: D-1178
SCALE: NTS.
DESIGNED BY: RP
DRAWN BY: CC
CHECKED BY: GCB
DATE: 4/20 SHEET NO. 18 OF 20

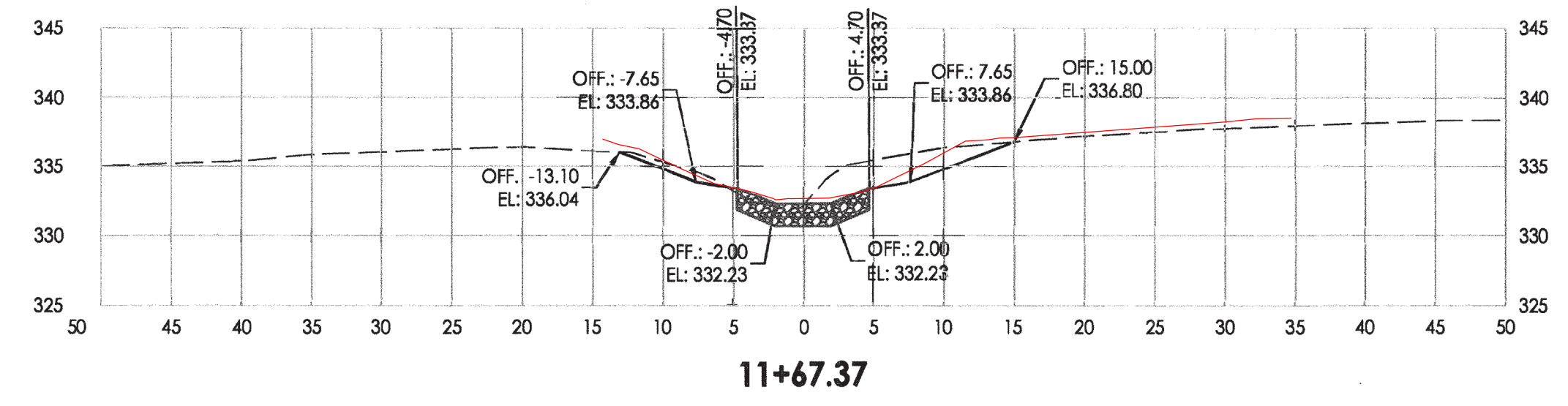
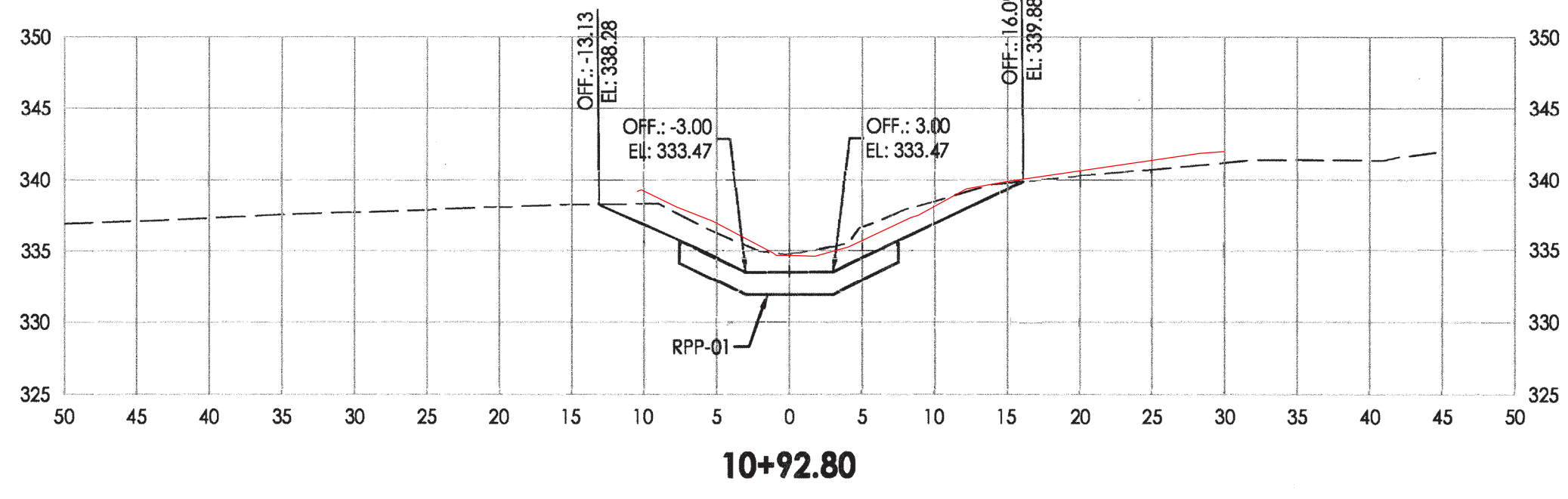
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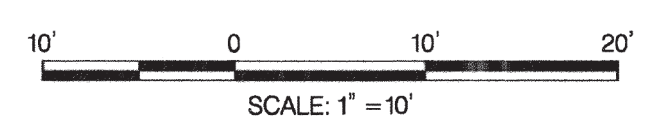
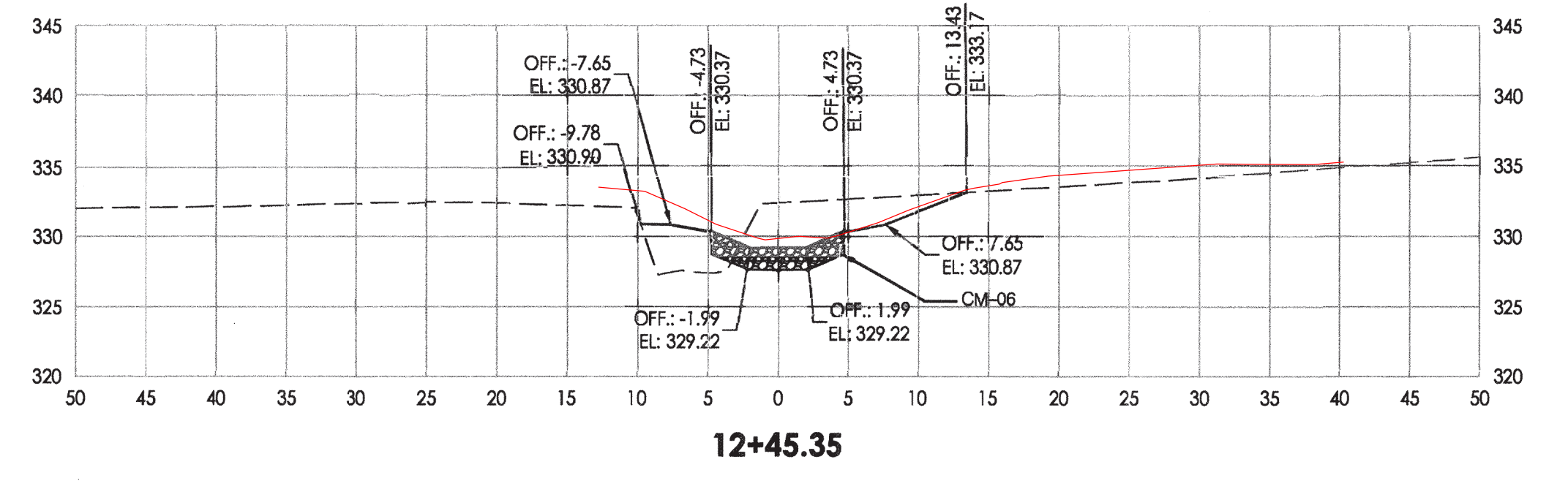
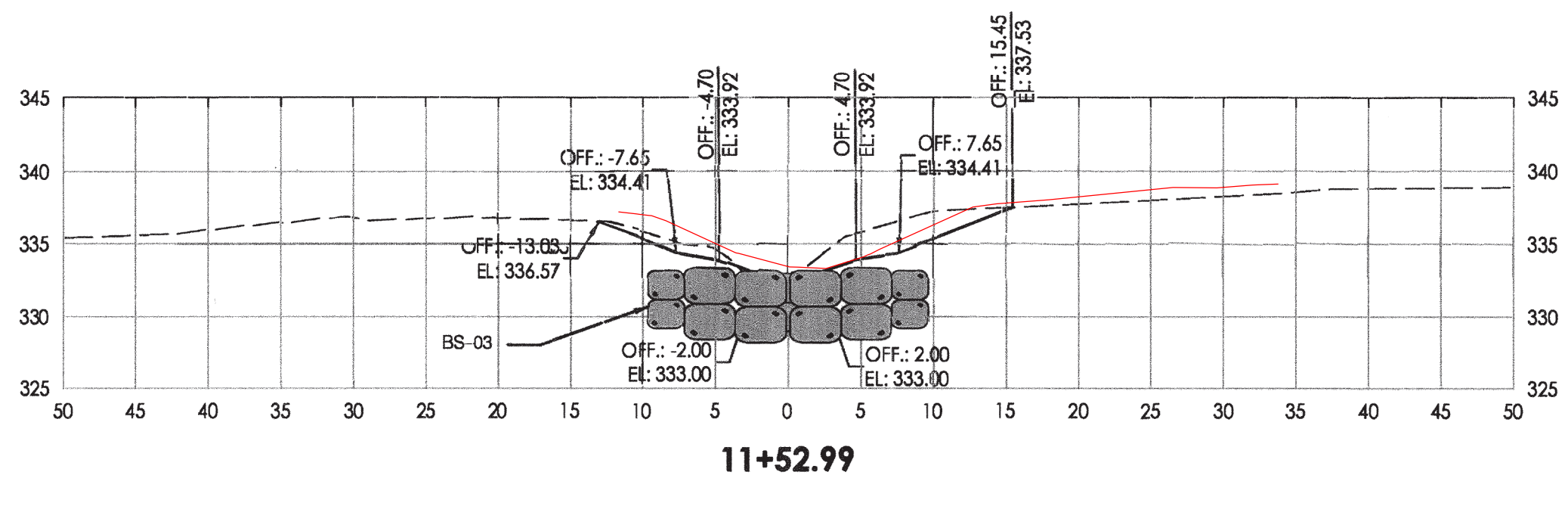
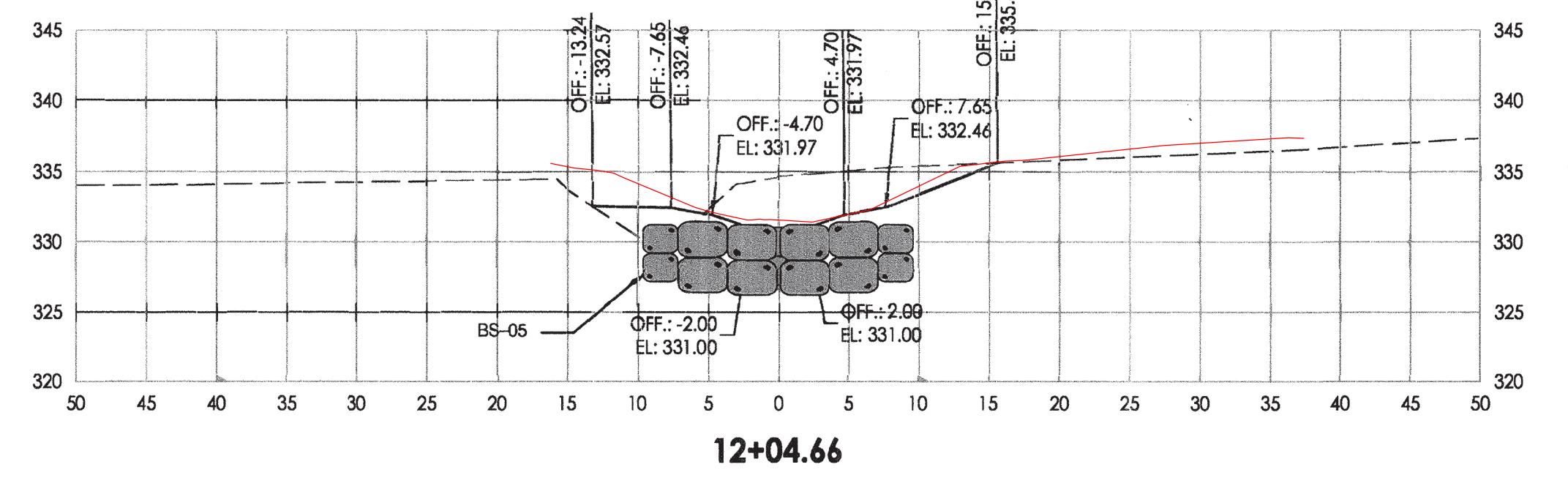
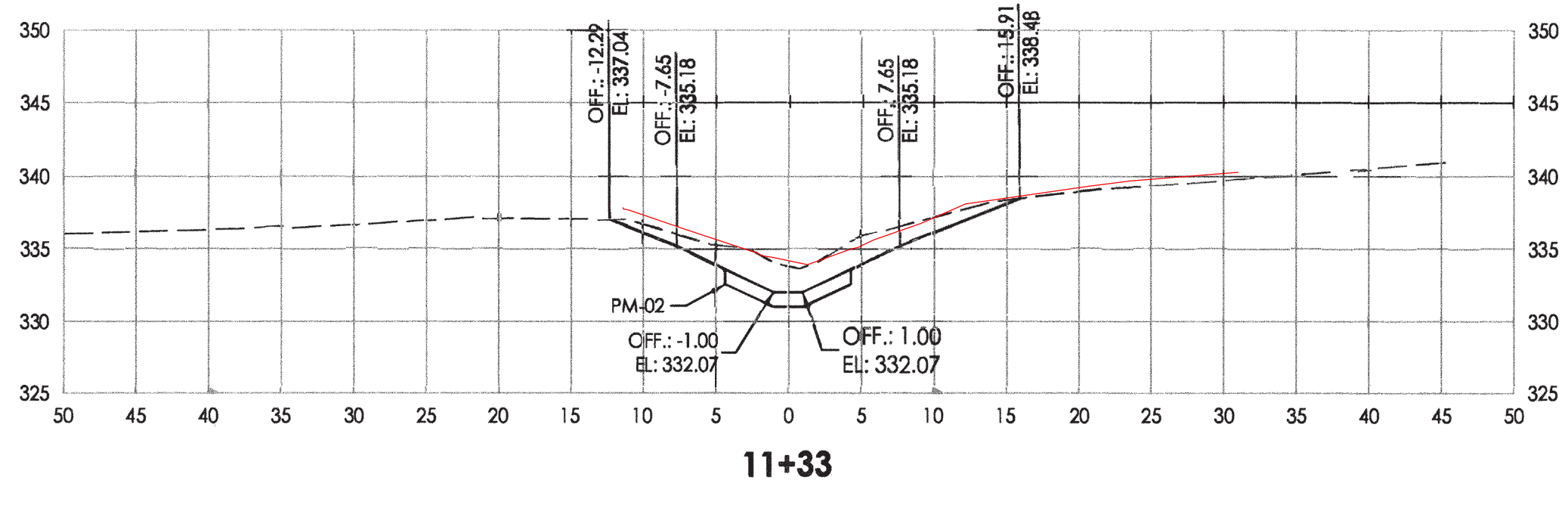
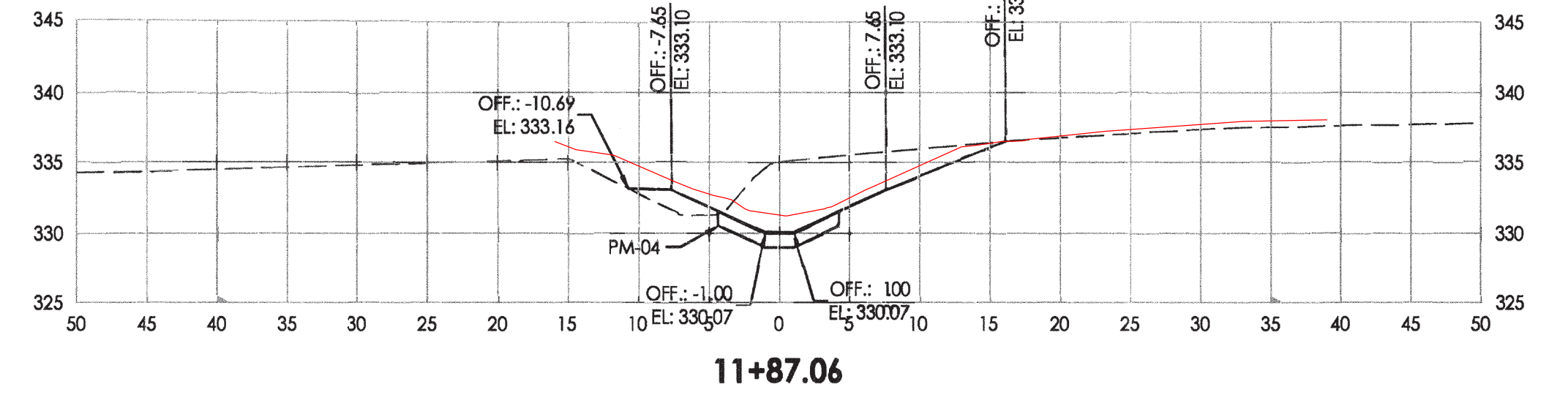
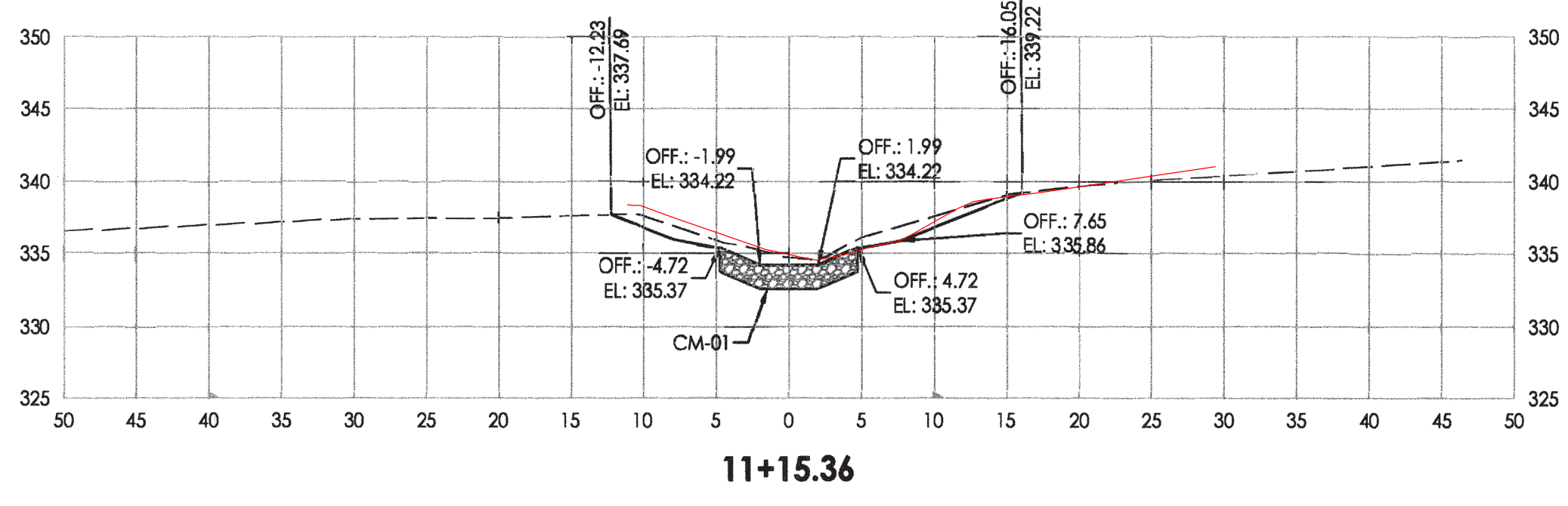
4/9/20
DATE

PLOTTED: Thursday, April 02, 2020 AT 12:23 PM



LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- CASCADE MIX (CM)
- POOL MIX (PM)
- BOULDER SILL (BS)
- RIPRAP PLUNGE POOL (RPP)



XS-01

BY: ddorofizio - U:\202830003\03_data\gis_cad\Sheet_files\pXS-0001_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

PREPARED BY:

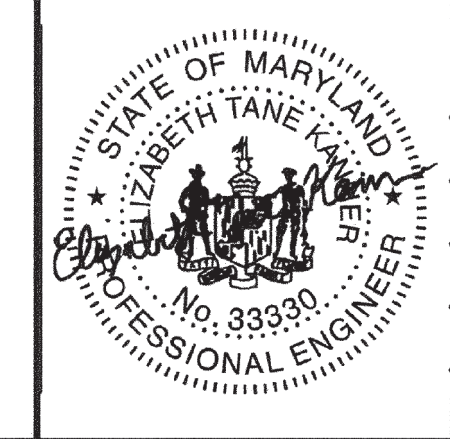
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HOWARD COUNTY
MARYLAND

STORMWATER MANAGEMENT DIVISION
BUREAU OF ENVIRONMENTAL SERVICES
HOWARD COUNTY GOVERNMENT
9801 BROKEN LAND PARKWAY
COLUMBIA, MD 21046
(410) 313-0522



BY	NO.	REVISIONS	DATE
CSA	1	AS-CONSTRUCTED SURVEY	02/25/21

ADVERTISED DATE	N/A
CONTRACT NO.	D-1178
SCALE	1" = 20'
DESIGNED BY	JC
DRAWN BY	CC
CHECKED BY	GB
DATE	4/20
SHEET NO.	19
OF	20

CONSULTING, WATERSHED EVALUATION AND DESIGN
GWYNN PARK DRIVE OUTFALL STABILIZATION
CAPITAL PROJECT D-1178
9690 GWYNN PARK DRIVE
ELLCOTT CITY, MD 21042

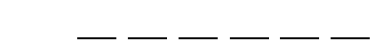
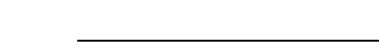

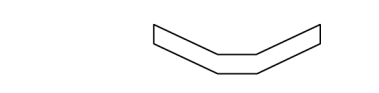
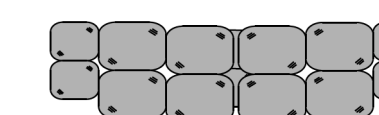
CROSS SECTIONS

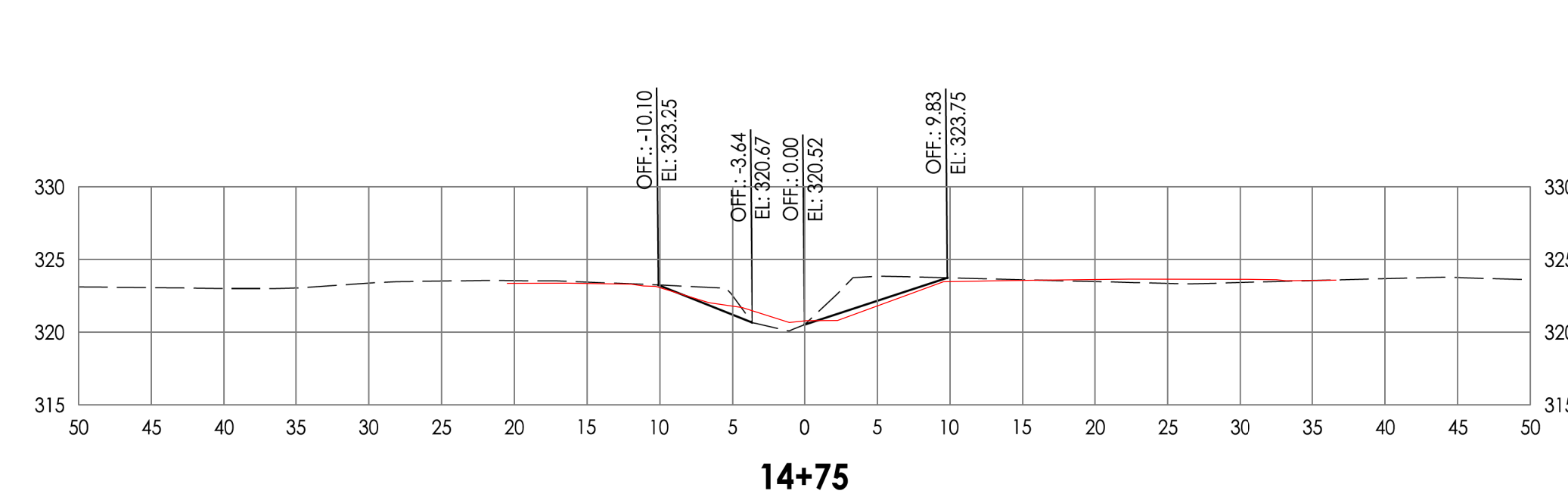
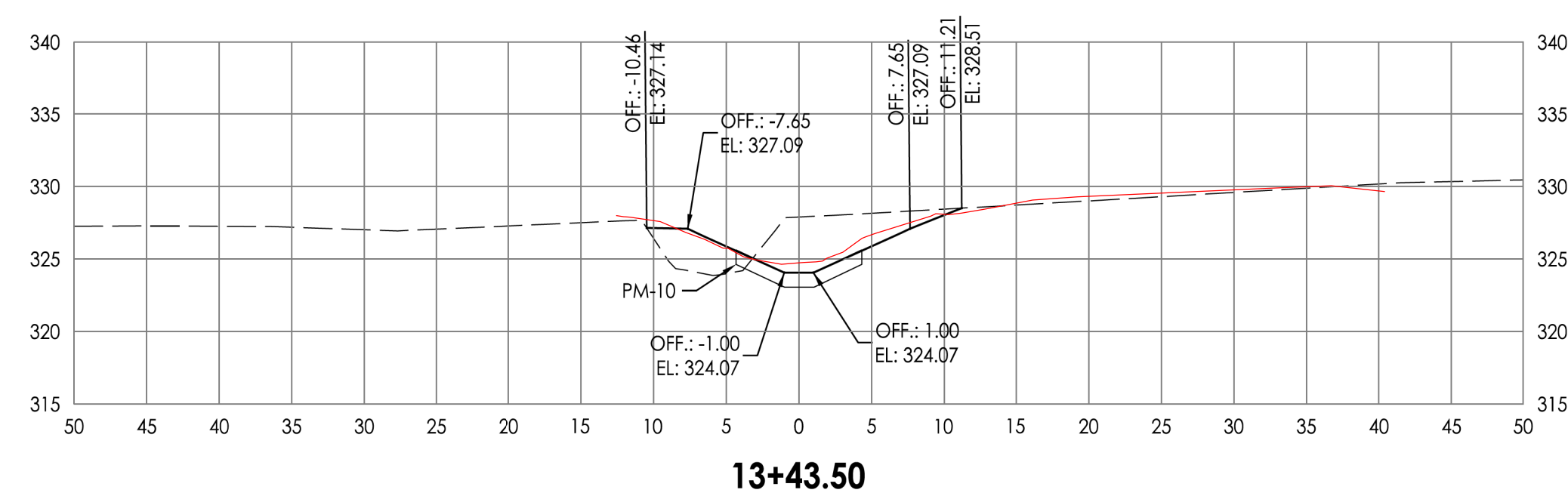
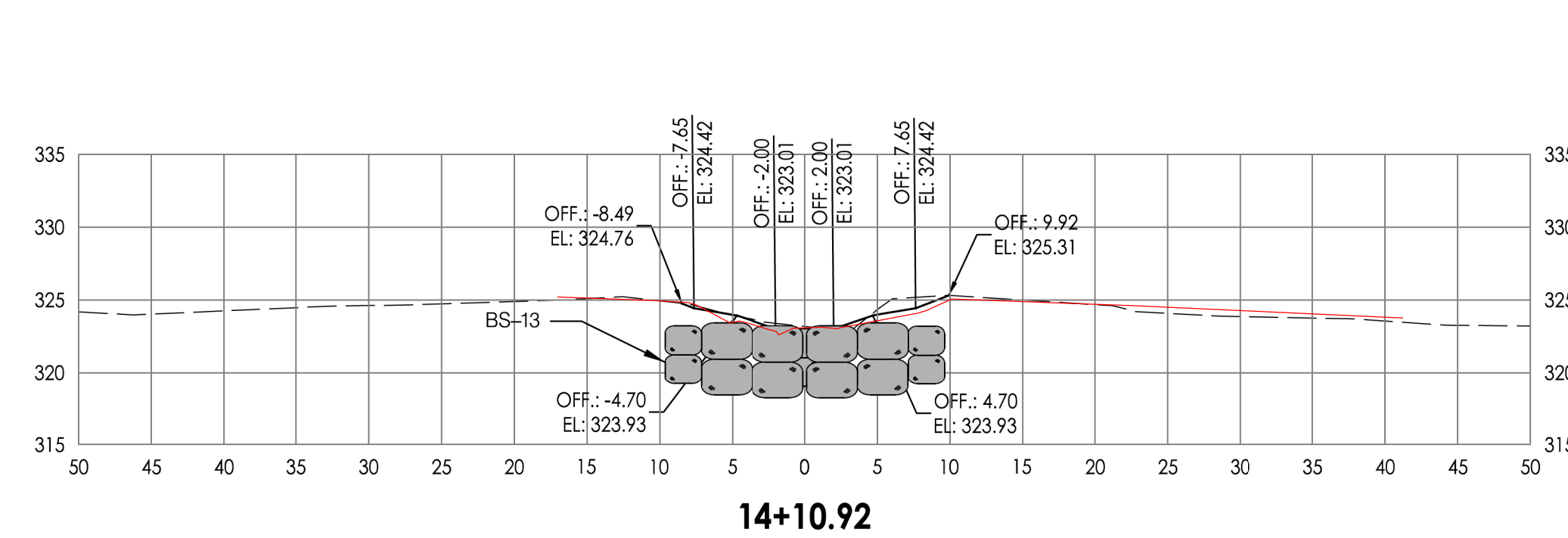
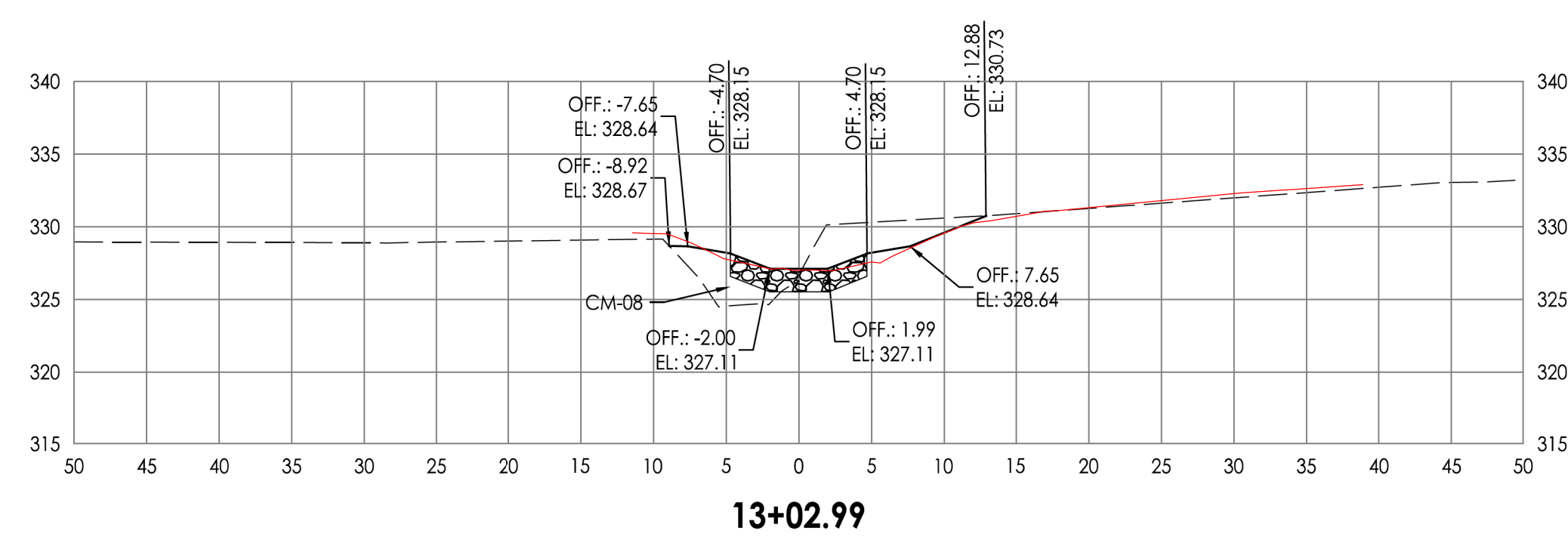
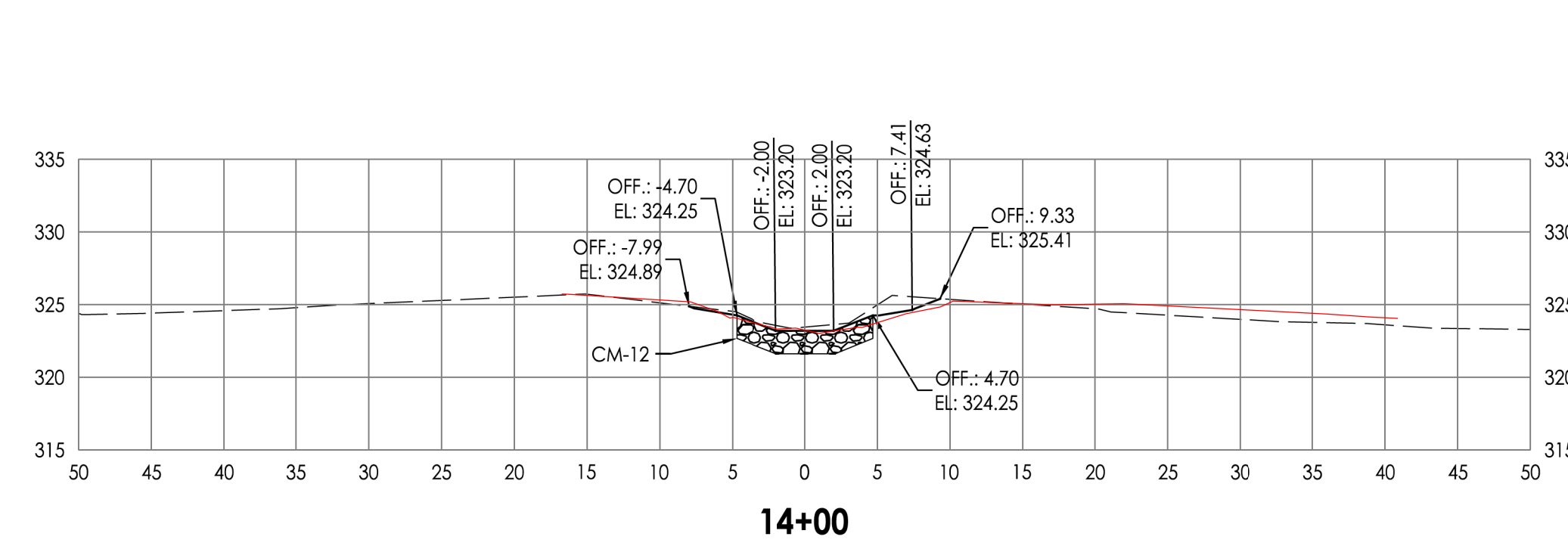
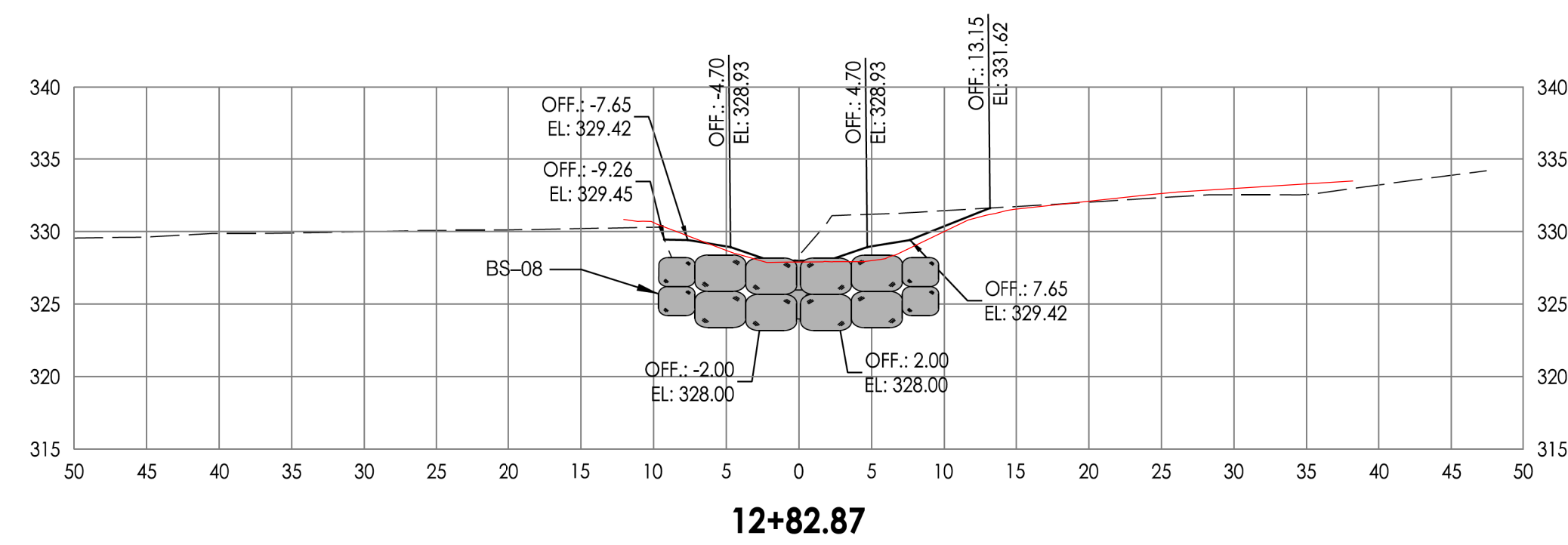
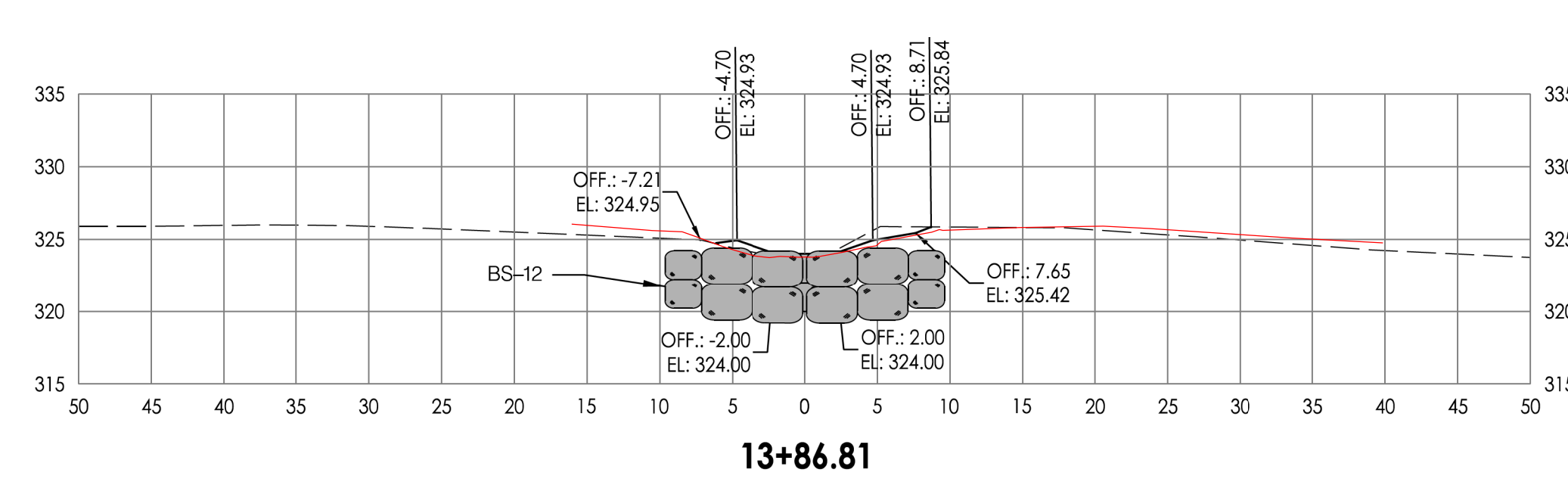
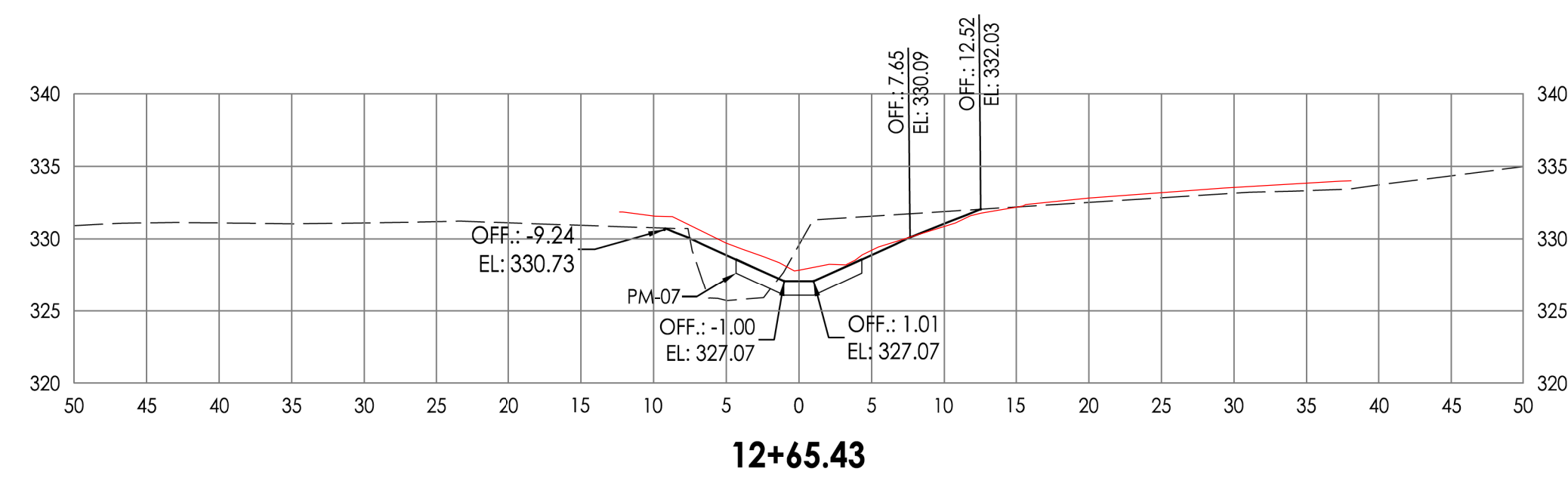
ELECTION DISTRICT NO. 01, HOWARD CO. MD TAX MAP 24 GRID NO. 8

Mark S. Richmond
CHIEF, STORMWATER MANAGEMENT DIVISION

4/9/20
DATE

LEGEND

-  EXISTING GRADE
-  PROPOSED GRADE
-  CASCADE MIX (CM)
-  POOL MIX (PM)
-  BOULDER SILL (BS)



XS-02

BY: ddboronzio - U:\202830003\03_data\gis_cad\Sheet_files\pXS-0002_Gwynn-Park.dgn

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

PREPARED BY:




a joint venture

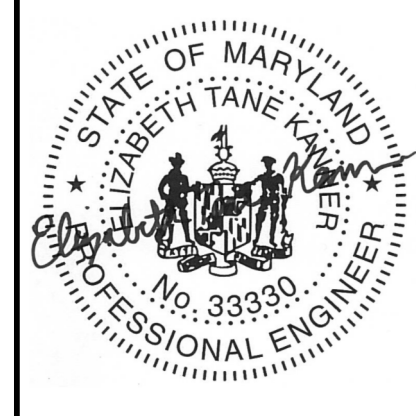
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