

# OLD ROXBURY ROAD ROADWAY WIDENING MD 97 TO WEST OF RIVERCREST COURT

CAPITAL PROJECT J-4239  
5th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

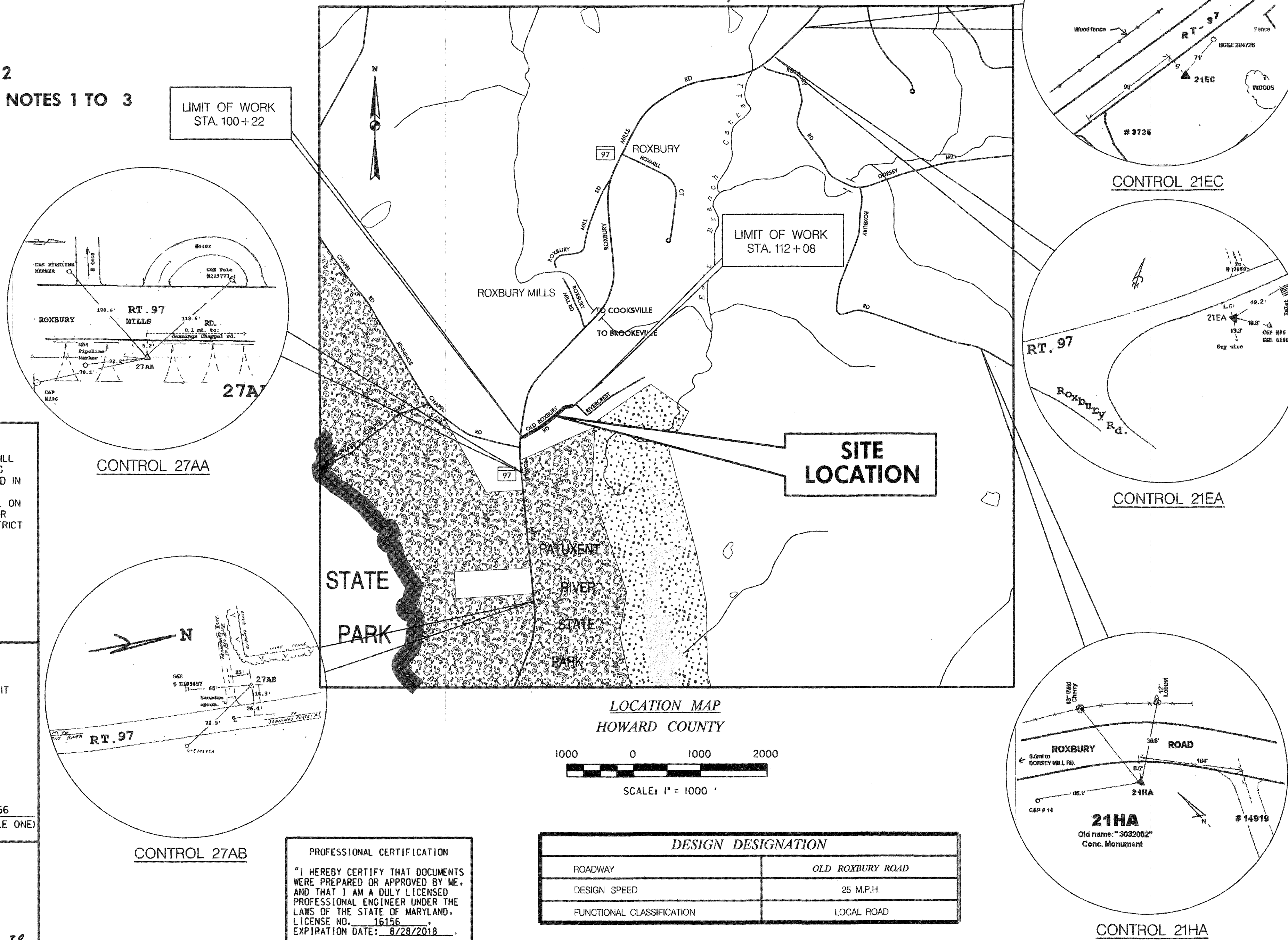
## INDEX OF DRAWINGS

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## GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 HOWARD COUNTY PUBLIC SCHOOLS AT 410-313-6600 AND MISS UTILITY AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK.
2. COORDINATES SHOWN HEREON ARE BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD '83/'11 AS PROJECTED BY HOWARD COUNTY PROJECT CONTROL STATIONS 17ED, FLYS, URS1, URS2, URS3, AND URS4.
  - 21EA  
N:582,715.157  
E:1,300,496.083  
ELEV:450.235  
HOWARD COUNTY DISK FOUND
  - 21EC  
N:583,153.978  
E:1,300,951.529  
ELEV:474.789  
HOWARD COUNTY DISK FOUND
  - 21HA  
N:578,325.136  
E:1,303,578.961  
ELEV:50.74  
HOWARD COUNTY DISK FOUND
  - 27AA  
N:576,482.308  
E:1,296,714.572  
ELEV:496.62  
HOWARD COUNTY DISK FOUND
  - 27AB  
N:574,543.018  
E:1,296,849.903  
ELEV:479.464  
HOWARD COUNTY DISK FOUND
  - HC36  
N:585,141.435  
E:1,289,408.855  
ELEV:536.242  
HOWARD COUNTY DISK FOUND
3. THE SYSTEM OF COORDINATES USED IS BASED ON THE FOLLOWING DATUMS AND PROJECTIONS:  
HORIZONTAL: NAD83/2011  
VERTICAL: NAVD83
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
5. ALL WORK SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," ISSUED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE NATURAL RESOURCES CONSERVATION SERVICE.
6. TOPOGRAPHIC SURVEYS WERE PERFORMED BY URS CORPORATION IN FEBRUARY 2015.
7. THE PROPERTY LINES AND EASEMENT LINES SHOWN HERE ARE BASED ON A FIELD RUN SURVEY PERFORMED BY URS CORPORATION IN FEBRUARY 2015.
8. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
9. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHOD, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
10. APPROXIMATE UTILITIES ARE SHOWN FROM AVAILABLE RECORDS AND/OR FIELD RECONNAISSANCE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 

AT&T	1-800-252-1133
BGE (CONSTRUCTION SERVICES)	(410) 637-8713
BGE (EMERGENCY)	(410) 685-0123
HOCO BUREAU OF UTILITIES	(410) 313-4900
COLONIAL PIPELINE CO.	(410) 795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	(410) 531-5533
VERIZON	1-800-743-0033
12. THE RECEIVING WATER BODY CATTAIL CREEK HAS A DESIGNATED USE III-P. IT IS NOT A FEAR II DESIGNATED STREAM AND HAS AN IMPAIRMENT LISTING CATEGORY OF 2. "WATERS ARE ATTAINING THE WATER QUALITY FOR THE SINGLE POLLUTANT ASSESSED."



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

OWNER'S/DEVELOPER'S SIGNATURE: Brandon Loe DATE: 4/9/18  
 PRINTED NAME & TITLE: Brandon Loe

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

DESIGNER'S SIGNATURE: David T. Moriconi DATE: 3-26-18  
 PRINTED NAME: DAVID T. MORICONI MD REGISTRATION NO. 16156  
 (P.E.) R.L.S., OR R.L.A. (CIRCLE ONE)

HOWARD SCD SIGNATURE BLOCK:  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD SOIL CONSERVATION DISTRICT: Jeffrey Selzer DATE: 4/17/18  
 EP-17-38

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

PREPARED BY: **URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220

PROFESSIONAL CERTIFICATION:  
 "I HEREBY CERTIFY THAT 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. 16156. EXPIRATION DATE: 8/28/2018."

DES: DMT  
 DRN: DMT  
 CHK: DTM  
 DATE: 03/2018

BY NO. REVISION DATE

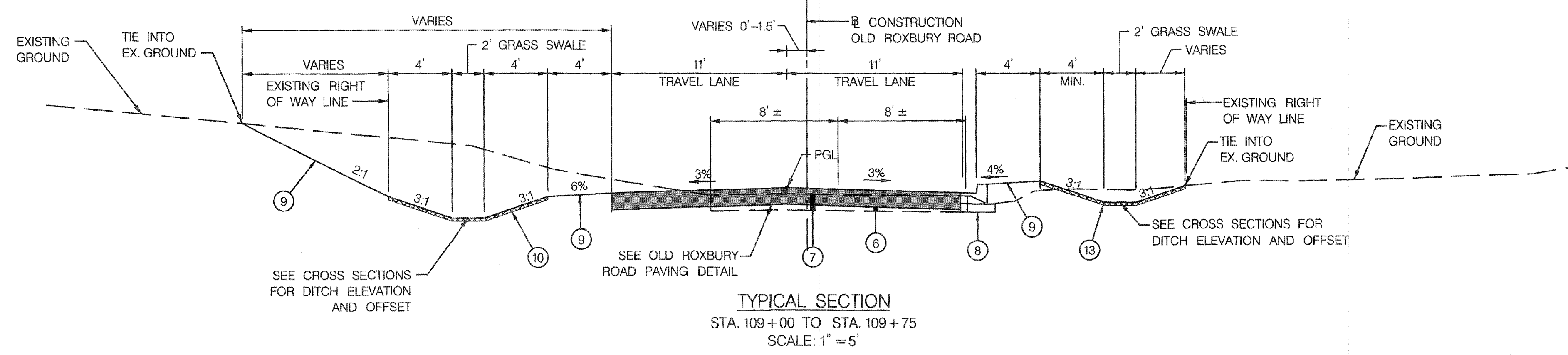
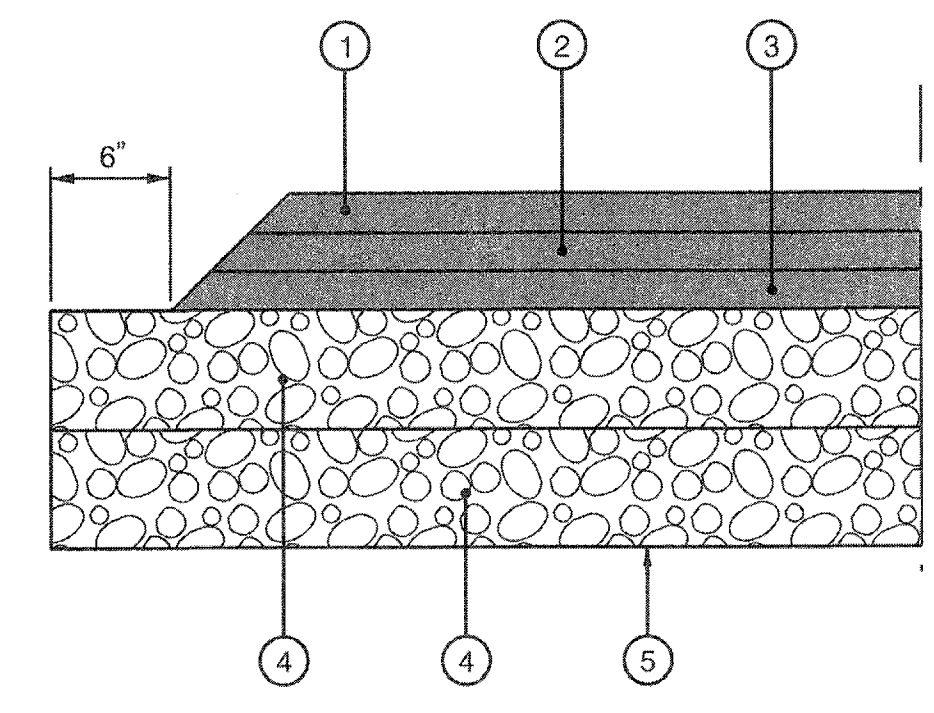
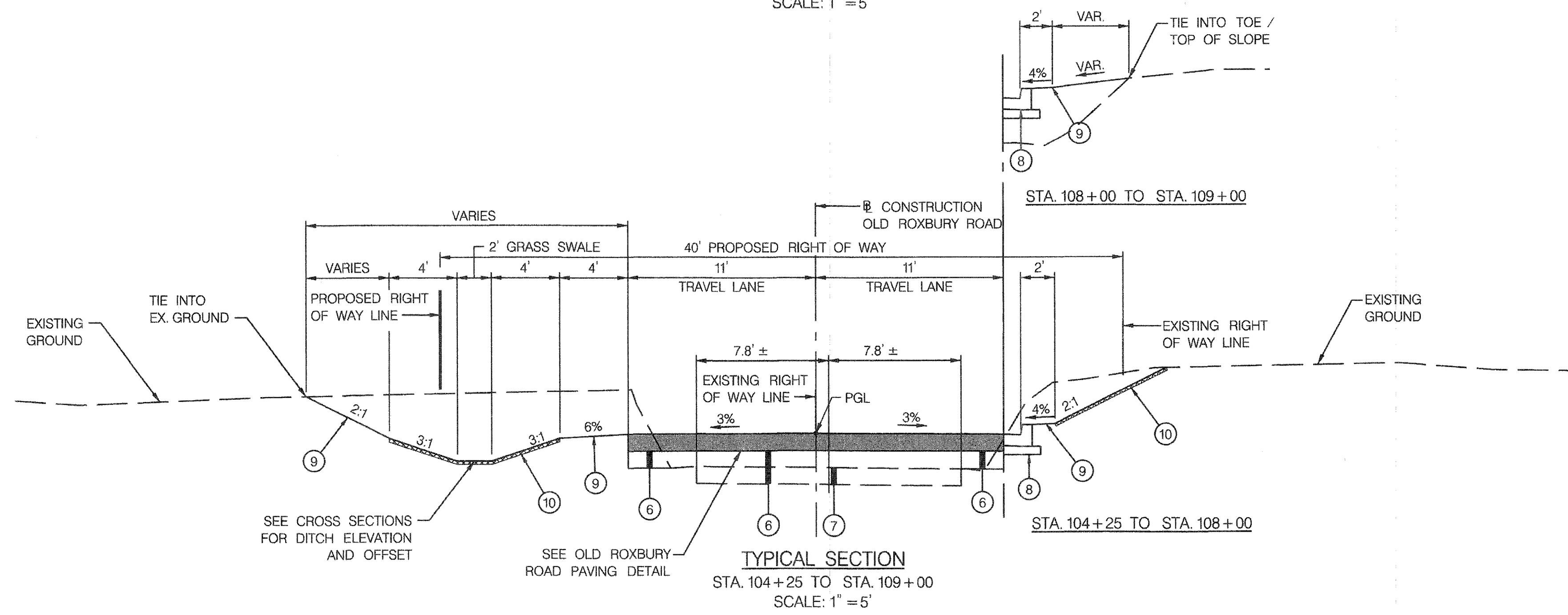
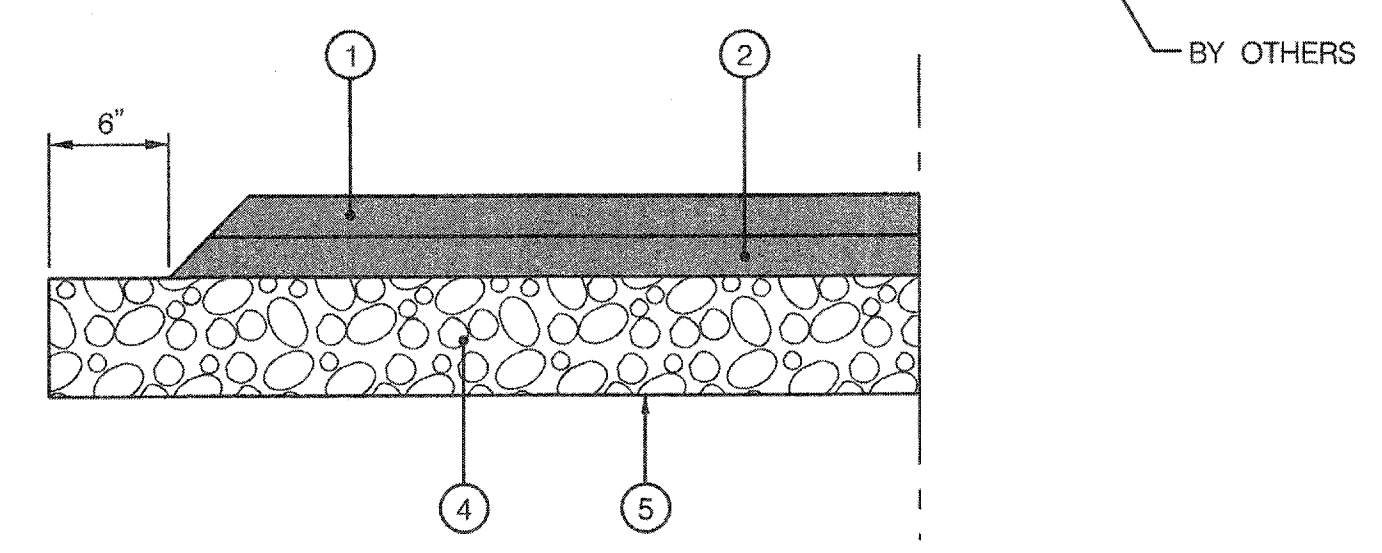
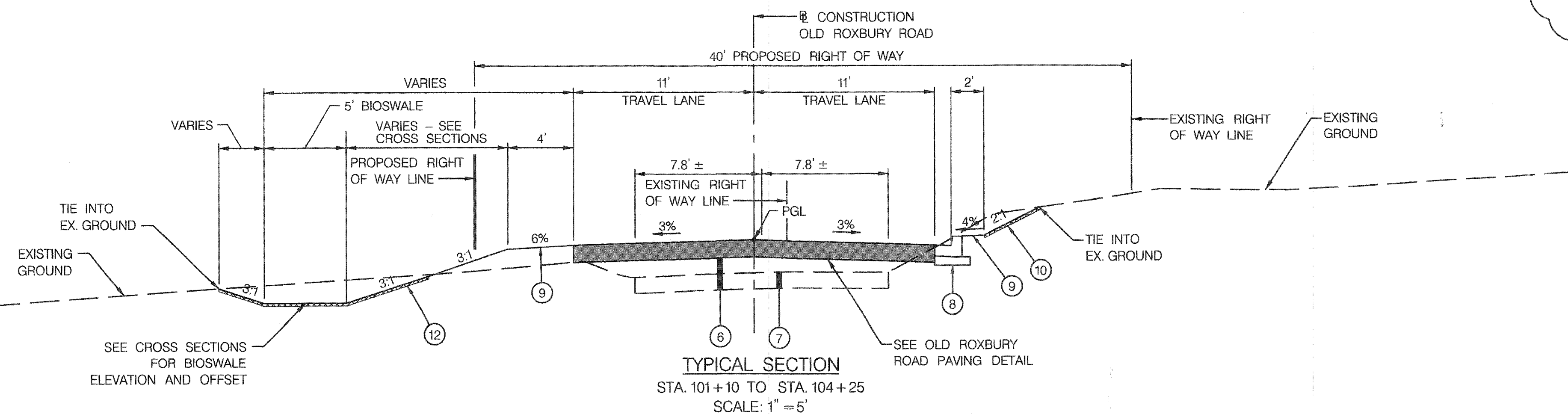
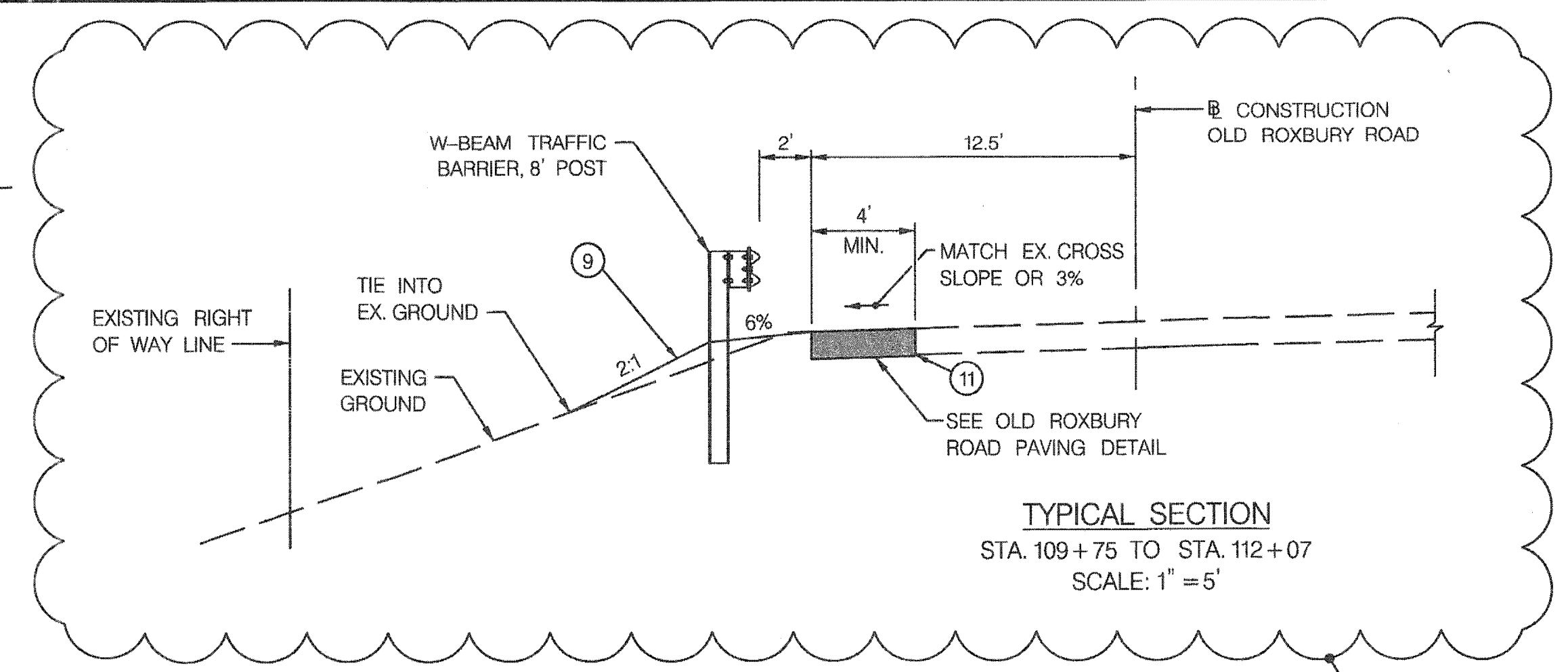
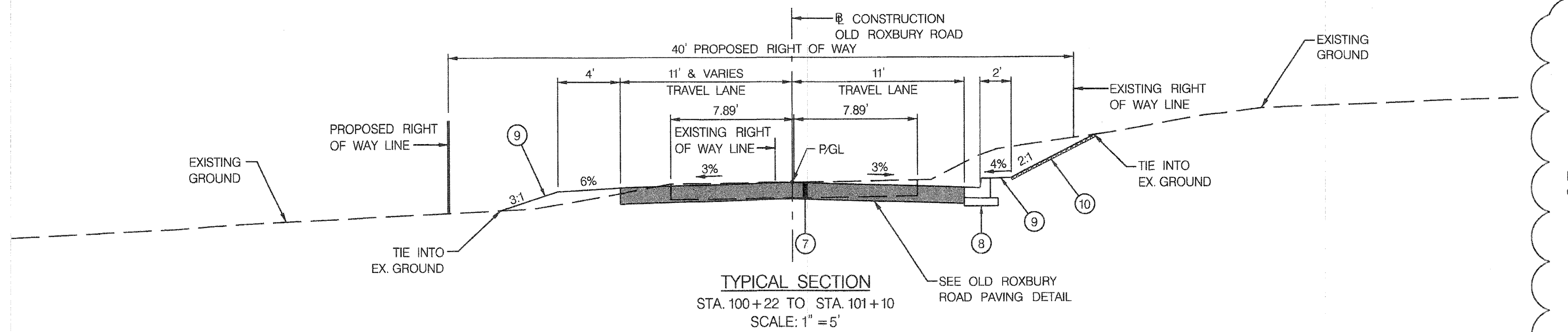
TITLE SHEET

SCALE MAP NO. 21 BLOCK NO. 19

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT  
 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 19





- LEGEND**
- ① 2.0" HMA SUPERPAVE FINAL SURFACE 12.5 MM PG 64-22, LEVEL 2
  - ② 2.0" HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22, LEVEL 2
  - ③ 4.0" HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2
  - ④ 4.0" GRADED AGGREGATE BASE
  - ⑤ TOP OF SUBGRADE, LIMIT OF CLASS 1 EXCAVATION
  - ⑥ COMPACTED VARIABLE DEPTH GRADED AGGREGATE BASE (2" MIN.)
  - ⑦ EXISTING PAVEMENT TO BE REMOVED
  - ⑧ 7" COMBINATION CURB AND GUTTER - HOWARD COUNTY DETAIL R-3.01
  - ⑨ FOR SLOPES 3:1 OR FLATTER USE 4" TOPSOIL, SEED & MULCH, 2:1 OR STEEPER USE 2" TOPSOIL, SEED & MULCH
  - ⑩ TURF GRASS ESTABLISHMENT WITH TYPE A SOIL STABILIZATION MATTING
  - ⑪ FULL DEPTH SAW CUT
  - ⑫ BIORETENTION MEADOW ESTABLISHMENT WITH TYPE D SOIL STABILIZATION MATTING
  - ⑬ TURF GRASS ESTABLISHMENT WITH TYPE B SOIL STABILIZATION MATTING

- NOTES:**
1. OPEN ROADWAY TYPICAL SECTION IS BASED ON HOWARD COUNTY DETAIL R-1.01.
  2. CLOSED ROADWAY TYPICAL SECTION IS BASED ON HOWARD COUNTY DETAIL R-1.02. (AND AS MODIFIED TO MINIMIZE IMPACTS).
  3. THE EXISTING PAVEMENT SECTION VARIES.

**PROFESSIONAL CERTIFICATION**  
"I HEREBY CERTIFY THAT 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. 16156. EXPIRATION DATE: 8/28/2018."

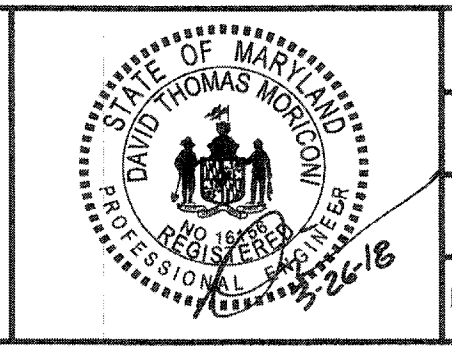
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 4/1/18  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 4/10/18  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 4/10/18  
CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-7220



DES:	DMT		
DRN:	DMT		
CHK:	DTM		
DATE:	03/2018	BY:	NO.
		REVISION	DATE

**TYPICAL SECTIONS AND DETAILS**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

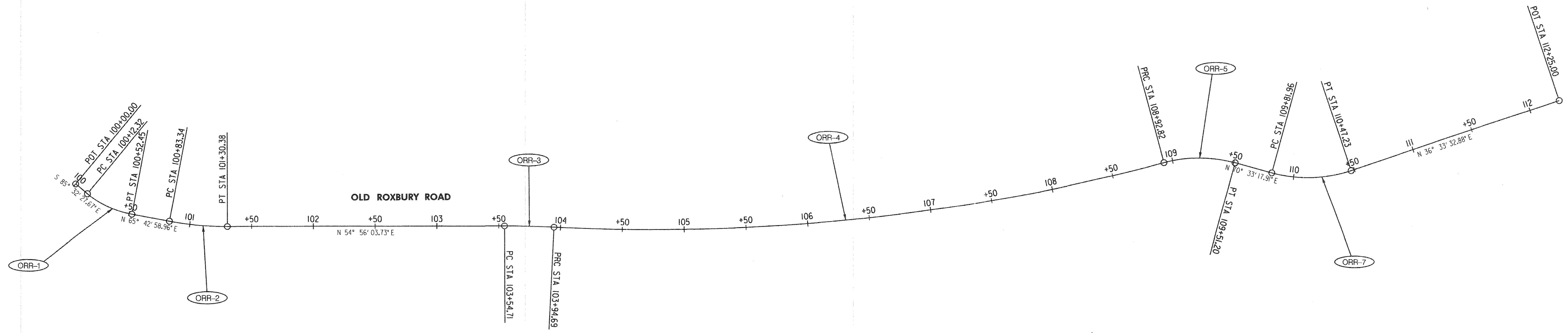
**OLD ROXBURY ROAD ROADWAY WIDENING**  
MD 97 TO WEST OF RIVERCREST COURT

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 19





CONSTRUCTION CONTROL COORDINATES					
CURVE	POINT NO.	STATION	NORTHING	EASTING	BEARING
B/L OLD ROXBURY ROAD					
	PT	100+00.00	577,021.6726	1,296,677.7243	S 85° 32' 27.67" E
ORR-1	PC	100+12.32	577,020.7146	1,296,690.0092	S 85° 32' 27.67" E
	PI	100+32.82	577,019.1210	1,296,710.4450	
	PT	100+52.45	577,027.5508	1,296,729.1292	N 65° 42' 58.96" E
ORR-2	PC	100+83.34	577,040.2517	1,296,757.2801	N 65° 42' 58.96" E
	PI	101+06.93	577,049.9542	1,296,778.7851	
	PT	101+30.38	577,063.5083	1,296,798.0953	N 54° 56' 03.73" E
ORR-3	PC	103+54.71	577,192.3885	1,296,981.7072	N 54° 56' 03.73" E
	PI	103+74.71	577,203.8753	1,296,998.0721	
	PT	103+94.69	577,214.4739	1,297,015.0259	N 57° 59' 18.61" E
ORR-4	PC	103+94.69	577,214.4739	1,297,015.0259	N 57° 59' 18.61" E
	PI	106+45.79	577,347.5783	1,297,227.9423	
	PT	108+92.82	577,539.5060	1,297,389.8494	N 40° 09' 01.55" E
ORR-5	PC	108+92.82	577,539.5060	1,297,389.8494	N 40° 09' 01.55" E
	PI	109+22.71	577,562.3533	1,297,409.1230	
	PT	109+51.20	577,572.3041	1,297,437.3091	N 70° 33' 17.91" E
ORR-6	PC	109+51.20	577,582.5458	1,297,466.3193	N 70° 33' 17.91" E
	PI	110+15.59	577,593.7400	1,297,498.0273	
	PT	110+47.23	577,620.7499	1,297,518.0567	N 36° 33' 32.88" E
	POE	112+25.00	577,763.5436	1,297,623.9467	N 36° 33' 32.88" E

CURVE DATA						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
ORR-1	28° 44' 33.37" LT	71° 37' 11.01"	80.00	20.50	40.13	2.58
ORR-2	10° 46' 55.23" LT	22° 55' 05.92"	250.00	23.59	47.05	1.11
ORR-3	3° 03' 14.88" RT	7° 38' 21.97"	750.00	19.99	39.98	0.27
ORR-4	17° 50' 17.05" LT	3° 34' 51.55"	1,600.00	251.10	498.13	19.58
ORR-5	30° 24' 16.35"	52° 05' 13.46"	110.00	29.89	58.37	3.99
ORR-6	33° 59' 45.02"	52° 05' 13.46"	110.00	33.63	65.27	5.02

**MAINTENANCE OF TRAFFIC NOTES**

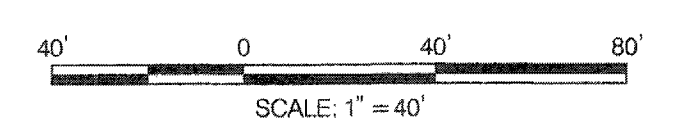
**CONSTRUCTION STAGING**

1. THE CONTRACTOR SHALL COORDINATE TIME OF CONSTRUCTION WITH THE PROPERTY OWNERS AND HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
2. CONSTRUCTION OF THE PROPOSED CURB AND GUTTER AND FULL DEPTH PAVEMENT SECTIONS SHALL BE PERFORMED UNDER A FLAGGING OPERATION AS PER MD SHA STD. 104.02-10.

**TRAFFIC CONTROL NOTES**

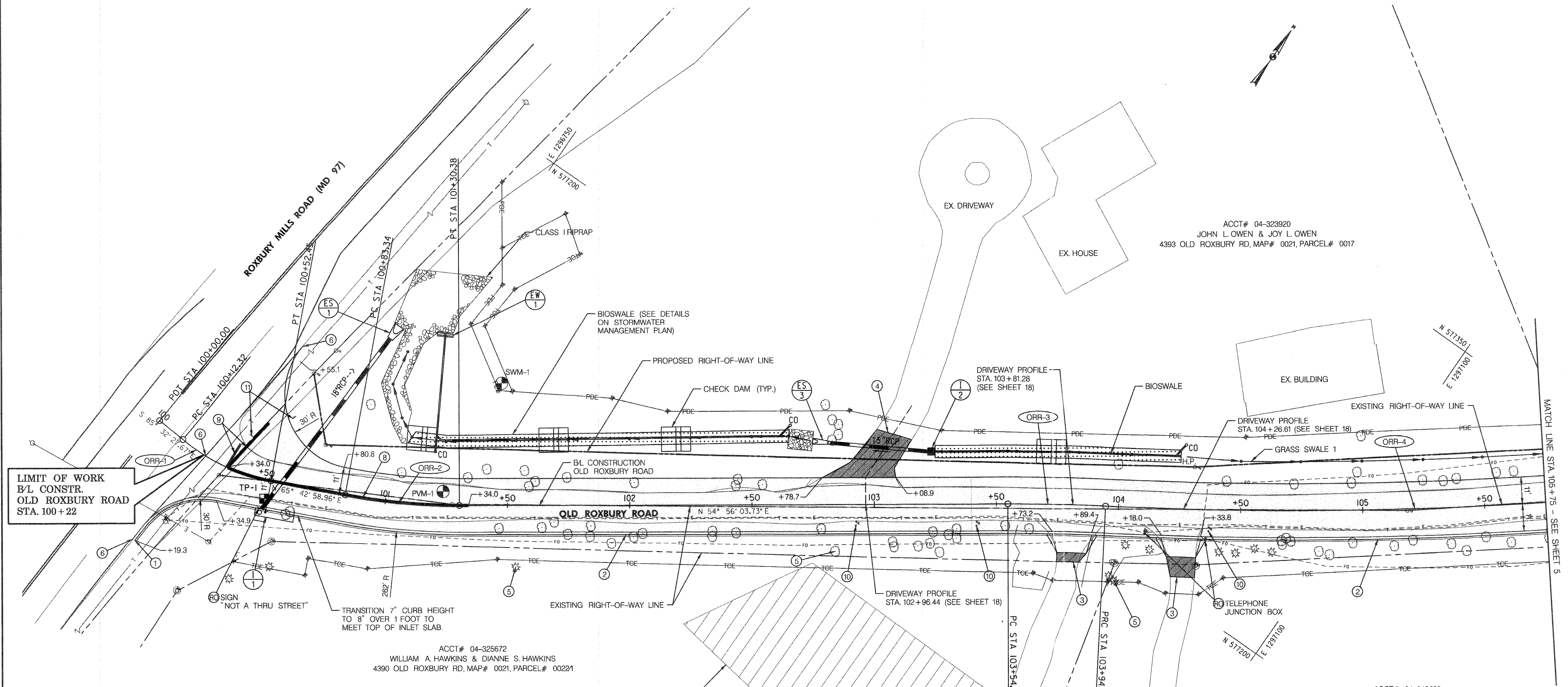
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION'S WORK ZONE TRAFFIC CONTROL TYPICALS, THE MD MUTCD AND SUBSEQUENT REVISIONS ADOPTED BY THE STATE OF MARYLAND.
2. ALL EXISTING SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION.
3. PORTABLE VARIABLE MESSAGE SIGN(S) (PVMS) MESSAGES SHALL BE AS DIRECTED BY THE HOWARD COUNTY INSPECTOR. ALL PROPOSED PVMSs SHALL BE PLACED ACCORDING TO STD. MD. 104.01-22, OR AS DIRECTED BY THE COUNTY.
4. ADVANCE WARNING SIGNS SHALL BE INSTALLED AT A MINIMUM SPACING OF 200 FEET TO AN EXISTING SIGN, UNLESS OTHERWISE DIRECTED BY THE HOWARD COUNTY INSPECTOR.
5. EXCAVATIONS IN AREAS WHERE THE WORK BUFFER IS LESS THAN ONE LANE SHALL BE BACKFILLED WITH GAB FOR MOT PRIOR TO THE END OF THE WORK DAY IN CONFORMANCE WITH SHA STD. MD. 104.01-28.
6. NO WORK IS TO BEGIN UNTIL ALL ADVANCE WARNING SIGNS AND CHANNELIZATION DEVICES ARE IN PLACE AND OPERATIONAL.
7. THE CONTRACTOR SHALL USE STEEL PLATES TO COVER ANY AND ALL OPEN TRENCHES AT THE END OF THE WORK DAY OR WHEN ALL LANES OF TRAFFIC ARE TO BE OPENED TO TRAFFIC.
8. FOR OFF-PEAK HOUR WORK ZONES, TYPICAL APPLICATIONS FROM CATEGORY I OF THE MDSHA BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES IN ADDITION TO THOSE CITED ON THESE PLANS MAY BE REQUIRED.
9. TYPICAL APPLICATIONS TO BE USED FOR OFF-PEAK HOUR WORK MAY BE MODIFIED AS REQUIRED BASED ON FIELD CONDITIONS.
10. NOTE THAT THE CONTRACTOR SHALL USE STAGED CONSTRUCTION TO COMPLETE THE WORK. UNDER STAGED CONSTRUCTION, THE CONTRACTOR SHALL ONLY SET UP LANE CLOSURES FOR WORK THAT WILL BE COMPLETED, OR SUFFICIENTLY COMPLETED IN ORDER TO REMOVE THE LANE CLOSURE PRIOR TO THE BEGINNING OF THE PEAK PERIOD, SUCH AS ONE BLOCK OR BETWEEN DRIVEWAYS. UPON COMPLETION OF ONE BLOCK OR MEDIAN SECTION, THE LANE CLOSURE MAY BE ESTABLISHED FOR THE NEXT SECTION OR BLOCK.

PROFESSIONAL CERTIFICATION  
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> 4/11/18 Chief, Bureau of Engineering: <i>[Signature]</i> 4/10/2018 Chief, Transportation and Special Projects Division: <i>[Signature]</i> 4/11/18 Chief, Bureau of Highways: <i>[Signature]</i> 4/10/2018	PREPARED BY <b>URS</b> 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220		DES: DMT DRN: DMT CHK: DTM DATE: 03/2018	GEOMETRY PLAN SCALE MAP NO. _____ BLOCK NO. _____	OLD ROXBURY ROAD ROADWAY WIDENING MD 97 TO WEST OF RIVERCREST COURT 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND SCALE 1" = 40' SHEET 3 OF 19
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LIMIT OF WORK  
B/L CONSTR.  
OLD ROXBURY ROAD  
STA. 100 + 22

ACCT# 04-325672  
WILLIAM A. HAWKINS & DIANNE S. HAWKINS  
4390 OLD ROXBURY RD, MAP# 0021, PARCEL# 00221

ACCT# 04-323920  
JOHN L. OWEN & JOY L. OWEN  
4393 OLD ROXBURY RD, MAP# 0021, PARCEL# 0017

ACCT# 04-343689  
KIRK E. AND JOYCE A. JAMES  
4380 OLD ROXBURY RD, MAP# 0021, PARCEL# 00222

- LEGEND**
- (R) TO BE REMOVED
  - (R) REMOVE AND RESET
  - (R) RELOCATE (BY OTHERS)
  - (A) ADJUST
  - (2) NEW CONSTRUCTION NOTES (SEE NOTES THIS SHEET)
  - FULL DEPTH HOT MIX ASPHALT ROADWAY PAVEMENT
  - HOT MIX ASPHALT FOR DRIVEWAYS
  - CONCRETE DRIVEWAY APRON
  - TCE — TEMPORARY CONSTRUCTION EASEMENT
  - PDE — PERPTUAL DRAINAGE EASEMENT
  - — — PROPOSED RIGHT-OF-WAY LINE

- NEW CONSTRUCTION NOTES**
- 1 NOSE DOWN CURB - HOWARD COUNTY DETAIL R-3.02.
  - 2 7" COMBINATION CURB AND GUTTER - HOWARD COUNTY DETAIL R-3.01.
  - 3 RESIDENTIAL DRIVEWAY ENTRANCE - HOWARD COUNTY DETAIL R-6.05.
  - 4 RESIDENTIAL DRIVEWAY ENTRANCE - HOWARD COUNTY DETAIL R-6.06.
  - 5 SAVE EXISTING TREE
  - 6 TIE INTO EXISTING ROAD
  - 7 INSTALL W-BEAM TRAFFIC BARRIER, 8' POST
  - 8 5" DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (100FT)
  - 9 REMOVE /REPLACE THERMOPLASTIC STOP BAR
  - 10 REMOVE AND RESET MAILBOX TO A LOCATION COORDINATED AND APPROVED BY THE COUNTY /PROPERTY OWNER
  - 11 REMOVE AND RESET "STOP" AND "OLD ROXBURY ROAD" SIGN

SEPTIC DRAIN FIELD NOT TO BE DISTURBED (LOCATION APPROXIMATE)

**PROFESSIONAL CERTIFICATION**  
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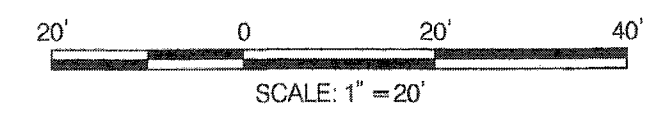
**TEST PIT LOCATIONS**

NO.	UTILITY	NORTHING	EASTING	SURFACE ELEVATION	REMARKS
TP-1	*TELEPHONE /ELECTRIC	577,020.0319	1,296,731.0361	465.72	NOT FOUND

**BORING LOCATIONS**

NO.	NORTHING	EASTING	ELEVATION
SWM-1	577,144.1947	1,296,783.8049	463.45
PVM-1	577,064.2872	1,296,789.3451	466.35

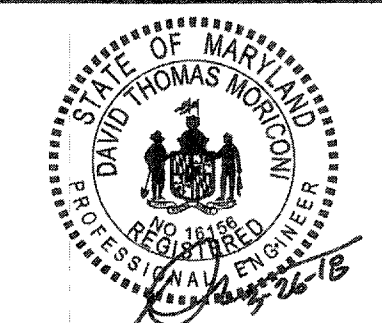
**NOTES:**  
1. REMOVE ALL TREES WITHIN THE LIMIT OF DISTURBANCE UNLESS NOTED OTHERWISE. SEE EROSION & SEDIMENT CONTROL PLAN FOR LIMIT OF DISTURBANCE.



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 4/19/18  
 Chief, Bureau of Engineering: *[Signature]* DATE: 4/10/2018  
 Chief, Transportation and Special Projects Division: *[Signature]* DATE: 4/19/18  
 Chief, Bureau of Highways: *[Signature]* DATE: 4/10/2018

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 755-1220



DES:	DMT			
DRN:	DMT			
CHK:	DTM			
DATE:	03/2018	BY NO.		REVISION
				DATE

**ROADWAY PLAN - 1**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

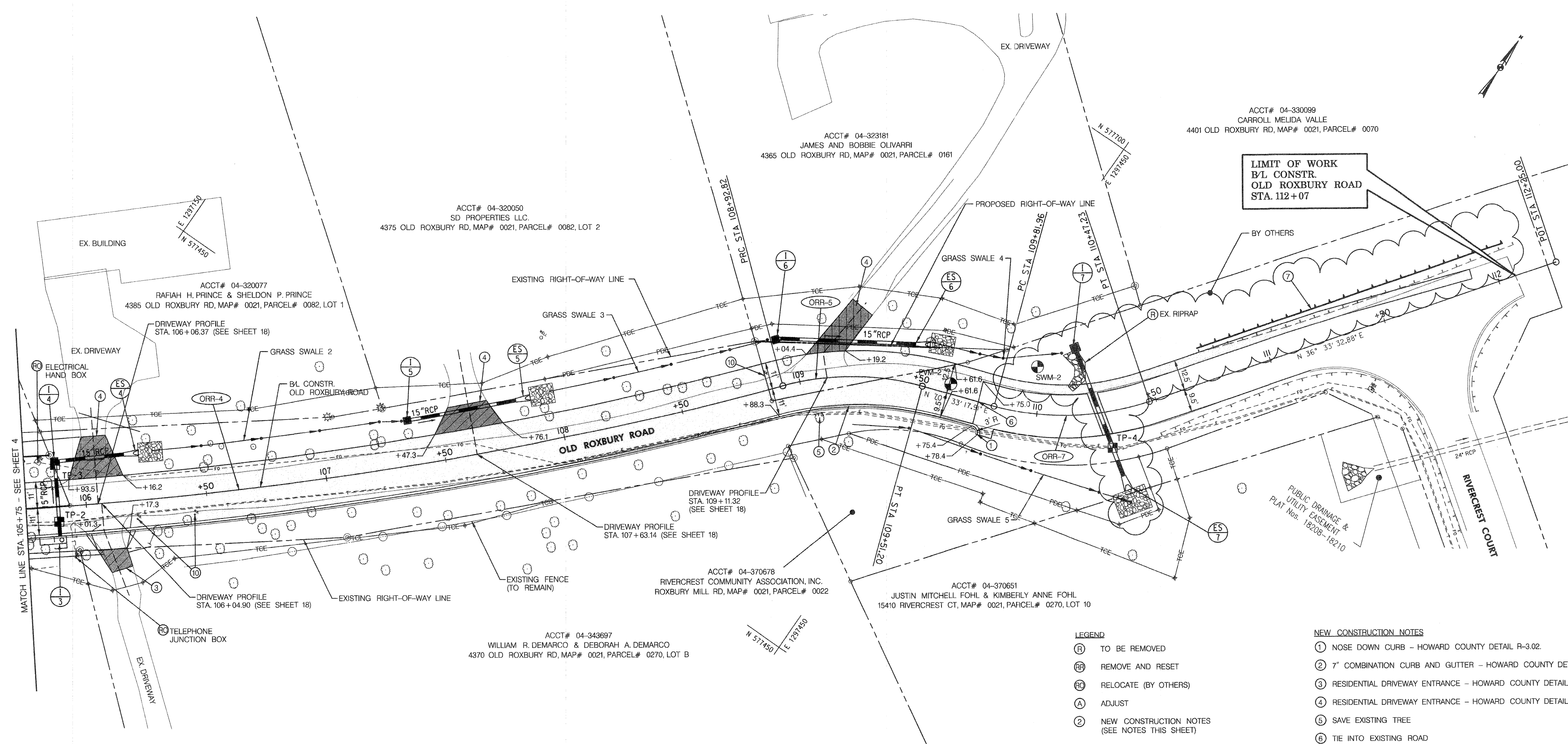
OLD ROXBURY ROAD  
ROADWAY WIDENING  
MD 97 TO WEST OF RIVERCREST COURT

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE  
1" = 20'

SHEET  
4 OF 19





ACCT# 04-330099  
 CARROLL MELIDA VALLE  
 4401 OLD ROXBURY RD, MAP# 0021, PARCEL# 0070

ACCT# 04-320050  
 SD PROPERTIES LLC  
 4375 OLD ROXBURY RD, MAP# 0021, PARCEL# 0082, LOT 2

ACCT# 04-320077  
 RAFIAH H. PRINCE & SHELDON P. PRINCE  
 4385 OLD ROXBURY RD, MAP# 0021, PARCEL# 0082, LOT 1

ACCT# 04-370678  
 RIVERCREST COMMUNITY ASSOCIATION, INC.  
 ROXBURY MILL RD, MAP# 0021, PARCEL# 0022

ACCT# 04-370651  
 JUSTIN MITCHELL FOHL & KIMBERLY ANNE FOHL  
 15410 RIVERCREST CT, MAP# 0021, PARCEL# 0270, LOT 10

ACCT# 04-343697  
 WILLIAM R. DEMARCO & DEBORAH A. DEMARCO  
 4370 OLD ROXBURY RD, MAP# 0021, PARCEL# 0270, LOT B

**LIMIT OF WORK  
 B/L CONSTR.  
 OLD ROXBURY ROAD  
 STA. 112+07**

- LEGEND**
- (R) TO BE REMOVED
  - (RR) REMOVE AND RESET
  - (RC) RELOCATE (BY OTHERS)
  - (A) ADJUST
  - (2) NEW CONSTRUCTION NOTES (SEE NOTES THIS SHEET)
  - FULL DEPTH HOT MIX ASPHALT ROADWAY PAVEMENT
  - HOT MIX ASPHALT FOR DRIVEWAYS
  - CONCRETE DRIVEWAY APRON
  - TCE — TEMPORARY CONSTRUCTION EASEMENT
  - PDE — PERPTUAL DRAINAGE EASEMENT
  - PROPOSED RIGHT-OF-WAY LINE

- NEW CONSTRUCTION NOTES**
- 1 NOSE DOWN CURB - HOWARD COUNTY DETAIL R-3.02.
  - 2 7" COMBINATION CURB AND GUTTER - HOWARD COUNTY DETAIL R-3.01.
  - 3 RESIDENTIAL DRIVEWAY ENTRANCE - HOWARD COUNTY DETAIL R-6.05.
  - 4 RESIDENTIAL DRIVEWAY ENTRANCE - HOWARD COUNTY DETAIL R-6.06.
  - 5 SAVE EXISTING TREE
  - 6 TIE INTO EXISTING ROAD
  - 7 INSTALL W-BEAM TRAFFIC BARRIER, 8' POST
  - 8 5" DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (100FT)
  - 9 REMOVE / REPLACE THERMOPLASTIC STOP BAR
  - 10 REMOVE AND RESET MAILBOX TO A LOCATION COORDINATED AND APPROVED BY THE COUNTY / PROPERTY OWNER

**NOTES:**  
 1. REMOVE ALL TREES WITHIN THE LIMIT OF DISTURBANCE UNLESS NOTED OTHERWISE.

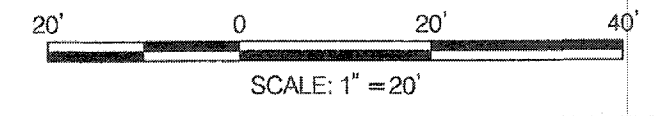
**TEST PIT LOCATIONS**

NO.	UTILITY	NORTHING	EASTING	SURFACE ELEVATION	REMARKS
TP-2	*TELEPHONE /ELECTRIC	577,322.0138	1,297,176.4700	469.76	NOT FOUND
TP-3	FIBER OPTIC	577,340.4020	1,297,161.5991	472.91	NOT FOUND
TP-4	*TELEPHONE /ELECTRIC FIBER OPTIC	577,596.1624	1,297,516.6980	442.79	NOT FOUND

**BORING LOCATIONS**

NO.	NORTHING	EASTING	ELEVATION
SWM-2	577,606.0130	1,297,471.9094	443.77
PVM-2	577,579.7533	1,297,446.4723	445.01

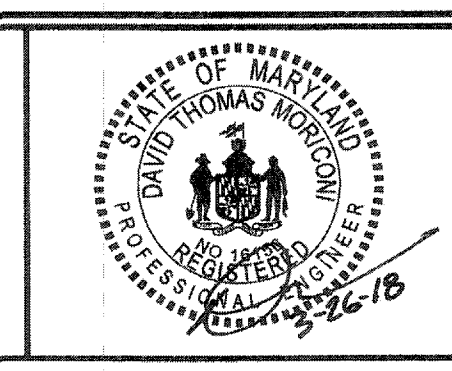
**PROFESSIONAL CERTIFICATION**  
 "I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16156. EXPIRATION DATE: 8/28/2018."



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: *John A. Miller* 4/11/18  
 Chief, Bureau of Engineering: *Thomas E. Suttler* 4/11/18  
 Chief, Bureau of Highways: *Matthew* 4/10/2018

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: 4101 785-7220



DES:	DMT				
DRN:	DMT				
CHK:	DTM				
DATE:	03/2018	BY	NO.	REVISION	DATE

**ROADWAY PLAN - 2**

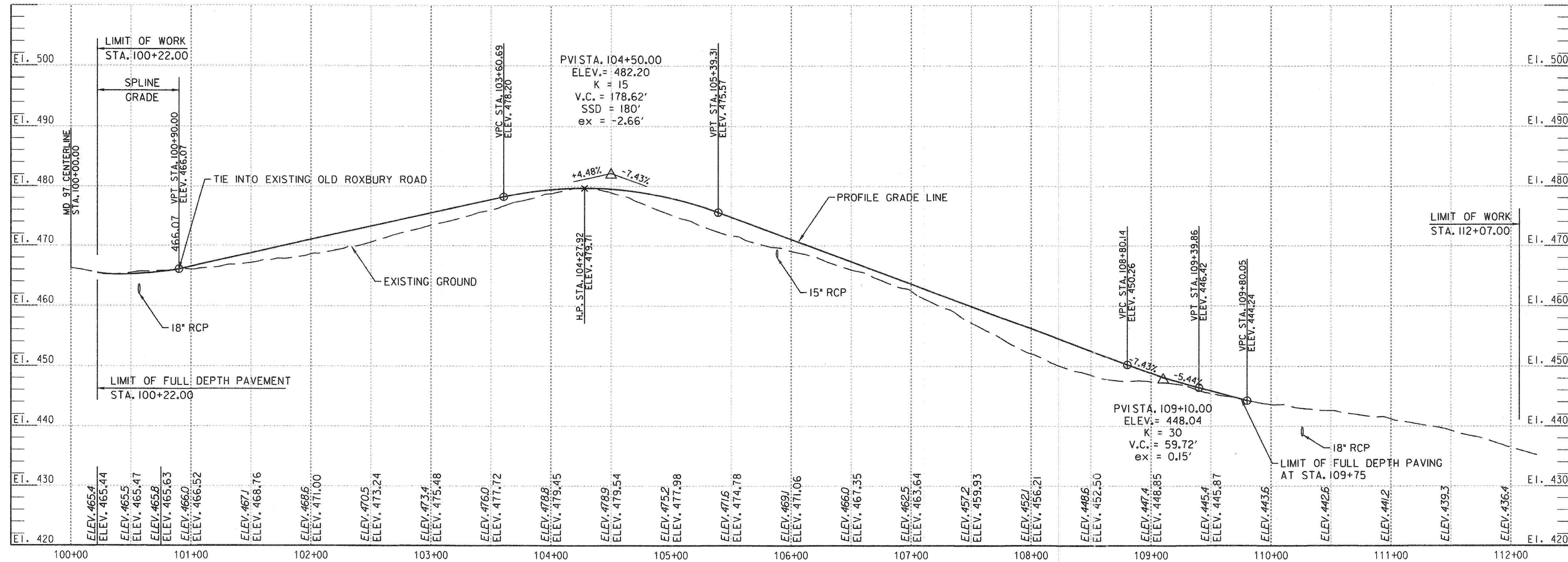
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT**

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE 1" = 20'  
 SHEET 5 OF 19

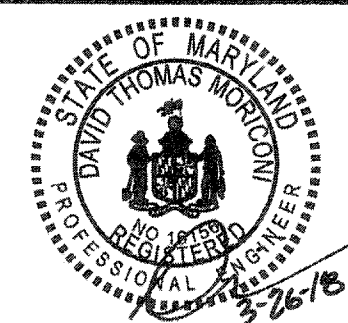
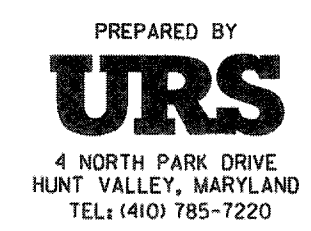




OLD ROXBURY ROAD PROFILE  
SCALE: 1" = 50' HORIZ. 1" = 10' VERT.

PROFESSIONAL CERTIFICATION  
 "I HEREBY CERTIFY THAT 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. 16156 EXPIRATION DATE: 8/28/2018"

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *Janet D.* 4/1/18  
 Chief, Bureau of Engineering: *Thomas B. Sutter* 4/1/18  
 Chief, Bureau of Highways: *Maurice* 4/10/2018



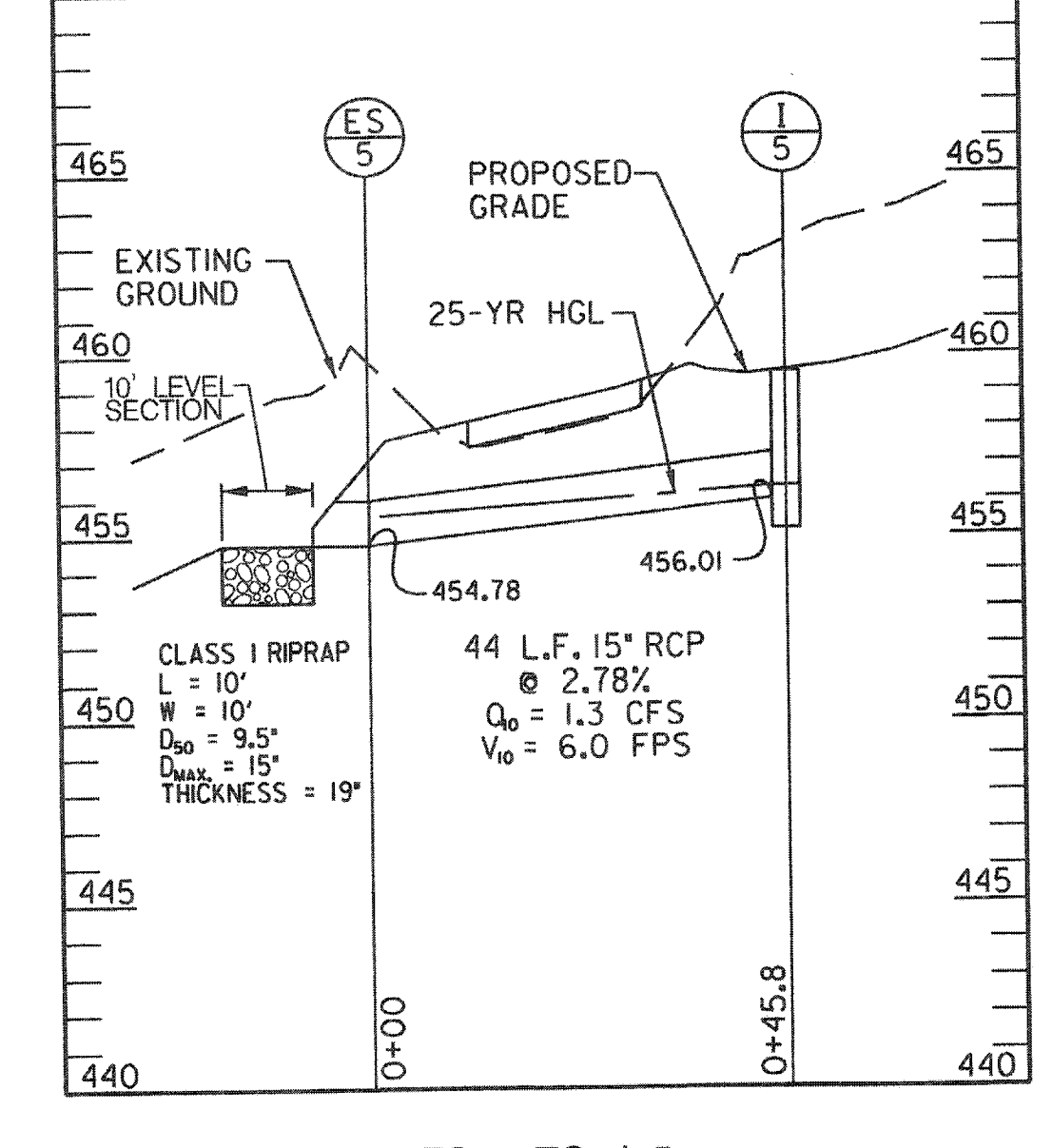
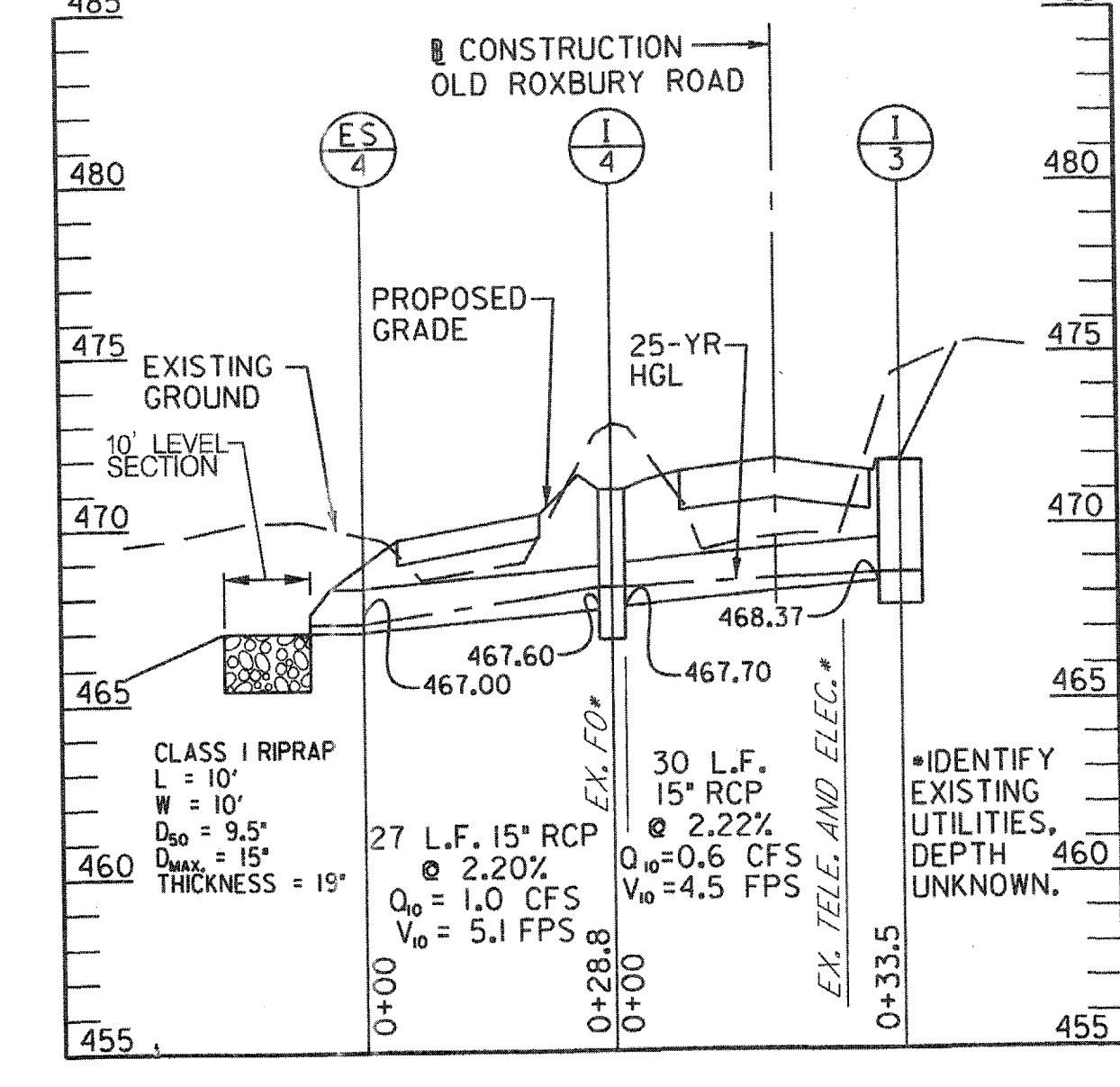
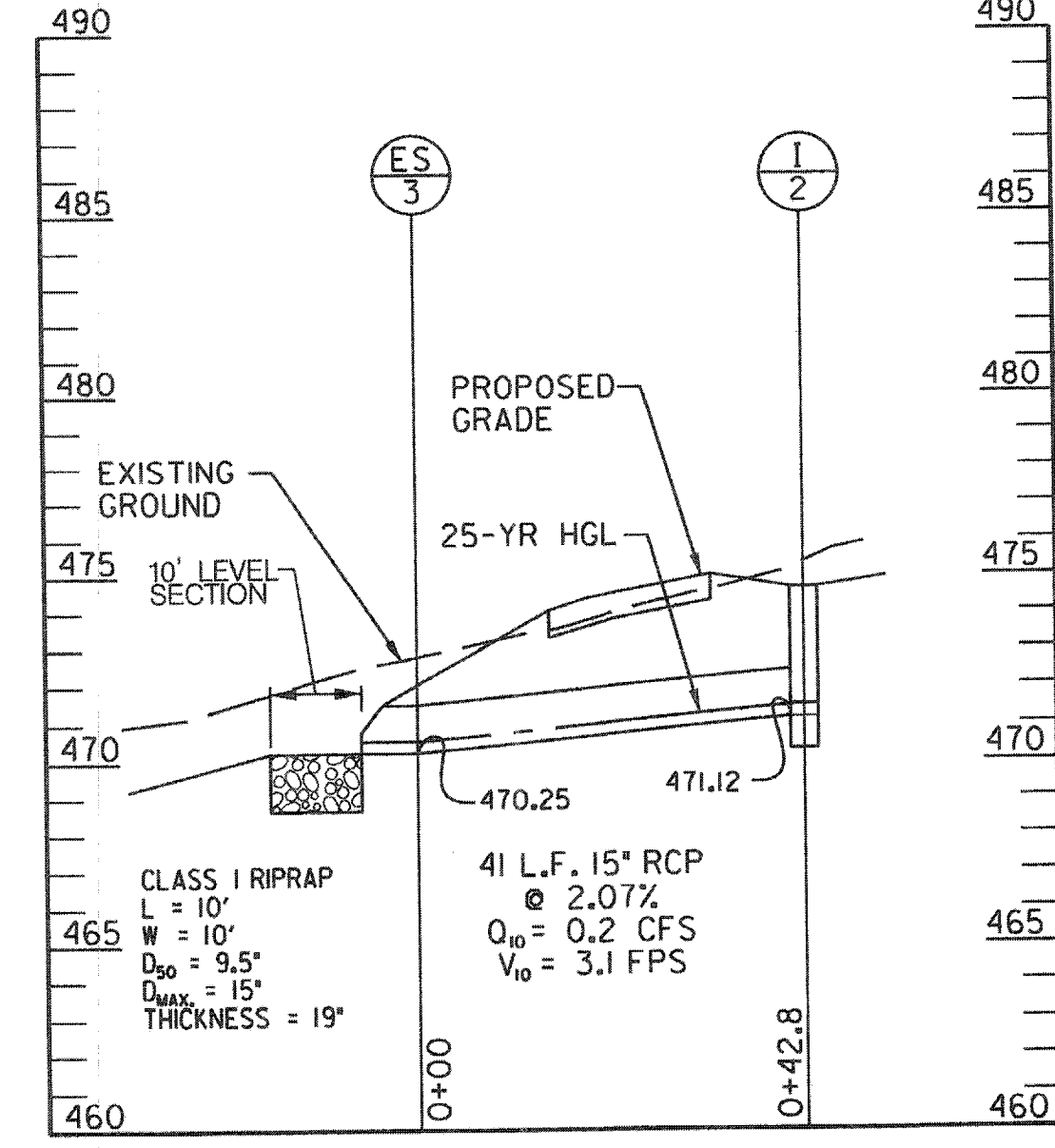
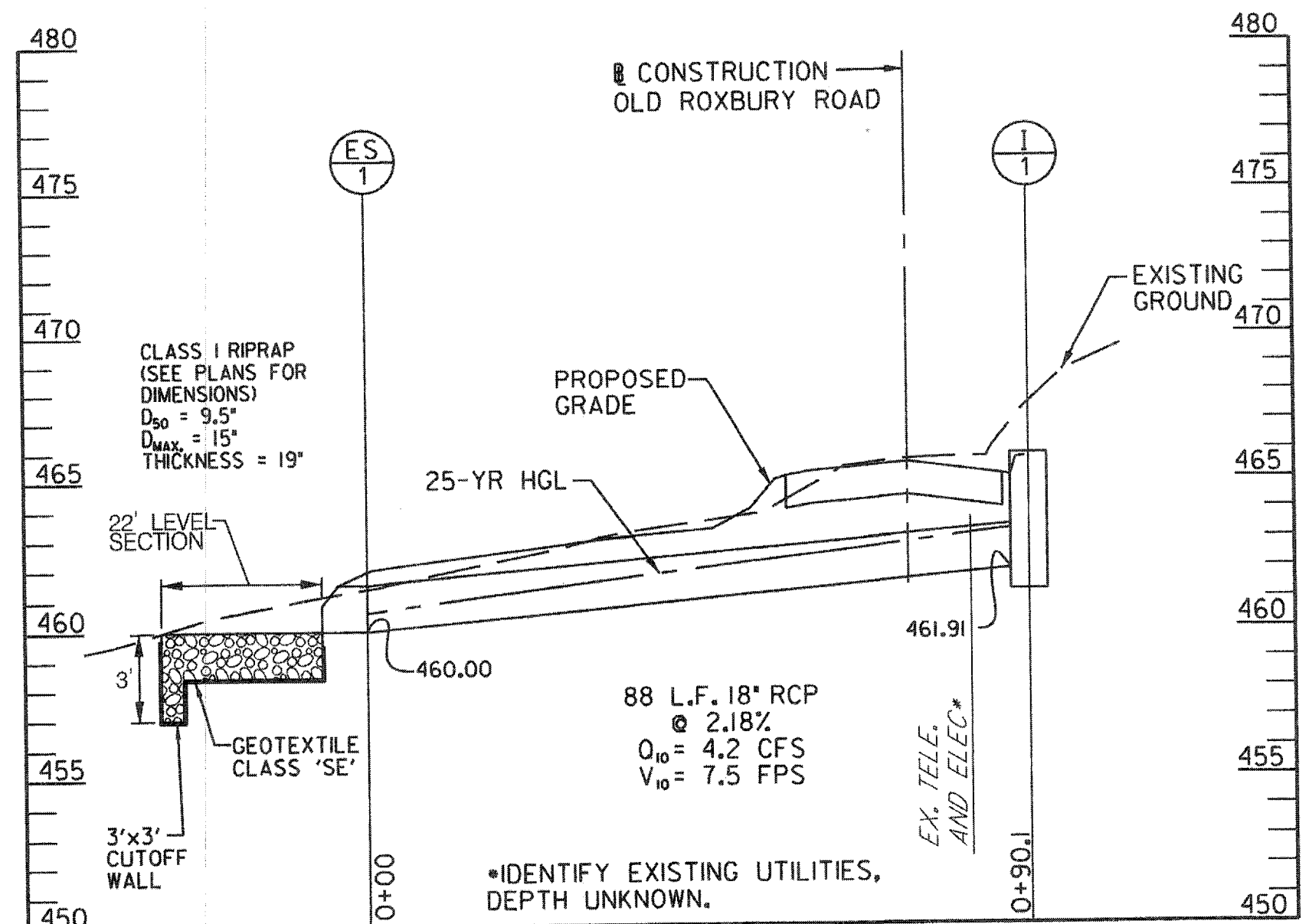
DES:	DMT			
DRN:	DMT			
CHK:	DTM			
DATE:	03/2018	BY:	NO.	
		REVISION		DATE

ROADWAY PROFILE

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT  
 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 6 OF 19



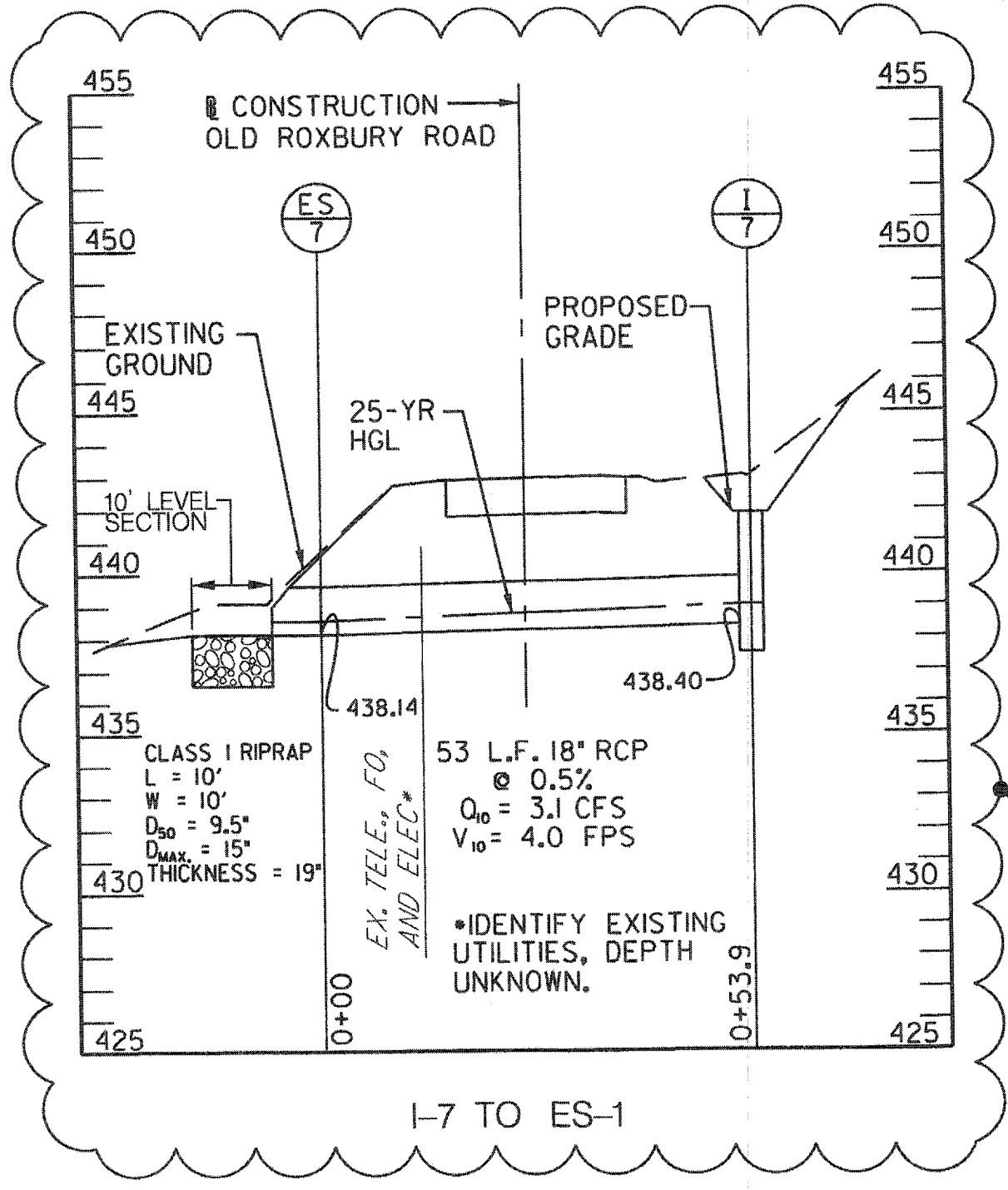
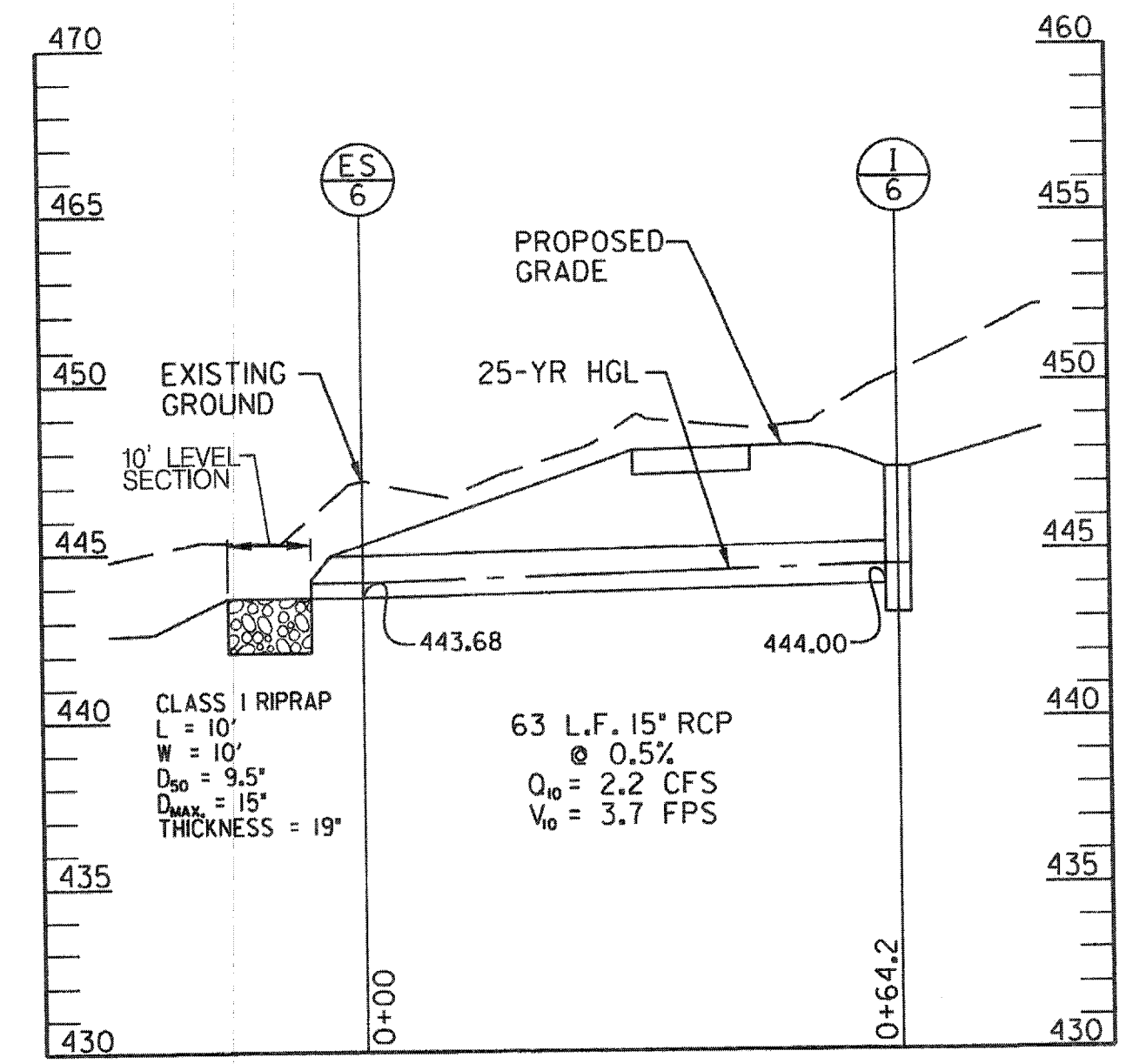


I-1 TO ES-1

ES-3 TO I-2

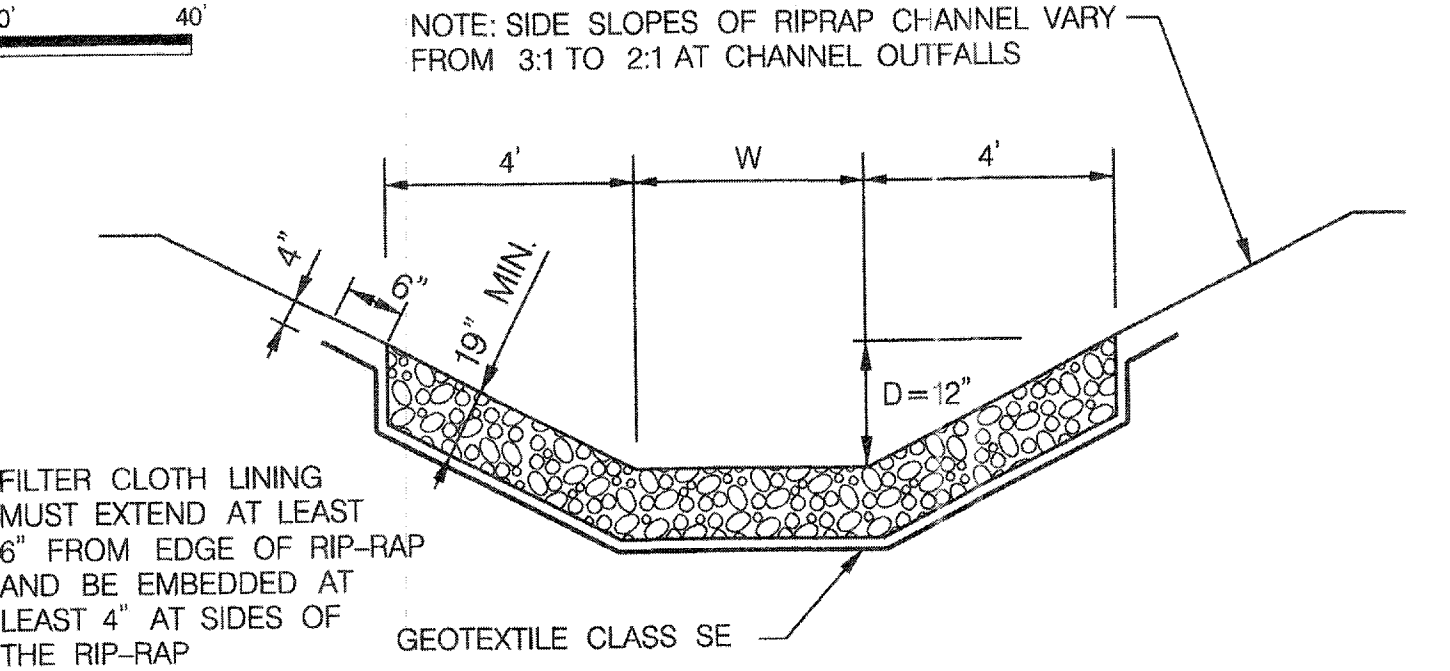
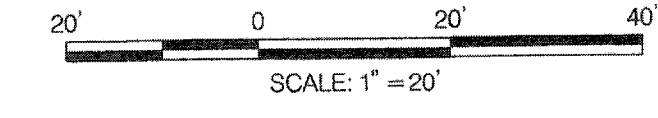
ES-4 TO I-3

ES-5 TO I-5

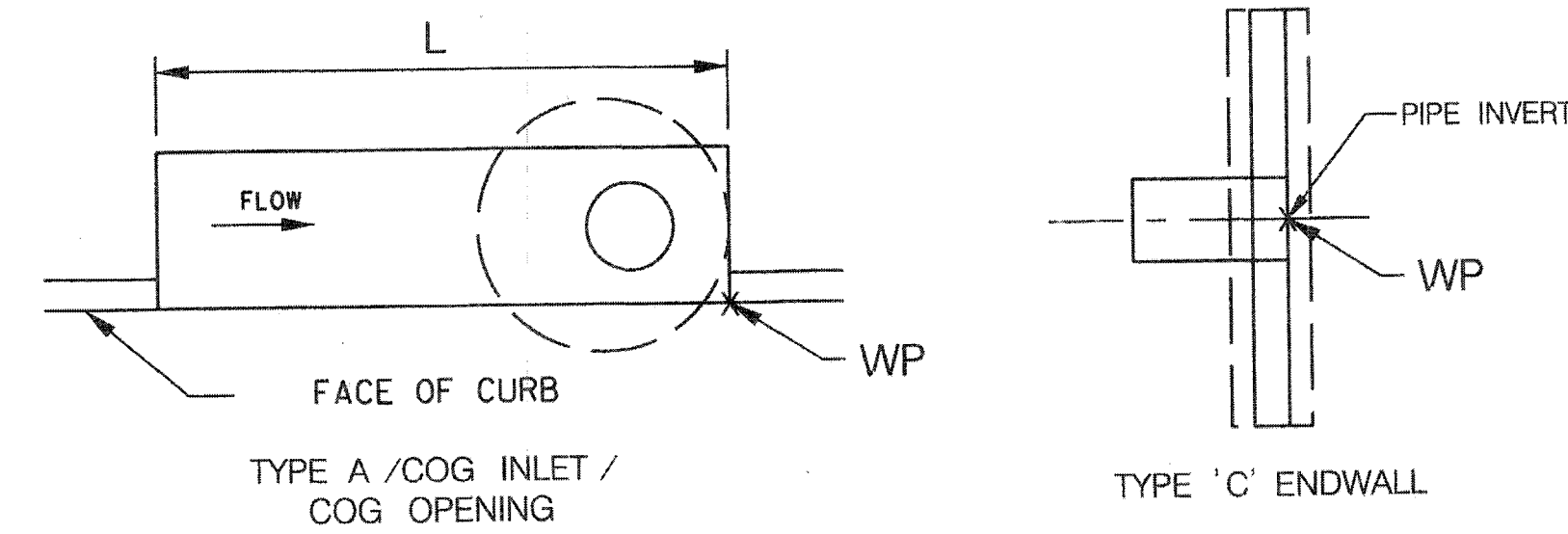
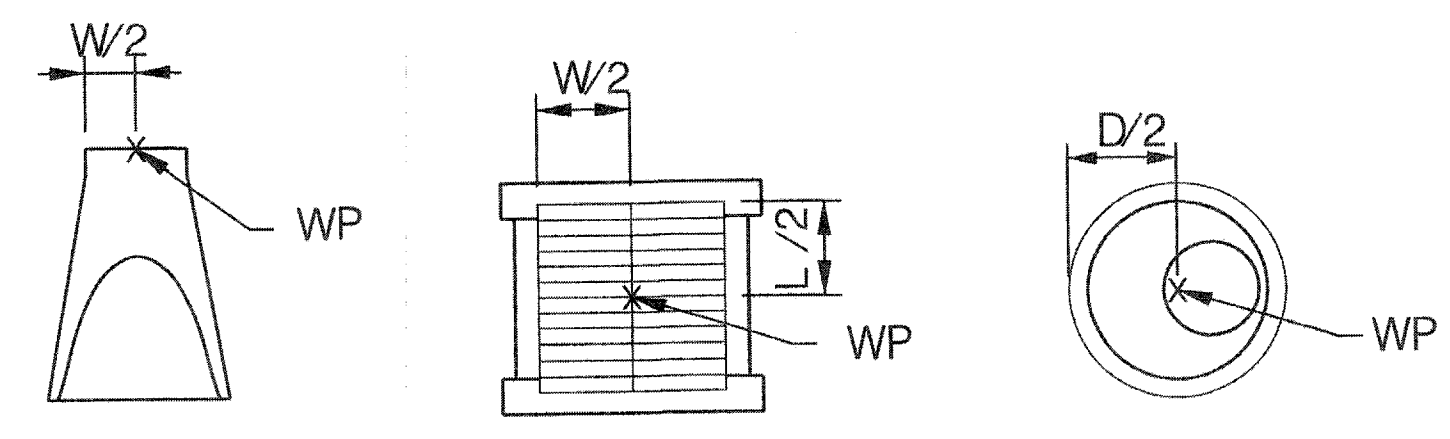


ES-6 TO I-6

I-7 TO ES-1



SECTION VIEW - RIPRAP SWALE  
 CLASS I RIPRAP OUTFALL PROTECTION DETAIL  
 NOT TO SCALE



NOTE:  
 WORK POINT LOCATIONS FOR STRUCTURES ARE SHOWN IN THE DIAGRAMS ABOVE. THE TOP ELEVATIONS OF THE STRUCTURES ARE GIVEN AT THE WORK POINTS. FOR CURB INLETS, THE TOP ELEVATIONS ARE GIVEN AT THE TOP OF CURB.

WORKPOINT LOCATIONS  
 NOT TO SCALE

- NOTES:
- CONTRACTOR SHALL TEST PIT LOCATION OF EXISTING TELEPHONE & ELECTRIC PRIOR TO ORDERING INLETS FOR INSTALLATION. IF A CONFLICT EXISTS, NOTIFY THE COUNTY FOR A RESOLUTION.

STRUCTURE NO.	WORK POINT		STRUCTURE TYPE	HOWARD COUNTY STD. NO.	T.O.G./T.O.C. ELEVATION	INVERT ELEVATION		REMARKS
	STATION	OFFSET				IN	OUT	
I-1	100+48.85	12.09' RT.	PRECAST 15" COG INLET	MD 374.51	465.78 (T.O.C)	---	461.91	SEE NOTE BELOW
I-2	103+21.56	19.26' LT.	STD. 'S' INLET	D-4.22	474.62	471.50	471.2	
I-3	105+90.80	12.00' RT.	TYPE A-10 INLET	D-4.04	471.87	---	468.37	
I-4	105+88.15	19.04' LT.	STD. 'S' INLET	D-4.22	471.10	467.70	467.60	
I-5	107+36.98	18.83' LT.	STD. 'S' INLET	D-4.22	459.51	---	456.01	
I-6	108+94.58	19.23' LT.	STD. 'S' INLET	D-4.22	447.50	---	444.50	
I-7	110+17.49	27.72' LT.	STD. 'S' INLET	D-4.22	441.90	---	438.50	BY OTHERS
EW-1	101+22.84	69.67' LT.	TYPE 'C' END WALL	D-5.21	---	---	460.00 *	ADAPTED FOR 6" PIPE
ES-1	100+91.25	72.95' LT.	CONCRETE END SECTION	D-5.51	---	---	460.00 *	
ES-3	102+72.18	22.72' LT.	CONCRETE END SECTION	D-5.51	---	---	470.25	
ES-4	106+17.28	19.56' LT.	CONCRETE END SECTION	D-5.51	---	---	467.00	
ES-5	107+83.22	19.24' LT.	CONCRETE END SECTION	D-5.51	---	---	454.78	
ES-6	109+42.17	15.71' RT.	CONCRETE END SECTION	D-5.51	---	---	444.23	
ES-7	110+31.08	27.60' RT.	CONCRETE END SECTION	D-5.51	---	---	438.14 *	BY OTHERS

\* APPROX. CONTRACTOR SHALL VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.  
 NOTE: TRANSITION CURB HEIGHT TO 8" WITHIN 10' OF INLET I-1

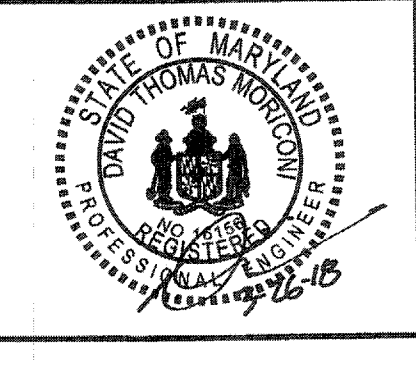
PROFESSIONAL CERTIFICATION  
 "I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16156 EXPIRATION DATE: 6/28/2018"

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

4/1/18  
 CHIEF, BUREAU OF ENGINEERING

4/10/18  
 CHIEF, BUREAU OF HIGHWAYS

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES: DMT			
DRN: DMT			
CHK: DTM			
DATE: 03/2018	BY: NO.	REVISION	DATE

**STORM DRAIN PROFILES & DETAILS**

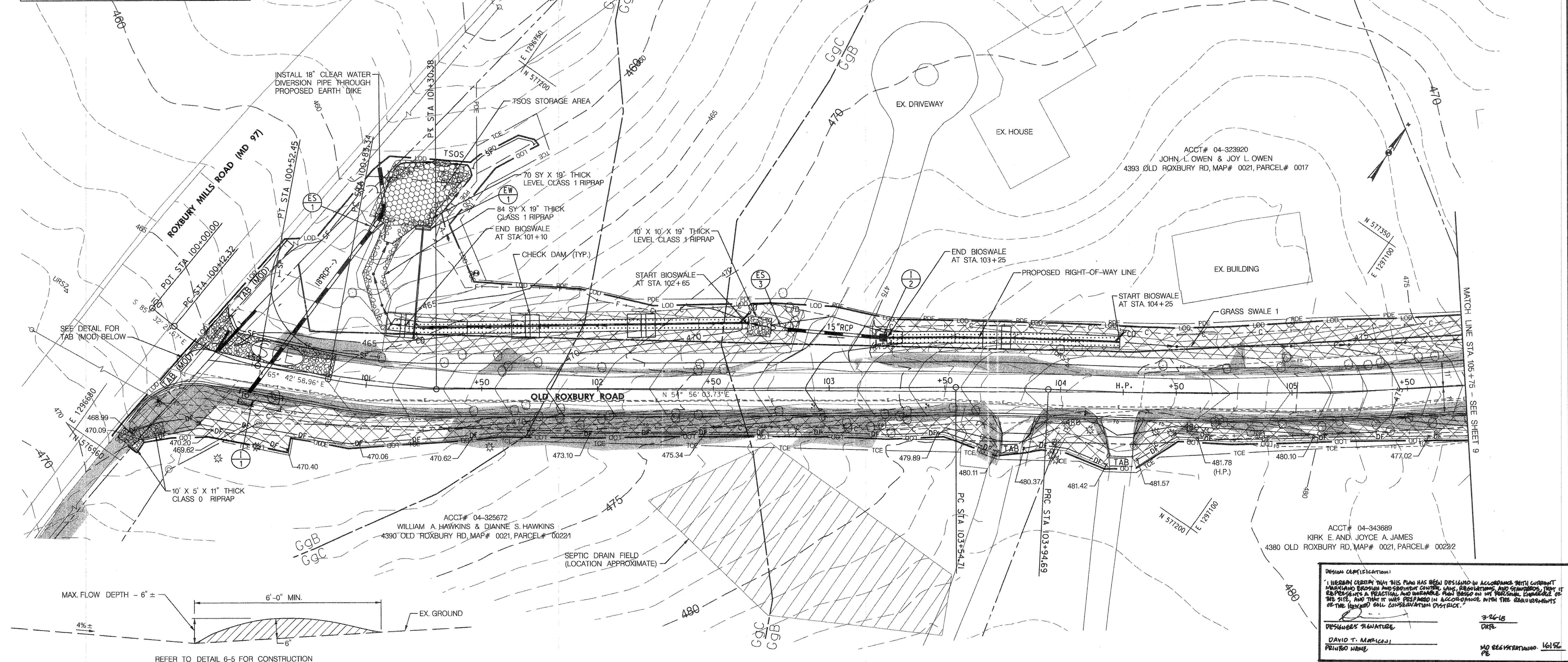
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND



TEMPORARY STONE OUTLET STRUCTURE	
DRAINAGE AREA	0.35 AC
REQUIRED STORAGE VOLUME	620 CF
PROVIDED STORAGE VOLUME	850 CF
BOTTOM AREA (APPROX. 30FT X 28FT)	850 SF
BOTTOM ELEVATION	460.00
TOP OF WEIR ELEVATION / STORAGE ELEVATION	461.00



MODIFIED TEMPORARY ASPHALT BERM [TAB (MOD)]  
NOT TO SCALE

SOILS TABLE				
MAP UNIT SYMBOL	MAP UNIT NAME	HSG	K-FACTOR	DRAINAGE CLASS
GgB	GLENELG LOAM, 3 TO 8% SLOPES	B	0.24	WELL DRAINED
GgC	GLENELG LOAM, 8 TO 15% SLOPES	B	0.24	WELL DRAINED
GmB	GLENVILLE SILT LOAM, 3 TO 8% SLOPES	C	0.37	MODERATELY WELL
MaC	MANOR LOAM, 8 TO 15% SLOPES	B	0.28	WELL DRAINED
McD	MANOR LOAM, 15 TO 25% SLOPES, VERY ROCKY	B	0.28	WELL DRAINED

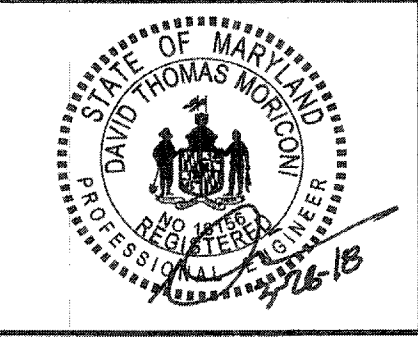
**OWNER/DEVELOPER CERTIFICATION**  
 "I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WORK IS BEING PERFORMED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN INCLUDING THE PROVISIONS AND MAINTENANCE CONTROLS AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AS A WORKING MEMBER OF THE ENVIRONMENTAL ACTION PROGRAM TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY THAT I AM THE OWNER OR THE PROJECT OR THE EVALUATOR OF HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDOT."  
 OWNER'S/DEVELOPER'S SIGNATURE: *Robert Lewis*  
 PRINTED NAME & TITLE: *Robert Lewis, Chief*  
 DATE: 4/17/18

**PROFESSIONAL CERTIFICATION**  
 "I HEREBY CERTIFY THAT 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. 16156. EXPIRATION DATE: 8/28/2018."  
 SIGNATURE: *David T. Mancini*  
 DATE: 4/17/18

**HOWARD SOCD SIGNATURE BLOCK:**  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 SIGNATURE: *Robert Lewis*  
 DATE: 4/17/18  
 HOWARD SOIL CONSERVATION DISTRICT  
 EP-17-38

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 DIRECTOR OF PUBLIC WORKS: *John A. Hulse* 4/16/18  
 CHIEF, BUREAU OF ENGINEERING: *Thomas & Butler* 4/6/18  
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION: *Robert Lewis* 4/16/18  
 CHIEF, BUREAU OF HIGHWAYS: *Maureen* 4/16/2018

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 795-1220



DES:	DMT	DATE:	03/2018
DRN:	DMT	BY:	NO.
CHK:	DTM	REVISION:	
DATE:	03/2018	DATE:	

**EROSION & SEDIMENT CONTROL PLAN 1**  
 SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT  
 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 20'  
 SHEET 8 OF 19

**LEGEND**

- 360— EXISTING CONTOURS
- 360— PROPOSED CONTOURS
- LOD— LIMIT OF DISTURBANCE (LOD)
- SF— SILT FENCE (SF)
- SSF— SUPER SILT FENCE (SSF)
- DF— DIVERSION FENCE (DF)
- TAB— TEMPORARY ASPHALT BERM (TAB)
- PST— PORTABLE SEDIMENT TANK (PST)
- CIP— CURB INLET PROTECTION (CIP)
- AGIP— AT GRADE INLET PROTECTION (AGIP)
- TGOS— TEMPORARY GABION OUTLET STRUCTURE
- A-1— EARTH DIKE
- [RIPRAP] RIPRAP
- [SSM] SOIL STABILIZATION MATTING (SSM) (SEE TYPICALS FOR TYPE)
- [SCE] STABILIZED CONSTRUCTION ENTRANCE (SCE)
- TCE— TEMPORARY CONSTRUCTION EASEMENT
- PDE— PERPETUAL DRAINAGE EASEMENT
- [STEEP] STEEP SLOPES
- [HIGHLY] HIGHLY ERODIBLE SOILS
- GgB GgC SOIL BOUNDARY /TYPE

**NOTES:**

- REMOVE ALL TREES WITHIN THE LIMIT OF DISTURBANCE UNLESS NOTED OTHERWISE.
  - ALL SIDE DITCHES (EXCEPT FOR THE BIOSWALL) SHALL BE STABILIZED WITH SOIL STABILIZATION MATTING PER THE TYPICAL SECTIONS ON SHEET 2.
- STANDARD STABILIZATION NOTES:**  
 FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
  - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

**DESIGN CERTIFICATION:**  
 "I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND DURABLE PLAN, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER OF THE HOWARD SOIL CONSERVATION DISTRICT."  
 DESIGNER'S SIGNATURE: *David T. Mancini*  
 DATE: 4/16/18  
 PRINTED NAME: DAVID T. MANCINI  
 LICENSE NO.: 16156  
 PE



**OWNER'S/DEVELOPER'S CERTIFICATION**  
 I/WE HEREBY CERTIFY THAT THE GRADING, EROSION, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING SWEEPING AND MAINTENANCE SCHEDULES, AND THAT THE EROSION CONTROL PERSONNEL EMPLOYED IN THE CONSTRUCTION PROCESS WILL HAVE A CERTIFICATE OF TRAINING AT A LEVEL AND DEPARTMENT TO THE SATISFACTION (MPE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT FROM THE BEGINNING OF THE PROJECT. I CERTIFY THAT THE EROSION AND SEDIMENT CONTROL PLAN IS BEING MAINTAINED BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDC.

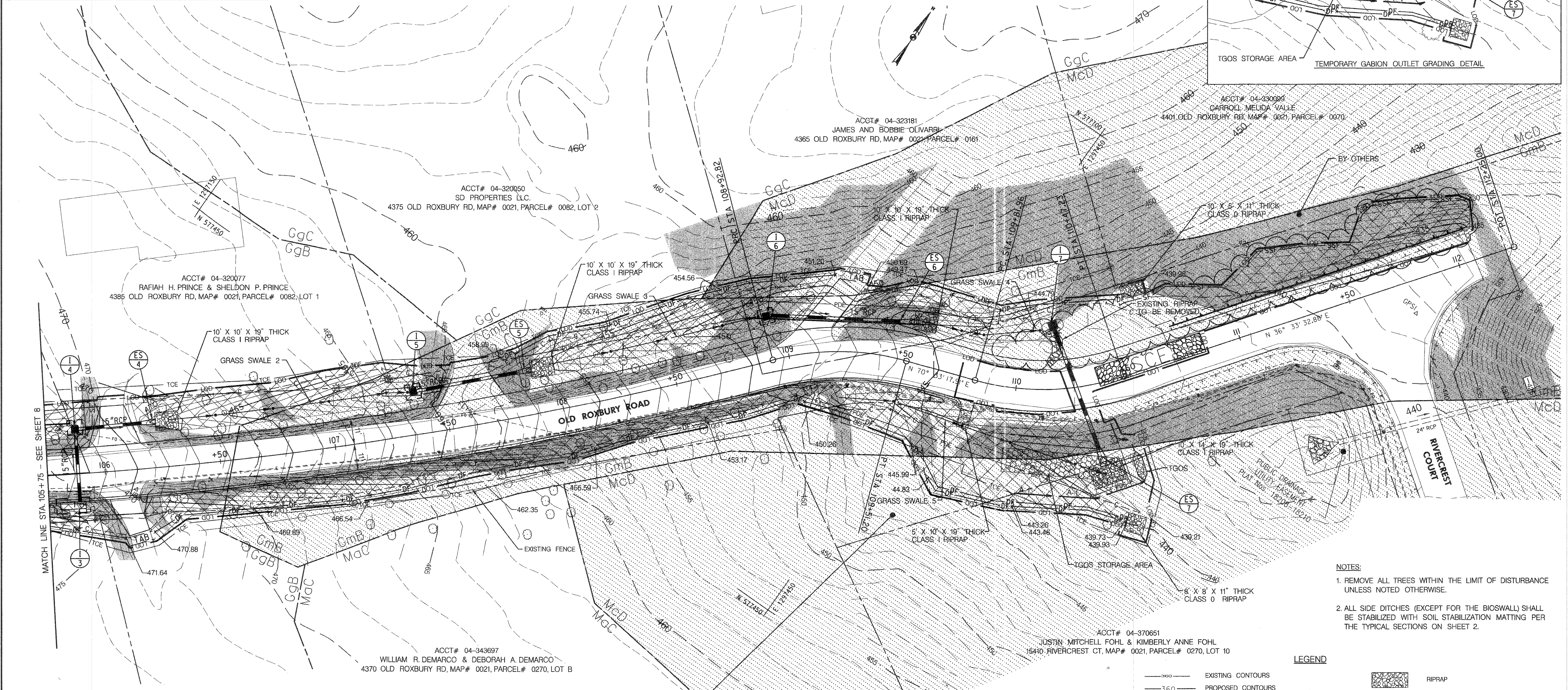
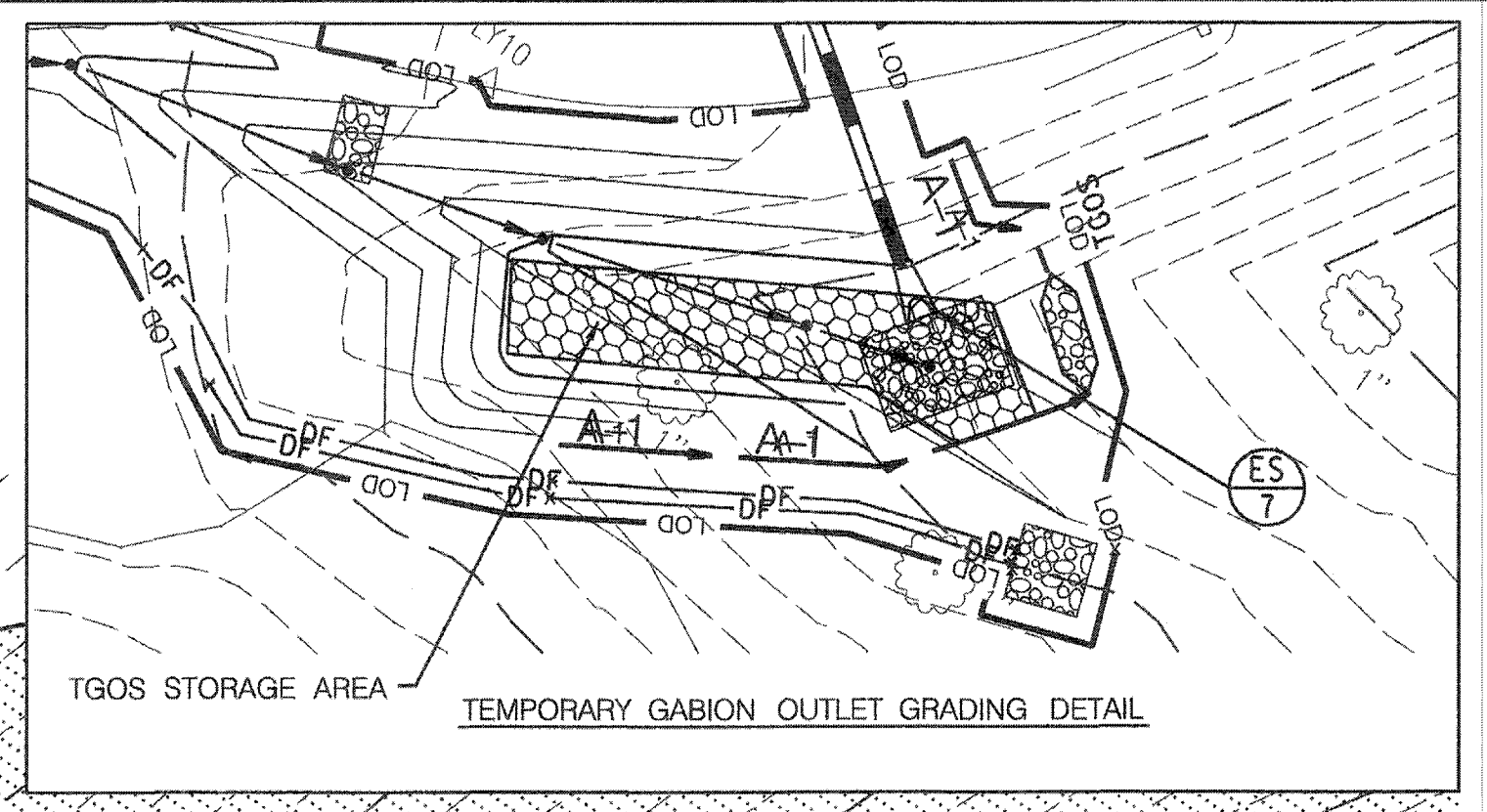
OWNER'S/DEVELOPER'S SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 PRINTED NAME & TITLE \_\_\_\_\_

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

DESIGNER'S SIGNATURE \_\_\_\_\_ DATE 3-22-18  
 DAVID T. MARIANOVIĆ NO REGISTRATION IN IC115  
 PRINTED NAME \_\_\_\_\_ PE \_\_\_\_\_

**TEMPORARY GABION OUTLET STRUCTURE**

DRAINAGE AREA	0.9 AC
REQUIRED STORAGE VOLUME	1620 CF
PROVIDED STORAGE VOLUME	1670 CF
BOTTOM AREA (50FT X 10FT)	550 SF
BOTTOM ELEVATION	439.00
TOP OF WEIR ELEVATION / STORAGE ELEVATION	441.00

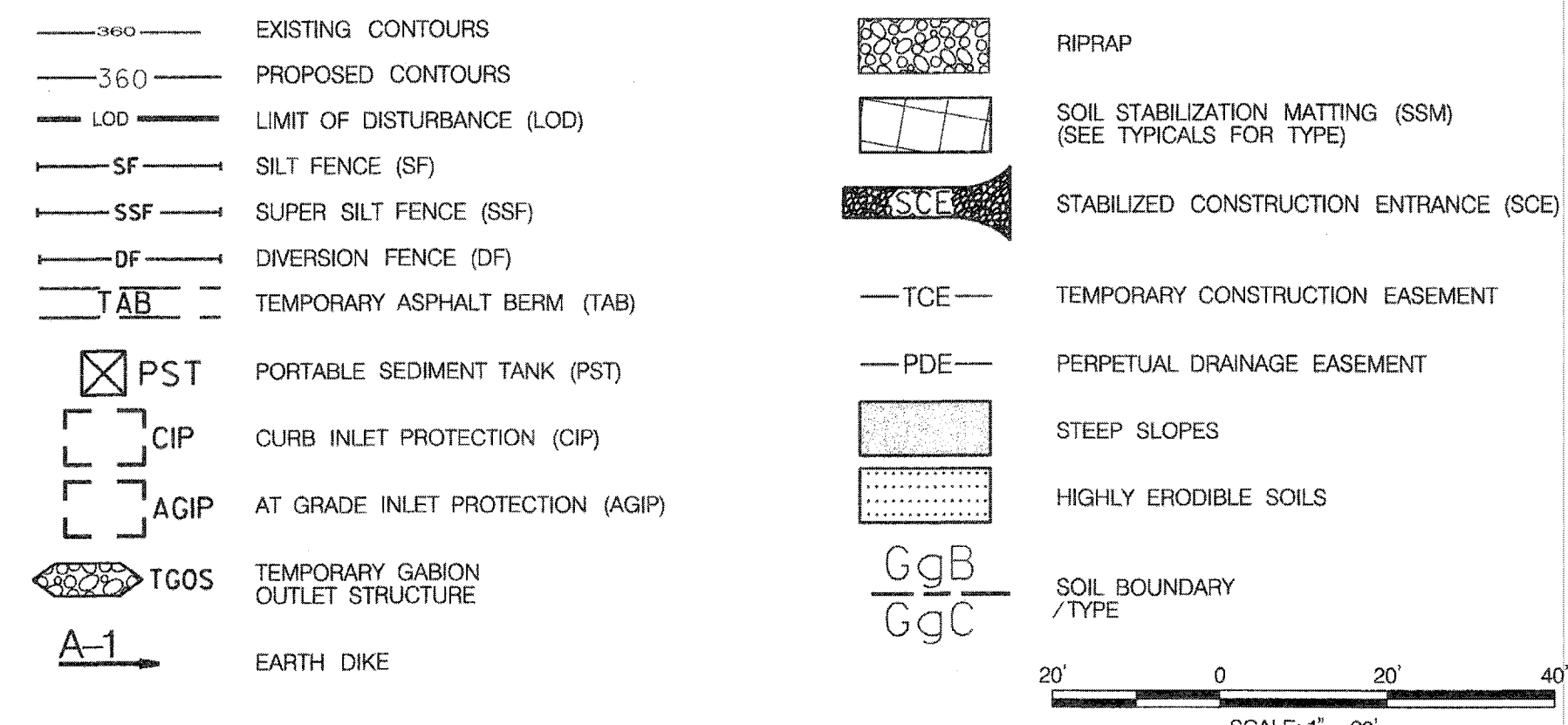


**SOILS TABLE**

MAP UNIT SYMBOL	MAP UNIT NAME	HSG	K-FACTOR	DRAINAGE CLASS
GgB	GLENELG LOAM, 3 TO 8% SLOPES	B	0.24	WELL DRAINED
GgC	GLENELG LOAM, 8 TO 15% SLOPES	B	0.24	WELL DRAINED
GmB	GLENVILLE SILT LOAM, 3 TO 8% SLOPES	C	0.37	MODERATELY WELL
MaC	MANOR LOAM, 8 TO 15% SLOPES	B	0.28	WELL DRAINED
McD	MANOR LOAM, 15 TO 25% SLOPES, VERY ROCKY	B	0.28	WELL DRAINED

- NOTES:**
- REMOVE ALL TREES WITHIN THE LIMIT OF DISTURBANCE UNLESS NOTED OTHERWISE.
  - ALL SIDE DITCHES (EXCEPT FOR THE BIOSWALL) SHALL BE STABILIZED WITH SOIL STABILIZATION MATTING PER THE TYPICAL SECTIONS ON SHEET 2.

**LEGEND**



**HOWARD SCD SIGNATURE BLOCK:**  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE 4/17/18  
 EP.17.38

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT 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. 16156, EXPIRATION DATE: 8/28/2018.

- STANDARD STABILIZATION NOTES**
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
  - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works DATE 4/1/18  
 Chief, Transportation and Special Projects Division DATE 4/1/18

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES:	DMT		
DRN:	DMT		
CHK:	DTM		
DATE:	03/2018	BY:	NO.
		REVISION	DATE

**EROSION & SEDIMENT CONTROL PLAN 2**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OLD ROXBURY ROAD ROADWAY WIDENING**  
 MD 97 TO WEST OF RIVERCREST COURT

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE 1" = 20'  
 SHEET 9 OF 19



B-4-2 STANDARDS AND SPECIFICATIONS

FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS
Definition: The process of preparing the soils to sustain adequate vegetative stabilization.
Purpose: To provide a suitable soil medium for vegetative growth.
Conditions Where Practice Applies: Where vegetative stabilization is to be established.
Criteria: A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...

B-4-3 STANDARDS AND SPECIFICATIONS

FOR SEEDING AND MULCHING
Definition: The application of seed and mulch to establish vegetative cover.
Purpose: To protect disturbed soils from erosion during and at the end of construction.
Conditions Where Practice Applies: To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.
Criteria: 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...

B-4-4 STANDARDS AND SPECIFICATIONS

FOR TEMPORARY STABILIZATION
Definition: To stabilize disturbed soils with vegetation for up to 6 months.
Purpose: To use fast growing vegetation that provides cover on disturbed soils.
Conditions Where Practice Applies: Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.
Criteria: 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3); and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary table with columns: Hardiness Zone, Seed Mixture, Application Rate, Seeding Date, Seeding Depth, Fertilizer Rate, Lime Rate. Includes rows for CEREAL RYE and FOXTAIL MILLET.

1. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1. Permanent Seeding Table B.3, or site-specific seeding summaries.
2. 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.
3. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. Cultipacker 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.
4. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

B-4-5 STANDARDS AND SPECIFICATIONS

FOR STOCKPILE AREA
Definition: A mound or pile of soil protected by appropriately designed erosion and sediment control measures.
Purpose: To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.
Conditions Where Practice Applies: Stockpile areas are utilized when it is necessary to salvage and store soil for later use.
Criteria: 1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

SEQUENCE OF CONSTRUCTION - GENERAL NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION AT (410) 313-1855 AT LEAST SEVEN (7) DAYS PRIOR TO ANY EARTH DISTURBANCE TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE INSPECTOR.
2. UTILITIES AND STORM DRAINS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS ARE FOR THE GUIDANCE OF THE CONTRACTOR ONLY. CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-267-7777 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND UTILITIES IN THE AREA OF THE PROPOSED EXCAVATION AND HAVE THOSE UTILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.
3. THE EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONING PRIOR TO CLEARING THE ENTIRE SITE CLEAR AND GRUB FOR EROSION AND SEDIMENT CONTROL MEASURES OR DEVICES ONLY ON COMMENCEMENT OF CONSTRUCTION.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCES, AND OTHER EROSION SEDIMENT CONTROL DEVICES AS PER THE EROSION AND SEDIMENT CONTROL PLANS. THE LOCATIONS FOR STABILIZED CONSTRUCTION ENTRANCES SHOWN ON THE PLANS ARE APPROXIMATE, AND EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD WITH APPROVAL FROM THE ENGINEER AND INSPECTOR.
5. MAINTAIN ALL SEDIMENT CONTROL PRACTICES ACCORDING TO THE MARYLAND 2011 STANDARDS UNTIL THE ENTIRE SITE IS STABILIZED.
6. CONTRACTOR SHALL LOCATE THE STAGING AND STOCKPILE AREA AND IS RESPONSIBLE FOR PROVIDING ANY ADDITIONAL EROSION CONTROLS FOR STAGING AND STOCKPILE AREAS AS REQUIRED BY THE INSPECTOR.
7. STORM DRAIN SYSTEMS SHALL ALWAYS BE CONSTRUCTED FROM THE DOWNSTREAM END. INLET PROTECTION SHALL BE INSTALLED AT EXISTING INLETS BEFORE ANY DISTURBANCE IN THE WORK AREA. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUN OFF IS DIRECTED TO AN ADEQUATE SEDIMENT CONTROL DEVICE. CONTRACTOR SHALL USE PORTABLE SEDIMENT TANK TO DEWATER THE WORKING AREA DURING CONSTRUCTION.
8. MAINTAIN ACCESS TO PRIVATE RESIDENCES AT ALL TIMES. ROADWAY SUBBASE SHALL BE STABILIZED WITH GRADED AGGREGATE BASE MATERIAL AT THE END OF EACH WORK DAY.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
A. PRIOR TO THE START OF EARTH DISTURBANCE.
B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
2. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
3. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
4. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. DAYS 3-7, AND DURING SPRING SEEDING DATES IF THE GROUND IS FROZEN, INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR HILL STOCKPILES (SEC. B-4-9) IN EXCESS OF 20 FT. MUST BE BENCHMARKED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR HILL STOCKPILES (SEC. B-4-9) IN EXCESS OF 20 FT. MUST BE BENCHMARKED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
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 CID.
SITE ANALYSIS:
TOTAL AREA OF SITE: 1.60 ACRES
AREA DISTURBED: 1.60 ACRES
AREA TO BE ROOFED OR PAVED: 0.55 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 1.05 ACRES
TOTAL CUT: 1,700 CU. YDS.
TOTAL FILL: 1,000 CU. YDS.
HOCO LANDFILL/SITE WITH OFFSITE WASTE/BORROW AREA LOCATION: ACTUAL GRADING PERMIT

SEQUENCE OF CONSTRUCTION

- 1. WORK TO BE PERFORMED BY THE RIVERCREST DEVELOPER PRIOR TO J-4239 IS AS FOLLOWS:
a. CONSTRUCT AND MAINTAIN THE POND TO BE INCREASED AS-BUILTS OF THE POND WITHIN THE RIVERCREST DEVELOPMENT (F-04-57) IS COMPLETE.
b. CONSTRUCT ROAD WIDENING (STA 109+75 TO 111+90 LT)
c. THE STORAGE VOLUMES FOR THE POND TO BE INCREASED AS-BUILTS OF THE POND TO BE PREPARED, AND A COPY OF THE HOWARD SCD APPROVAL LETTER TO BE PROVIDED TO THE INSPECTOR.
d. STABILIZE ALL DISTURBED AREAS AND WITH THE INSPECTORS APPROVAL, REMOVE BLOCKAGE OF I-7.
2. OBTAIN THE GRADING PERMIT PRIOR TO CONSTRUCTION. NPDES PERMIT WILL BE PROVIDED PRIOR TO THE START OF CONSTRUCTION. (1 DAY)
3. NOTIFY HOWARD COUNTY AT 410-313-1855 AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. (1 DAY)
4. WITH THE APPROVAL OF THE INSPECTOR, INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE) AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. THE SCE SHALL BE RELOCATED AND REHABILITATED AS NEEDED OR AS DIRECTED BY THE ENGINEER THROUGHOUT CONSTRUCTION. (2 DAYS)
5. CLEAR AND GRUB FOR THE INSTALLATION OF THE PERIMETER EROSION AND SEDIMENT CONTROL MEASURES. (3 DAYS)
6. INSTALL THE FOLLOWING PERIMETER EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON E&S PLANS: SILT FENCE (SF), SUPER SILT FENCE (SSF), DIVERSION FENCE (DF), TEMPORARY ASPHALT BERM (TAB) AND MODIFIED TAB ALONG MD97. (5 DAYS)
7. WITH THE APPROVAL OF THE INSPECTOR, CLEAR AND GRUB THE REMAINDER OF SITE AS NEEDED. (5 DAYS)
8. INSTALL TEMPORARY GABION OUTLET STRUCTURE, EARTH DIKE, AND ASSOCIATED GRADING AS SHOWN ON E&S PLANS. (3 DAYS)
9. PROVIDE A COPY OF THE HOWARD SCD APPROVAL LETTER OF THE AS-BUILT OF F-04-57 POND REVISION TO THE C.I.D. INSPECTOR BEFORE PROCEEDING.
CONSTRUCT AND STABILIZE: GRASS SWALES 2, 3, 4, AND 5 WORKING DOWNSTREAM TO UPSTREAM. INSTALL TYPE D SOIL STABILIZATION MATTING IN EACH GRASS SWALE AS SHOWN ON THE TYPICAL SECTION. INSTALL ALL ASSOCIATED INLETS, END SECTIONS, AND CONNECTING PIPES WITH THE MENTIONED GRASS SWALES. (10 DAYS)
10. INSTALL TEMPORARY STONE OUTLET STRUCTURE, EARTH DIKE, AND ASSOCIATED GRADING AS SHOWN ON E&S PLANS. (3 DAYS)
11. CONSTRUCT I-1.5 E-BYPASS OUTFALL AND THE CONNECTING PIPE, WORKING DOWNSTREAM TO UPSTREAM. INSTALL 18" CLEAR WATER DIVERSION PIPE FROM ES-1 THROUGH THE CONSTRUCTED EARTH DIKE AS SHOWN ON E&S PLANS. CURB INLET PROTECTION (CIP) SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF I-1. (3 DAY)
12. CONSTRUCT AND STABILIZE: GRASS SWALE 1 AND THE PROPOSED BIOSWALE WITHOUT BIO-RETENTION SOIL MIX SAND, STONE UNDERDRAIN, WORKING DOWNSTREAM TO UPSTREAM. INSTALL TYPE D SOIL STABILIZATION MATTING IN THE GRASS SWALE AND BIOSWALE SECTION AS SHOWN ON THE TYPICAL SECTION. INSTALL ALL REMAINING ASSOCIATED INLETS, END SECTIONS, AND CONNECTING PIPES WITH THE MENTIONED GRASS SWALE AND BIOSWALE. (7 DAYS)
13. AT-GRADE INLET PROTECTION (AGIP) SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF THE DRAINAGE SYSTEM AND BEFORE THE UPSTREAM CONTRIBUTORY AREAS ARE CONSTRUCTED AND STABILIZED. (5 DAYS)
14. SCARIFY EXISTING PAVEMENT WHERE ROADWAY PROFILE IS TO BE RAISED. LAY COMPACTED GRADED AGGREGATE BASE AS INDICATED ON TYPICAL SECTIONS. (7 DAYS)
15. CONSTRUCT THE NEW CURB AND GUTTER, DRIVEWAY APRONS-TIE-INS, AND FULL DEPTH PAVEMENT. ANY REMAINING DRAINAGE SYSTEM SHALL BE CONSTRUCTED STARTING DOWNSTREAM AND WORKING UPSTREAM. CONSTRUCT ONLY THE AMOUNT OF CURB AND GUTTER THAT CAN BE STABILIZED IN ONE WORK DAY. INSTALL TYPE A SOIL STABILIZATION MATTING ON ALL SLOPES 2:1 OR GREATER AS SHOWN ON THE TYPICAL SECTIONS. (30 DAYS)
17. CURB INLET PROTECTION (CIP) SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF THE REMAINING DRAINAGE SYSTEM AND FULL DEPTH PAVEMENT BEFORE THE UPSTREAM CONTRIBUTORY AREAS ARE CONSTRUCTED AND STABILIZED. (5 DAYS)
18. CONSTRUCT BIOSWALE (BIO-RETENTION SOIL MIX SAND, STONE UNDERDRAIN AND UNDERDRAIN ENDS) STARTING DOWNSTREAM. CONSTRUCTION SHALL TAKE PLACE DURING A FORECASTED 3-DAY DRY WEATHER PERIOD. PLACE SSM TYPE D.
19. STABILIZE THE DISTURBED AREAS WITH TOPSOIL, PERMANENT SEEDING AND MULCHING AS NEEDED. (5 DAYS)
20. CONTRACTOR SHALL CLEAN ALL PIPES INSTALLED AS PART OF THIS PROJECT AFTER ALL UPSTREAM AREAS HAVE BEEN STABILIZED. (2 DAYS)
21. UPON THE HOWARD COUNTY INSPECTOR'S APPROVAL, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES AND STABILIZE THE REMAINING DISTURBED AREAS WITH PERMANENT SEEDING (1 DAY).
NOTE: THE TIME LINE EXCLUDES WEATHER RELATED DELAYS.

- INSPECTION DATE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
NAME AND TITLE OF INSPECTOR
WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
EVIDENCE OF SEDIMENT DISCHARGES
IDENTIFICATION OF PLAN DEFICIENCIES
IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
PHOTOGRAPHS
MONITORING/SAMPLING
MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
IDENTIFY INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE)
TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. EXCEPT FOR THE WORK TO BE COMPLETED UNDER REDLINE REVISION TO F-04-57 BY THE RIVERCREST DEVELOPER.
A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM SIZE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
USE I AND II MARCH 1 - JUNE 15
USE III AND IIIIP OCTOBER 1 - APRIL 30
USE IV MARCH 1 - MAY 31
A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

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

OWNER'S/DEVELOPER'S SIGNATURE: [Signature] DATE: 4/19/18
PRINTED NAME & TITLE: [Name and Title]

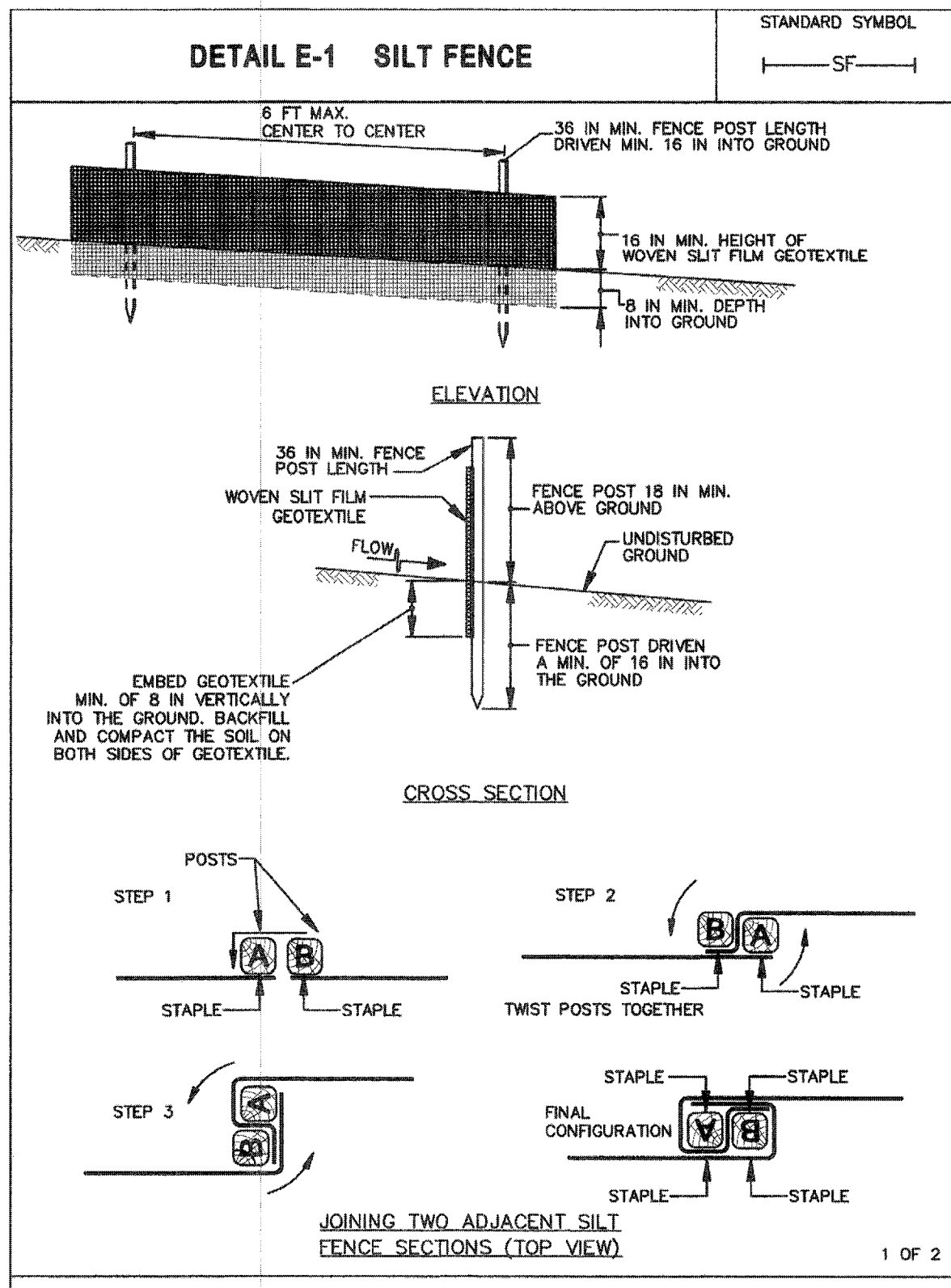
DESIGN CERTIFICATION: I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE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

DESIGNER'S SIGNATURE: [Signature] DATE: 3/26/18
PRINTED NAME: DAVID T. MORICONI
HOWARD SCD SIGNATURE BLOCK: THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT 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. 16156 EXPIRATION DATE: 8/28/2018

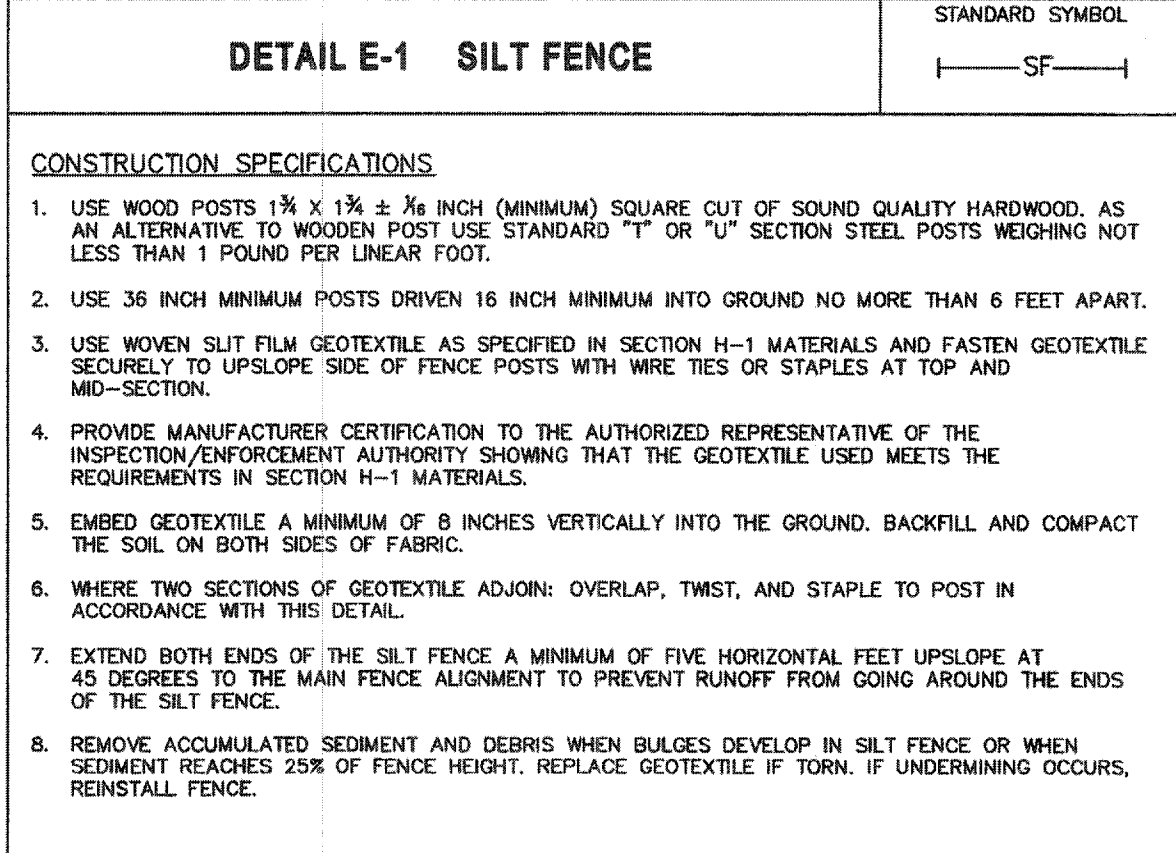
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BY: NO.
REVISION:
DATE: 4/19/18
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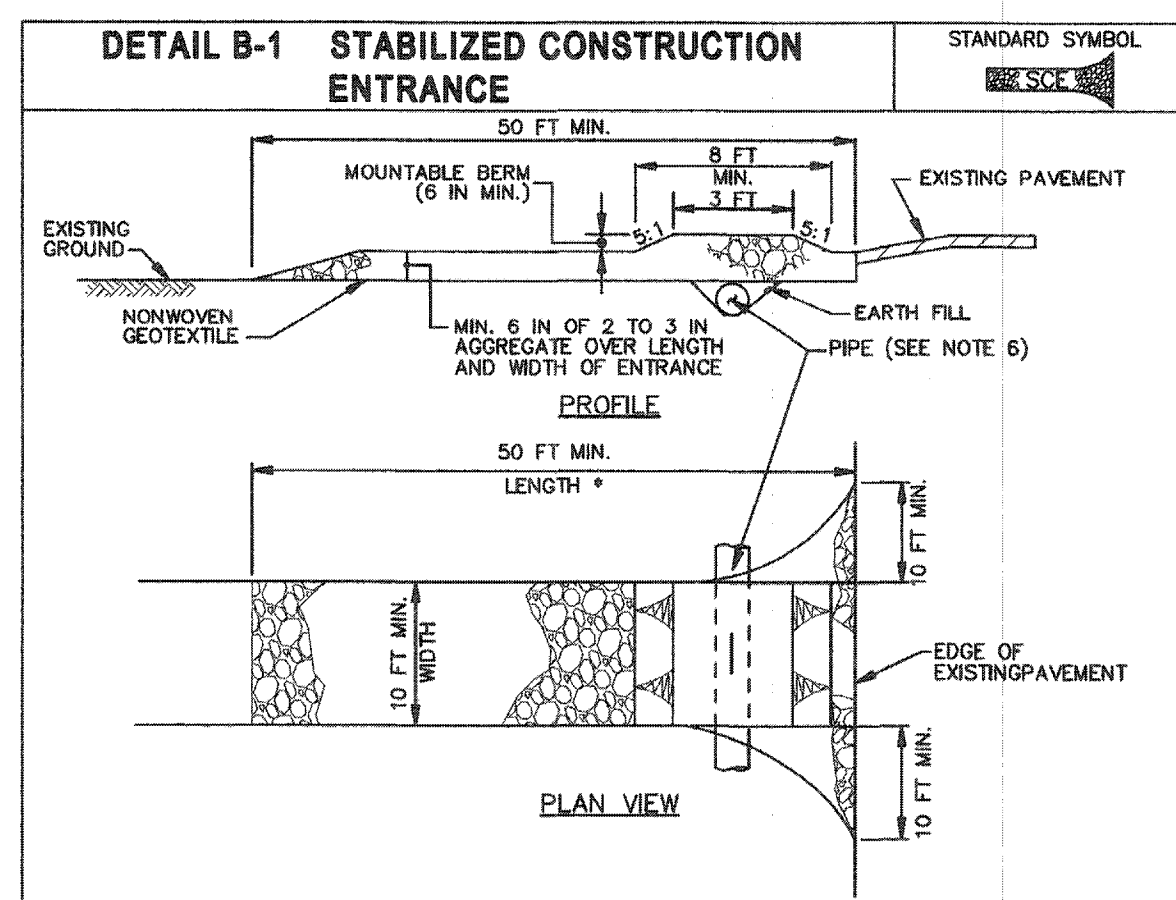
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

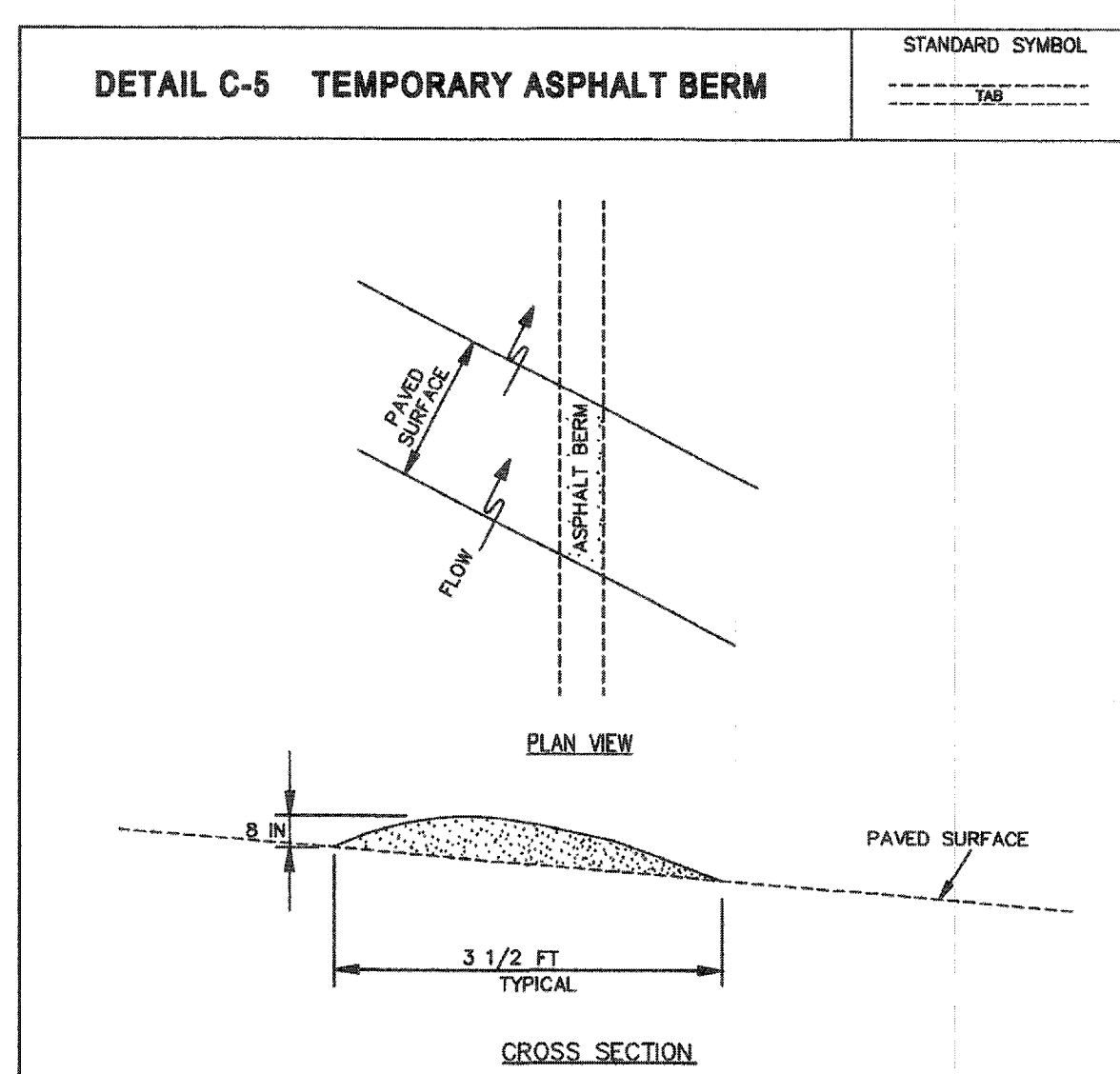


**CONSTRUCTION SPECIFICATIONS**

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SOE. USE MINIMUM LENGTH OF 50 FEET (150 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SOE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SOE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE PROTECT PIPE INSTALLED THROUGH THE SOE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SOE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SOE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SOE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

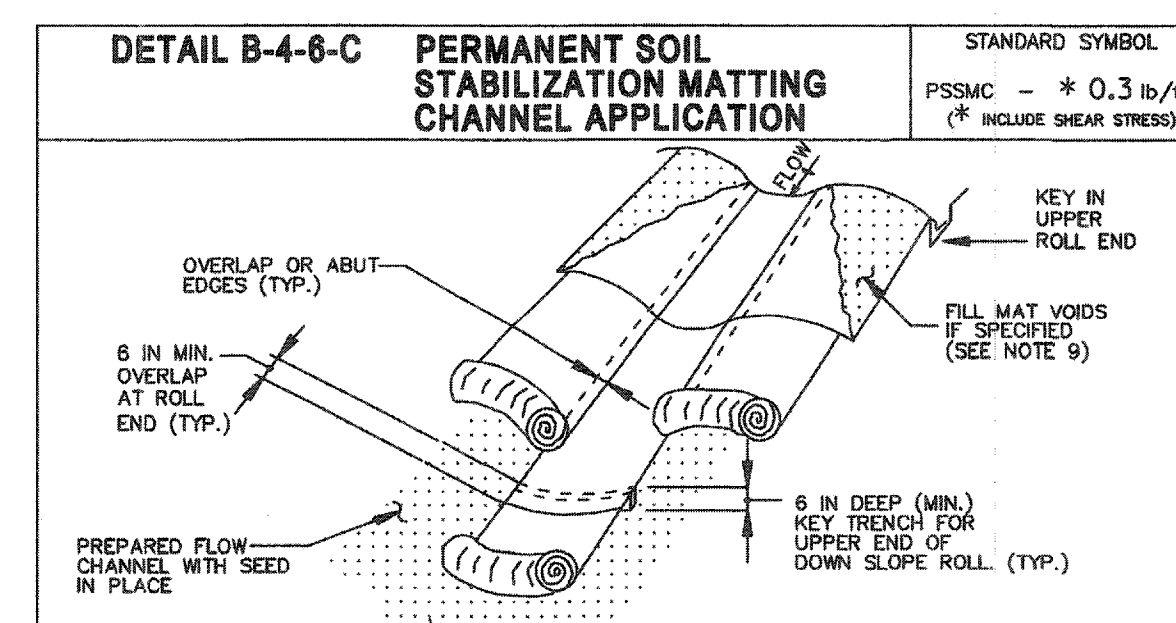


**CONSTRUCTION SPECIFICATIONS**

- CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
- INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3 1/2 FEET.
- PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
- COMPACT ASPHALT BERM.
- REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
- ON REMOVAL OF ASPHALT BERM, RETURN TO ORIGINAL CONDITIONS OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

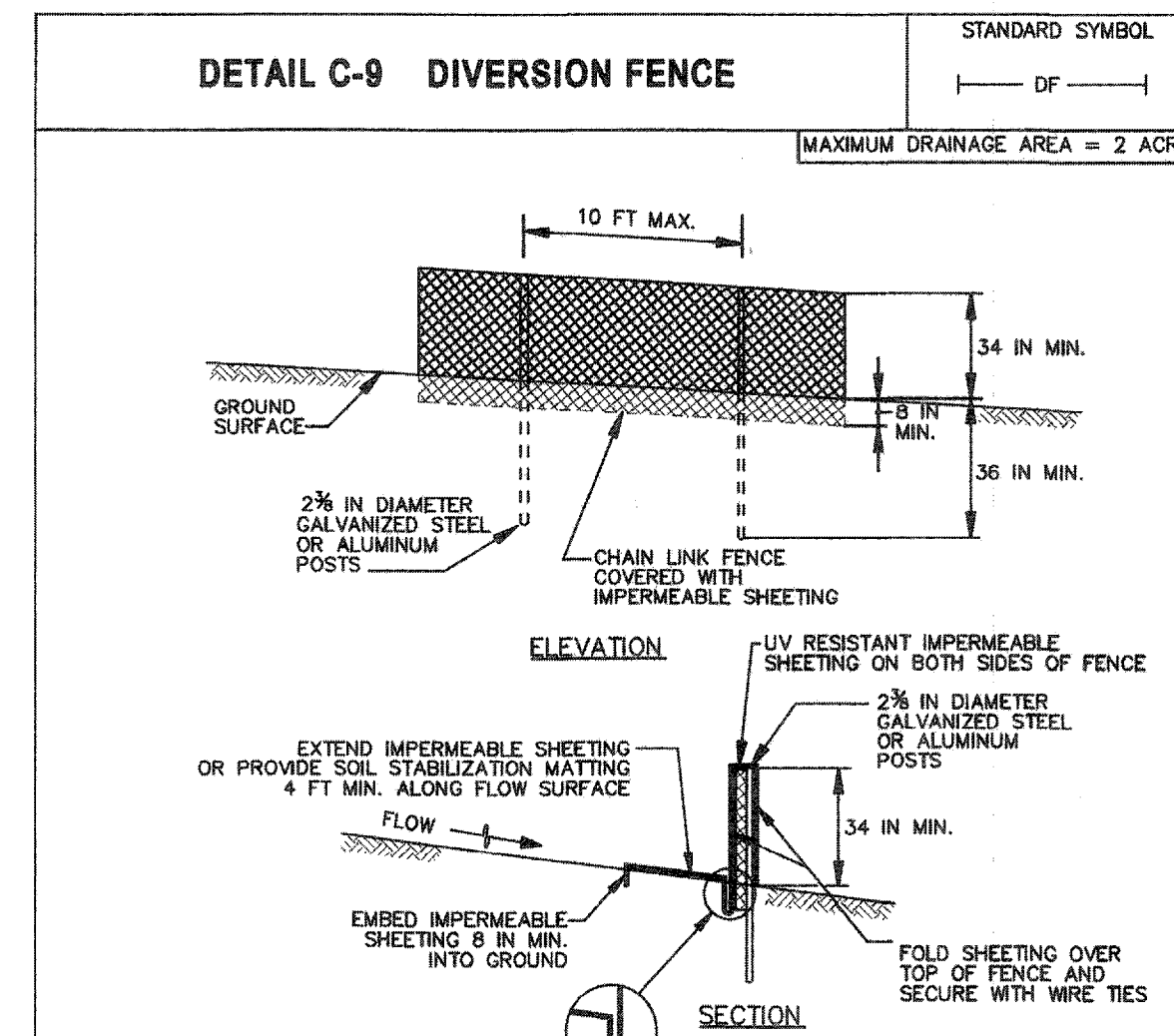


**CONSTRUCTION SPECIFICATIONS**

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ABOVE.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1 1/2 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE NEXT DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEVED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

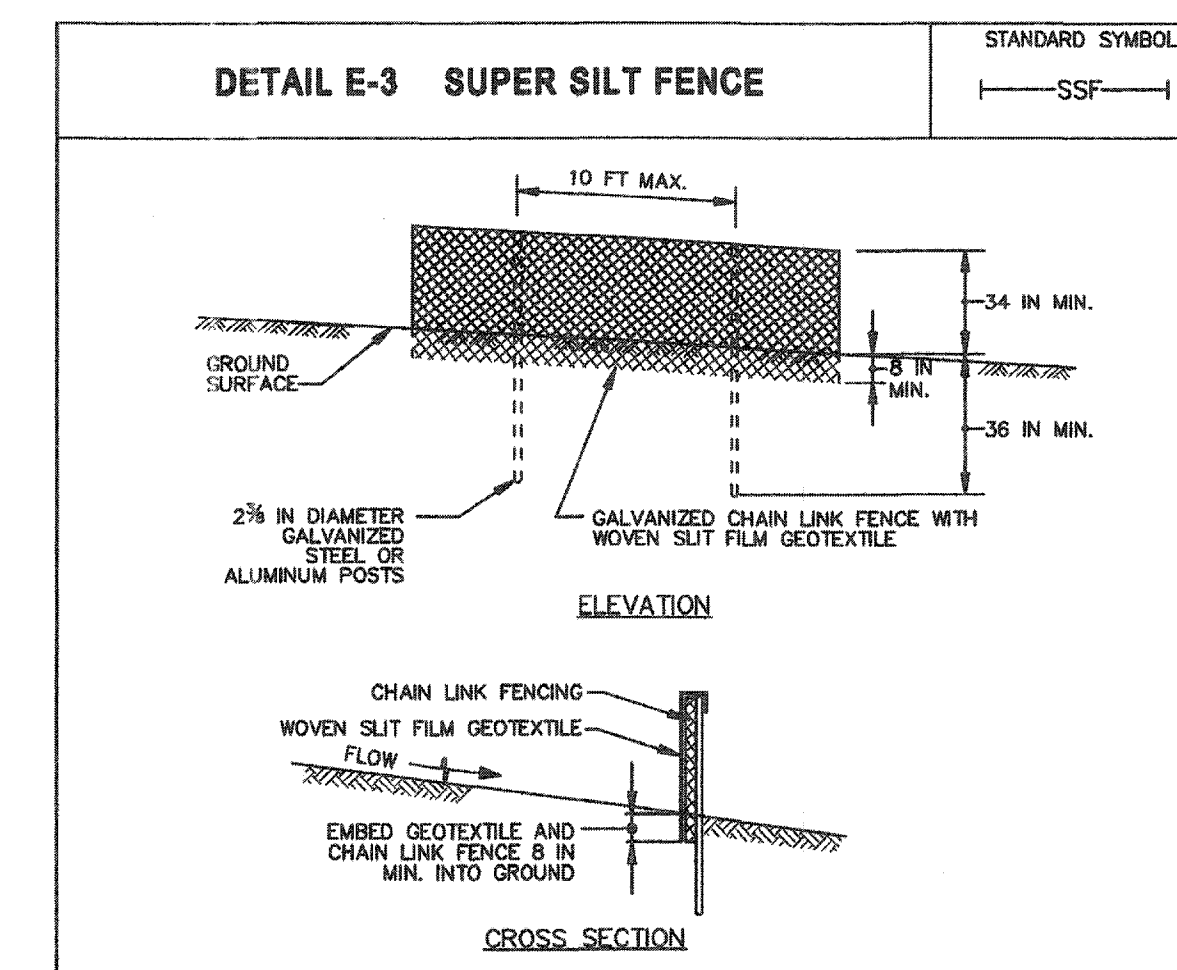


**CONSTRUCTION SPECIFICATIONS**

- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 1/2 INCH MAXIMUM OPENING).
- USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
- FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
- SECURE 1 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
- EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
- WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 8 INCHES AND FOLD WITH SEAM FACING DOWNSLOPE.
- KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

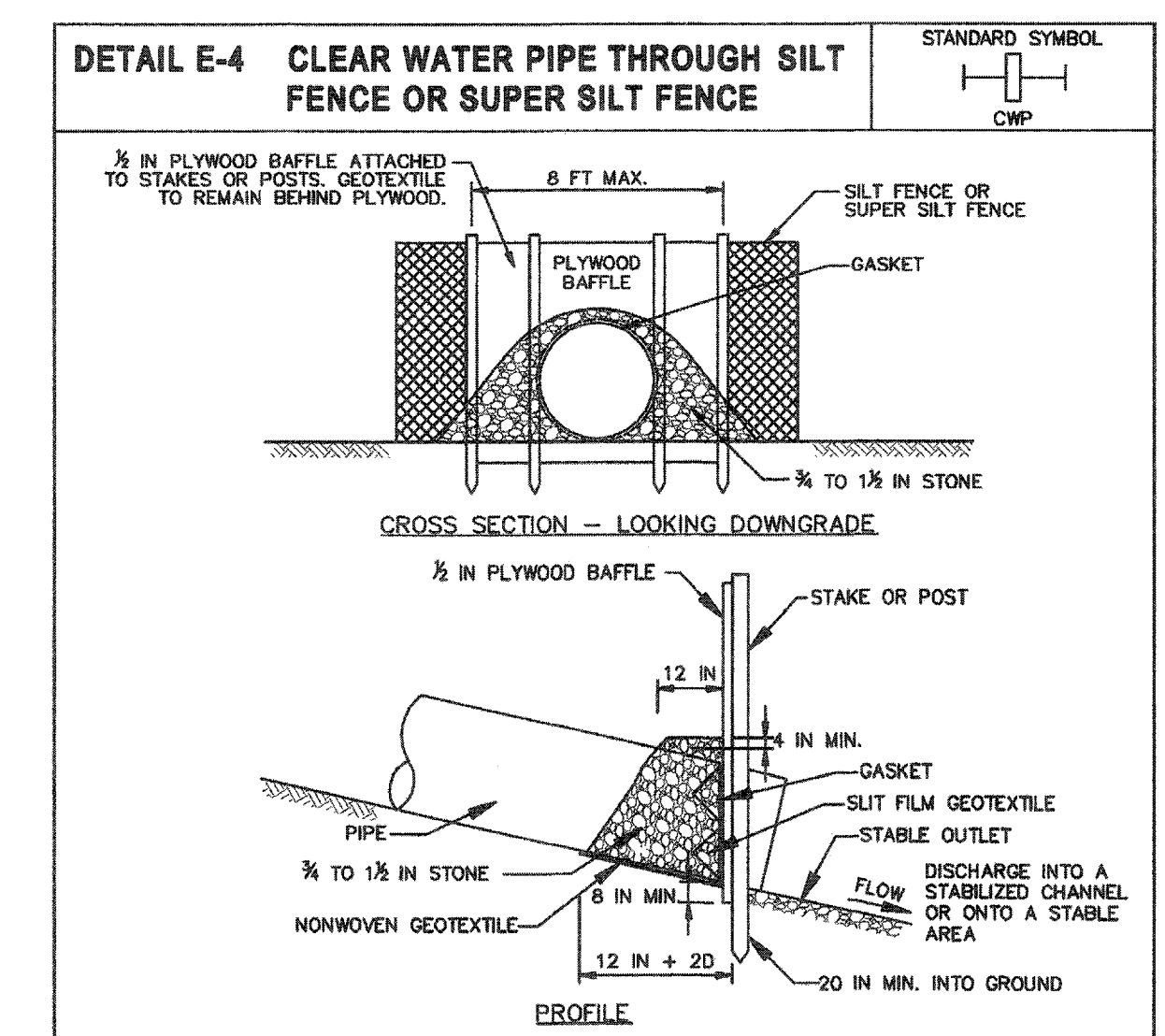


**CONSTRUCTION SPECIFICATIONS**

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

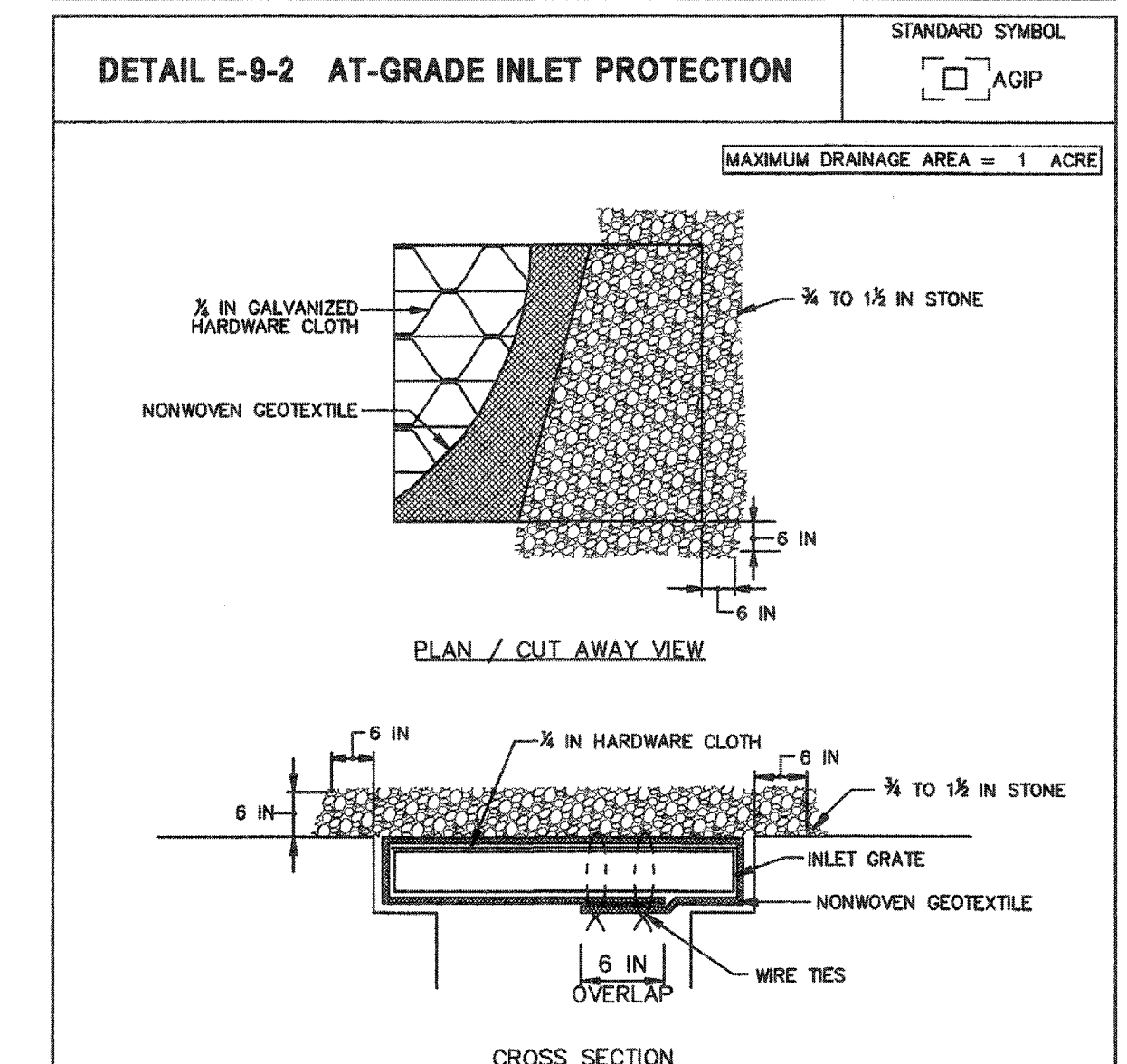


**CONSTRUCTION SPECIFICATIONS**

- INSTALL SILT FENCE OR SUPER SILT FENCE IN ACCORDANCE WITH DETAIL E-1 OR DETAIL E-2.
- AT THE PIPE LOCATION, CUT AND PULL BACK THE WOVEN SILT FILM GEOTEXTILE AND CHAIN LINK FENCING. SECURE GEOTEXTILE TO PIPE WITH GASKET. INSTALL ADDITIONAL STAPLES OR POSTS IF NECESSARY TO ACCOMMODATE THE INSTALLATION OF THE BAFFLE BOARD.
- ENTRENCH 1/2 INCH PLYWOOD BAFFLE A MINIMUM OF 8 INCHES AND SECURE TO THE UPSLOPE SIDE OF THE FENCE STAPLES OR POSTS. BAFFLE SHOULD BE AT LEAST THE HEIGHT OF THE FENCE.
- PLACE 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE BEHIND THE PLYWOOD BAFFLE ON NONWOVEN GEOTEXTILE AND EXTEND 12 INCH MIN. ALONG TOP OF PIPE AND TO A HEIGHT OF 4 INCHES ABOVE THE TOP OF PIPE.
- USE NONWOVEN AND WOVEN SILT FILM GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN SEDIMENT REACHES 8 INCHES IN HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL BAFFLE, CHAIN LINK, AND GEOTEXTILE. REPLACE STONE IF DISPLACED. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**CONSTRUCTION SPECIFICATIONS**

- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
- PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

HOWARD SCD SIGNATURE BLOCK:

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

*[Signature]* 4/12/18  
HOWARD SOIL CONSERVATION DISTRICT DATE

EP-17-38

PROFESSIONAL CERTIFICATION

"I HEREBY CERTIFY THAT 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. 16156 EXPIRATION DATE: 8/28/2018"

OWNERS/DEVELOPER CERTIFICATION:

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

OWNER'S/DEVELOPER'S SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED NAME & TITLE \_\_\_\_\_

DESIGN CERTIFICATION:

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

*[Signature]* 3-26-18  
DESIGNER'S SIGNATURE DATE

DAVID T. MORICONI  
PRINTED NAME

MD REGISTRATION NO. 16156  
(P.E. R.L.S., OR R.L.A. (CIRCLE ONE))

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-7220

DATE: 4/11/18  
DATE: 4/12/18  
DATE: 4/10/2018

DES: DMT  
ORN: DMT  
CHK: DTM  
DATE: 03/2018

BY NO. \_\_\_\_\_ REVISION \_\_\_\_\_ DATE \_\_\_\_\_

EROSION AND SEDIMENT CONTROL  
DETAILS AND NOTES - 2

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
ROADWAY WIDENING  
MD 97 TO WEST OF RIVERCREST COURT

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE N/A  
SHEET 11 OF 19



B-4.5 STANDARDS AND SPECIFICATIONS

FOR PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use

a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Notes:

Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland".

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of cultivar protection and assures a pure genetic line.

c. Ideal Times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)

Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

e. If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (lb/20-20-20)			Lime Rate
					N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
1	TALL FESCUE	100	3/15-5/15 8/15-10/15	1/2-1/2 in	45 pounds per acre (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
2	SOD	N/A	3/15-5/15 8/15-10/15	1/2-1/2 in 1/2-1/2 in	(1.0 lb/1000 sf)	(1000 sf)	(1000 sf)	(1000 sf)

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications

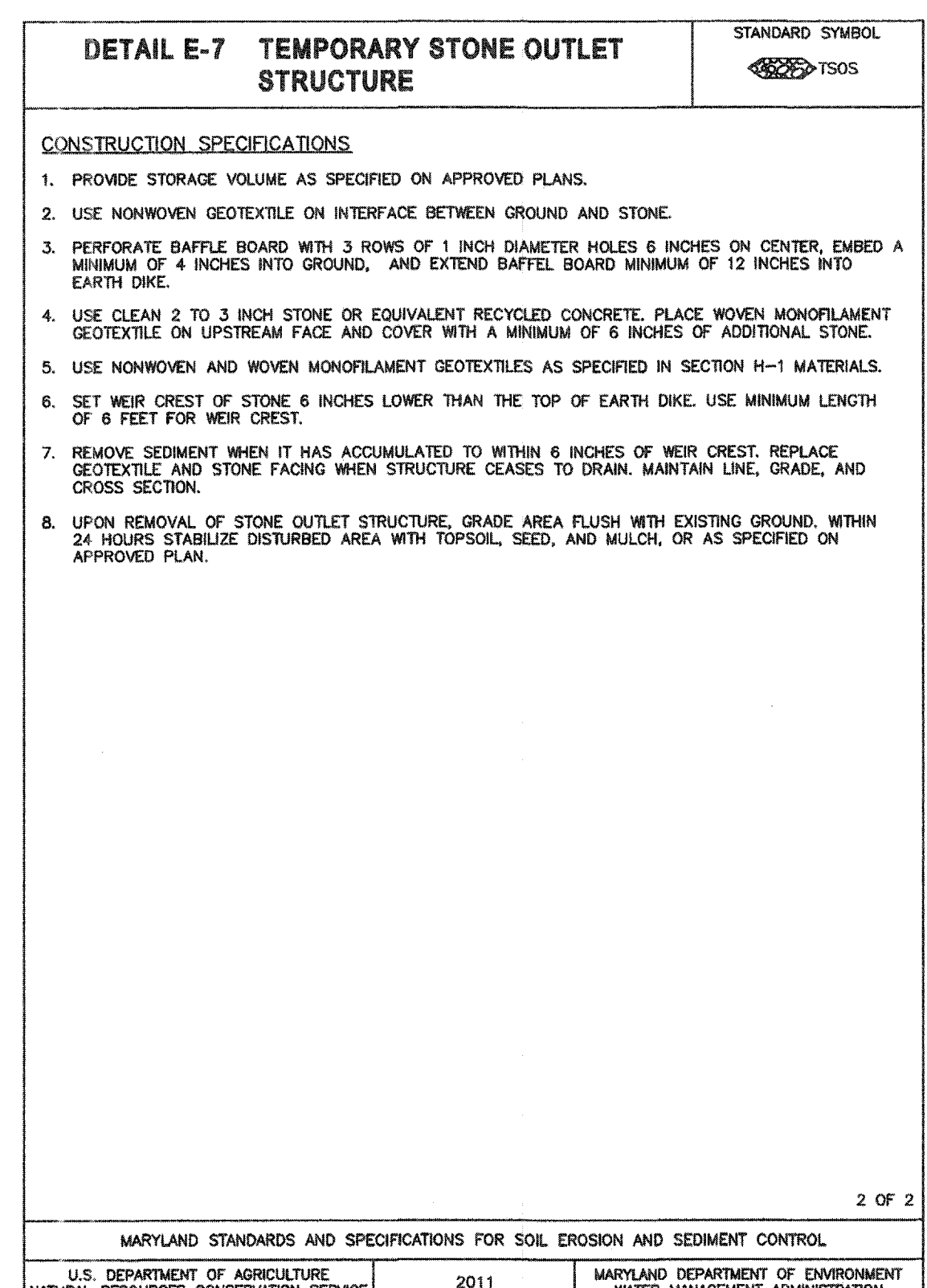
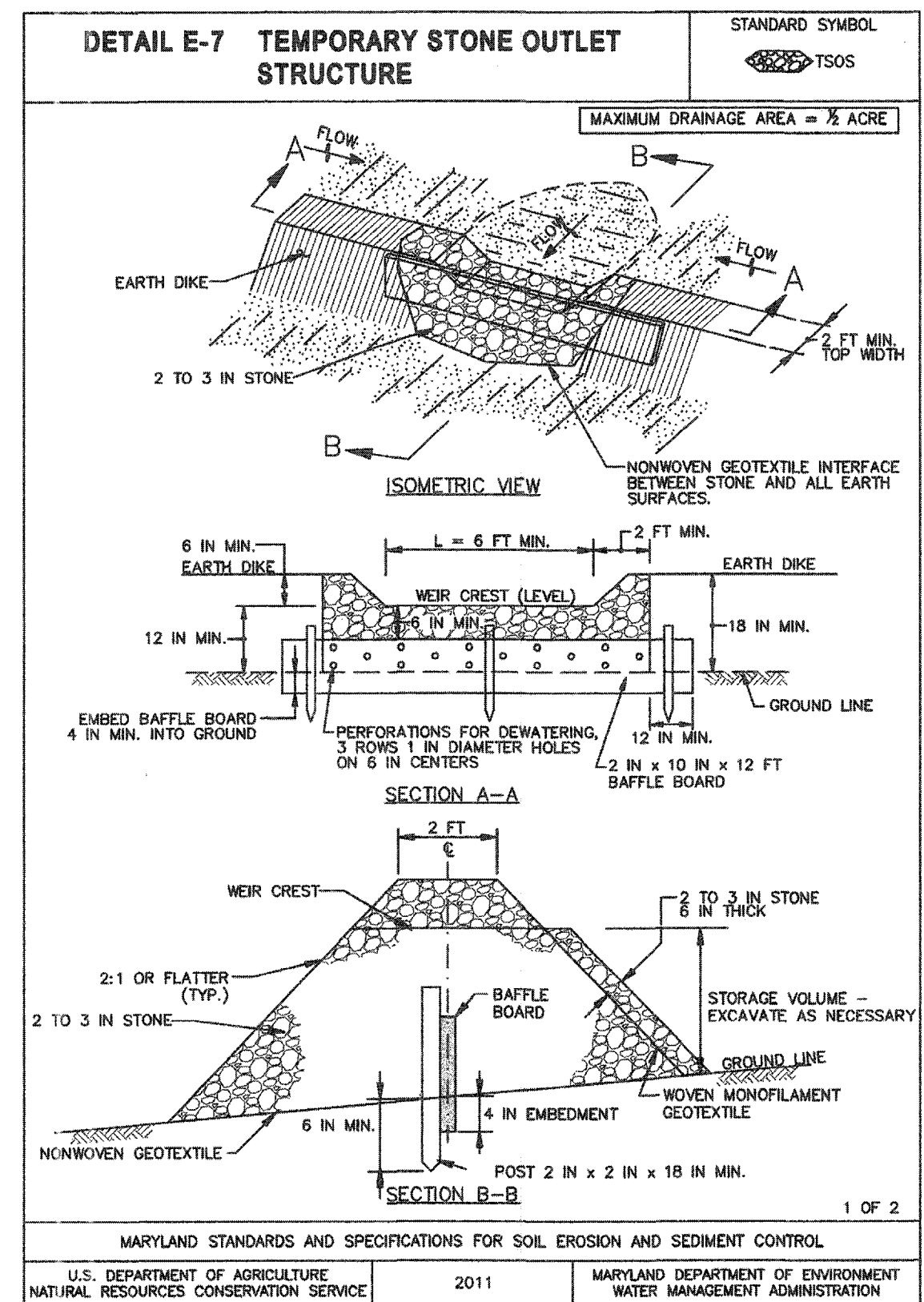
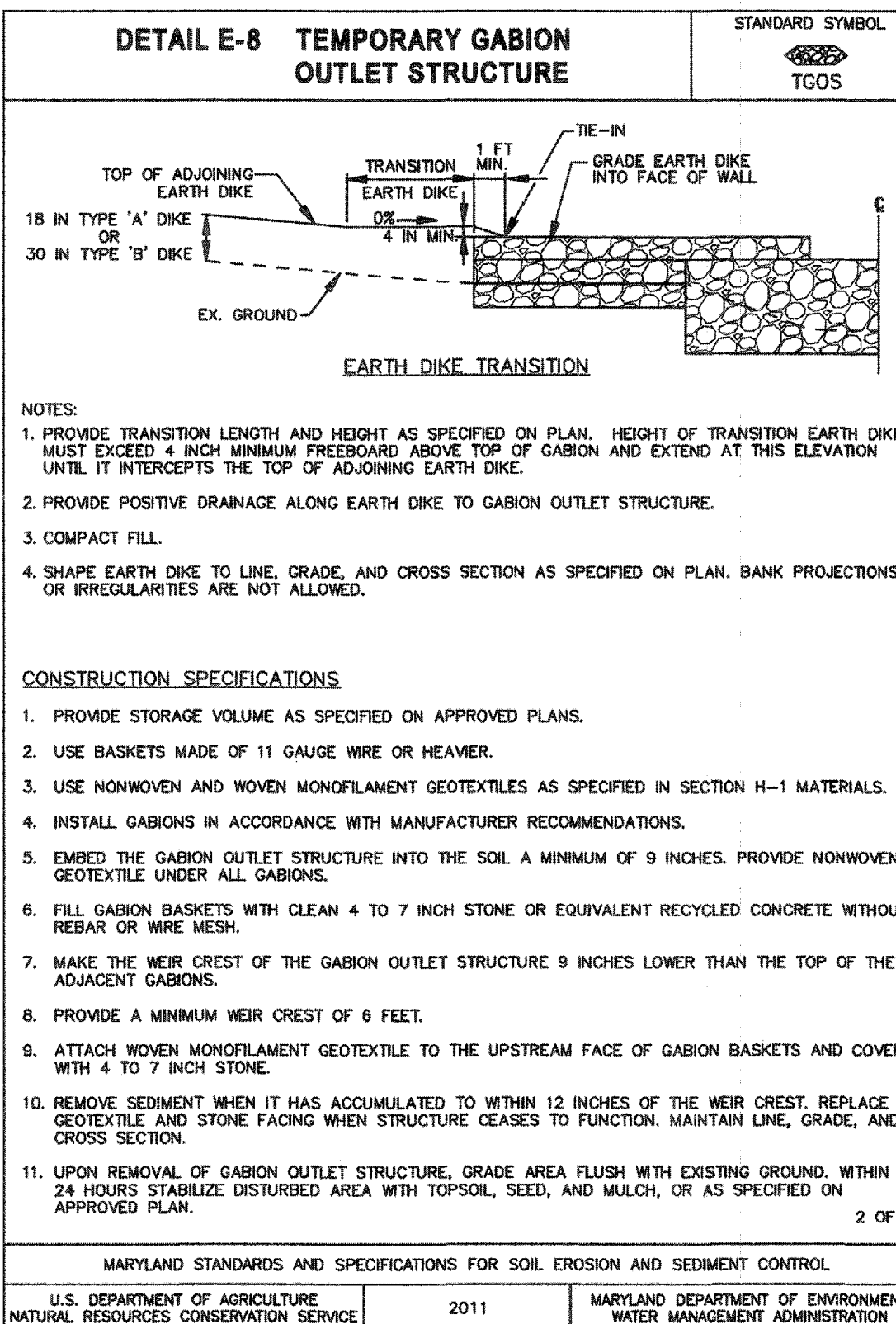
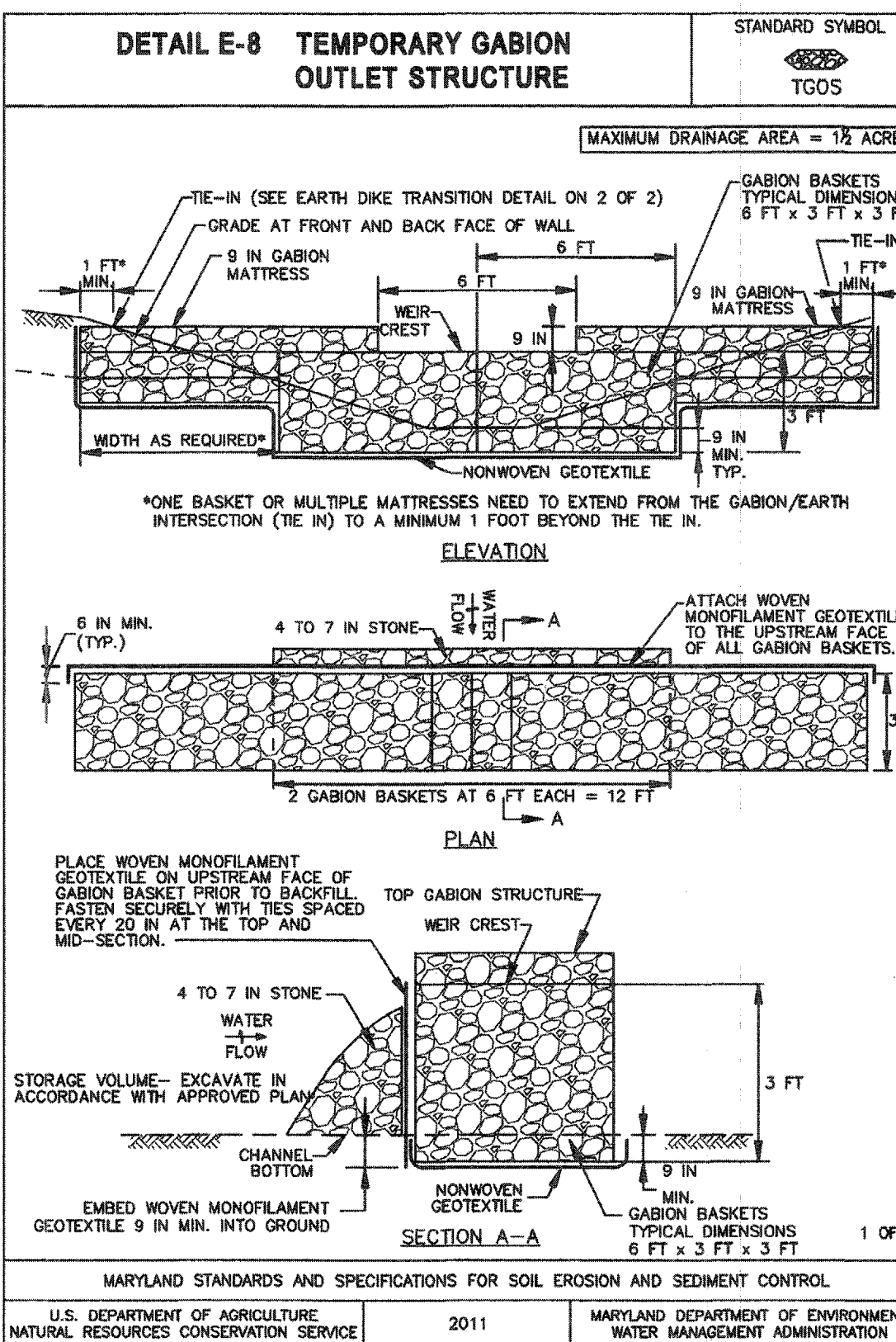
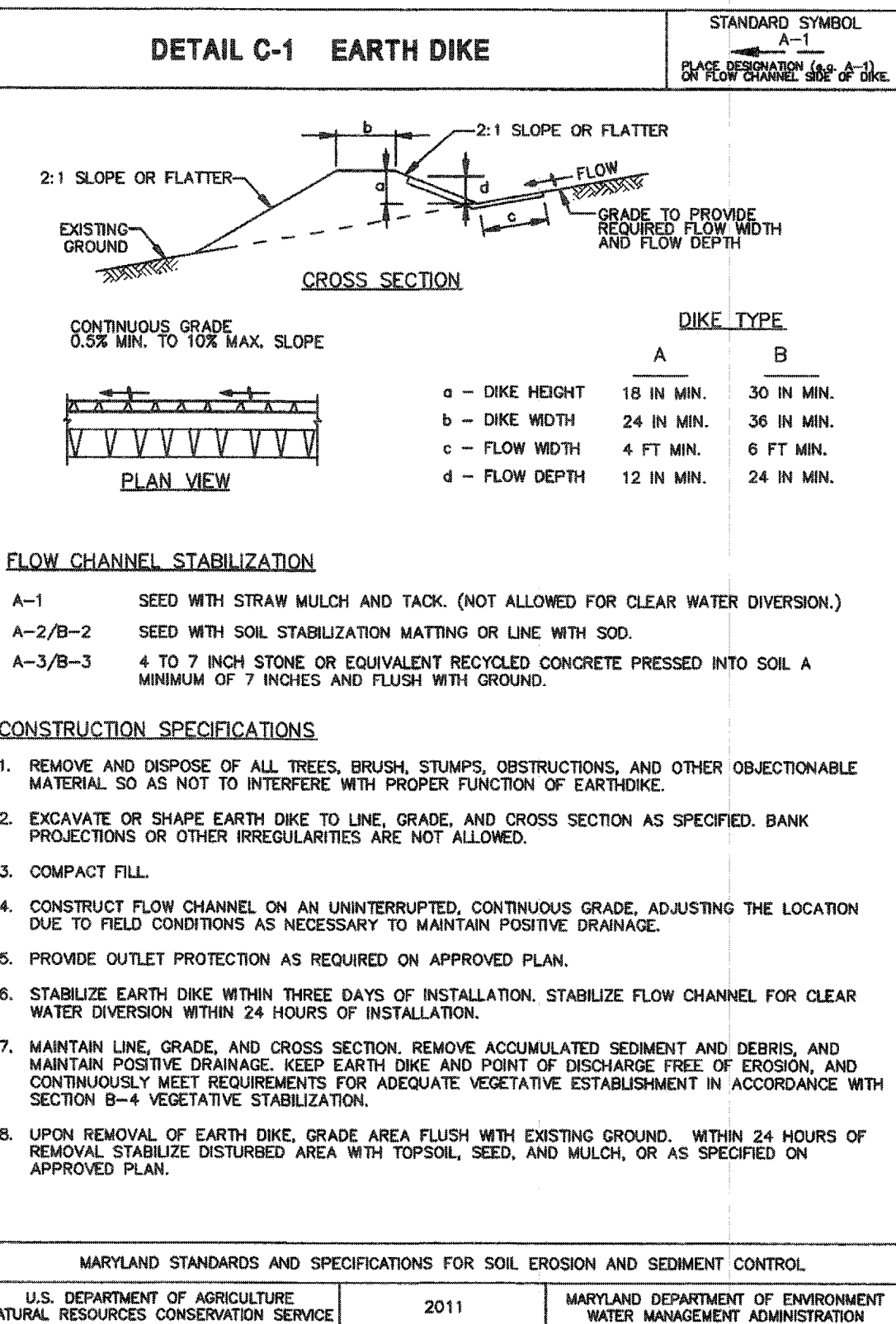
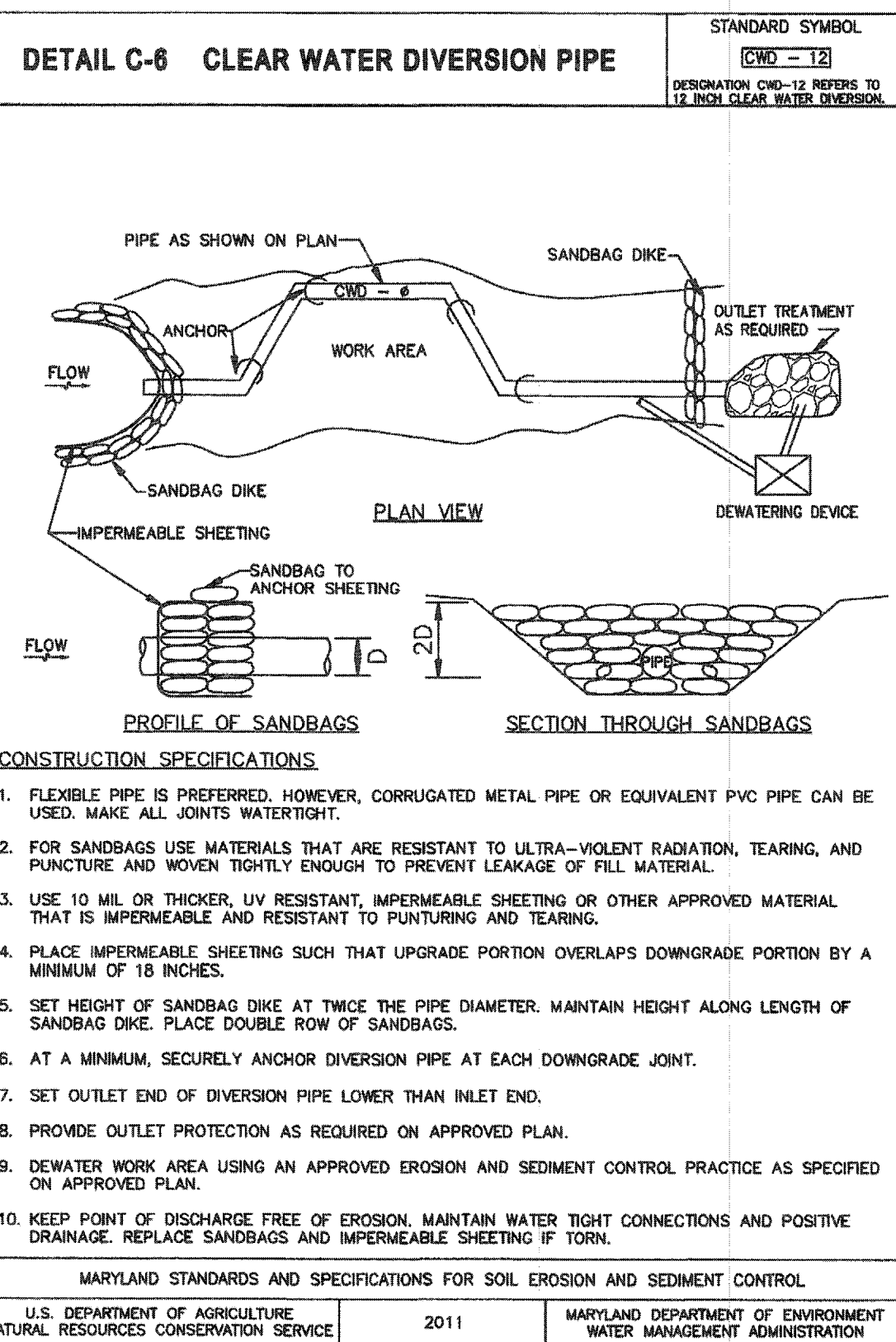
- Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
- Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/8 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
- Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- Sod must not be harvested or transported when moisture content (excessively dry or wet) may adversely affect its survival.
- Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.

2. Sod Installation

- During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
- Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- Whenever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
- Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.

3. Sod Maintenance

- In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
- After the first week, sod watering is required as necessary to maintain adequate moisture content.
- Do not mow until the sod is firmly rooted. No more than 1/2 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.



HOWARD SCD SIGNATURE BLOCK:  
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
HOWARD SOIL CONSERVATION DISTRICT  
DATE: 4/17/18  
EP-17-38

PROFESSIONAL CERTIFICATION  
"I HEREBY CERTIFY THAT 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. 16156 EXPIRATION DATE: 8/28/2018"

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

DESIGN CERTIFICATION:  
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
DESIGNER'S SIGNATURE \_\_\_\_\_ DATE: 3-26-18  
DAVID T. MORICONI  
PRINTED NAME  
MD REGISTRATION NO. 16156  
(P.E., R.L.S., OR R.L.A. (CIRCLE ONE))

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DIRECTOR OF PUBLIC WORKS: [Signature] DATE: 4/11/18  
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION: [Signature] DATE: 4/11/18  
CHIEF, BUREAU OF ENGINEERING: [Signature] DATE: 4/10/2018  
CHIEF, BUREAU OF HIGHWAYS: [Signature] DATE: 4/10/2018

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-7220  
DATE: 03/2018

DES: DMT			
DRN: DMT			
CHK: DTM			
DATE: 03/2018	BY: NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL  
DETAILS AND NOTES - 3  
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
ROADWAY WIDENING  
MD 97 TO WEST OF RIVERCREST COURT  
5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND  
SCALE: N/A  
SHEET 12 OF 19



**As-Built Inspection Tabulations/Checklist for BMP Number:**

Name	Date
------	------

**M-8 BIO-SWALES MDE TABULATIONS**

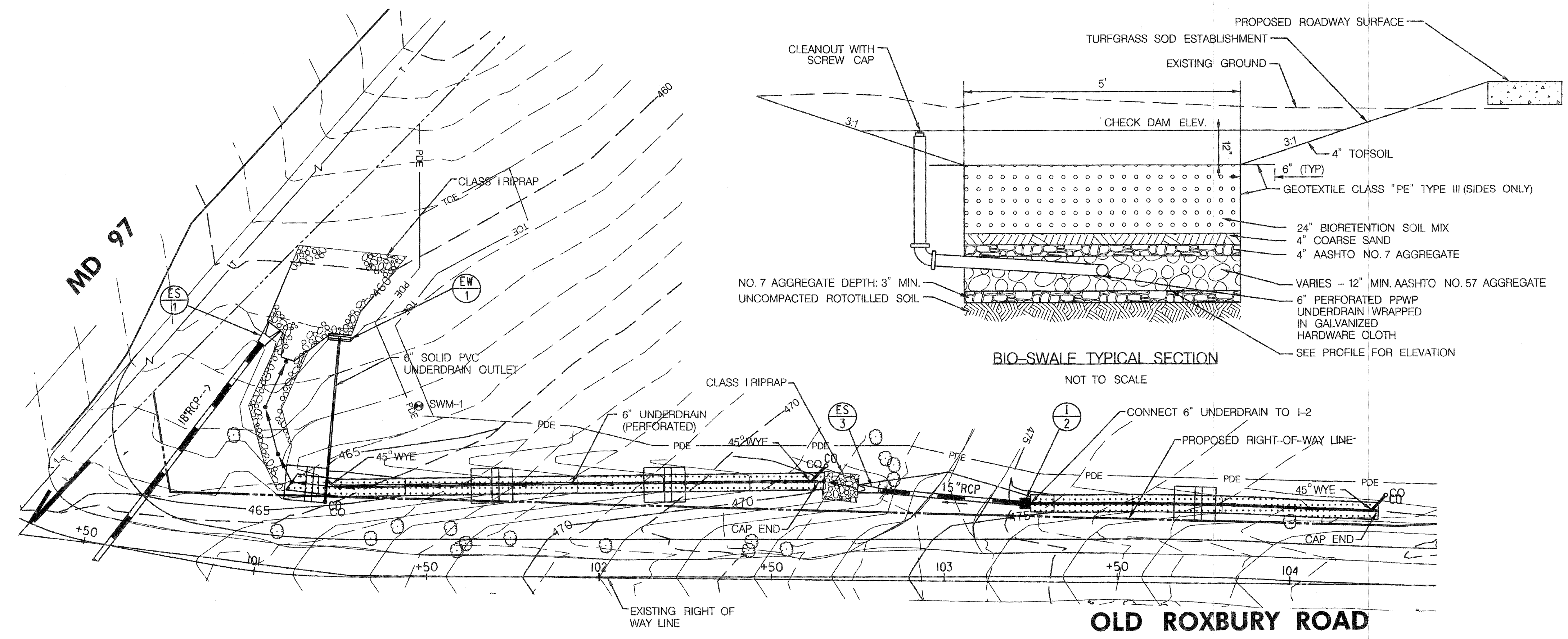
ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	NA				
Bottom width	5'				
Left side slope (ft/ft)	3:1				
Right side slope (ft/ft)	3:1				
Length	260'				
Number of Check Dams/Weirs	4				
10-Year Freeboard	2'				
Maximum Channel slope (ft/ft)	0.04				
Underdrain Pipe Diameter	6"				
Thickness of Filter Media	24"				
Composition of Filter Media	BSM				

**Revised February 2011**

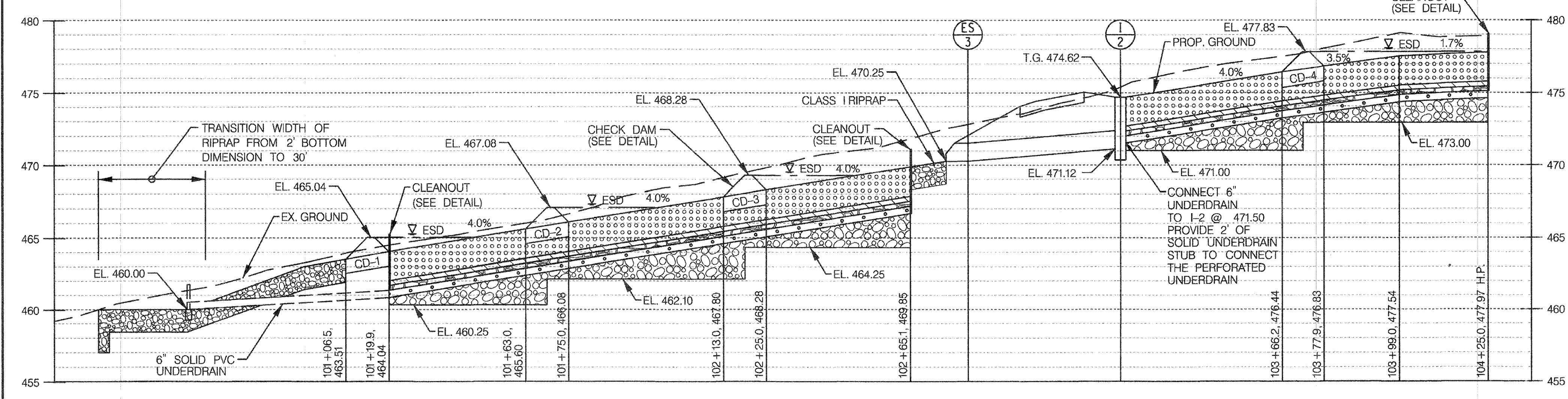
**BIO-SWALES CONSTRUCTION CHECKLIST**

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Underdrain system and/or observation well installed according to plans			
Placement of geotextiles and filter fabric according to plans			
Placement of gravel diaphragm, weirs, and/or check dams			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Placement of and backfill of underdrain system			
Composition of filter media			

**AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10**  
**The As-Built Inspector is to verify the construction activities while activity is performed as listed above.**



**BIO-SWALE - PLAN**  
SCALE: 1" = 20'

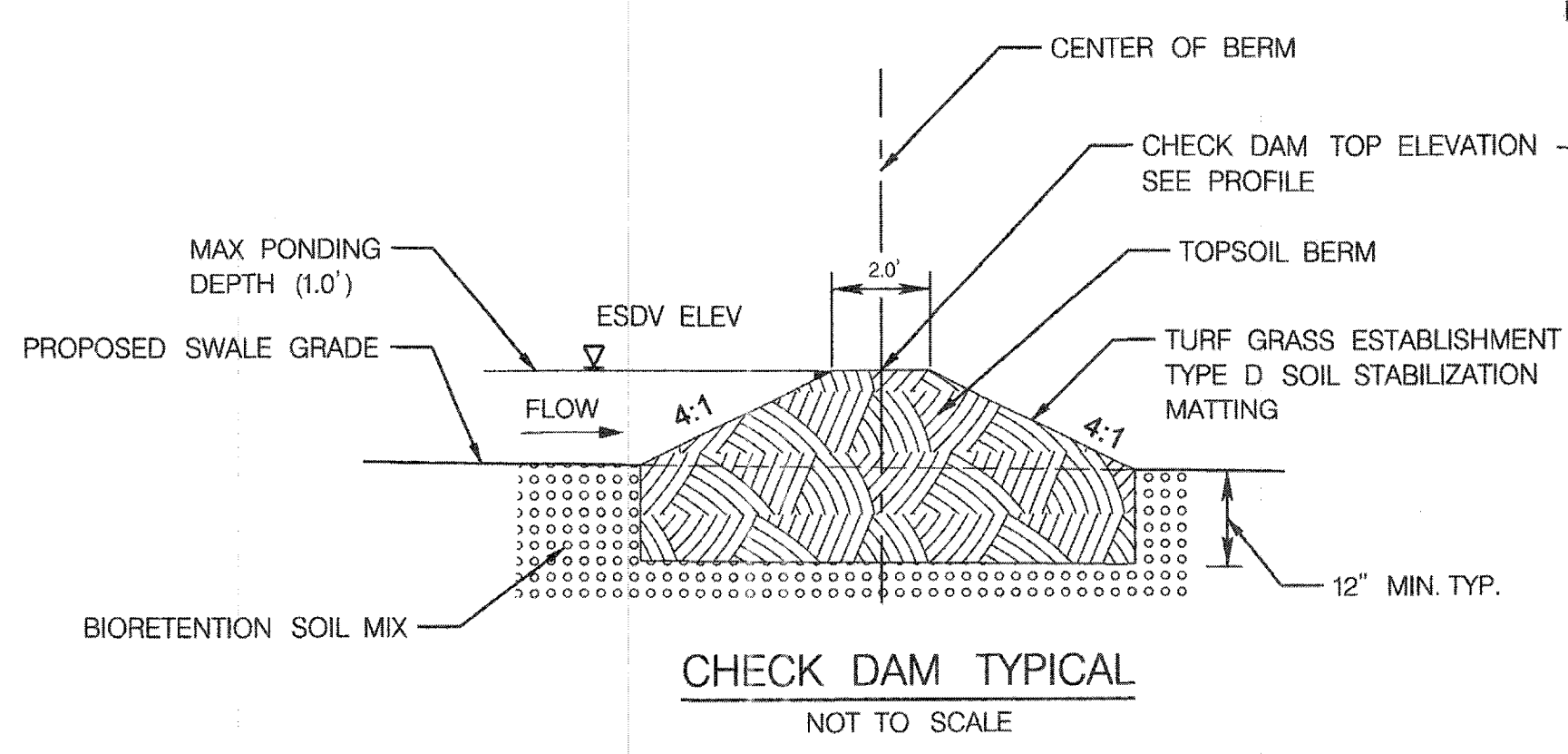


**BIO-SWALE - PROFILE**  
SCALE: HOR: 1" = 20' VER: 1" = 5'

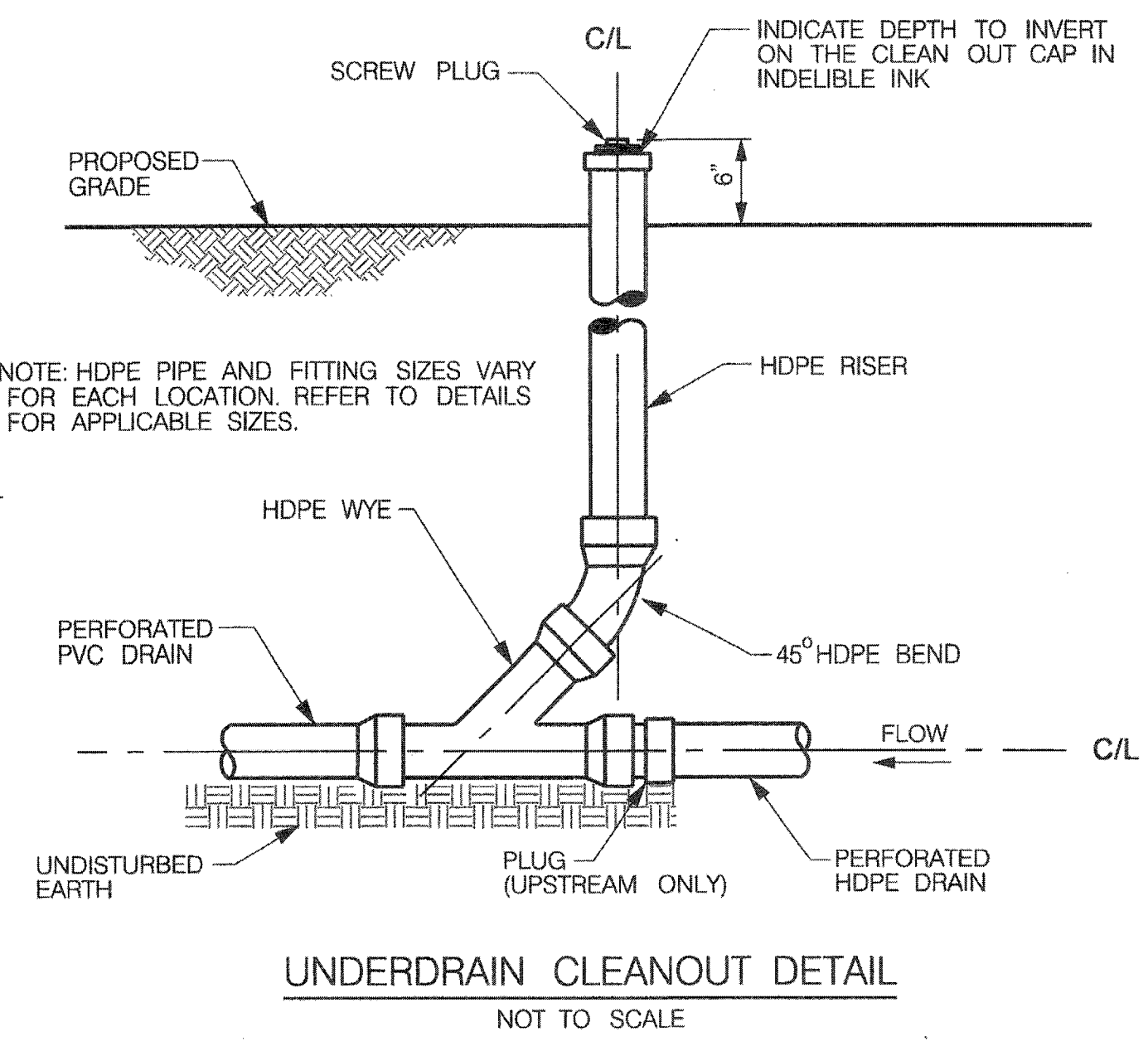
**BORING LOCATIONS**

NO.	NORTHING	EASTING	ELEVATION
SWM-1	577,144.1947	1,296,783.8049	463.45

**PROFESSIONAL CERTIFICATION**  
 "I HEREBY CERTIFY THAT 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. 16156. EXPIRATION DATE: 8/28/2018."



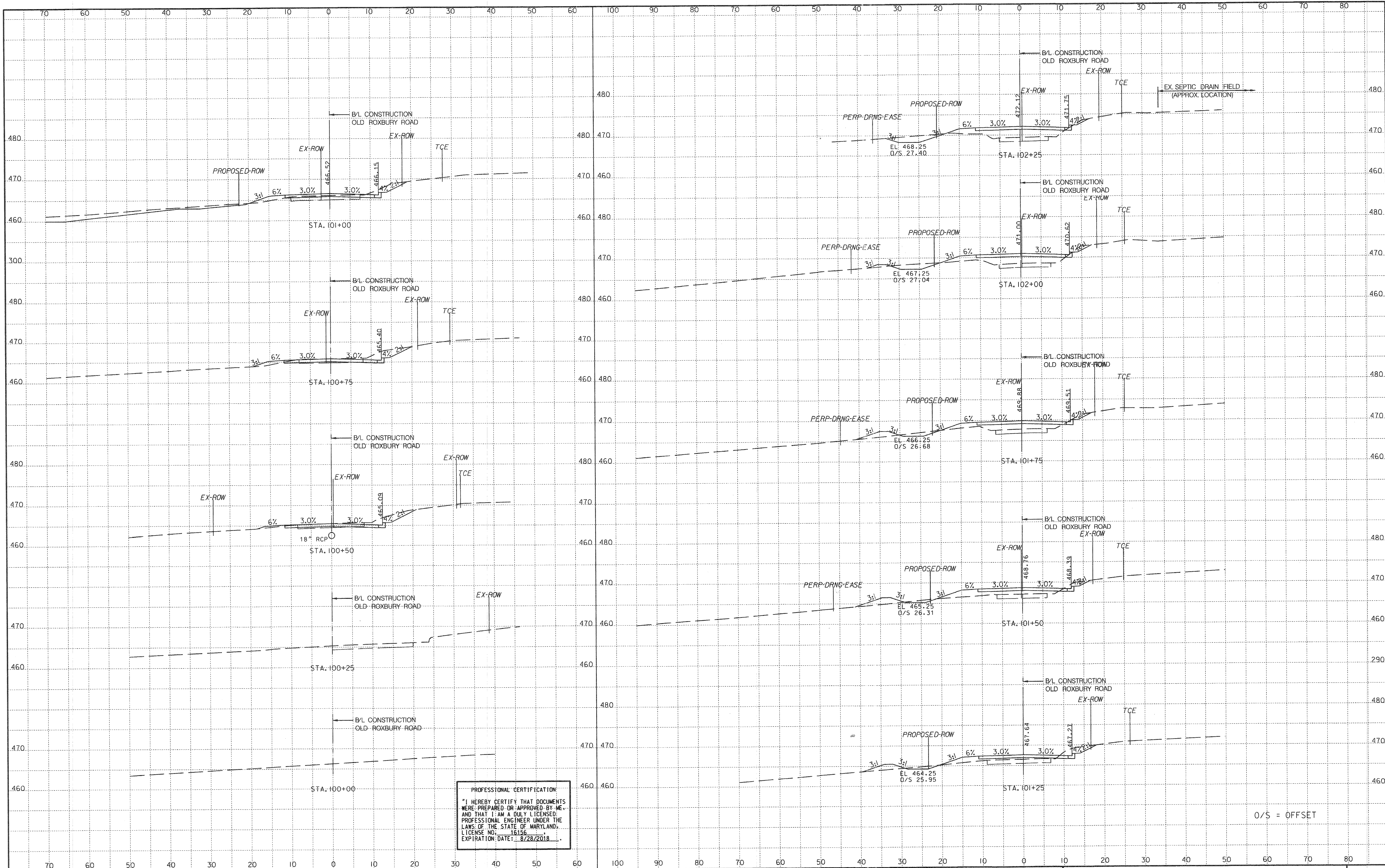
**CHECK DAM TYPICAL**  
NOT TO SCALE



**UNDERDRAIN CLEANOUT DETAIL**  
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: [Signature] 4/1/18 Chief, Transportation and Special Projects Division: [Signature] 4/1/18		PREPARED BY <b>URS</b> 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220		STATE OF MARYLAND PROFESSIONAL ENGINEER [Signature] EXPIRATION DATE: 8/28/2018		DES: DMT DRN: DMT CHK: DTM DATE: 03/2018		<b>STORMWATER MANAGEMENT PLAN</b>		OLD ROXBURY ROAD ROADWAY WIDENING MD 97 TO WEST OF RIVERCREST COURT 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 13 OF 19
				REVISION BY NO. DATE		SCALE MAP NO. BLOCK NO.						





PROFESSIONAL CERTIFICATION  
 "I HEREBY CERTIFY THAT 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. 16156 EXPIRATION DATE: 8/28/2018"

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*4/1/18*  
 DIRECTOR OF PUBLIC WORKS DATE

*4/10/18*  
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

*4/10/18*  
 CHIEF, BUREAU OF ENGINEERING DATE

*4/10/2018*  
 CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES:	DMT		
DRN:	DMT		
CHK:	DTM		
DATE:	02/2018		
BY:		NO.	
		REVISION	
		DATE	

**CROSS SECTIONS**

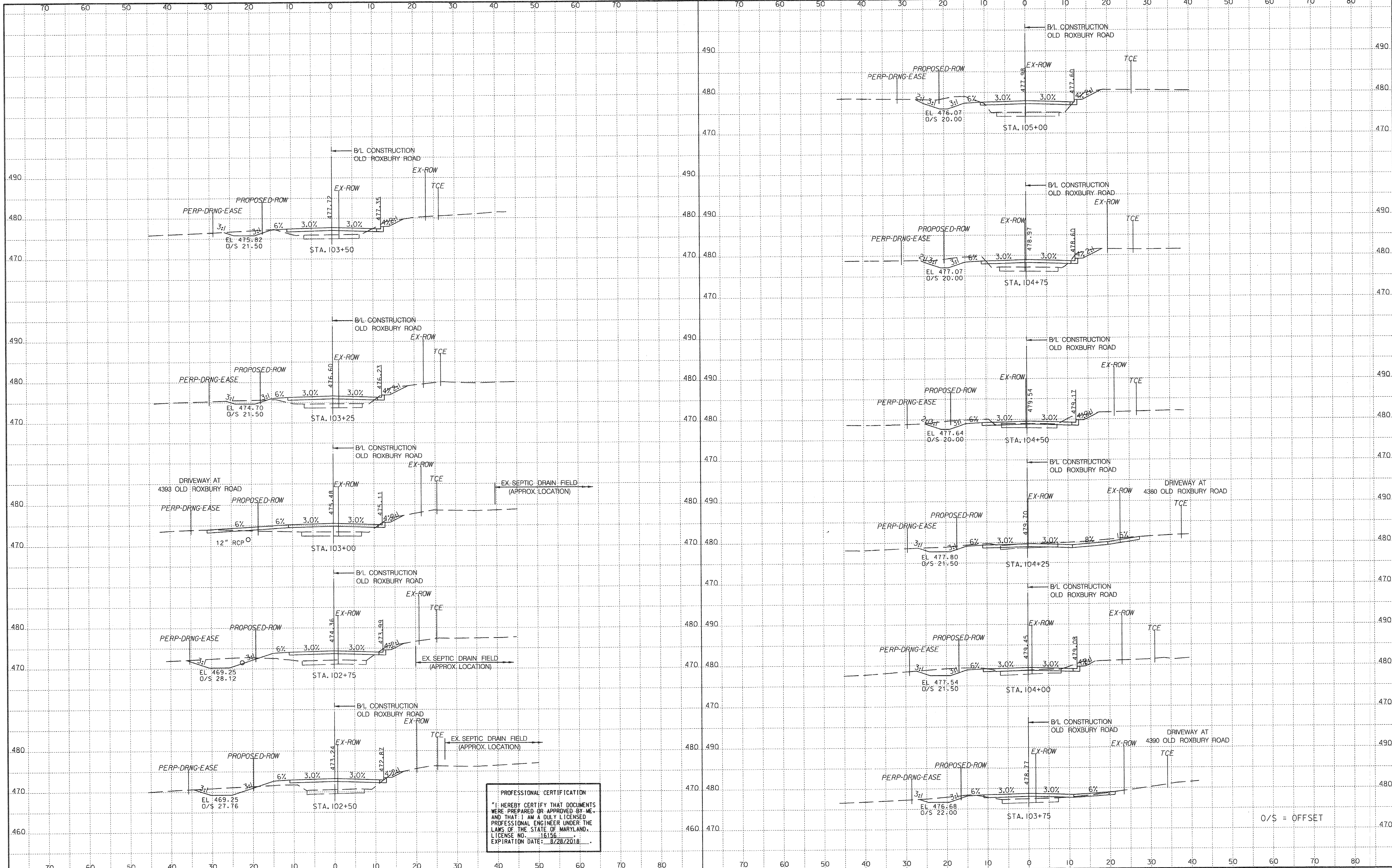
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT  
 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE  
 1" = 10'

SHEET  
 14 OF 19





PROFESSIONAL CERTIFICATION  
 "I HEREBY CERTIFY THAT 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. 16156 EXPIRATION DATE: 8/28/2018."

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 4/19/18  
 Chief, Bureau of Engineering: *[Signature]* 4/19/18  
 Chief, Transportation and Special Projects Division: *[Signature]* 4/19/18  
 Chief, Bureau of Highways: *[Signature]* 4/19/2018

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: 410.755-7220



DES:	DMT		
DRN:	DMT		
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DATE:	02/2018	BY NO.	
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**CROSS SECTIONS**

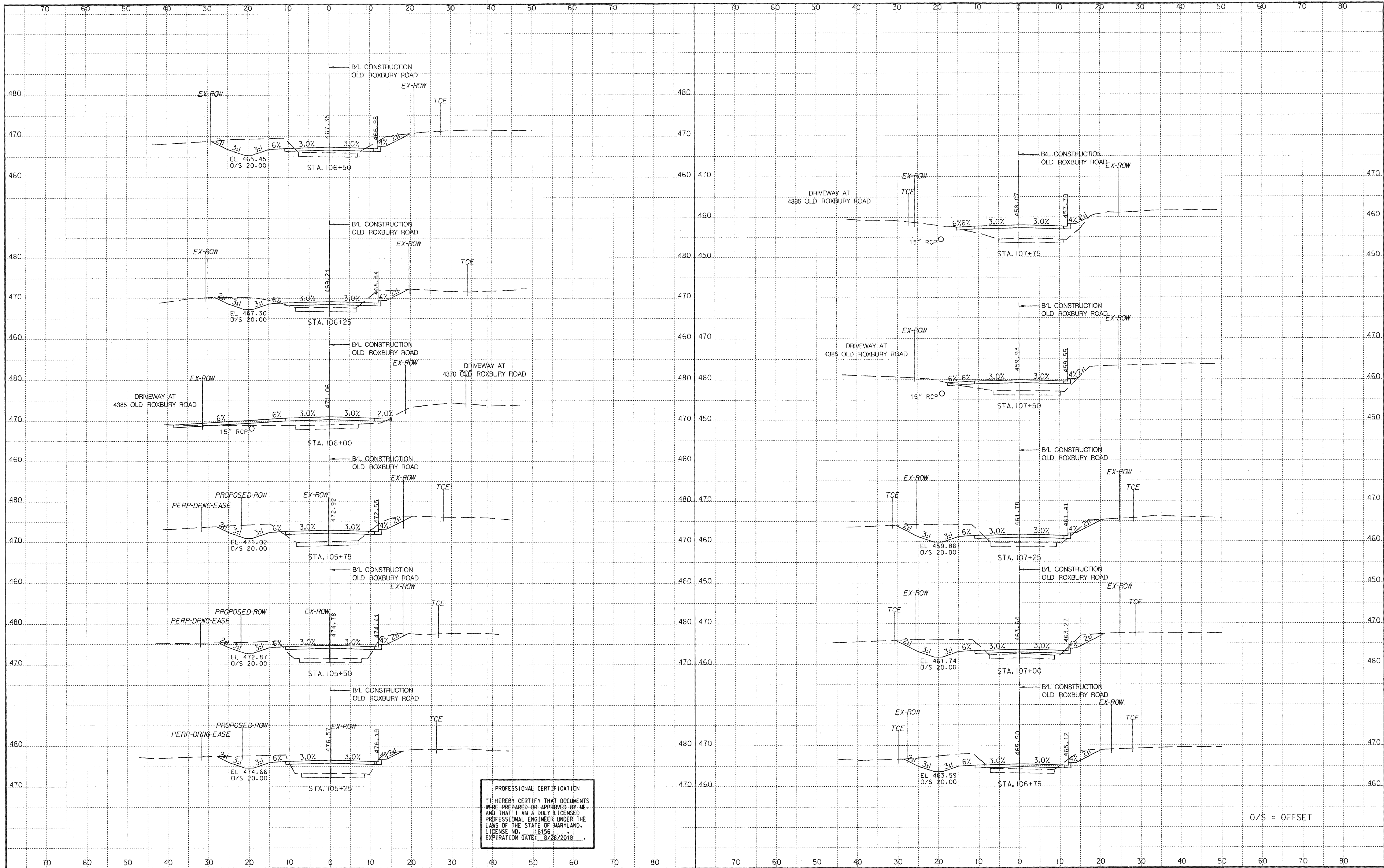
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
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 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

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 15 OF 19





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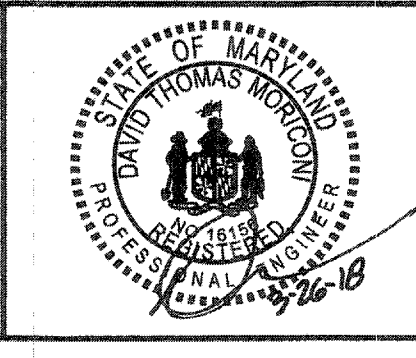
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*[Signature]* 4/1/18  
 DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 4/10/2018  
 CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 4/1/18  
 CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HEAT VALLEY, MARYLAND  
 TEL: (410) 785-7220



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DRN:	DMT		
CHK:	DTM		
DATE:	02/2018		
BY:	NO.	REVISION	DATE

**CROSS SECTIONS**

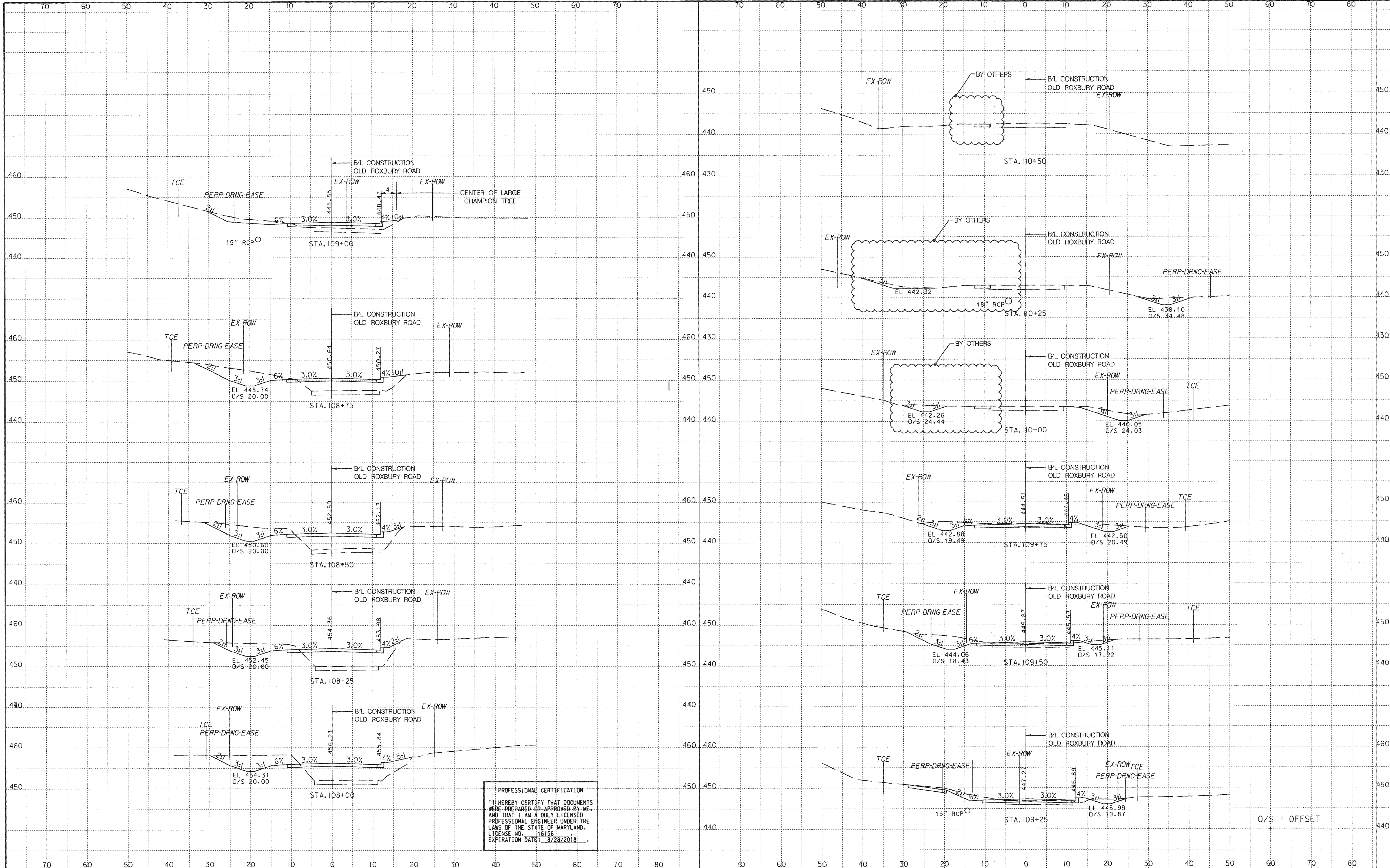
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT  
 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE  
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 16 OF 19





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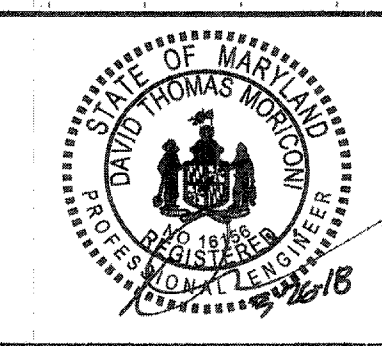
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*John A. White*  
 DIRECTOR OF PUBLIC WORKS  
 DATE: 4/10/18

*Thomas E. Suttle*  
 CHIEF, BUREAU OF ENGINEERING  
 DATE: 4/10/2018

*John A. White*  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 4/10/2018

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES: DMT			
DRN: DMT			
CHK: DTM			
DATE: 02/2018	BY: NO.	REVISION	DATE

**CROSS SECTIONS**

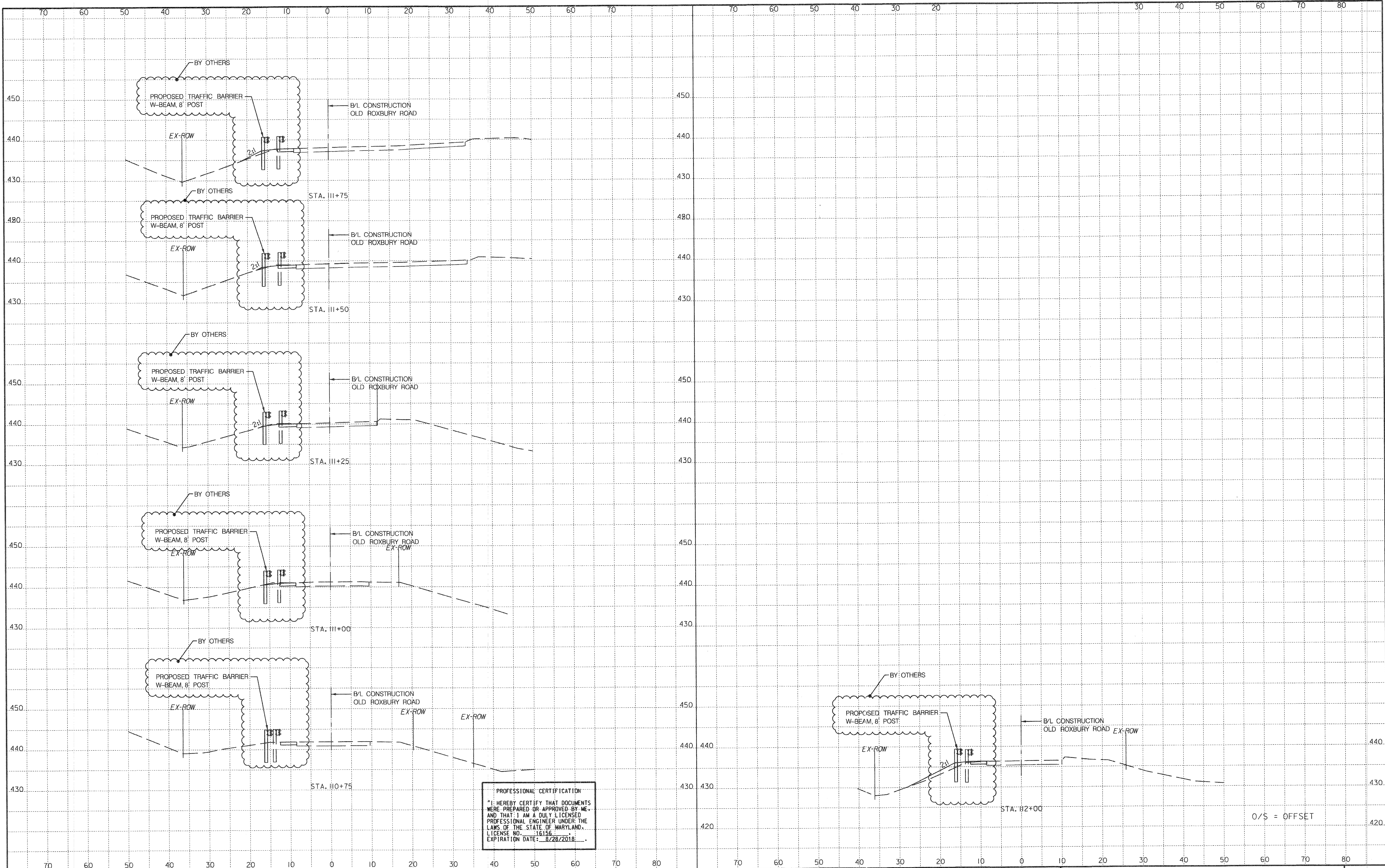
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

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 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

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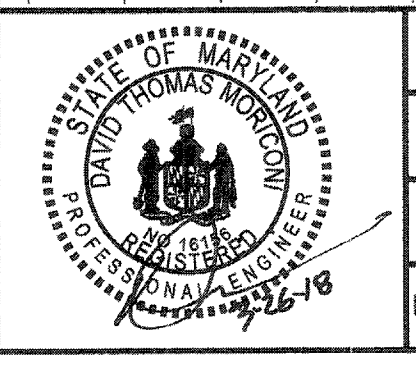
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Ray V. ...* 4/1/16  
 DIRECTOR OF PUBLIC WORKS DATE

*Thomas B. ...* 4/19/18  
 CHIEF, BUREAU OF ENGINEERING DATE

*...* 4/10/2018  
 CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY  
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DATE: 02/2018		DATE:	

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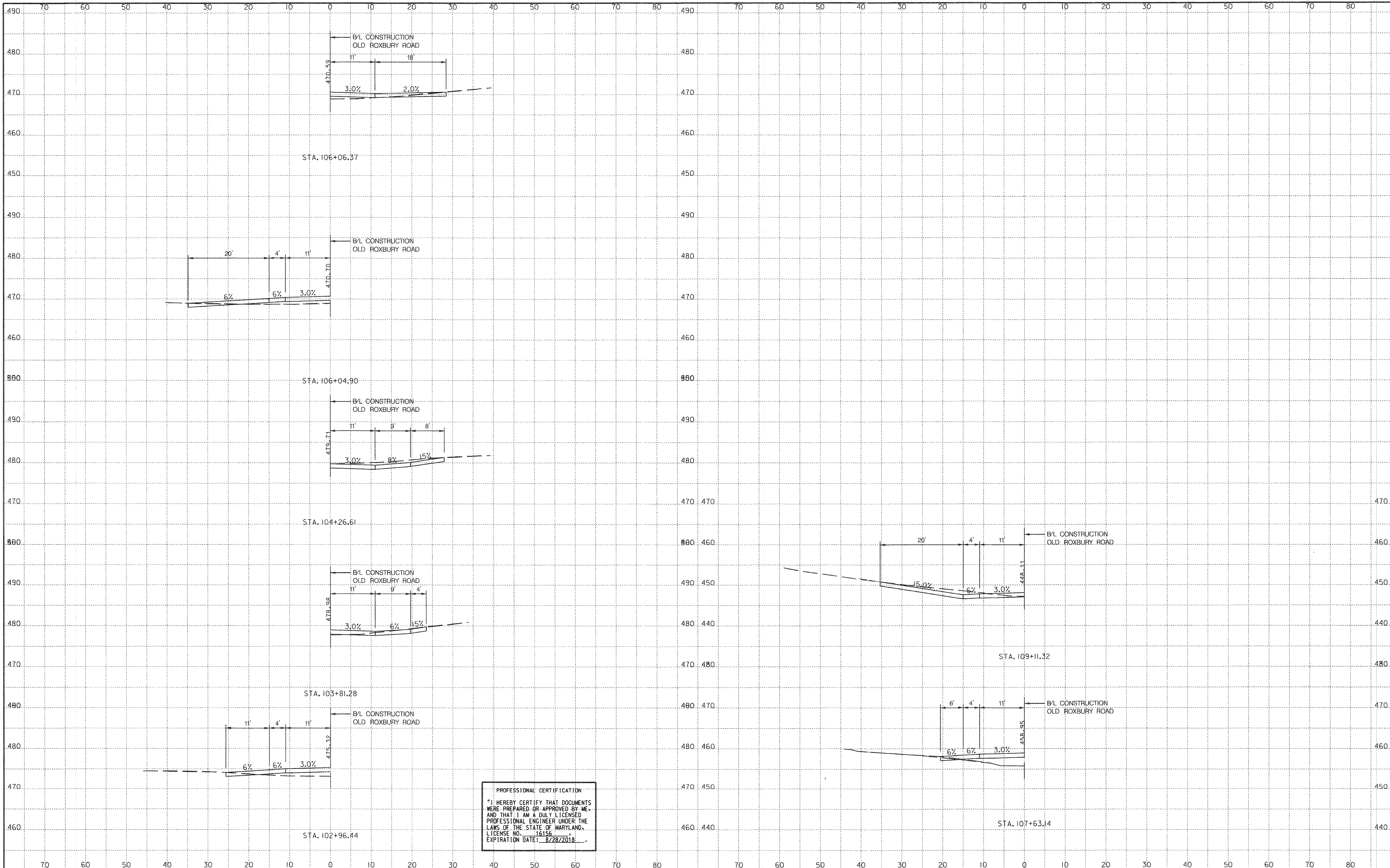
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

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 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

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 18 OF 19





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DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Jan P. Van* 4/11/18  
 DIRECTOR OF PUBLIC WORKS DATE

*Thomas B. Billa* 4/9/18  
 CHIEF, BUREAU OF ENGINEERING DATE

*Robert D.* 4/11/18  
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

*Meunier* 4/10/2018  
 CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY  
**URS**  
 4 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND  
 TEL: (410) 785-7220



DES:	DMT		
DRN:	DMT		
CHK:	DTM		
DATE:	02/2018	BY:	NO.
		REVISION	DATE

**DRIVEWAY PROFILES**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

OLD ROXBURY ROAD  
 ROADWAY WIDENING  
 MD 97 TO WEST OF RIVERCREST COURT  
 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

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 19 OF 19