

CAPITAL PROJECT NO. D-1163

# TROTTER ROAD STREAM BANK STABILIZATION

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

# SPECIAL CONTRACTOR NOTES

- I. 100-YR FLOODPLAIN ELEVATION IS SHOWN ON THE PLANS.
- 2. STREAM DESIGNATED USE: IV-P. IN-STREAM WORK IS PROHIBITED FROM MARCH IST TO MAY 3IST, INCLUSIVE.
- 3. CONTRACTOR SHALL CONTINUALLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.
- 4. THE CONTRACTOR SHALL EXERCISE CARE IN ACTIVITIES INVOLVING EITHER CUT AND FILL OR GRADING IN THE VICINITY OF TREES TO REMAIN AT THE CONSTRUCTION SITE. ALL EARTH CUTS AND ACTIVITIES IN THE VICINITY OF TREES TO REMAIN SHALL BE MADE IN A MANNER THAT DOES NOT DISTURB THE CRITICAL ROOT ZONE WITHIN THE DRIPLINE OF THE TREE. PROTECTIVE ORANGE FENCING SHALL BE INSTALLED AROUND THE PERIMETER OF THE CRITICAL ROOT ZONE WITHIN THE DRIPLINE OF THE TREE. THE LOCATION OF THE PROTECTIVE ORANGE FENCING SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- 5. UPON COMPLETION OF THE WORK, BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE ALL REMNANTS OF CONSTRUCTION MATERIALS FROM THE SITE. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.
- 6. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS LOCATIONS SHALL BE TAKEN.
- 7. ALL TREES TO BE REMOVED SHALL BE CUT AT THE BASE WITH A SAW AND NOT PUSHED OVER. TREE STUMPS MAY BE LEFT IN PLACE, UNLESS OTHERWISE DIRECTED ON THE PLANS.
- 8. ALL MATERIAL SHALL BE REMOVED AND DISPOSED OF OFFSITE. REMOVED TREES AND BRUSH MAY BE RE-DISTRIBUTED ON SITE AT THE DISCRETION OF THE ENGINEER.

# SOUTH THE STATE OF THE STATE OF

MAILBOX ——————————

EXISTING RIGHT OF WAY LINE -----

FIRE HYDRANT ——————————

PROPOSED FULL DEPTH PAVEMENT — — — — —

PROPOSED GRINDING & HMA PAVEMENT OVERLAY —

PROPOSED CONCRETE SIDEWALK, DRIVEWAY ENTR.—

SAN. SEWER ————————

BORING — — — — — — — — — — —

SANITARY SEWER MANHOLE — — — — —

WATER | INF ------

GAS LINE -----

UG ELECTRIC — — — — — — — —

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. 15466, EXPIRATION DATE: JULY 15, 2013.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC	WORKS
CHIEF, STORMWATER MANAGEMENT DISSION	4/12/12 DATE
Evelyn & John Chief, Bureau of Environmental Services	4/12/12
DIRECTOR OF PUBLIC WORKS	4/13/12 DATE
/	

**CONVENTIONAL SIGNS** 

PROPOSED PIPE/CULVERT — — — — —

EXISTING PIPE/CULVERT — — — — = = = = = :

IMBRICATED RIPRAP WALL — — — —

WETLAND BOUNDARY — — — — — — — • • • •

WETLAND BUFFER BOUNDARY — — — —

100-YR FI 000PI AIN — — — — .....

UTILITY POLE ——————

HEDGE / TREE LINE — — — — —

BUSH / TREE ———————

CONIFEROUS TREE ——————

RIP-RAP — — — — — — — — —

GIS EXISTING CONTOUR — — — —

SURVEYED MAJOR CONTOUR — — — —

SURVEYED MINOR CONTOUR — — — —

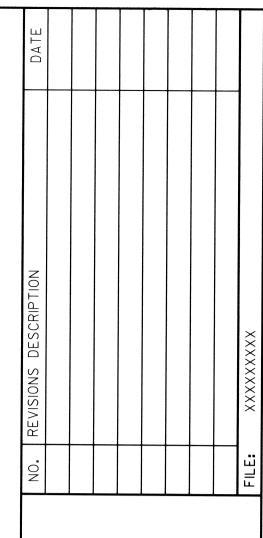
	ENGINEER'S CERTIFICATE	
	"ICERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE P BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WI THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT"	L <b>AN</b> ITH
2	SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) PAUL F. CLEMENT, P.E.	4/11/12 TE
2	DEVELOPER'S CERTIFICATE  *I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDII AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM THE CONTROL OF SEDIMENT AND EROSION BEFORE THE BEGINNING OF THE PROJECT. LALSO AUTHORIZE PERIODIC	L FOR
12	ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT'  SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  HOWARD E. Saltzman	1/12/12 TE

#### GENERAL NOTES

- ALL INFORMATION AND DETAILS ON THESE DRAWINGS SHALL BE CONSTRUCTED AS PER THE PLANS OR AS DIRECTED BY THE HOWARD COUNTY ENGINEER.
- 2. ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
- APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THESE LOCATIONS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

AT&T	I-800-252-II33
COMCAST	
BG&E (CONTRACTOR SERVICES)	
BG&E (UNDERGROUND DRAINAGE CONTROL)	
MISS UTILITY	
HOWARD COUNTY BUREAU OF UTILITIES	410-313-4900
HOWARD COUNTY DIVISION OF CONSTRUCTION INSPECTION	410-313-1880
VERIZON	_1-800-743-0033/410-224-9210

- 4. THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND/OR INFORMATION REGARDING:
  - A. PROPOSED/EXISTING RIGHT-OF-WAY.
    B. UTILITY RELOCATION.
    C. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
    D. EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT.
    E. HORIZONTAL/VERTICAL SURVEY CONTROL.
    F. GRADING PERMIT.
- SEE HOWARD COUNTY STANDARD DETAILS NO'S G-1.01 AND G-1.02 FOR STANDARD SYMBOLS
- 6. HORIZONTAL COORDINATES ARE BASED ON MD NAD 83/91 DATUM AND VERTICAL ELEVATIONS ARE BASED ON NAVD 1988 ELEVATIONS.
- THE EXISTING TOPOGRAPHY IN AREAS #1 AND #2 IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS. THE SURVEY IN AREA #1 WAS PERFORMED BY HOWARD COUNTY IN SEPTEMBER, 2009. AREA #2 WAS SURVEYED BY JMT IN OCTOBER, 2010. GIS CONTOURS WITH TWO FOOT INTERVALS BASED OFF OF BARE EARTH LIDAR MASS POINTS COLLECTED IN SPRING, 2004 IS USED THROUGHOUT THE BALANCE OF THE PROJECT.
- BORINGS AND BORING LOGS PERFORMED BY E2CR, JUNE 2009.
- THE SUBJECT PROPERTIES ARE ZONED R-ED (LOW DENSITY RESIDENTIAL) PER FEBRUARY 2, 2004 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/2006.
- THE DEPARTMENT OF PLANNING AND ZONING AND THE HOWARD SOIL CONSERVATION DISTRICT HAVE DETERMINED THAT THE DISTURBANCES WITHIN THE 100-YR FLOODPLAIN, WETLANDS, STREAM AND REQUIRED BUFFERS FOR THE PROPOSED STREAM BANK STABILIZATION PROJECT ARE CONSIDERED ESSENTIAL OR NECESSARY IN ACCORDANCE WITH SECTIONS 16.116(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THIS PROJECT IS NOT A SUBDIVISION, AND THEREFORE THIS PLAN IS NOT REQUIRED TO MEET THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THERE ARE NO BURIAL GROUNDS OR CEMETARY SITES LOCATED ON THE PROJECT SITE.
- 13. THIS PLAN MEETS THE REQUIREMENTS OF THE FOREST CONSERVATION REGULATIONS.
- 14. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 24 HRS IN ADVANCE OF ANY WORK BEING PERFORMED.
- 16. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HRS PRIOR TO ANY EXCAVATION WORK BEING PERFORMED.
- 17. THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
- 18. WATER IS PUBLIC.
- 19. SEWER IS PUBLIC.
- 20. STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT WILL NOT ADD IMPERVIOUS AREA NOR WILL IT CHANGE THE HYDROLOGY OF THE SITE.
- 21. EXISTING UTILITIES ARE BASED ON FIELD SURVEYS. THE LOCATIONS OF ALL UTILITIES IS APPROXIMATE.
- 22. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY JMT AND WAS APPROVED ON DECEMBER 19, 2011.
- 23. THE WETLANDS DELINEATION FOR THIS PROJECT WAS PERFORMED BY JMT ON OCTOBER 20, 2010.
- 24. ALL WORK SHALL BE CONSTRUCTED ACCORDING TO THE REQUIREMENTS OF THE NONTIDAL WETLANDS AND WATERWAYS PERMIT DATED DECEMBER 19, 2011. THE MDE PERMIT TRACKING NUMBER IS 201160805/11-NT-0191.
- 25. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- OBSTRUCTIONS SHOWN ON THESE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. JMT DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THOSE CHANGES.
- 27. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- 28. HOWARD SOIL CONSERVATION DISTRICT TRACKING # EP-12-13.
- 29. A WAIVER PETITION (WP-12-119) FROM SUBSECTION 16.155(a)(1)(ii) WAS APPROVED ON MARCH 6, 2012 THAT ALLOWS THE GRADING PERMITS TO BE OBTAINED FOR THE PROJECT WITHOUT FIRST SUBMITTING SITE DEVELOPMENT PLANS TO DPZ FOR APPROVAL. THE WAIVER APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
  - I. PETITIONER SHALL OBTAIN AUTHORIZATION FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND U.S. ARMY CORPS OF ENGINEERS FOR ACTIVITIES IN REGULATED AREAS ASSOCIATED WITH THE PROJECT. THE PETITIONER SHALL OBTAIN ALL NECESSARY PERMITS FROM MDE AND DILP.
  - 2. PETITIONER SHALL OBTAIN AUTHORIZATION FROM THE OWNER(S) OF T.M. 35, P. 23 FOR ACTIVITIES PROPOSED ON THAT PROPERTY PRIOR TO START OF WORK.
  - 3. PETITIONER SHALL SUBMIT A COMPLETED FOREST CONSERVATION DATA SUMMARY TO THE DPZ, DIVISION OF LAND DEVELOPMENT, ATTN: DAVE BOELLNER.





STREAM BANK STABILIZATION

CAPITAL PROJECT D-1163

HOWARD COLINEY DEPARTMENT OF BIRDLY WOODS

TITLE SHEET

AS SHOWN

DATE: APRIL 9, 2012

JMT JOB NO.: 09-2356-003/012

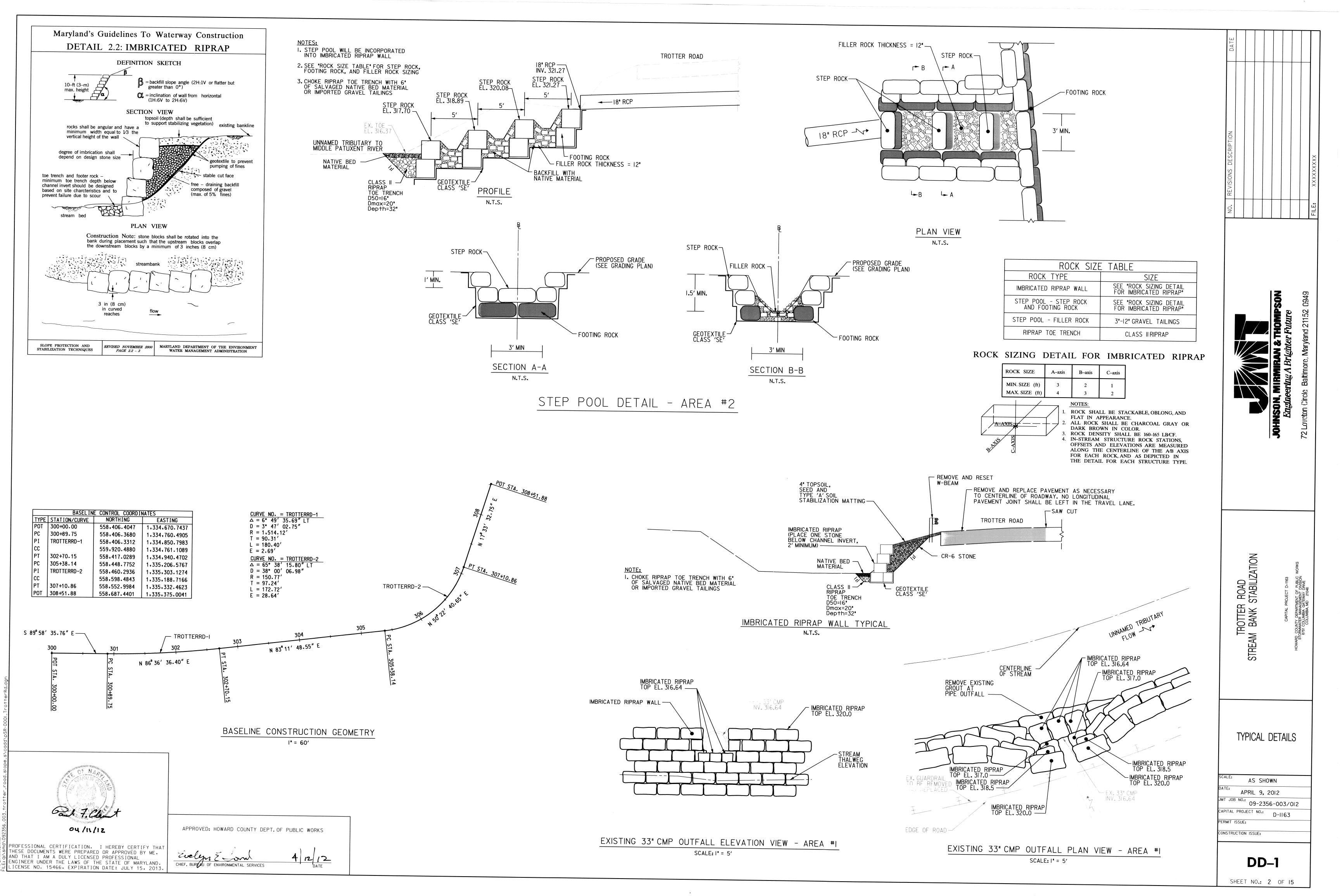
CAPITAL PROJECT NO.: D-1163

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CONSTRUCTION ISSUE:

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SHEET NO.: | OF 15



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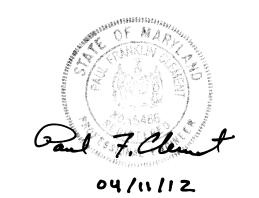
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									₹ AT TIME O	FDAL	LING	9.0	to all I	14.0				
									T AT END OF									
									A UGERS P	ULLED		***************************************						
NORTH	T HOWARD COURTS  ECT NUMBER 09-2356-018  MD ELEVATION 223 1 HOLE SIZE 1.25  STARTED 327/12 COMPLETED 3.27/12  JING CONTRACTOR: RIG 2208 7  JING METHOD HOROW Stam Augor LOGGED BY 8 Taylor HOLE SIZE 1.25  H. SAST-  HARD WAS STARTED 3.27/12  JING METHOD HOROW Stam Augor LOGGED BY 8 Taylor HOLE SIZE 1.25  MATERIAL MATERIAL SAST-						AST	-		-	·		CA VED					
	SWALLE PYPE : NUMBEH	SAM PLE LENGTH	WAR PILL IN	RLCOVERY %	* <b>3</b> 0H	BLOW SNUCK NVALUE	S RAIN CLAIR	MATERIAL DESCR	357*1 <b>0N</b>	U.S.C.S.	GRAPHIC COS	STHATUM	(LLVLVA) EN	# 57 IN WALLES #				
C							J	Asphat Pavemoni		ASP-IA		A	-322-	3 3 13 20 25 30 35 <b>40 4</b> 3				
	SS	M	G	38		25-12-7-	1	Fine Silly SAND, Some Gra	vol Moist Brown	1	***		+322-					
+	s · ss	24 24	2			.19) 9 12 9 4		to Dark Greenish Brown, M (FILL) (Estimated USDA: S.		SM		A	-321- -320- -319-					
<u></u>	5.7 SS	24				2.2.2.5	5	SILT, With Sand and Clay Roots Moist Macium Brow	Trace Sand, Trace	M.		Α.	10:6-					
	<b>S</b> -3	21 7	<b>₹</b> . All	3.0		143	63	Loose (FILL) (USDA Sitte	xarri J		m		-316-	Λ				
	S5 5-4	24				3546 19	l	Clayey Sit T. Trace Sand. * Moist, Tan, Light Gray, Van ☐ (Essimated USDA, Sit Loan	Stiff (Residual)	M		E*	-315-	<b>\.</b> •				
	SS 5-5	24	3	13		12-12-9- 10 (21)		Services assessed registerious posts transfer	8.				-314- -313-					
	SS S-2	24	4	17		13.23 24.41	11	Fine to Madium Sity SAND Moist, Tan, Brown, Danse s	a Extremity Dense				-312- -311-	•				
+	-+	$\dashv$				(47) 26:27		(Estimated USDA: Sandy Lit	Sept.	SM		Ð	-310-					
,, 13	\$5 \$7	24	13	54		21-23							_309_ are_					
	SS S 8	5.75	8	34		38 39	15	Fine Sity SAND, Liste Mica Brown Greenish Brown, "a					-30F-					
1	58		_			50.50€*	1	Extramally Dense (Decompo					-306-					
- 43	SS S-9	24	12	50		13.26 33.37				041	<i>Y</i>	C	-301					
+						149)	ł						-304-					
	SS - 10	5.79	14	59		13.26 43.50/6*							-303-					
+	55	_		-		17.21	21	Fine Sity SAND, Lide Mica		<del>                                     </del>	m		-302-					
15	SS.	24	11	46		25 S		Brawn Greenish Brawn, "a to Denso (Saproha)		177. <b>4</b> 4		gis.	-901-					
	SS	24	16	63		5- <b>6</b> 12		a your make a second		SM		B	-300- -299-					
<u>25</u> S	÷ 12			-043		(18)					Ш		296					

SIN SOME	MAN A DIA	i imps	72	Lo	son, Mirmiran & Tho weton Circle ss, Maryland 21152	mpson			Е	ORI	ng nu	JMBE	RB-4	14	
LIENT HONE	: Count					PROJECT NAME	Trottar	Frac	Arou	.2	***		***************************************		
POVECT NUMB	MER <u>09</u>	295€	018			PROJECT LOCAT	TION								
ROUND ELEV	72 Loveton C Sparks, Mary  Thoward Counts  CT NUMBER 09 2356 018  ID ELEVATION 322 11 HOLE SIZE COMPLETED STARTED 327/12 COMPLETED STARTED 327/12 COMPLETED STARTED 527/12 COMPLETED STARTED 527/12 COMPLETED SAST-  HERWING NATION 18 STARTED 18 STARTED 18 STARTED 527/12 COMPLETED SAST-  HERWING NATION 18 STARTED 18 START			LE SI <b>ZE</b>		GROU	NO W	ATE	H & CAY	ED DEFT	1 LEVEL	S			
ATE STARTED	72 Loveton C Sparks, Mary  Howard Counts  CT NUMBER 09 2356 018  ID ELEVATION 322 1 HOLE SIZE  STARTED 327/12 COMPLETED  NG CONTRACTOR / RIG 2208 /  NG METHOD DCP LOGGED 8  - BAST -				MPLETED 3/27/12	ATTMED	FORLL	NG_	Dy						
RILLING CONT	RACTO	R PM	G <u>E2CH</u>	<u> </u>		AT END OF	POPILLI	NG _							
RILLING METH	<u> </u>	a.			LOGGED BY B. Taylor	A UGERS P	VULL ED	-			CA	VEO			
ORTH	72 Loveton Circ Sparks, Maryla  72 Loveton Circ Sparks, Maryla  73 Loveton Circ Sparks, Maryla  74 Howard County  ECT NUMBER			•						CA	VED				
1 70		HOD %	BLCW COUNTS IN VALUE	HALADLP	MATERIAL DESCR	USUS.			STRATUM LEVEVALEN ROOD		**			9 90 90 9 80 96	
				3	Clayer Sit 1 Trace to Some Trace Roots, Moist, Medium	, Sand, * raco Mica, i Brown	Mt.		En.	-329- -321- -326-		20 26	30 35 40	4.5	
4 1				)	Sandy, Silty, CLAY Trace N	Aca, Tence Poets	CL I		p-	-319-					

	SON, I					72	Lo	son, Mirmiran & Tho veton Circle (s. Maryland 21152	,					RING	NU		RE	
	MT _					54.5	***************************************		PROJECT NAME		r Ecar	Ara	3.2				*****	
						-0n8	но	LE SIZE _1.25	PROJECT LOCAT		ANT W	ATE	TO A CA	VED DE	CT LILL C	WELL O		=
DATE DRIL	ESTAI LING (	RTED	RAC	TOF	P#	G_E20F	co	MPLETED 327.02  LOGGED BY B 12/yor	☐ AT TIME OF ☐ AT ENB OF AUGERS P	DALL	LING LING	9.0	n El 1 n .l 1	16.0 113.9	CAVED		'E. 2	
NOF															CAVED			_
	SAMEL VPC NUMBER	NAM PUE UENGTH	SAMPLE HE C. IR.	H CONTRACTOR	N. S.	BLCW CCONIS TRIVALUEL	SIMALULFIE	MATERIAL DESCR	FCT ON	U.M.C. 5.	(3-4.处外做), 巨顶	STHALLOW	MATAVATA ME	10 Z	0 3C 40 • 3C 40	100 % C 50 60 100 % d	72 80 72 80 72 80	2
£				-	├		1	Asphalt Payornors	·	SD-JA	1	Λ	-325-		1 1 2	25 30	35 45	)
	SS	24	12	GC.	1	77.57	-	Fine to Coarse Clayay SAN Moist, Cark Brown, Change	D, Trace Grave.	90	***	A	-304- -303-				· · · · · · · · · · · · · · · · · · ·	
	5 · S5		_	-	ł	73. F6#7	25	Til Consc FL. (Tistimatod (): 	SDA: Seroy Clay	M	▓	Δ	-177-		[	;		
ſ.	50 57 85	24		21	-	3344	5	SILT Some Sand, Trace M Modium Danise (F.C.) [List Loam]	ca Moisz Grown marad LSEA: 541	SM	<b>***</b>	Α	-271 <b>-</b>					-
	\$-3 \$5		16			77 · T 5 :29 :27 2:2	i.	Fine to Coarse SAND, Some Trace Asphalt and Gravel N Black, Madium Danisc (FIL.)	Advist Dark Brown	M.			-919- -918-	•		-	-	
F-1	\$4 \$\$	-	19	_		137.9	3	Loam   Sandy S&T, Trace to Jittle Light Gray, Stiff (Recided)	Gay Most Far. USDA Loam	SM	$\prod$	B.	-31/- -316-					
	55 55 56	175				16 22 16 22 50 6	11	Find to Madium Sity SAND Quarte Graval, Most, Tan F (festimated USDA Sandy).	Frames, Very Densid				-3*3-	•			ter parameter to promise	
	S5 5-7	24	123	SC		38 19 36 1		Micaceous Sandy Sit 1 Mo Medium Dense (Estimated Sity I no SAND, Trans Mic	JSDA Sittown	38		es Se	-3*7- -311-		***			
75	\$\$ 5-8	20	1,3	GC:		15-19- 21-50/21		Brown Otanga, Elemanty (Dacomposad Rock)	Jonese				-316- -369-					
								Bottom of Bonng at 16.3 to	Ø.	1	222			<u> </u>		:	<del>- i</del>	_
														;	:			
														:	:	:		

1	No.					son, Mirmiran & Tho weton Circle	mpson	***********			BO	RING NU	IMBER B	-5		,	• •
	<b>AN A</b> Com		WP-9.	* S	oarl	ks. Maryland 21152	PROJECT NAME:	The same delication	n Cama	d A							
			36€	0n &	***************************************		PROJECT LOCAT		111000	1 M D	1						
/A	TON	Ĵu.	25.4		_ HC	OLE SIZE 3.20						VED DEFTHL	EVELS				A
				<b>3</b> 2207		MPLETED 3/27/12	¥ ATTME OF	DR	LING	9.0	tri EL 3º	10.0					
						LOGGED BY B Taylor	AT END OF AUGERS PI	JLLEC	L##G _		M - 1 - 1	CAVE	D_15041E_2%	0.0			
					A5T							CAVE					
	SAMPLI HICITE	HLOOVEHY X	F4(2) %	BECOM: CAUNIS IN VALUE	SIMALLE	MATERIAL DESCR	571 <b>⊙</b> •4	6,25,5,5	GRAPHE LA KI	SHALM	LEVEVATEM. Foots	10 20 30 4 10 20 30 4 10 20 30 4	MC 1.1 £ 50 60 70 80 13 00 % □ 11 50 60 70 80 00 00 4 € 6 50 60 70 80 N VALUE ▲ 2 25 30 35 48	90 90	TROTTER ROAD	NOI WI	163 ILIC WORKS
					Ţ	Asphalt Payomort		SD-4A	A	Λ	+325- +325-		25 30 35 43			를	CAPITAL PROJECT D-1163 HOWARD COUNTY DEPARTMENT OF PUBLIC STORMWATER MANAGENENT DIVISION 6751 COLUMBIA GATEWAY DRIVE
	12	SC.		7757	3	Fine to Coarse Clayay BANE Moist, Dark Brown, Change I	Brown Madium	50	<b>X</b>	Α	-123-			A	S\{	<u> </u>	OJECT NT OF MENT
	î.	5+		1647	25 35	Conscittifalimacod(S	<i>I</i> -	M.	₩	<u> </u>	-177- -27-			1		) _	L PRO
	_	-		20	5	Skill Some Sand, Trace Mic Modum Denise & Culff som Liborni	ra Word Brown nalad LSIA: 581	SM	***	1	-121-						APITA DEPA UMBIA
1	115	75		3345 V·		Fine to Coerse SAND, Some race Asphat, and Gravel M	Sit. Track Ster	M.		B*	-919-	6				2	O VINATE COLL
	17	7 *		\$ 29 27 23	Į.	Black Medium Dense If II	(USCA: Sandy	SM	M	В	L314-	•		-	F <sub>5</sub>	<del>-</del>	D CO STORN 675
$\dashv$	-	$\dashv$		155	3	Sandy St. T. Trace to Little C Legiv. Gray, Stiff (Recided)	Zay Most Far.	├	╁╁╁	╁	<u> </u>				<	Ī	OWAR
'	19	79		 	11	Fine to Modium Sity SAND,	Trace Mea, Trace	M.	Щ	B*	<u> </u>	0 4	The second secon			=	I
5	15	96		14.77 50/6	11	(Restmated JSDA Sandy La	ear i				-2*3-	•		> > 📥		<b>つ</b>	
	12	6.0	Ì	38 39 36 31		Micaceous Sandy Sit 1 Work Medium Dense (Estimated U	JSDA Set Lovel	3-3			-317-			5			
4		_		15.19		Sity Hino SAND, Trans Mica Brown (Drange, Elemently 3 (Decomposed Rock)					-316-						
	12	60		21 5072		r Dacomposas mode.					-309-			5× 5×			
						Bottom of Boning at 16.3 fee									SCALE: APR	S SHO	2012
													*		CADITAL DDO IEC		56-003/012



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. 15466, EXPIRATION DATE: JULY 15, 2013.

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

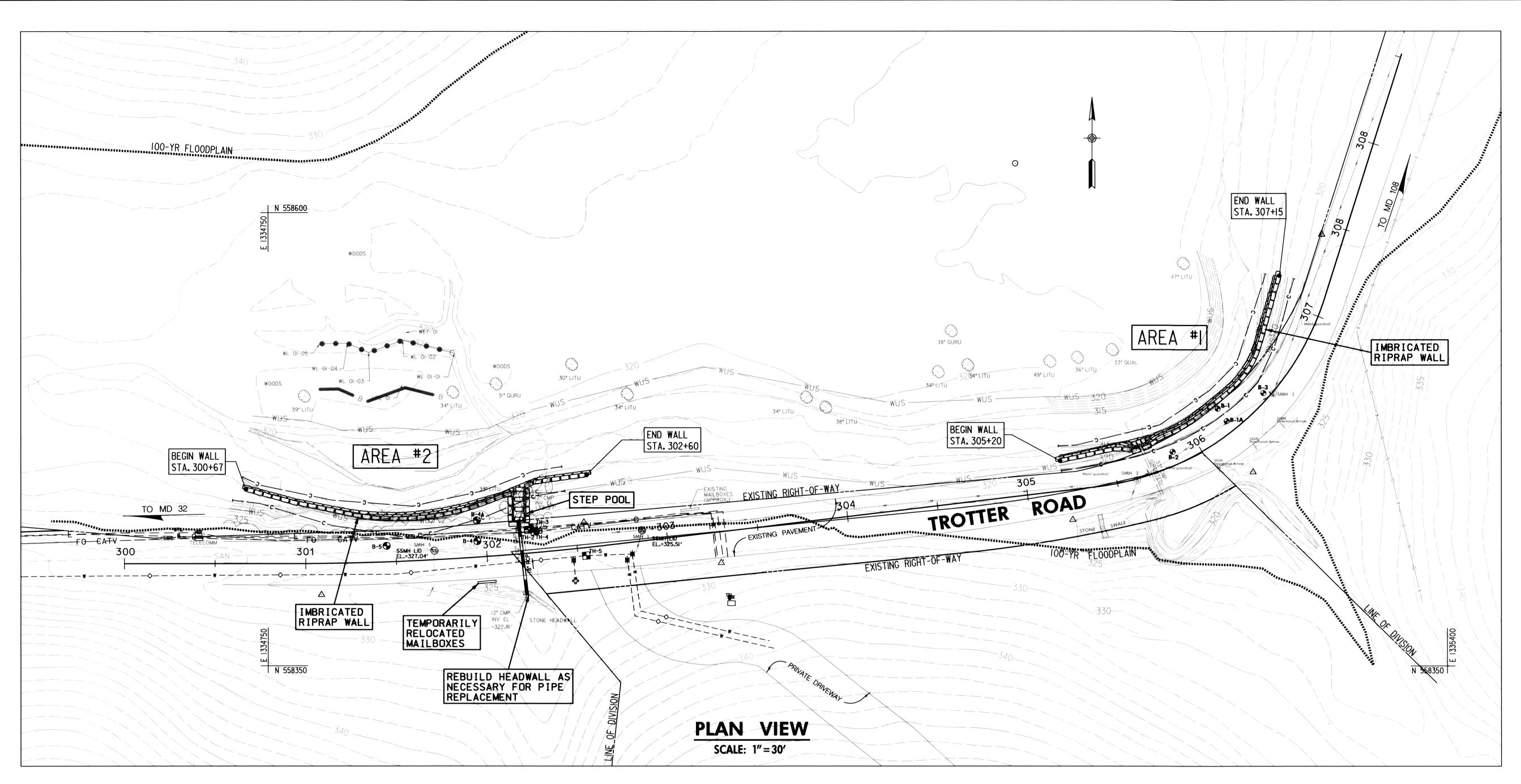
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

4/12/12 DATE

CONSTRUCTION ISSUE: BL-1

CAPITAL PROJECT NO.: D-1163

SHEET NO.: 3 OF 15



	AREA I					
	STATION	OFFSET				
	305+20	16 <b>.</b> 5′ <b>,</b> LT <b>.</b>				
1	305+25	17.1', LT.				
	305+50	18 <b>.</b> 9′ <b>,</b> LT <b>.</b>				
	305+67	14.7', LT.				
1	305+71	14.7', LT.				
	305+75	15 <b>.</b> 4′ <b>,</b> LT <b>.</b>				
	306+00	17.0', LT.				
	306+25	18.0', LT.				
	306+50	17 <b>.</b> 9′ <b>,</b> LT <b>.</b>				
	306+75	23 <b>.</b> 0′ <b>,</b> LT <b>.</b>				
	307+00	26.9′, LT.				
	307+15	27 <b>.</b> 6′ <b>,</b> LT <b>.</b>				
	NOTE:	-				
	STATION/OFFSETS GI	VEN AT CENTERLINE				

IMBRICATED ROCK WALL SCHEDULE

OF TOP ROCK ON WALL (SEE ROCK SIZING DETAIL, SHEET 2).

33" OUTFALL TA	APER SCHEDULE				
AREA #I					
STATION	OFFSET				
305+68	18.9', LT.				

STATION/OFFSETS GIVEN AT CENTERLINE OF CREST ROCK (SEE ROCK SIZING DETAIL, SHEET 2).

#### SANITARY SEWER

TOP EL. = 325.55 INV. EL. (IN) = 314.04 INV. EL. (IN) = 314.38 INV. EL. (OUT) = 313.99

TOP EL. = 321.75 INV. EL. (IN) = 313.26 INV. EL. (IN) = 313.32 INV. EL. (OUT) = 313.12

TOP EL. = 322.74 INV. EL. (IN) = 312.82 INV. EL. (OUT) = 313.82

TOP EL. = 320.48 INV. EL. (IN) = 311.95INV. EL. (OUT) = 311.93

TOP EL. = 327.09 INV. EL. (IN) = 314.60 INV. EL. (IN) = 314.32 INV. EL. (OUT) = 314.26

IMBRICATED ROCK	WALL SCHEDULE	STEP POOL	SCHEDULE
AREA	#2	AREA	<b>4 #</b> 2
STATION	OFFSET	STATION	OFFSET
300+67	41.1', LT.	302+19	19 <b>.</b> 1′ <b>,</b> LT.
300+75	38 <b>.</b> 9′ <b>,</b> LT <b>.</b>	302+20	24.6', LT.
301+00	32 <b>.</b> 5′ <b>,</b> LT <b>.</b>	302+20	30.0′, LT.
301+25	27.1' <b>,</b> LT.	302+21	35 <b>.</b> 5′ <b>,</b> LT <b>.</b>
301+50	23 <b>.</b> 6′ <b>,</b> LT <b>.</b>	NOTE:	
301+75	24.4′, LT.	STATION / DEESETS C	IVEN AT CENTEDI IN

STATION/OFFSETS GIVEN AT CENTERLINE OF CREST ROCK (SEE ROCK SIZING DETAIL, SHEET 2).

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

NOTE:

302+00

302+25

302+50

302+60

STATION/OFFSETS GIVEN AT CENTERLINE OF TOP ROCK ON WALL (SEE ROCK SIZING DETAIL, SHEET 2).

29**.**4′**,** LT**.** 

37.0′, LT.

39.6′, LT.

_	335					335
		(	E 2	E 1		
-	_ 330		EX./PR			330 _
		STEP POOL		TCMP A		325
		(SEE DETAIL, SHEET 2)	#+1		-INV.322.81 -INV.321.27	320
-	  315 		OP ELEV. 322.9	8"WTR.TOP ELEV.321.8		315 — —
-	  310 					310
-	  305		+111	0+21.9		305
-  -  -			GAS ELEV. 322.5 U.G. ELEC. EV. 5.92 ±		40 I F	
-  -  -	<u>300</u>		0+3.6 TOP EI 0+4.5 TOP ELEV		- 40 L.F. 18"RCP CL. V @ 3.85%	300
	  295		00+0	0+40	2 3 3 3 7 8	

- I. THE LOCATION OF ALL SHOWN UTILITIES IS APPROXIMATE. ADDITIONAL TEST PITS MAY BE NECESSARY PRIOR TO CONSTRUCTION TO DETERMINE THE ACTUAL LOCATIONS.
- 2. LIMITS OF WALL MAY NEED TO BE ADJUSTED IN THE FIELD TO TIE INTO NATURAL FEATURES AT THE DIRECTION OF THE ENGINEER.
- 3. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED PAVEMENT AT THE DIRECTION OF THE ENGINEER. CONTRACTOR SHALL BE PAID PER UNIT PRICE BID FOR PAVEMENT REPAIR.
- 4. ACTUAL LOCATION OF THE RELOCATED MAILBOXES SHALL BE COORDINATED WITH THE USPS POSTMASTER.
- 5. TREE-SAVES ARE TO BE IDENTIFIED AT THE PRE-CONSTRUCTION MEETING. TREE-SAVES ARE TO BE PROTECTED WITH ORANGE TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND

TES	TEST PIT SUMMARY						
	UTILITY TYPE	TOP DEPTH					
TEST PIT TH-2	I" ELECTRIC CABLE	5 <b>.</b> 92′					
TEST PIT TH-3	2" PLASTIC GAS PIPE	2.58′					
TEST PIT TH-4	(2) I-I/2" FIOS INNERDUCTS & (I) I-I/2" CABLE TV LINE	2.98′					
TEST PIT TH-5	8" DUCTILE IRON WATER PIPE	5.14′					

SOIL BORING SUMMARY TABLE

BORING B-I EL. = 320.42 N 558,491.92 E 1,335,273.40

BORING B-IA EL. = 322.I3 N 558,484.96 E I,335,278.42

BORING B-2 EL. = 321.56 N 558,467.96 E 1,335,248.63

BORING B-3 EL. = 322.48 N 558,500.44 E 1,335,298.63

BORING B-4 EL. = 323 N 558,418.82 E 1,334,865.26

BORING B-4A EL. = 322 N 558,430.31 E 1,334,864.98

→ BORING B-5 EL. = 325 N 558,416.21 E 1,334,815.30

NOTE: SEE SHEET DD-2 FOR SOIL BORING LOGS

39**.**8′**,** LT**.** GRUBBING.

PLAN SHEET

TROTTER ROAD STREAM BANK STABILIZATION

AS SHOWN APRIL 9, 2012 (JMT JOB NO.: 09-2356-003/012

CAPITAL PROJECT NO.: D-1163 PERMIT ISSUE: CONSTRUCTION ISSUE:

PS-1

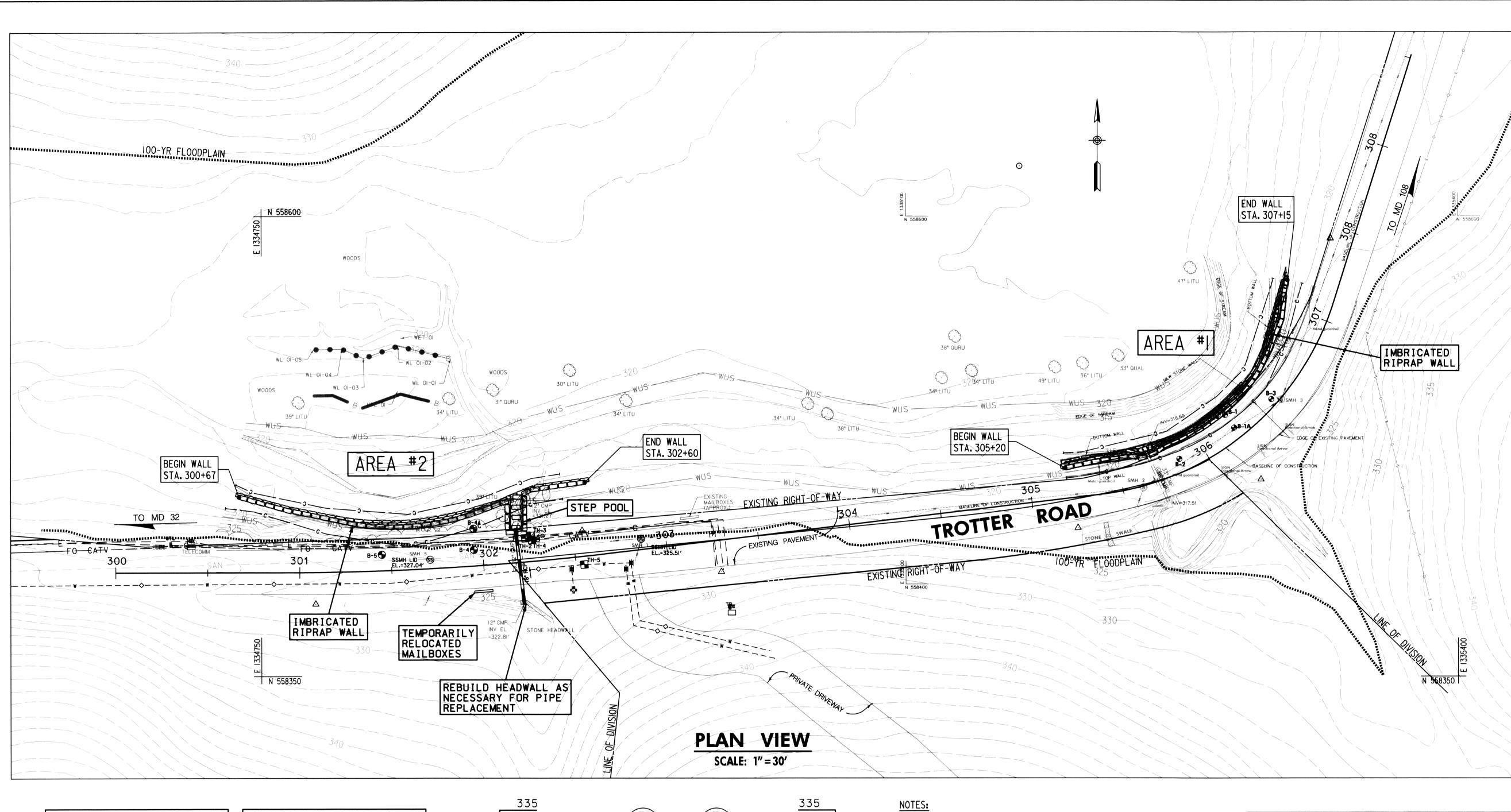
SHEET NO.: 4 OF 15

04/11/12 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. 15466, EXPIRATION DATE: JULY 15, 2013.

CHIEF, BY EAU OF ENVIRONMENTAL SERVICES

4/12/12 DATE



IMBRICATED RO	OCK WALL SCHEDULE
А	REA I
STATION	OFFSET
305+20	16.5', LT.
305+25	17.1', LT.
305+50	18.9', LT.
305+67	14.7', LT.
305+71	14.7', LT.
305+75	15.4', LT.
306+00	17.0', LT.
306+25	18.0', LT.
306+50	17.9', LT.
306+75	23.0′, LT.
307+00	26.9', LT.
307+15	27 <b>.</b> 6′ <b>,</b> LT.
NOTE:	

STATION/OFFSETS GIVEN AT CENTERLINE OF TOP ROCK ON WALL (SEE ROCK SIZING DETAIL, SHEET 2).

33" OUTFALL TA	APER SCHEDULE				
AREA #I					
STATION	OFFSET				
305+68	18.9', LT.				

STATION/OFFSETS GIVEN AT CENTERLINE OF CREST ROCK (SEE ROCK SIZING DETAIL, SHEET 2).

#### SANITARY SEWER

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TOP EL. = 322.74 INV. EL. (IN) = 312.82 INV. EL. (OUT) = 313.82

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TOP EL. = 327.09 INV. EL. (IN) = 314.60 INV. EL. (IN) = 314.32 INV. EL. (OUT) = 314.26

V	0	T	E	S	:
_					_

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NOTE: SEE SHEET DD-2 FOR SOIL BORING LOGS					
TES	T PIT SUMMARY				
	UTILITY TYPE	TOP DEPTH			
TEST PIT TH-2	I" ELECTRIC CABLE	5.92′			
TEST PIT TH-3	2" PLASTIC GAS PIPE	2.58′			
TEST PIT TH-4	(2) I-I/2" FIOS INNERDUCTS & (I) I-I/2" CABLE TV LINE	2.98′			
TEST PIT TH-5	8" DUCTILE IRON WATER PIPE	5.14′			

SOIL BORING SUMMARY TABLE

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BORING B-2 EL. = 321.56 N 558,467.96 E 1,335,248.63

BORING B-3 EL. = 322.48 N 558,500.44 E 1,335,298.63

BORING B-4 EL. = 323 N 558,418.82 E 1,334,865.26

BORING B-4A EL. = 322 N 558,430.31 E 1,334,864.98

BORING B-5 EL. = 325 N 558,416.21 E 1,334,815.30

# AS-BUILT CERTIFICATION

"I HEREBY CERTIFY THAT THE STREAMBANK STABILIZATION PRACTICE SHOWN #EP-12-13. EXCEPT AS NOTED IN RED ON THIS "AS-BUILT" DRAWING."

Gal 7. Clement SIGNATURE

15466 P.E. NO. 07/18/12



PLAN SHEET

ROAD STABILIZATION

TROTTER STREAM BANK S

AS SHOWN APRIL 9, 2012 09-2356-003/012 CAPITAL PROJECT NO.: D-1163

CONSTRUCTION ISSUE:

SHEET NO.: 4A OF 15



AND THAT I AM A DULY LICENSED PROFESSIONAL

04/11/12 PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME,

IMBRICATED ROCK WALL SCHEDULE

AREA #2

STATION/OFFSETS GIVEN AT CENTERLINE

OF TOP ROCK ON WALL (SEE ROCK SIZING

STATION

300+67

300+75

301+00

301+25

301+50

301+75

302+00

302+25

302+50

302+60

DETAIL, SHEET 2).

OFFSET

41.1', LT.

38.9′, LT.

32.5′, LT.

27.I', LT.

23.6', LT.

24.4', LT.

29.4', LT.

37.0′, LT.

39.6', LT.

39.8', LT.

ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. CHIEF, BUREAU OF ENVIRONMENTAL SERVICES LICENSE NO. 15466, EXPIRATION DATE: JULY 15, 2013.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

STEP POOL SCHEDULE

AREA #2

STATION

302+19

302+20

302+20

302+21

DETAIL, SHEET 2).

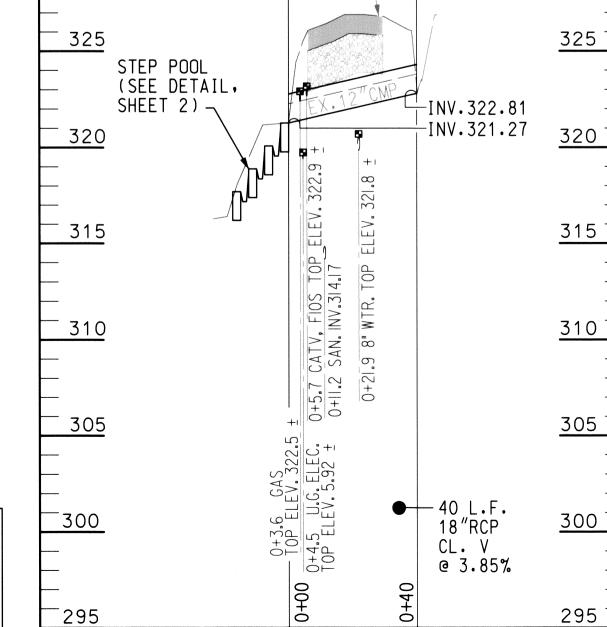
OFFSET

19.1', LT.

24.6', LT.

30.0', LT.

35.5′**,** LT.



2

X./PR.

GROUND

STATION/OFFSETS GIVEN AT CENTERLINE OF CREST ROCK (SEE ROCK SIZING

<del>330</del>

305

330

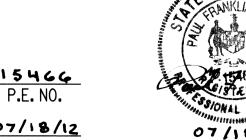
ON THE PLANS HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS INCLUDED UNDER THE HOWARD SOIL CONSERVATION DISTRICT APPROVAL,

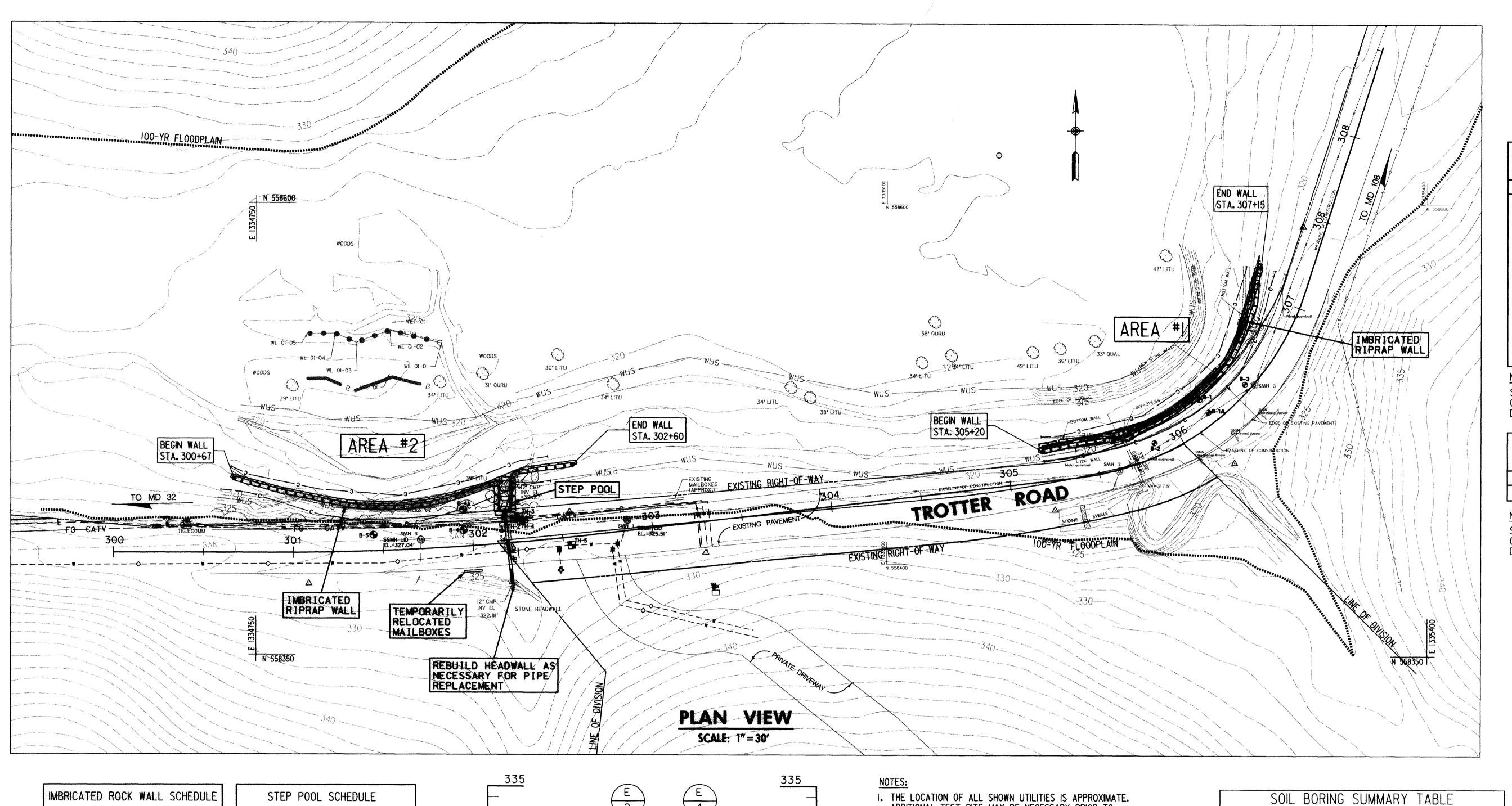
"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL OBSERVATIONS CONDUCTED DURING CONSTRUCTION.

PAUL F. CLEMENT

PRINT NAME

DATE





IMBRICATED	ROCK	WALL	SCHEDULE
	AREA	1.	
STATION		OF	FSET
305+20		16	.5', LT.
305+25		17.	l', LT.
305+50		18	.9', LT.
305+67		14.	.7', LT.
305+71		14.	.7', LT.
305+75		15.	4', LT.
306+00		17.	.0', LT.
306+25		18.	.0', LT.
306+50		17.	9', LT.
306+75	ŀ	23	.0', LT.
307+00		26	.9', LT.
307+15		27	.6', LT.
			1,1111111111111111111111111111111111111

STATION/OFFSETS GIVEN AT CENTERLINE OF TOP ROCK ON WALL (SEE ROCK SIZING DETAIL, SHEET 2).

33" OUTFALL	TAPER	SCHEDULE
AF	REA #I	
STATION		OFFSET
305+68	V.	18.9', LT.

STATION/OFFSETS GIVEN AT CENTERLINE OF CREST ROCK (SEE ROCK SIZING DETAIL, SHEET 2).

# SANITARY SEWER

TOP EL. = 325,55 INV. EL. (IN) = 314,04 INV. EL. (IN) = 314,38 INV. EL. (OUT) = 313,99

SMH 3 TOP EL. = 322.74 INV. EL. (IN) = 312.82 INV. EL. (OUT) = 313.82

**SMH** 2 TOP EL. = 321.75 INV. EL. (IN) = 313.26 INV. EL. (IN) = 313.32 INV. EL. (OUT) = 313.12

TOP EL. = 320.48 INV. EL. (IN) = 311.95 INV. EL. (OUT) = 311.93

TOP EL. = 327.09
INV. EL. (IN) = 314.60
INV. EL. (IN) = 314.32
INV. EL. (OUT) = 314.26

STATION	1 OFFSET
300+67	41.1', LT.
300+75	38.9', LT.
301+00	32.5′, LT.
301+25	27.1', LT.
301+50	23.6′, LT.
301+75	24.4', LT.
302+00	29.4', LT.
302+25	37.0′, LT.

AREA #2

39.6', LT.

39.8', LT.

STATION/OFFSETS GIVEN AT CENTERLINE OF CREST ROCK (SEE ROCK SIZING DETAIL, SHEET 2).

AREA #2

OFFSET

19.1', LT.

24.6', LT.

30.0', LT.

35.5', LT.

STATION

302+19

302+20

302+20

302+21

302+50

302+60

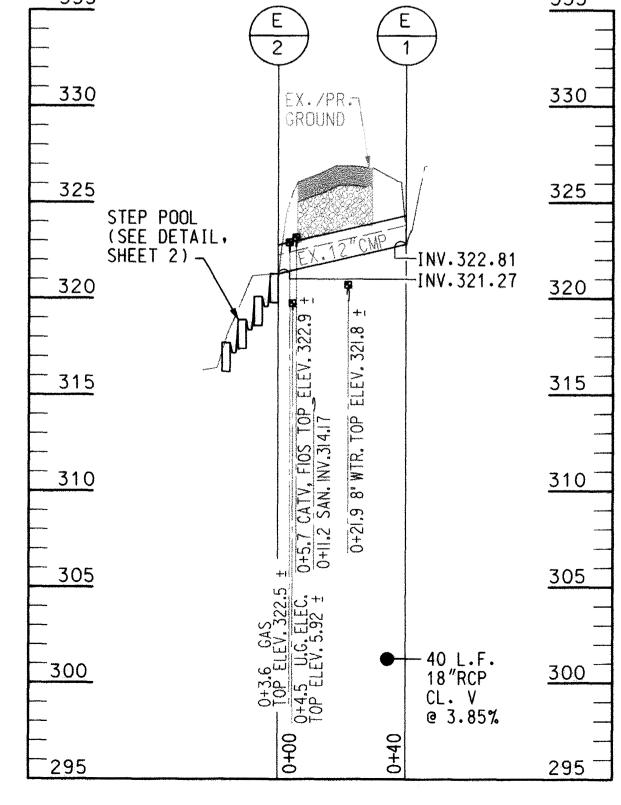
STATION/OFFSETS GIVEN AT CENTERLINE OF TOP ROCK ON WALL (SEE ROCK SIZING DETAIL, SHEET 2).

# 51/11/12

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. 15466, EXPIRATION DATE: JULY 15, 2013.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS





- I. THE LOCATION OF ALL SHOWN UTILITIES IS APPROXIMATE. ADDITIONAL TEST PITS MAY BE NECESSARY PRIOR TO CONSTRUCTION TO DETERMINE THE ACTUAL LOCATIONS.
- 2. LIMITS OF WALL MAY NEED TO BE ADJUSTED IN THE FIELD TO TIE INTO NATURAL FEATURES AT THE DIRECTION OF THE ENGINEER.
- 3. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED PAVEMENT AT THE DIRECTION OF THE ENGINEER. CONTRACTOR SHALL BE PAID PER UNIT PRICE BID FOR PAVEMENT REPAIR.
- 4. ACTUAL LOCATION OF THE RELOCATED MAILBOXES SHALL BE COORDINATED WITH THE USPS POSTMASTER.
- 5. TREE-SAVES ARE TO BE IDENTIFIED AT THE PRE-CONSTRUCTION MEETING. TREE-SAVES ARE TO BE PROTECTED WITH ORANGE TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.

		T	EST PIT SUMMARY	
			UTILITY TYPE	TOP DEPTH
TEST	PIT	TH-2	I* ELECTRIC CABLE	5.92′
TEST	PIT	TH-3	2" PLASTIC GAS PIPE	2.58′
TEST	PIT	TH-4	(2) 1-1/2" FIOS INNERDUCTS & (1) 1-1/2" CABLE TV LINE	2.98′
TEST	PIT	TH-5	8" DUCTILE IRON WATER PIPE	5,14'

BORING B-I EL. = 320.42 N 558,491.92 E 1,335,273.40

BORING B-IA EL. = 322.13 N 558,484.96 E 1,335,278.42

BORING B-2 EL. = 321.56 N 558,467.96 E 1,335,248.63

BORING B-3 EL. = 322.48 N 558,500.44 E 1,335,298.63

BORING B-4 EL. = 323 N 558,418.82 E 1,334,865.26

BORING B-4A EL. = 322 N 558,430.31 E 1,334,864.98

BORING B-5 EL. = 325 N 558,416.21 E 1,334,815.30

NOTE: SEE SHEET DD-2 FOR SOIL BORING LOGS

## AS-BUILT CERTIFICATION

"I HEREBY CERTIFY THAT THE STREAMBANK STABILIZATION PRACTICE SHOWN ON THE PLANS HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS INCLUDED UNDER THE HOWARD SOIL CONSERVATION DISTRICT APPROVAL, \*EP-12-13, EXCEPT AS NOTED IN RED ON THIS "AS-BUILT" DRAWING."

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL OBSERVATIONS CONDUCTED DURING CONSTRUCTION.

Sand 7, Clement **SIGNATURE** 

PAUL F, CLEMENT

PRINT NAME

15466 P.E. NO. 07/18/12

DATE





PS-1A

PERMIT ISSUE:

CONSTRUCTION ISSUE:

SHEET NO .: 4A OF 15

PLAN SHEET

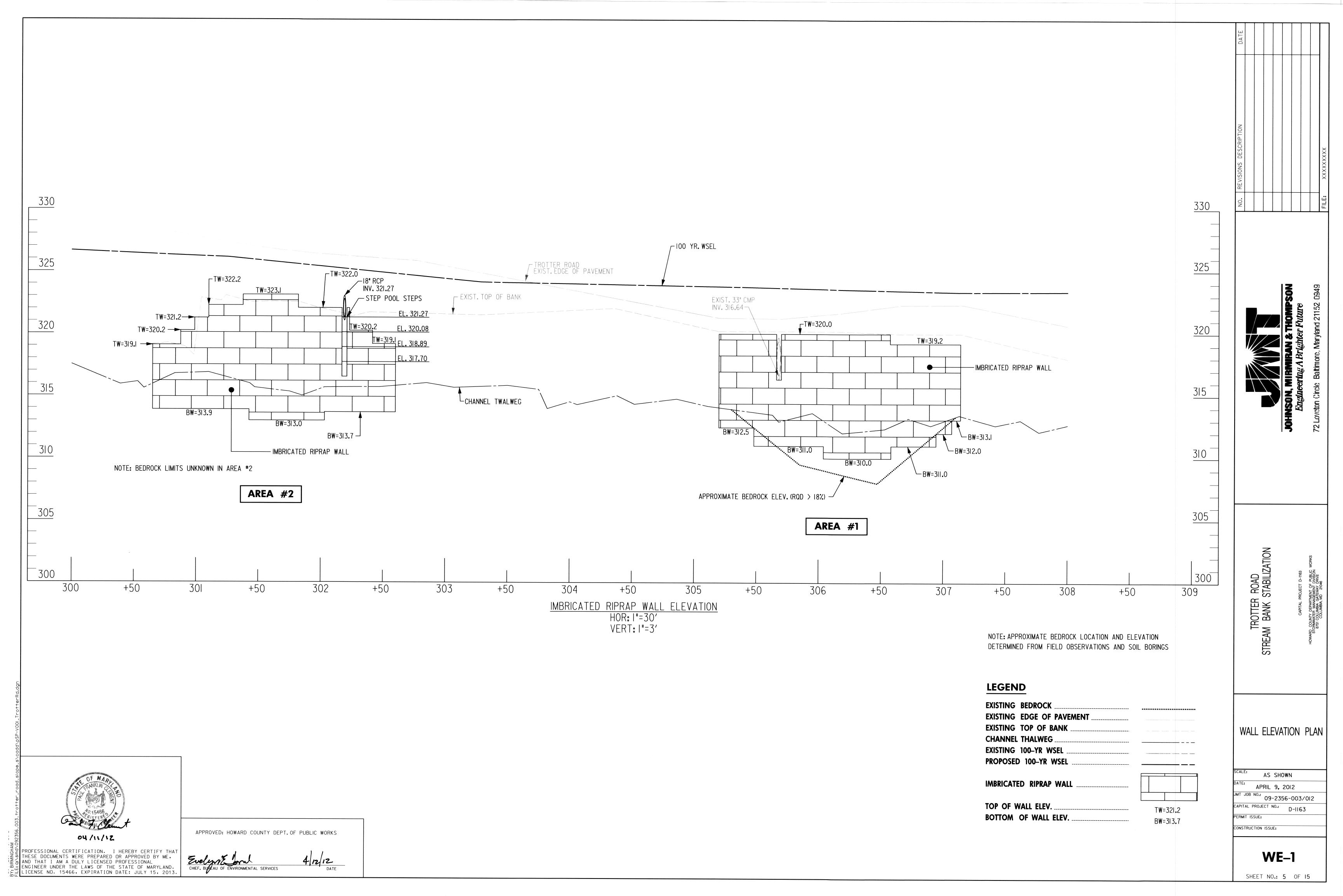
AS SHOWN

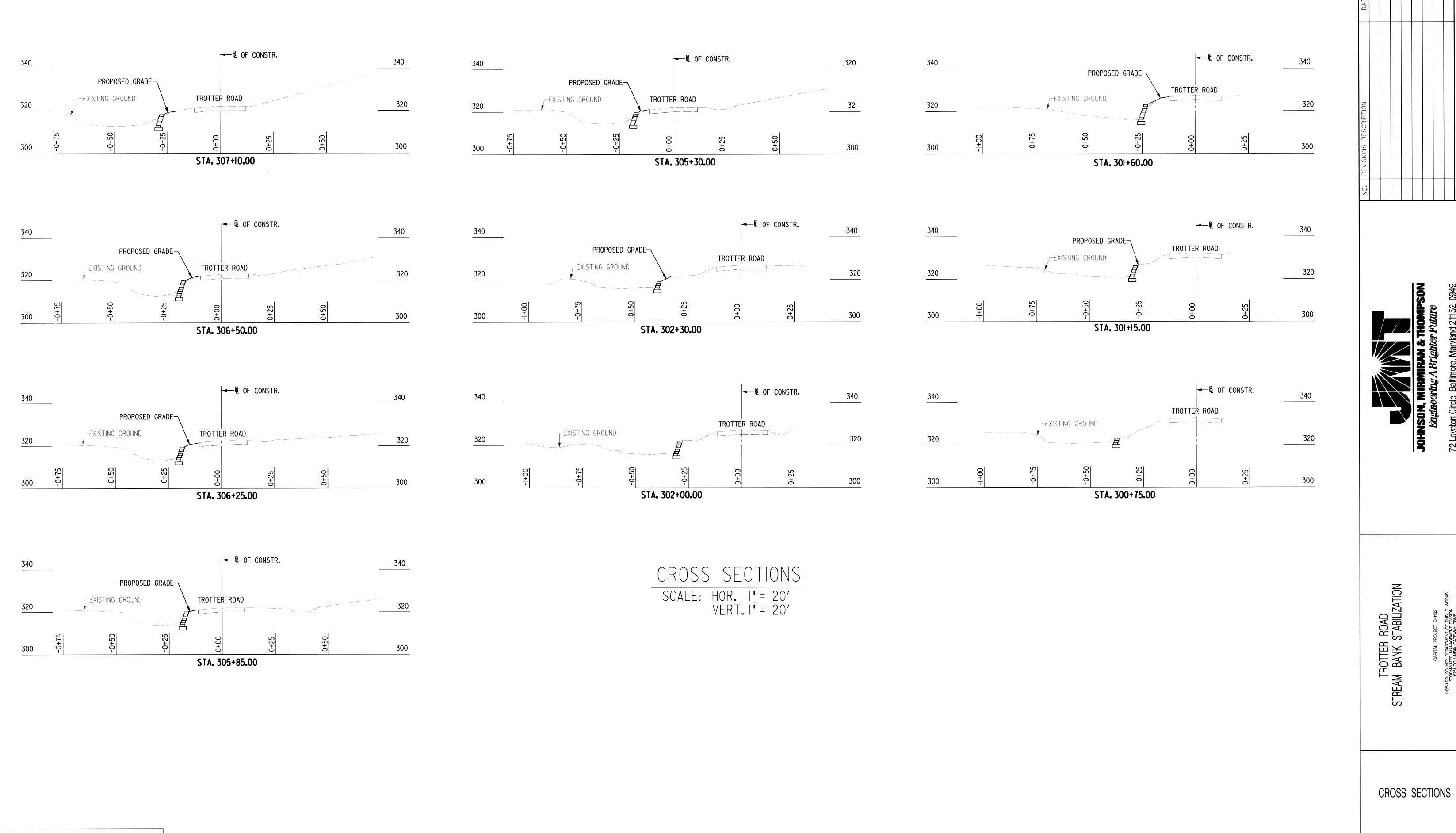
APRIL 9, 2012 JMT JOB NO.: 09-2356-003/012

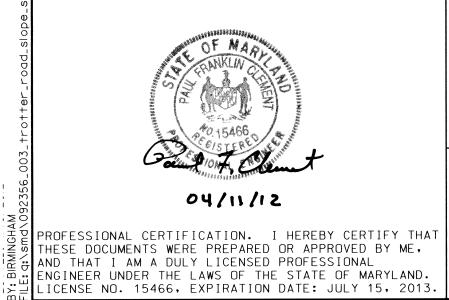
CAPITAL PROJECT NO.: D-1163

ROAD STABILIZATION

TROTTER STREAM BANK S







APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS 4/12/12 DATE

AS SHOWN APRIL 9, 2012 JMT JOB NO.: 09-2356-003/012 CAPITAL PROJECT NO.: D-1163 PERMIT ISSUE: CONSTRUCTION ISSUE:

TROTTER ROAD STREAM BANK STABILIZATION

XS-1

SHEET NO.: 6 OF 15

#### TRAFFIC CONTROL NOTES

- I. ALL TEMPORARY TRAFFIC SIGNS, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES USED FOR MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND THE MARYLAND STATE HIGHWAY ADMINISTRATION BOOK OF STANDARDS AND SPECIFICATIONS.
- 2. ALL TEMPORARY TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE TO MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION ON MATERIALS, SECTION 104.08
- 3. ALL DETOUR SIGNS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
- 4. ANY CORRECTIONS, MODIFICATIONS, OR ADDITIONS TO THE PLAN SHALL BE APPROVED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, TRAFFIC DIVISION.
- 5. MISS UTILITY SHALL BE NOTIFIED PRIOR TO PLACEMENT OF SIGNING.
- 6. HOWARD COUNTY BUREAU OF ENGINEERING/TRANSPORTATION PROJECTS DIVISION (410-313-2014) SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY WORK.
- 7. THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS TRAFFIC DIVISION RESERVES THE RIGHT TO MODIFY OR ADJUST THE PLAN TO FIT SITE CONDITIONS AT ANY TIME.
- 8. ADVANCE NOTICE SIGN SHALL BE PLACED AT THE POINT OF ROAD CLOSURE TWO (2) WEEKS PRIOR TO CLOSURE. IF CLOSURE DOES NOT TAKE PLACE WITHIN ONE (1) WEEK OF THE DATE STATED ON SIGN, THE DATE SHALL BE CHANGED TO REFLECT THE CORRECT CLOSURE DATE AT NO ADDITIONAL COST.
- 9. SIGN INSTALLATION SHALL NOT LAST ANY LONGER THAN 15 MINUTES PER LOCATION. IF LONGER THAN 15 MINUTES APPROPRIATE TRAFFIC CONTROL AND PERMITS SHALL BE USED.
- 10. TRAFFIC ENGINEER SHALL DETERMINE EXACT PLACEMENT OF THE TYPE III BARRICADES.
- II. ALL SIGNS SHALL CONFORM TO CURRENT MDSHA MATERIAL AND REFLECTIVITY REQUIREMENTS.
- 12. ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS UNLESS PERMISSION FOR CLOSURE IS GRANTED BY THE PROPERTY OWNER/MANAGER. HOWEVER, ACCESSIBILITY FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
- 13. ALL FLAGGERS SHALL BE CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION.
- 14. ALL TRAFFIC CONTROL DEVICES ARE TO BE REMOVED FROM VIEW WHEN NOT IN USE.
- 15. NO HAZARDOUS MATERIALS SHALL BE STORED WITHIN PUBLIC RIGHT-OF-WAY.
- 16. ANY TEMPORARY TRAFFIC SIGNING AND MARKINGS THAT MAY CONFLICT WITH NORMAL TRAFFIC FLOW SHALL BE REMOVED OR COVERED AT THE END OF EACH DAY DURING CONSTRUCTION ON THIS PROJECT.
- 17. ALL EXISTING TRAFFIC CONTROL DEVICE THAT MUST BE REMOVED SHALL BE REPLACED IN THEIR PROPER LOCATION PRIOR TO THE COMPLETION OF THE PROJECT. COST FOR THE REPLACEMENT AND/OR REPAIR OF DEVICES DAMAGED AS A RESULT OF THE PROJECT SHALL BE ASSESSED TO THE CONTRACTOR.
- 18. AT THE COMPLETION OF THE PERMITTED WORK ACTIVITY, CONDITIONS WITHIN THE PUBLIC SPACE SHALL BE FULLY RESTORED TO THOSE WHICH EXISTED PRIOR TO THE WORK ACTIVITY.
- 19. WHEN PAVEMENT MARKINGS HAVE BEEN OBLITERATED BY THE WORK ACTIVITY, THE CONTRACTOR SHALL INSTALL ANY CRITICAL INTERIM PAVEMENT MARKING PRIOR TO THE END OF THE WORK DAY.

# ROADWAY CLOSURE NOTIFICATION

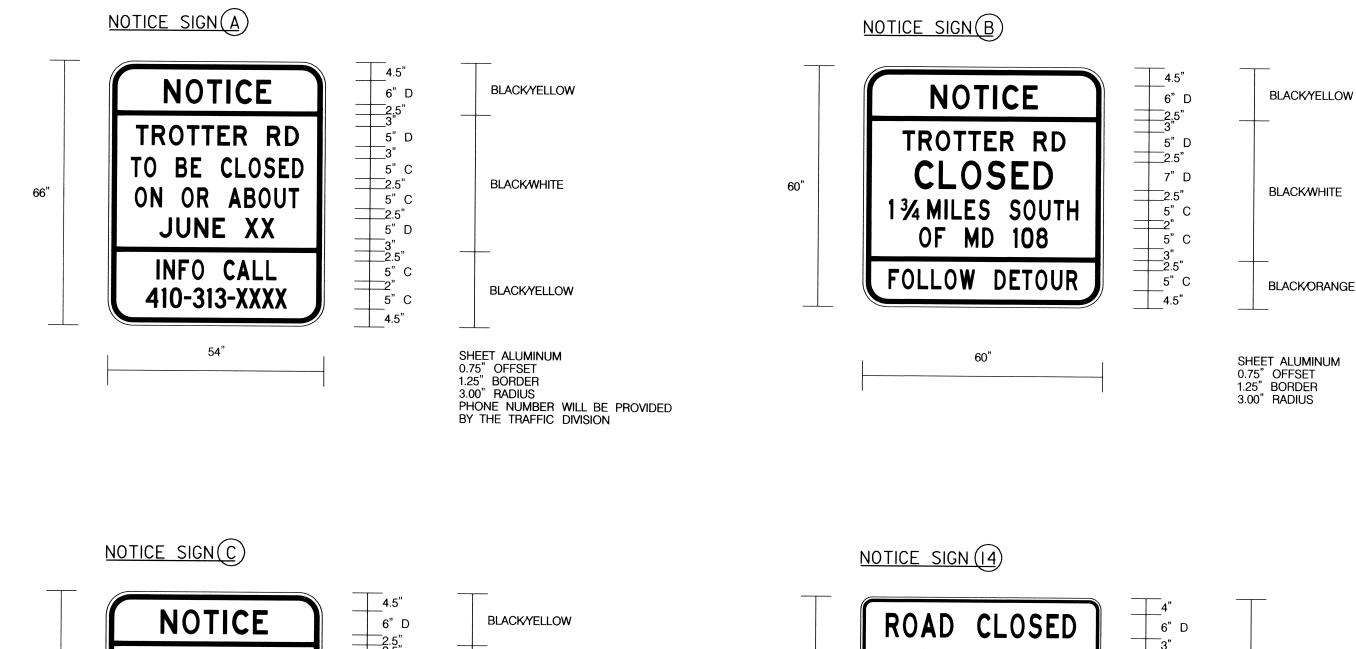
THE CONTRACTOR MUST NOTIFY THE FOLLOWING AGENCIES AT LEAST FOUR WEEKS IN ADVANCE OF THE ROAD CLOSURE:

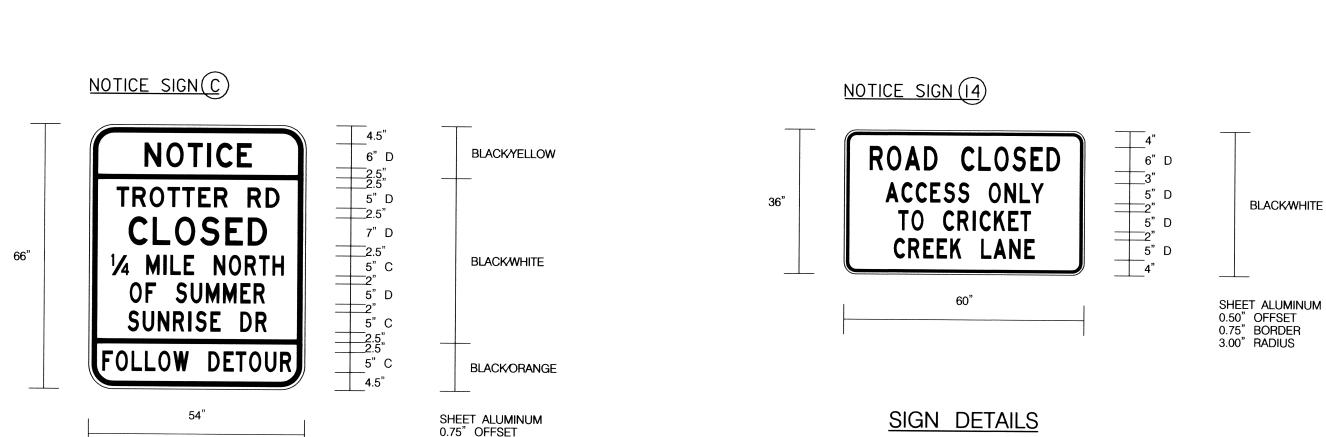
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/TRANSPORTATION PROJECTS DIVISION - STEVE SHARAR
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF HIGHWAYS/TRAFFIC DIVISION - PARRIS ZIRKENBACH
HOWARD COUNTY PUBLIC SCHOOLS/TRANSPORTATION DIVISION - BRYAN JOHNSON
HOWARD COUNTY TRANSIT SERVICES - MAYNARD NASH
HOWARD COUNTY BUREAU OF ENVIRONMENTAL SERVICES - MARK KREIS
HOWARD COUNTY EMERGENCY COMMUNICATIONS/9II CENTER - ADMINISTRATIVE NUMBER

410-313-2300

#### **DETOUR NOTES**

- I. SIGN (A) TO BE INSTALLED 14 DAYS PRIOR TO APPROVED DAY OF ROAD CLOSURE.
- 2. SIGN (A) SHALL BE REMOVED AS SOON AS ROADWAY IS CLOSED.
- 3. THE USE OF SIGN (A) OR A VARIABLE MESSAGE SIGN (VMS) TO ALERT MOTORISTS OF THE CLOSURE TO BE DETERMINED BY THE TRAFFIC ENGINEER.
- 4. ALL SIGN LOCATIONS ARE APPROXIMATE.
- 5. ALL SIGN LOCATIONS SHALL BE MARKED AND/OR APPROVED BY HOWARD COUNTY TRAFFIC (410-313-5752) PRIOR TO THE INSTALLATION OF ANY SIGNS.
- 6. ALL SIGNS SHALL BE COVERED WITH OPAQUE MATERIAL UNTIL ROAD IS CLOSED.
- 7. THE TYPE III BARRICADE LOCATIONS SHALL BE DETERMINED BY THE TRAFFIC ENGINEER AND CONTRACTOR.
- 8. SEE TEMPORARY TRAFFIC CONTROL SIGN TABLE FOR SIGN SUPPORT INFORMATION. ALL SUPPORTS SHALL BE BREAKAWAY WITH DRILLED HOLES PER MARYLAND STANDARD MD 812.01.
- 9. ACCESS SHALL BE MAINTAINED TO CRICKET CREEK LANE AT ALL TIMES. ACCESS SHALL ALSO BE PROVIDED TO THE MAILBOXES AT CRICKET CREEK LANE AT ALL TIMES. IF NECESSARY, MAILBOXES MAY BE ABLE TO BE TEMPORARILY RELOCATED. ANY MAILBOX ADJUSTMENTS MUST BE COORDINATED WITH AND APPROVED BY THE UNITED STATES POSTAL SERVICE PRIOR TO ANY MODIFICATIONS.
- 10. DETOUR PLAN FOR FULL ROAD CLOSURE SHALL BE UTILIZED WHILE TROTTER ROAD IS CLOSED IN BOTH DIRECTIONS WHILE CONSTRUCTION IS COMPLETED IN AREA I.
- II. DETOUR PLAN FOR NORTHBOUND TROTTER ROAD CLOSURE SHALL BE UTILIZED WHILE TROTTER ROAD IS CLOSED IN THE NORTHBOUND DIRECTION WHILE CONSTRUCTION IS COMPLETED IN THE AREA 2. SOUTHBOUND TROTTER ROAD SHALL BE OPEN TO TRAFFIC DURING THIS STAGE.
- 12. FULL CLOSURE SHALL BE IMPLEMENTED AT THE BEGINNING OF SUMMER AFTER SCHOOL IS OUT OF SESSION. DURATION OF FULL DETOUR SHALL BE LIMITED TO ONE MONTH. AFTER AREA I CONSTRUCTION IS COMPLETE, SOUTHBOUND TROTTER ROAD SHALL BE REOPENED AND NORTHBOUND DETOUR SHALL REMAIN IN PLACE WHILE WORK IS COMPLETED IN AREA 2. ROAD SHALL BE OPEN IN BOTH DIRECTIONS BEFORE SCHOOL IS BACK IN SESSION.





1.25" BORDER



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. 15466, EXPIRATION DATE: JULY 15, 2013.

Evelyn E Janl 4/12/12

CHIEF, BURE OF ENVIRONMENTAL SERVICES

DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

**MT-1**SHEET NO.: 7 OF 15

MAINTENANCE OF

TRAFFIC NOTES

N.T.S.

JANUARY 16, 2012

09-2356-003/012

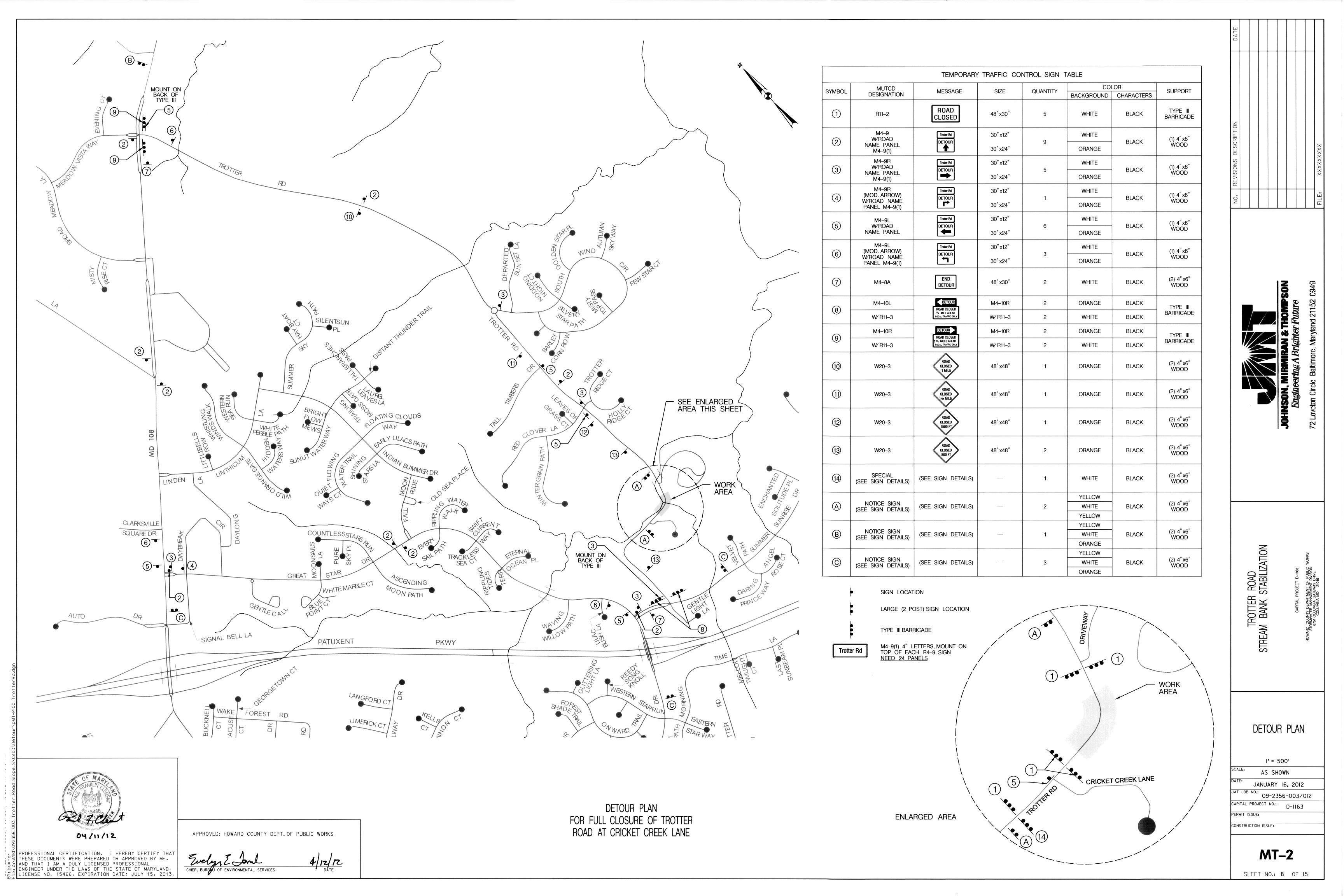
AS SHOWN

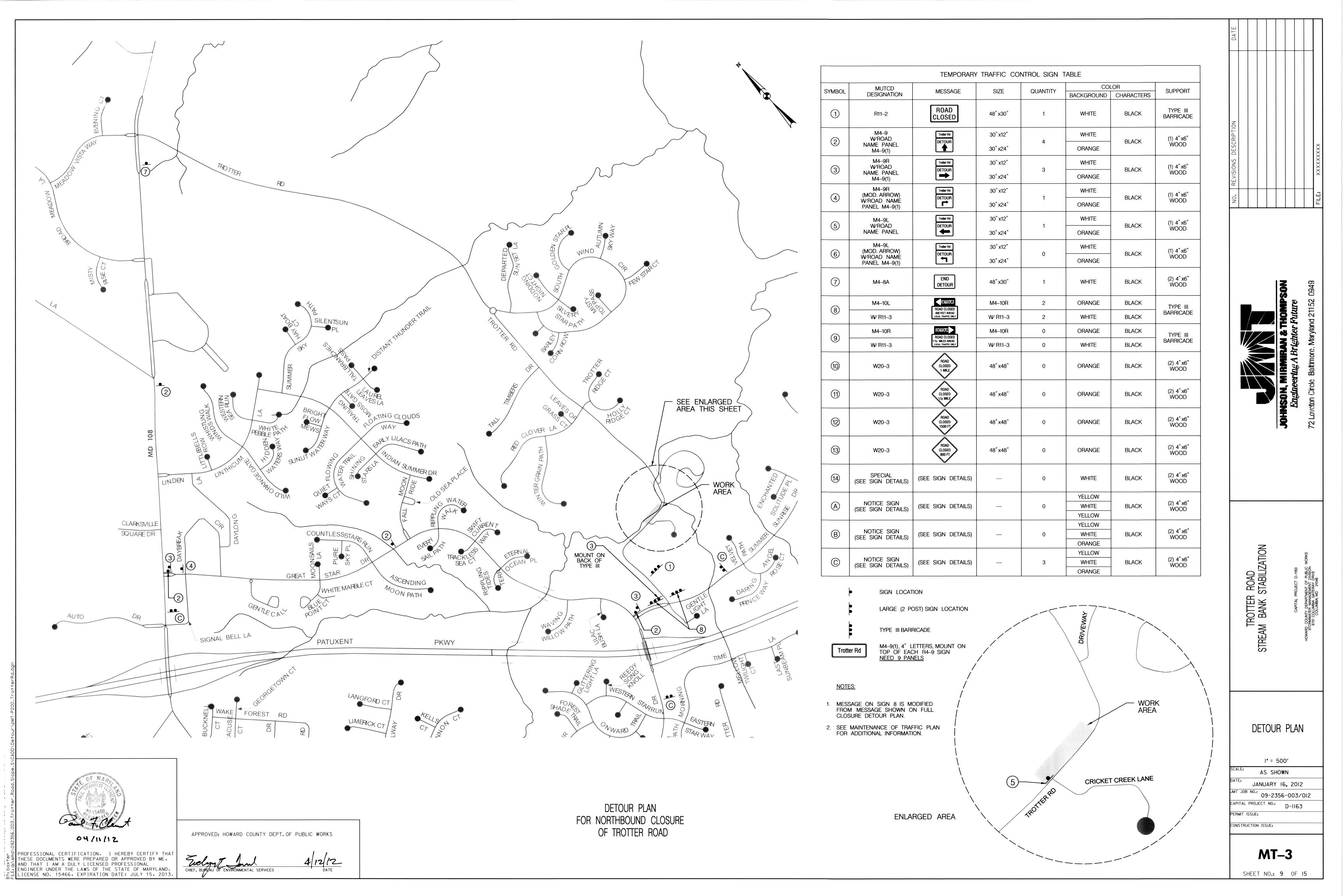
JAPITAL PROJECT NO.: D-1163

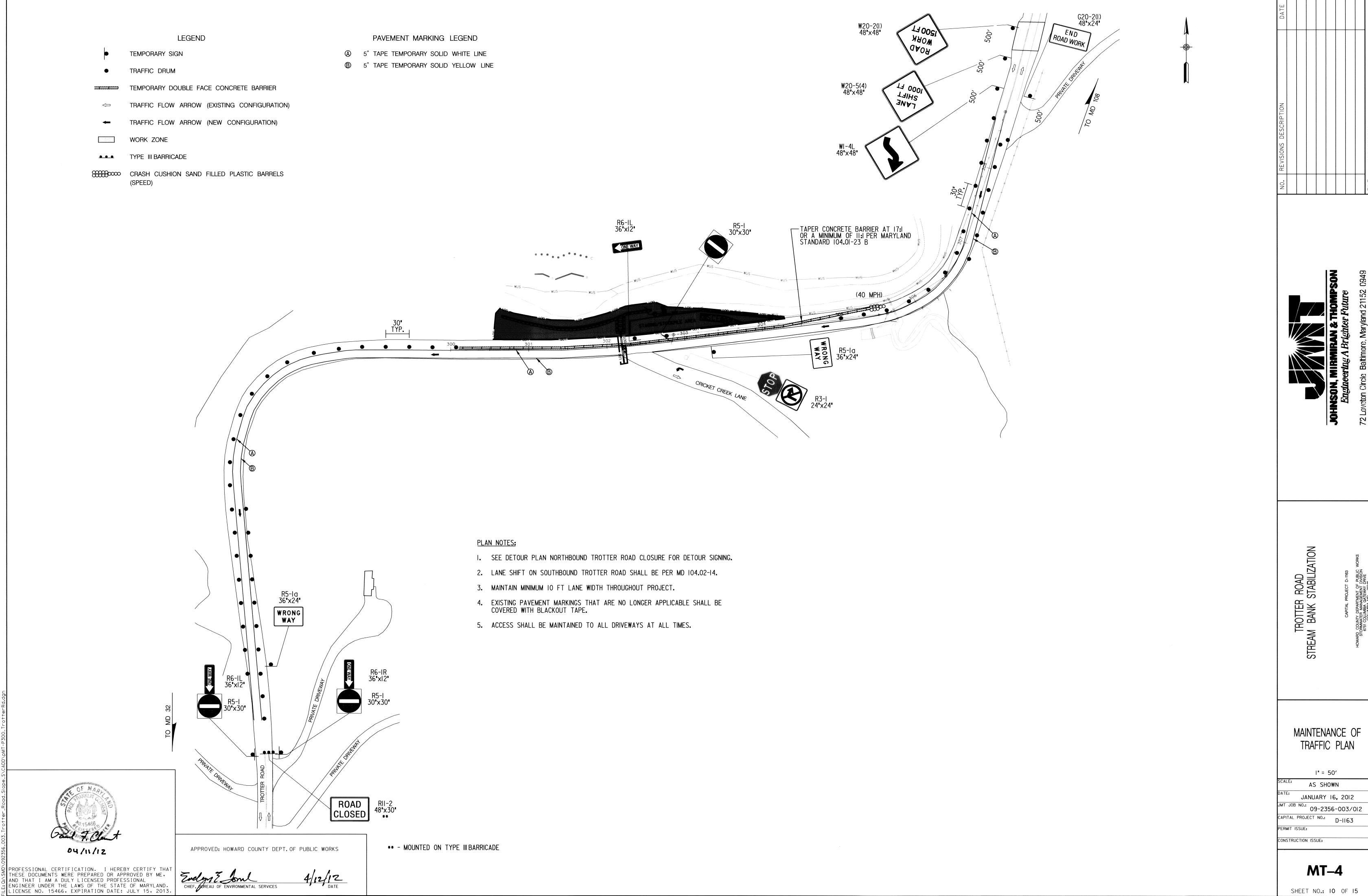
ERMIT ISSUE:

ONSTRUCTION ISSUE:

ROAD STABILIZATION TROTTER M BANK S STREAM







SHEET NO .: 10 OF 15

#### SEQUENCE OF CONSTRUCTION

- I. THE CONTRACTOR SHALL OBTAIN GRADING PERMIT FROM HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS PRIOR TO BEGINNING CONSTRUCTION. HOWARD SOIL SOIL CONSERVATION DISTRICT # IS EP-I2-I3. THE MDE TRACKING # IS 20II60805/II-NT-019I.
- 2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HRS PRIOR TO ANY EXCAVATION WORK BEING PERFORMED.
- 3. THE CONTRACTOR SHALL CONTACT HOWARD COUNTY DIVISION OF CONSTRUCTION INSPECTION AT (410) 313-1880 TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS BEFORE CONSTRUCTION IS TO BEGIN.
- 4. STABILIZED CONSTRUCTION ENTRANCE AND STAGING/STOCKPILE AREA IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. EXACT LOCATION TO BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE C.I.D. INSPECTOR.
- 5. PRIOR TO BEGINNING CONSTRUCTION, PERFORM TEST PITS ON EXISTING UTILITIES IN AREA #2 AS NECESSARY FOR WALL AND PIPE CONSTRUCTION.

#### PHASE I

- 6. INSTALL SANDBAG DIVERSION SBD-2 ALONG THE WORK AREA. UTILIZE DEWATERING BAG DB-2 TO DEWATER THE WORK AREA AS NECESSARY. OUTFALL DEWATERING BAG TO STABLE OUTFALL CONDITION DOWNSTREAM FROM THE WORK AREA.
- 7. CONSTRUCT IMBRICATED RIPRAP RETAINING WALL AS SHOWN ON THE PLANS. WALL CONSTRUCTION WILL OCCUR USING A TOP-DOWN APPROACH BY UTILIZING THE ROADWAY FOR EQUIPMENT ACCESS AND TEMPORARY STOCKPILING OF MATERIAL.
- 8. STABILIZE THE WORK AREA WITH TOPSOIL, SEED AND SOIL STABILIZATION MATTING. PERFORM LANDSCAPING OPERATIONS PER THE LANDSCAPING PLAN.
- 9. AFTER WORK AREA IS STABILIZED AND WITH THE APPROVAL OF THE C.I.D. INSPECTOR, REMOVE MAINTENANCE OF STREAM FLOW AND EROSION AND SEDIMENT CONTROL DEVICES FOR PHASE I CONSTRUCTION.
- IO. STABILIZE THOSE AREAS DISTURBED BY THE REMOVAL OF MAINTENANCE OF STREAM FLOW AND EROSION AND SEDIMENT CONTROL DEVICES.
- II. PROCEED TO PHASE 2 CONSTRUCTION.

04/11/12

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME,

ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 15466, EXPIRATION DATE: JULY 15, 2013.

AND THAT I AM A DULY LICENSED PROFESSIONAL

#### PHASE 2

- 12. INSTALL STABILIZED CONSTRUCTION ENTRANCE SCE-I.
- 13. CLEAR AND GRUB FOR AND INSTALL SUPER SILT FENCE SSF-I.
- 14. INSTALL SANDBAG DIVERSION SBD-I ALONG THE WORK AREA. UTILIZE DEWATERING BAG DB-I TO DEWATER THE WORK AREA AS NECESSARY. OUTFALL DEWATERING BAG TO STABLE OUTFALL CONDITION DOWNSTREAM FROM THE WORK AREA.
- 15. CONSTRUCT IMBRICATED RIPRAP RETAINING WALL, 18 RCP, AND STEP POOL AS SHOWN ON THE PLANS.
- 16. STABILIZE THE WORK AREA WITH TOPSOIL, SEED AND SOIL STABILIZATION MATTING. PERFORM LANDSCAPING OPERATIONS PER THE LANDSCAPING PLAN.
- 17. AFTER WORK AREA IS STABILIZED AND WITH THE APPROVAL OF THE C.I.D. INSPECTOR, REMOVE MAINTENANCE OF STREAM FLOW AND EROSION AND SEDIMENT CONTROL DEVICES FOR PHASE 2 CONSTRUCTION.
- 18. STABILIZE THOSE AREAS DISTURBED BY THE REMOVAL OF MAINTENANCE OF STREAM FLOW AND EROSION AND SEDIMENT CONTROL DEVICES.

#### MAINTENANCE OF STREAM FLOW NOTES

- I. THE CONTRACTOR HAS THE OPTION TO PROVIDE A CLEAR WATER "PUMP AROUND" METHOD IN-LIEU OF TEMPORARY SANDBAG DIVERSION FOR MAINTAINING STREAM FLOWS DURING CONSTRUCTION FOR BASE FLOW STREAM CONDITIONS. THIS MAY BE PROVIDED AT THE CONTRACTOR'S OWN RISK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THIS OPTION. IN THE EVENT THAT A STORM EVENT IS FORECASTED, OR NO WORK IS ANTICIPATED TO OCCUR DURING AN EXTENDED PERIOD OF TIME (24 HOURS OR MORE), CONTRACTOR MUST INSTALL TEMPORARY SANDBAG DIVERSION AS SHOWN ON THE PLANS. THE COST OF THE CLEAR WATER PUMP AROUND DIVERSION AND THE REMOVAL AND INSTALLATION SHALL BE INCIDENTAL TO THE COST OF MAINTENANCE OF STREAM FLOW.
- THE MAXIMUM DEPTH OF FLOW RESULTING FROM A 2-YR STORM EVENT (609 CFS) IS ESTIMATED TO BE APPROXIMATELY 3.8'. PLEASE NOTE THAT THIS DEPTH DOES NOT CONSIDER THE CHANNEL CONSTRICTION RESULTING FROM THE PLACEMENT OF THE STREAM DIVERSION.

#### STANDARD SEDIMENT CONTROL NOTES

- I. 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 (410) 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 SPECIFICATIONS 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) 7 calender days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol.I, Chapter I2 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 6. 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.
- (NOT FOR BIDDING PURPOSES)
  Site Analysis:

Total Area of Site	1.41	Acres
Area Disturbed	0.33	_ Acres
Area to be roofed or paved	0.00	Acres
Area to be vegetatively stabilized	0.15	_ Acres
Total Cut	600	_ Cu. Yds.
Total Fill	25	_ Cu. Yds.
Off-site waste/borrow area locations:	UNKNOWN	<b>N</b>

- 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 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.
- II. 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.

#### PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

<u>Seedbed Preparation:</u> Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- I. Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq.ft.) and 600 lbs/acre 10-10-10 fertilizer (14 bs/1000 sq.ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq.ft.).
  - 2. Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the period March I -- April 30, and August I -- October I5, seed with 60 lbs/acre (I.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May I -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq.ft.) of weeping lovegrass. During the period of October I6 -- February 28, protect site by:

Option I -- Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

Option 2 -- Use sod.

Option 3 -- Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- Apply I-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

#### TEMPORARY SEEDING NOTES

BY THE HOWARD SOIL CONSERVATION DISTRICT.

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq.ft.).

Seeding: -- For periods March I -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs/1000 sq.ft.). For the period May I -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq.ft.). For the period November 16 -- February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply I-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Tuelon T Soul 4/11/12
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

\_\_\_\_

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL

4/7/12

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS. AND IOO-YR FLOODPLAINS

- I. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS. WATERWAYS. OR THE 100-YEAR FLOODPLAIN.
- 2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE IOO-YEAR FLOODPLAIN.
- 3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- 4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- 5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE IOO-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- 6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- 7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 3I FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- 8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- 9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
  USE IV-P WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH I MAY 3I, INCLUSIVE, DURING ANY YEAR.
- 10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- II. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

NO. REVISIONS DESCRIPTION

DATE

FILE: XXXXXXXXXX



TROTTER ROAD STREAM BANK STABILIZATION

EROSION & SEDIMEN'
CONTROL NOTES

N.T.S.

JATE: APRIL 9, 2012

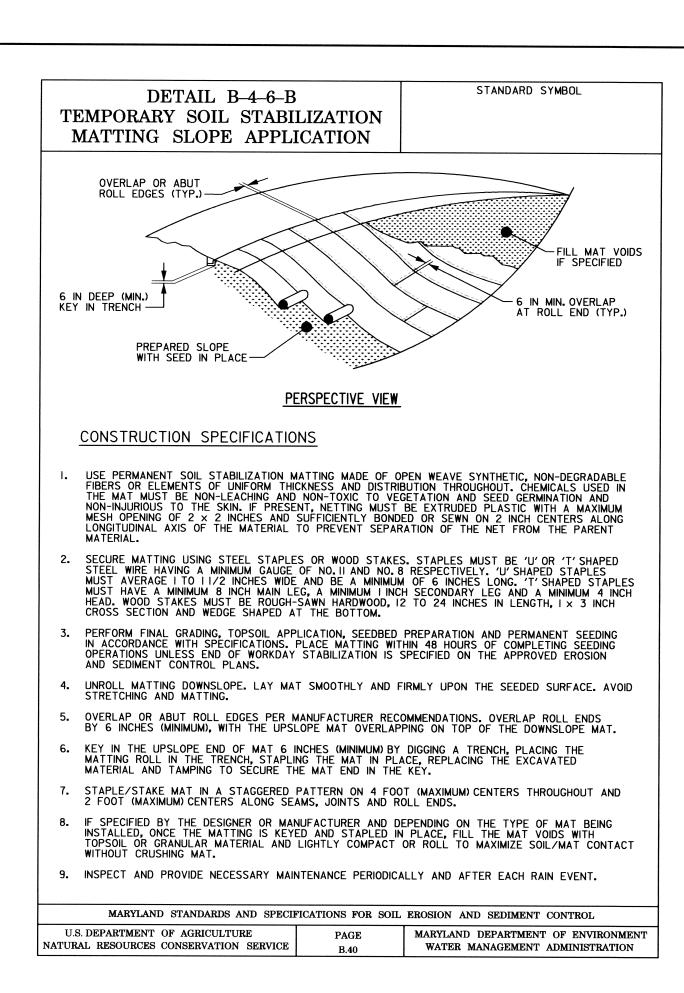
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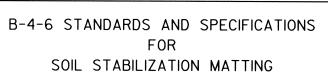
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SHEET NO.: II OF 15





Definition

Material used to temporarily or permanently stabilize channels or steep slopes until groundcover is establish.

Purpose To protect the soils until vegetation is established.

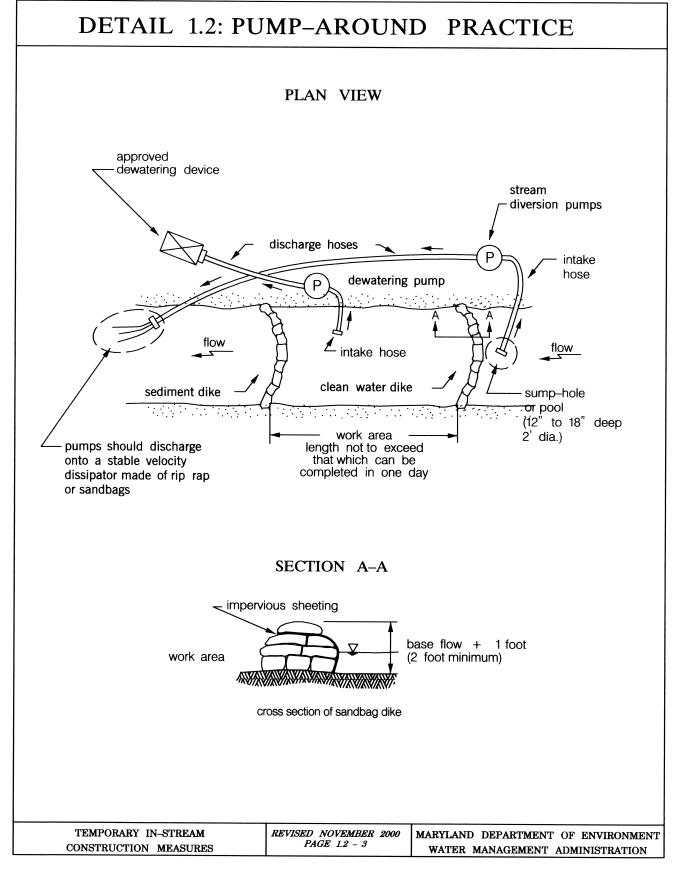
#### Conditions Where Practice Applies

On steep slopes and in flow channels of dikes and swales where flow velocities for the I-year storm event exceed two feet per second (2 fps) and the sheer stress exceeds one pound per square foot (I lb/ft²). Matting may also be used on tidal or stream banks where moving water is likely to wash out new vegetative plantings.

The soil stabilization matting that is used must withstand the flow velocities and sheer stresses determined for the area. Temporary soil stabilization matting is made with degradable (lasts 6 months minimum, 36 months maximum), natural or man-made fibers of uniform thickness and distribution of fibers throughout and is smolder resistant. The maximum permissible velocity for temporary matting is 5 feet per second.

Permanent soil stabilization matting is an open weave, synthetic material consisting of non-degradable fibers or elements of uniform thickness and distribution of weave throughout. The maximum permissible velocity for permanent matting is 8.5 feet per second

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



#### DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE MOUNTABLE BERM (6" MIN.) -50' MINIMUM EXISTING PAVEMENT --- EARTH FILL \*\* GEOTEXTILE CLASS 'C'-- PIPE AS NECESSARY OR BETTER MINIMUM 6" OF 2"-3" AGGREGATE OVER LENGTH AND WIDTH OF STRUCTURE **PROFILE** \* 50′ MINIMUM-LENGTH 10' MIN. EXISTING 10' MINIMUM WIDTH PAVEMENT PLAN VIEW O' MIN. STANDARD SYMBOL SCE Construction Specification

1. Length - minimum of 50' (\*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

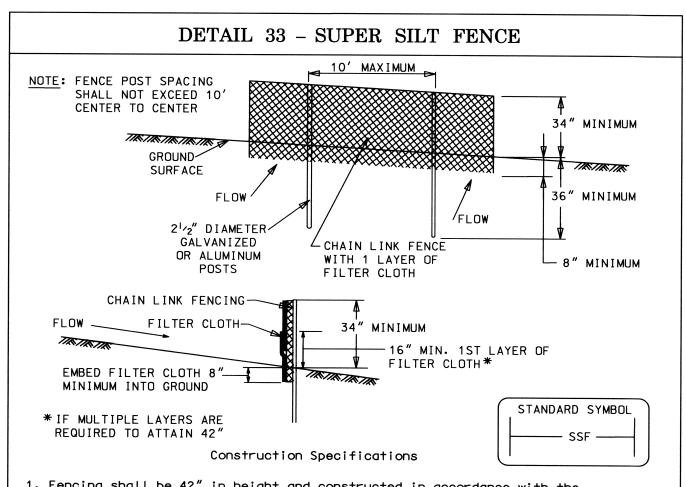
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. \*\*The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance. U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT

DETAIL 1.5: SANDBAG/STONE DIVERSION **TRANSVERSE SECTION VIEW** existing grade sandbag/stone diversion impervious sheeting design flow leve - disturbed area -----H/2+1 ft (0.3 m) for projects of duration < 2 weeks; 2-year flood elevation for projects of longer duration PLAN VIEW minimum opening is A STORY 45% of stream width disturbed area Sandbag/Stone Diversion FOR INFORMATION PURPOSES ONLY: APPROXIMATE 2-YEAR FLOOD DEPTH IS 3.8 FEET. CONTRACTOR SHALL BE RESPONSIBLE FOR ACTUAL FIELD CONDITIONS AND SHALL SIZE THE DIVERSION TO HIS AND THE E&S INSPECTOR'S SATISFACTION. TEMPORARY IN-STREAM REVISED NOVEMBER 2000 | MARYLAND DEPARTMENT OF ENVIRONMENT



WATER MANAGEMENT ADMINISTRATION

latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

5. When two sections of filter cloth adjoin each other, they shall be overlapped

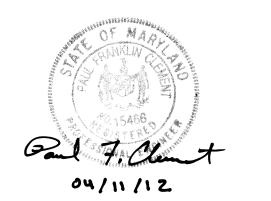
6. Maintenance shall be performed as needed and silt buildups removed when "bulges"

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Modulus Flow Rate

CONSTRUCTION MEASURES

PAGE SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION



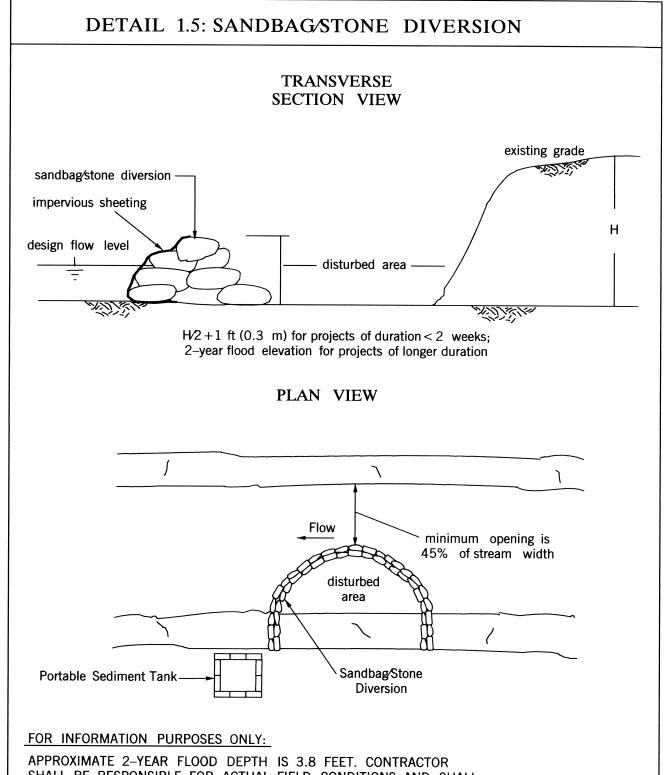
ICENSE NO. 15466, EXPIRATION DATE: JULY 15, 2013.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL

WATER MANAGEMENT ADMINISTRATION

SOIL CONSERVATION SERVICE



-DEWATERING BAG

1. FILTER BAG SHALL BE NON-WOVEN GEOTEXTILE WITH A MINIMUM SURFACE AREA OF 225 SQUARE FEET

ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD. SEAM STRENGTH SHALL WITHSTAND 100LB/IN. USING ASTM D-4884

3. FILTER BAG SHALL HAVE A NOZZLE LARGE ENOUGH TO ACCOMMODATE A FOUR (4) INCH DIAMETER PLIMP

NOZZLE SHALL BE SEALED TIGHTLY AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR

6. PUMPING RATE SHALL BE CONTROLLED TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG.

7. THE FILTER BAG SHALL BE DEWATERED, REMOVED AND DISPOSED OF UPON COMPLETION OF PUMPING

OPERATIONS OR AFTER IT HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. THE DEWATERED

8. THE GEOTEXTILE FABRIC SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS WITH PROPERTIES

DEWATERING BAG DETAIL FOR CONTROL

OF SEDIMENT IN PUMPED WATER

I. The diversion structure should be installed from upstream to downstream.

SEDIMENT FROM THE BAG SHALL BE SPREAD IN AN UPLAND AREA AND STABILIZED WITHIN 24 HOURS.

GAL/MIN/FT

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

MATERIAL SPECIFICATIONS
Materials for sandbag and stone stream diversions should meet the following requirements:
Riprap: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
Sandbags: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
Sheeting: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES
All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the

2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus I foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain

5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.

6. Sandbag or stone diversions should not obstruct more than 45% of the stream width Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are

7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.

8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an

<u>DESCRIPTION</u>

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream

4. Sediment-laden water from the construction area should be pumped to a dewatering basin.

observed during the construction time or if project time is expected to last more than 2 weeks.

approved sediment and erosion control plan and the inspecting authority approves their removal.

IMPLEMENTATION SEQUENCE
Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2).

I. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or Right-Of-Ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility

2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a

3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager and the engineer to\_review limits of disturbance, erosion and sediment control

requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior

to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access.

Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.

5. Upon installation of the sediment control measures and approval by the sediment control inspector and the

stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end if the day, including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump-around removed from the channel. Work should not be conducted in the channel during rain events.

6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans,

and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipator

7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment

If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See section 4, Stream Crossings, Maryland Guidelines to Waterway

9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each working day with

10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a

12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem

reaches the tributary confluence. Construction in the tributary, including pump-around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work

13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices

14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan

II. A pump-around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipator

bag or other approved source. The measure should be located such that the water drains back into the channel

8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided.

local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of

4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.

EFFECTIVE USES & LIMITATIONS
Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary

5. FILTER BAG SHALL BE PLACED ON A LEVEL OR GENTLY SLOPING (5% MAXIMUM) AREA.

AS THE BAG BECOMES FILLED WITH SEDIMENT THE PUMPING RATE SHALL BE REDUCED.

5% MAX

AGGREGATE UNDERLAYMENT

CONSTRUCTION SPECIFICATIONS

DEVICE TO PREVENT UNFILTERED WATER FROM ESCAPING.

DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

unless otherwise authorized by the WMA.

minimum of 48 hours before starting construction.

seed and mulch or seed and matting as specified on the plans.

until the sediment inspector approves their removal.

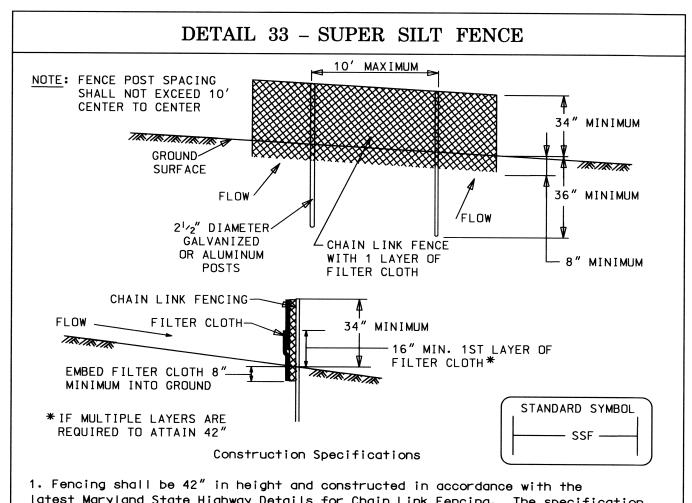
new sediment dike below the old one, the old sediment dike should be removed.

MGWC 1.2: PUMP-AROUND PRACTICE

made of riprap or sandbags

measure may not be practical in large channels.

PUMP DISCHARGE HOSE

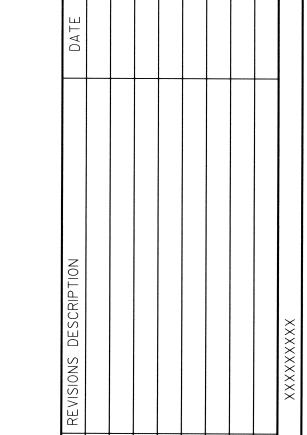


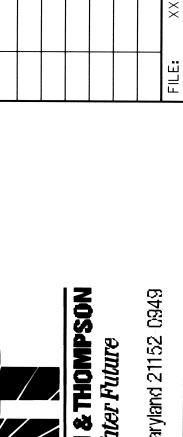
4. Filter cloth shall be embedded a minimum of 8" into the ground.

by 6" and folded.

develop in the silt fence, or when silt reaches 50% of fence height

Tensile Strength 50 lbs/in (min.) Test: MSMT 509 20 lbs/in (min.) Test: MSMT 509 0.3 gal/ft²/minute (max.) Test: MSMT 322 Filtering Efficiency 75% (min.) Test: MSMT 322 U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT





ROAD STABILIZATION TROTTER A BANK S

**EROSION & SEDIMENT** CONTROL DETAILS

N.T.S. APRIL 9, 2012 09-2356-003/012

CAPITAL PROJECT NO.: D-1163 ERMIT ISSUE: ONSTRUCTION ISSUE:

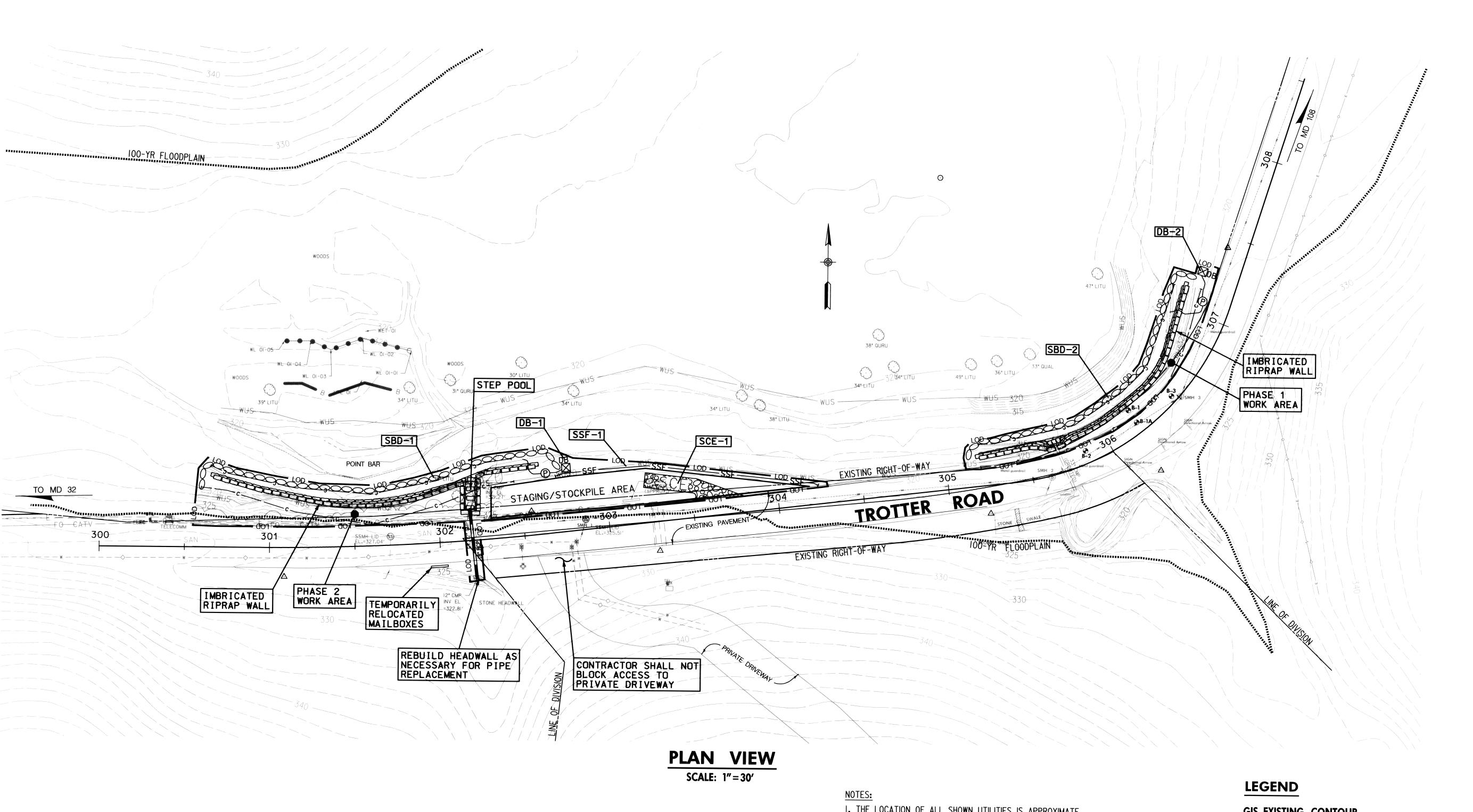
ED-1

SHEET NO.: 12 OF 15

BY THE HOWARD SOIL CONSERVATION DISTRICT.

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.

Evelys Zon CHIEF, BUTEAU OF ENVIRONMENTAL SERVICES



I. THE LOCATION OF ALL SHOWN UTILITIES IS APPROXIMATE. ADDITIONAL TEST PITS MAY BE NECESSARY PRIOR TO CONSTRUCTION TO DETERMINE THE ACTUAL LOCATIONS.

2. LIMITS OF WALL MAY NEED TO BE ADJUSTED IN THE FIELD TO TIE INTO NATURAL FEATURES.

3. ACTUAL LOCATION OF THE RELOCATED MAILBOXES SHALL BE COORDINATED WITH THE USPS POSTMASTER.

4. TREE-SAVES ARE TO BE IDENTIFIED AT THE PRE-CONSTRUCTION MEETING. TREE-SAVES ARE TO BE PROTECTED WITH ORANGE TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.

GIS EXISTING CONTOUR	320
SURVEYED MAJOR CONTOUR	
SURVEYED MINOR CONTOUR	
TOP OF BANK LINE	
BOTTOM OF BANK LINE	
CHANNEL THALWEG	
IMBRICATED RIPRAP WALL	COLLEGE
DEWATERING BAG	⊠DB
SUPER SILT FENCE	
CUT/FILL LINE	⊢——C/F——-
SANDBAG DIVERSION	0000
100-YEAR FLOODPLAIN	



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. 15466, EXPIRATION DATE: JULY 15, 2013.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Evelyn E John CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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

4/17/12 DATE

3

**EROSION & SEDIMENT** CONTROL PLAN

TROTTER ROAD STREAM BANK STABILIZATION

AS SHOWN APRIL 9, 2012 ... 09-2356-003/012 CAPITAL PROJECT NO.: D-II63 PERMIT ISSUE: CONSTRUCTION ISSUE:

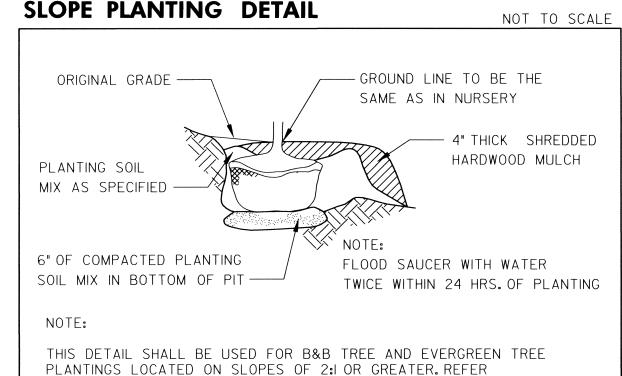
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SHEET NO .: 13 OF 15



ADAPTED FROM DETAIL 2.4:

LIVE STAKES (MWWCG) AND USDA-SCS (1994)



TO APPROPRIATE PLANTING DETAILS FOR PLANT MATERIAL FOR

REMAINDER OF DETAIL (SEE THIS SHEET).

## **PLANTING NOTES:**

- 1. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN, "AMERICAN STANDARDS FOR NURSERY
- 2. ALL PLANTINGS SHALL BE MONITORED FOR SURVIVAL AND REPLACED AS NECESSARY FOR A PERIOD OF 2 GROWING SEASONS FOLLOWING INSTALLATION. A GUARANTEE OF PLANT SURVIVAL SHALL BE PROVIDED BY THE CONTRACTOR AS FOLLOWS:

PLANTINGS 2"-2.5" CAL. TREES

SHRUBS (24" HT.)

SURVIVAL RATE 100% 75%

- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND MAY MAKE MINOR ADJUSTMENTS IN SPACING AND/OR LOCATION OF PLANT MATERIALS. CONTRACTOR TO VERIFY 'AS BUILT' LOCATION OF ALL
- 4. NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT. PLANT LOCATIONS MAY BE ALTERED IN ACCORDANCE WITH SUBTLE TOPOGRAPHY CHANGES ON-SITE.
- FOR ALL TREES AND SHRUBS PLANTED IN AREAS COVERED WITH SOIL STABILIZATION MATTING, AN "X" PATTERN SHALL CAREFULLY BE CUT IN THE MATTING, LAYING BACK THE MATTING IN AN AREA LARGE ENOUGH TO ALLOW FOR EXCAVATION OF THE PLANTING PIT. AFTER INSTALLATION OF THE PLANT, THE MATTING SHALL BE RE-STAPLED AROUND THE BASE OF THE PLANT, ALL AREAS NOT STABILIZED IN PLANT MATERIALS SHALL BE STABILIZED WITH SEED AND SOIL STABILIZATION MATTING OR MULCH.
- 6. ALL SHADE TREES SHALL BRANCH A MINIMUM OF 6'-0" ABOVE GROUND LEVEL. TREES SHALL BE PLANTED AND STAKED IN ACCORDANCE WITH THE PLANTING DETAIL SHOWN.
- 7. PLANTING SOIL MIX: 2/3 EXISTING SOIL (EXCAVATED FROM PLANT PIT) AND 1/3 PEAT HUMUS.
- 8. ALL GROUNDCOVER AND SHRUB BEDS SHALL RECEIVE 2" TOPSOIL THOROUGHLY WORKED INTO THE TOP 6" OF EXISTING SOIL. ALL BEDS TO BE MULCHED, USING ONLY SHREDDED HARDWOOD MULCH, AS PINE MULCH OR OTHER WOOD CHIPS WILL FLOAT, TO A 3" DEPTH WHEN PLANT INSTALLATION IS COMPLETE.
- ALL PLANT PIT LOCATIONS SHALL BE EXCAVATED TO DEPTH AND DIMENSIONS INDICATED ON APPROPRIATE PLANTING DETAILS. ALL NATIVE SOIL EXCAVATED FROM PLANTING PITS (NOT USEABLE FOR PLANTING PURPOSES) SHALL BE REMOVED. PLANTING PITS SHALL BE BACKFILLED WITH PLANT SOIL MIXTURE AS SPECIFIED IN NOTE 7 ABOVE.
- PLANT SPACINGS ARE SHOWN ON THE PLAN AS THEY PERTAIN TO THE AREA NOTED. PLANTS SHALL BE INSTALLED ACCORDING TO THE PLANTING ZONES SHOWN ON THE PLANS. PLANT LOCATIONS SHOULD NOT INTERFERE WITH EXISTING TREES TO REMAIN WITHIN THE WORK AREA.
- 11. ALL DISTURBED AREAS SHALL BE STABILIZED WITH THE SEED AND MULCH BY THE END OF EACH WORK DAY.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS



LIVE STAKE PLANTING DETAILS NOT TO SCALE NEAR BANK ZONE VARIES-SEE PLANS 2:I SLOPE (TYP.) LIVE STAKE (TYP.) BANKFULL ELEV. TOE OF SLOPE NEAR BANK ZONE WATER TABLE ELEV. VARIES-SEE PLAN SOIL STABILIZATION MATTING FLOW -LIVE STAKES SHALL BE PLANTED IN SPECIFIED AREAS **SECTION** ACCORDING TO THE PLANTING DENSITIES SHOWN ON THE LANDSCAPING PLANS. LIVE STAKE PLANTINGS WILL **PLAN** ALSO APPLY TO ALL MICRO-BERM LOCATIONS. I. LIVE STAKES SHALL BE STAKED THROUGH MATTING. 2. LIVE STAKES SHALL BE RANDOMLY DISTRIBUTED WITHIN THE SPECIFIED LIVE STAKE PLANTING ZONES ACCORDING TO PLANTING DENSITIES SHOWN ON THE LANDSCAPING PLANS.

# TREE & SHRUB INSTALLATION THROUGH SOIL STABILIZATION MATTING

PLANTING LAYOUT DETAIL

STABILIZATION MATTING

24"-48"

NOT TO SCALE MAKE CUT WITH SHARP KNIFE THROUGH SOIL STABILIZATION MATTING - SEE SOLID LINE IN DIAGRAM ABOVE. NOTE THAT ALL CUTS IN THE MATTING SHALL BE A MINIMUM OF 2 FEET CLEAR OF ALL MATTING SEAMS, OVERLAPS AND EDGES. (2) TEMPORARILY PIN BACK MATTING WITH 4 STAPLES TO INSTALL TREE OR

- SHRUB SEE DASHED LINE IN DIAGRAM ABOVE. (3) INSTALL PLANT THROUGH PINNED BACK MATTING. INSTALL PLANT AT PROPER
- GRADE TO GROUND PLANE.
- 4 REMOVE 4 STAPLES PLACED IN STEP 2 ABOVE THAT WERE USED TO TEMPORARILY PIN BACK THE MATTING DURING ROOT BALLI INSTALLATION.
- (5) PLACE 4 STAPLES IN EACH OF FOUR CUT SECTIONS TO WELL ANCHOR SOIL STABILIZATION MATTING BACK OVER TOP OF THE ROOT BALL.
- (6) FOR TREE INSTALLATIONS, INSTALL TREE STAKES THROUGH MATTING, ONCE RE-ANCHORED OVER ROOT BALL.

TREE PLANTING DETAIL NOT TO SCALE PLANTING SOIL MIXTURE -#12 GAUGE PRUNE 1/3 OF LEAF AREA, RETAINING WIRE, TWISTED -NATURAL FORM OF TREE, DO NOT SHEAR HEAD DIAMETER OR CUT CENTRAL LEADER. BALL Staking Plan SPRAY ALL TREES IN LEAF -NOT TO SCALE WITH ANTI-DESICCANT -(3) 2" X 2" NOTCHED (3) PIECES OF REINFORCED -STAKES, SPACE EVENLY RUBBER HOSE - GROUND LINE TO BE THE DOUBLE STRAND #12 SAME AS NURSERY GAUGE WIRE, TWISTED 4" THICK SHREDDED HARDWOOD MULCH 2" DEPRESSION BELOW BANKFULL BENCH REMOVE BURLAP FROM TOP AND SIDES OF ROOT BALL PLANTING SOIL MIX-AS SPECIFIED FLOOD SAUCER WITH WATER TWICE WITHIN 24 HRS. OF PLANTING. 6" OF COMPACTED PLANTING SOIL MIX IN BOTTOM OF PIT

\*NOTES: I. ALL TREES ARE TO BE BE STAKED. 2. TREE SHELTERS ARE REQUIRED ON ALL NEW TREES.

#### SHRUB PLANTING DETAIL

NOT TO SCALE SPRAY ALL SHRUBS IN LEAF WITH ANTI-DESICCANT -GROUND LINE TO BE THE SAME AS IN NURSERY - 4" THICK SHREDDED HARDWOOD MULCH - 2" DEPRESSION BELOW BANKFULL BENCH REMOVE BURLAP FROM TOP AND FINISHED GRADE SIDES OF ROOT BALL PLANTING SOIL MIX AS SPECIFIED -FLOOD SAUCER WITH WATER TWICE WITHIN 24 HRS. OF PLANTING. 6" OF COMPACTED PLANTING SOIL MIX IN BOTTOM OF PIT

VARIES
15'-0" to 19'-0" LANDSCAPE PLANTING NOTES: I. ALL DECIDUOUS OVERSTORY TREES SHALL BE PLANTED WITH RANDOM SPECIES AND RANDOM SPACING RANGING FROM 15'-0" TO 19'-0" ON CENTER. 2. ALL DECIDUOUS UNDERSTORY TREES AND SHRUBS SHALL BE PLANTED WITH RANDOM SPACING RANGING FROM 10'-0" TO 15'-0" ON CENTER. 3. ALL DECIDUOUS UNDERSTORY TREES AND SHRUBS SHALL BE PLANTED IN GROUPS OF 3 OR 5 PLANTS AND NO MORE THAN 7 PLANTS. 4. DO NOT PLANT IN STRAIGHT ROWS OR GRIDS. DECIDUOUS OVERSTORY DECIDUOUS UNDERSTORY/SHRUB



SOTTER BANK

NOT TO SCALE

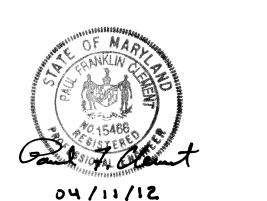
LANDSCAPING DETAILS

AS SHOWN APRIL 9, 2012 JMT JOB NO.: 09-2356-003/012 CAPITAL PROJECT NO.: D-1163

ERMIT ISSUE:

ONSTRUCTION ISSUE:

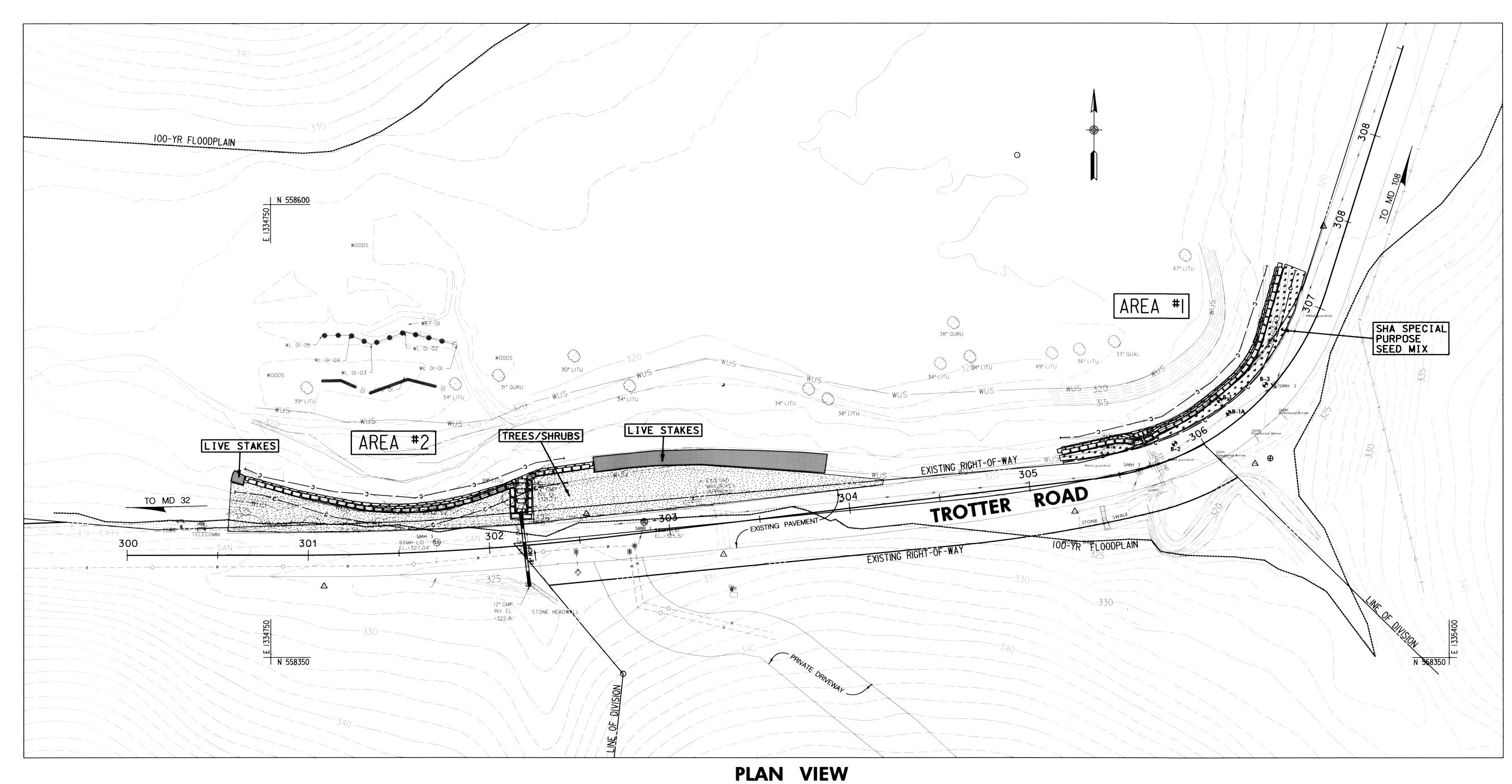
SHEET NO.: 14 OF 15



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME,

ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 15466, EXPIRATION DATE: JULY 15, 2013

AND THAT I AM A DULY LICENSED PROFESSIONAL



PLAN VIEW
SCALE: 1"=30'

## LANDSCAPE LEGEND

DECIDUOUS TREE/SHRUB PLANTING ZONE

LIVE STAKE PLANTING ZONE

SHA SPECIAL PURPOSE SEED MIX

TREE/SHRUB PLANTING SCHEDULE	
SCIENTIFIC / COMMON NAME	SIZE
ACER NEGUNDO / BOX ELDER	2" CAL.
ACER RUBRUM / RED MAPLE	2" CAL.
DIOSPYROS VIRGINIANA / PERSIMMON	2" CAL.
QUERCUS ALBA / WHITE OAK	2" CAL.
VACCINIUM CORYMBOSUM / BLUEBERRY	24" HT.
CEPHALANTHUS OCCIDENTALIS / BUTTONBUSH	24" HT.
CORNUS AMOMUM / SILKY DOGWOOD	24" HT.
ILEXVERTICILLATA / WINTERBERRY HOLLY	24" HT.
LINDERA BENZOIN / SPICEBUSH	24" HT.

LIVESTAKE SCHEDULE	
SCIENTIFIC / COMMON NAME	WETLAND INDICATOR
CORNUS SERICEA / RED-OSIER DOGWOOD	FACW
CORNUS AMOMUM / SILKY DOGWOOD	FACW
VIBURNUM RECOGNITUM / NORTHERN ARROWWOOD	FAC
SALIX NIGRA / BLACK WILLOW	FACW+
SALIX SERICEA / SILKY WILLOW	OBL

SHA SPECIAL PURPOSE SEED MIX				
MIX	MIX SPECIES			
%	SCIENTIFIC NAME	COMMON NAME		
75	Festuca brevipila Tracey	Hard fescue		
20	Festuca rubra L.ssp.fallax (Thuill.) Nyman	Chewing fescue		
5	Poa pratensis L. ssp. pratensis	Kentucky bluegrass		

APPLIED @ 200 LBS/ACRE



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APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

LANDSCAPING PLAN

TROTTER ROAD STREAM BANK STABILIZATION

AS SHOWN APRIL 9, 2012 JMT JOB NO.: 09-2356-003/012 CAPITAL PROJECT NO.: D-II63 PERMIT ISSUE: CONSTRUCTION ISSUE:

SHEET NO .: 15 OF 15

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