

HOWARD COUNTY

Capital Project #D-1158

Tuscany Road Stream Rehabilitation Project

Storm Water Management Division
Bureau Of Environmental Services

INDEX OF SHEETS

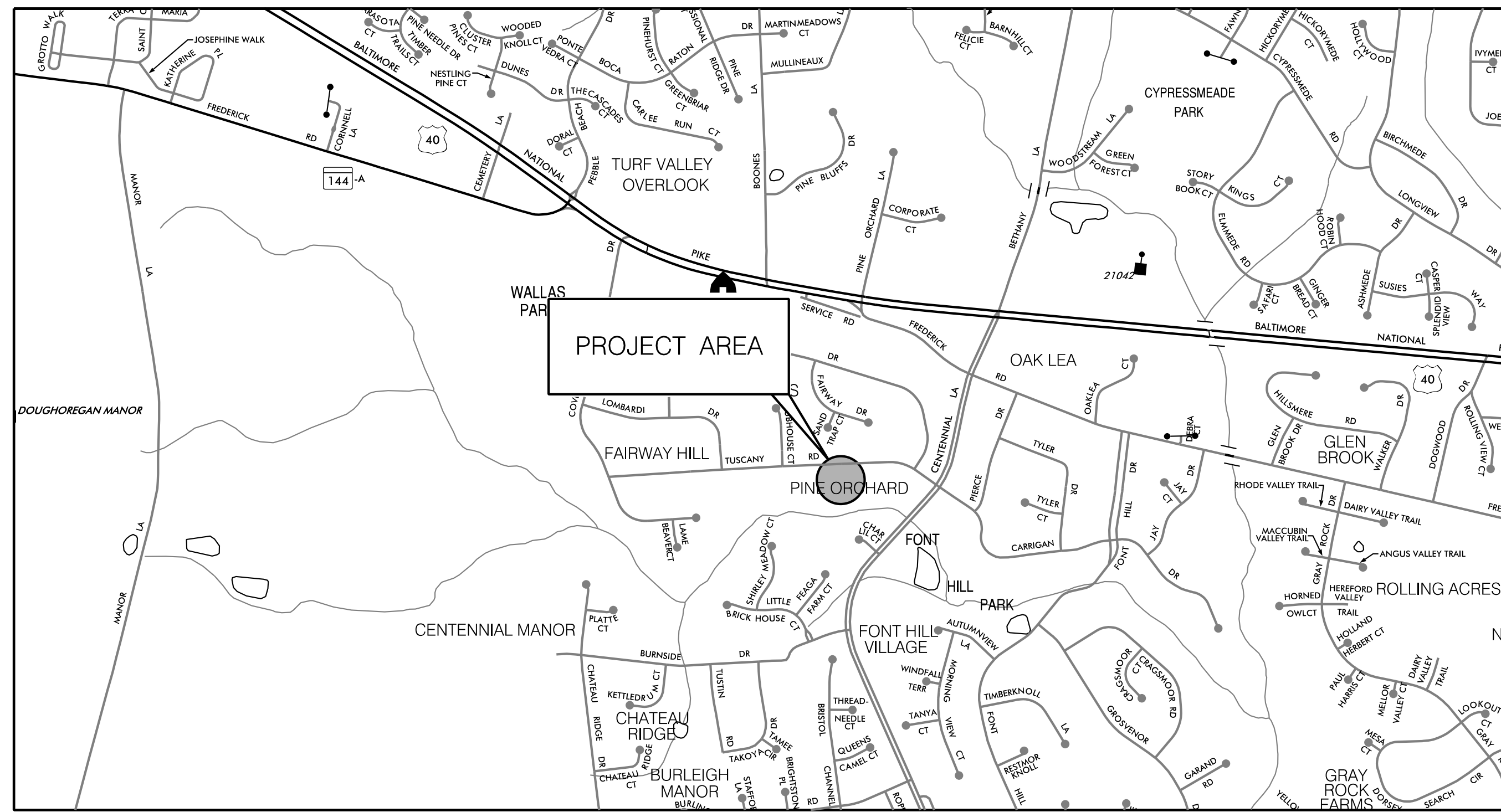
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PROPOSED MEDIAN BARRIER	
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EXISTING ROADWAY	
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TRAVERSE POINT	
APPROXIMATE LIMITS OF CUT AND/OR FILL	
PROPOSED MAJOR CONTOUR	
PROPOSED MINOR CONTOUR	
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EXISTING MAJOR CONTOURS	
EXISTING MINOR CONTOURS	
EXISTING PIPE/CULVERT	
EXISTING DROP INLET	
WETLAND	
WATERS OF THE US	
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 MDSA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
- THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS /BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS, INC.-JULY 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 WERE DELINEATED BY McCORMICK TAYLOR JULY 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'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 THE FAIRWAYS SECTION 1, AREA 2 (F-87-08)
- A JOINT PERMIT APPLICATION WILL BE SUBMITTED TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THIS PROJECT. (TRACKING NUMBER 201261624)
- STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT WILL NOT ADD IMPERVIOUS AREA.
- WAIVER PETITION WP-13-111 HAS BEEN APPROVED BY THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING FOR THIS PROJECT, SUBJECT TO THE FOLLOWING CONDITIONS:
 - PETITIONER SHALL SUBMIT TO THE DEPARTMENT OF PLANNING AND ZONING A COPY OF THE MEMORANDUM AUTHORIZING THE DEPARTMENT OF FINANCE, BUREAU OF ACCOUNTING, TO TRANSFER \$3,920.00 TO THE FOREST CONSERVATION FUND- SECTION 16.1211, SAP ACCT. #2060000000-3000-3000000000-PWPW00000000000000-432521.
 - PETITIONER SHALL SUBMIT A COMPLETED FOREST CONSERVATION DATA SUMMARY TO THE DPZ, DIVISION OF LAND DEVELOPMENT, ATTN: DAVE BOELLNER.
 - PETITIONER SHALL, PRIOR TO GRADING PERMIT APPLICATION, OBTAIN A RIGHT-OF-ENTRY FROM THE OWNERS OF THE FAIRWAYS, LOT 132.
 - PETITIONER SHALL OBTAIN ANY REQUIRED PERMITS FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, MARYLAND DEPARTMENT OF THE ENVIRONMENT AND U.S. ARMY CORPS OF ENGINEERS AS APPLICABLE.



DEPARTMENT OF RECREATION AND PARKS, HOWARD COUNTY, MD

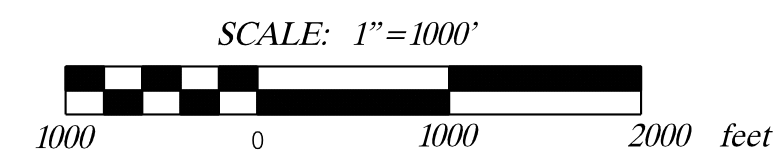
John R. Boyd
DIRECTOR OF RECREATION AND PARKS
6/29/13
DATE

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 R. Polster
HOWARD SOIL CONSERVATION DISTRICT
6/29/13
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. 25819, EXPIRATION DATE: 2/5/2015

DESIGN CERTIFICATION

I CERTIFY THAT THIS PLAN FOR 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.

6-18-2013
DATE
Chris Brooks
DESIGNER'S SIGNATURE
6/21/13
DATE
MARYLAND REGISTRATION NUMBER 25819
CHRIS BROOKS P.E.
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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

6/21/13
DATE
Mark S. Richmond
OWNER/DEVELOPER SIGNATURE
Mark S. Richmond
PRINTED NAME AND TITLE
Acting Division Chief

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Mark S. Richmond
DIRECTOR OF PUBLIC WORKS
6/21/13
DATE
Mark S. Richmond
CHIEF, STORMWATER MANAGEMENT DIVISION
6/21/13
DATE

McCormick Taylor
Engineers & Planners
Since 1946

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

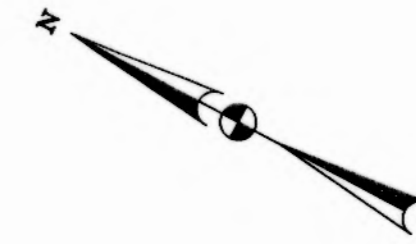


DES:	LEN:	AS-BUILT:	3/24/14
LN			
MR			
CB			
DATE: 6/17/13			
BY:	NO.:	REVISION:	DATE:

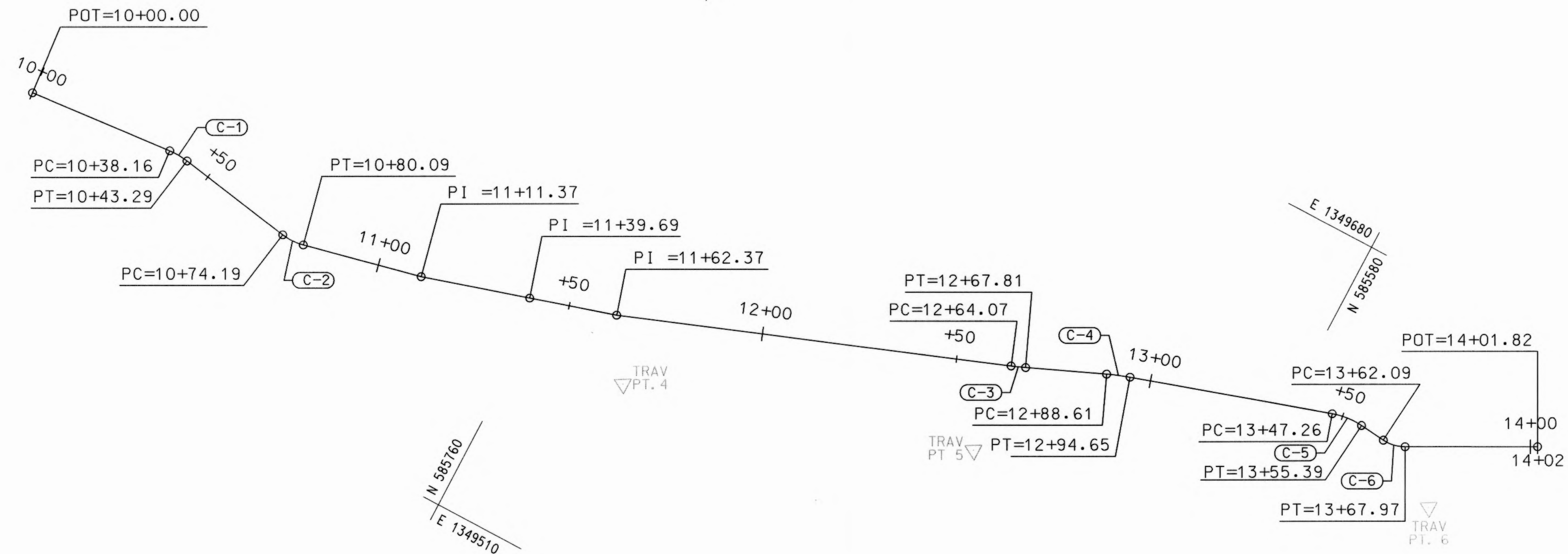
HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

TITLE SHEET

SCALE
AS SHOWN
SHEET
1 OF 11



TRAV
PT. 3



BASELINE CONTROL COORDINATES

CONSTRUCTION	POINT NO.	NORTHING	EASTING	B STATION	BEARING AHEAD	RADIUS
TUSCANY	POB =100	585901.1523	1349554.313	10+00.00	S 5°03'36.82" E	
	PC =101	585863.1451	1349557.678	10+38.16	S 5°03'36.82" E	
	PI	585860.5754	1349557.906	10+40.74	S 9°38'21.46" W	
	CC =102	585861.3811	1349537.756			20.00'
	PT=103	585858.0322	1349557.474	10+43.29	S 9°38'21.46" W	
	PC =104	585827.5655	1349552.299	10+74.19	S 9°38'21.46" W	
	PI	585824.6184	1349551.799	10+77.18	S 12°54'08.82" E	
	CC =105	585825.0539	1349567.087			15.00'
	PT=106	585821.7045	1349552.466	10+80.09	S 12°54'08.82" E	
	PI=107	585791.2199	1349559.449	11+11.37	S 16°45'33.22" E	
	PI=108	585764.0954	1349567.618	11+39.69	S 16°45'33.22" E	
	PI=109	585742.3807	1349574.157	11+62.37	S 20°38'50.71" E	
	PC =110	585647.2133	1349610.018	12+64.07	S 20°38'50.71" E	
	PI	585645.4654	1349610.677	12+65.94	S 23°19'21.15" E	
	CC =111	585675.4226	1349684.879			80.00'
	PT=112	585643.7501	1349611.416	12+67.81	S 23°19'21.15" E	
	PC =113	585624.6453	1349619.653	12+88.61	S 23°19'21.15" E	
	PI	585621.8683	1349620.85	12+91.63	S 17°33'06.04" E	
	CC =114	585600.8909	1349564.555			60.00'
	PT=115	585618.9849	1349621.762	12+94.65	S 17°33'06.04" E	
	PC =116	585568.8308	1349637.625	13+47.26	S 17°33'06.04" E	
	PI	585564.8989	1349638.869	13+51.38	S 5°45'00.91" W	
CC =117	585562.7995	1349618.556			20.00'	
PT=118	585560.7957	1349638.456	13+55.39	S 5°45'00.91" W		
PC =119	585554.1342	1349637.785	13+62.09	S 5°45'00.91" W		
PI	585551.1213	1349637.482	13+65.11	S 27°56'37.84" E		
CC =120	585553.1323	1349647.735			10.00'	
PT=121	585548.4462	1349638.901	13+67.97	S 27°56'37.84" E		
POE =122	585518.539	1349654.765	14+01.82			

CURVE DATA

CURVE NO.	DELTA	Dc	R	T	L	E	CENTER CURVE	
							NORTHING	EASTING
C-1	14°41'58.2795"	286°28'44.0312"	20.00'	2.58'	5.13'	0.17	585861.3811	1349537.7560
C-2	22°32'30.2778"	381°58'18.7080"	15.00'	2.99'	5.90'	0.29	585825.0539	1349567.0873
C-3	2°40'30.4331"	71°37'11.0078"	80.00'	1.87'	3.74'	0.02	585675.4226	1349684.8793
C-4	5°46'15.1047"	95°29'34.6771"	60.00'	3.02'	6.04'	0.08	585600.8909	1349564.5553
C-5	23°18'06.9495"	286°28'44.0312"	20.00'	4.12'	8.13'	0.42	585562.7995	1349618.5564
C-6	33°41'38.7438"	572°57'28.0627"	10.00'	3.03'	5.88'	0.45	585553.1323	1349647.7346

TRAVERSE CONTROL COORDINATES

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
3	585928.3398	1349518.528	384.41	
4	585732.6813	1349559.287	378.19	
5	585645.5762	1349586.422	374.71	
6	585535.8997	1349628.15	372.15	

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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Howard County
M A R Y L A N D

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

DES: LN

DRN: MR

CHK: CB

DATE: 6/17/13

BY	NO.	REVISION	DATE

HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

GEOMETRY SHEET

SCALE

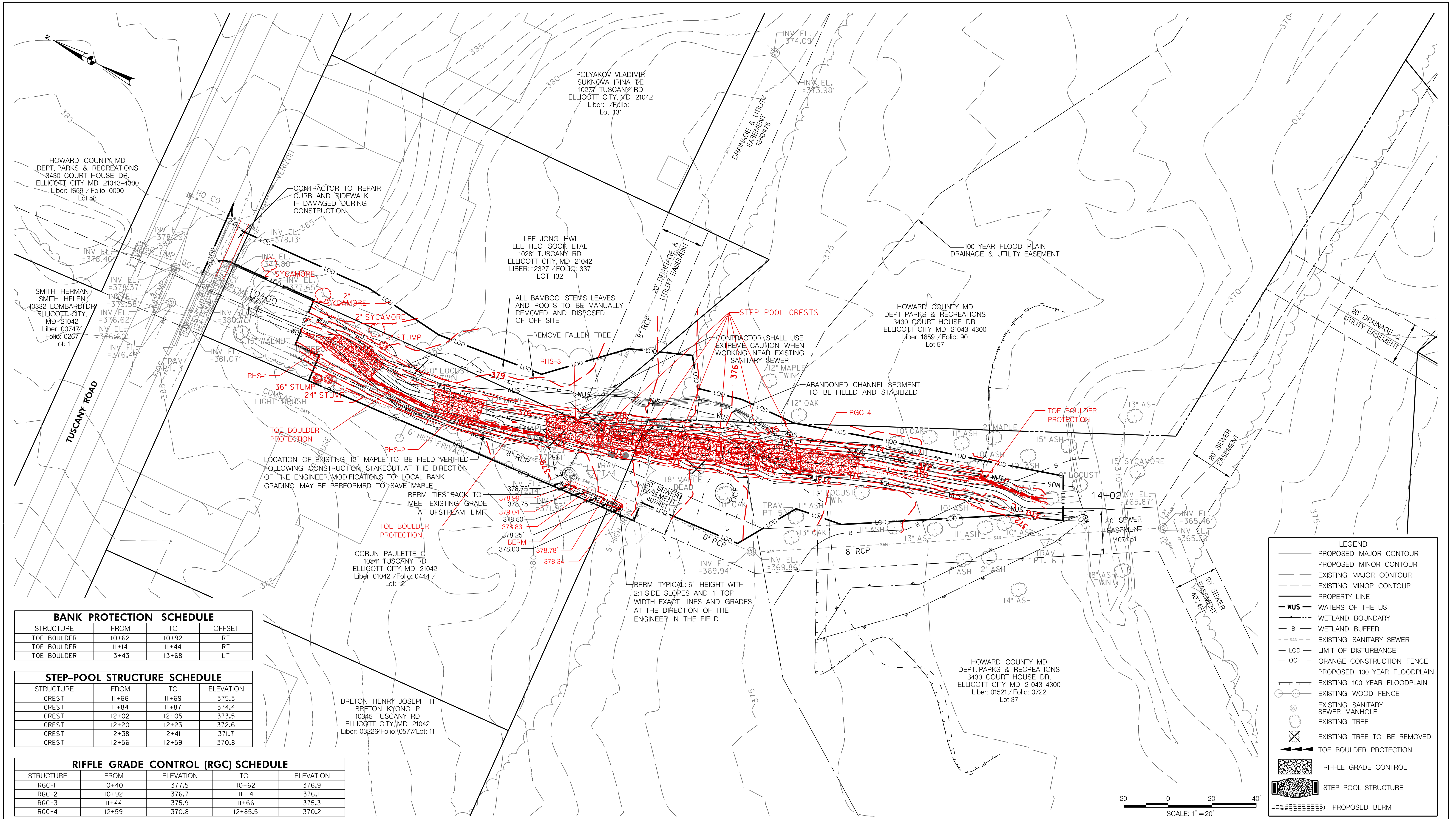
1" = 20'

SHEET

2 OF 11

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/21/13
DATE



BANK PROTECTION SCHEDULE

STRUCTURE	FROM	TO	OFFSET
TOE BOULDER	10+62	10+92	RT
TOE BOULDER	11+14	11+44	RT
TOE BOULDER	13+43	13+68	LT

STEP-POOL STRUCTURE SCHEDULE

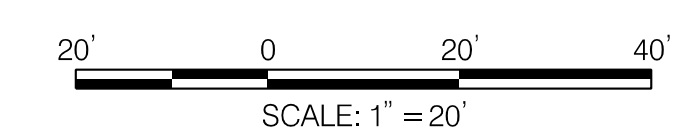
STRUCTURE	FROM	TO	ELEVATION
CREST	11+66	11+69	375.3
CREST	11+84	11+87	374.4
CREST	12+02	12+05	373.5
CREST	12+20	12+23	372.6
CREST	12+38	12+41	371.7
CREST	12+56	12+59	370.8

RIFLE GRADE CONTROL (RGC) SCHEDULE

STRUCTURE	FROM	ELEVATION	TO	ELEVATION
RGC-1	10+40	377.5	10+62	376.9
RGC-2	10+92	376.7	11+14	376.1
RGC-3	11+44	375.9	11+66	375.3
RGC-4	12+59	370.8	12+85.5	370.2

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPERTY LINE
- WUS - WATERS OF THE US
- WETLAND BOUNDARY
- B - WETLAND BUFFER
- SAN - EXISTING SANITARY SEWER
- LOD - LIMIT OF DISTURBANCE
- OCF - ORANGE CONSTRUCTION FENCE
- PROPOSED 100 YEAR FLOODPLAIN
- EXISTING 100 YEAR FLOODPLAIN
- EXISTING WOOD FENCE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- TOE BOULDER PROTECTION
- RIFLE GRADE CONTROL
- STEP POOL STRUCTURE
- PROPOSED BERM



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. ...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/20/13 DATE

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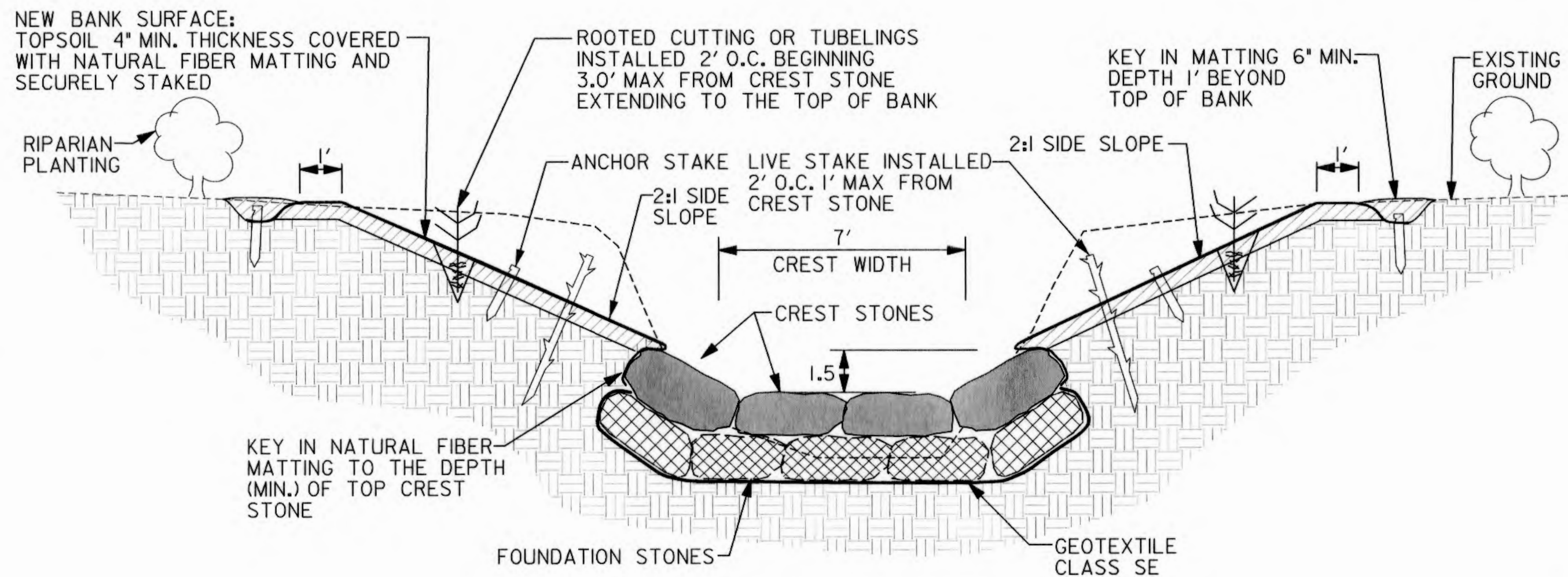


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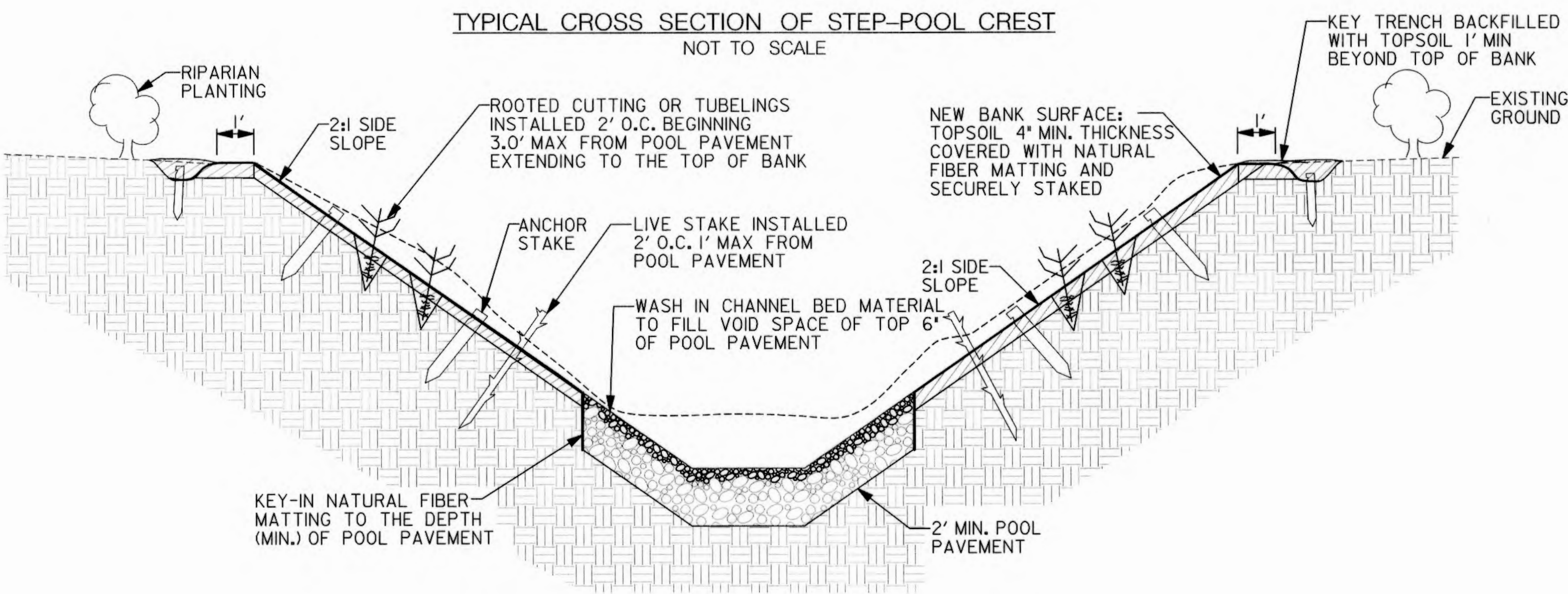
HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

SITE PLAN

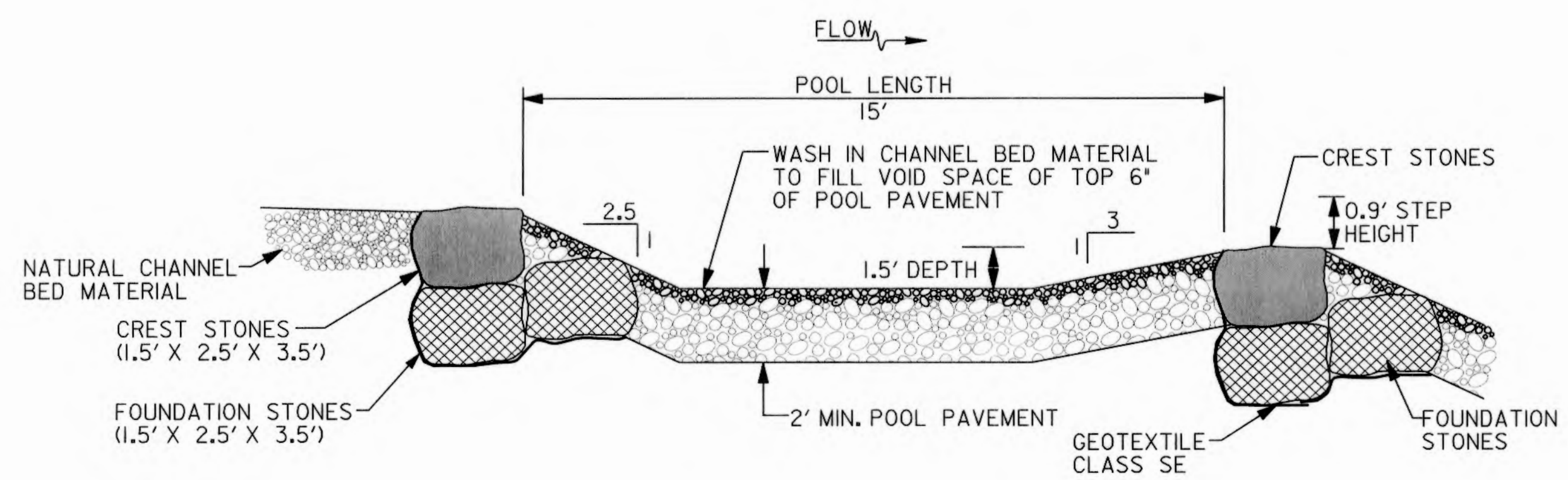
SCALE: 1" = 20'
SHEET: 3 OF 11



TYPICAL CROSS SECTION OF STEP-POOL CREST
NOT TO SCALE



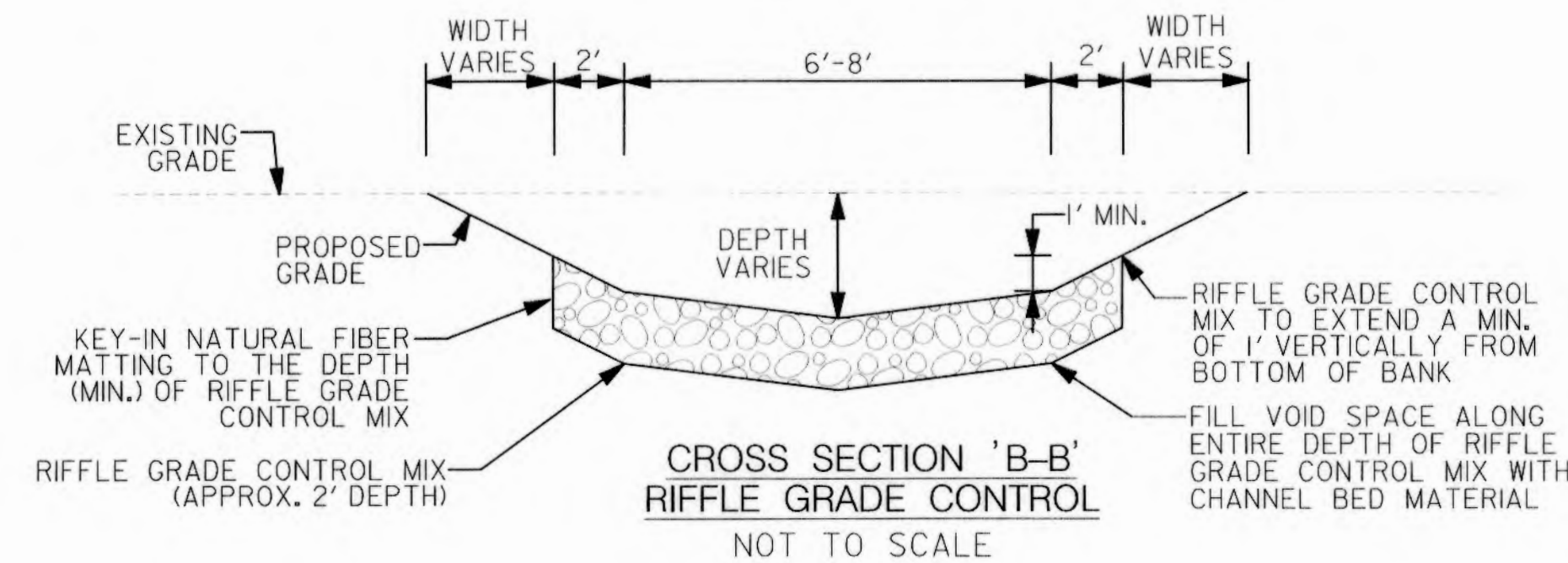
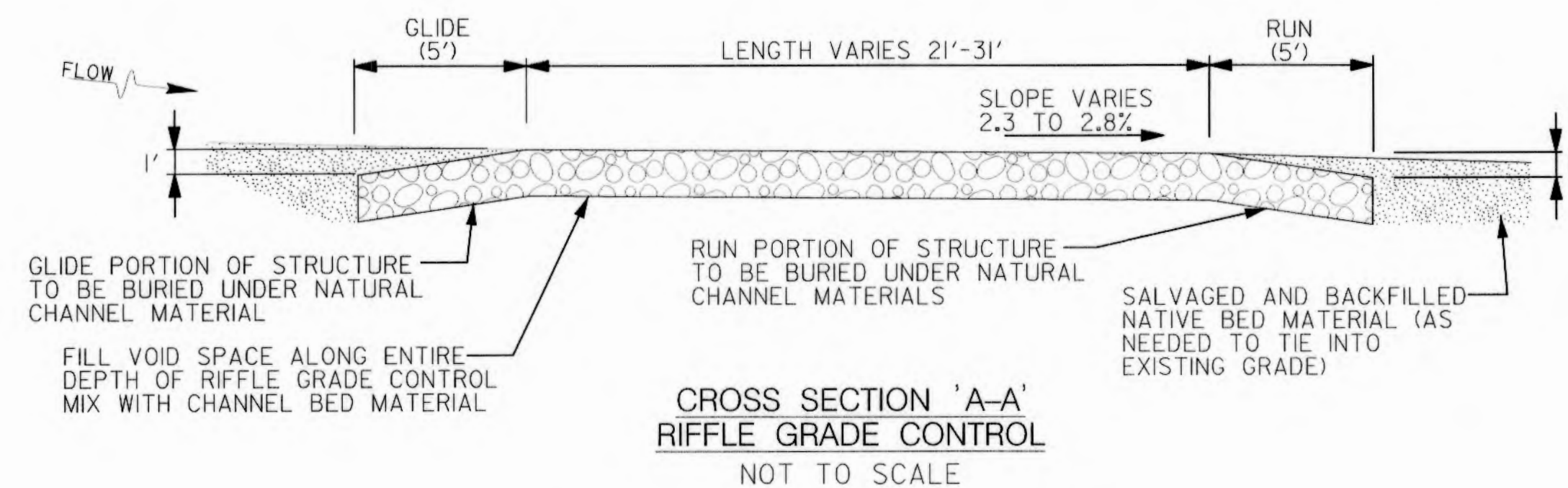
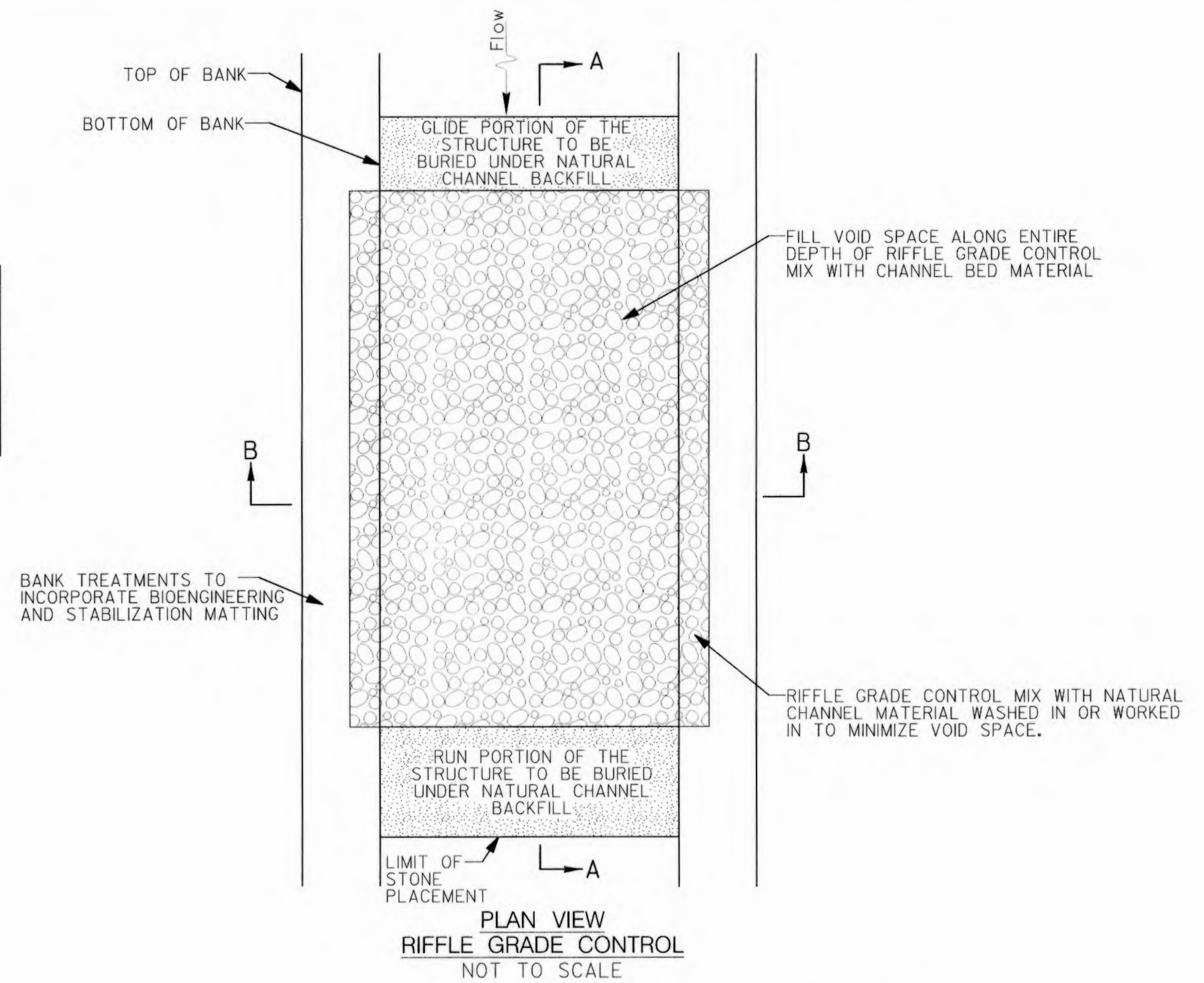
TYPICAL CROSS SECTION OF STEP-POOL POOL
NOT TO SCALE



TYPICAL PROFILE THROUGH STEP-POOL
NOT TO SCALE

RIFFLE GRADE CONTROL MIX	
AMOUNT OF STONE (%)	TYPE
40	SHA CLASS 0
30	SHA CLASS 1
30	SHA CLASS 2
100	TOTAL

POOL PAVEMENT MIX	
AMOUNT OF STONE (%)	TYPE
20	57 STONE
50	SHA CLASS 0
30	SHA CLASS 1
100	TOTAL



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TUSCANY ROAD STREAM REHABILITATION PROJECT
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TAX MAP 24
WAIVER PETITION #WP-13-111

STREAM STABILIZATION DETAILS

SCALE

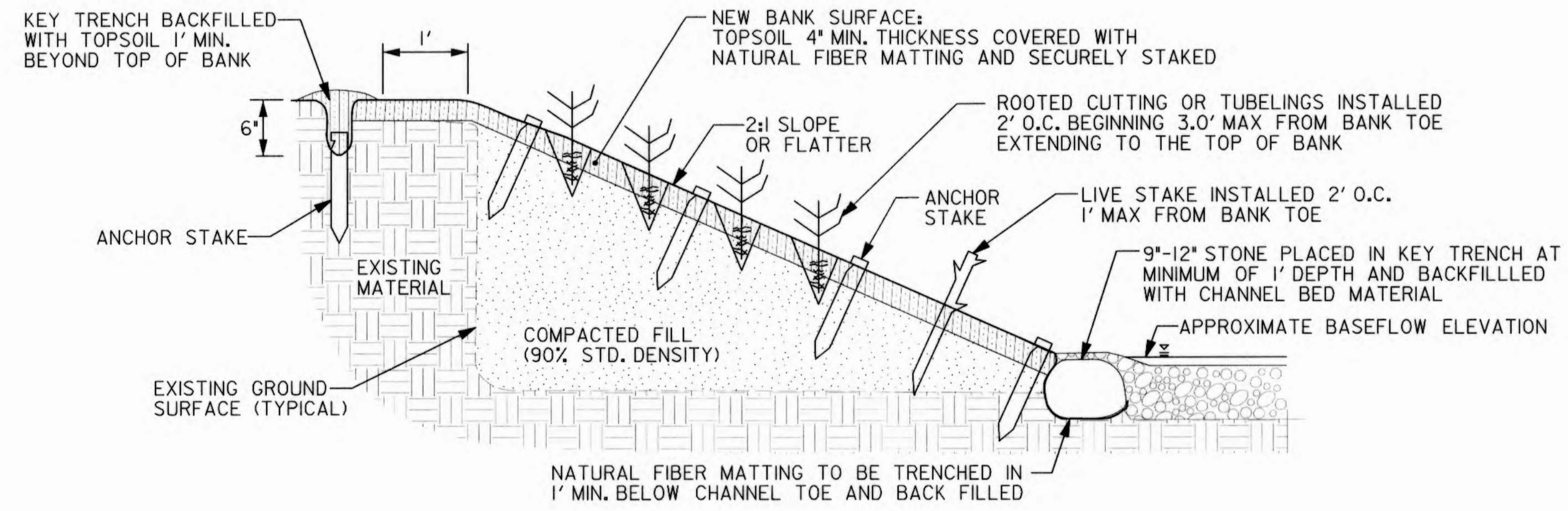
AS NOTED

SHEET

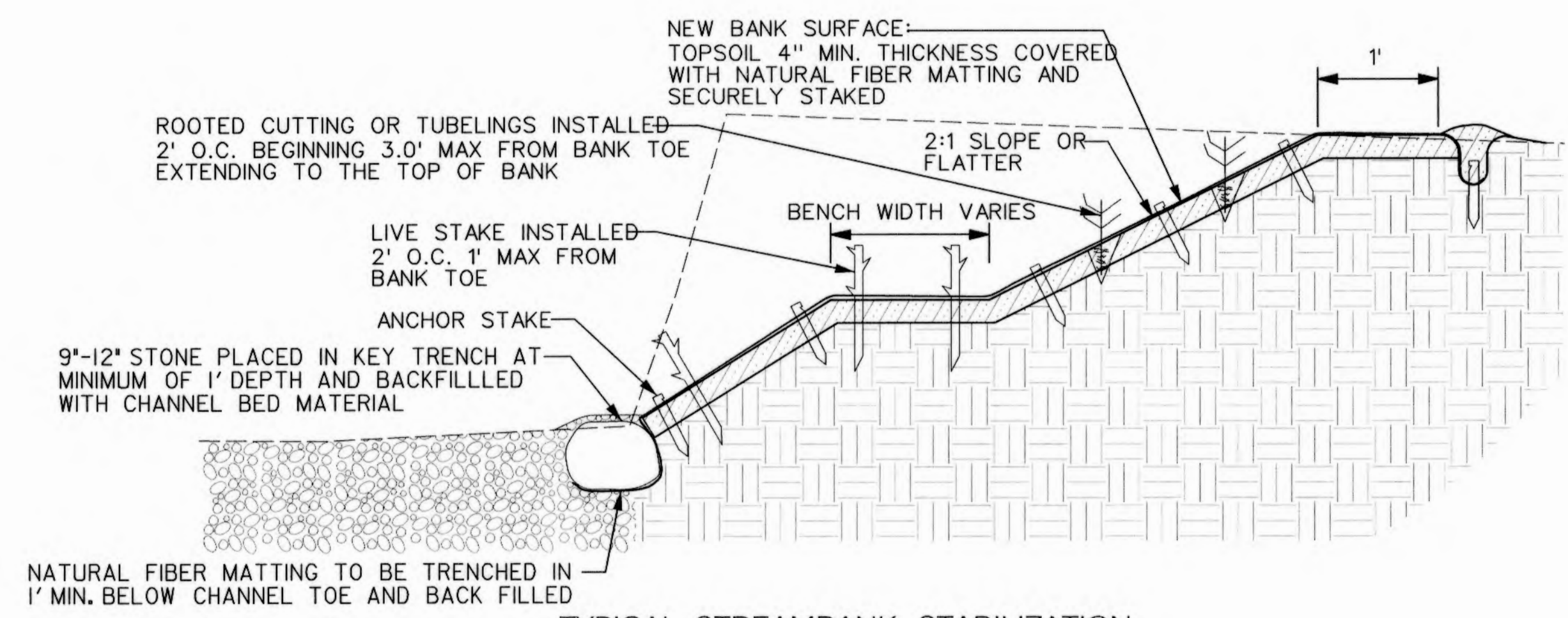
4 OF 11

Mark DeLuca
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

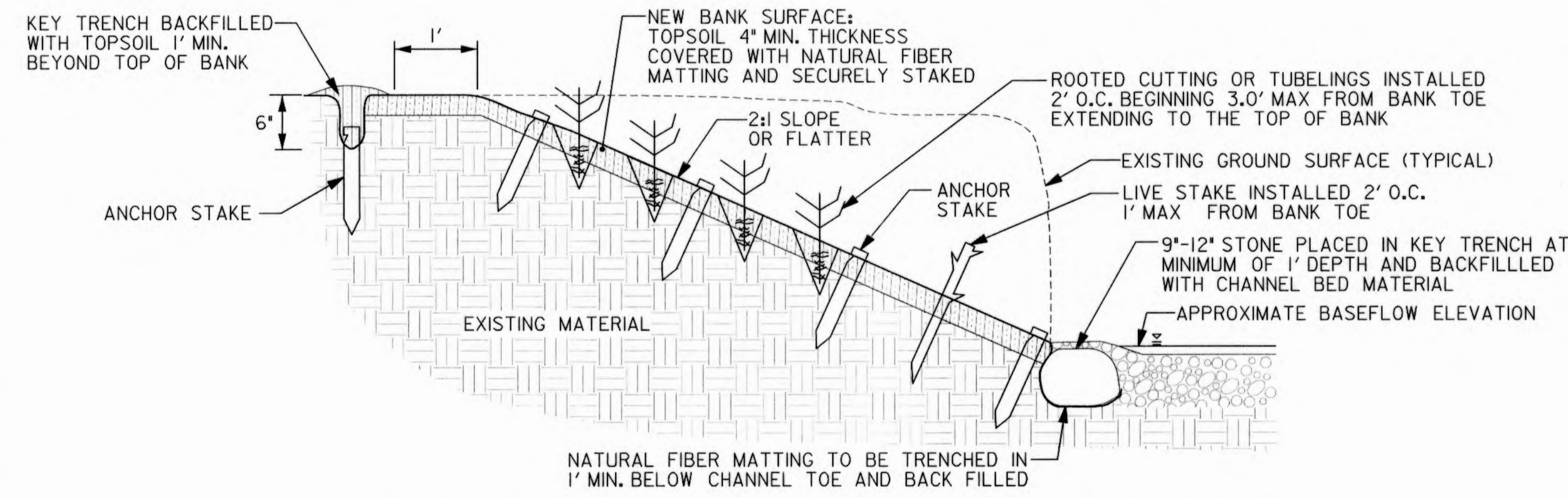
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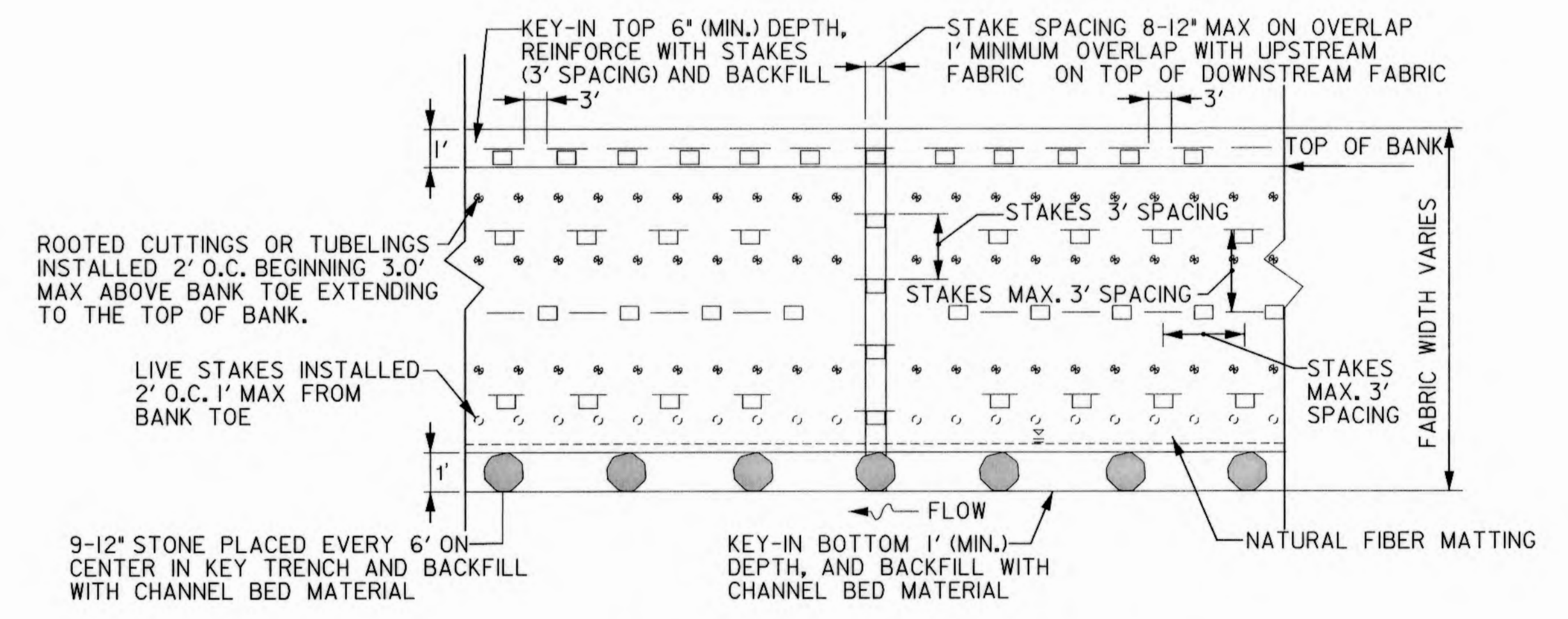
TYPICAL STREAMBANK STABILIZATION IN FILL WITH STONE KEY
NOT TO SCALE



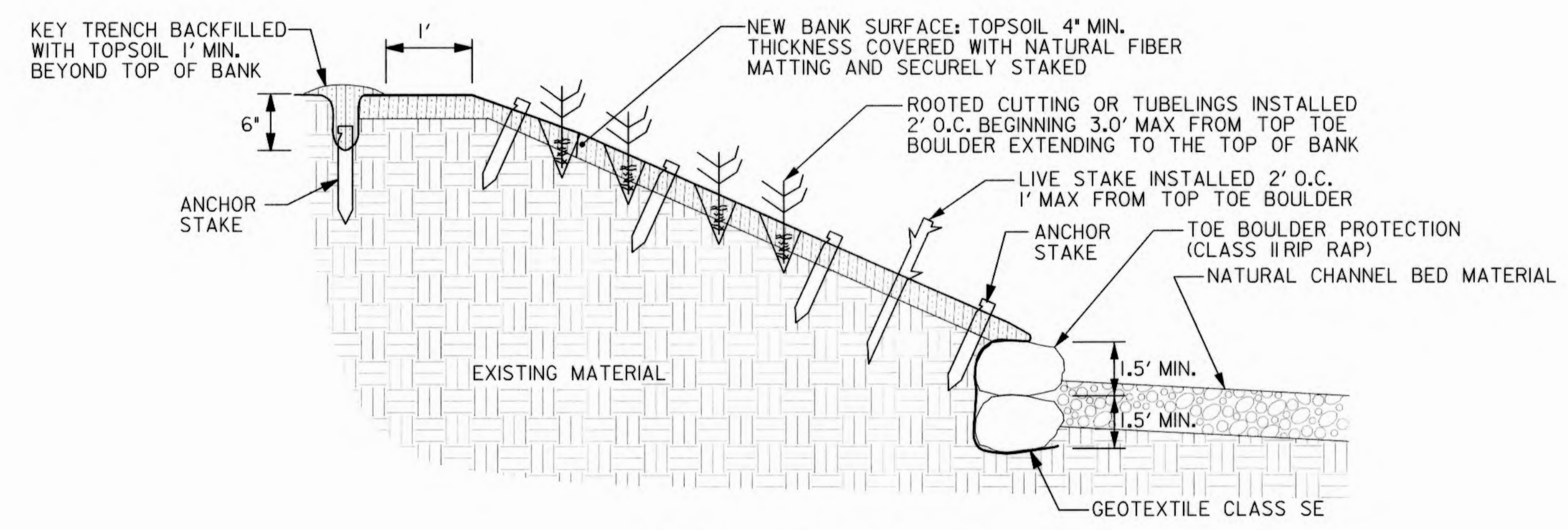
TYPICAL STREAMBANK STABILIZATION WITH FLOODPLAIN BENCH
NOT TO SCALE



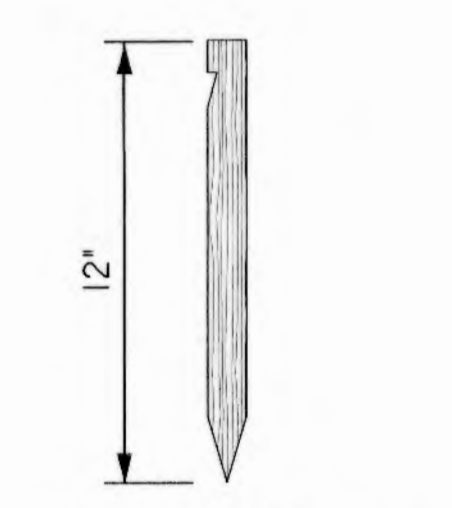
TYPICAL STREAMBANK STABILIZATION IN CUT WITH STONE KEY
NOT TO SCALE



NATURAL FIBER MATTING - PLAN VIEW
NOT TO SCALE



TOE BOULDER PROTECTION TYPICAL
NOT TO SCALE



1" X 2" NOTCHED WOOD GRADE STAKE OR EQUIVALENT
ANCHOR STAKE
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. Lucia
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

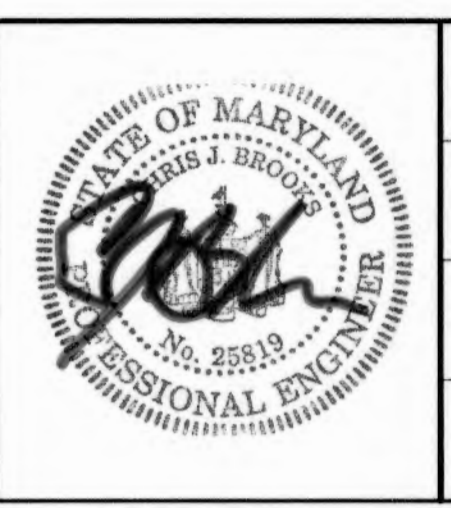
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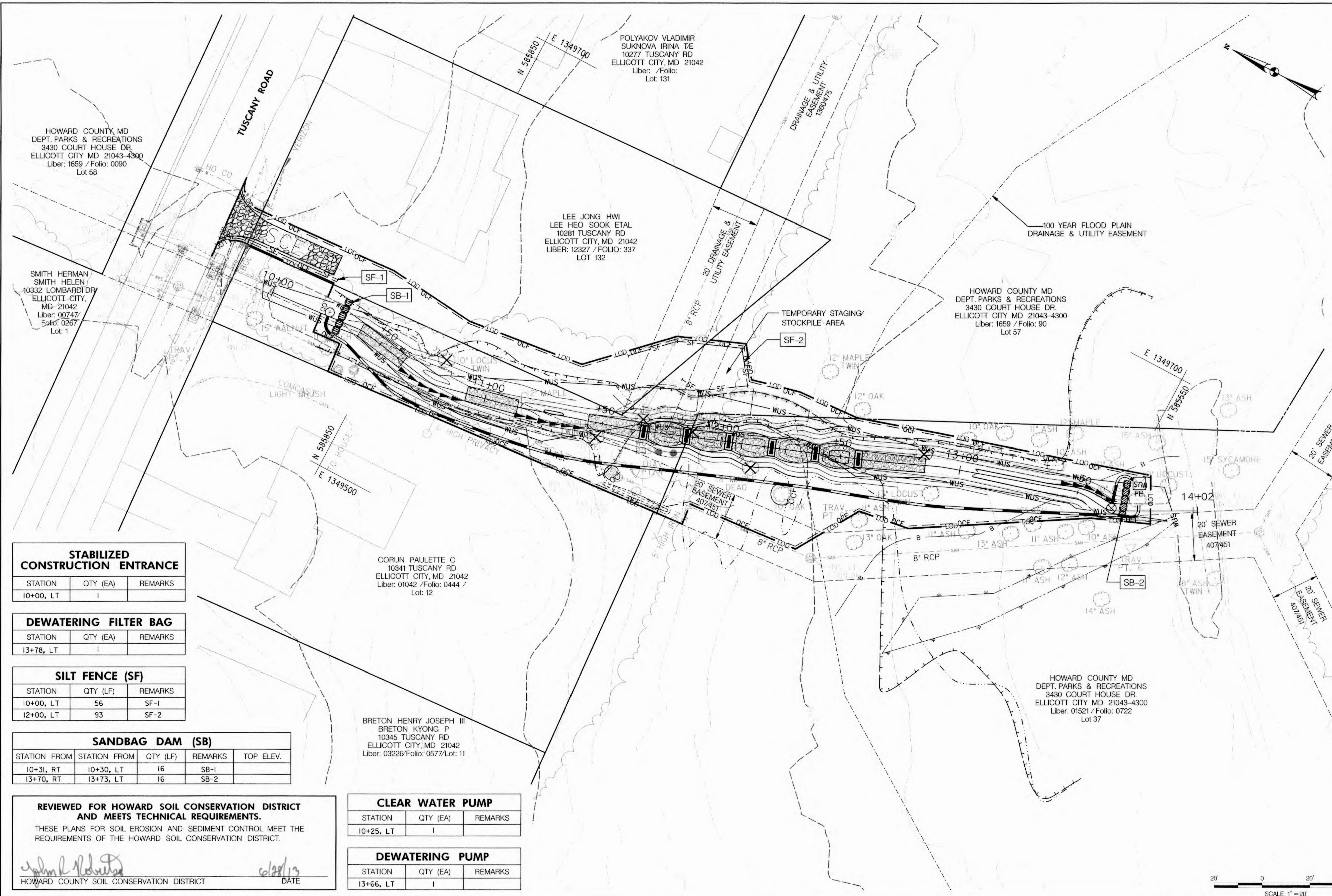
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TAX MAP 24
WAIVER PETITION #WP-13-111

STREAM STABILIZATION DETAILS

SCALE
AS NOTED
SHEET
5 OF 11

- 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.
 4. ANY STOCKPILE OF MATERIALS MUST REMAIN OUTSIDE THE 100 YEAR FLOODPLAIN.
 5. ADDITIONAL SEDIMENT CONTROLS SHALL BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.



STABILIZED CONSTRUCTION ENTRANCE

STATION	QTY (EA)	REMARKS
10+00, LT	1	

DEWATERING FILTER BAG

STATION	QTY (EA)	REMARKS
13+78, LT	1	

SILT FENCE (SF)

STATION	QTY (LF)	REMARKS
10+00, LT	56	SF-1
12+00, LT	93	SF-2

SANDBAG DAM (SB)

STATION FROM	STATION TO	QTY (LF)	REMARKS	TOP ELEV.
10+31, RT	10+30, LT	16	SB-1	
13+70, RT	13+73, LT	16	SB-2	

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 M. Roberts 6/28/13
 HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

CLEAR WATER PUMP

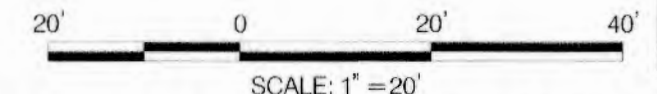
STATION	QTY (EA)	REMARKS
10+25, LT	1	

DEWATERING PUMP

STATION	QTY (EA)	REMARKS
13+66, LT	1	

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPERTY LINE
- WATERS OF THE US
- WETLAND BOUNDARY
- WETLAND BUFFER
- PROPOSED 100 YEAR FLOODPLAIN
- EXISTING 100 YEAR FLOODPLAIN
- SILT FENCE
- LIMIT OF DISTURBANCE
- ORANGE CONSTRUCTION FENCE
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- SANDBAG DAM
- DEWATERING FILTER BAG
- DEWATERING PUMP
- CLEAR WATER PUMP
- STABILIZED CONSTRUCTION ENTRANCE
- DIVERSION/DEWATERING HOSE



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Michael J. ... 6/21/13
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

McCormick Taylor
 Engineers & Planners Since 1946

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: LN				
DRN: MR				
CHK: CB				
DATE: 6/17/13	BY	NO.	REVISION	DATE

HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'
 SHEET: 6 OF 11

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT AND MDE PERMIT (TRACKING NUMBER 201261624).
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 5 DAYS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900 AND MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR AT (301) 665-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY.
3. THE LOD SHALL BE STAKED OUT 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 DEPARTMENT OF RECREATION AND PARKS, A REPRESENTATIVE FROM THE BUREAU OF UTILITIES AND A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION. TREES TO BE REMOVED SHALL BE MARKED AT THE PRE-CONSTRUCTION MEETING. (1 DAY)
5. ORANGE CONSTRUCTION FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS. (1 DAY)
6. CONSTRUCT THE FOLLOWING PERIMETER CONTROLS AS SHOWN ON THE PLAN: STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE, CLEARING ONLY THE AREA NEEDED TO INSTALL THE EGS CONTROLS. (1 DAY)
7. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL THE STREAM DIVERSION/PUMP AROUND WHICH INCLUDES THE SANDBAG, PUMP AND DIVERSION HOSES FOR THE PROPOSED STREAM REACH. DEWATER ALL WORK AREAS AS NEEDED TO A DEWATERING FILTER BAG. (1 DAY)
8. COMMENCE IN STREAM CONSTRUCTION AND GRADING, STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY AND REMOVE THE STREAM DIVERSION/PUMP AROUND, COMPLETE CHANNEL GRADING FROM DOWNSTREAM TO UPSTREAM. (5 DAYS)
9. INSTALL LANDSCAPING PER PLAN. (1 DAY)
10. STABILIZE TEMPORARY CONSTRUCTION ACCESS AND GRADE TO FINAL ELEVATIONS REMOVING ALL RUTS. (1 DAY)
11. 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)

IN-CHANNEL PUMPING NOTES

1. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. REFER TO THE DETAILS AND SPECIFICATIONS FOR MCWC 1.2: PUMP-AROUND PRACTICE INCLUDED ON THE PLANS.
2. THE CONTRACTOR SHALL USE A PUMP AND DIVERSION HOSES TO ACCOMMODATE A 3 INCH DISCHARGE DIAMETER AND THE FLOWS ANTICIPATED DURING CONSTRUCTION IN THE CHANNEL SECTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING A CONSTRUCTION PHASE DEWATERING SYSTEM, INCLUDING A TEMPORARY SYSTEM OF PUMPS, DRAINAGE DITCHES AND, SANDBAG/STONE DIVERSIONS, AS REQUIRED TO REMOVE WATER FROM ANY SOURCE, INCLUDING GROUND WATER, AND MAINTAIN WORKABLE, DRY CONDITIONS IN THE WORK AREA.
4. THE CONTRACTOR SHALL NOTE THAT THE WATERWAY LOCATED WITHIN THE PROJECT LIMITS IS CLASSIFIED AS USE IV-P WATERS. INSTREAM WORK IS PROHIBITED MARCH 1 THROUGH MAY 31, INCLUSIVE DURING ANY YEAR.

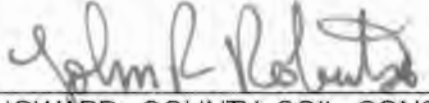
HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

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 (1313-1855).
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 THERE TO.
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 GERMINATION 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	0.39 ACRES
AREA DISTURBED	0.39 ACRES
AREA TO BE ROOFED OR PAVED	0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.39 ACRES
TOTAL CUT	218.00 CU. YDS.
TOTAL FILL	200.00 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	SEE NOTE 13

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.


6/28/13
 HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES (CONTINUED)

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. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
10. 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, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRES GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
13. 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, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENEED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 2. PERMANENT STABILIZATION
 - A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - I. SOIL PH BETWEEN 6.0 AND 7.0.
 - II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENEED TO A DEPTH OF 3 TO 5 INCHES.
 - D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- B. TOPSOILING**
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 INCH IN DIAMETER.
 - B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 6. TOPSOIL APPLICATION
 - A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- 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. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 SEEDING AND MULCHING

- A. SEEDING**
1. 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 THAWS.
 - 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. SOO 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.
 - I. 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.
 - II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED 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.
 - I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - II. MIX SEED AND FERTILIZER TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - I. 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.
 - II. 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.
 - III. SEEDING FIBER USED ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - I. MATERIALS (IN ORDER OF PREFERENCE)
 1. MULCH 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.
 2. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - I. 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.
 - II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - III. WCFM MATERIALS 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 REGULATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1-5 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
 - IV. 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 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:
 - I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - II. 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.
 - III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II, TERRA TACK OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS SHOULD 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.
 - IV. 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

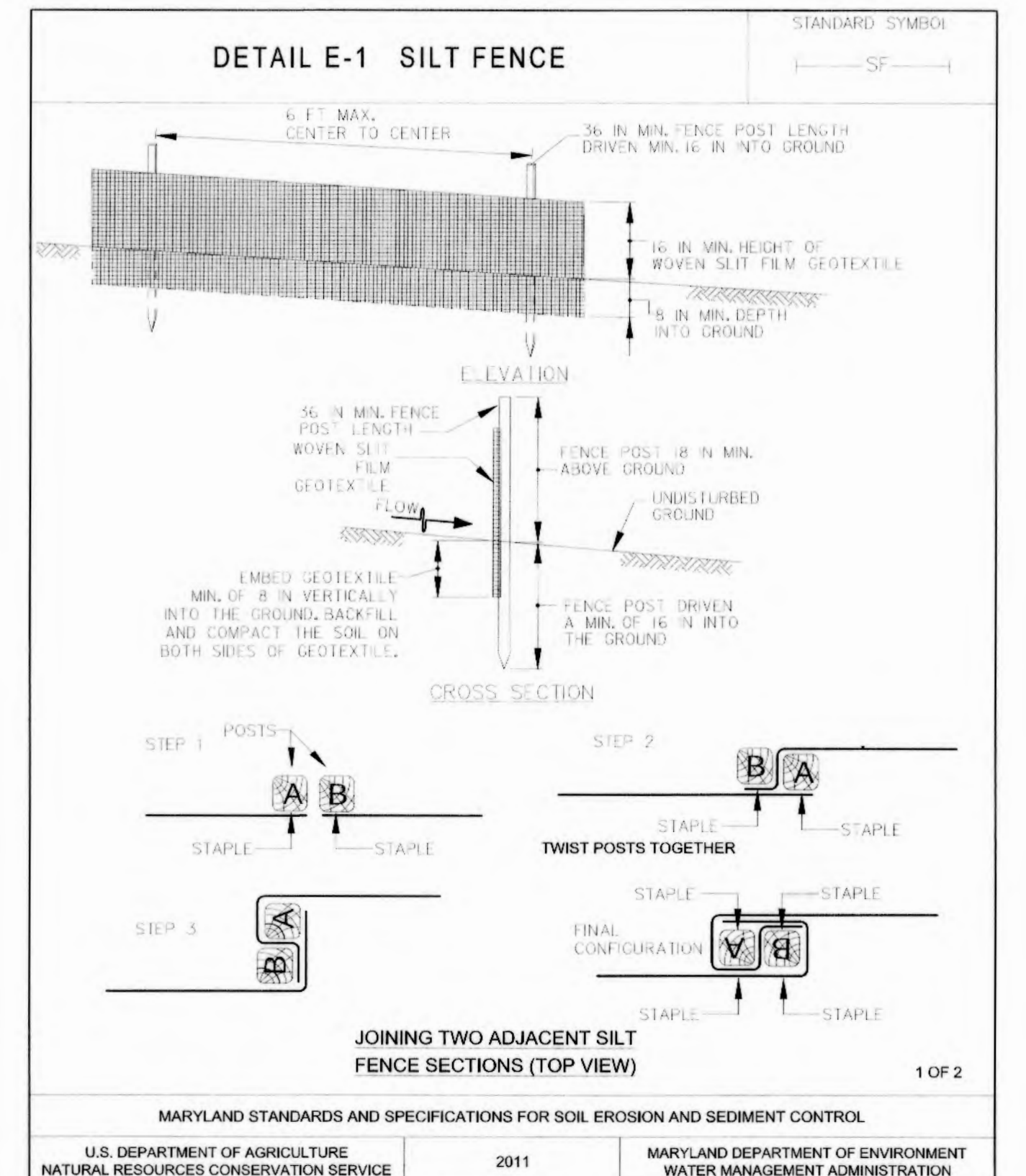
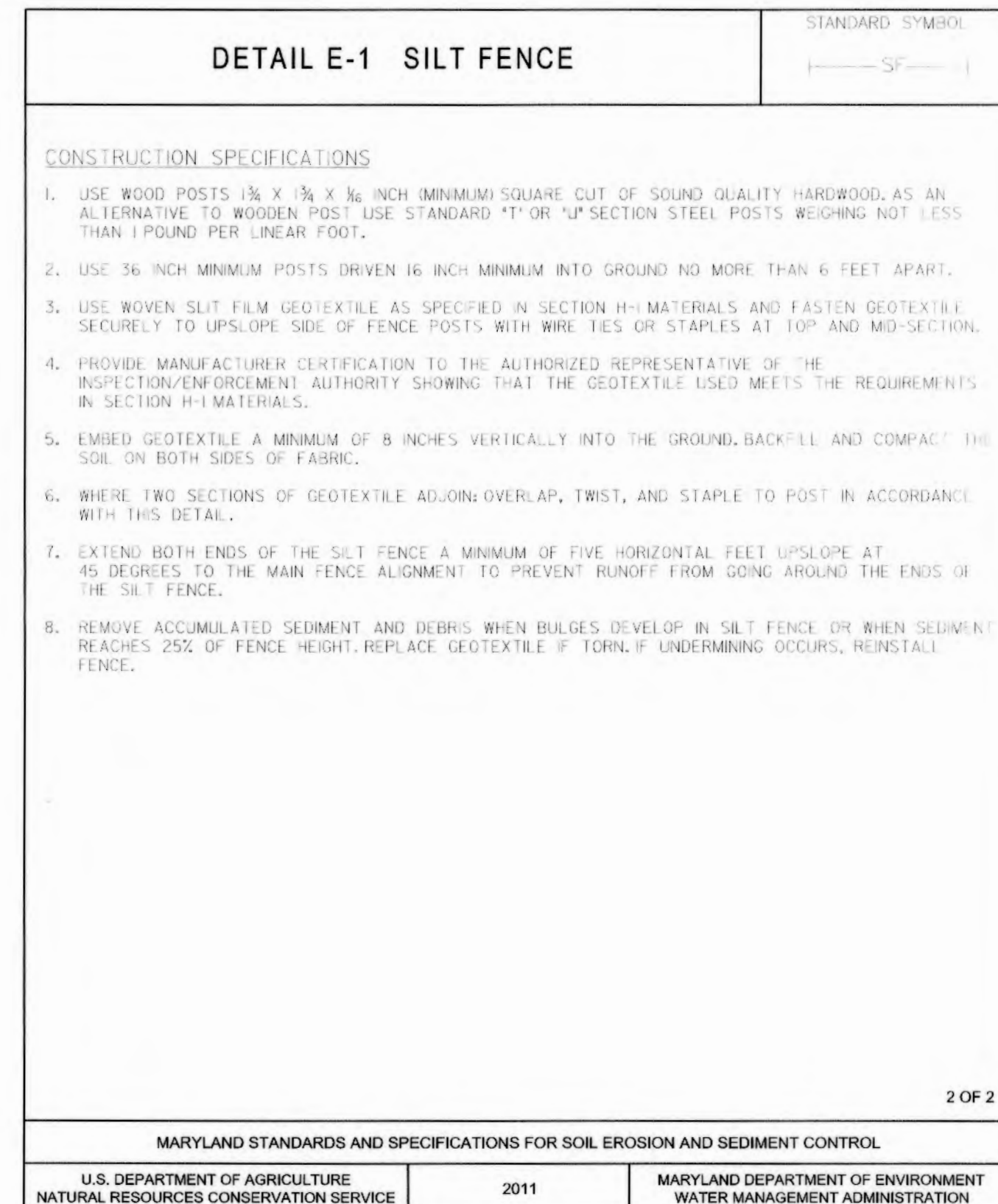
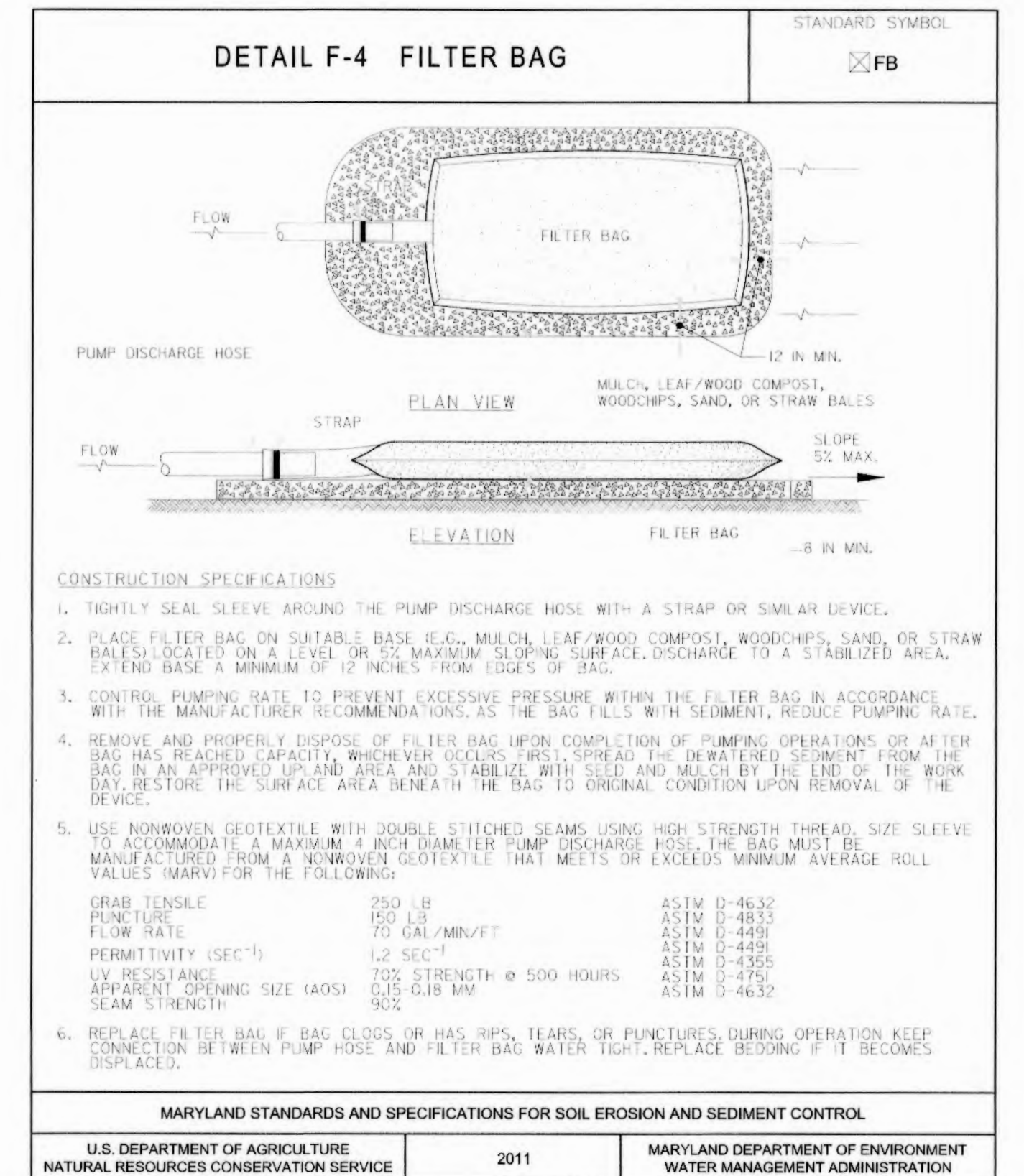
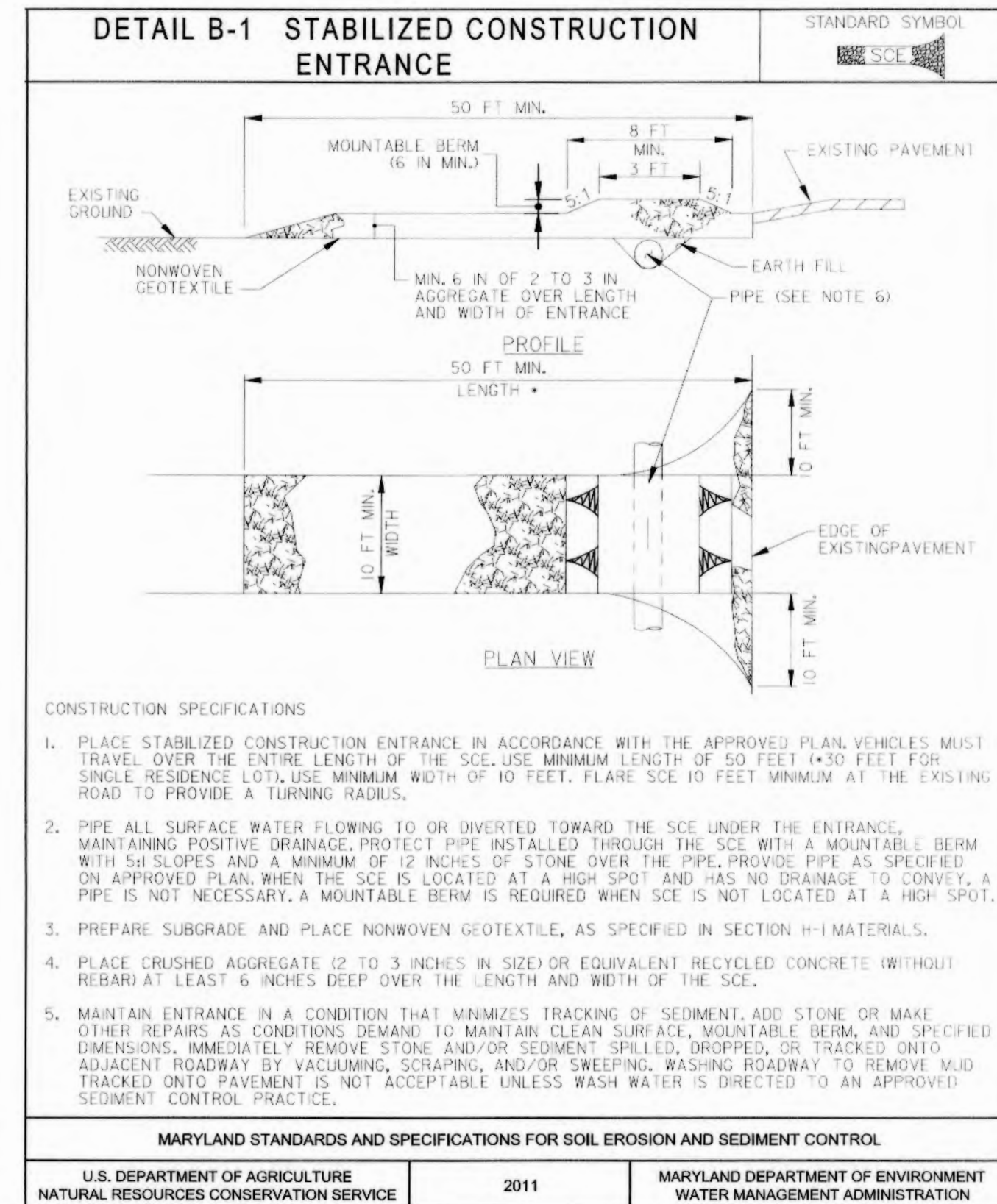
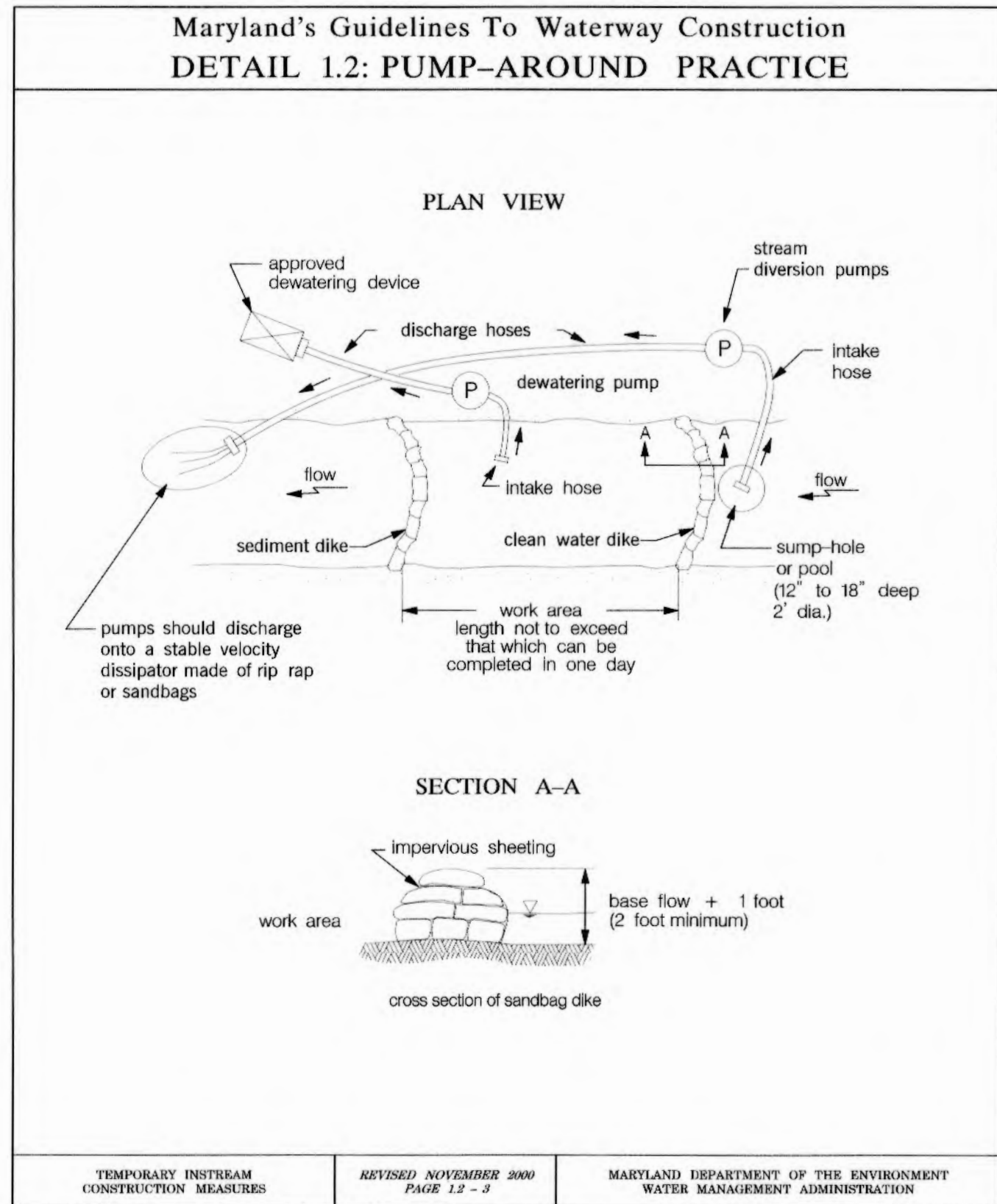
NO.	SPECIES	HARDINESS ZONE (FROM FIGURE B.3)		SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
		6B	SEE BELOW			N	P ₂ O ₅	
	ANNUAL RYEGRASS	40		MAR. 1 TO MAY 15; AUG. 1 TO OCT 15	0.5	436 LB/AC (10 LB/ 1000 SF)	2 TON/AC (90 LB/ 1000 SF)	
	FOXTAIL MILLET	30		MAY 16 TO JULY 31	0.5			

B-4-5 PERMANENT STABILIZATION

NO.	SPECIES	HARDINESS ZONE (FROM FIGURE B.3)		SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
		6B	1			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	90 LB/AC	90 LB/AC	2 TON/AC
	CREeping RED FESCUE	15		MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.	(1.0 LB/ 1000 SF)	(2.0 LB/ 1000 SF)	(2.0 LB/ 1000 SF)	(90 LB/ 1000 SF)
	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

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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 L. Roberts
HOWARD COUNTY SOIL CONSERVATION DISTRICT

6/21/13
DATE

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HOWARD COUNTY, MARYLAND**

Mark DeLuca
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

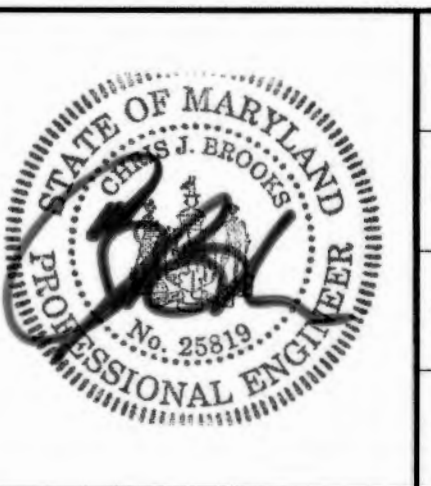
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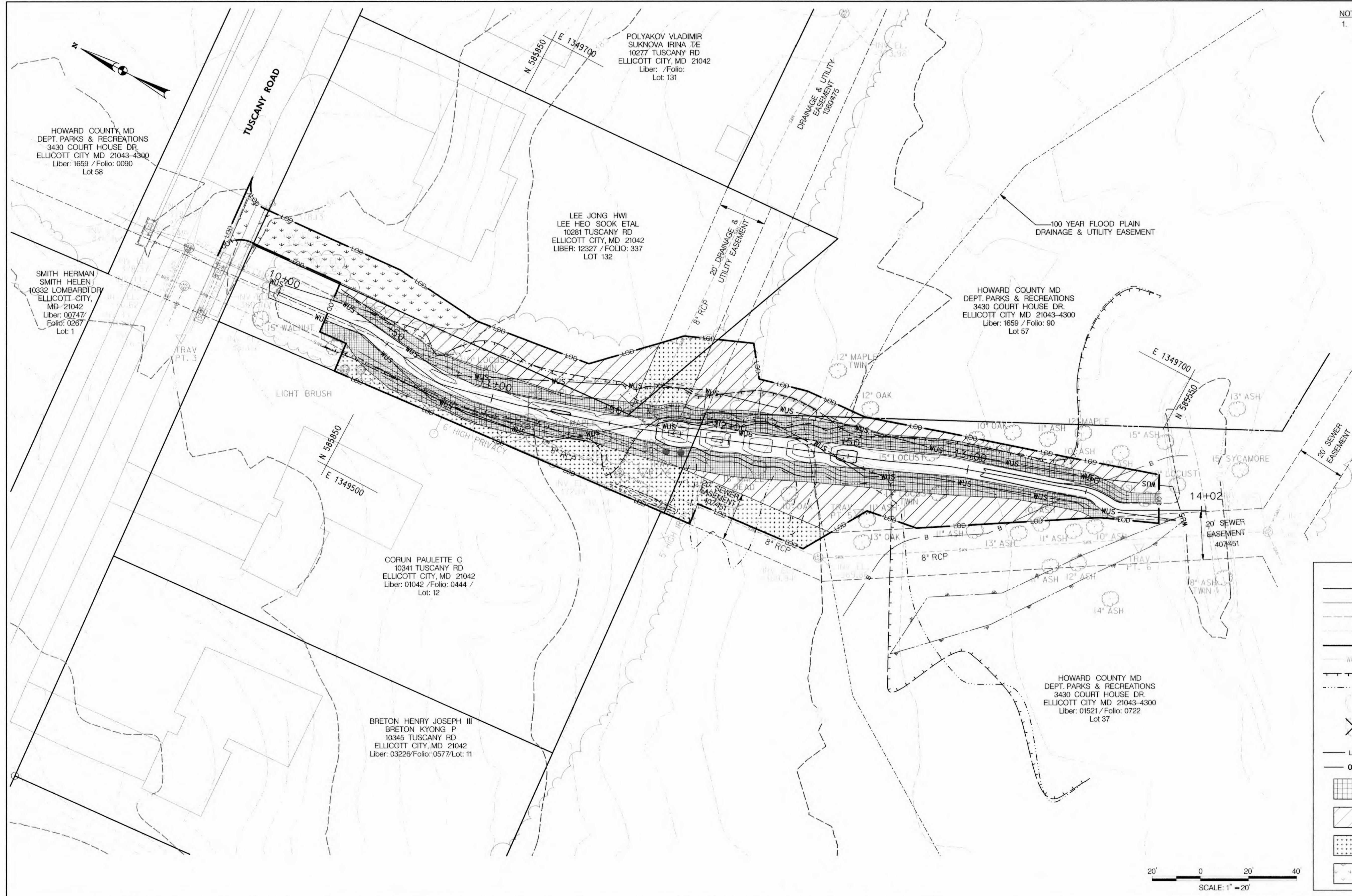
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BY	NO.	REVISION	DATE		

**HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111**

EROSION AND SEDIMENT CONTROL DETAIL SHEET

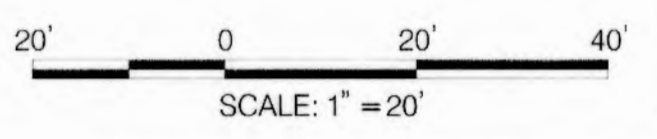
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SHEET
8 OF 11

NOTE:
1. CONTAINERIZED TREES SHALL NOT BE PLANTED WITHIN EXISTING SANITARY SEWER RIGHT OF WAY



LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPERTY LINE
- WATERS OF THE US
- PROPOSED 100 YEAR FLOODPLAIN
- EXISTING 100 YEAR FLOODPLAIN
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- LOD - LIMIT OF DISTURBANCE
- OCF - ORANGE CONSTRUCTION FENCE
- STREAMBANK ZONE
- RIPARIAN TREE AND SHRUB ZONE
- RIPARIAN SHRUB ZONE
- TURFGRASS SEED ZONE



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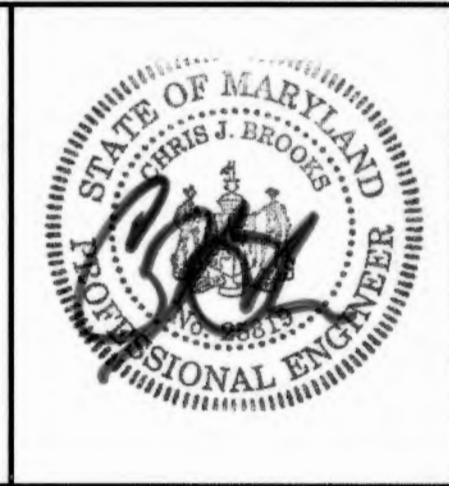
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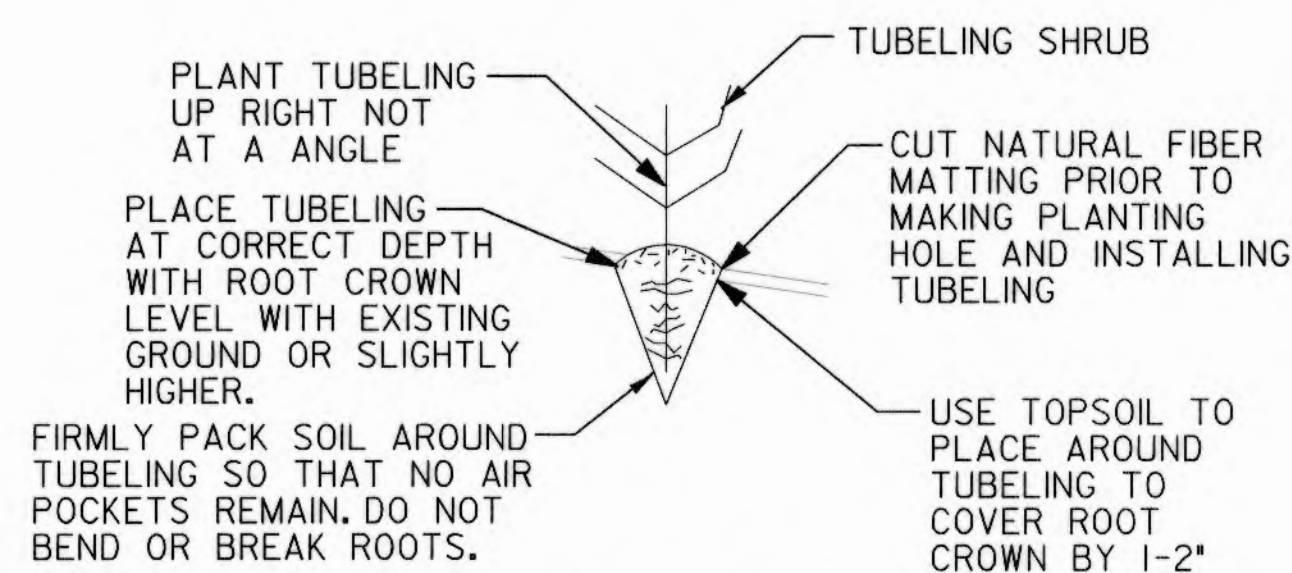


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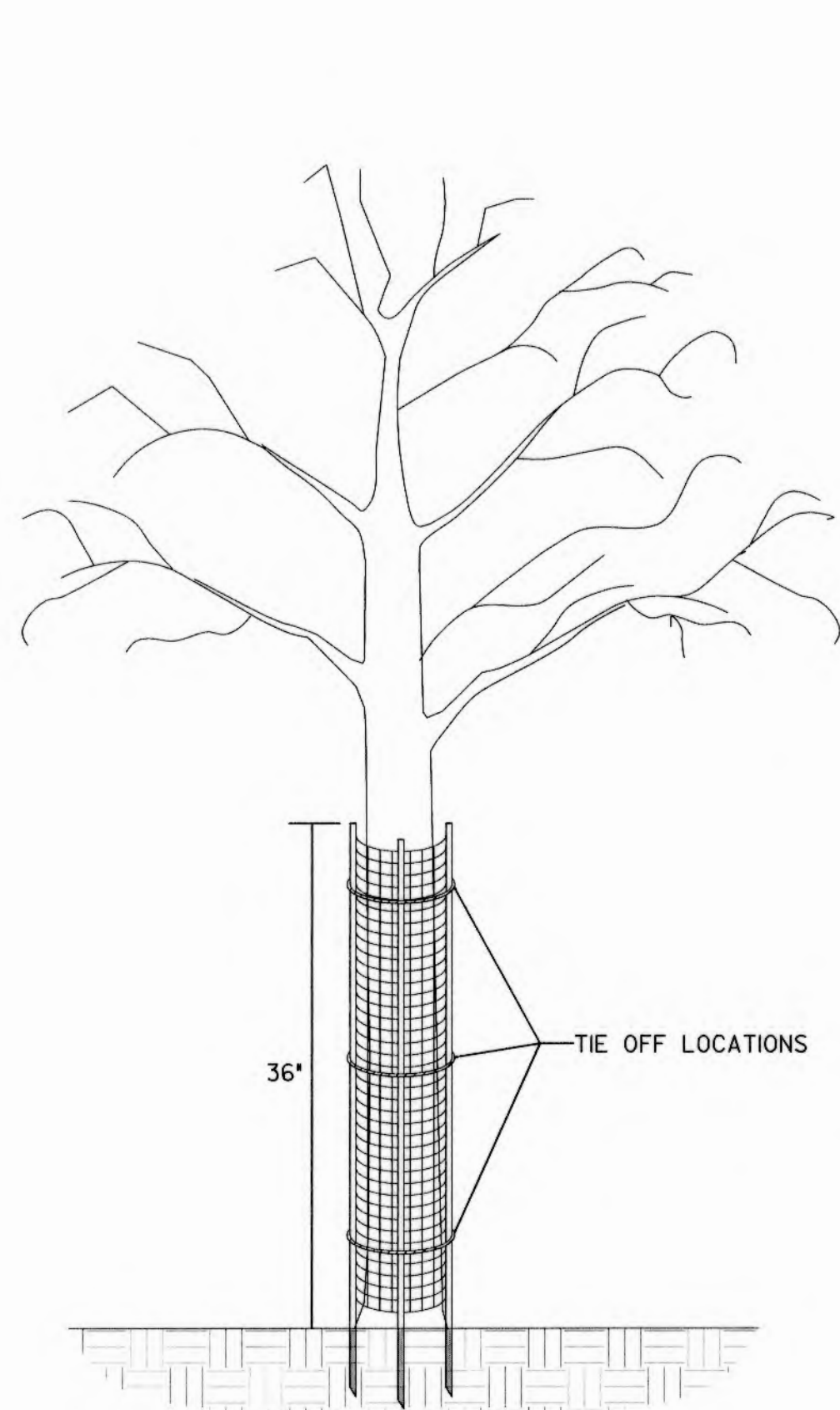
HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

LANDSCAPING PLAN

SCALE
1" = 20'
SHEET
9 OF 11



TUBELING DETAIL
NOT TO SCALE



INSTALLATION INSTRUCTIONS:

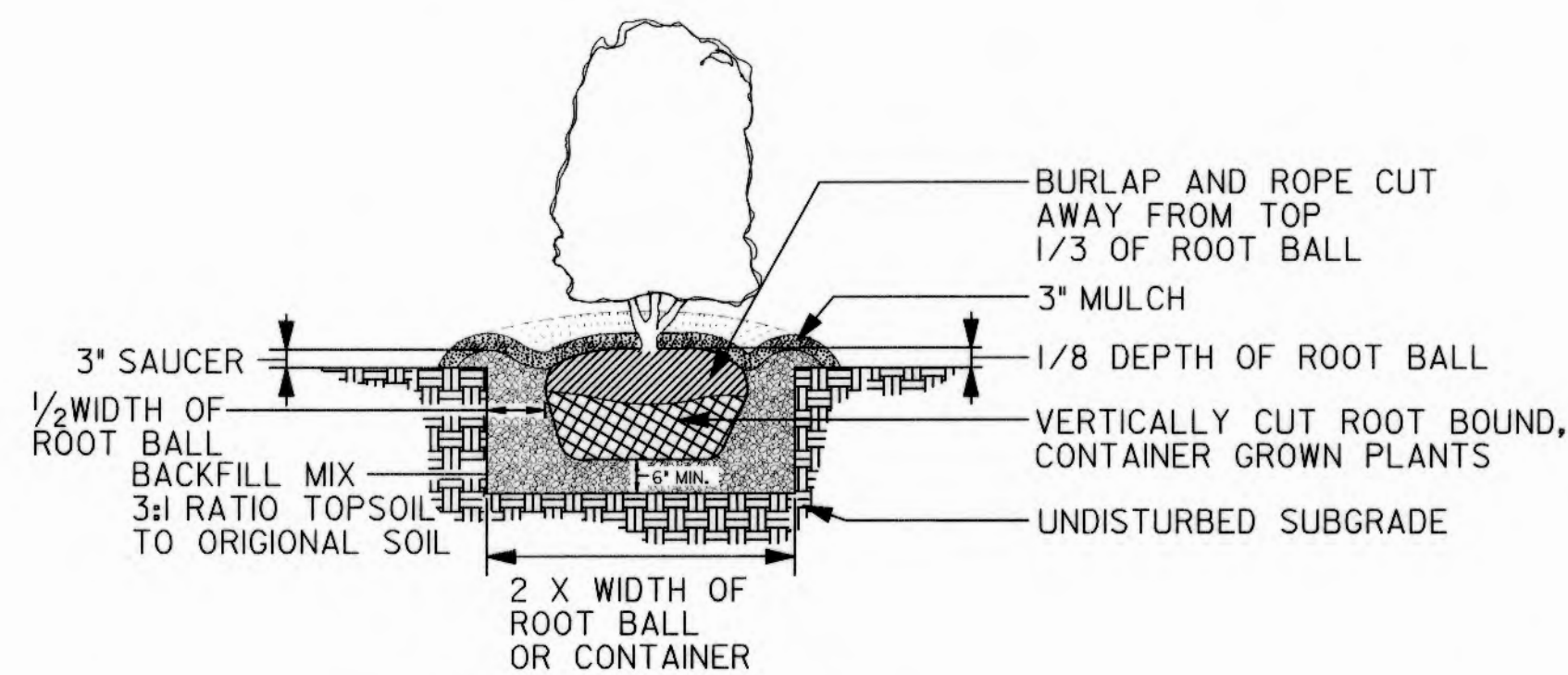
1. PLANT TREE ACCORDING TO STANDARD SPECIFICATIONS.
2. PLACE THE SHELTER AROUND THE TREE.
3. DRIVE LONGER STAKES INTO THE GROUND.
4. TIE-OFF ROPE ENDS AROUND TREE.

PRODUCT NOTES:

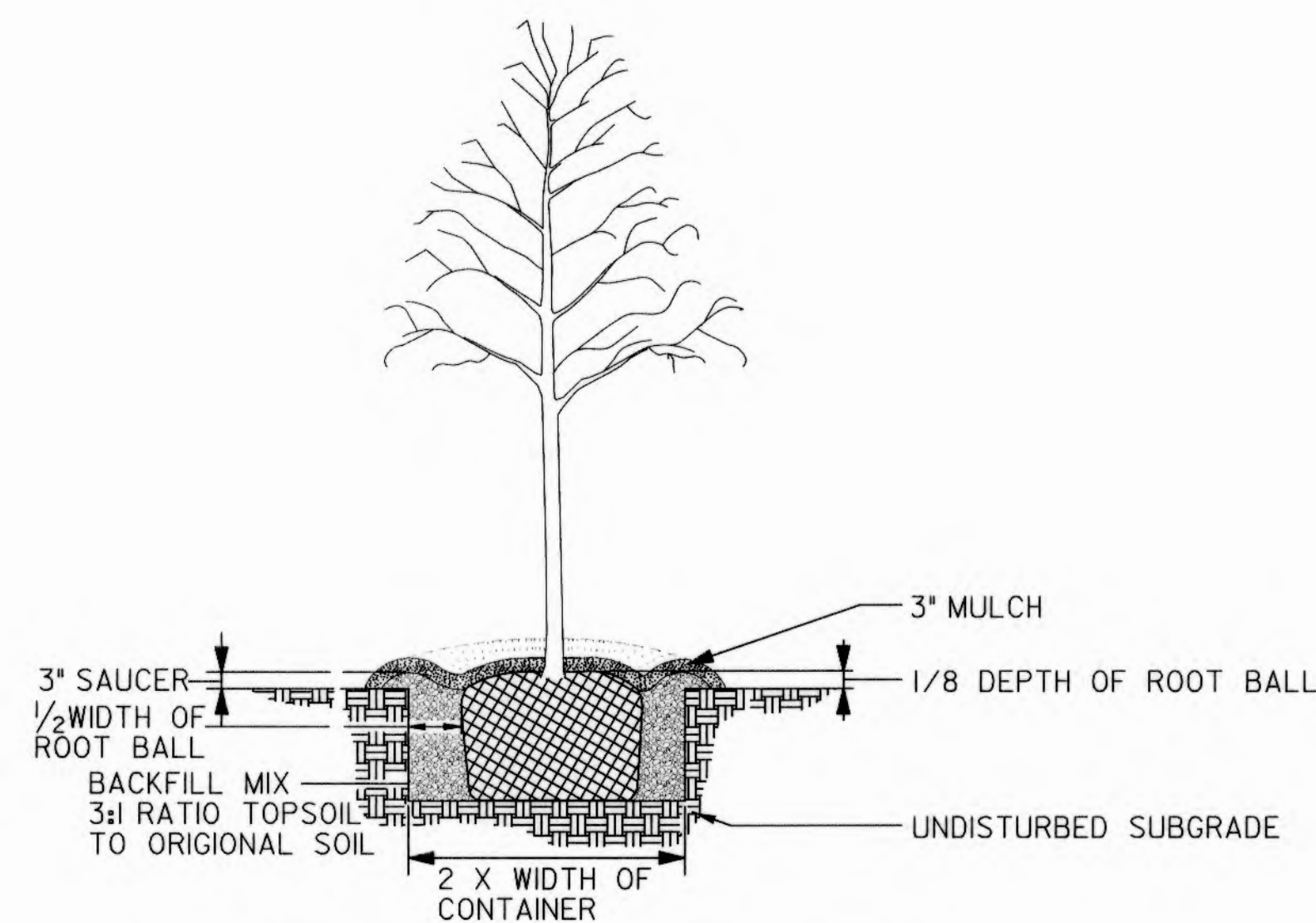
1. TREE SHELTER SHALL BE A.M. LEONARD TREE BARK PROTECTOR OR APPROVED EQUAL.
2. TREE SHELTER MUST HAVE LONGER, HARDY STAKES FOR INSERTION INTO GROUND TO PROVIDE SUPPORT.

TREE SHELTER DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL
B & B AND CONTAINER GROWN
NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL

CONTAINER GROWN
NOT TO SCALE

Planting Schedule

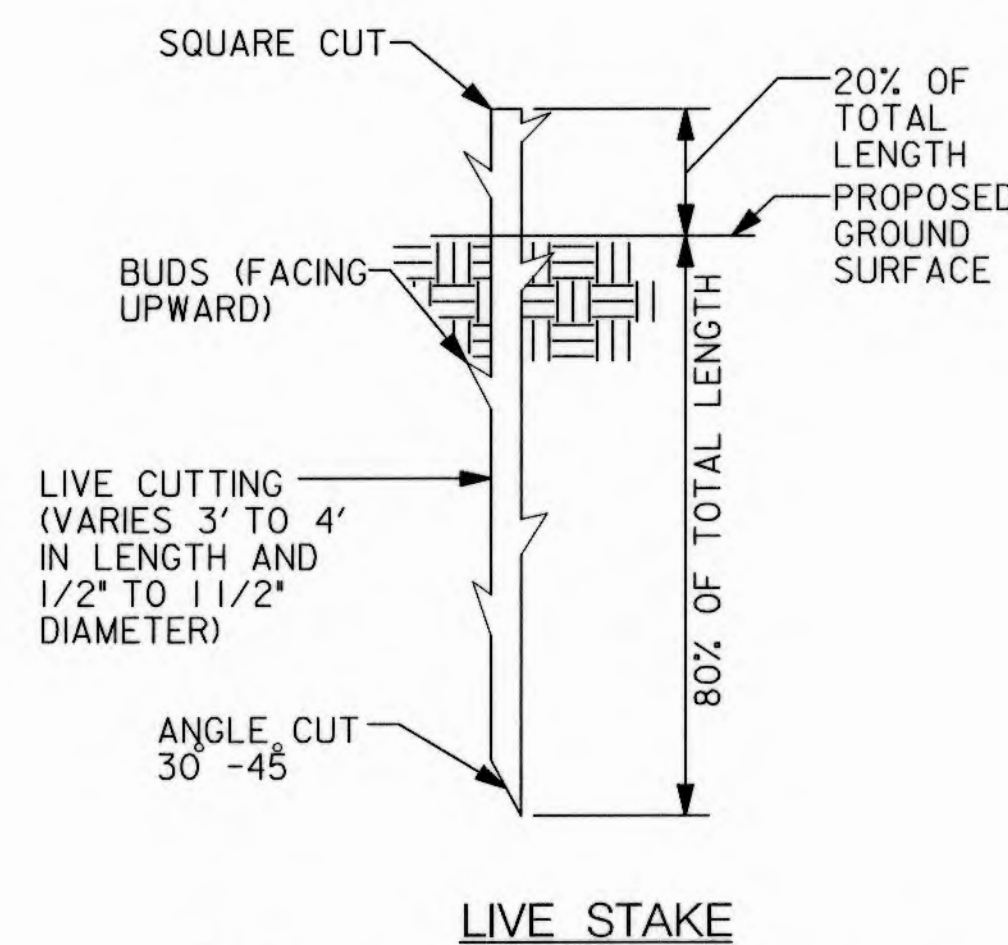
Zone	Botanical Name	Common Name	Size	Comment	Quantity
Streambank	<i>Cornus sericea</i>	Red Osier Dogwood	3'-4' Live Stake	Plant 2' O.C.	120
Streambank	<i>Viburnum dentatum</i>	Southern Arrowwood	3'-4' Live Stake	Plant 2' O.C.	120
Streambank	<i>Salix sericea</i>	Silky Willow	3'-4' Live Stake	Plant 2' O.C.	120
Streambank	<i>Cornus sericea</i>	Red Osier Dogwood	1" Dia. X 8-12" Deep Tubeling	Plant 2' O.C.	270
Streambank	<i>Viburnum dentatum</i>	Southern Arrowwood	1" Dia. X 8-12" Deep Tubeling	Plant 2' O.C.	270
Streambank	<i>Salix sericea</i>	Silky Willow	1" Dia. X 8-12" Deep Tubeling	Plant 2' O.C.	270
Riparian Tree & Shrub	<i>Platanus occidentalis</i>	American Sycamore	5' HT, 5 GAL. Cont.	Plant 12' O.C.	5
Riparian Tree & Shrub	<i>Acer rubrum</i>	Red Maple	5' HT, 5 GAL. Cont.	Plant 12' O.C.	5
Riparian Tree & Shrub	<i>Quercus bicolor</i>	Swamp White Oak	5' HT, 5 GAL. Cont.	Plant 12' O.C.	5
Riparian Tree & Shrub	<i>Liriodendron tulipifera</i>	Yellow Poplar	5' HT, 5 GAL. Cont.	Plant 12' O.C.	5
Riparian Tree & Shrub	<i>Amelanchier arborea</i>	Serviceberry	2' HT, 2 GAL. Cont.	Plant 8' O.C.	9
Riparian Tree & Shrub	<i>Cornus amomum</i>	Silky Dogwood	2' HT, 2 GAL. Cont.	Plant 8' O.C.	9
Riparian Tree & Shrub	<i>Lindera benzoin</i>	Spice Bush	2' HT, 2 GAL. Cont.	Plant 8' O.C.	9
Riparian Shrub	<i>Amelanchier arborea</i>	Serviceberry	2' HT, 2 GAL. Cont.	Plant 8' O.C.	15
Riparian Shrub	<i>Cornus amomum</i>	Silky Dogwood	2' HT, 3 GAL. Cont.	Plant 8' O.C.	15
Riparian Shrub	<i>Lindera benzoin</i>	Spice Bush	2' HT, 3 GAL. Cont.	Plant 8' O.C.	15

Riparian Seed Mix

Zone	Botanical Name	Common Name	Percent Mix	Seeding Rate	Quantity (lbs.)
Streambank, Riparian	<i>Elymus virginicus</i>	Virginia Wildrye	5	30 lbs per acre	
Streambank, Riparian	<i>Agrostis alba</i>	Redtop	5	30 lbs per acre	
Streambank, Riparian	<i>Poa compressa</i>	Canada Bluegrass	5	30 lbs per acre	
Streambank, Riparian	<i>Festuca arundinacea</i>	Trident tall Fescue	10	30 lbs per acre	
Streambank, Riparian	<i>Sorghastrum nutans</i>	Indian Grass	5	30 lbs per acre	
Streambank, Riparian	<i>Lolium multiflorum</i>	Annual Ryegrass	25	30 lbs per acre	
Streambank, Riparian	<i>Elymus sp.</i>	Saint Perennial Ryegrass	20	30 lbs per acre	
Streambank, Riparian	<i>Festuca rubra</i>	Creeping Red Fescue	25	30 lbs per acre	
TOTAL MIX					9.0

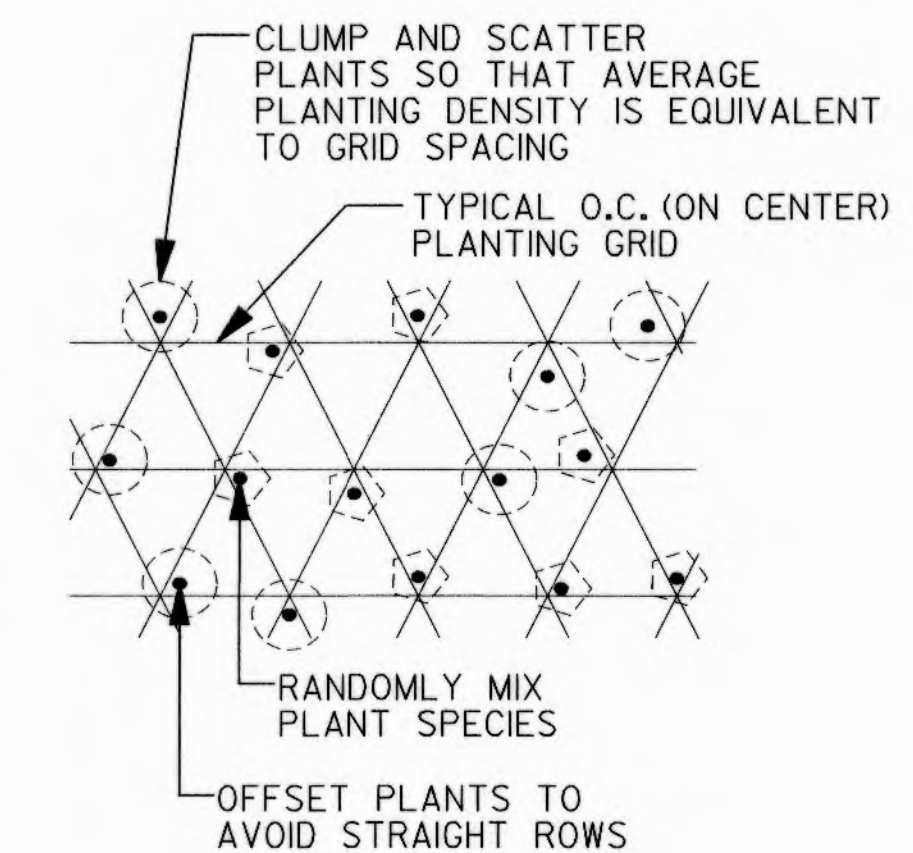
Turfgrass Seed Mix

Zone	Botanical Name	Common Name	Percent Mix	Seeding Rate	Quantity (lbs.)
Turfgrass	<i>Poa pratensis</i>	Kentucky Blue Grass	33	50 lbs per acre	
Turfgrass	<i>Lolium perenne</i>	Perennial Rye Grass	33	50 lbs per acre	
Turfgrass	<i>Schedonorus phoenix</i>	Tall Fescue	34	50 lbs per acre	
TOTAL MIX					2.0



LIVE STAKE

NOTE:
1. LIVE STAKES MUST BE INSTALLED WHILE DORMANT (LATE FALL TO EARLY SPRING). DO NOT ALLOW THEM TO DRY OUT.



RANDOM PLANTING PATTERN

NOT TO SCALE

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DES: LN

DRN: MR

CHK: CB

DATE: 6/17/13

BY

NO.

REVISION

DATE

HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

LANDSCAPE NOTES AND DETAILS

SCALE

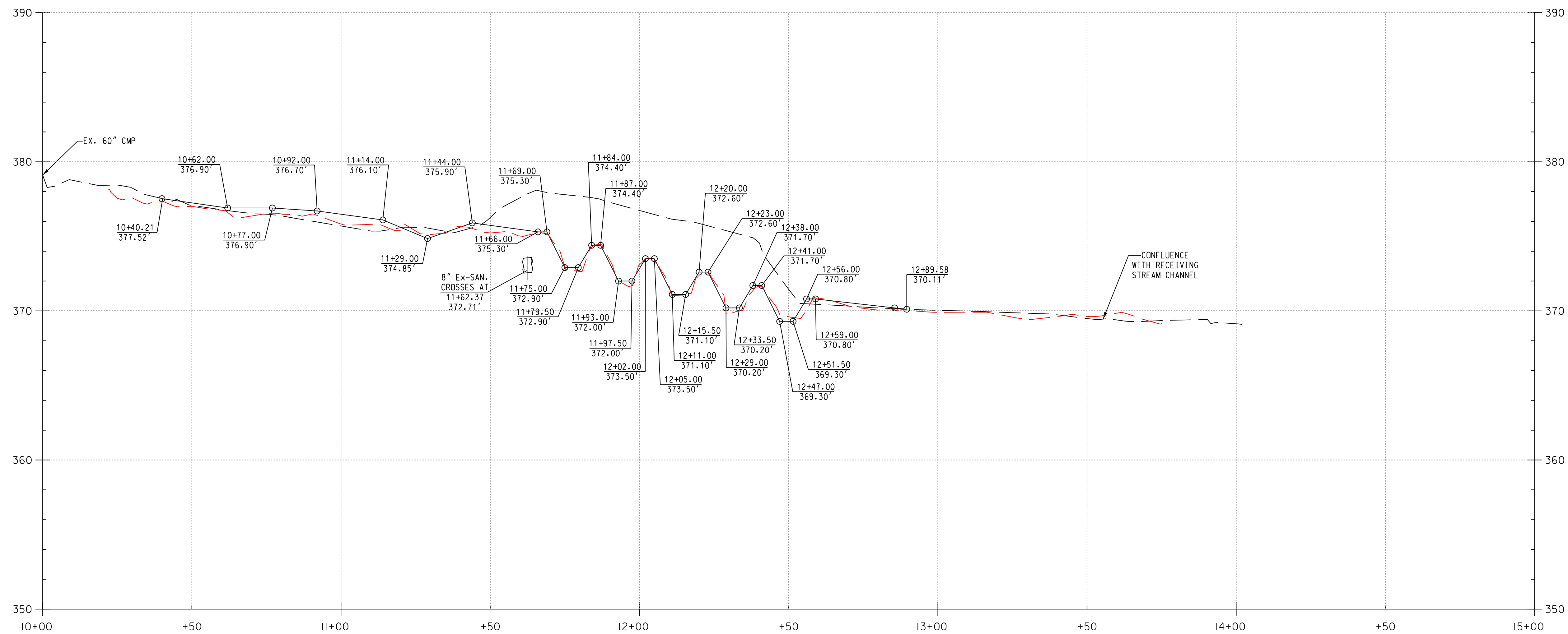
AS NOTED

SHEET

10 OF 11

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CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/21/13
DATE



STEP-POOL PROFILE ELEVATIONS		
LOCATION	PROPOSED ELEV. (FT)	AS-BUILT ELEV. (FT)
CREST 1	375.3	375.3
POOL 1	372.9	372.7
CREST 2	374.4	374.5
POOL 2	372.0	371.8
CREST 3	373.5	373.6
POOL 3	371.1	371.0
CREST 4	372.6	372.6
POOL 4	370.2	369.8
CREST 5	371.7	371.6
POOL 5	369.3	369.5
CREST 6	370.8	370.9

NOTE:
 AS-BUILT PROFILE SHOWN DEPICTS THE CENTERLINE OF THE CONSTRUCTED STEP-POOL SYSTEM. REFER TO THE STEP-POOL ELEVATION TABLE FOR PROPOSED STRUCTURE COMPARISON. CRESTS AND POOLS ARE DESIGNATED 1 TO 6, STARTING AT THE UPSTREAM PROJECT LIMIT AND EXTENDING DOWNSTREAM

SCALE
 HORIZONTAL: 1" = 20' VERTICAL: 1" = 4'

LEGEND
 — AS-BUILT
 - - - EXISTING — PROPOSED

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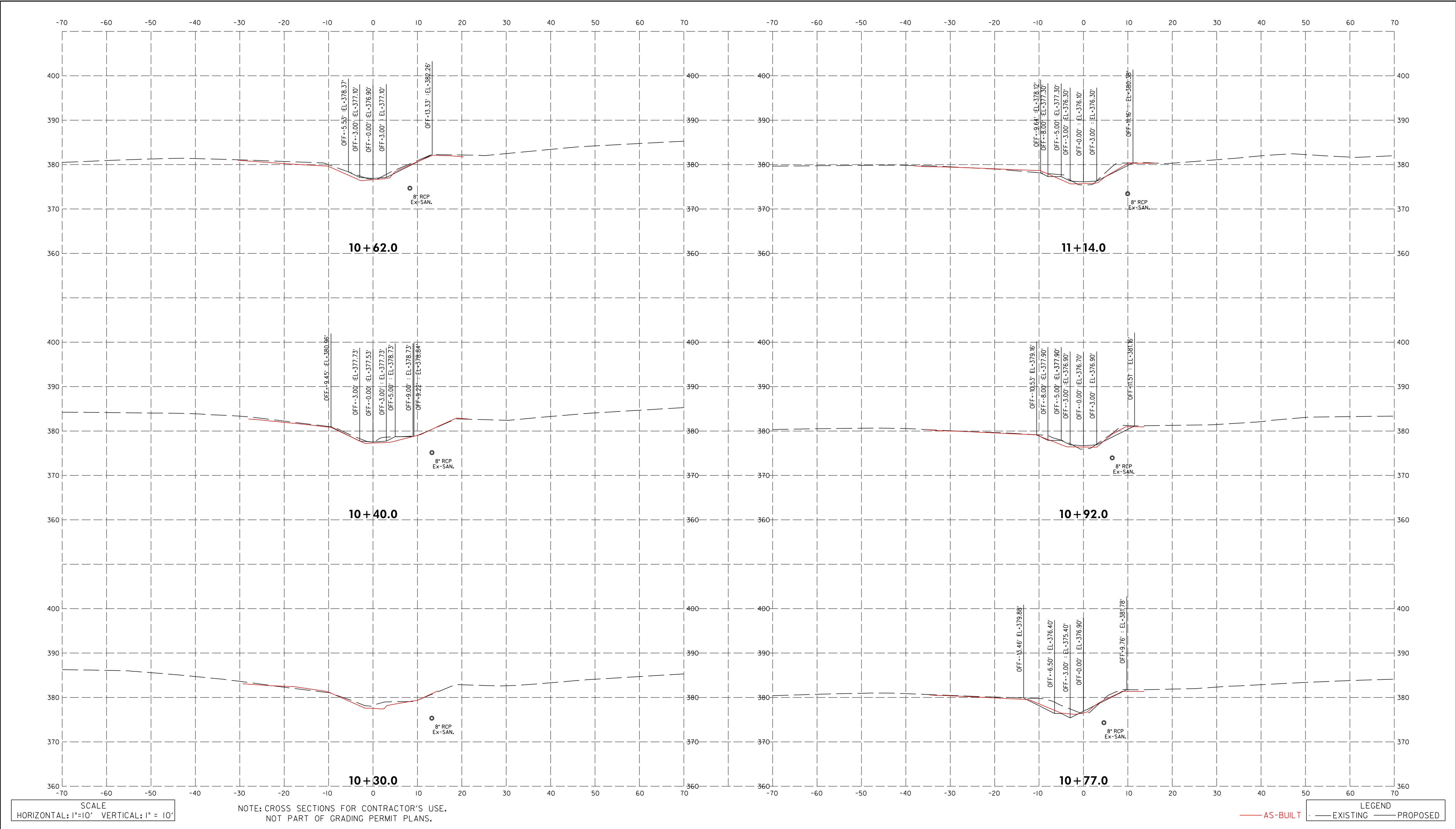


DES: LN	LEN	AS-BUILT	3/24/14
DRN: MR			
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 TAX MAP 24
 WAIVER PETITION #WP-13-111

PROFILE SHEET

SCALE
 AS SHOWN
 SHEET
 11 OF 11



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1"= 10'

NOTE: CROSS SECTIONS FOR CONTRACTOR'S USE.
NOT PART OF GRADING PERMIT PLANS.

LEGEND
— AS-BUILT — EXISTING — PROPOSED

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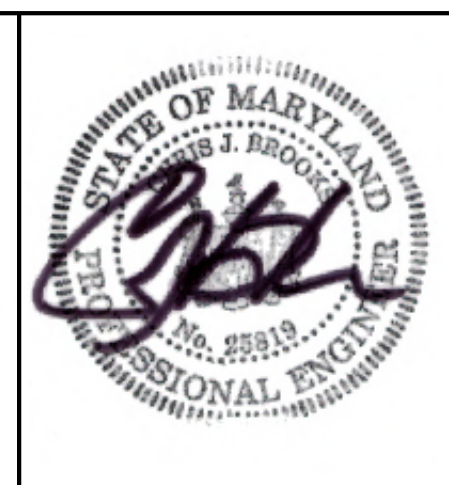
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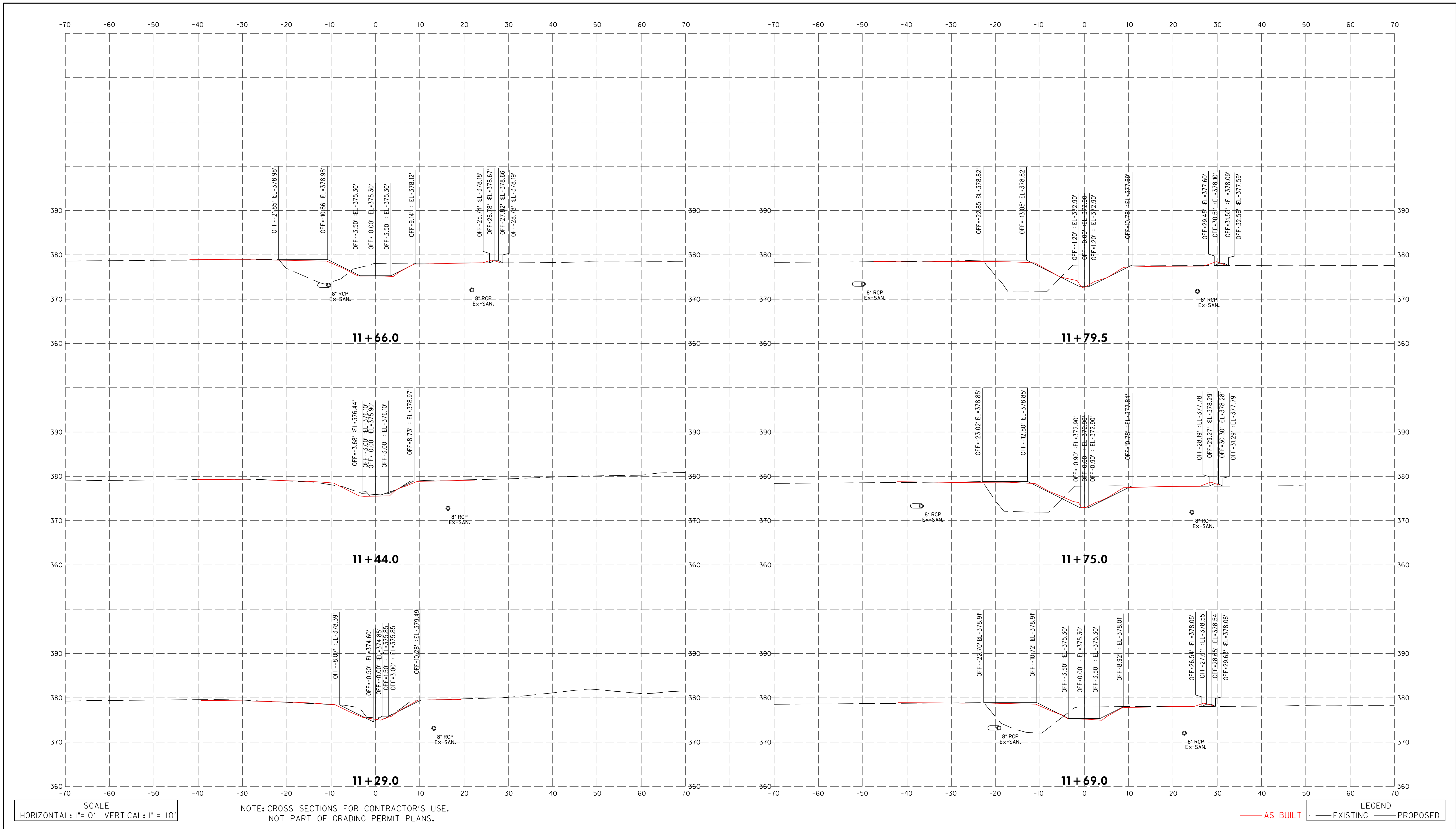


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TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
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CROSS SECTIONS

SCALE
AS SHOWN
SHEET
1 OF 2



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1"= 10'

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LEGEND
— AS-BUILT — EXISTING — PROPOSED

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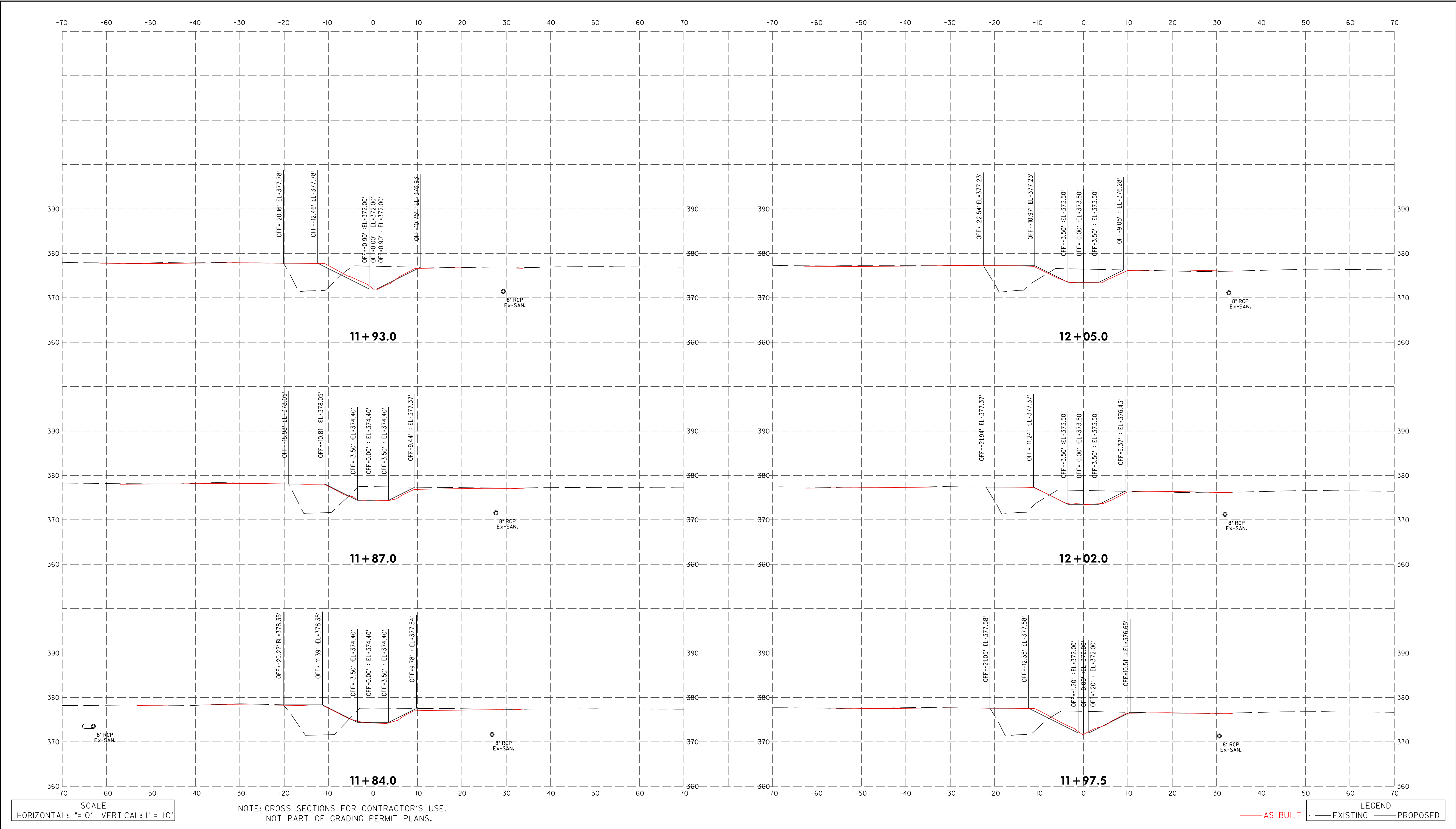


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TAX MAP 24
WAIVER PETITION #WP-13-111

CROSS SECTIONS

SCALE
AS SHOWN
SHEET
2 OF 2



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1"= 10'

NOTE: CROSS SECTIONS FOR CONTRACTOR'S USE.
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LEGEND
— AS-BUILT
- - - EXISTING
... PROPOSED

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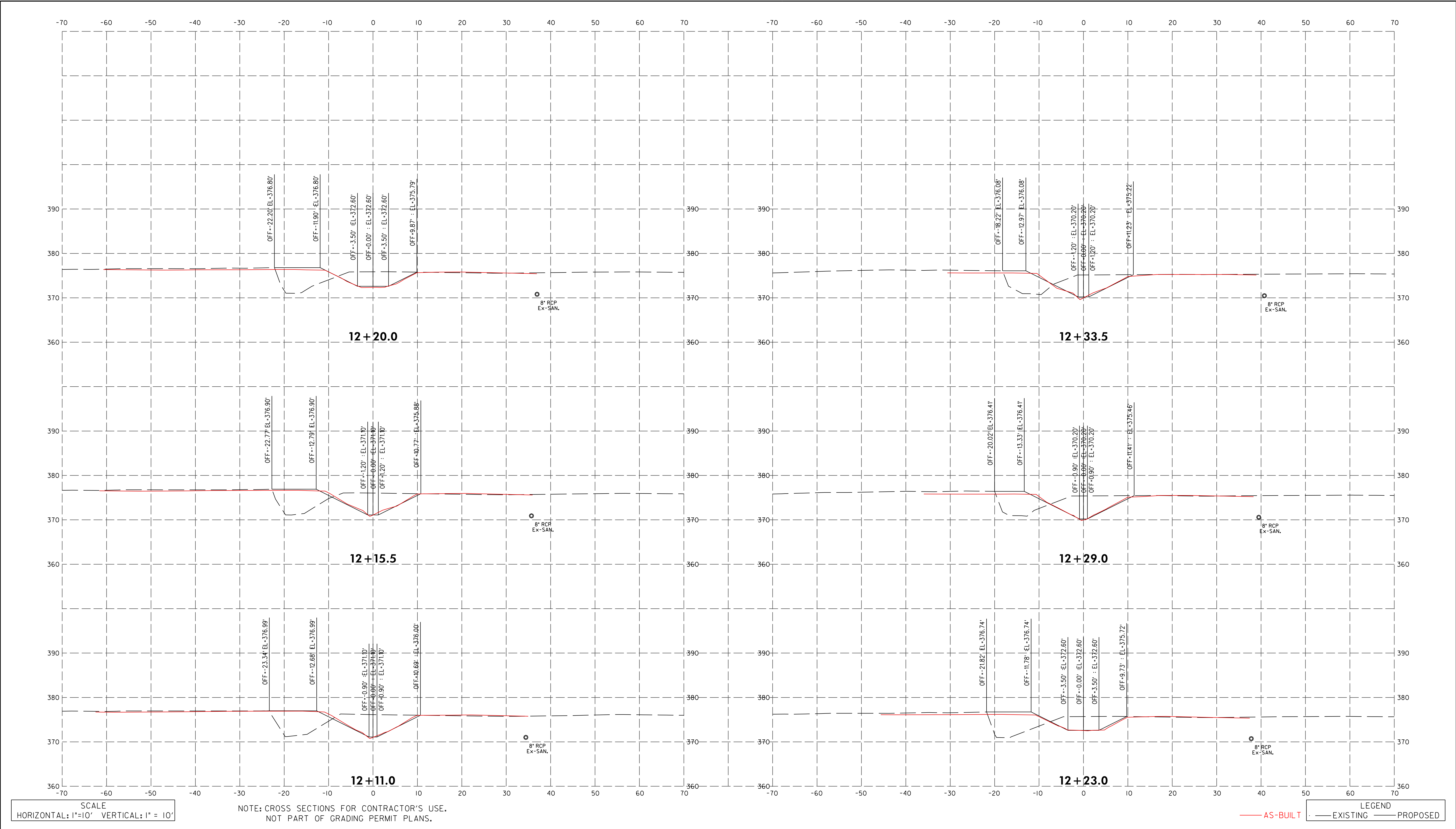


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CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

CROSS SECTIONS

SCALE
AS SHOWN
SHEET
3 OF 7



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1"= 10'

NOTE: CROSS SECTIONS FOR CONTRACTOR'S USE.
NOT PART OF GRADING PERMIT PLANS.

LEGEND
— AS-BUILT
- - - EXISTING
— PROPOSED

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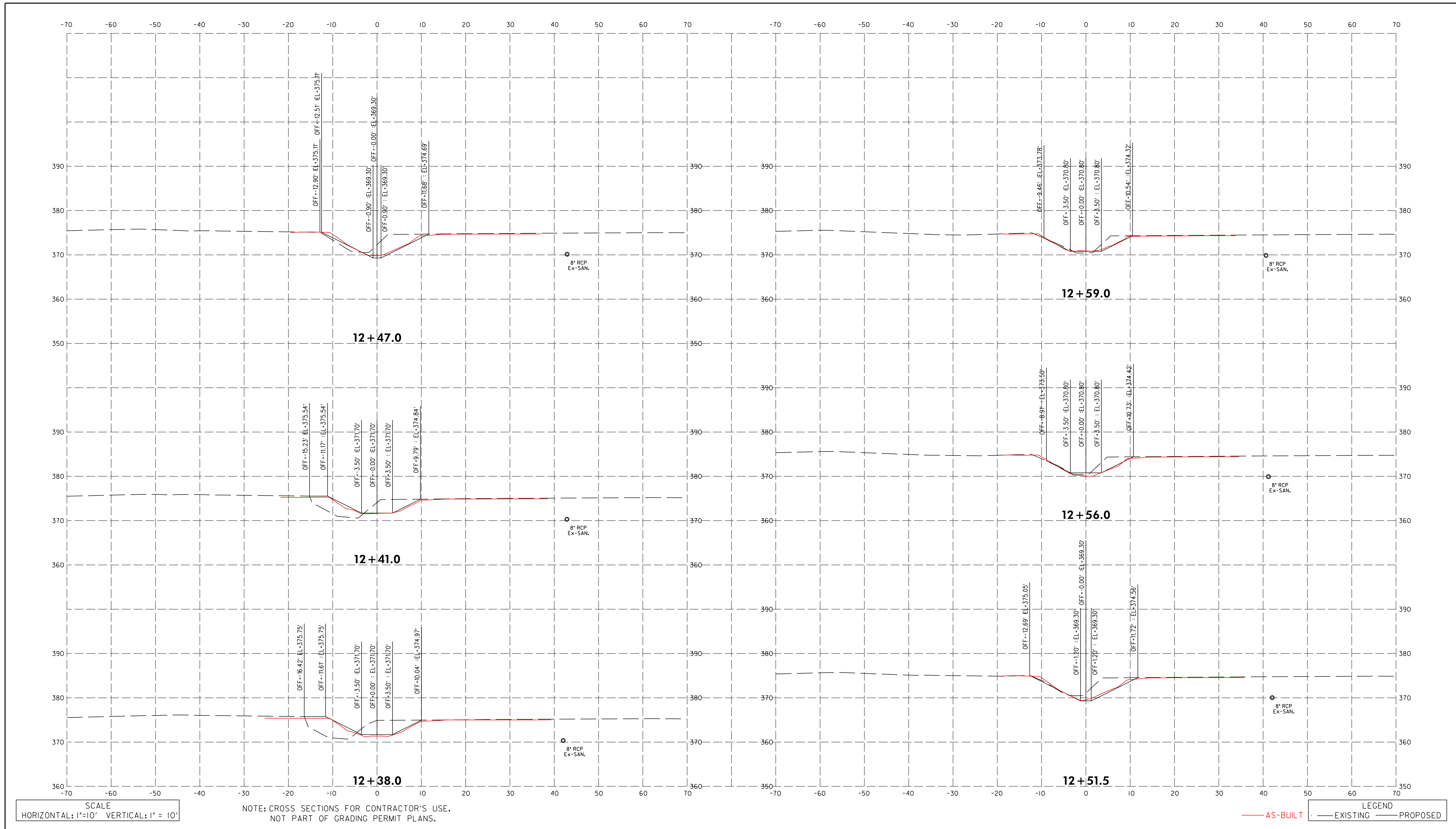


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CROSS SECTIONS

SCALE
AS SHOWN
SHEET
4 OF 7



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1"= 10'

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LEGEND
— AS-BUILT — EXISTING — PROPOSED

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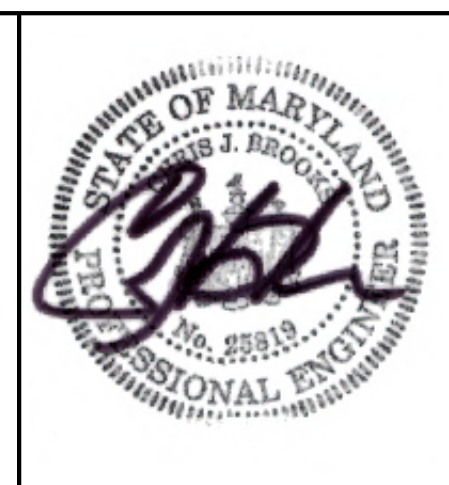
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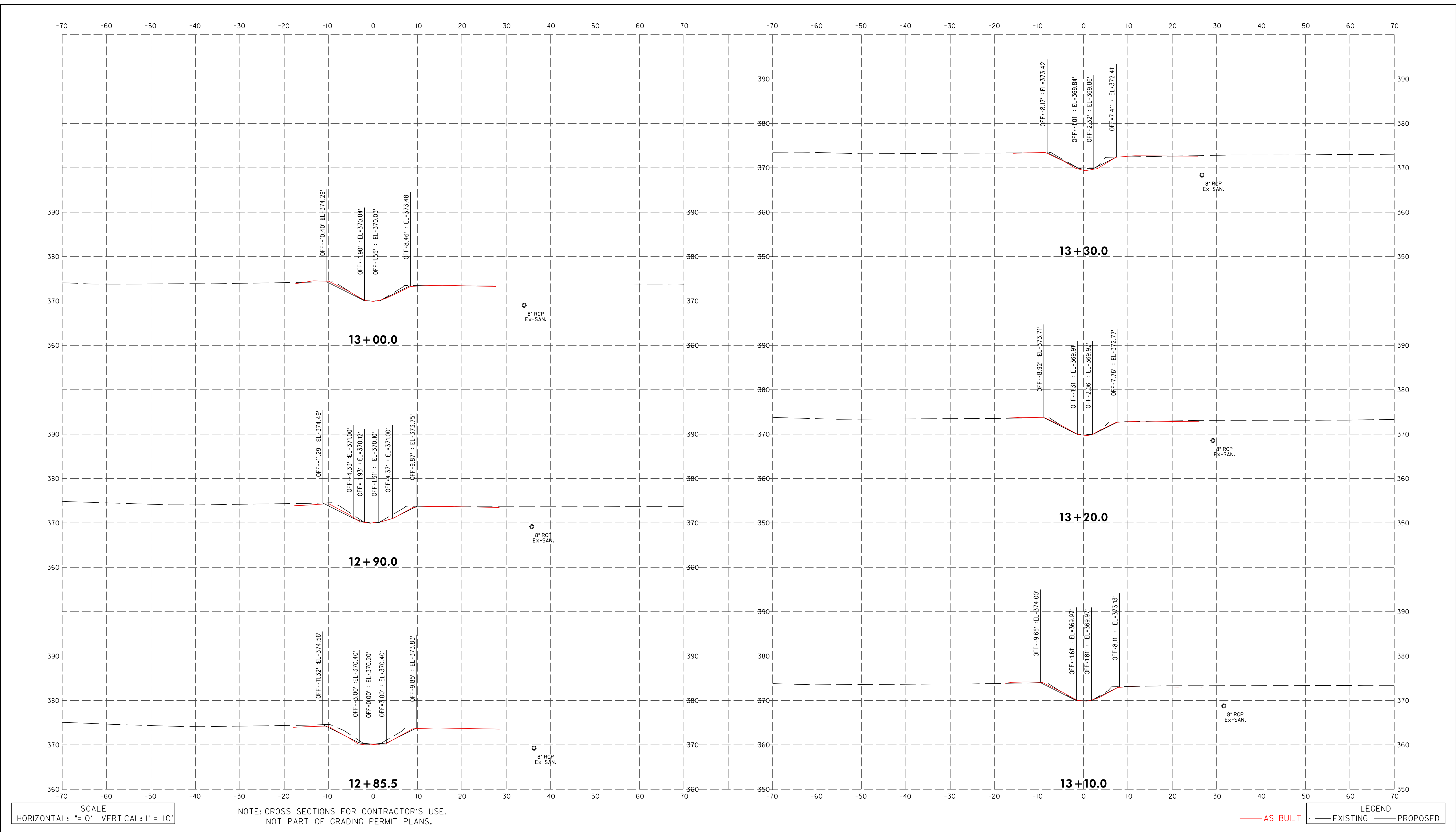


DES: LN	LEN	AS-BUILT	3/24/14
DRN: RB			
CHK: CB			
DATE: 6/17/13	BY	NO.	REVISION

HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
TUSCANY ROAD STREAM REHABILITATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 1, HOWARD COUNTY MARYLAND
TAX MAP 24
WAIVER PETITION #WP-13-111

CROSS SECTIONS

SCALE
AS SHOWN
SHEET
5 OF 7



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1"= 10'

NOTE: CROSS SECTIONS FOR CONTRACTOR'S USE.
NOT PART OF GRADING PERMIT PLANS.

LEGEND
— AS-BUILT — EXISTING — PROPOSED

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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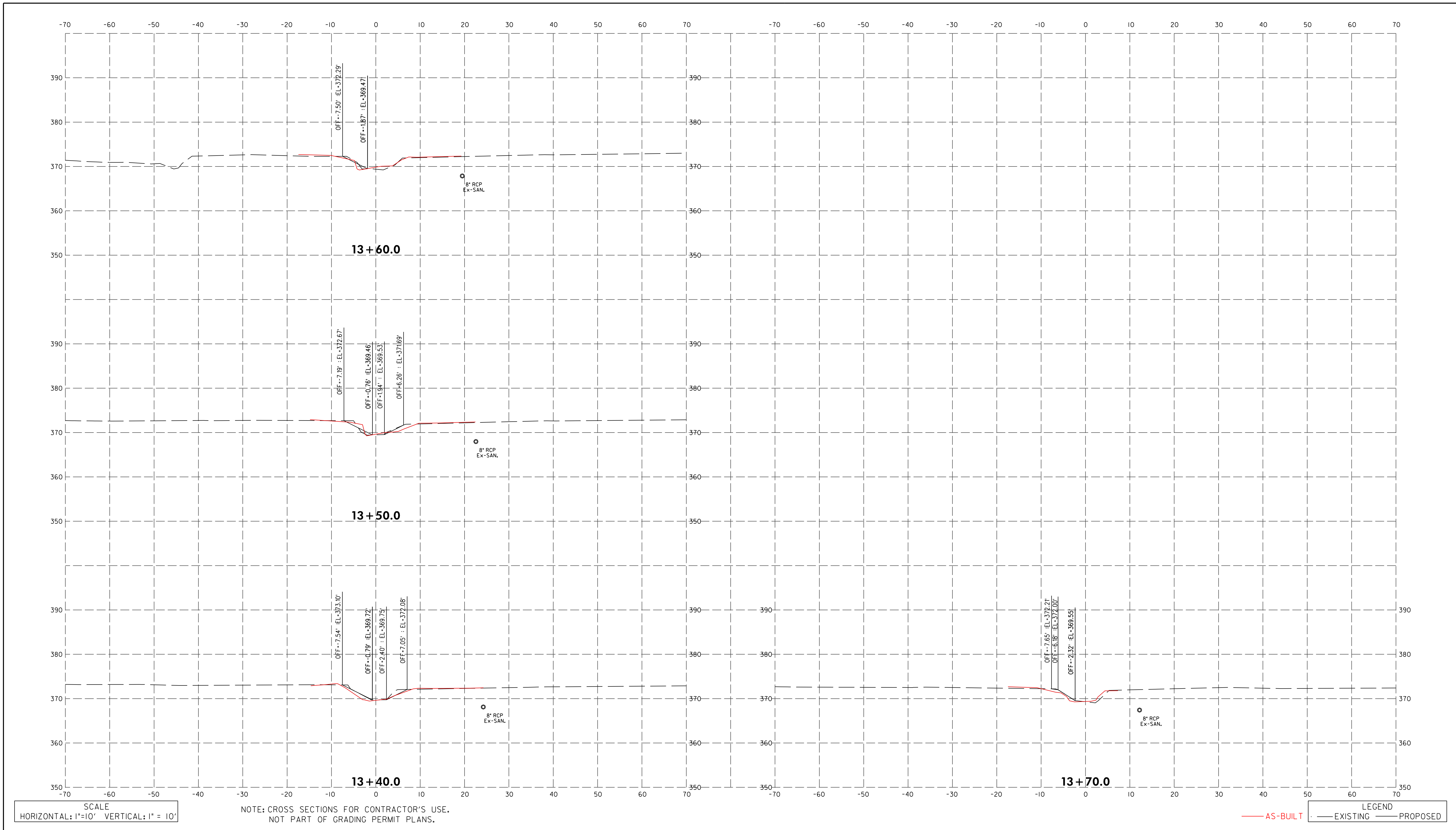


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CROSS SECTIONS

SCALE
AS SHOWN
SHEET
2 OF 2