

HOWARD COUNTY

Capital Project #D-1159

Woodland Park Principal Spillway Replacement Project

Storm Water Management Division Bureau Of Environmental Services

INDEX OF SHEETS

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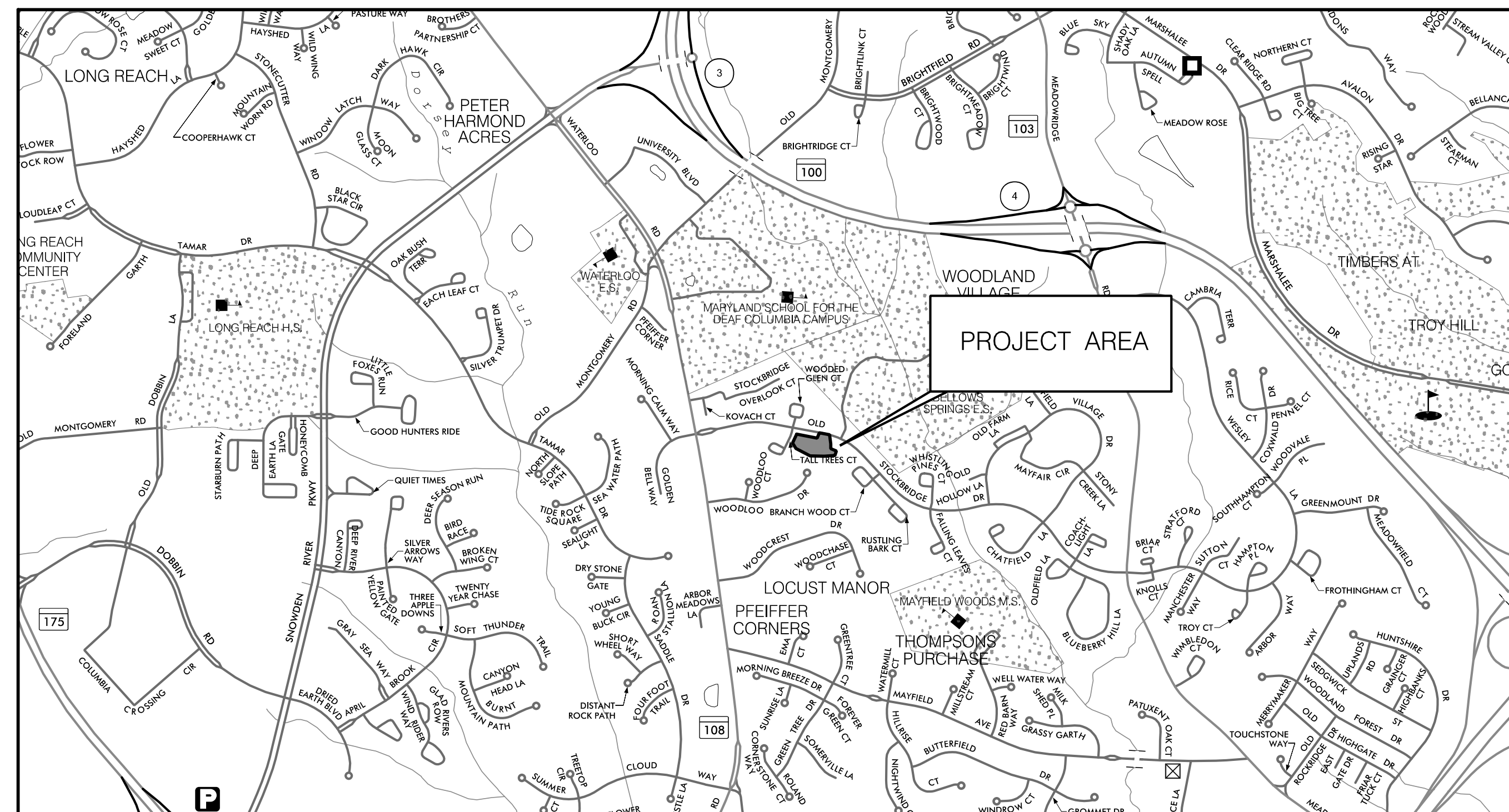
GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA 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 FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK AND THE FOLLOWING STAGES OF THE PROJECT:
 - PRIOR TO THE START OF EARTH DISTURBANCE.
 - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
 - PRIOR TO THE START OF PHASE TWO (2) OF CONSTRUCTION.
 - PRIOR TO THE REMOVAL OF SEDIMENT CONTROL PRACTICES.
- SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS, INC-NOVEMBER 2014
- 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 McCORMICK TAYLOR- FEBRUARY, 2015.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND McCORMICK TAYLOR 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 CONTRACTORS'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 McCORMICK TAYLOR IMMEDIATELY TO RESOLVE THE SITUATION.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- SITE DEVELOPMENT DETAILS ARE REFERENCED FROM THE AS-BUILT PLANS FOR WOODLAND PARK, SECTION TWO AREA ONE (F-83-079) THAT WERE AS-BUILT CERTIFIED NOVEMBER 11, 1984.
- A JOINT PERMIT APPLICATION HAS BEEN AUTHORIZED BY TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THIS PROJECT. (TRACKING NUMBER 201661186 /16-NI-3194)
- PROJECT IMPACTS INCLUDE WORK IN A USE I STREAM. WORK MAY NOT BE CONDUCTED DURING THE PERIOD BETWEEN MARCH 1 AND JUNE 15. THE PROJECT IS NOT LOCATED WITHIN A TIER II WATERSHED BUT IT IS CURRENTLY UNDER A TMDL FOR SEDIMENT. (PATAPSCO RIVER LOWER NORTH BRANCH).
- CONTRACTOR SHALL PROVIDE STRUCTURAL SHOP DRAWINGS FOR ALL PRECAST OR PRE-FABRICATED STRUCTURES FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
- PROJECT AREA OWNED BY HOWARD COUNTY MARYLAND, PARKS & RECREATION.

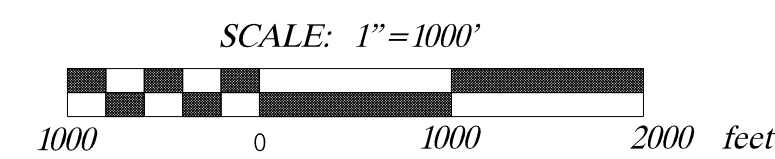
APPROVALS /PERMITS			
AGENCY	PERMIT #	DATE APPLIED	DATE APPROVED
MDE JOINT PERMIT APPLICATION	201661186	7/13/2016; rev 10/14/2016	3 / 13 / 2017
MDE DAM SAFETY	N /A	N /A	N /A
HOWARD SOIL CONSERVATION DISTRICT	EP-15-35	30% 05 /28 /2015 65% 05 /28 /2015 90% 11 /30 /2016 95% 5 /17 /2017 Final 6 /20 /2017	30% 07 /13 /2015 65% 07 /13 /2015 90% 12 /20 /2016 95% 06 /15 /2017 Final

LEGEND

PROPOSED MEDIAN BARRIER	
ELECTRICAL HAND BOX - SIGNALS	
FLOW LINE	
STATE, COUNTY OR CITY LINES	
PROPOSED TRAFFIC BARRIER	
EXISTING TRAFFIC BARRIER	
PROPOSED FENCE LINE	
EXISTING FENCE LINE	
PROPERTY LINE	
EASEMENT BOUNDARY	
EXISTING ROADWAY	
BASE OR SURVEY LINE	
TRAVERSE POINT	
APPROXIMATE LIMITS OF CUT AND/OR FILL	
PROPOSED MAJOR CONTOUR	
PROPOSED MINOR CONTOUR	
LIMIT OF DISTURBANCE	
EXISTING MAJOR CONTOURS	
EXISTING MINOR CONTOURS	
EXISTING PIPE/CULVERT	
EXISTING DROP INLET	
WATERS OF THE US	
HEDGE /TREE LINE	
BUSH /TREE	
CONIFEROUS TREE	
LIGHT POLE	



HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88



PROFESSIONAL CERTIFICATION

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. 32013, EXPIRATION DATE: 7/5/2019

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

DESIGN CERTIFICATION

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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, 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 APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PRIOR TO BEGINNING THE PROJECT. I SHALL ENGAGE A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION, AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

HOWARD SCD SIGNATURE BLOCK

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

HOWARD SOIL CONSERVATION DISTRICT
DATE: 5/10/18

DATE: 6/20/17
MARYLAND REGISTRATION NUMBER: 32013
DESIGNER'S SIGNATURE:
AMY L. HRIBAR
PRINTED NAME

DATE: 5/11/18
OWNER /DEVELOPER SIGNATURE:
JAMES M. IRWIN
PRINTED NAME AND TITLE



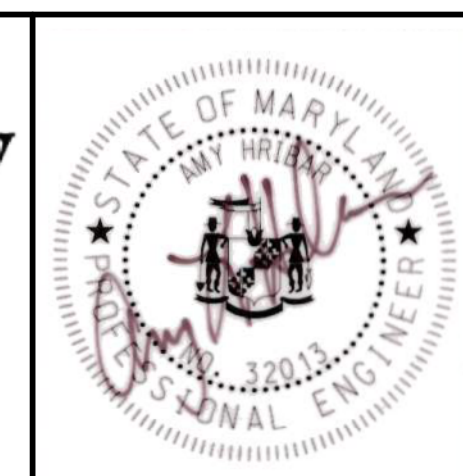
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE: 5/11/18
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

CHIEF, STORMWATER MANAGEMENT DIVISION DATE: 5/11/18

McCORMICK TAYLOR
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444

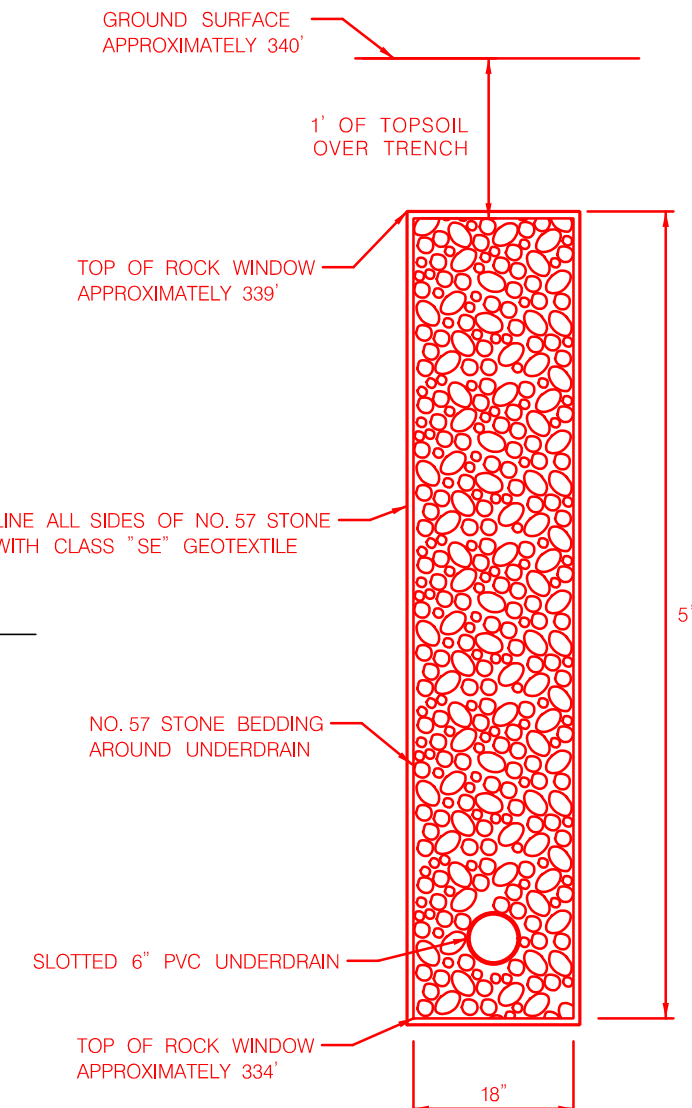
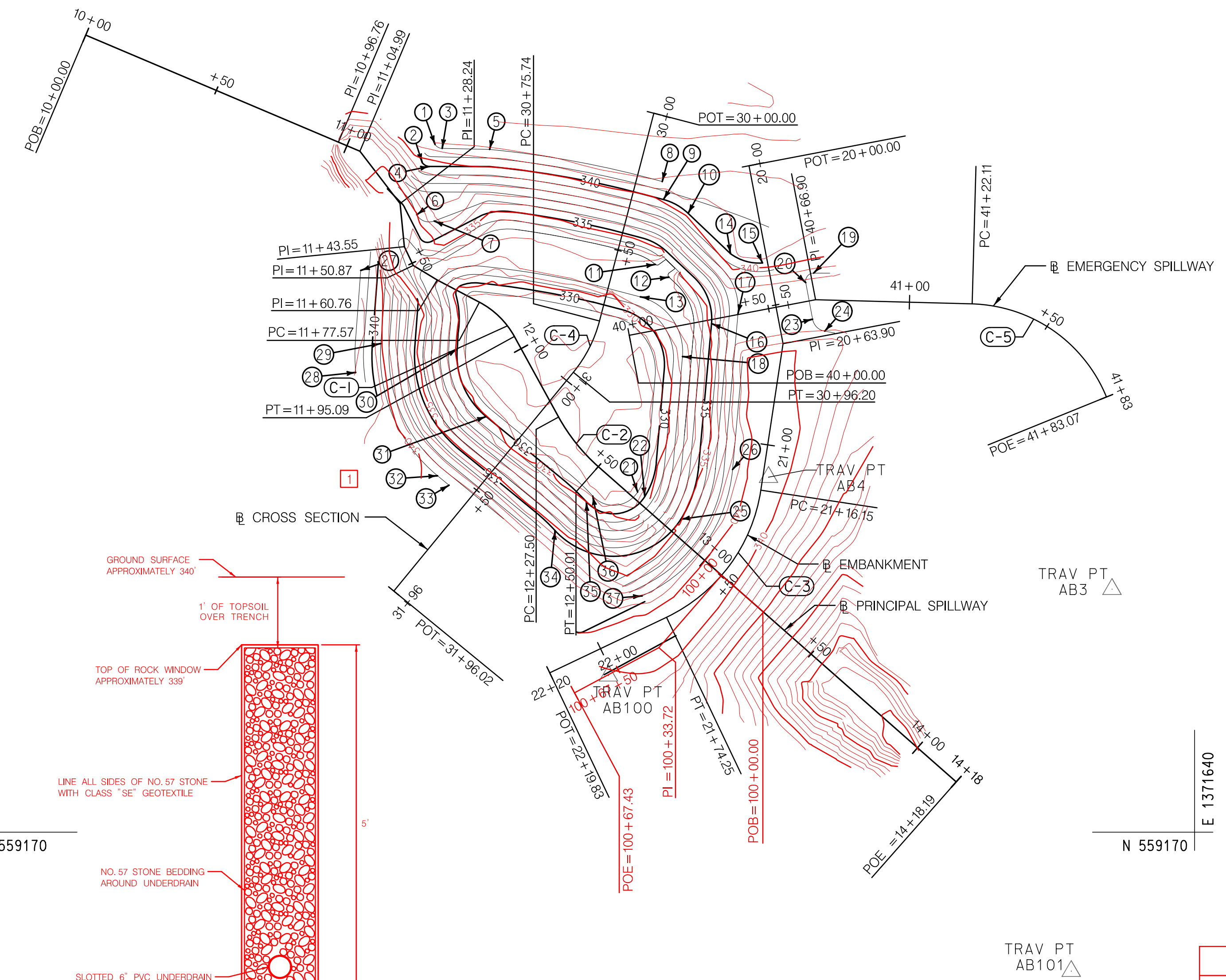


DES: EZS	EZS	<input checked="" type="checkbox"/>	AS-BUILT SURVEY	09/17/19
DRN: MER				
CHK: ALH				
DATE: 6/20/17	BY	NO.	REVISION	DATE

WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35
TITLE SHEET
SCALE: AS SHOWN
SHEET: 1 OF 13



N 559500
E 1371210



1 TRENCH DRAIN DETAIL
NOTE: TRENCH DRAIN INSTALLED DURING CONSTRUCTION TO IMPROVE SLOPE STABILITY. SEE SITE PLAN FOR APPROXIMATE DRAIN LOCATION.

POND GEOMETRY					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
1	11+19.24	22.45 LT	559412.5626	1371372.2301	342.00
2	11+21.53	14.99 LT	559406.2070	1371367.6968	340.00
3	11+21.85	23.61 LT	559411.1974	1371374.7377	342.00
4	11+24.14	16.15 LT	559404.8418	1371370.2044	340.00
5	11+28.24	36.88 LT	559410.8144	1371391.4675	342.00
6	11+32.79	5.47 LT	559387.7686	1371365.7763	336.00
7	11+35.56	11.33 LT	559385.5845	1371371.8897	336.00
8	11+88.48	74.52 LT	559399.5035	1371452.3045	342.00
9	11+89.98	70.76 LT	559393.1615	1371452.7189	340.00
10	11+92.63	74.97 LT	559388.2922	1371461.4475	340.00
11	11+96.74	55.81 LT	559370.2596	1371449.8951	333.00
12	12+02.97	57.86 LT	559365.7815	1371454.6866	333.00
13	12+04.20	45.65 LT	559358.8237	1371444.5797	332.00
14	12+06.14	80.85 LT	559374.0704	1371476.3685	340.00
15	12+14.46	89.16 LT	559370.7768	1371487.6589	340.00
16	12+24.54	63.11 LT	559349.4057	1371469.6759	335.00
17	12+25.93	73.02 LT	559352.9508	1371479.0302	338.00
18	12+36.62	48.38 LT	559337.7615	1371459.4499	332.00
19	12+61.85	101.42 LT	559367.2117	1371505.7205	338.00
20	12+61.97	97.04 LT	559363.8458	1371502.9105	338.00
21	12+66.33	2.43 LT	559289.9851	1371443.6311	329.00
22	12+69.29	2.91 LT	559288.3860	1371446.1693	330.00
23	12+72.29	88.96 LT	559350.9611	1371505.3149	338.00
24	12+78.32	88.61 LT	559346.7138	1371509.6048	338.00
25	12+84.10	5.30 LT	559280.3902	1371458.8605	335.00
26	12+86.18	30.53 LT	559297.9440	1371477.1063	339.00
27	11+44.53	17.49 RT	559368.1404	1371346.0134	342.00
28	11+53.10	42.80 RT	559332.1504	1371344.2520	342.00
29	11+55.38	29.48 RT	559342.3631	1371353.1122	339.00
30	11+79.66	18.31 RT	559340.3510	1371380.0372	330.00
31	12+15.04	22.33 RT	559316.6121	1371390.2062	330.00
32	12+25.10	47.38 RT	559295.7330	1371373.0871	339.00
33	12+28.96	45.45 RT	559292.3944	1371377.1590	339.00
34	12+53.50	27.01 RT	559276.3823	1371414.5419	335.00
35	12+55.08	12.09 RT	559286.5252	1371425.5928	330.00
36	12+55.40	9.11 RT	559288.5538	1371427.8030	329.00
37	12+91.74	24.00 RT	559253.3525	1371445.2229	339.00

PRINCIPAL SPILLWAY BASELINE CONTROL COORDINATES					
POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
POB	559451.1456	1371249.0598	10+00.00	N 67°02'25.27" W	
PI	559413.4028	1371338.1508	10+96.76	N 67°10'22.70" W	
PI	559410.2084	1371345.7398	11+04.99	N 37°29'03.66" W	
PI	559391.7565	1371359.8904	11+28.24	N 5°38'22.20" W	
PI	559376.5215	1371361.3948	11+43.55	N 25°23'41.64" W	
PI	559369.9105	1371364.5332	11+50.87	N 58°46'35.92" W	
PI	559364.7836	1371372.9910	11+60.76	N 62°13'41.64" W	
PC	559356.9533	1371387.8601	11+77.57	N 62°13'41.64" W	
PI	559352.7516	1371395.8390	11+86.58	N 28°46'05.50" W	
CC	559330.4090	1371373.8816			30.00'
PT	559344.8470	1371400.1788	11+95.09	N 28°46'05.50" W	
PC	559316.4361	1371415.7773	12+27.50	N 28°46'05.50" W	
PI	559306.4699	1371421.2491	12+38.87	N 48°36'40.30" W	
CC	559347.7185	1371472.7546			65.00'
PT	559298.9528	1371429.7789	12+50.01	N 48°36'40.30" W	
POE	559187.7543	1371555.9585	14+18.19		

EMBANKMENT BASELINE CONTROL COORDINATES					
POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
POB	559405.0661	1371482.9050	20+00.00	S 10°48'36" E	
PI	559342.3012	1371494.8893	20+63.90	S 8°36'51" W	
PC	559290.6366	1371487.0627	21+16.15	S 8°36'51" W	
PI	559259.3955	1371482.3300	21+47.75	S 64°31'35" W	
CC	559299.5541	1371428.1978			59.54'
PT	559245.8055	1371453.8042	21+74.25	S 64°31'35" W	
POE	559226.2008	1371412.6533	22+19.83		

CROSS SECTION BASELINE CONTROL COORDINATES					
POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
POB	559423.6057	1371449.3502	30+00.00	S 14°38'40" W	
PC	559350.3252	1371430.2013	30+75.74	S 14°38'40" W	
PI	559340.2729	1371427.5746	30+86.13	S 39°20'56" W	
CC	559362.3200	1371384.2986			47.44'
PT	559332.2385	1371420.9870	30+96.20	S 39°20'56" W	
POE	559255.0459	1371357.6955	31+96.02		

EMERGENCY SPILLWAY BASELINE CONTROL COORDINATES					
POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
POB	559345.2907	1371440.6751	40+00.00	N 79°11'24" E	
PI	559357.8371	1371506.3838	40+66.90	S 88°26'43" E	
PC	559356.3391	1371561.5809	41+22.11	S 88°26'43" E	
PI	559355.4052	1371595.9879	41+56.53	S 22°02'33" E	
CC	559303.7626	1371560.1540			52.60'
POE	559323.5014	1371608.9054	41+83.07		

TRAVERSE CONTROL COORDINATES			
POINT	NORTHING	EASTING	ELEVATION
AB1	559484.7673	1371497.5796	344.19
AB3	559255.7402	1371610.8720	333.08
AB4	559295.2374	1371489.7981	340.11
AB100	559225.2063	1371433.3658	339.9
AB101	559120.9940	1371596.5015	323.1

1 ORIGINAL DESIGN ALIGNMENTS, GEOMETRY POINTS, AND CONTROL COORDINATES HAVE NOT BEEN MODIFIED FOR AS-BUILT CONDITIONS, EXCEPT AS NOTED FOR "AS-BUILT SHIFTED EMBANKMENT B".

ASBUILT SHIFTED EMBANKMENT BASELINE CONTROL					
POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
POB	559260.5598	1371473.1872	100+00.00	S 40°55'00.8098" W	
PI	559235.0809	1371451.1035	100+33.72	S 61°50'23.8071" W	
POE	559219.1685	1371421.3772	100+67.43		

PRINCIPAL SPILLWAY BASELINE CURVE DATA								
CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
							NORTH	EAST
C-1	33°27'36.14"	190°59'09.35"	30.0000'	9.0176'	17.5196'	1.326	559330.4090	1371373.8816
C-2	19°50'34.80"	88°08'50.47"	65.0000'	11.3695'	22.5112'	0.99	559347.7185	1371472.7546

CROSS SECTION BASELINE CURVE DATA								
CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
							NORTH	EAST
C-4	24°42'16"	120°45'54"	47.44'	10.39'	20.46'	1.12	559362.3200	1371384.2986

EMBANKMENT BASELINE CURVE DATA								
CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
							NORTH	EAST
C-3	55°54'44"	96°14'11"	59.54'	31.60'	58.10'	7.87	559299.5541	1371428.1978

EMERGENCY SPILLWAY BASELINE CURVE DATA								
CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
							NORTH	EAST
C-5	66°24'11"	108°56'09"	52.60'	34.42'	60.96'	10.26	559303.7626	1371560.1540



SCALE: 1" = 30'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

M. D. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

[Signature]
DATE

McCORMICK TAYLOR

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: EZS	EZS	1	AS-BUILT SURVEY	09/17/19
DRN: MER				
CHK: ALH				
DATE: 6/20/17	BY	NO.	REVISION	DATE

WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35

GEOMETRY LAYOUT

SCALE: 1" = 30'

SHEET
2 OF 13

CLAY BACKFILL FOR CORE TRENCH			
FROM	TO	QTY (CY)	REMARKS
12+96.26, 33' LT	12+97.89, 34 RT	1400	EMBANKMENT

MIX 3 CONCRETE FOR MISCELLANEOUS STRUCTURES			
FROM	TO	QTY (CY)	REMARKS
12+78.76, 0 LT/RT	n/a	1	PROJECTION COLLAR

MIX 6 CONCRETE FOR MISCELLANEOUS STRUCTURES			
FROM	TO	QTY (CY)	REMARKS
12+94.72, 0' LT/RT	N/A	3	ANTI-SEEP COLLAR
13+33.20, 0' LT/RT	N/A	3	ANTI-SEEP COLLAR
12+78.76, 0' LT/RT	13+56.24, 0' LT/RT	18	CONCRETE CRADLE

CLASS 1 EXCAVATION			
FROM	TO	QTY (CY)	REMARKS
11+29.31	13+00.00	1927	POND GRADING

CLASS I RIP RAP			
FROM	TO	QTY (SY)	REMARKS
10+96.76	11+50.46	80	RIP RAP CHANNEL
11+99.22, 61' LT	12+02.17, 42' LT	31	OUTFALL PROTECTION #1

CLASS II RIP RAP			
FROM	TO	QTY (SY)	REMARKS
13+58.55	13.94.57	93	OUTFALL PROTECTION #2

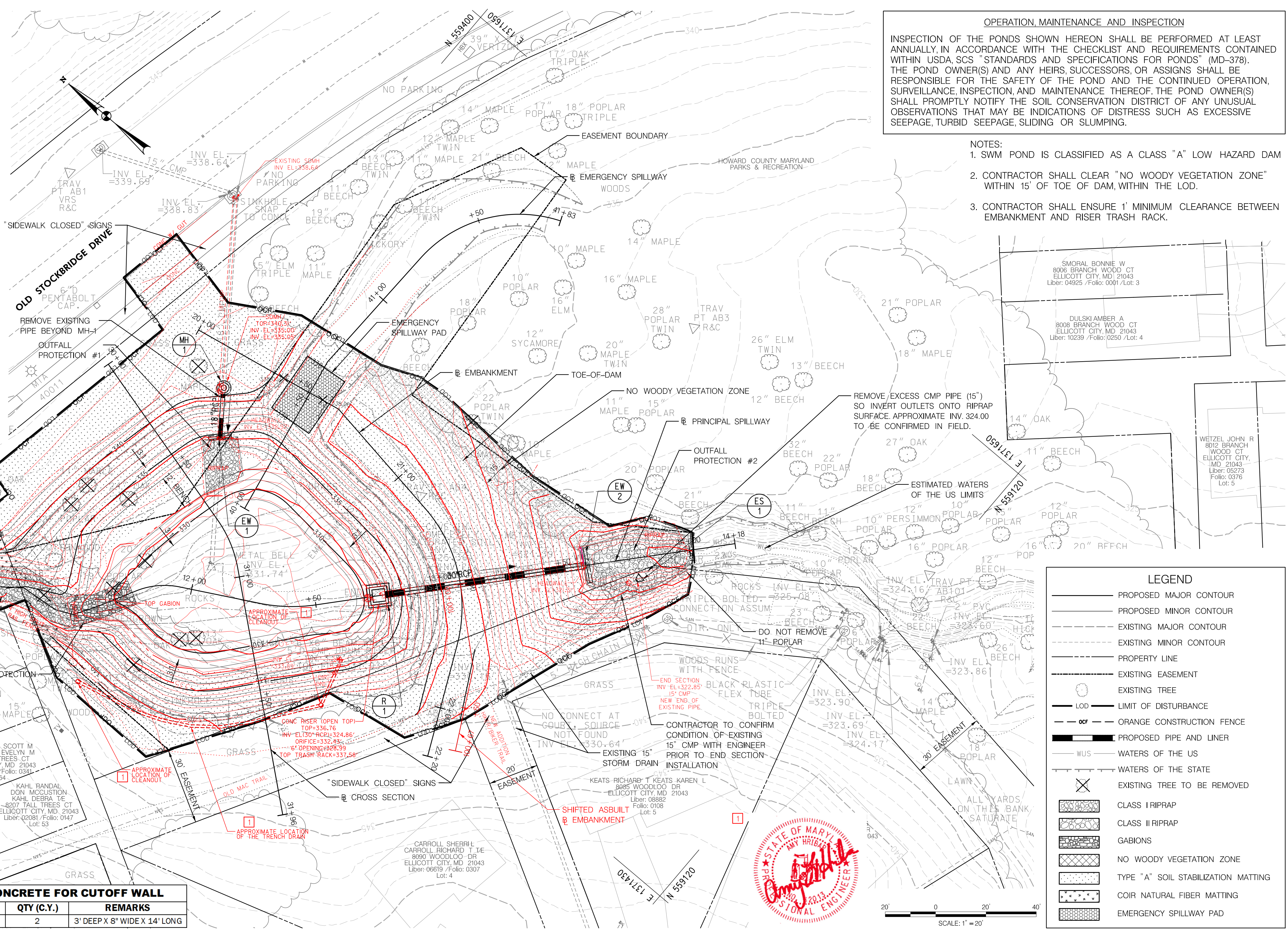
GABION PROTECTION			
FROM	TO	QTY (SY)	REMARKS
11+50.46	11+75.92	29	12" DEPTH

STABILIZATION MATTING - BMP	
QTY (CY)	REMARKS
69	COIR NATURAL FIBER MATTING
2752	TYPE "A" SOIL STABILIZATION MATTING

TREES TO BE REMOVED	
QTY (EA)	REMARKS
15	TREES TO BE REMOVED TO BE INCLUDED IN CLEARING AND GRUBBING LUMP SUM

ORANGE CONSTRUCTION FENCE	
QTY (LF)	REMARKS
848	AROUND LOD PERIMETER

MIX 1 CONCRETE FOR CUTOFF WALL		
STA.	QTY (C.Y.)	REMARKS
11+70	2	3" DEEP X 8" WIDE X 14' LONG



OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE PONDS SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

- NOTES:
1. SWM POND IS CLASSIFIED AS A CLASS "A" LOW HAZARD DAM
 2. CONTRACTOR SHALL CLEAR "NO WOODY VEGETATION ZONE" WITHIN 15' OF TOE OF DAM, WITHIN THE LOD.
 3. CONTRACTOR SHALL ENSURE 1' MINIMUM CLEARANCE BETWEEN EMBANKMENT AND RISER TRASH RACK.

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING TREE
- LOD - LIMIT OF DISTURBANCE
- OCF - ORANGE CONSTRUCTION FENCE
- PROPOSED PIPE AND LINER
- WUS - WATERS OF THE US
- WATERS OF THE STATE
- EXISTING TREE TO BE REMOVED
- CLASS I RIPRAP
- CLASS II RIPRAP
- GABIONS
- NO WOODY VEGETATION ZONE
- TYPE "A" SOIL STABILIZATION MATTING
- COIR NATURAL FIBER MATTING
- EMERGENCY SPILLWAY PAD



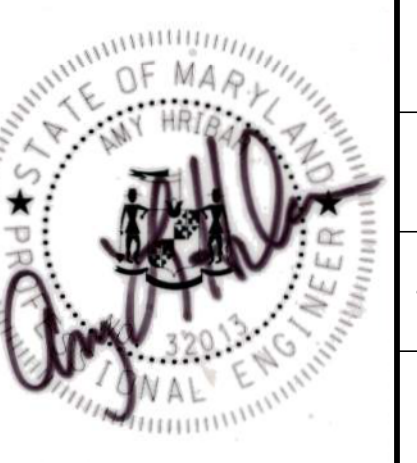
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Michael J. ...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 5/16/18

McCORMICK TAYLOR
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: EZS	EZS		AS-BUILT SURVEY	09/17/19
DRN: MER				
CHK: ALH				
DATE: 6/20/17	BY	NO.	REVISION	DATE

WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35

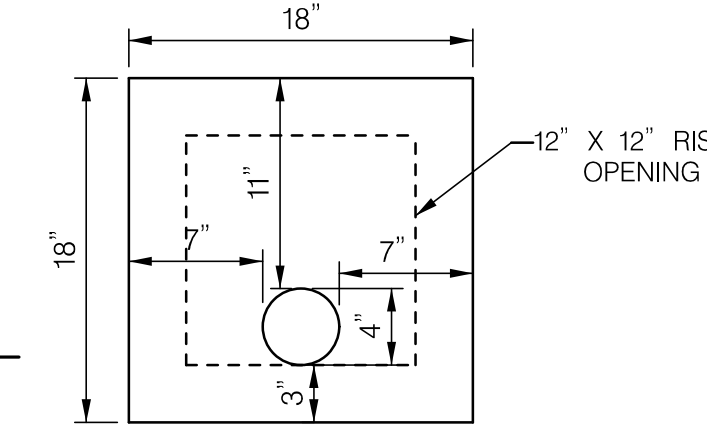
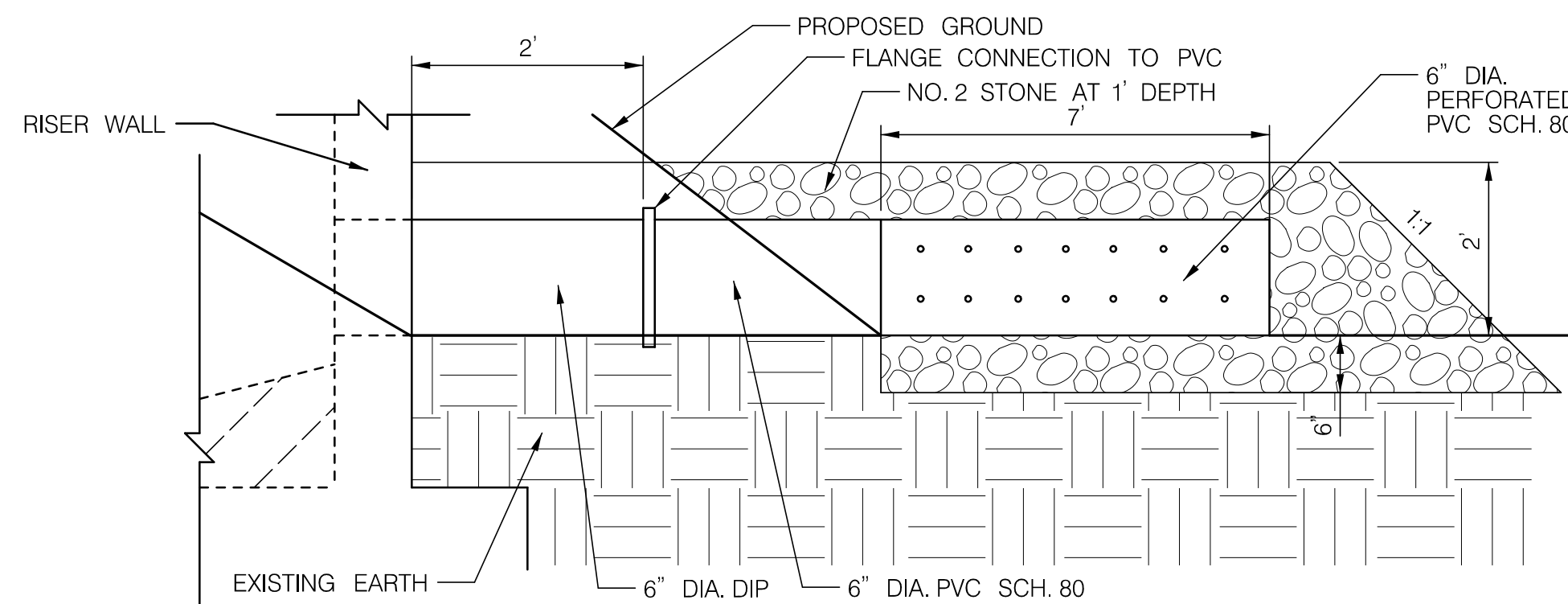
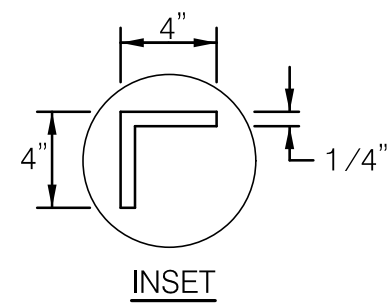
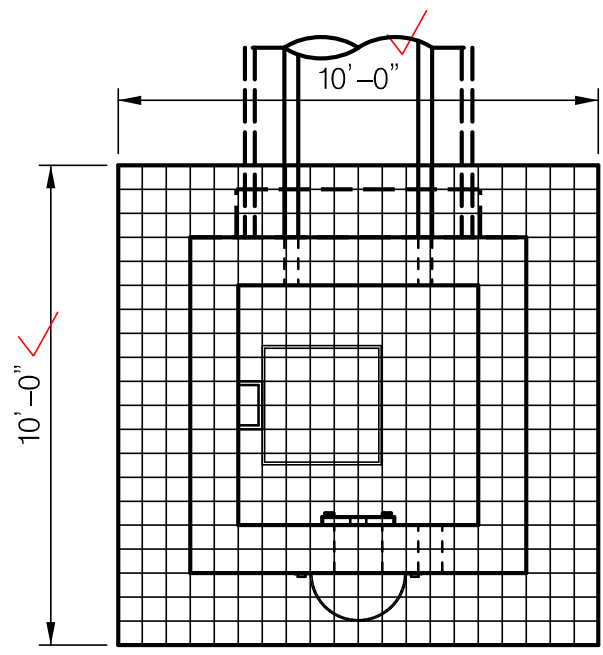
STORMWATER MANAGEMENT PLAN

SCALE: 1" = 20'

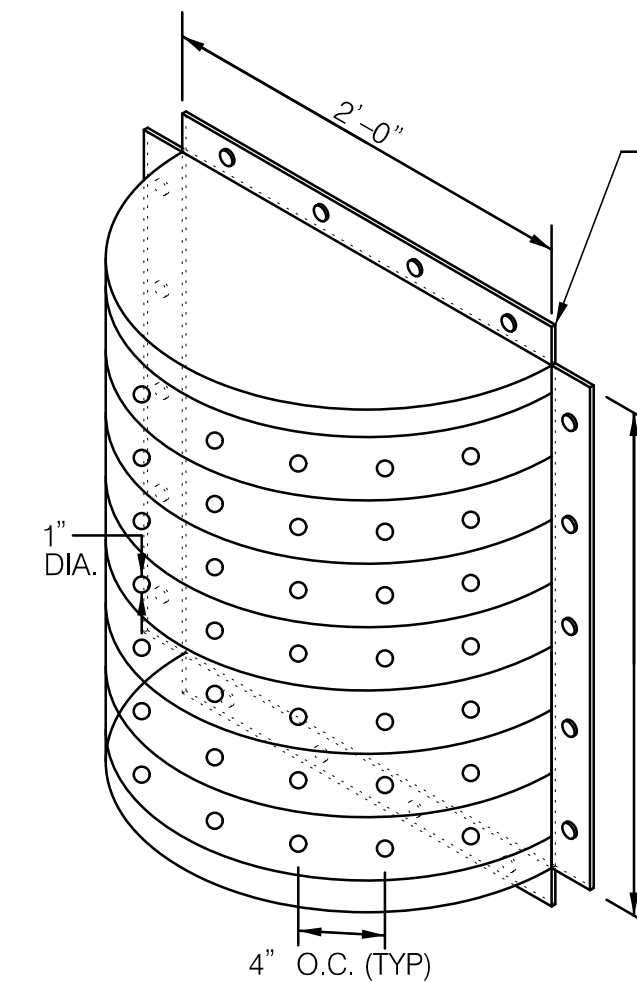
SHEET: 3 OF 13

TRASH RACK CONSTRUCTION NOTES:

1. FRAME SHALL BE CONSTRUCTED OF 4" X 4" X 1/4" STEEL ANGLE WITH THE CORNERS MITRED AND BUTT WELDED.
2. THE FRAME SHALL BE PAINTED WITH TWO COATS OF COLD GALVANIZED COMPOUND IN "BATTLESHIP GREY".
3. BARS SHALL BE #6 REBAR AT 6" CC EACH WAY, HOT-DIPPED GALVANIZED AND FILLET WELDED TO THE ANGLE FRAME.
4. ALL STEEL SHALL BE ASTM A-36.
5. TRASH RACK SHALL BE BOLTED ONTO THE OUTSIDE FACE OF THE RISER USING 3/8" DIA. STAINLESS STEEL EXPANSION BOLTS, @ 11" CC MIN. 4" FROM EDGE OF CONCRETE RISER, DRILL ANGLE FRAME TO ALLOW PASSAGE OF BOLTS.
6. ENSURE A 1" CLEARANCE BETWEEN TRASH RACK AND DAM EMBANKMENT SLOPE.
7. PROVIDE 30" X 30" LOCKABLE HINGED ACCESS HATCH IN TOP OF TRASH RACK OVER LADDER RUNGS.
8. SHOP DRAWING OF TRASH RACK MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.



- ORIFICE PLATE NOTES:**
1. 18" X 18" X 12" GALVANIZED STEEL ORIFICE PLATE.
 2. 4.0" DIA ORIFICE PLATE TO BE BOLTED TO THE INSIDE DOWN STREAM FACE OF CONCRETE RISER USING 1/2" STAINLESS STEEL CONCRETE ANCHORS.
 3. CONTRACTOR TO ENSURE ORIFICE PLATE CONNECTION TO RISER WALL IS WATER TIGHT.



- LOW FLOW TRASH RACK NOTES:**
1. TRASH RACK STEEL TO CONFORM TO ASTM A-36.
 2. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZED COMPOUND AFTER WELDING.
 3. TRASH RACK SHALL BE BOLTED ONTO THE OUTSIDE FACE OF THE RISER USING 3/8" DIA. STAINLESS STEEL EXPANSION BOLTS, @ 11" CC MIN. 4" FROM EDGE OF CONCRETE RISER, DRILL ANGLE FRAME TO ALLOW PASSAGE OF BOLTS.
 4. CENTER TRASH RACK OVER 12" X 12" RISER OPENING.

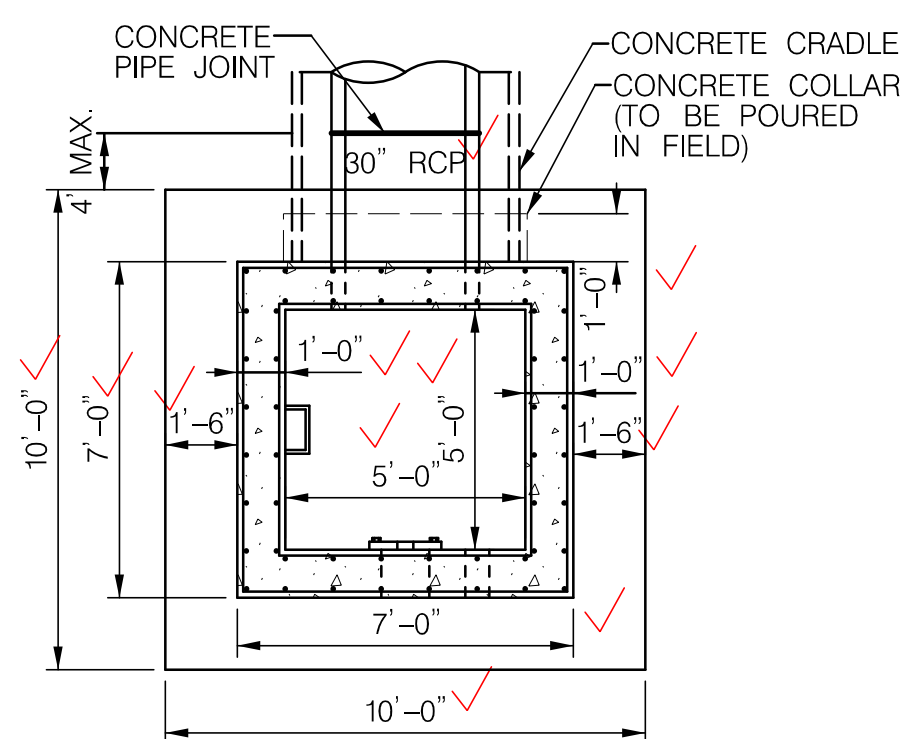
- LOW FLOW NOTES:**
1. PERFORATIONS SHALL BE 3/8" DIA. @ 4" O.C. ALL AROUND FINAL 8 LF OF PIPE
 2. A MINIMUM 6" STONE SHALL BE PLACED AROUND PERFORATED PIPE IN ALL DIRECTIONS

VALVE DRAIN PIPE DETAIL

NOT TO SCALE

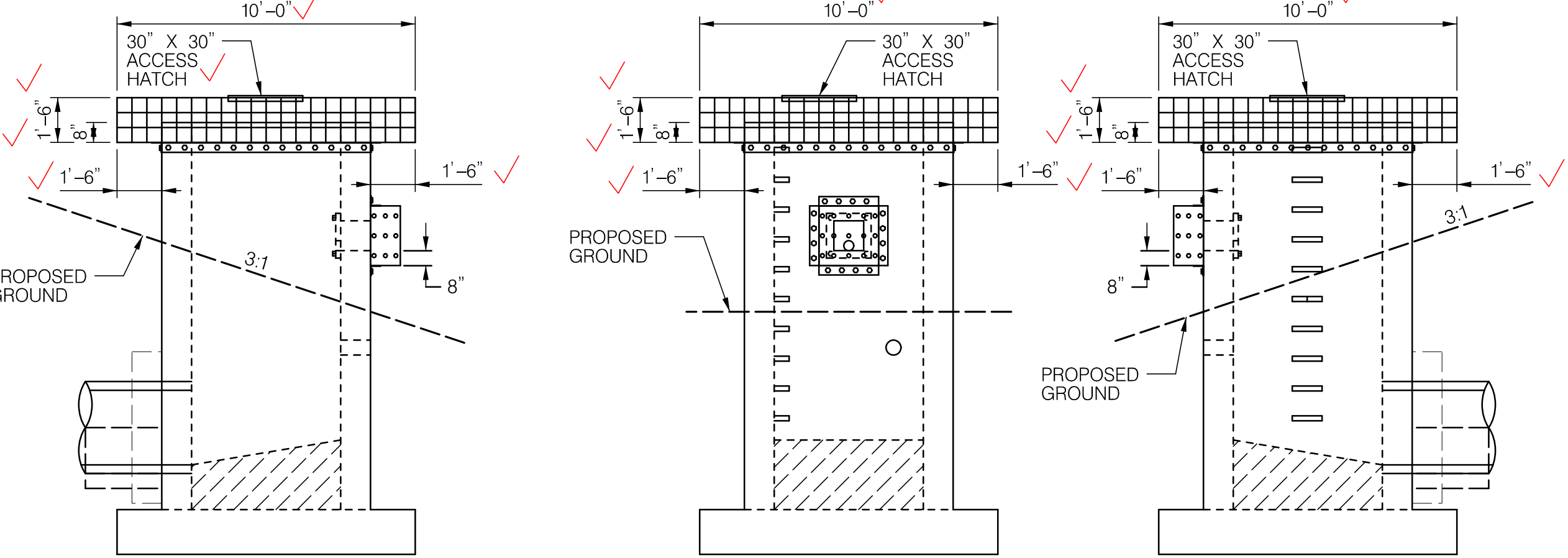
RISER CONSTRUCTION NOTES:

1. RISER STEPS SHALL FOLLOW DETAIL G-5.21 FOR MANHOLE AND INLET STEPS
2. SHA MIX NO.3 CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITION OF ACI 301 AND ACI 318.
3. PRECAST STRUCTURES SHALL BE DESIGNED BY A PRECAST CONCRETE STRUCTURES MANUFACTURER IN ACCORDANCE TO LOADING SPECIFIED IN LATEST EDITIONS OF ASTM C857 AND ASTM C890.
4. PRECAST STRUCTURES SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C858 AND MARYLAND NRCS POND CODE MD-378.
5. RESILIENT CONNECTORS BETWEEN MANHOLE STRUCTURES, PIPES AND LATERALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C923.
6. OVERALL HEIGHT OF PRECAST IS ADJUSTABLE IN 6" INCREMENTS. FINAL GRADE ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR WITH MIX NO.3 CONCRETE.
7. INVERT SHALL BE APPROVED PRECAST PLAIN MIX NO.3 CONCRETE. INVERT TO SLOPE DOWN TOWARD OUTLET AT THE RATE OF 2" PER FOOT, OR AS SHOWN ON PLAN OR AS DIRECTED.
8. FIRST BARREL JOINT OF CONCRETE PIPE SHALL HAVE A WATERTIGHT CONNECTION AND BE PLACED NO MORE THAN 4' FROM RISER.
9. A CONCRETE COLLAR SHALL BE PLACED AROUND THE CONCRETE PIPE AND RISER TO PROVIDE A WATERTIGHT CONNECTION. SEE DETAIL G-2-9.
10. USE NON-SHRINK GROUT TO PARGE THE PIPE CONNECTION INSIDE THE RISER.
11. THE RISER WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER EACH RISER. THE PAYMENT WILL BE FULL COMPENSATION FOR ALL EXCAVATION, CONCRETE, MASONRY, SPECIAL OR PRECAST UNITS, REINFORCEMENT, LADDER RUNGS, DRIP STONES, AGGREGATE, UNDERDRAIN STUBS, FRAMES, GRATES AND COVERS, GRADE AND SLOPE ADJUSTMENTS, BACKFILL, GASKET, WATERTIGHT SEALS, TRASH RACKS, ORIFICE PLATES AND FOR ALL MATERIAL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
12. GATE VALVE NOT SHOWN IN RISER DETAIL FOR CLARITY.
13. A 6" DRAIN VALVE SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE RISER. VALVE STEM SHALL BE ANCHORED TO RISER AND EXTEND TO TOP OF RISER FOR MAINTENANCE ACCESS. ENSURE VALVE KEY IS ACCESSIBLE THROUGH TRASH RACK.



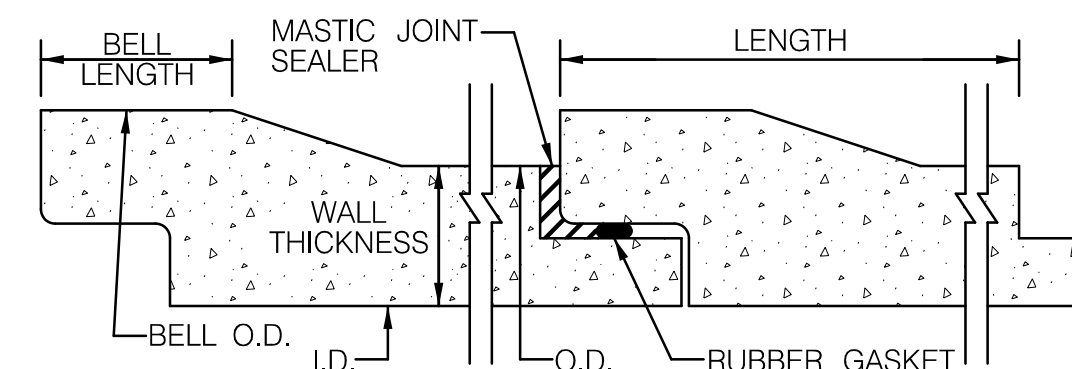
RISER PLAN

SCALE: 1" = 2'



TRASH RACK DETAIL

SCALE: 1" = 4'



BARREL JOINT SEALER NOTES:

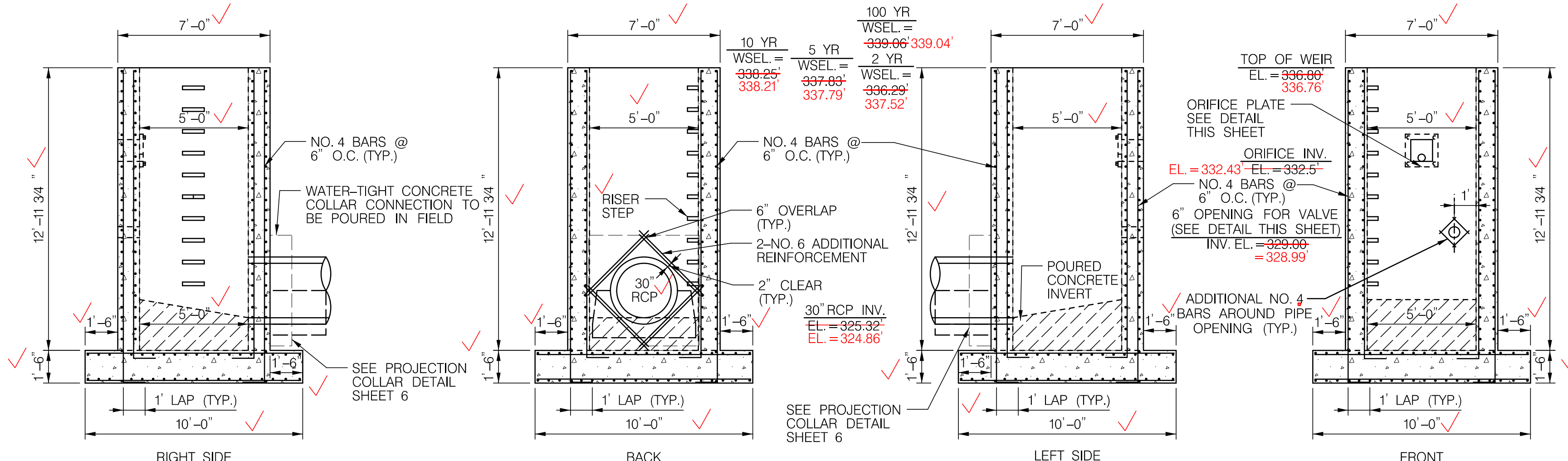
1. MASTIC JOINT SEALER TO BE APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. JOINT SEALER SHOULD HAVE WATERTIGHT CONNECTION.
3. THE SEALER SHALL BE A MIXTURE OF ASPHALT, MINERAL FILLER, AND PETROLEUM SOLVENTS AND SHALL HAVE ADHESIVE AND COHESIVE PROPERTIES.

THE SEALER SHALL CONFORM TO THE FOLLOWING:

TEST AND METHOD	SPECIFICATION LIMITS
RESIDUES BY EVAPORATION, NONVOLATILE MATTER, D 2939, % MIN.	70
INORGANIC FILLER ON IGNITION, ASH CONTENT, D 2939, %	15-45

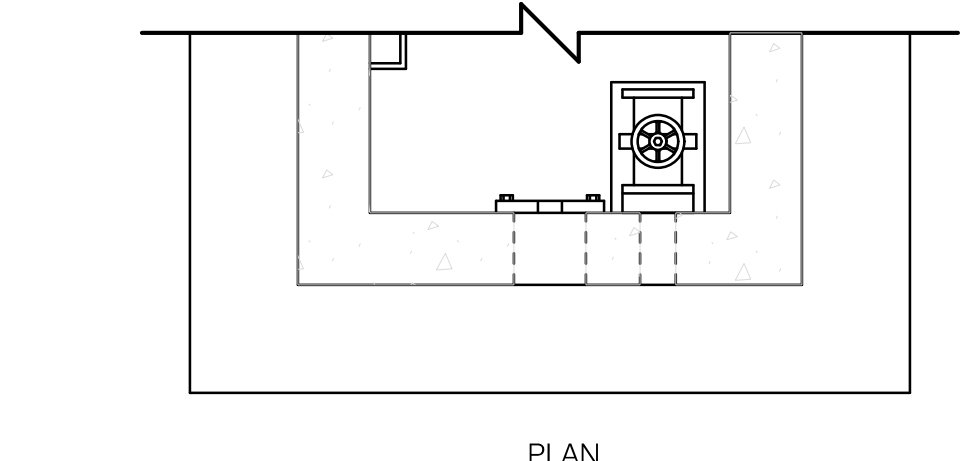
BARREL JOINT SEAL DETAIL

NOT TO SCALE

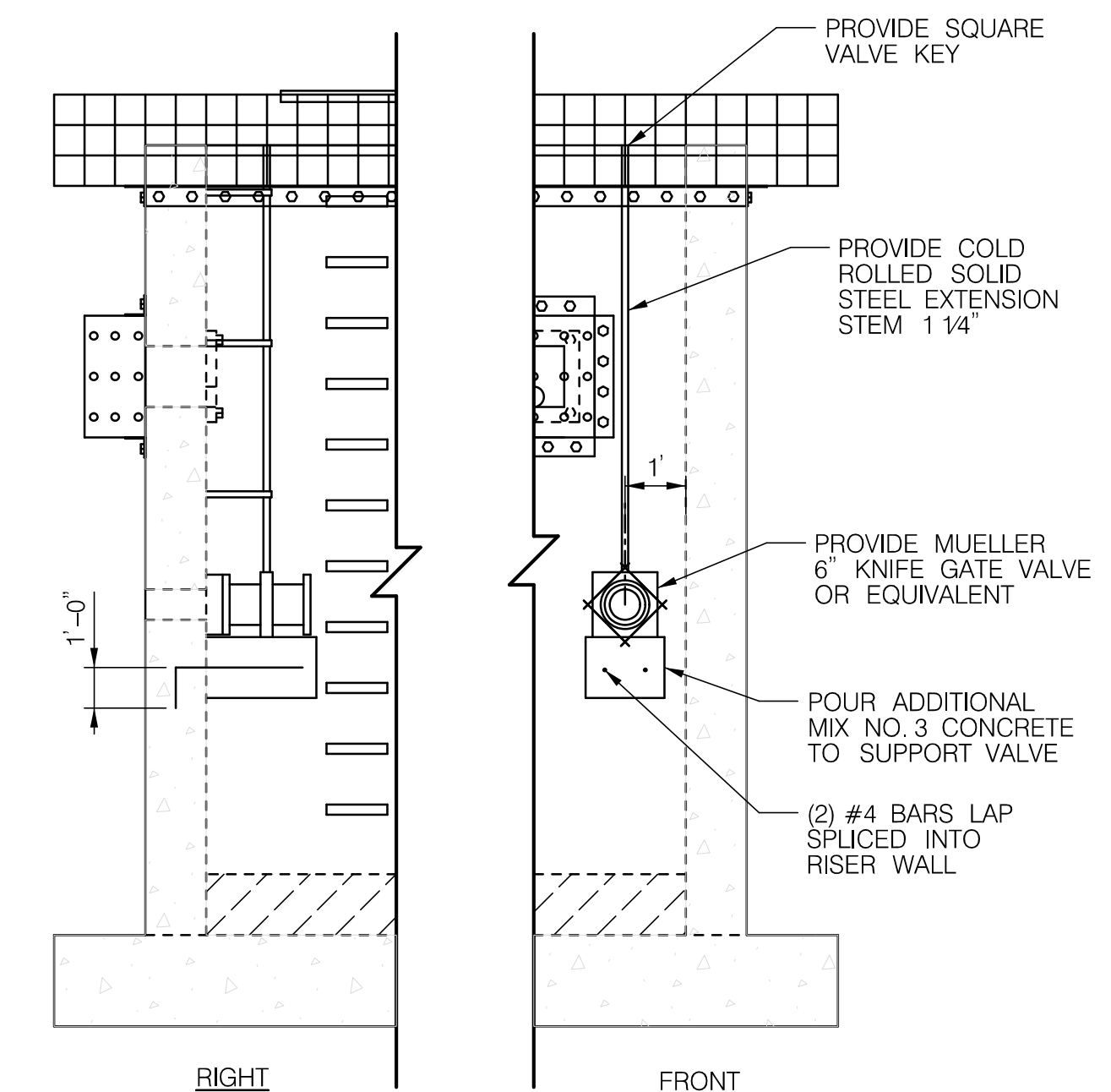


RISER ELEVATION

SCALE: 1" = 4'

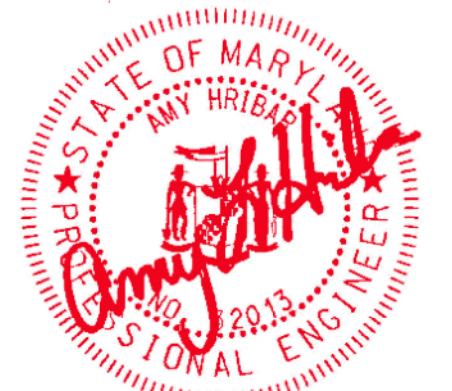


PLAN



GATE VALVE DETAIL

SCALE: NOT TO SCALE



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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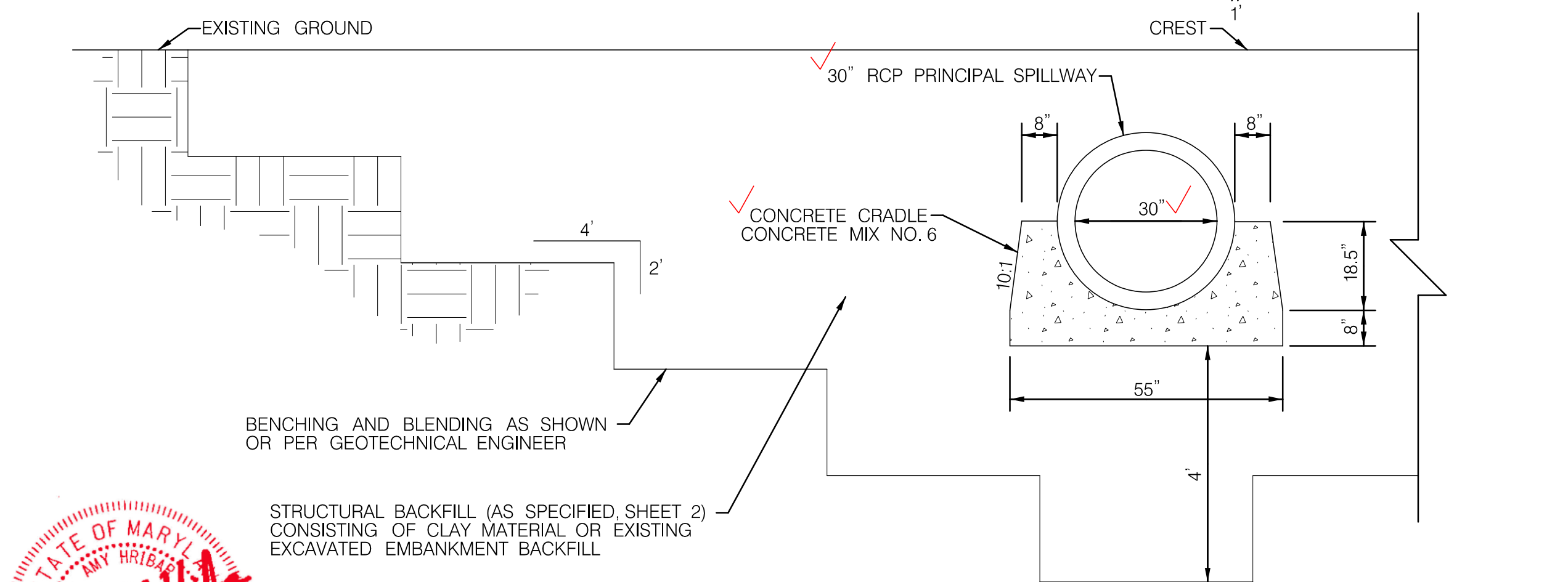
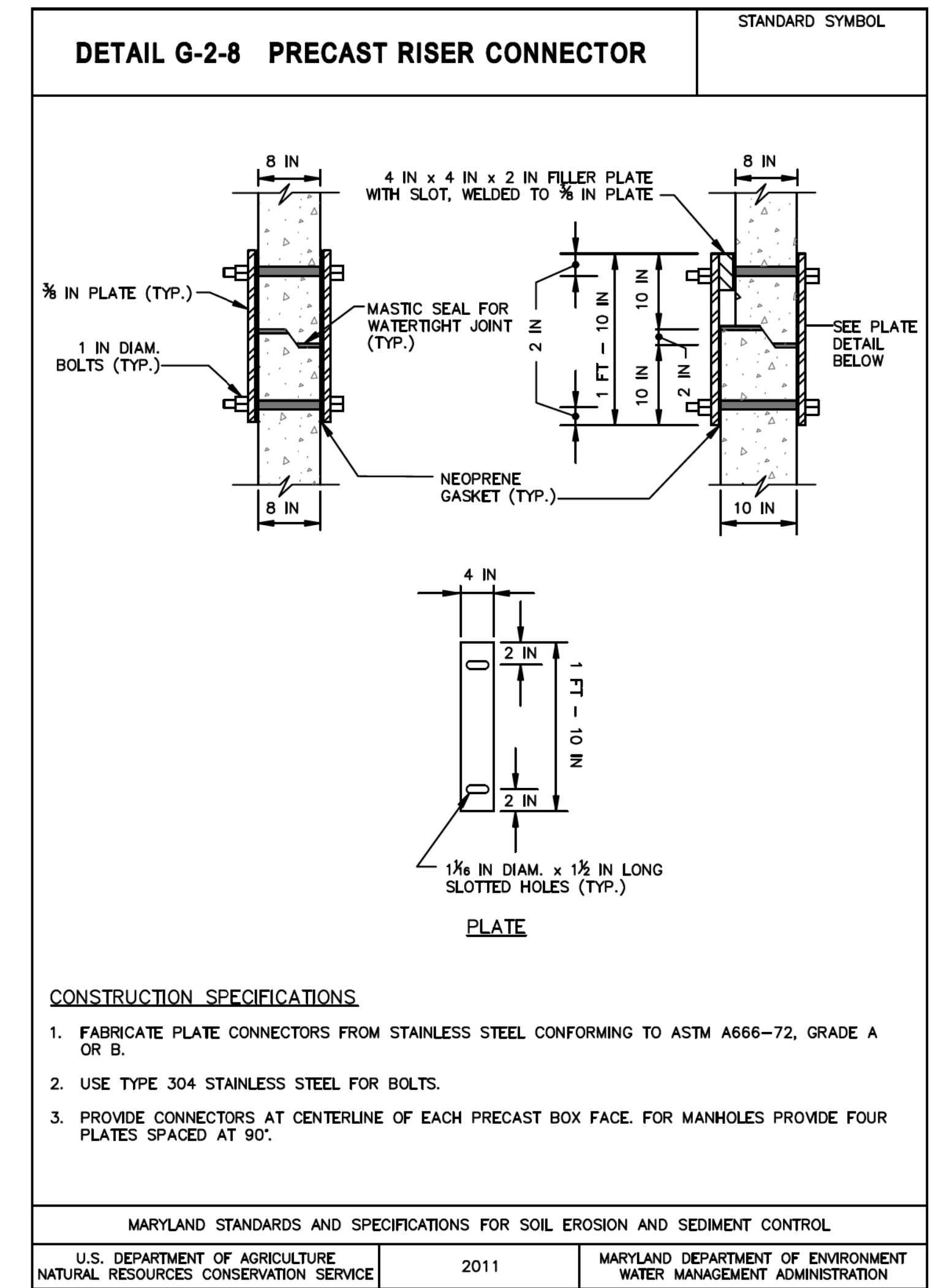
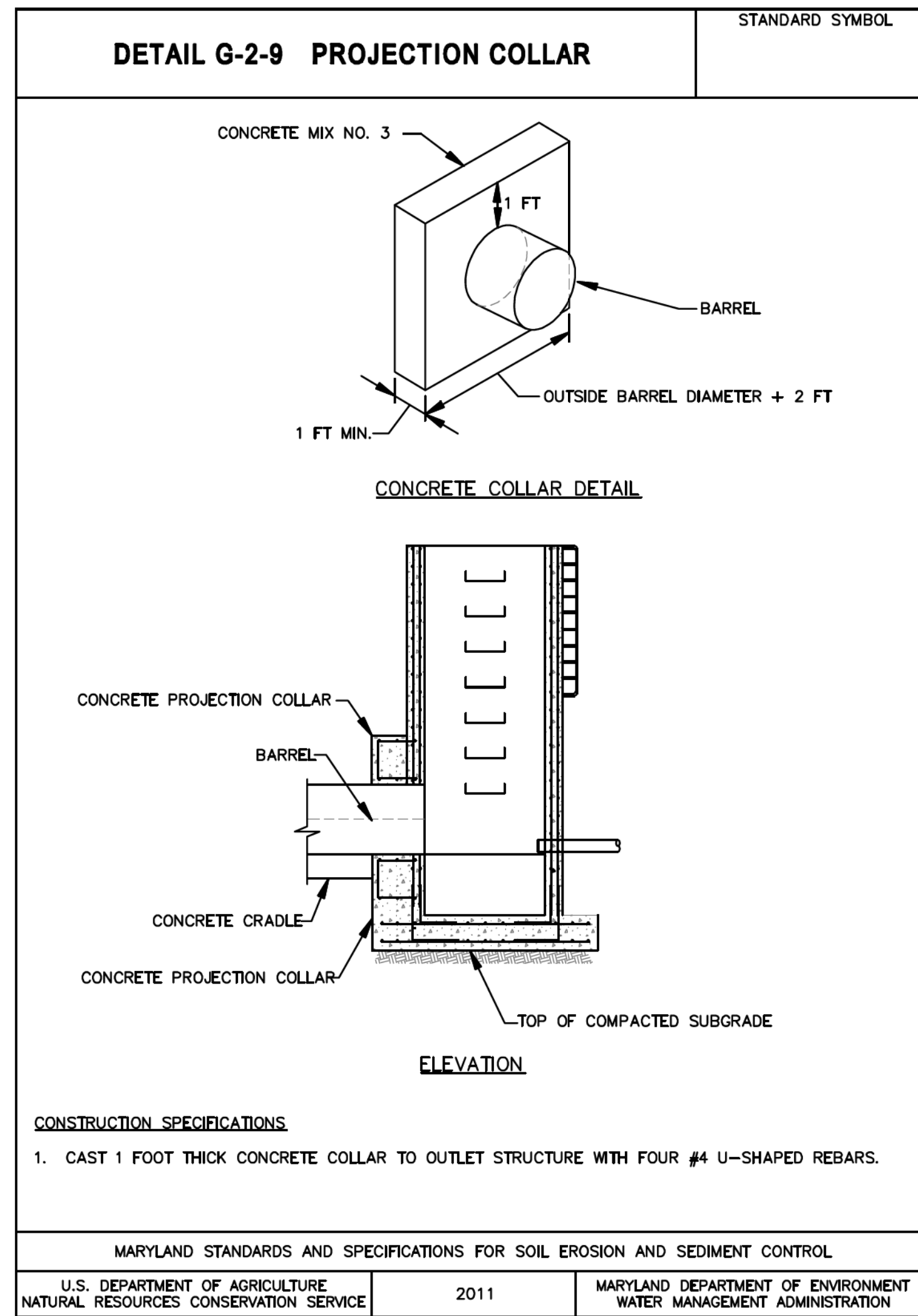
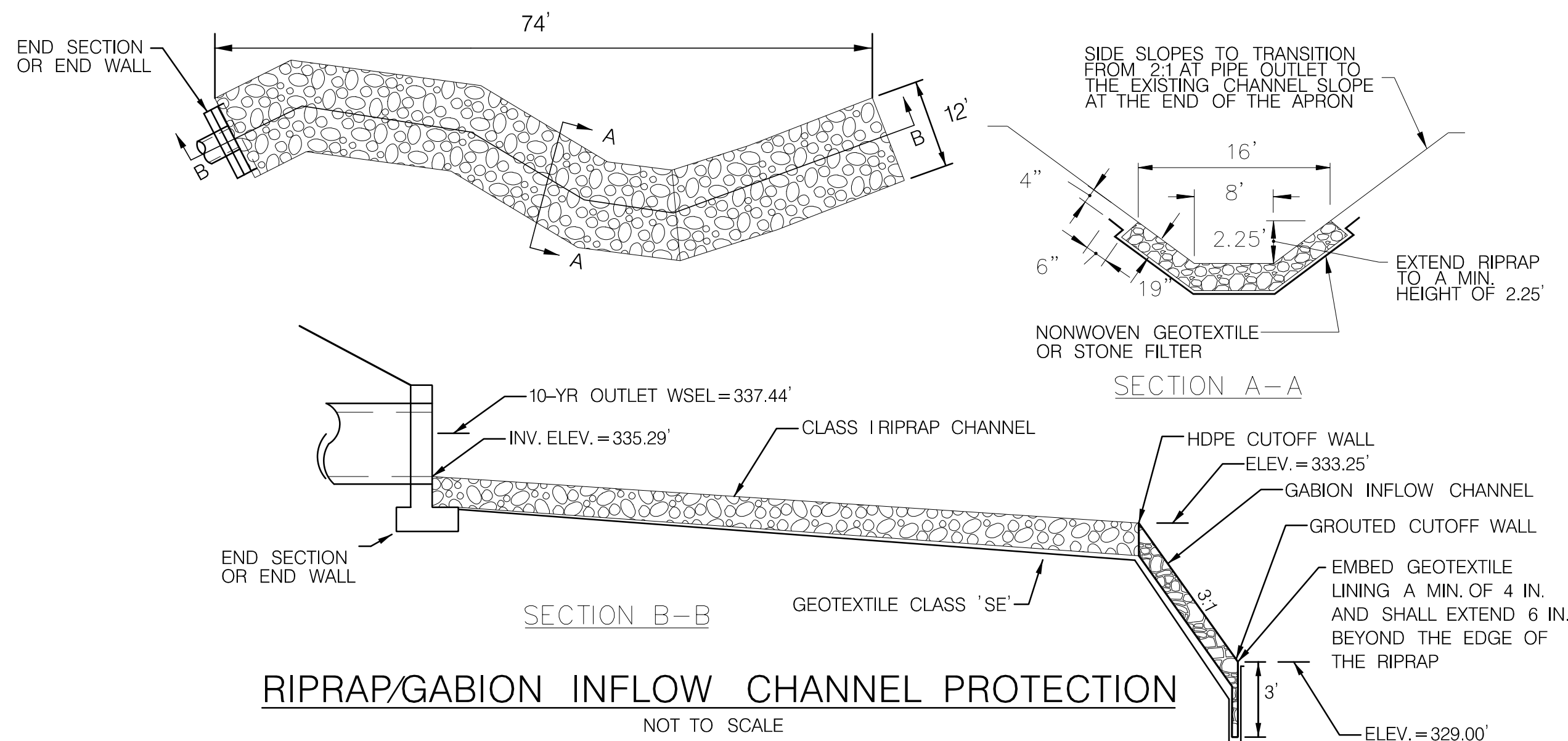
Howard County
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WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
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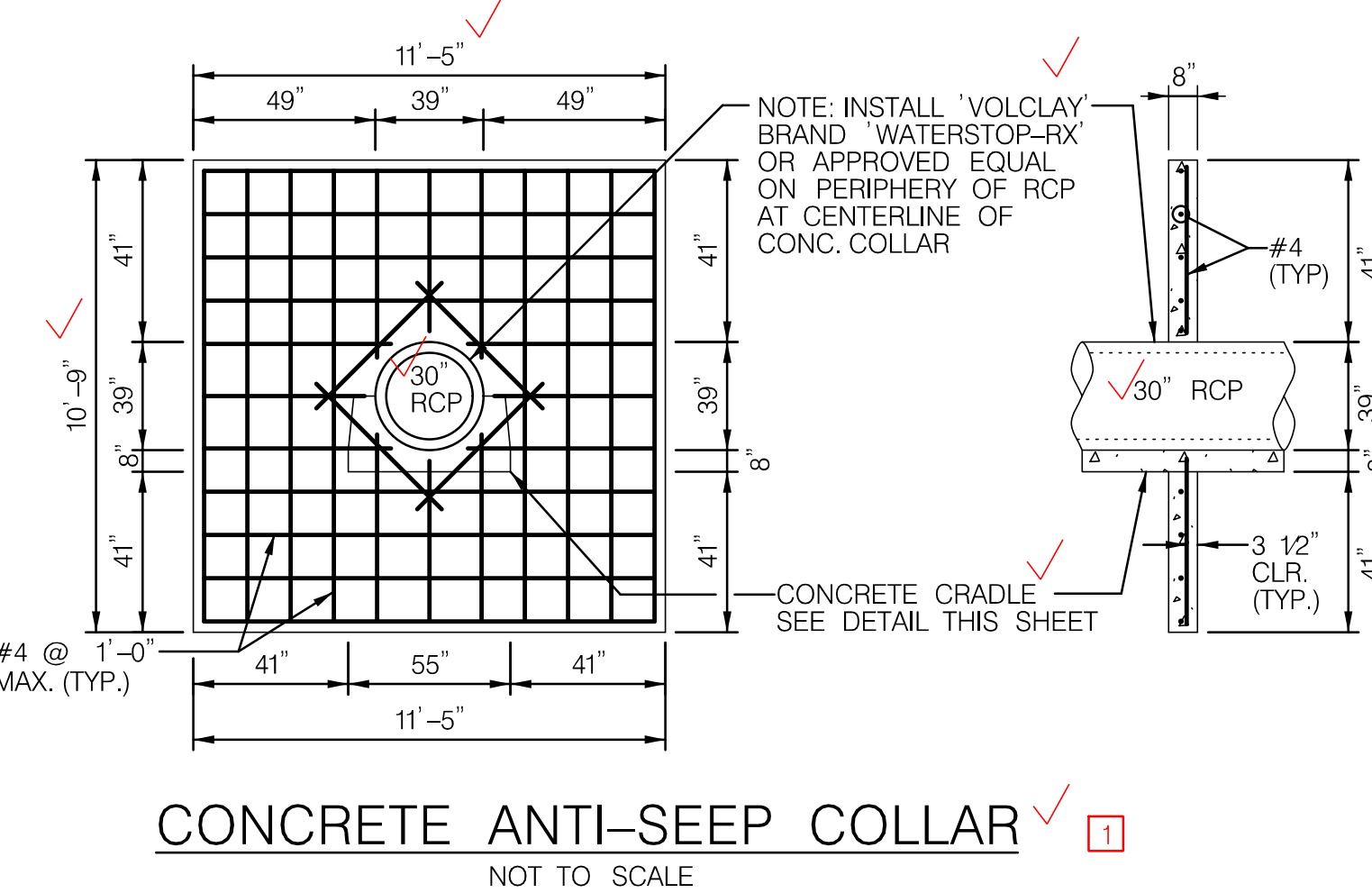
STORMWATER MANAGEMENT DETAILS

SCALE
AS SHOWN
SHEET
5 OF 13

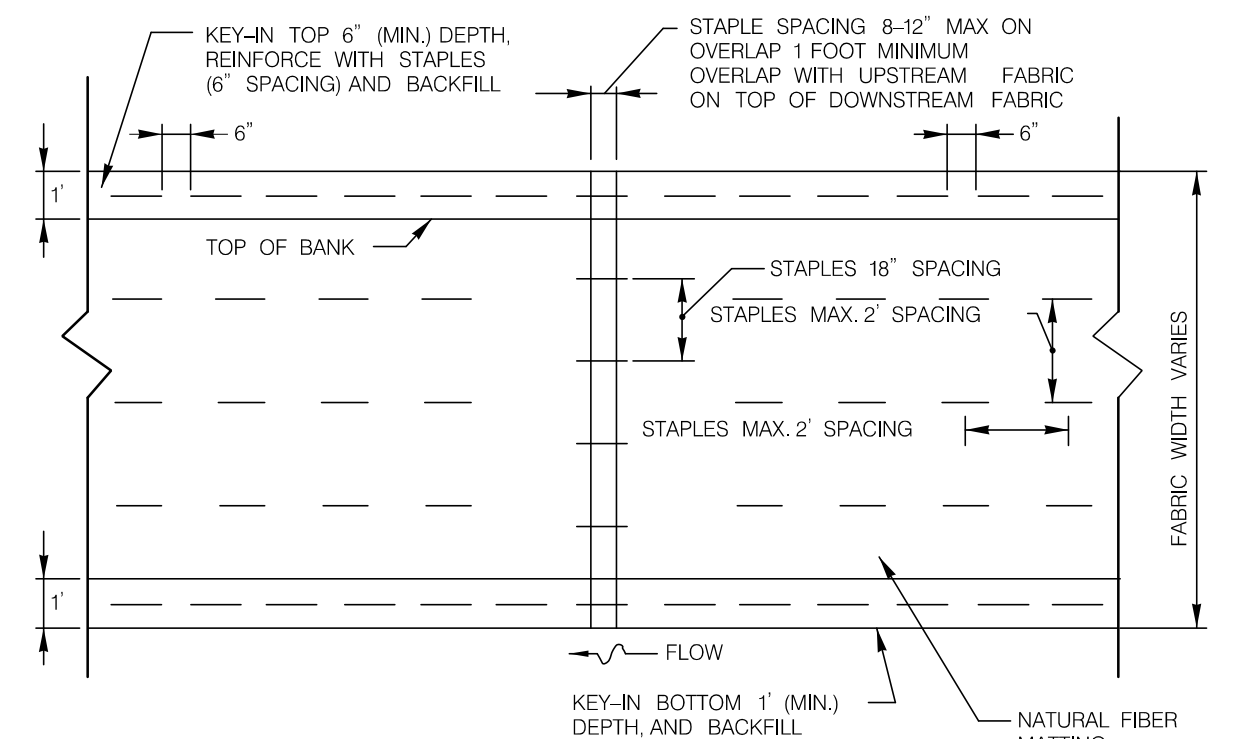


PIPE TRENCH AND CONCRETE CRADLE DETAIL
NOT TO SCALE

- NOTES:
- PROVIDE MINIMUM 3" CLEAR COVER FOR ALL REINFORCEMENT, EXCEPT AS NOTED.
 - USE MIX NO. 6 CEMENT CONCRETE (f'c = 4500 psi) FOR ANTI-SEEP COLLAR AND CRADLE.
 - USE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A615/A615M, A616/A616M, A617/A617M AND A706/A706M. DO NOT WELD REINFORCING STEEL BARS UNLESS SPECIFIED.
 - PLACE ANTI-SEEP COLLAR A MINIMUM OF 2' FROM BARREL JOINTS.



CONCRETE ANTI-SEEP COLLAR
NOT TO SCALE



COIR NATURAL FIBER MATTING
NOT TO SCALE

- CONSTRUCTION
- The Contractor shall furnish Howard County with specifications and a source of soil stabilization matting for review and approval.
 - Topsoil and Seeding shall be completed before the soil stabilization matting is installed. The matting shall be placed within 24 hours after seeding operations have been completed. Matting shall be laid smoothly and securely upon the seeded bed in the direction of water flow. Stretching shall be avoided.
 - Where more than one width of matting is required, the ends of each strip shall overlap 1 foot for both vertical and horizontal overlaps. Overlapping shall be done with the higher mat overlapping the lower mat and upstream matting overlapping downstream matting. Matting shall be firmly fastened in place with staples driven vertically into the soil and flush with the surface. Staples shall be placed a maximum of 2 feet apart along the edges and throughout the matting.
 - On all overlapping edges, staples shall be placed 18 inches apart. At all ends of matting, staples shall be placed 12 inches apart.
 - The Contractor shall excavate a 1 foot deep trench along all edges of the matting. The matting shall be placed into the trench, pinned, and the trench backfilled and tamped.

- DESCRIPTION
- Soil stabilization matting shall be placed to the details on the Construction Plans and as directed by the Engineer.
- MATERIALS
- Soil stabilization matting shall be degradable matting or an equivalent matting consisting of machine produced matting meeting the following minimum specifications:
- | Material | Natural Fiber |
|------------------|-----------------------|
| Thickness | 0.25 Inches |
| Weight | 9.6 oz/SY |
| Tensile Strength | 4.7 lb./in. |
| Netting Opening | 2.0 x 1.0 in. or less |
- Staples for securing the soil stabilization matting shall be U steel wire with a minimum gauge of 8. The U shaped staples shall average 1 to 1.5 inches wide. The length of the staples shall be 6 inches minimum.

DEPARTMENT OF PUBLIC WORKS
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MARYLAND

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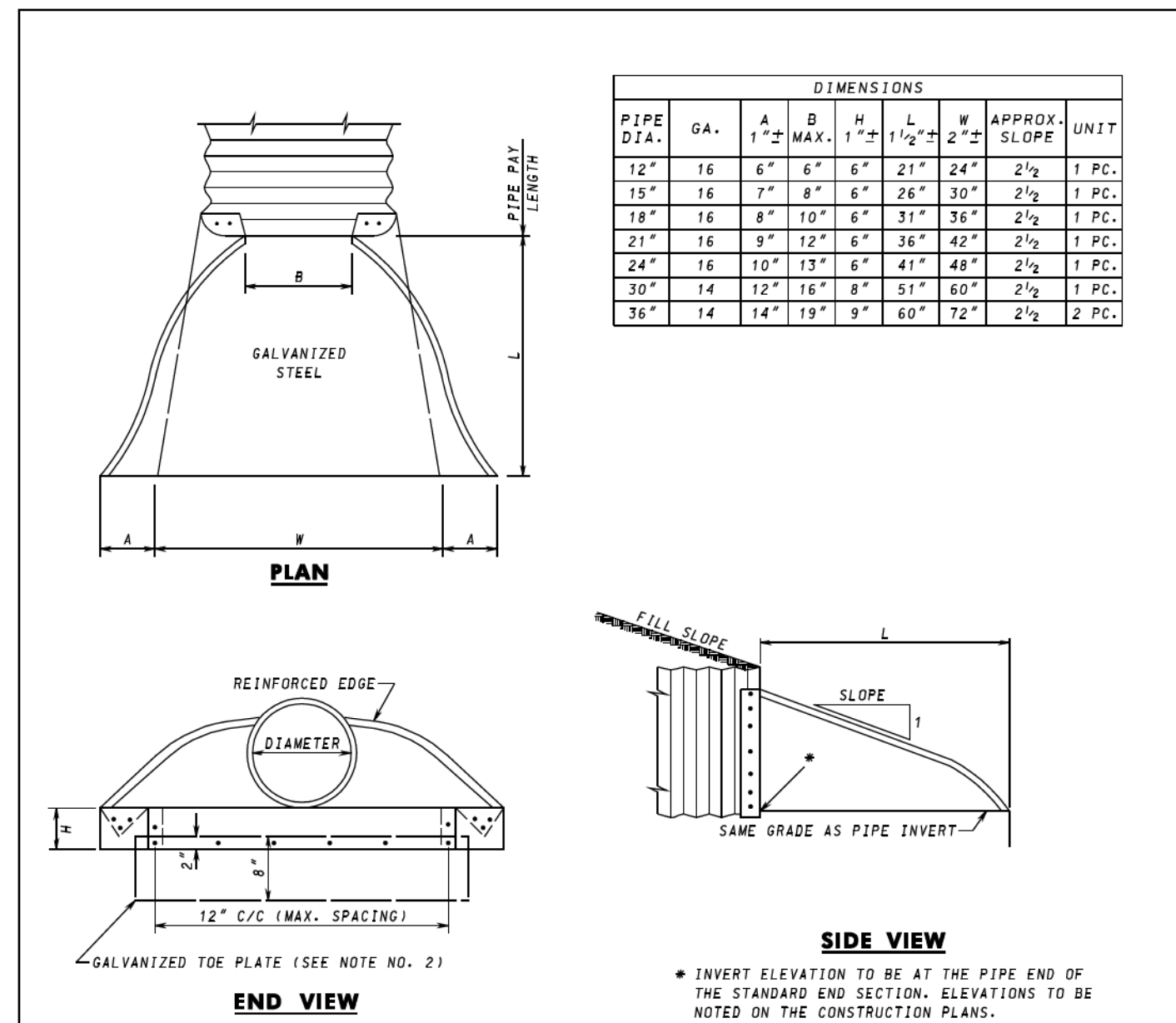
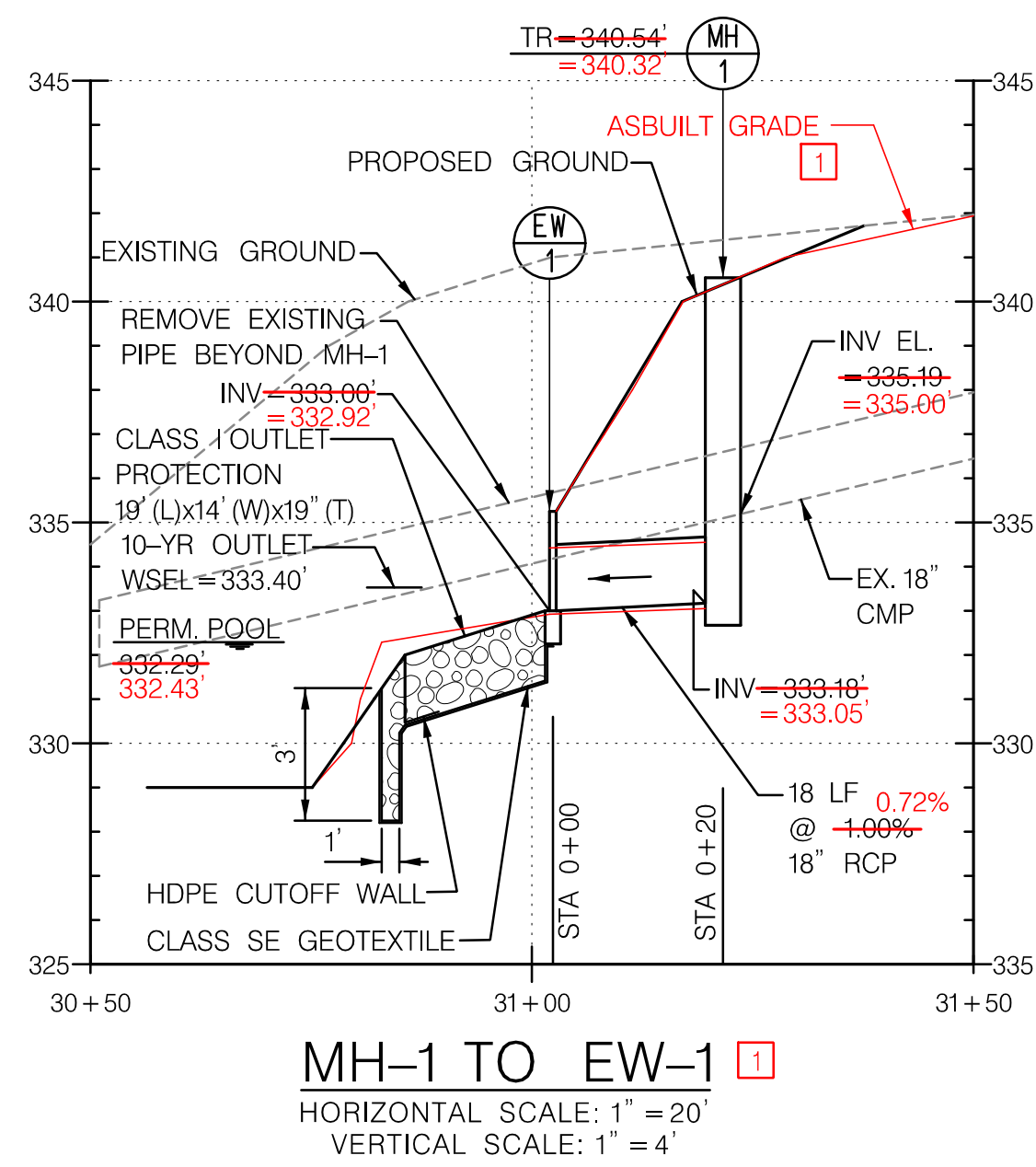


DES: EZS	EZS	1	AS-BUILT SURVEY	09/17/19
DRN: MER				
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WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35

STORMWATER MANAGEMENT DETAILS

SCALE
AS SHOWN
SHEET
6 OF 13



QUANTITIES FOR ESTIMATING PURPOSES ONLY

OPENING INCHES	D	A	B	C	E	F	H	L	CONC. C.Y.	STEEL LBS.
12	0.79	8"	6"	6"	11-9"	9"	2'-6"	10'-3"	1.14	70
15	1.23	9"	6"	6"	11-9"	9"	2'-0"	17'-9"	0.72	47
18	1.77	9"	6"	6"	11-9"	9"	2'-3"	9'-0"	0.95	54
21	2.40	9"	6"	6"	11-9"	9"	2'-6"	10'-3"	1.14	70
24	3.14	9"	6"	6"	11-9"	9"	2'-9"	11'-6"	1.36	80
27	3.98	9"	6"	6"	11-9"	9"	3'-0"	12'-9"	1.62	88
30	4.91	9"	6"	6"	11-9"	9"	3'-3"	14'-2"	2.22	98
33	5.94	9"	6"	6"	11-9"	9"	3'-6"	15'-5"	2.48	105
36	7.07	12"	16"	10"	3'-2"	12"	4'-0"	16'-4"	4.16	182
42	9.82	12"	16"	10"	3'-2"	12"	4'-6"	19'-0"	5.07	206
48	12.57	12"	16"	10"	3'-2"	12"	5'-0"	21'-8"	6.09	244
54	15.90	12"	20"	12"	3'-8"	12"	5'-6"	24'-2"	7.62	275
60	19.54	12"	20"	12"	3'-8"	12"	6'-0"	26'-8"	8.82	304
72	28.27	12"	20"	12"	3'-8"	12"	7'-0"	31'-4"	11.46	377

APPROVED: *K.G. McCall*
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL - SHA
APPROVAL - FEDERAL HIGHWAY ADMINISTRATION

APPROVAL - SHA
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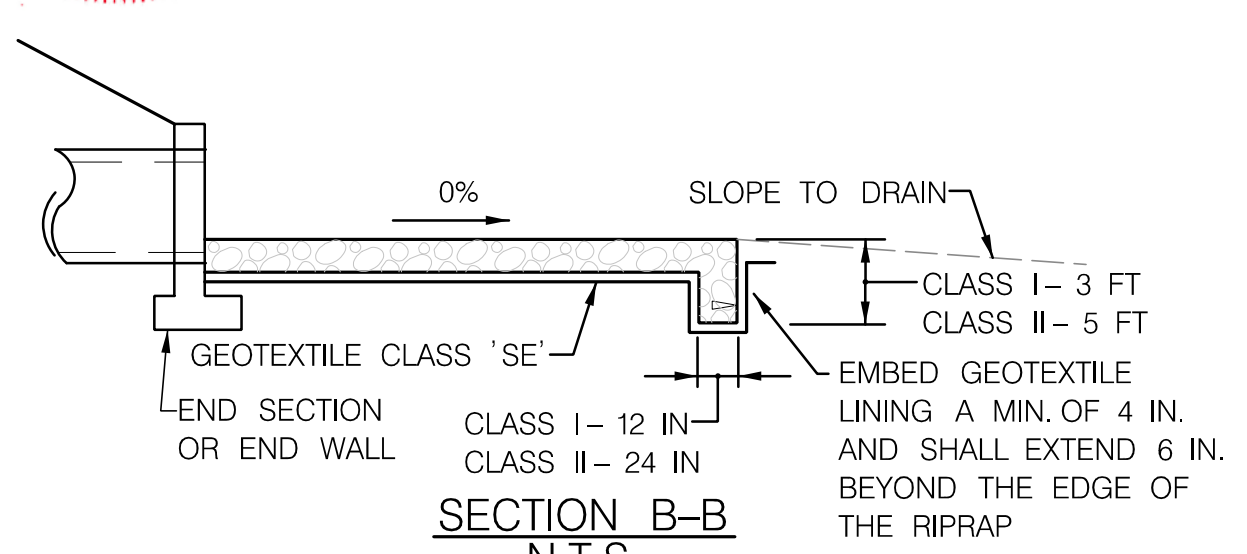
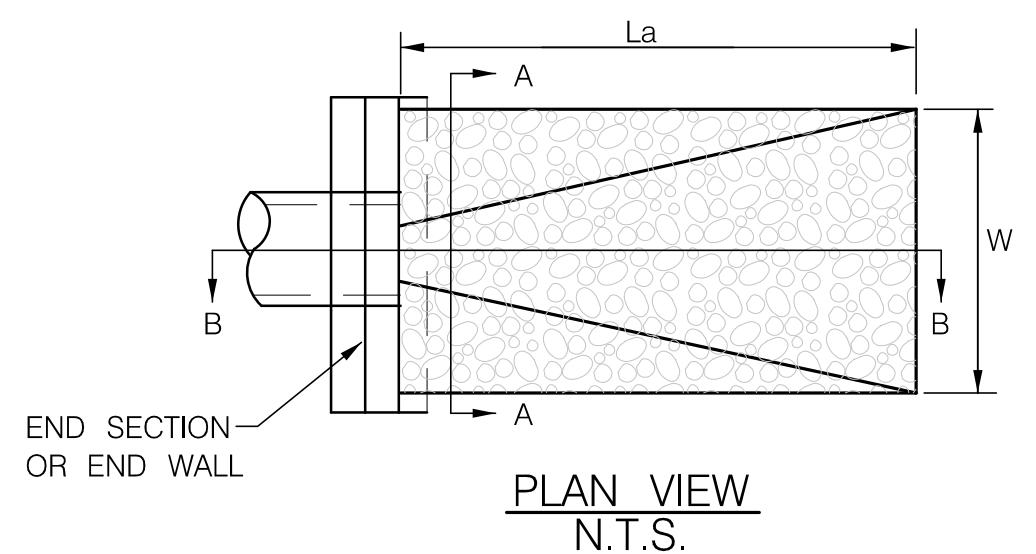
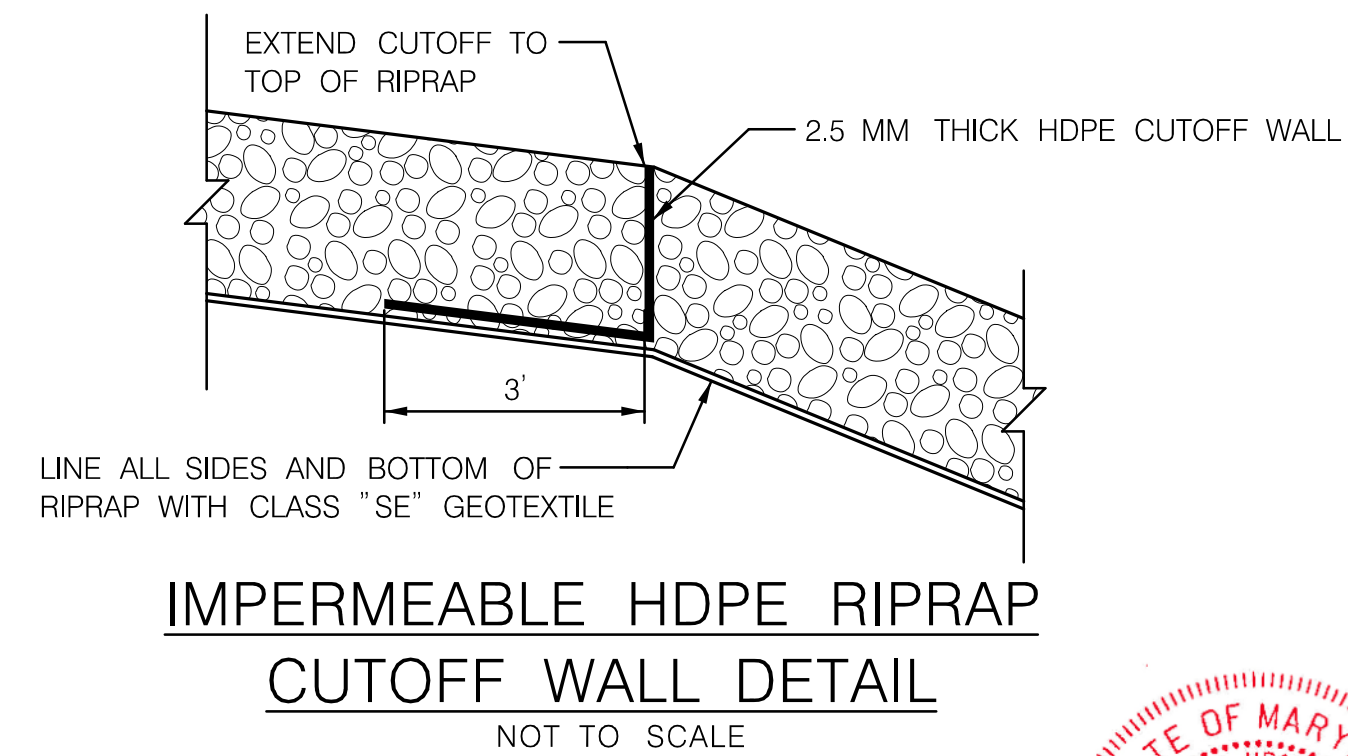
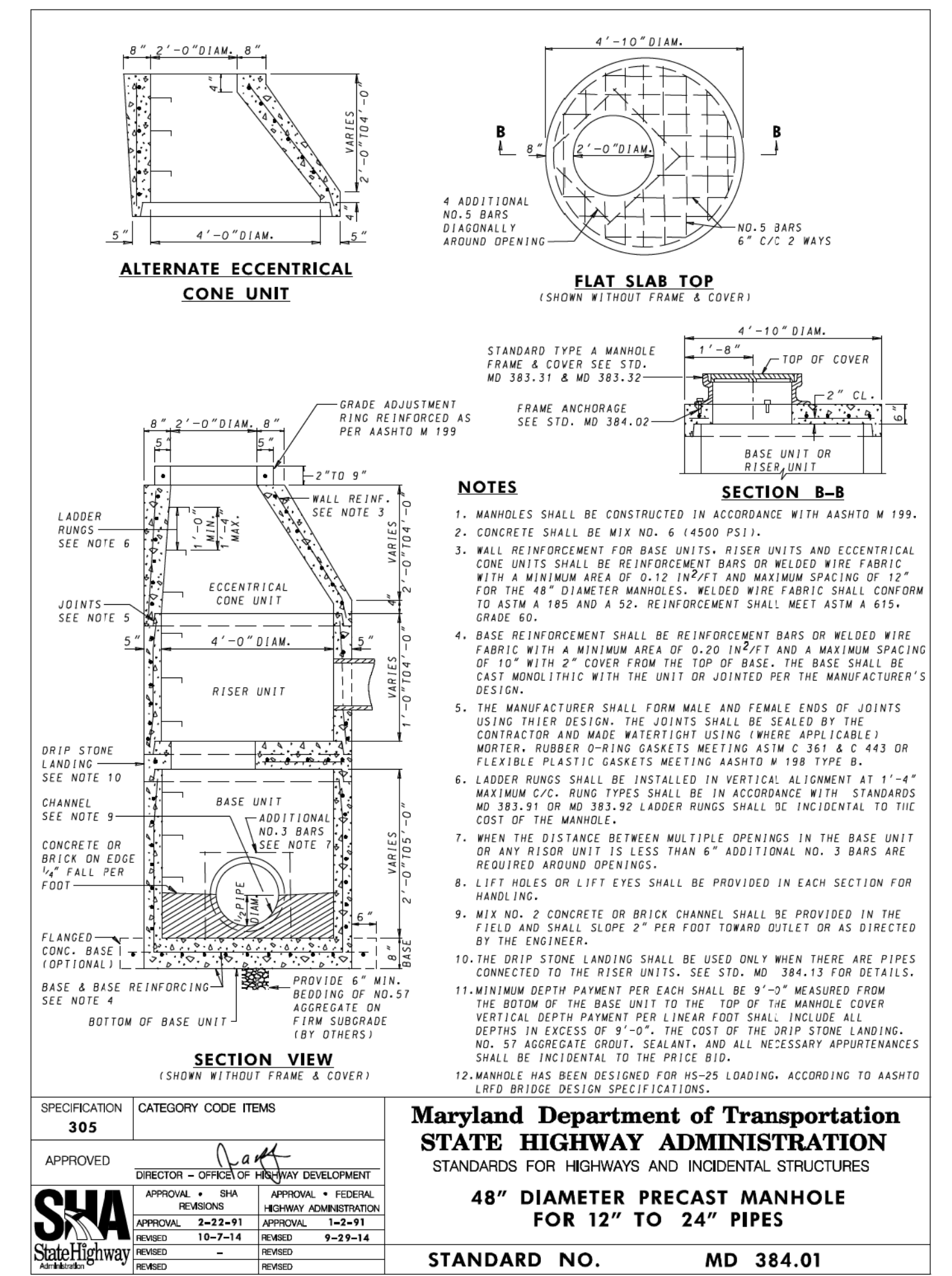
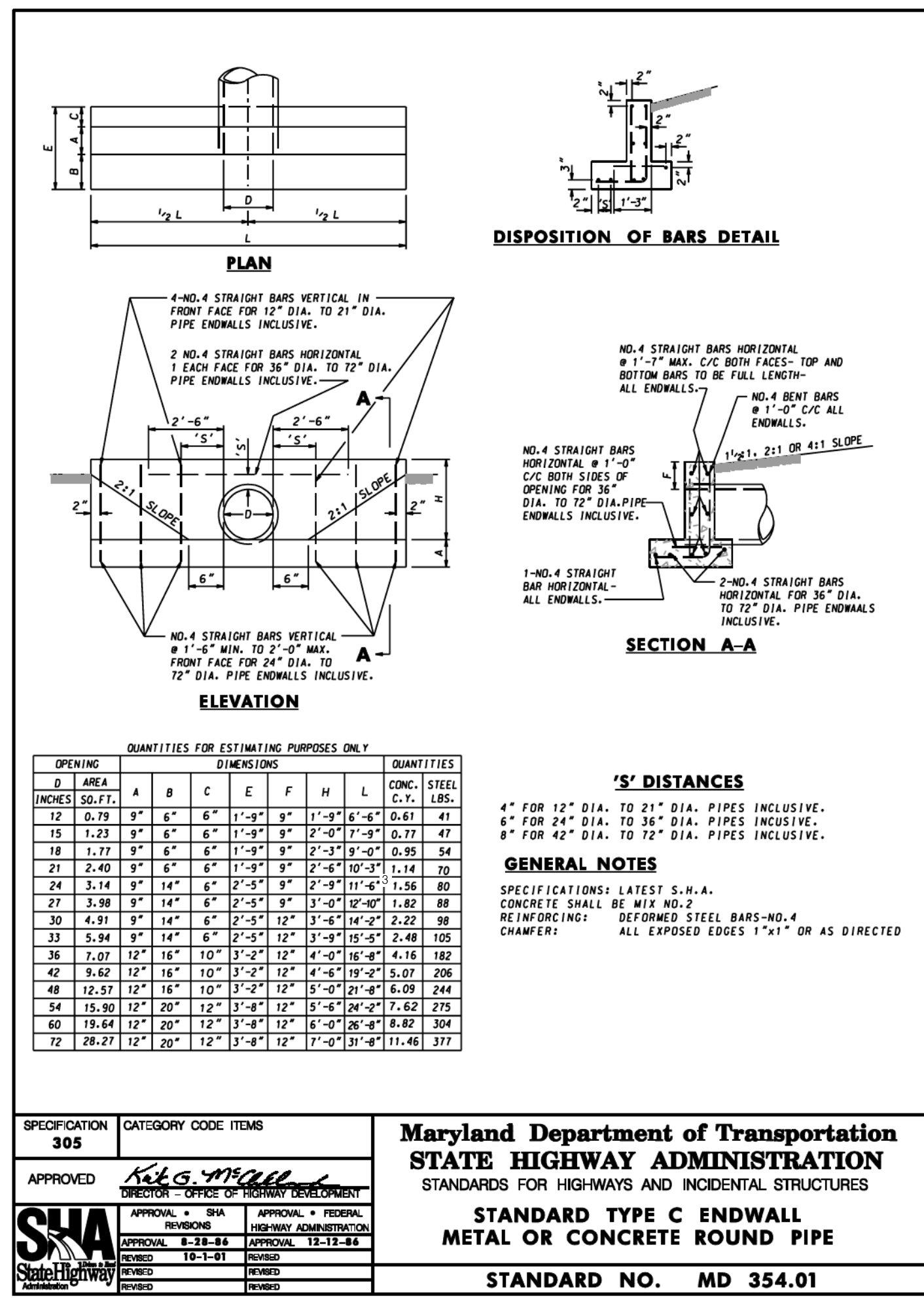
REVISIONS: 16-1-01, 7-1-09, 7-27-09, 12-12-08

STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD METAL END SECTION
ROUND METAL PIPE

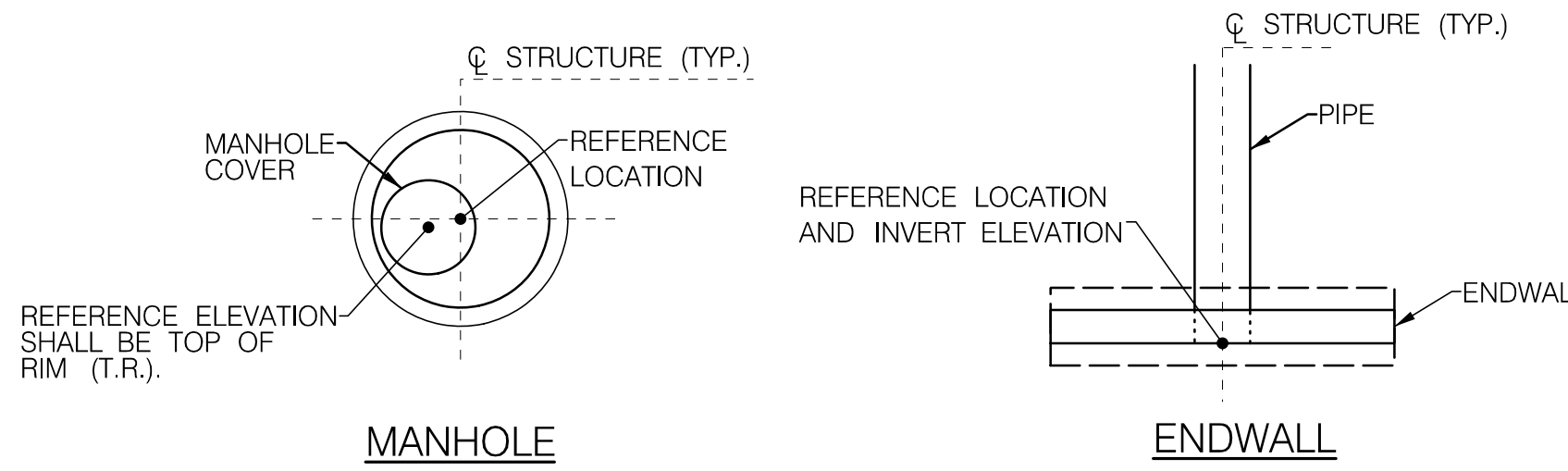
STANDARD NO. MD 370.01



RIPRAP OUTLET PROTECTION TYPICAL DETAIL
N.T.S.

RIPRAP OUTLET PROTECTION SCHEDULE

OUTLET STRUCTURE ID	La (LF)	W (LF)	CLASS	T (IN)	H (FT)	Z1 (H:1)	Z2 (H:1)	Q ₁₀	V ₁₀	D ₁₀	TYPE	RIPRAP QTY (SY)	CUTOFF WALL QTY (LF)
EW-1	19	14	CLASS I	19	1.2	3:1	3:1	5.24cfs	6.73fps	0.66ft	ROP I	31	12
EW-2	42	33.5	CLASS II	32	1.2	2.5:1	2.5:1	84cfs	19.27fps	2.5ft	ROP I	93	20



DRAINAGE STRUCTURE STAKEOUT LOCATION DETAILS
N.T.S.

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE ID	STATION	OFFSET (LF)	BASELINE	TYPE	STANDARD SHA NO.	TOP	INVERT	VERTICAL DEPTH (TOTAL) (LF)	REMARKS
MH-1	11+95.52	81.01 LT	PRINCIPAL SPILLWAY	48 INCH PRECAST MANHOLE FOR 12 TO 24 INCH PIPES	MD 384.01	340.54	333.18	7.36	18 INCH PIPE
R-1	12+74.24	00 LT/RT	PRINCIPAL SPILLWAY	CAST-IN-PLACE RISER SEE DETAIL SHEET	N/A	336.80	325.32		SEE DETAIL
EW-1	11+98.02	61.07 LT	PRINCIPAL SPILLWAY	STANDARD TYPE C ENDWALL	MD 354.01		333.00		18 INCH PIPE
EW-2	13+57.47	00 LT/RT	PRINCIPAL SPILLWAY	STANDARD TYPE C ENDWALL	MD 354.01		321.39		30 INCH PIPE
ES-1	13+77.40	9.05' RT	PRINCIPAL SPILLWAY	STANDARD METAL END SECTION - ROUND METAL PIPE	MD 340.01		324.00*		15 INCH PIPE

* TO BE CONFIRMED IN FIELD

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Michael D. Roca
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

5/1/18
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DRAINAGE PROFILE AND DETAILS

SCALE
AS SHOWN

SHEET
7 OF 13

SEQUENCE OF CONSTRUCTION EROSION AND SEDIMENT CONTROL - GENERAL NOTES

- 1. OBTAIN MDE PERMIT 201661186 AND GRADING PERMIT. (1 DAY)
2. THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK...
3. ORANGE HIGH VISIBILITY FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS...
4. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE...
PHASE 1
5. MOBILIZE EQUIPMENT FOR PHASE 1 ACTIVITIES...
6. INSTALL SANDBAG DAMS, CLEAR WATER DIVERSION PIPES, FILTER BAGS, PUMPS AND SUMP PIT...
7. DURING A 3 DAY DRY WEATHER FORECAST FROM THE NATIONAL WEATHER SERVICE...
8. DURING A 5 DAY DRY WEATHER FORECAST FROM THE NATIONAL WEATHER SERVICE...
9. PERMANENTLY STABILIZE PHASE 1 EXCAVATION AND GRADED AREA. (1 DAY)
PHASE 2
10. INSTALL PHASE 2 PERIMETER CONTROLS, SANDBAG DAMS, AND CLEAR WATER DIVERSION PIPES. (2 DAYS)
11. DURING A 5 DAY DRY WEATHER FORECAST FROM THE NATIONAL WEATHER SERVICE...
12. INSTALL RIPRAP AND GABION INFLOW CHANNEL...
13. INSTALL TRASH RACK AND ORIFICE PLATE. (1 DAY)
14. WHEN AREAS ARE FULLY STABILIZED AND WITH PERMISSION FROM THE INSPECTOR...

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 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...
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS...
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL...
17. OFFSITE WASTE / BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN AND PERMIT.

B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT...
B. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE...
B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION...
C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE...

B-4-3 SEEDING AND MULCHING

- A. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW...
B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES...
C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA...
D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS...
2. APPLICATION
A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS...
B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL...
C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER)...
B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY...
B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE...
2. APPLICATION
A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING...
B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE...
C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE...
3. ANCHORING
A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS...
A. PRIOR TO THE START OF EARTH DISTURBANCE.
B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS...
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.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN...
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES...
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE...
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION...
6. SITE ANALYSIS:
TOTAL AREA OF SITE 0.76 ACRES
AREA DISTURBED 0.76 ACRES
AREA TO BE ROOFED OR PAVED 0.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED 0.58 ACRES
TOTAL CUT 1927 CY
TOTAL FILL 158 CY
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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR...
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY...
10. ANY MAJOR CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION...
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...
TABLE:
TOTAL AREA OF SITE 0.76 ACRES
AREA DISTURBED 0.76 ACRES
AREA TO BE ROOFED OR PAVED 0.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED 0.58 ACRES
TOTAL CUT 1927 CY
TOTAL FILL 158 CY
OFFSITE WASTE/BORROW AREA LOCATION SEE NOTE #17

B-4-5 PERMANENT STABILIZATION

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20) N, P2O5, K2O, LIME RATE. Includes rows for SWITCH GRASS, CREEPING RED FESCUE, and PARTRIDGE PEA.

NOTE: MAY 16 TO JUNE 15 ARE ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20) N, P2O5, K2O, LIME RATE. Includes rows for TALL FESCUE, PERENNIAL RYEGRASS, and WHITE CLOVER.

B-4-4 TEMPORARY STABILIZATION

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20) 436 LB/AC (10 LB/1000 SF), LIME RATE 2 TON/AC (90 LB/1000 SF). Includes rows for ANNUAL RYEGRASS and FOXTAIL MILLET.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

McCORMICK TAYLOR logo and address: 509 South Exeter Street, 4th Floor, Baltimore, Maryland 21202, (410) 662-7400

Howard County MARYLAND logo and address: Storm Water Management Division, Bureau of Environmental Services, 6751 Columbia Gateway Drive, Suite 514, Columbia, Maryland 21046-3143, (410) 313-6444



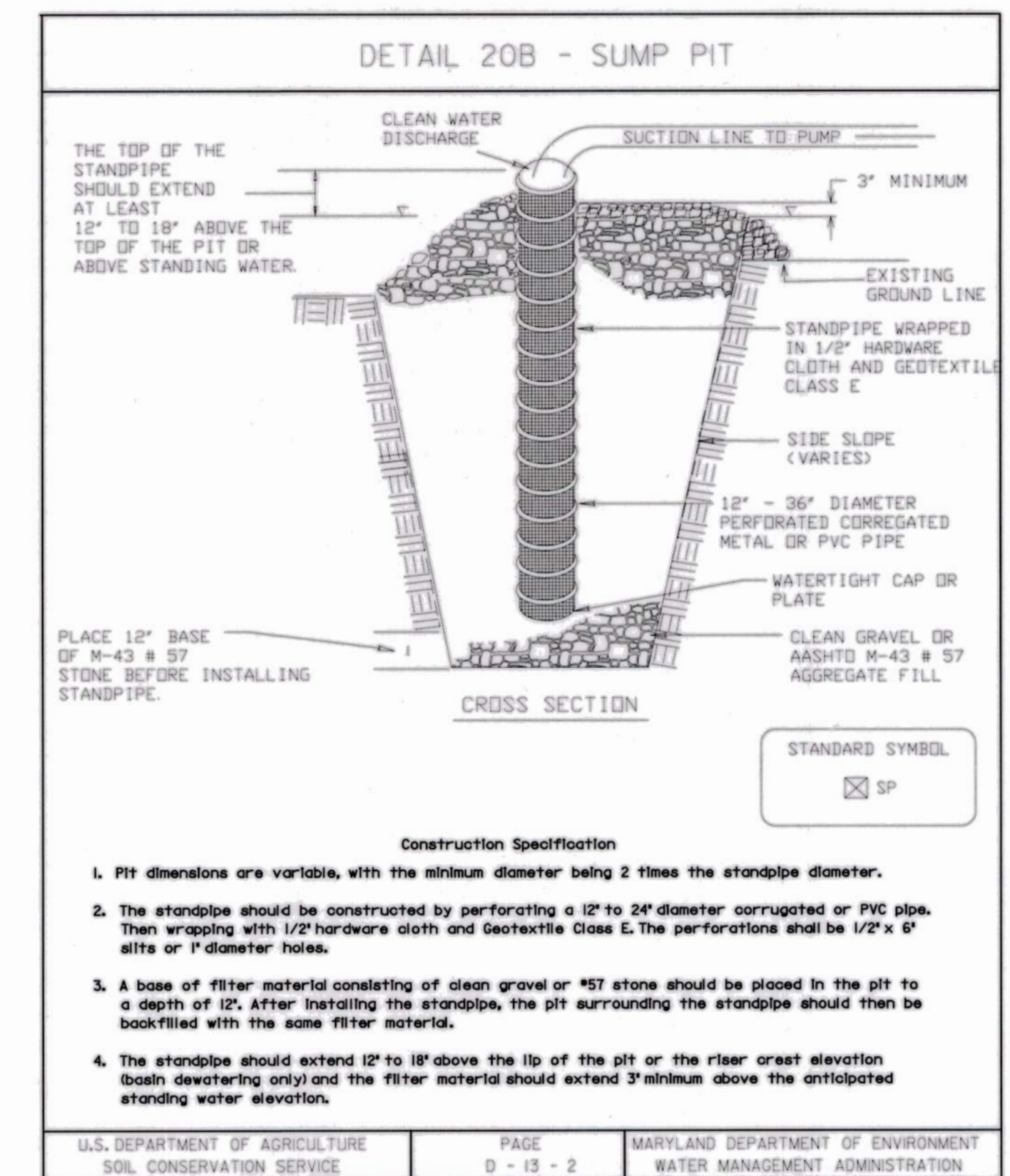
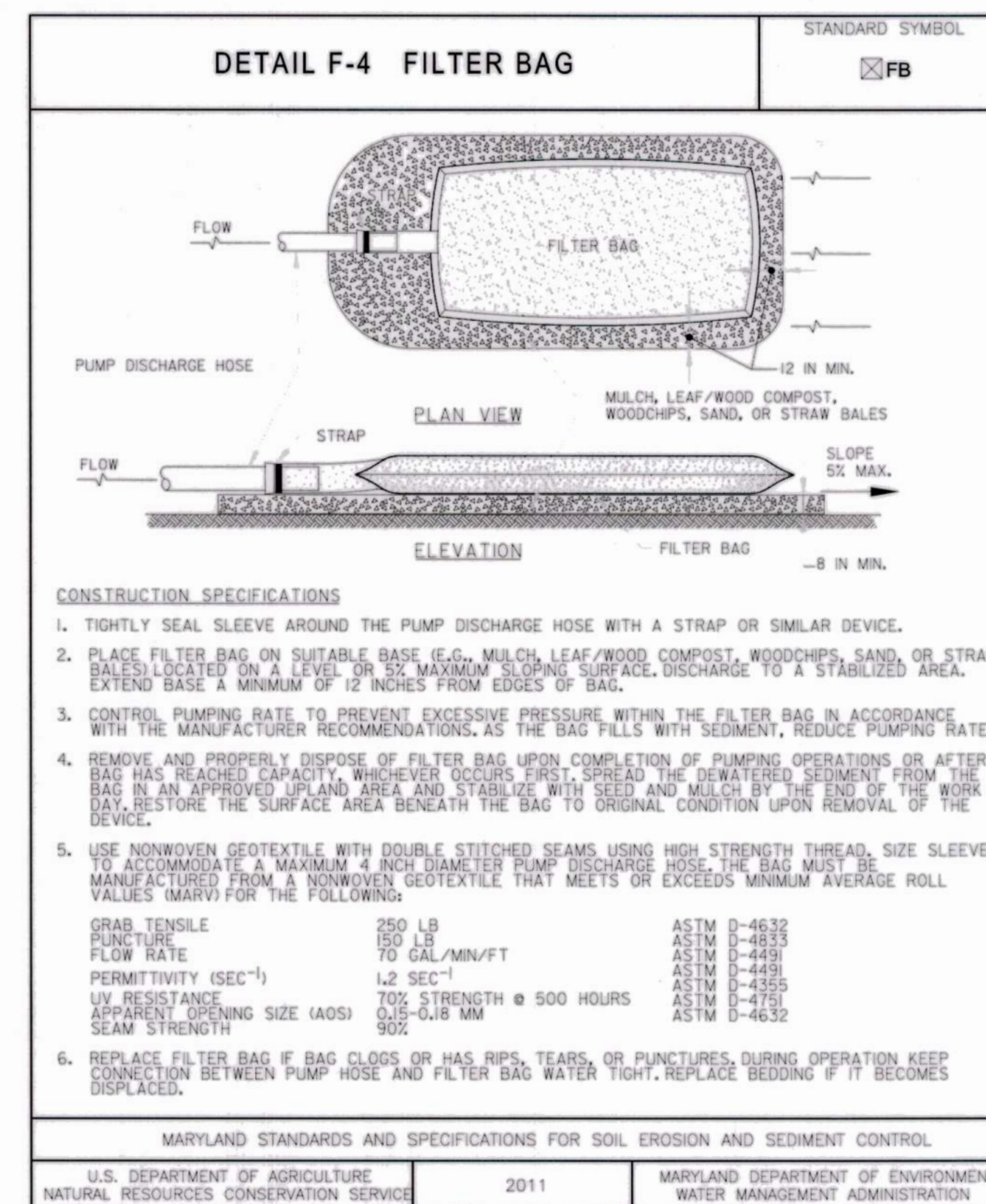
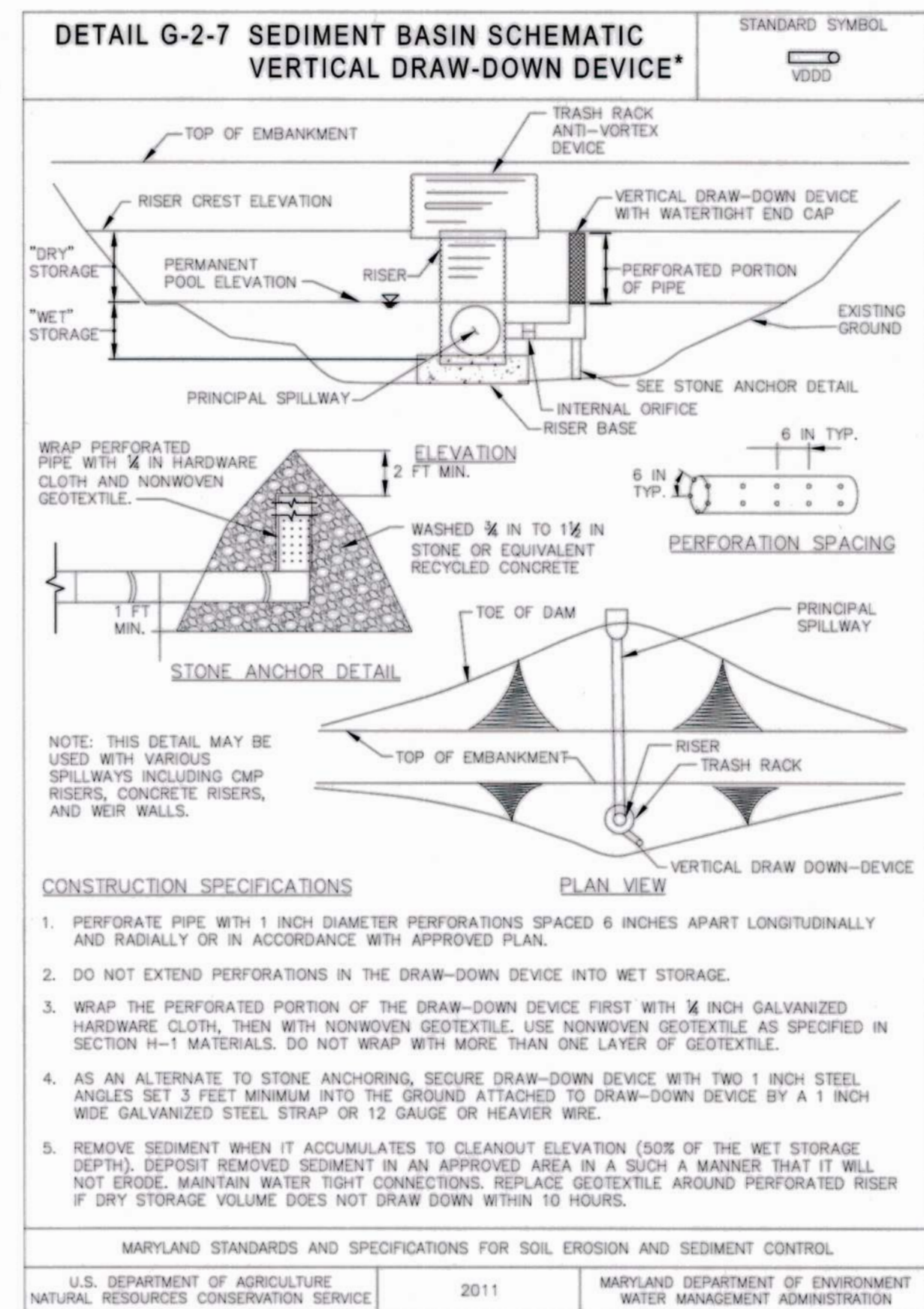
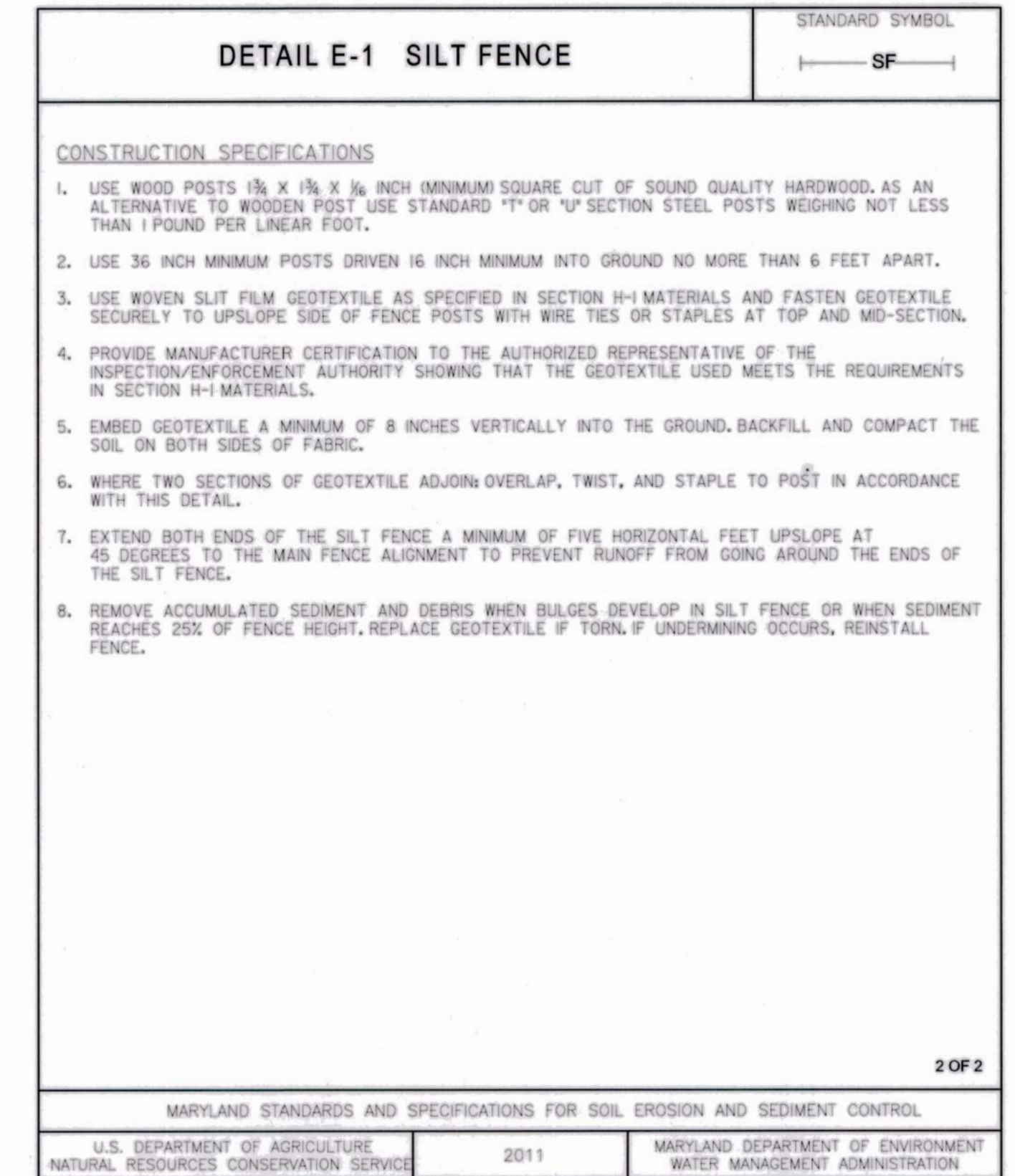
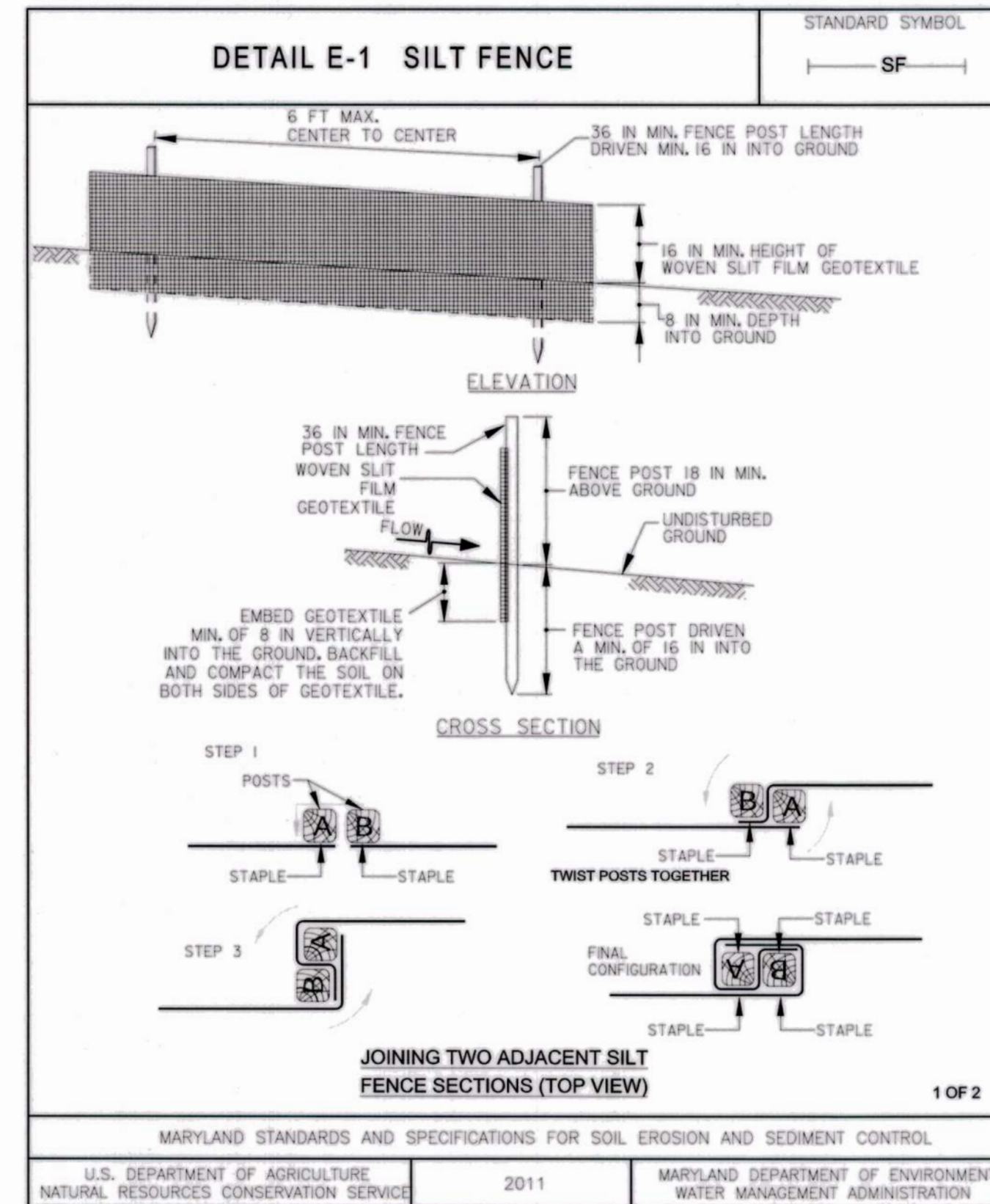
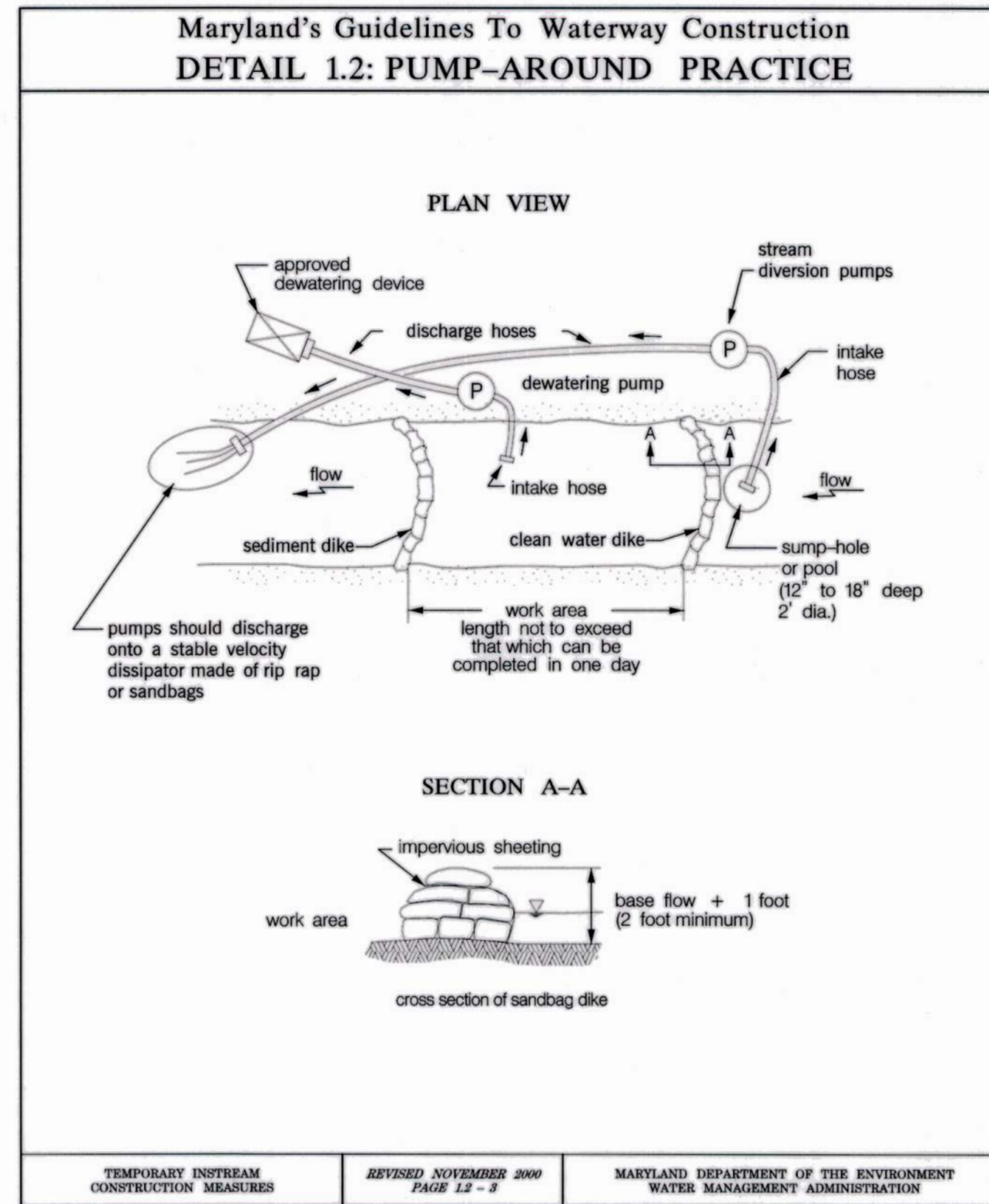
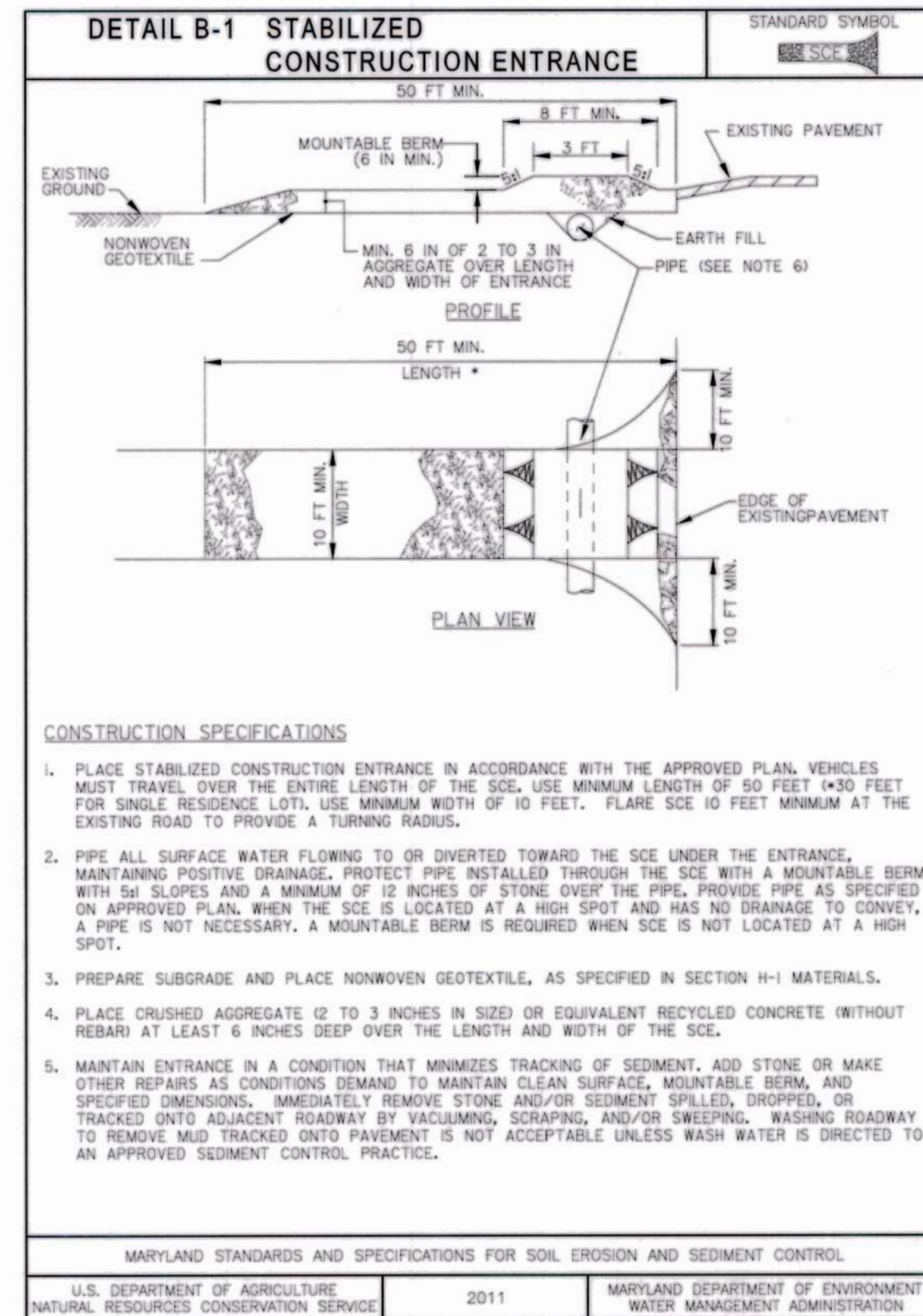
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DRN: MER
CHK: ALH
DATE: 6/20/17
BY NO. REVISION DATE

WOODLAND PARK PRINCIPAL SPILLWAY REPLACEMENT PROJECT CAPITAL PROJECT #D-1159 HOWARD COUNTY EP-15-35 EROSION AND SEDIMENT CONTROL NOTES

SCALE NOT TO SCALE SHEET 8 OF 13

Chief, Bureau of Environmental Services

DATE



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuca
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

5/1/18
DATE

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MARYLAND

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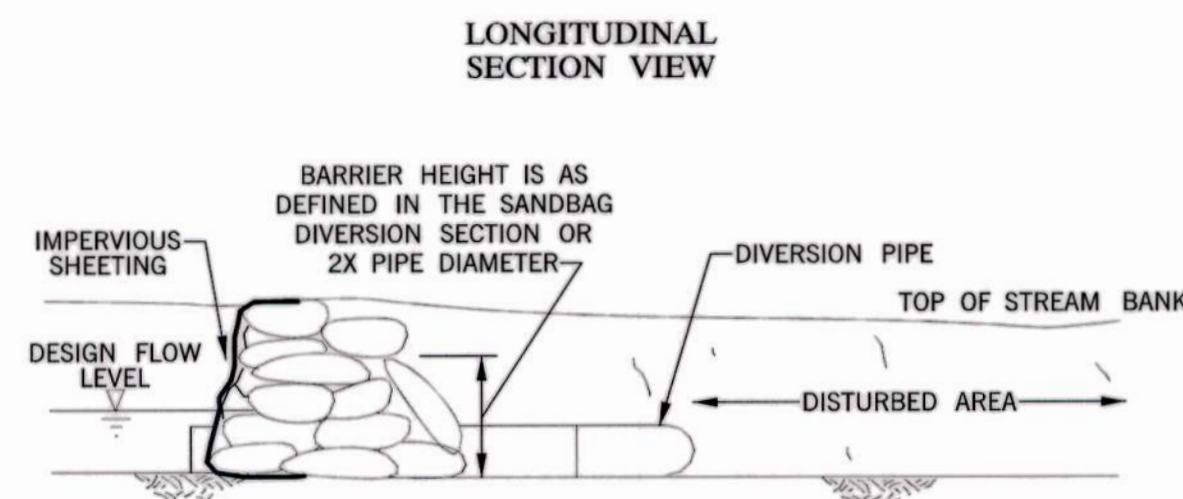
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CHK: ALH				
DATE: 6/20/17	BY	NO.	REVISION	DATE

WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35

EROSION AND SEDIMENT CONTROL DETAIL SHEET

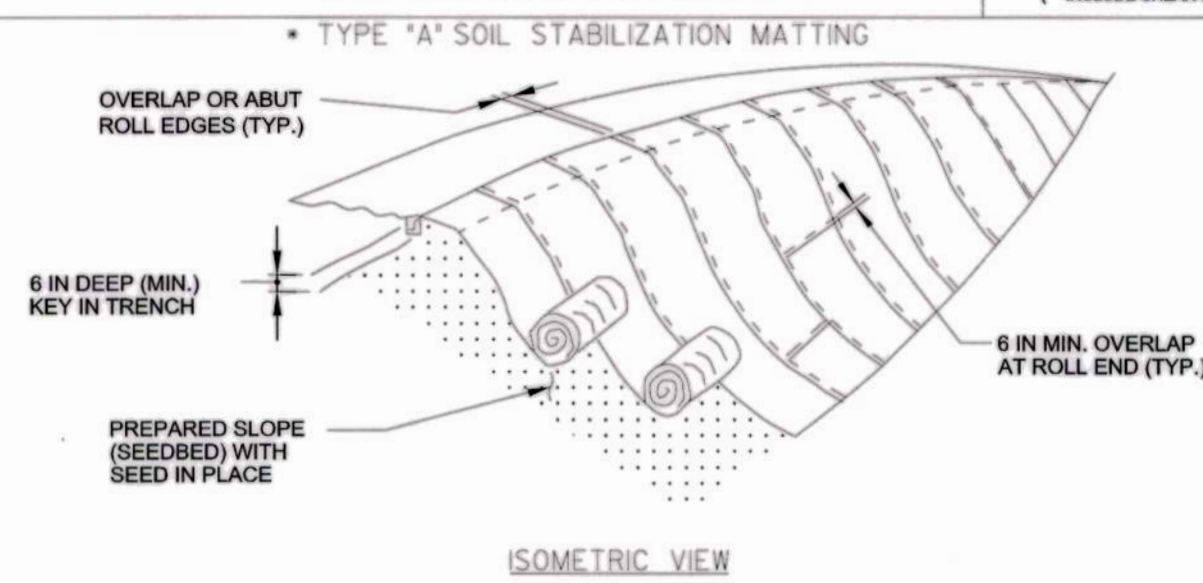
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SHEET
9 OF 13

SAND BAG DAM DETAIL



DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION*

STANDARD SYMBOL
TSSMS - 2.0 lb/ft²
(* INCLUDE SHEAR STRESS)



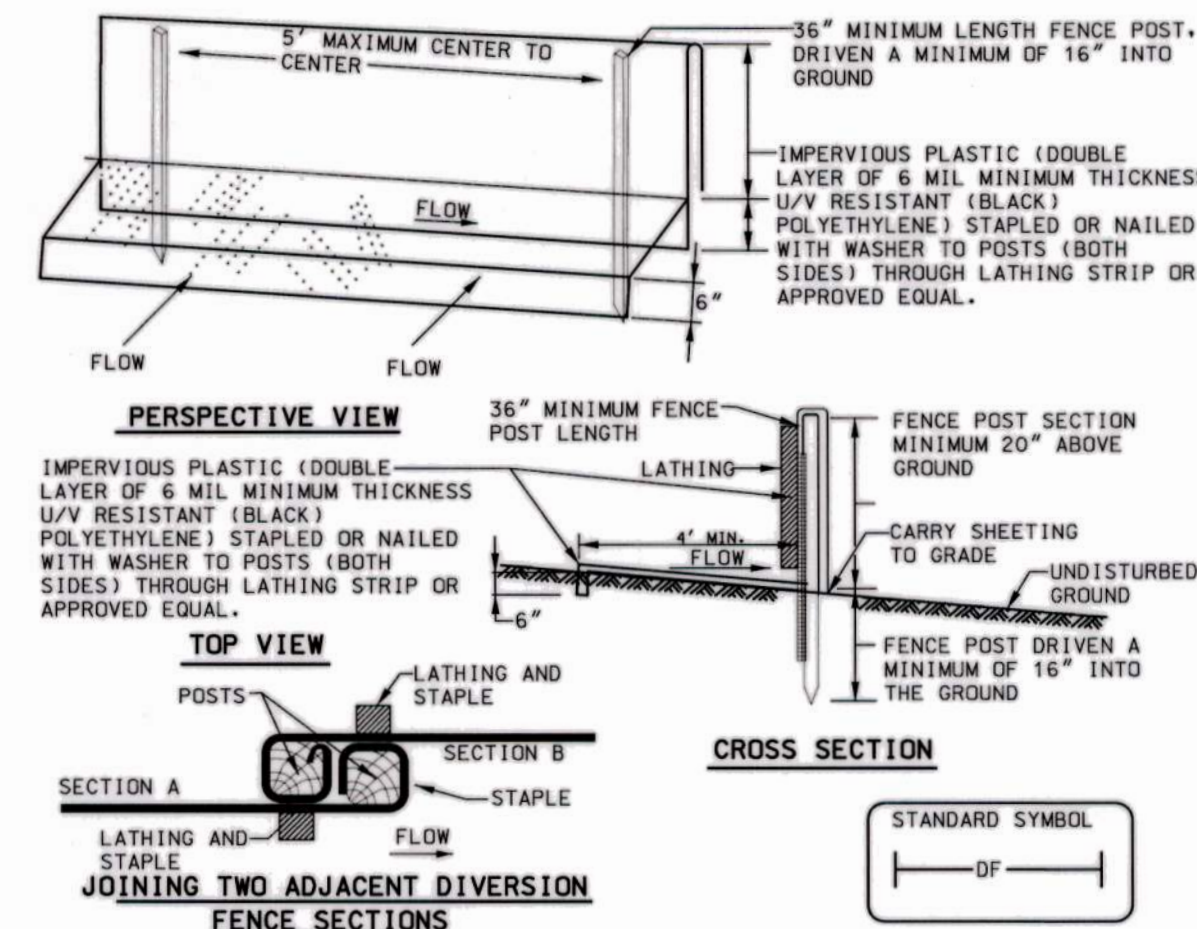
CONSTRUCTION SPECIFICATIONS

- 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 SMOLDER 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 1/2" OR 11/4" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. 1/4" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. 11/4" 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, 1/2 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 & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- 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 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DIVERSION FENCE



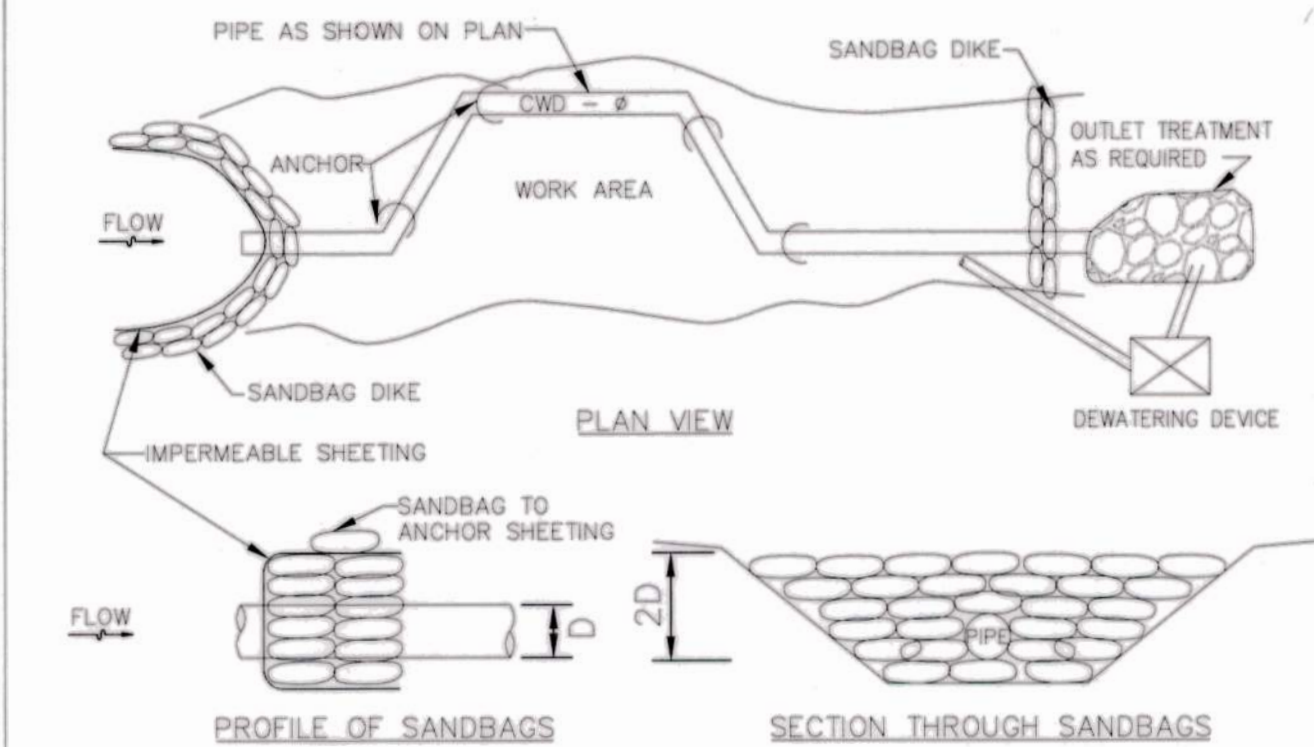
CONSTRUCTION SPECIFICATIONS

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Posts shall be 2" x 2" square (minimum) cut, and shall be of sound quality hardwood. Maximum post spacing shall be 5 feet center to center.
- Double layer of 6 mil polyethylene sheeting shall be fastened securely to each fence post with lathing and staples at top and mid-section.
- Ends of polyethylene sheeting shall come together only at posts. Ends shall be overlapped, folded and stapled to prevent runoff bypass. The upgrade section shall overlap the downgrade section.
- Diversion fence shall have an uninterrupted positive grade to a stable outlet.
- The contributing drainage area measured to the outlet shall not exceed 2 acres.
- Diversion Fence shall be inspected after each rainfall event and maintained when necessary.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE PAGE A-3-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL
CWD - 12
DESIGNATION CWD-12 REFERS TO 12 INCH CLEAR WATER DIVERSION.

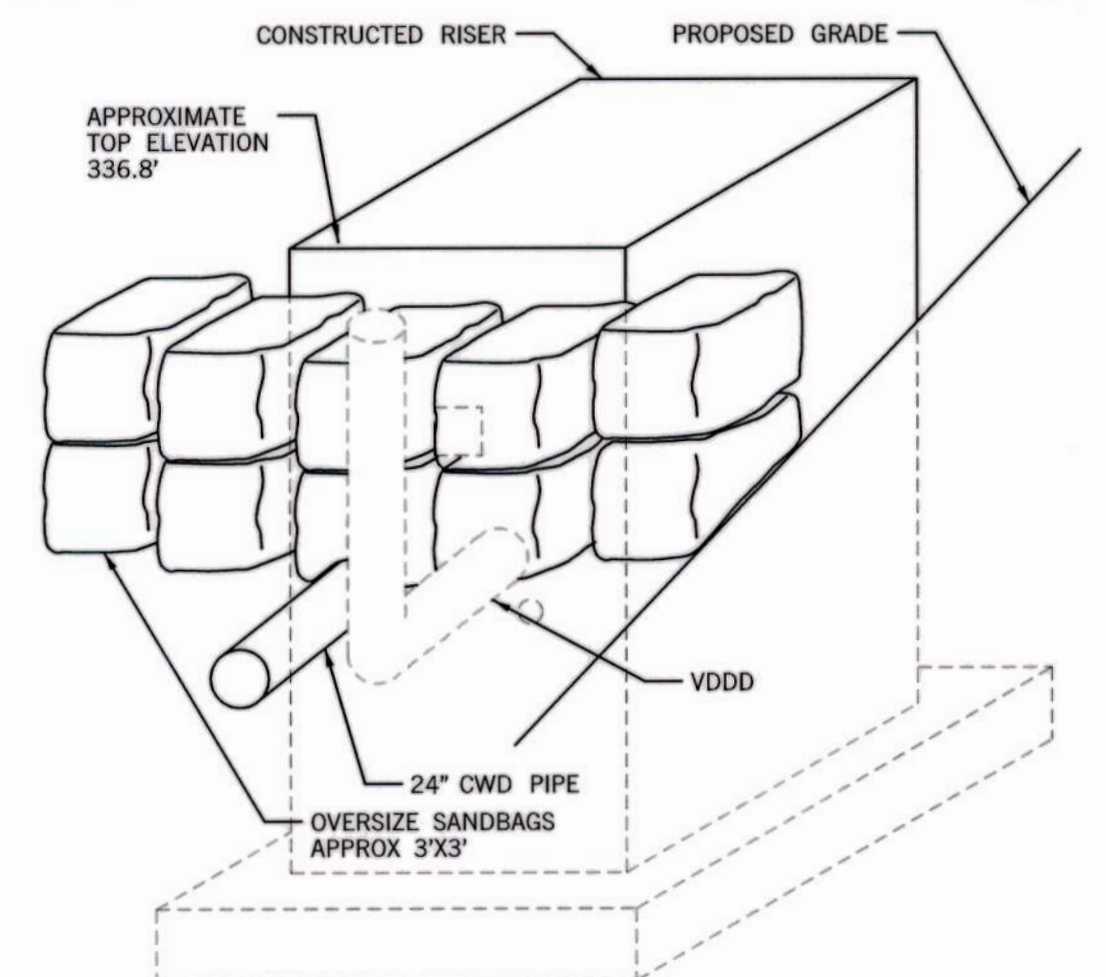


CONSTRUCTION SPECIFICATIONS

- FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
- FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
- USE 10 ML OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNCTURING AND TEARING.
- PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
- SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
- AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
- SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
- PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
- DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
- KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

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

SAND BAG RISER CONNECTION DETAIL



NOTE:
SANDBAGS TO BE PLACED AT LEAST 2 FEET FROM RISER. 24" DIVERSION PIPE WILL OUTFALL INTO OPEN AREA BETWEEN RISER AND SANDBAGS TO ALLOW FLOW THROUGH RISER OPENINGS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
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(410) 313-6444



DES: EZS				
DRN: MER				
CHK: ALH				
DATE: 6/20/17				
BY	NO.	REVISION	DATE	

WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35
EROSION AND SEDIMENT CONTROL DETAIL SHEET

SCALE
NOT TO SCALE
SHEET
10 OF 13

Mark D. Luce
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
5/6/18
DATE

SAND BAGS				
FROM	TO	QTY (L.F.)	TOP ELV.	REMARKS
12+43.84, 16.4'LT	12+44.51, 13.8' RT	35	333	SB 1-1
13+96.54, 4.7' LT	13+95.99, 7.7' RT	13	323	SB 1-2
12+47.18, 35.5' RT	12+53.20, 32.9' RT	20	338	SB 1-3

SILT FENCE			
FROM	TO	QTY (LF)	REMARKS
20+41.03, 24' LT	20+64.33, 21' LT	28	SF 1-1
11+54.67, 35.3' LT	12+18.8, 60.6' LT	112	SF 1-2
11+14.95, 46.8' LT	11+82.36, 83.4' LT	90	SF 1-3
13+65.06, 15' LT	13+95.16, 12' RT	75	SF 1-4

DIVERSION FENCE			
FROM	TO	QTY (L.F.)	REMARKS
11+15.18, 44.5' LT	11+82.39, 81.8' LT	55	DF 1-1
12+79.00, 55.1' RT	12+50.36, 31.8' RT	37	DF 1-2
13+15.49, 45.3' RT	13+97, 9.7' RT	90	DF 1-3

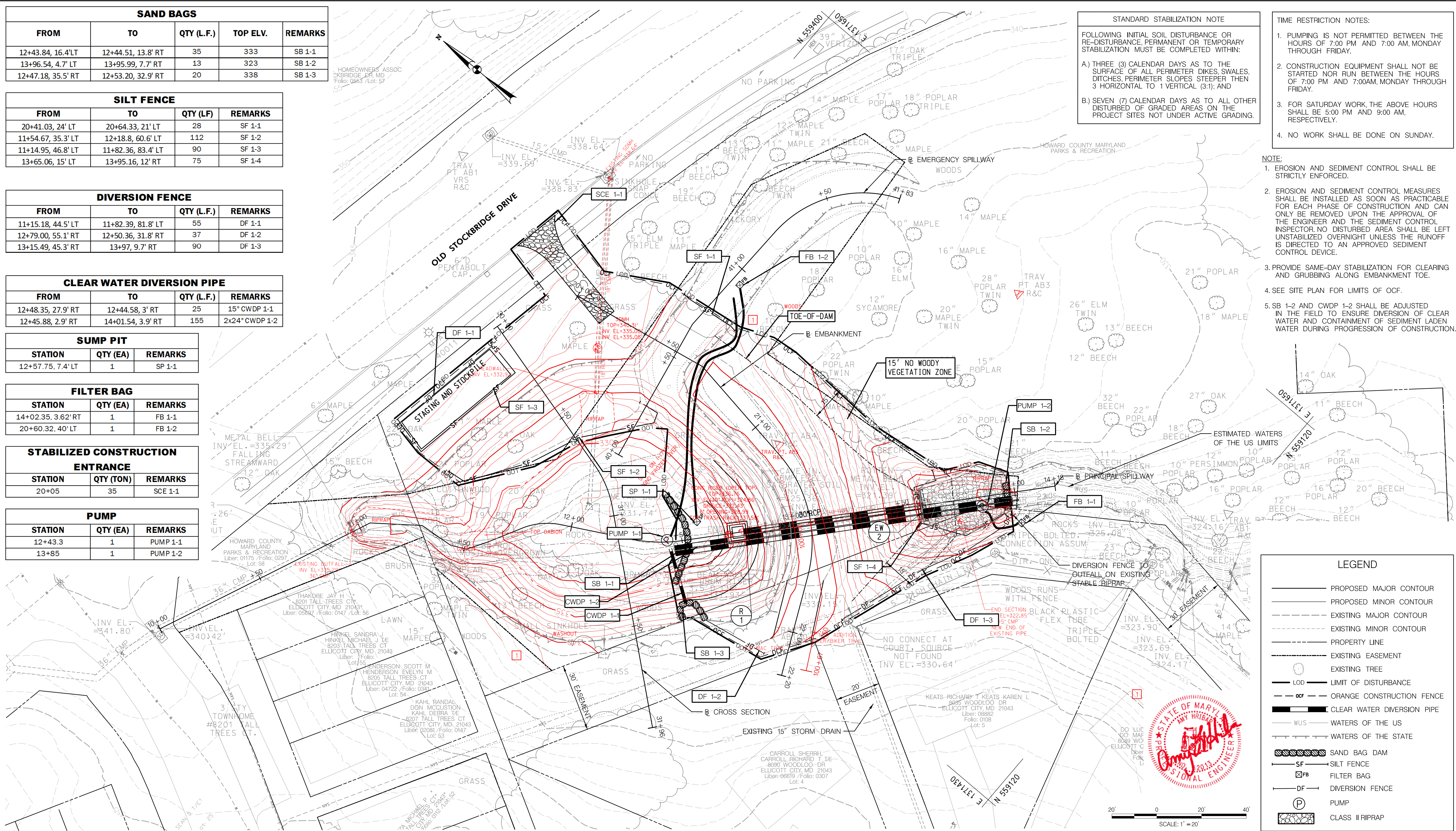
CLEAR WATER DIVERSION PIPE			
FROM	TO	QTY (L.F.)	REMARKS
12+48.35, 27.9' RT	12+44.58, 3' RT	25	15" CWDP 1-1
12+45.88, 2.9' RT	14+01.54, 3.9' RT	155	2x24" CWDP 1-2

SUMP PIT		
STATION	QTY (EA)	REMARKS
12+57.75, 7.4' LT	1	SP 1-1

FILTER BAG		
STATION	QTY (EA)	REMARKS
14+02.35, 3.62' RT	1	FB 1-1
20+60.32, 40' LT	1	FB 1-2

STABILIZED CONSTRUCTION ENTRANCE		
STATION	QTY (TON)	REMARKS
20+05	35	SCE 1-1

PUMP		
STATION	QTY (EA)	REMARKS
12+43.3	1	PUMP 1-1
13+85	1	PUMP 1-2



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 THAN 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.

TIME RESTRICTION NOTES:

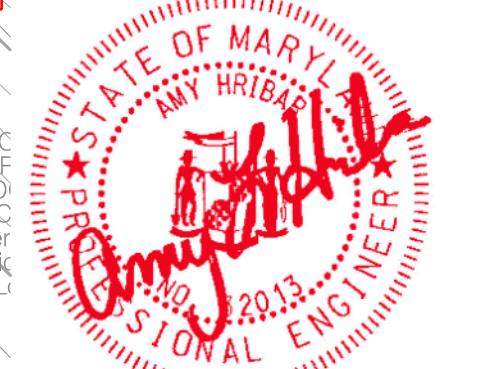
- PUMPING IS NOT PERMITTED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
- CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
- FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE 5:00 PM AND 9:00 AM, RESPECTIVELY.
- NO WORK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

NOTE:

- 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.
- PROVIDE SAME-DAY STABILIZATION FOR CLEARING AND GRUBBING ALONG EMBANKMENT TOE.
- SEE SITE PLAN FOR LIMITS OF OCF.
- SB 1-2 AND CWDP 1-2 SHALL BE ADJUSTED IN THE FIELD TO ENSURE DIVERSION OF CLEAR WATER AND CONTAINMENT OF SEDIMENT LADEN WATER DURING PROGRESSION OF CONSTRUCTION.

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING TREE
- LOD - LIMIT OF DISTURBANCE
- OCF - ORANGE CONSTRUCTION FENCE
- CWDP - CLEAR WATER DIVERSION PIPE
- WUS - WATERS OF THE US
- WATS - WATERS OF THE STATE
- SAND BAG DAM
- SF - SILT FENCE
- FB - FILTER BAG
- DF - DIVERSION FENCE
- P - PUMP
- CLASS II RIPRAP



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Michael D. Luen
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

5/6/18
DATE

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MARYLAND

Storm Water Management Division
Bureau of Environmental Services
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DES: EZS	EZS	1	AS-BUILT SURVEY	09/17/19
DRN: MER				
CHK: ALH				
DATE: 6/20/17	BY	NO.	REVISION	DATE

WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35

**EROSION AND SEDIMENT CONTROL PLAN
PHASE 1**

SCALE
1" = 20'

SHEET
11 OF 13

SAND BAGS				
FROM	TO	QTY (L.F.)	TOP ELV.	REMARKS
10+94.73, 6.1' LT	10+97.58, 6' RT	19	339	SB 2-1
12+70.90, 4.7' LT	12+70.69, 4.3' RT	22	332	SB 2-2
11+94.69, 84.1' LT	11+98.67, 84.9' LT	6	TOP OF PIPE	SB 2-3

CLEAR WATER DIVERSION PIPE			
FROM	TO	QTY (L.F.)	REMARKS
10+97.72	R-1	176	2x24" CWDP 2-1
EW-1	R-1	86	18" CWDP 2-2

SUMP PIT		
STATION	QTY (EA)	REMARKS
12+50.8	1	SP 2-1

PUMP		
STATION	QTY (EA)	REMARKS
11+96, 82.9' LT	1	PUMP 2-1
12+71, 27.7' LT	1	PUMP 2-2

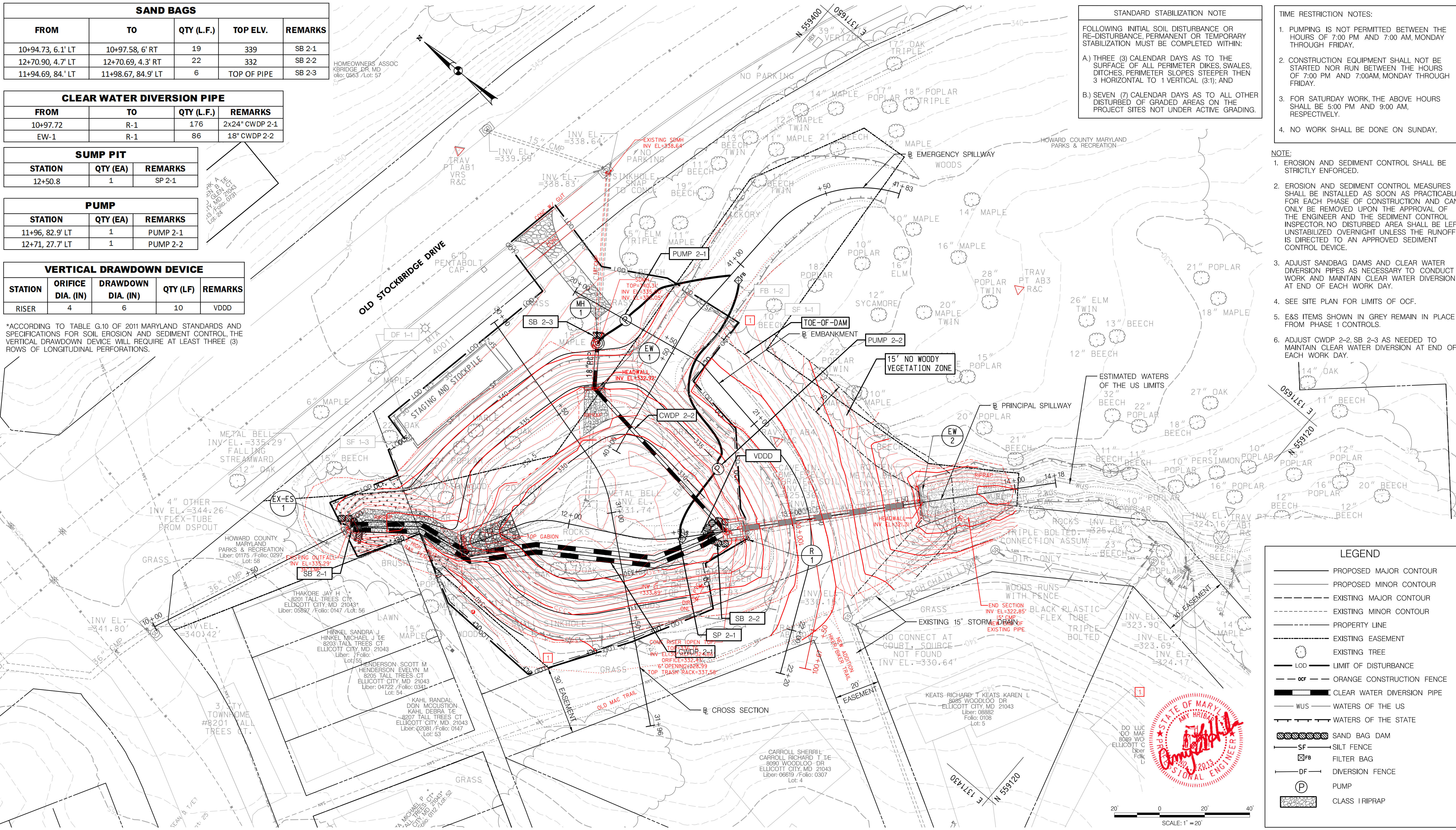
VERTICAL DRAWDOWN DEVICE				
STATION	ORIFICE DIA. (IN)	DRAWDOWN DIA. (IN)	QTY (LF)	REMARKS
RISER	4	6	10	VDDD

*ACCORDING TO TABLE G.10 OF 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE VERTICAL DRAWDOWN DEVICE WILL REQUIRE AT LEAST THREE (3) ROWS OF LONGITUDINAL PERFORATIONS.

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 THAN 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.

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

NOTE:
 1. EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.
 2. 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.
 3. ADJUST SANDBAG DAMS AND CLEAR WATER DIVERSION PIPES AS NECESSARY TO CONDUCT WORK AND MAINTAIN CLEAR WATER DIVERSION AT END OF EACH WORK DAY.
 4. SEE SITE PLAN FOR LIMITS OF OCF.
 5. E&S ITEMS SHOWN IN GREY REMAIN IN PLACE FROM PHASE 1 CONTROLS.
 6. ADJUST CWDP 2-2, SB 2-3 AS NEEDED TO MAINTAIN CLEAR WATER DIVERSION AT END OF EACH WORK DAY.



LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- - - EXISTING MAJOR CONTOUR
- - - EXISTING MINOR CONTOUR
- PROPERTY LINE
- - - EXISTING EASEMENT
- ⊙ EXISTING TREE
- LOD — LIMIT OF DISTURBANCE
- OCF — ORANGE CONSTRUCTION FENCE
- CLEAR WATER DIVERSION PIPE
- WUS — WATERS OF THE US
- WUS — WATERS OF THE STATE
- ▨ SAND BAG DAM
- SF SILT FENCE
- FB FILTER BAG
- DF DIVERSION FENCE
- P PUMP
- CLASS I RIPRAP



SCALE: 1" = 20'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark D. Roca
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

5/1/18
 DATE

McCORMICK TAYLOR
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 (410) 662-7400

Howard County
 MARYLAND
 Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143
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DES: EZS	EZS	1	AS-BUILT SURVEY	09/17/19
DRN: MER				
CHK: ALH				
DATE: 6/20/17	BY	NO.	REVISION	DATE

WOODLAND PARK
 PRINCIPAL SPILLWAY REPLACEMENT PROJECT
 CAPITAL PROJECT #D-1159
 HOWARD COUNTY
 EP-15-35

**EROSION AND SEDIMENT CONTROL PLAN
 PHASE 2**

SCALE
 1" = 20'
 SHEET
 12 OF 13

SWM POND CONSTRUCTION SPECIFICATIONS (MARYLAND CODE 378 POND - JANUARY 2000)

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL: - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT: - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION: - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRE OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH: - THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE: - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM IMPERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

EARTH FILL (CONTINUED)

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE: - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION ON M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION ON M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH.

PIPE CONDUITS (CONTINUED)

THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12 INCH WIDE STANDARD LAP TYPE BAND WITH 12 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE: - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/ CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE: - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIAL - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4"-10" PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" THROUGH 24" SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS. DRAINAGE DIAPHRAGMS - WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

DRAINAGE DIAPHRAGM: - WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTION OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

SEE EROSION AND SEDIMENT CONTROL SHEETS FOR DETAILED SEQUENCE OF CONSTRUCTION.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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DES: EZS					
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CHK: ALH					
DATE: 6/20/17	BY	NO.	REVISION	DATE	

**WOODLAND PARK
PRINCIPAL SPILLWAY REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EP-15-35**

POND CONSTRUCTION SPECIFICATIONS

SCALE
NOT TO
SCALE

SHEET

13 OF 13

Mark DeLuca
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

5/1/18
DATE