

HOWARD COUNTY

Capital Project #D-1159

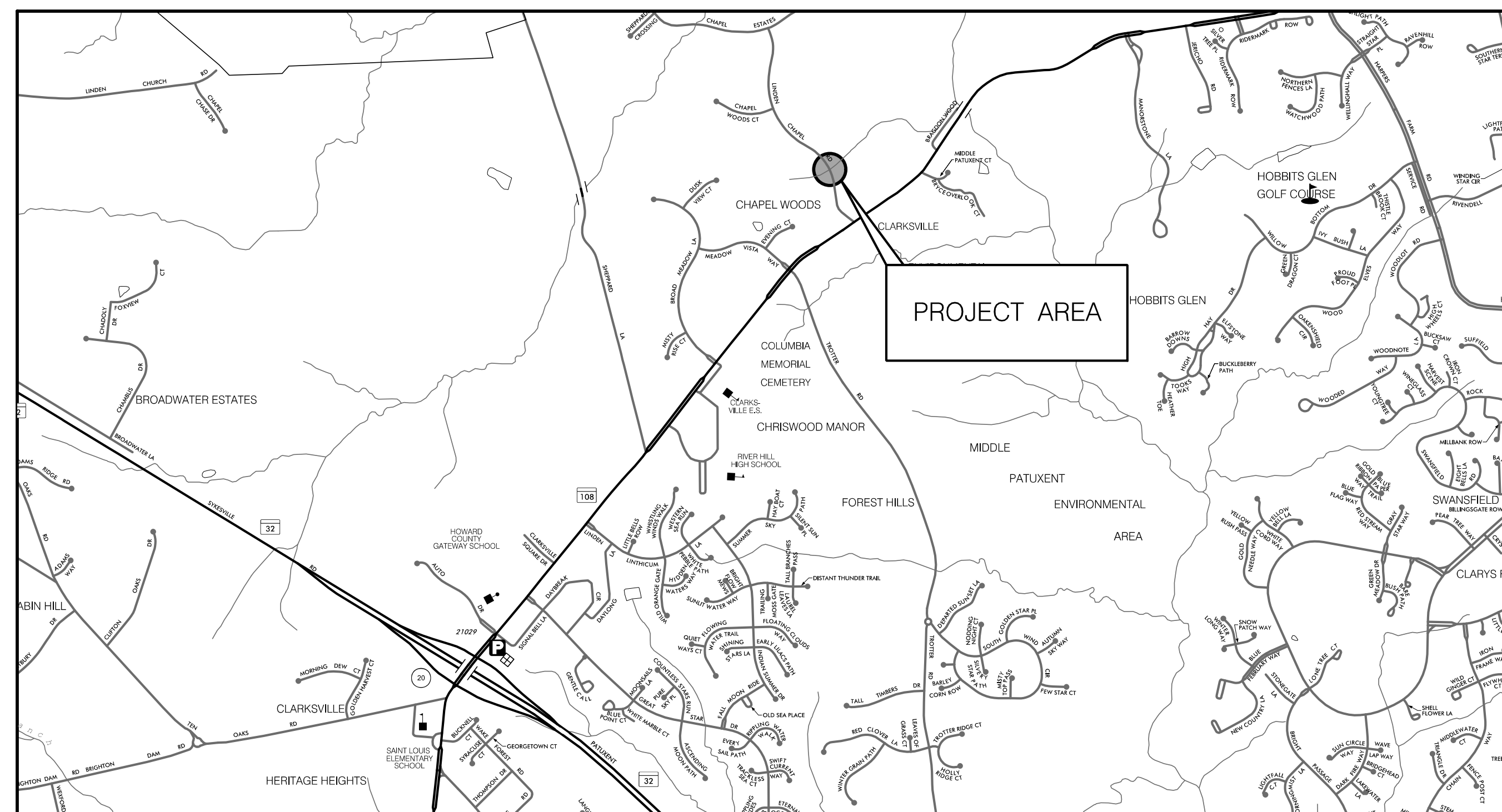
Linden Chapel Road

Principal Spillway Lining and Riser Replacement Project

Storm Water Management Division
Bureau Of Environmental Services

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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	
RIGHT OF WAY LINE	
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	
WETLAND	
HEDGE /TREE LINE	
BUSH /TREE	
CONIFEROUS TREE	
LIGHT POLE	



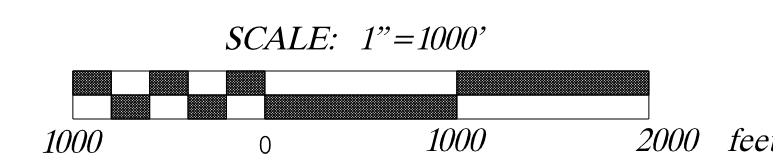
GENERAL NOTES

- 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.
- SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS, INC-APRIL 2012.
- 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.
- WATERS OF THE US AND WETLANDS WERE DELINEATED BY McCORMICK TAYLOR MAY 2012.
- 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' 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 LINDEN CHAPEL ROAD LOTS 2,3,4,5 & 6 OF CHAPEL WOODS SECTION 2 AREA 1 (F-86-137).
- A JOINT PERMIT APPLICATION HAS BEEN SUBMITTED TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THIS PROJECT. (TRACKING NUMBER 201204477)

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John R. Blanton 7/22/14
HOWARD SCD DATE

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: 7/2015
2/7/2017

DESIGN CERTIFICATION

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DISTRICT 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.

6/18/14
DATE

Amy H. Harbar
DESIGNER'S SIGNATURE

MARYLAND REGISTRATION NUMBER 32013

AMY HRIBAR
PRINTED NAME

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL 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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

6/25/14
DATE

Mark S. Richmond
OWNER /DEVELOPER SIGNATURE

Mark S. Richmond, Chief Stormwater Div.
PRINTED NAME AND TITLE



AS-BUILT CERTIFICATION

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

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION
DAM SAFETY DIVISION

V. P. Dalal 11/16/16
VISTY P. DALAL DATE
15-HR-0018 SR. REGULATORY AND COMPLIANCE ENGINEER

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond 6/25/14
CHIEF, STORMWATER MANAGEMENT DIVISION 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

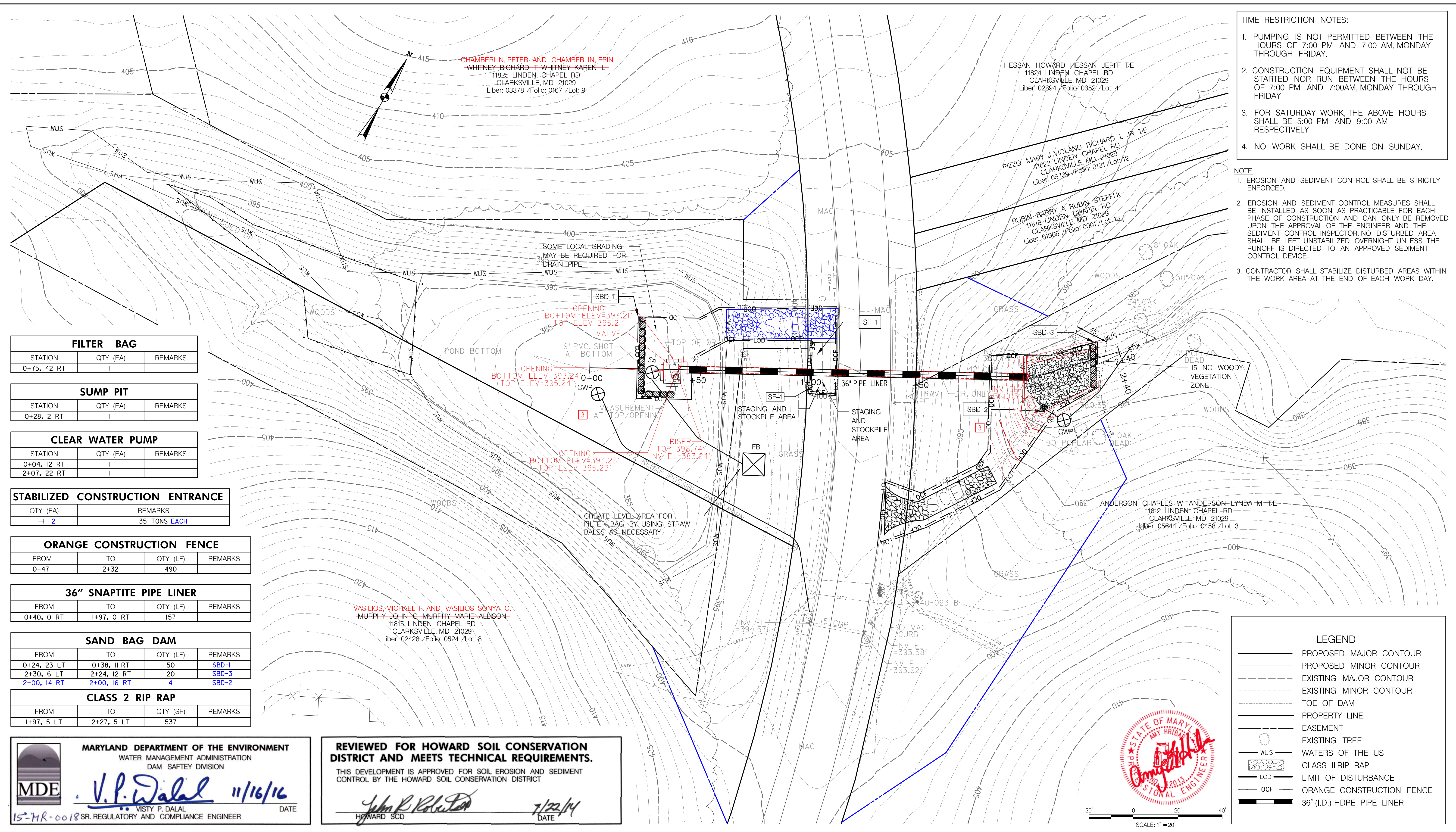


DES: MG				
DRN: MR				
CHK: CB	ADM	3	AS-BUILT SURVEY	5/19/17
	ADM	2	RISER REVISION	11/9/16
	ADM	1	RISER CLARIFICATION AND E&S REVISIONS	4/1/15
DATE: 6/18/14	BY	NO.	REVISION	DATE

**LINDEN CHAPEL ROAD
PRINCIPAL SPILLWAY LINING AND
RISER REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY**

TITLE SHEET

SCALE AS SHOWN
SHEET 1 OF 6



- 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 7:00AM, 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. CONTRACTOR SHALL STABILIZE DISTURBED AREAS WITHIN THE WORK AREA AT THE END OF EACH WORK DAY.

FILTER BAG		
STATION	QTY (EA)	REMARKS
0+75, 42 RT	1	

SUMP PIT		
STATION	QTY (EA)	REMARKS
0+28, 2 RT	1	

CLEAR WATER PUMP		
STATION	QTY (EA)	REMARKS
0+04, 12 RT	1	
2+07, 22 RT	1	

STABILIZED CONSTRUCTION ENTRANCE	
QTY (EA)	REMARKS
+ 2	35 TONS EACH

ORANGE CONSTRUCTION FENCE			
FROM	TO	QTY (LF)	REMARKS
0+47	2+32	490	

36" SNAPTITE PIPE LINER			
FROM	TO	QTY (LF)	REMARKS
0+40, 0 RT	1+97, 0 RT	157	

SAND BAG DAM			
FROM	TO	QTY (LF)	REMARKS
0+24, 23 LT	0+38, 11 RT	50	SBD-1
2+30, 6 LT	2+24, 12 RT	20	SBD-3
2+00, 14 RT	2+00, 16 RT	4	SBD-2

CLASS 2 RIP RAP			
FROM	TO	QTY (SF)	REMARKS
1+97, 5 LT	2+27, 5 LT	537	

MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATER MANAGEMENT ADMINISTRATION
 DAM SAFETY DIVISION

V. P. Dalal 11/16/16
 VISTY P. DALAL
 15-MR-0018 SR. REGULATORY AND COMPLIANCE ENGINEER DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

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

John R. Robertson 7/22/14
 HOWARD SCD DATE

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- TOE OF DAM
- PROPERTY LINE
- EASEMENT
- EXISTING TREE
- WATERS OF THE US
- CLASS II RIP RAP
- LOD
- LIMIT OF DISTURBANCE
- OCF
- ORANGE CONSTRUCTION FENCE
- 36" (I.D.) HDPE PIPE LINER

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark D. Preece 7/15/14
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

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

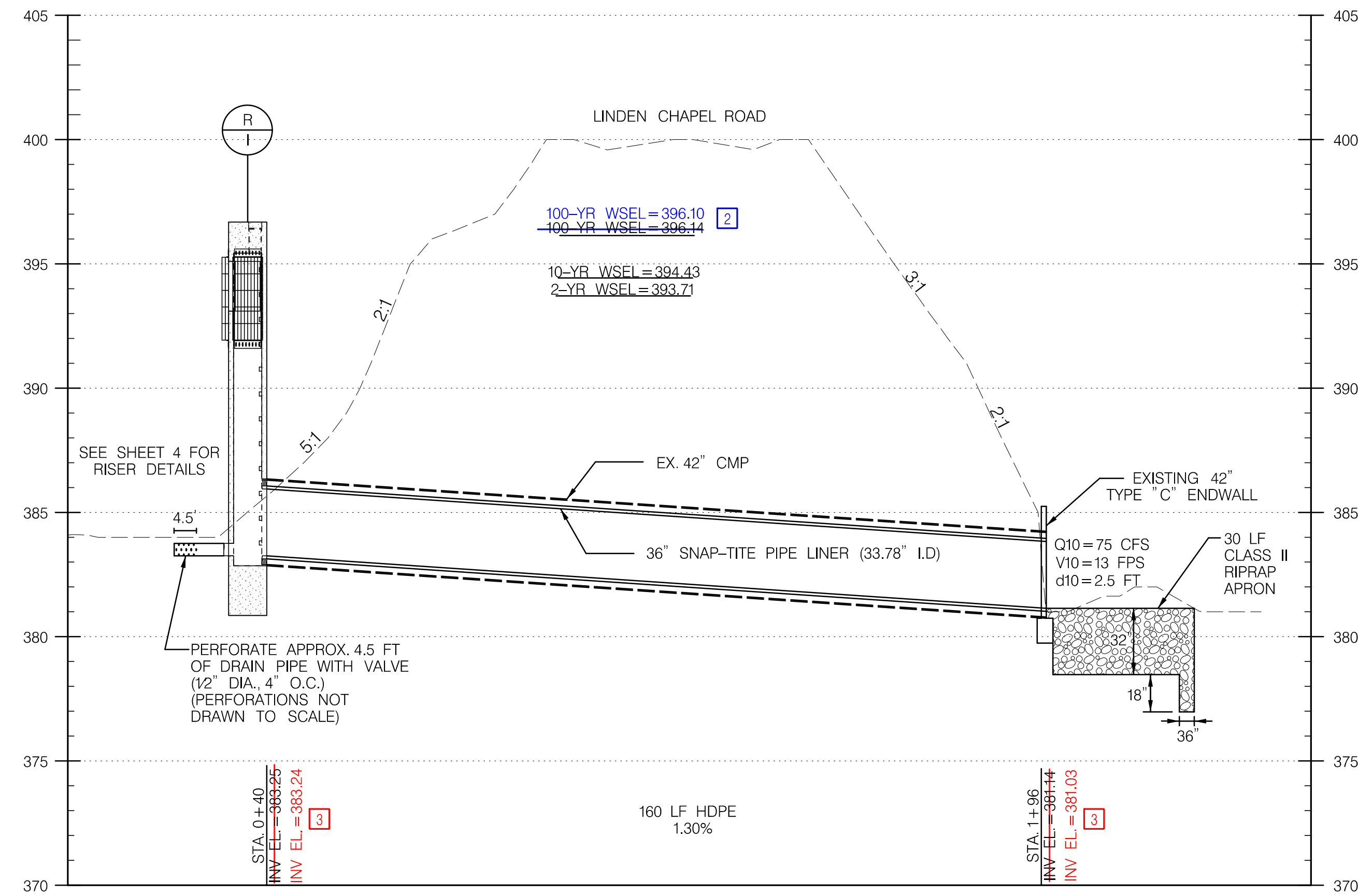
Howard County MARYLAND
 Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143
 (410) 313-6444

DES: MG				
DRN: MR				
CHK: CB	ADM	3	AS-BUILT SURVEY	5/19/17
DATE: 6/18/14	ADM	1	RISER CLARIFICATION AND E&S REVISIONS	4/1/15
BY	NO.		REVISION	DATE

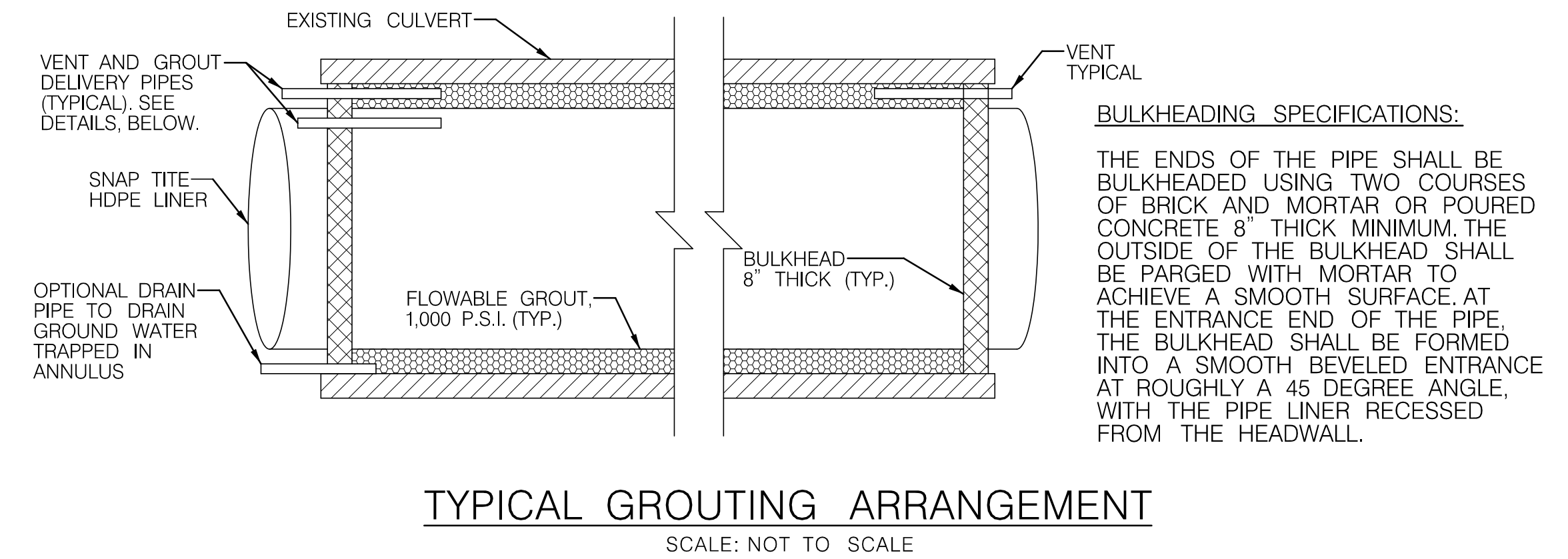
LINDEN CHAPEL ROAD
 PRINCIPAL SPILLWAY LINING AND
 RISER REPLACEMENT PROJECT
 CAPITAL PROJECT #D-1159
 HOWARD COUNTY

SITE PLAN

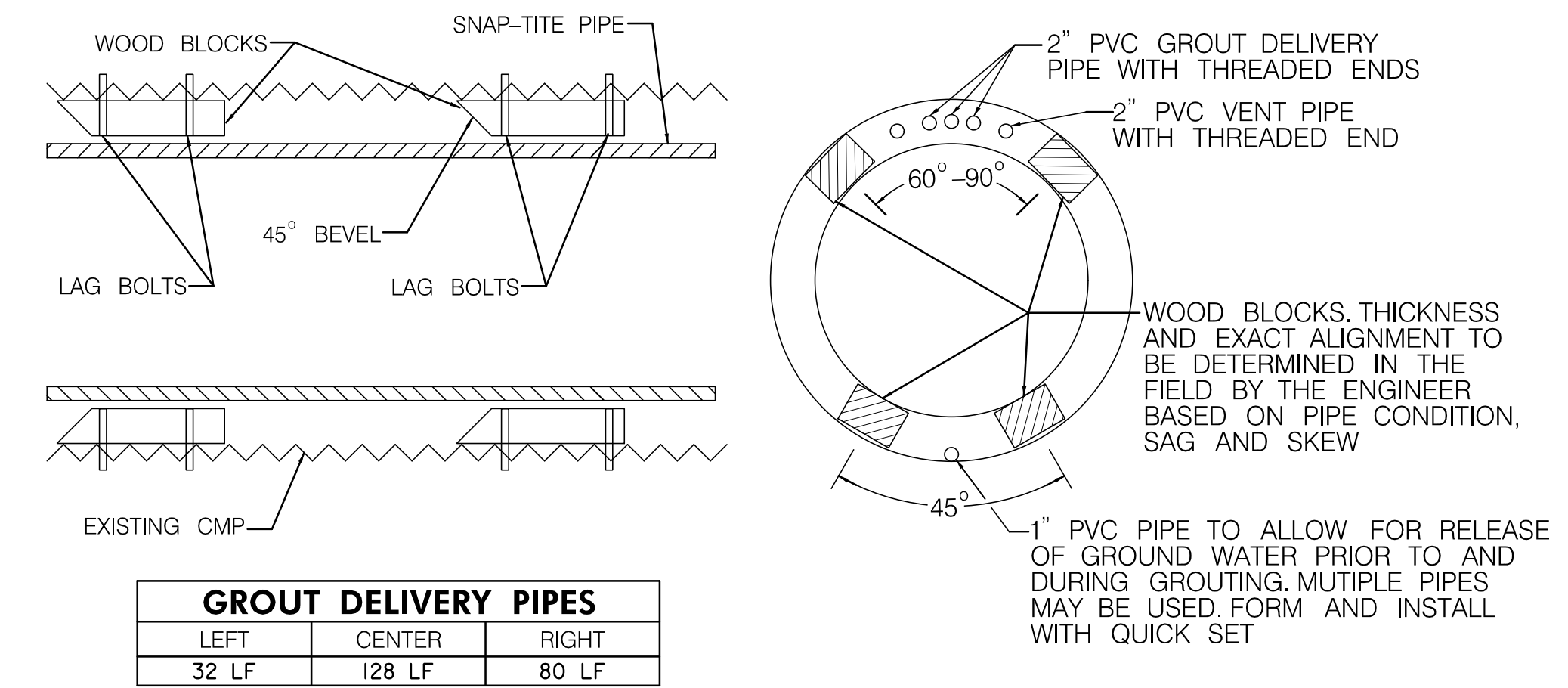
SCALE: 1" = 20'
 SHEET 2 OF 6



NOTES:
 1. PIPE LINER IS TO EXTEND 1' BEYOND EXISTING CMP PIPE.
 2. GRADING MAY BE NECESSARY TO INSTALL DRAIN VALVE PIPE.

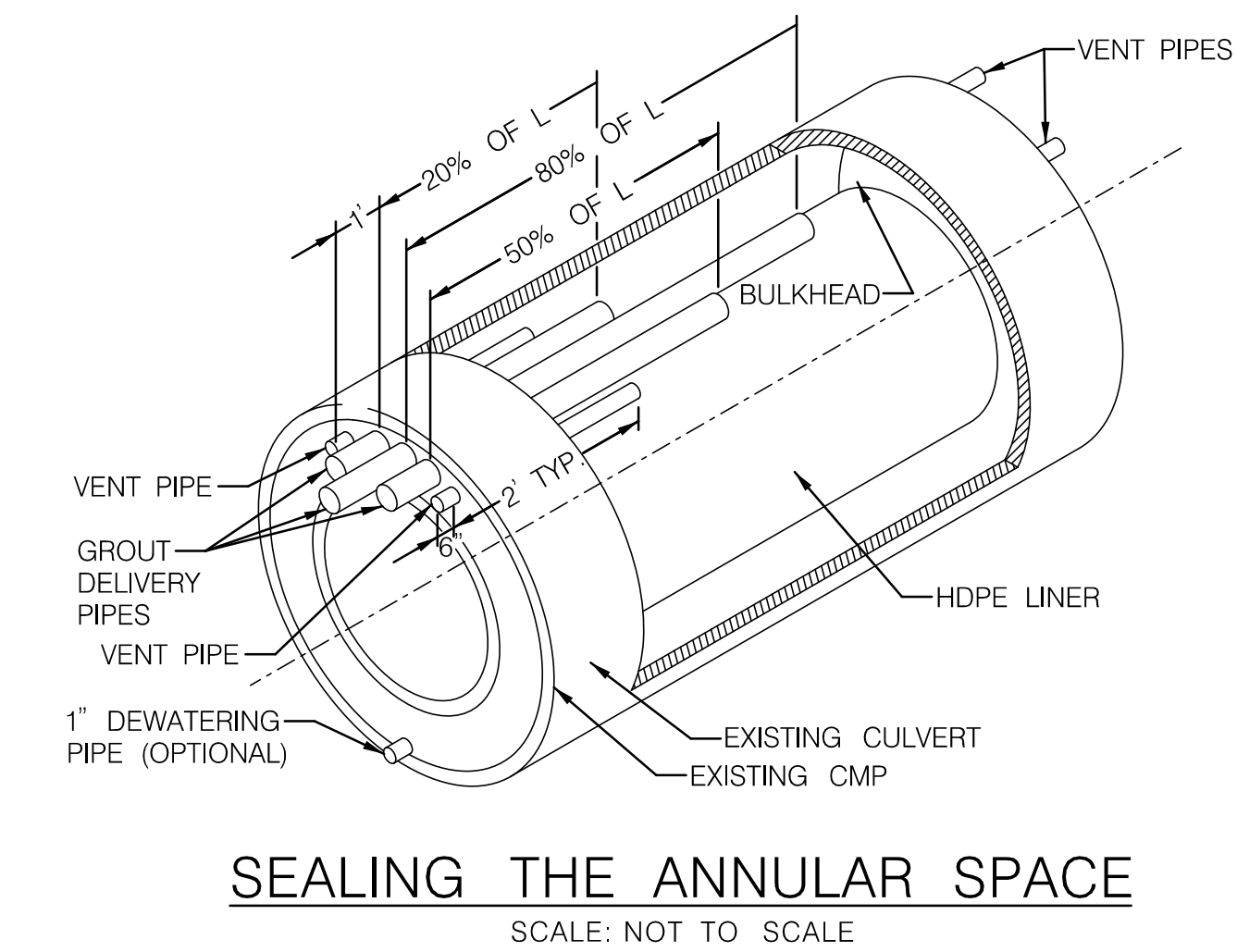


BULKHEADING SPECIFICATIONS:
 THE ENDS OF THE PIPE SHALL BE BULKHEADED USING TWO COURSES OF BRICK AND MORTAR OR POURED CONCRETE 8" THICK MINIMUM. THE OUTSIDE OF THE BULKHEAD SHALL BE PARGED WITH MORTAR TO ACHIEVE A SMOOTH SURFACE. AT THE ENTRANCE END OF THE PIPE, THE BULKHEAD SHALL BE FORMED INTO A SMOOTH BEVELED ENTRANCE AT ROUGHLY A 45 DEGREE ANGLE, WITH THE PIPE LINER RECESSED FROM THE HEADWALL.



GROUT DELIVERY PIPES		
LEFT	CENTER	RIGHT
32 LF	128 LF	80 LF

BLOCKING DETAIL
 SCALE: NOT TO SCALE



MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATER MANAGEMENT ADMINISTRATION
 DAM SAFETY DIVISION

V. P. Dalal 11/16/16
 VISTY P. DALAL
 SR. REGULATORY AND COMPLIANCE ENGINEER

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

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

Professional Engineer
 V. P. Dalal
 License No. 12013

DES: MG				
DRN: MR				
CHK: CB	ADM	3	AS-BUILT SURVEY	5/19/17
DATE: 6/18/14	ADM	2	RISER REVISION	11/9/16
BY	NO.		REVISION	DATE

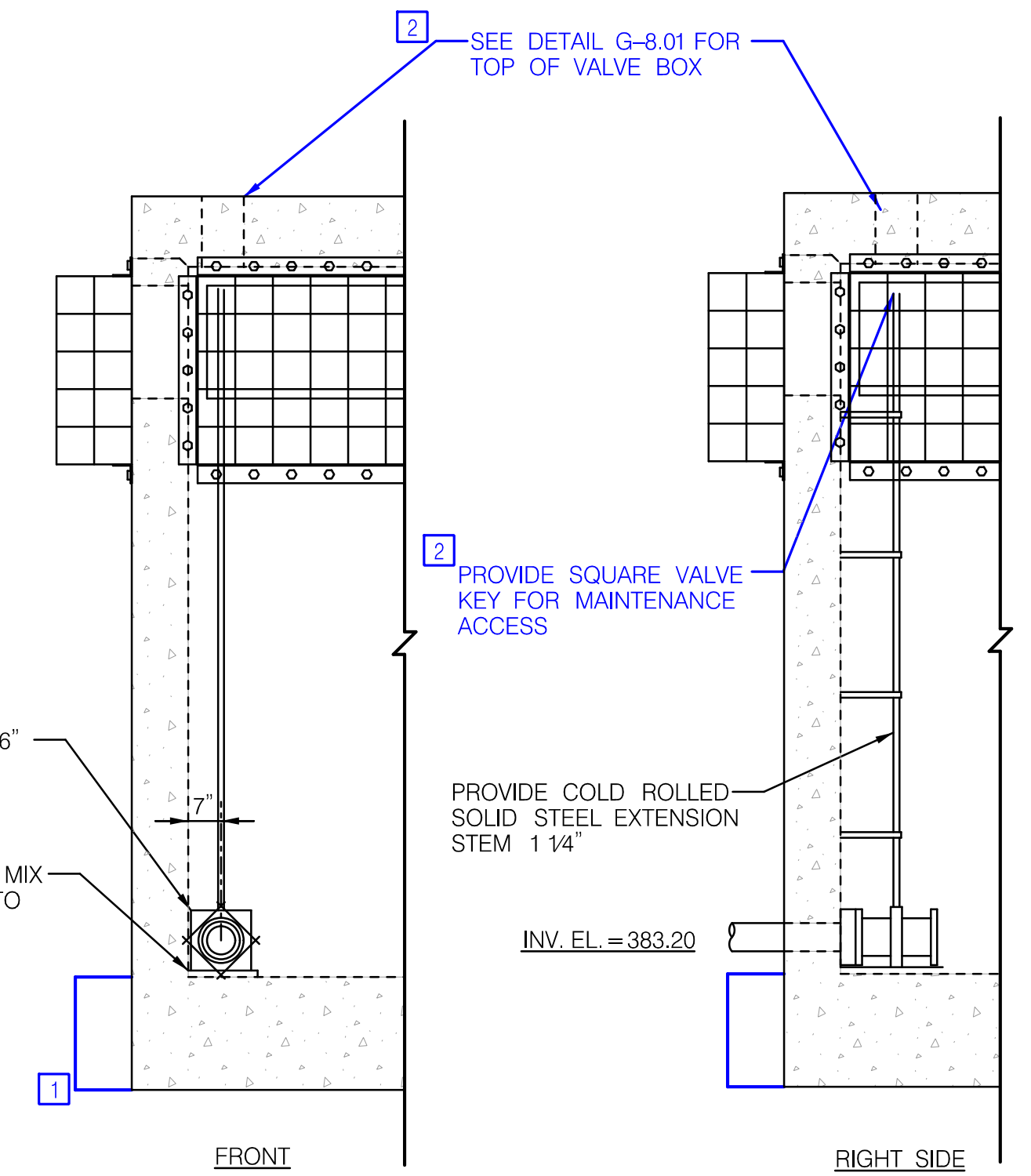
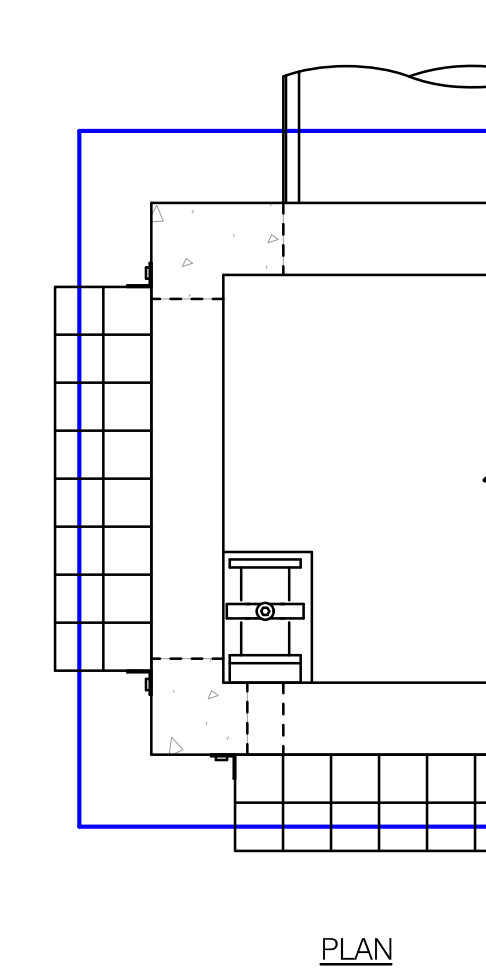
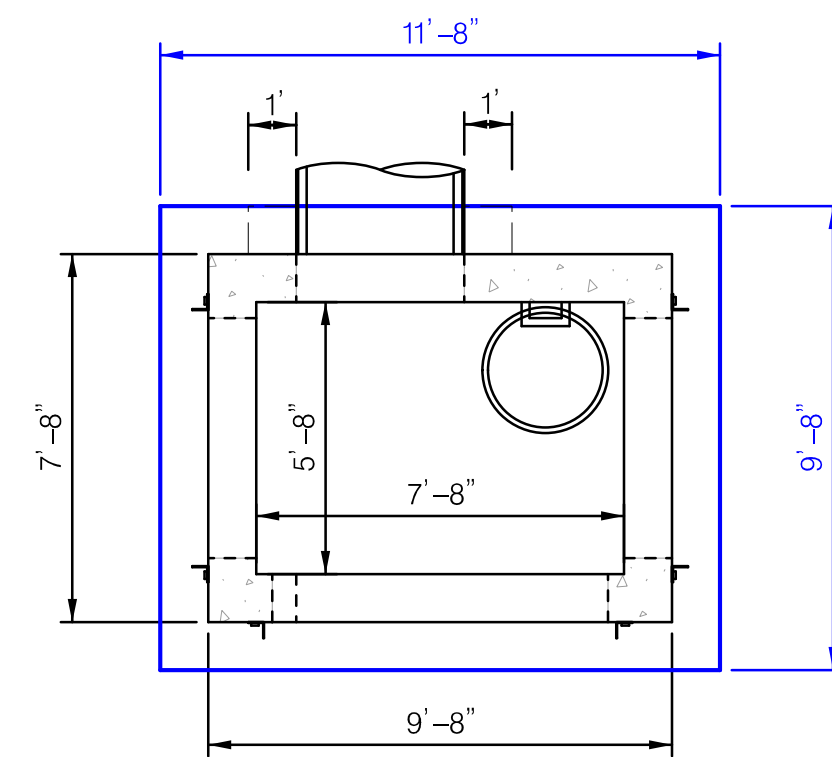
LINDEN CHAPEL ROAD
PRINCIPAL SPILLWAY LINING AND
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CAPITAL PROJECT #D-1159
HOWARD COUNTY

PIPE PROFILE

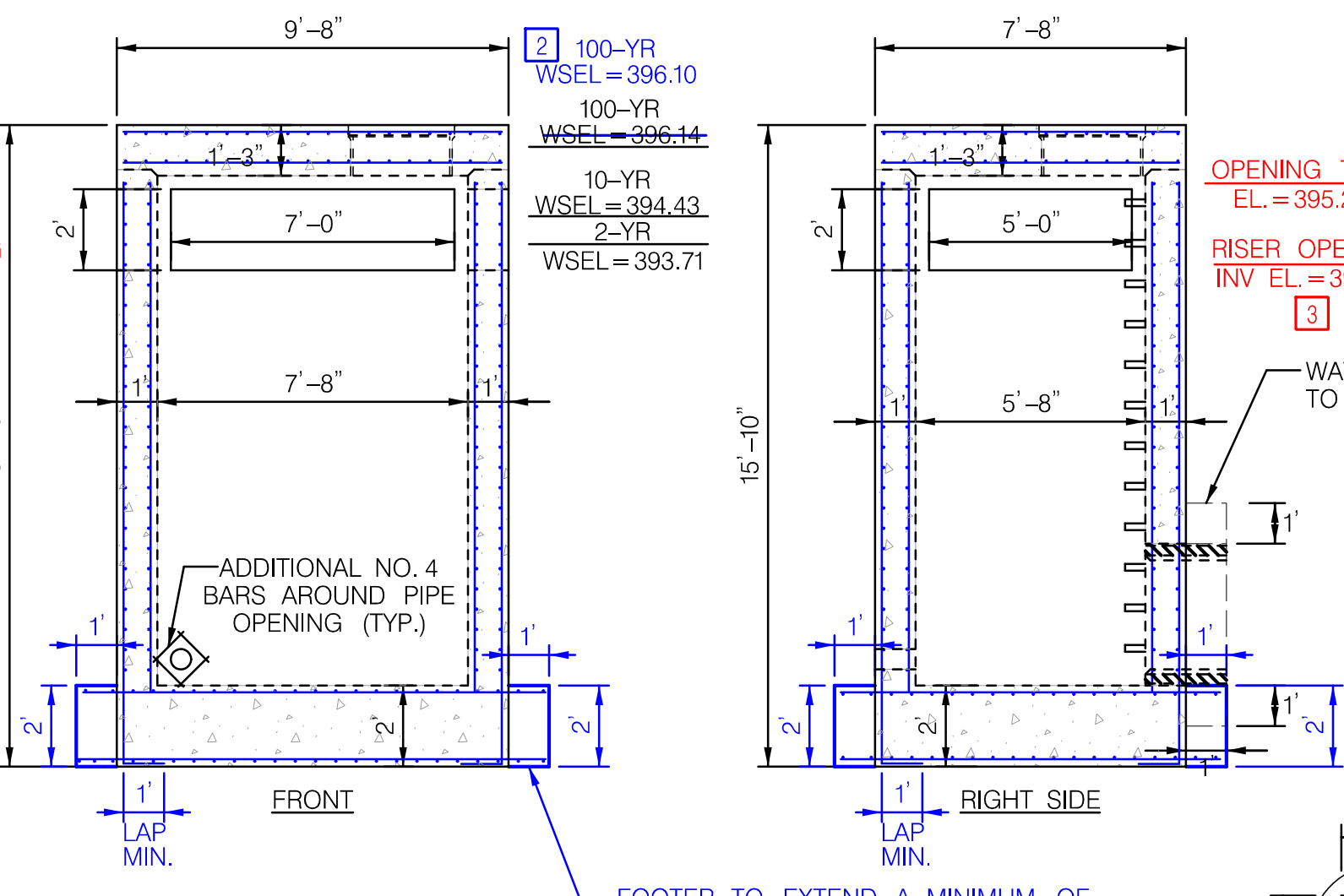
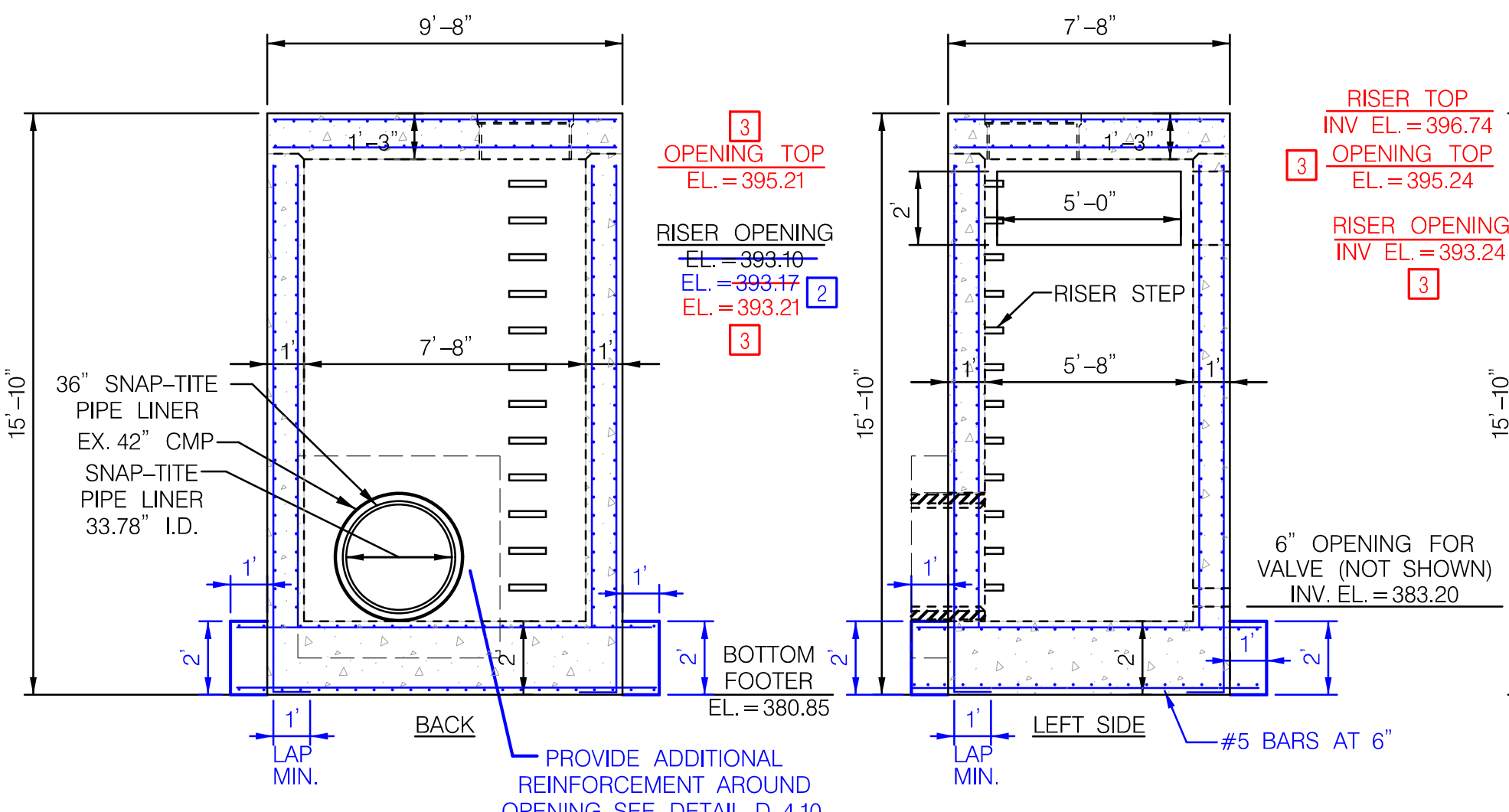
SCALE: AS SHOWN
 SHEET: 3 OF 6

RISER CONSTRUCTION NOTES:

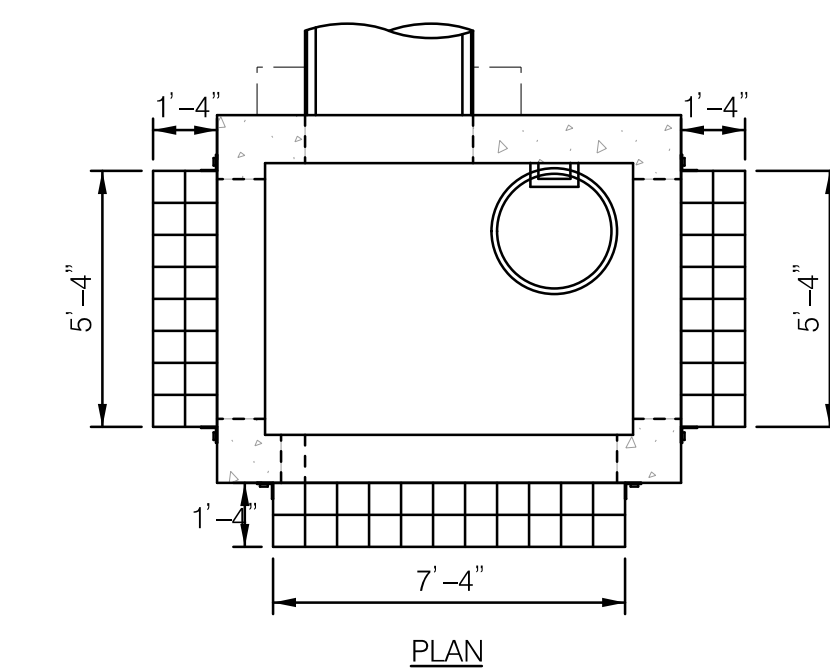
- RISER STEPS SHALL FOLLOW DETAIL G-5.21 FOR MANHOLE AND INLET STEPS
- SHA MIX NO. 3 CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITION OF ACI 301 AND ACI 318.
- RISER STRUCTURE SHALL BE CAST IN PLACE AND DESIGNED IN ACCORDANCE TO LOADING SPECIFIED IN LATEST EDITIONS OF ASTM C857 AND ASTM C890.
- RISER STRUCTURE SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C858 AND MARYLAND NRCS POND CODE MD-378.
- RESILIENT CONNECTORS BETWEEN MANHOLE STRUCTURES, PIPES AND LATERALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C923.
- INVERT SHALL BE APPROVED SHA 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.
- REFER TO DETAIL D-4.10 FOR REBAR PLACEMENT.
- REFER TO DETAIL D-3.91 SIDEWALK FRAME AND COVER FOR MANHOLE COVER.
- RISER SHALL BE CONSTRUCTED AS A MONOLITHIC STRUCTURE.
- A 6" DRAIN VALVE SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE RISER.
- VALVE STEM SHALL BE ANCHORED TO THE CONTROL STRUCTURE AND EXTEND TO THE TOP OF THE RISER FOR MAINTENANCE ACCESS.
- ENSURE WATERTIGHT SEAL AROUND VALVE.
- CONSTRUCT CONCRETE COLLAR TO ENSURE WATERTIGHT SEAL AT RISER AND PIPE CONNECTION.
14. GEOTECHNICAL ENGINEER TO VERIFY A SUITABLE SUBBASE IS PROVIDED FOR THE RISER. NO GRAVEL SHALL BE USED FOR THE RISER SUBBASE. LEAN CONCRETE IS RECOMMENDED TO IMPROVE SUBBASE STABILITY IF NECESSARY.



GATE VALVE DETAIL
NOT TO SCALE



RISER ELEVATION
SCALE: 1" = 4'
GATE VALVE NOT SHOWN ON RISER OR TRASHRACK DETAIL FOR CLARITY



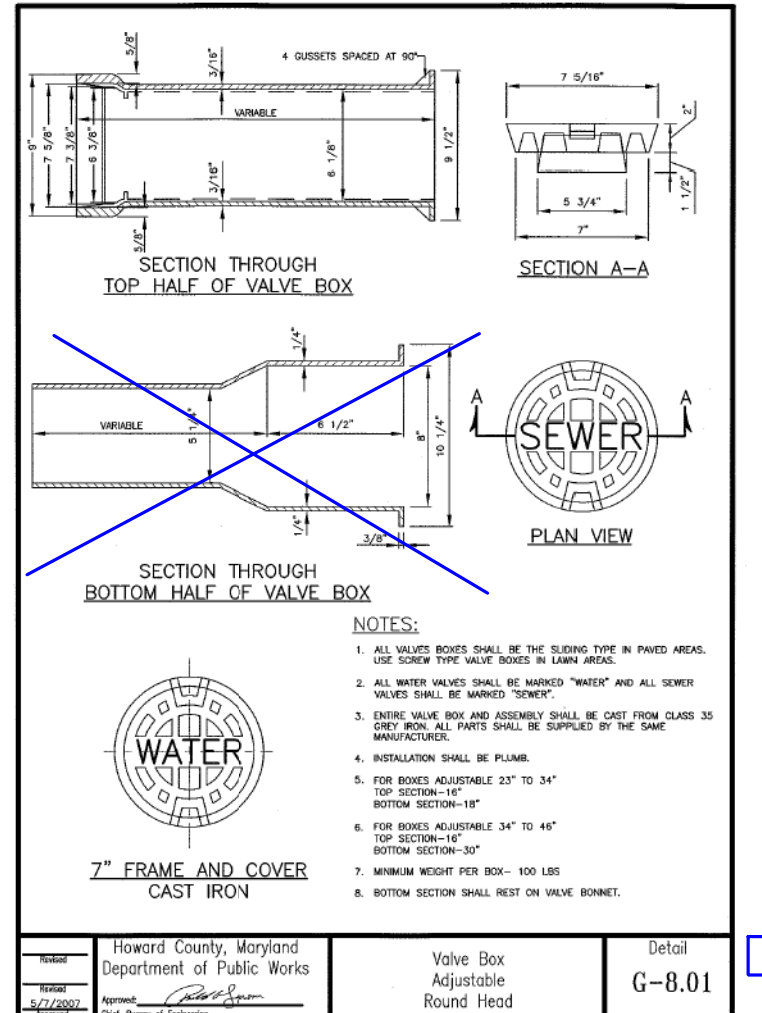
- TRASH RACK CONSTRUCTION NOTES:**
- FRAME SHALL BE CONSTRUCTED OF 4" X 4" X 316" STEEL ANGLE WITH THE CORNERS MITRED AND BUTT WELDED.
 - THE FRAME SHALL BE PAINTED WITH TWO COATS OF COLD GALVANIZED COMPOUND IN "BATTLESHIP GREY".
 - BARS SHALL BE #6 REBAR AT 6" CC EACH WAY, HOT-DIPPED GALVANIZED AND FILLET WELDED TO THE ANGLE FRAME.
 - ALL STEEL SHALL BE ASTM A-36.
 - 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.
 - ENSURE A 1" CLEARANCE BETWEEN TRASH RACK AND DAM EMBANKMENT SLOPE.

TRASH RACK DETAIL
SCALE: 1" = 4'



MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION
DAM SAFETY DIVISION

V. P. Dalal 11/16/16
VISTY P. DALAL
SR. REGULATORY AND COMPLIANCE ENGINEER



7" FRAME AND COVER
CAST IRON

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

W. P. ... 2/6/14
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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

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Storm Water Management Division
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6751 Columbia Gateway Drive, Suite 514
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DES:	MG			
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		ADM	1	RISER CLARIFICATION AND E&S REVISIONS
DATE:	6/18/14	BY	NO.	REVISION
				DATE

LINDEN CHAPEL ROAD
PRINCIPAL SPILLWAY LINING AND
RISER REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY

RISER DETAIL SHEET

SCALE
AS SHOWN

SHEET
4 OF 6

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

SEQUENCE OF CONSTRUCTION

1. A MINIMUM 5-DAY CLEAR WEATHER (NO PRECIPITATION) FORECAST FROM THE NATIONAL WEATHER SERVICE AND PERMISSION FROM THE INSPECTOR SHALL BE OBTAINED PRIOR TO PROCEEDING WITH ANY WORK. OBTAIN GRADING PERMIT AND MDE PERMIT (TRACKING NUMBER 201204477). (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. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF 24 HOURS 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) 665-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY.
3. ORANGE HIGH VISIBILITY FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRECONSTRUCTION MEETING. (1 DAY)
4. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, A REPRESENTATIVE FROM THE BUREAU OF UTILITIES AND A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION. (1 DAY)
5. INSTALL STABILIZED CONSTRUCTION ENTRANCES, CLEARING ONLY THE AREA NEEDED TO INSTALL THE E&S CONTROLS. (1 DAY)
6. DURING A 5 DAY DRY FORECAST FROM THE NATIONAL WEATHER SERVICE, INSTALL THE SAND BAG DAMS, CLEAR WATER PUMPS, HOSE, SUMP PIT AND DEWATERING FILTER BAG. REMOVE EXISTING RISER. (1 DAY)
7. COMPLETE PIPE LINING INSTALLATION AS SHOWN ON PLANS. (2 DAYS)
8. INSTALL NEW RISER (5 DAYS)
9. GROUT ANNULAR SPACE BETWEEN EXISTING PIPE AND LINER. (2 DAYS)
10. INSTALL RIPRAP PAD AND COMPLETE GRADING AROUND PIPE OUTFALL. STABILIZE GRADED AREAS WITH MATTING BY END OF WORK DAY. IF RIPRAP INSTALLATION IS NOT COMPLETED WHEN BASE FLOW RETURNS TO POND LEVEL, PUMP AROUND DOWNSIDE WORK AREA. (1 DAY)
11. INSTALL TRASHRACKS. (2 DAYS)
12. WHEN AREAS ARE FULLY STABILIZED, AND UPON PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS. (1 DAY)

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
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, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR 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 DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPERGERMINATION AND ESTABLISHMENT OF GRASSES.
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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
6. SITE ANALYSIS:

TOTAL AREA OF SITE	0.11 ACRES
AREA DISTURBED	0.11 ACRES
AREA TO BE ROOFED OR PAVED	0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.11 ACRES
TOTAL CU.	0 CU. YDS.
TOTAL FILL	0 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	SEE NOTE 13 BELOW

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.

John P. Kuster 7/12/14
DATE

HOWARD SOIL CONSERVATION DISTRICT

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION
DAM SAFETY DIVISION

V.P. Dalal 11/16/16
DATE

15-MR-0018 SR. REGULATORY AND COMPLIANCE ENGINEER

B-4-3 SEEDING AND MULCHING

- A. SEEDING SPECIFICATIONS
- A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 - B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAW.
 - C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
- A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 1. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE SPECIFIC SEEDING SUMMARIES.
 11. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 1. CULTIPACKER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDS MUST BE FIRM AFTER PLANTING.
 11. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING:
 - NITROGEN: 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE;
 - K2O (POTASSIUM), 200 POUNDS PER ACRE.
 11. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 111. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - 11V. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
- B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYLL.
 1. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 11. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 111. WCFM MATERIAL ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
 - 11V. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - 1V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 1 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PERCENTAGE RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
 2. APPLICATION
 - A. APPLY MULCH TO ALL SEEDING AREAS IMMEDIATELY AFTER SEEDING.
 - B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDING AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 3. ANCHORING
 - A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 1. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON SLOPES WITH A MINIMUM OF 3:1. USE OF THESE TOOLS ON SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 11. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 111. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETEROSET, TERRA TACK II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - 11V. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 TEMPORARY STABILIZATION

HARDINESS ZONE (FROM FIGURE B.3)		SEED MIXTURE (FROM TABLE B.3)		FERTILIZER RATE (10-20-20)			LIME RATE
6B		SEE BELOW					
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	436 LB/AC (10 LB/ 1000 SF)		2 TON/AC (90 LB/ 1000 SF)
	ANNUAL RYEGRASS	40	MAR. 1 TO MAY 15; AUG. 1 TO OCT 15	0.5			
	FOXTAIL MILLET	30	MAY 16 TO JULY 31	0.5			

B-4-5 PERMANENT STABILIZATION

HARDINESS ZONE (FROM FIGURE B.3)		SEED MIXTURE (FROM TABLE B.3)		FERTILIZER RATE (10-20-20)			LIME RATE	
6B		1						
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P ₂ O ₅	K ₂ O	
1	SWITCH GRASS	10	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.	45 LB/AC (1.0 LB/ 1000 SF)	90 LB/AC (2.0 LB/ 1000 SF)	90 LB/AC (2.0 LB/ 1000 SF)	2 TON/AC (90 LB/ 1000 SF)
	CREeping RED FESCUE	15	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.				
	PARTRIDGE PEA	4	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.				

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Michael P. DeLuca 7/15/14
DATE

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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

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

DES: MG

DRN: MR

CHK: CB

DATE: 6/18/14

BY	NO.	REVISION	DATE

LINDEN CHAPEL ROAD
PRINCIPAL SPILLWAY LINING AND
RISER REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY

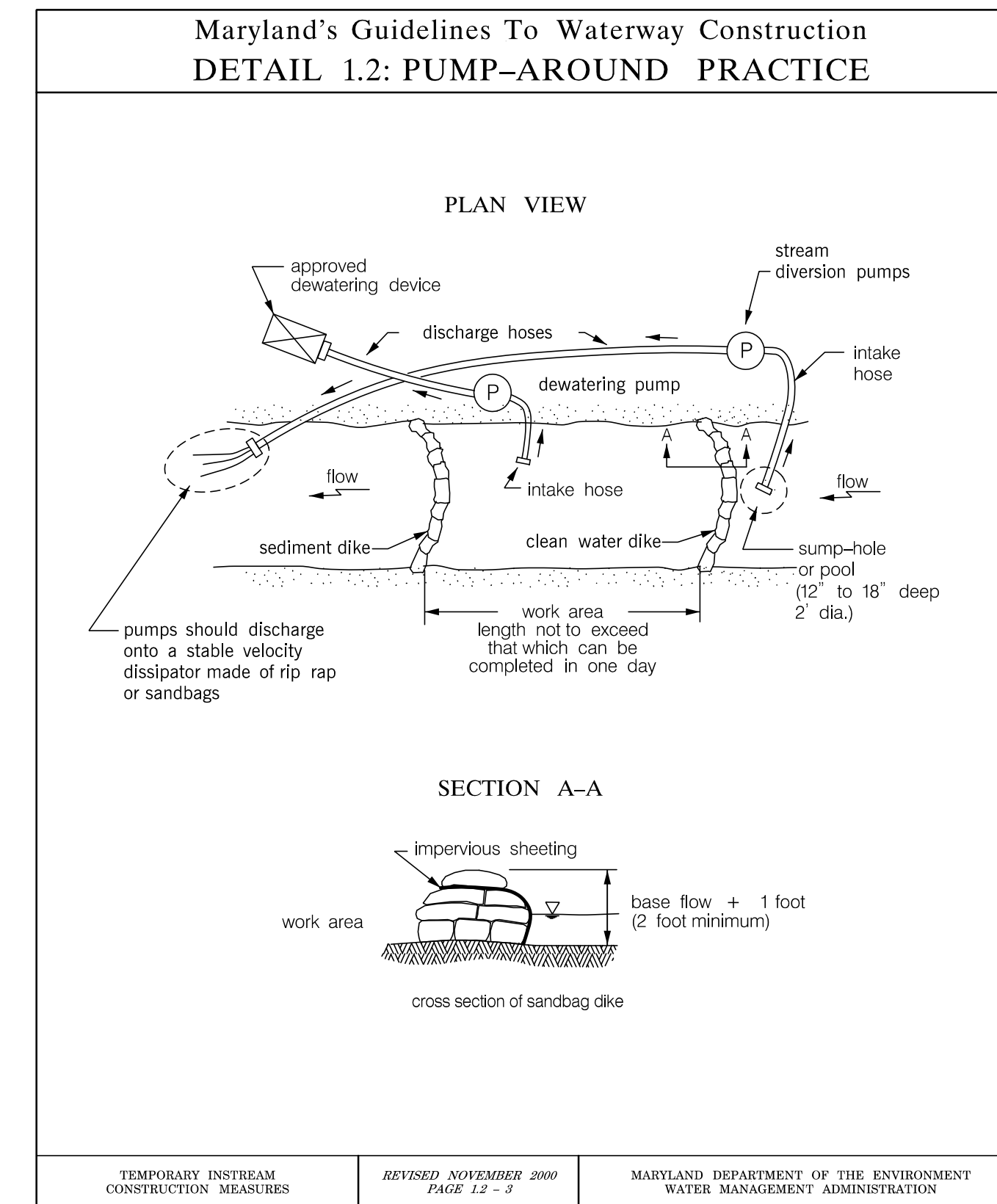
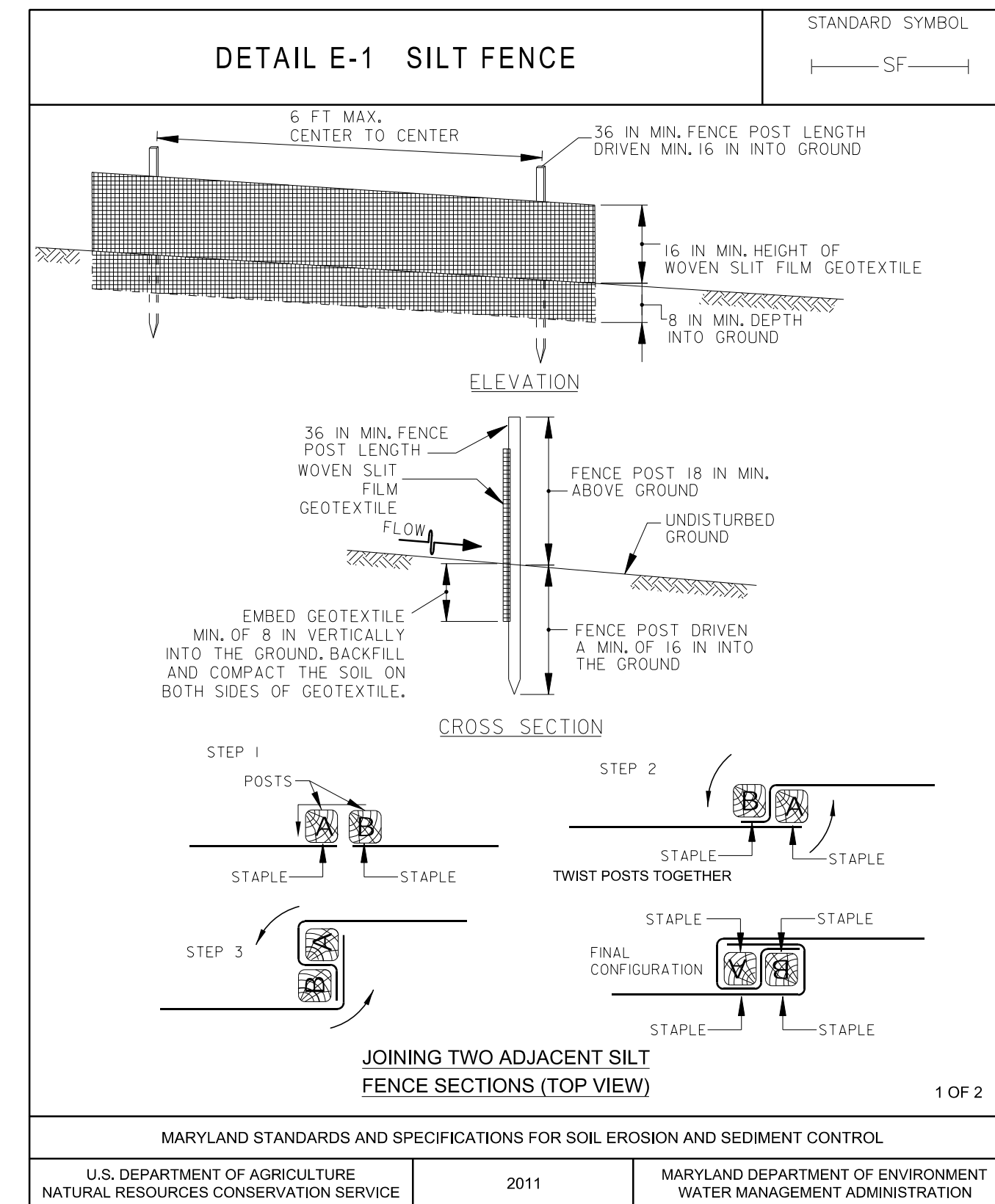
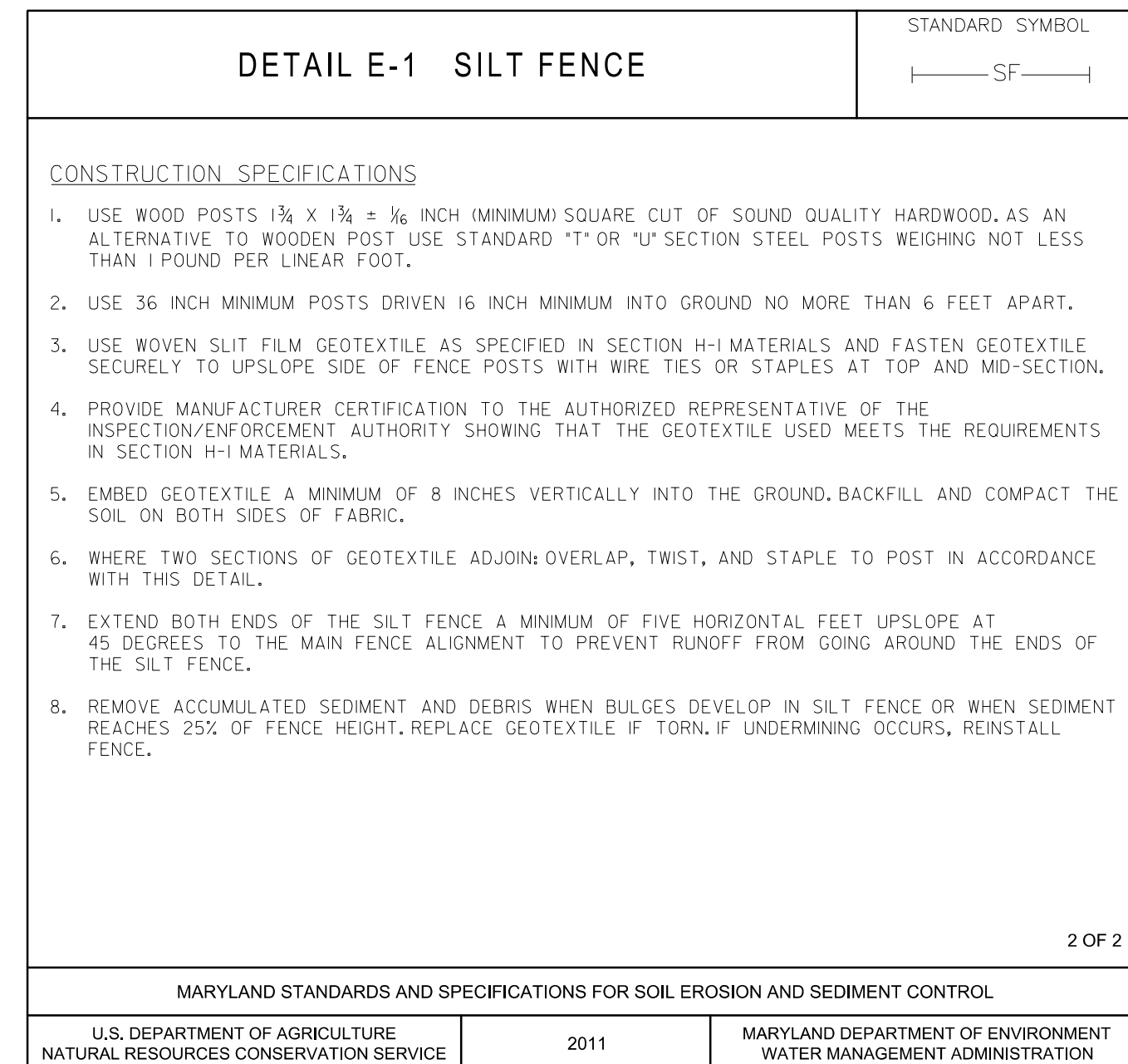
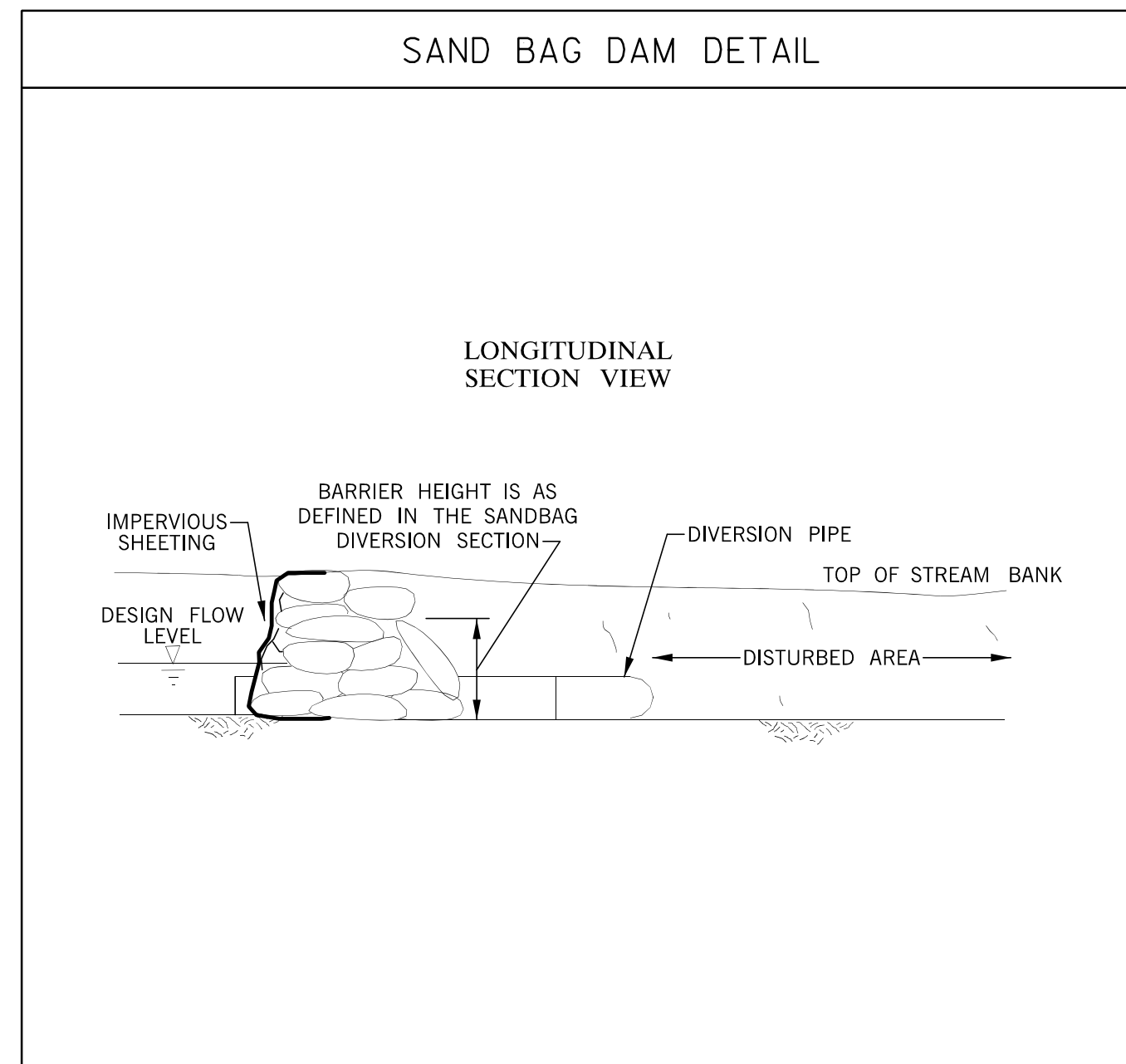
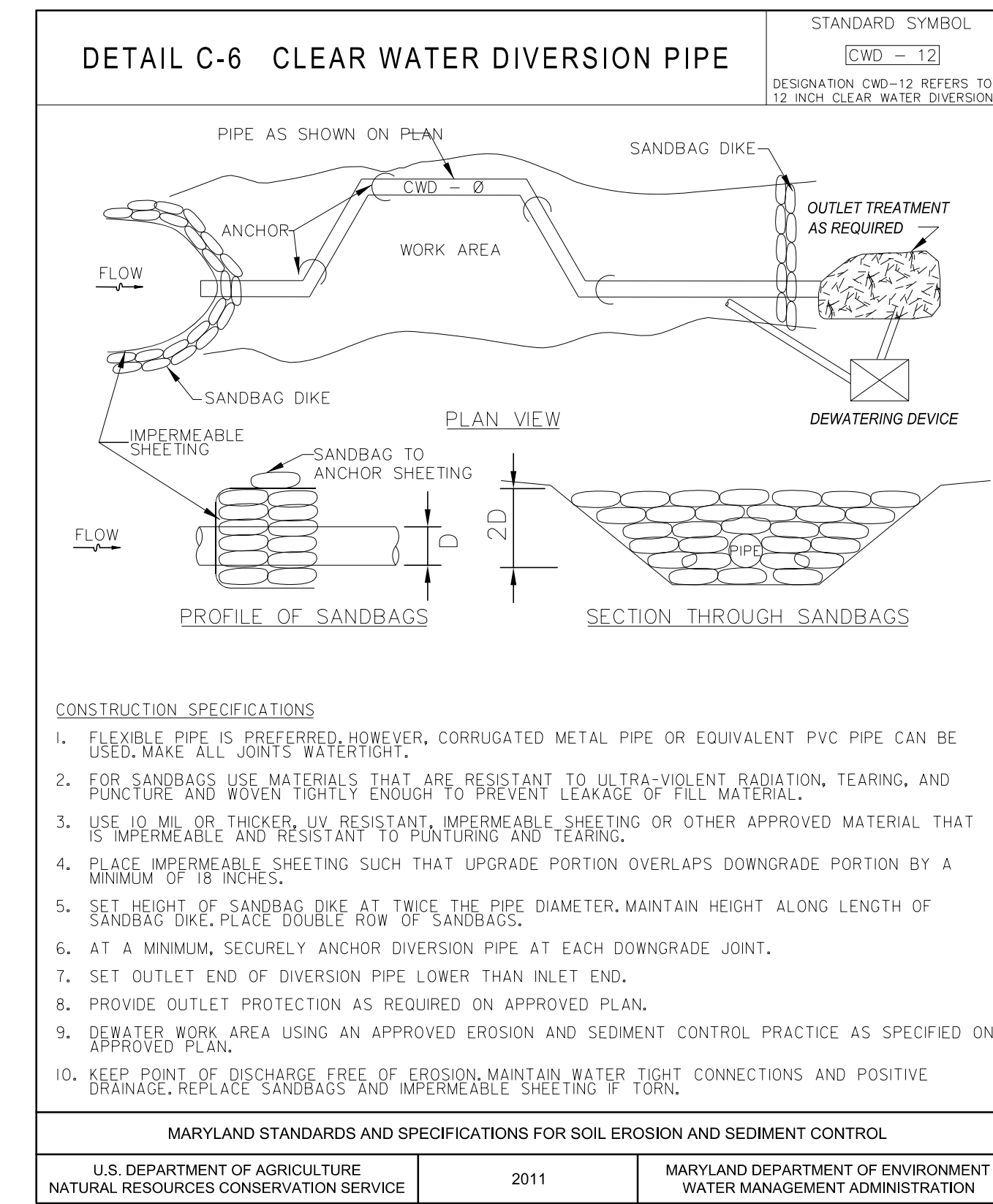
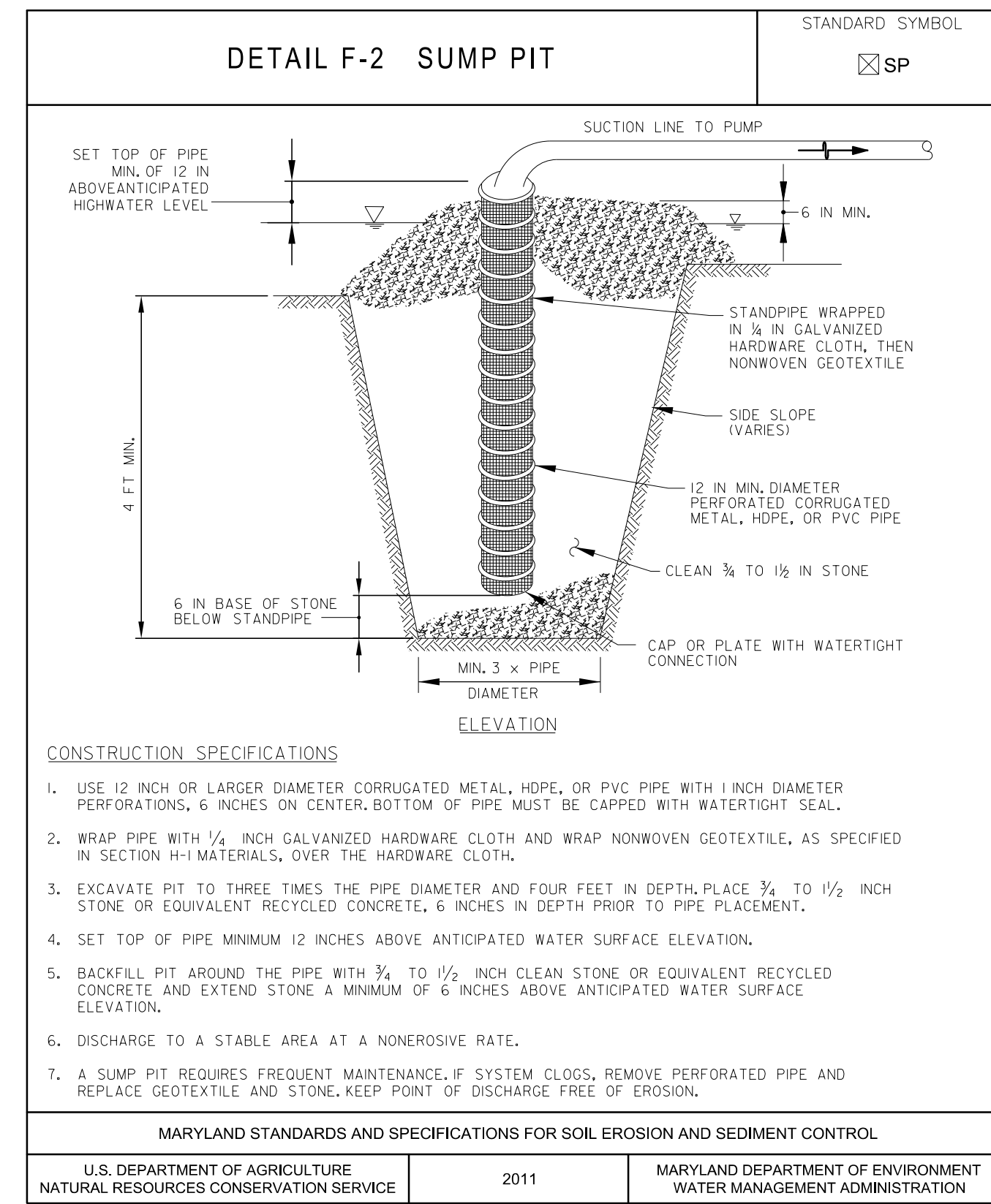
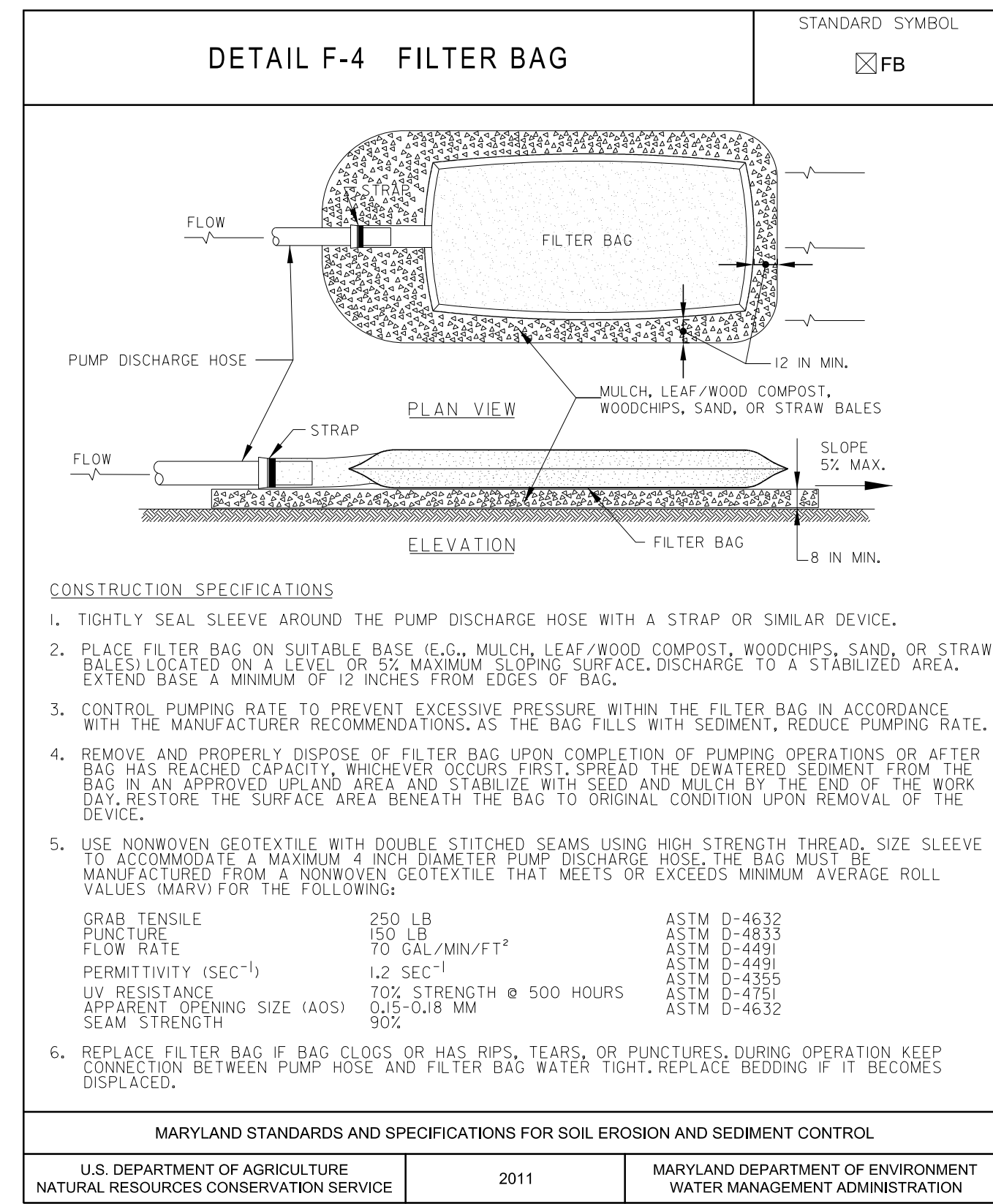
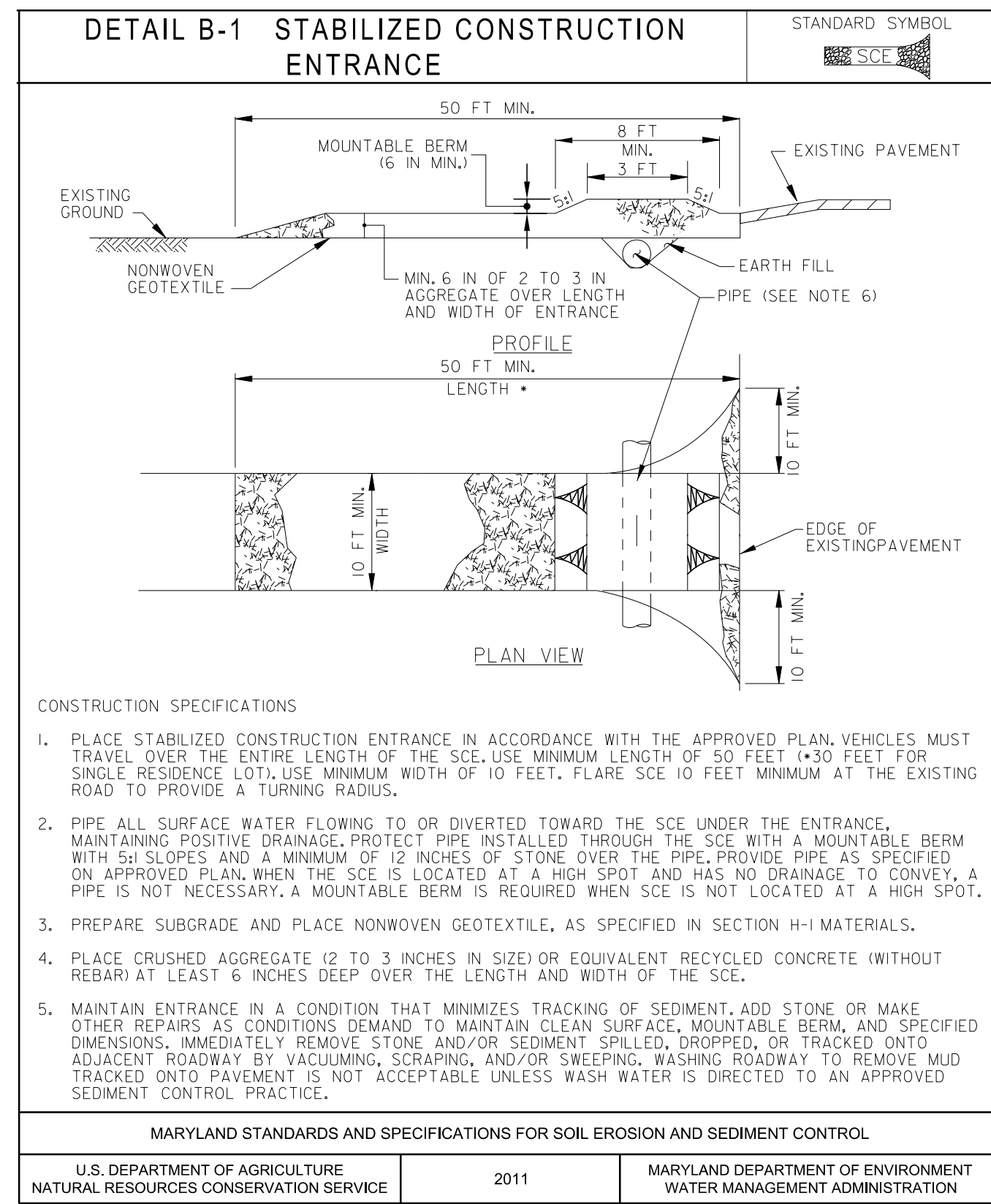
EROSION AND SEDIMENT CONTROL NOTES

SCALE

NOT TO SCALE

SHEET

5 OF 6



MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION
DAM SAFETY DIVISION

V.P. Dalal 11/16/16
VISIT P. DALAL
15-MR-0018 SR. REGULATORY AND COMPLIANCE ENGINEER DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

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

John R. Roberts 7/22/14
HOWARD SCD DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. ... 7/15/14
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

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Bureau of Environmental Services
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Columbia, Maryland 21046-3143
(410) 313-6444



DES:	MG				
DRN:	MR				
CHK:	CB				
DATE:	6/18/14	BY	NO.	REVISION	DATE

LINDEN CHAPEL ROAD
PRINCIPAL SPILLWAY LINING AND RISER REPLACEMENT PROJECT
CAPITAL PROJECT #D-1159
HOWARD COUNTY
EROSION AND SEDIMENT CONTROL DETAIL SHEET

SCALE: NOT TO SCALE
SHEET: 6 OF 6