

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

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

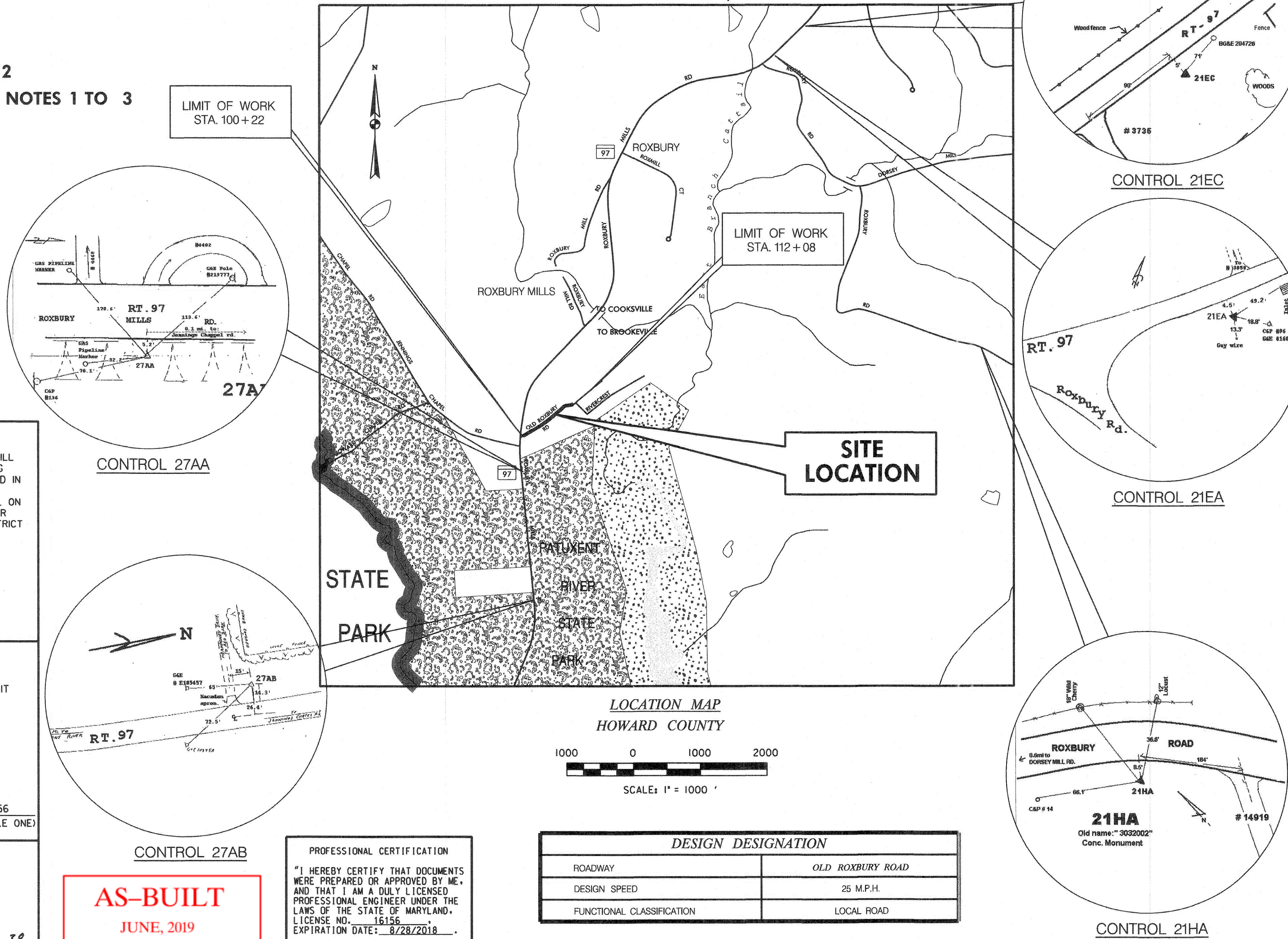
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GENERAL NOTES

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: NAVD88
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."

Brandon Lee 4/9/18
OWNER'S/DEVELOPER'S SIGNATURE DATE
BRANDON LEE
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."

David T. Moriconi 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)

HOWARD SCD SIGNATURE BLOCK:

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

AS-BUILT
JUNE, 2019

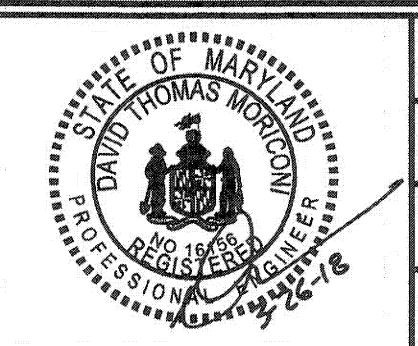
PROFESSIONAL CERTIFICATION

"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: 9/28/2018"

DESIGN DESIGNATION	
ROADWAY	OLD ROXBURY ROAD
DESIGN SPEED	25 M.P.H.
FUNCTIONAL CLASSIFICATION	LOCAL ROAD

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
David T. Moriconi 4/11/18
DIRECTOR OF PUBLIC WORKS DATE
Thomas B. Butler 4/11/18
CHIEF, BUREAU OF ENGINEERING DATE
Brandon Lee 4/11/18
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE
Michael 4/11/2018
CHIEF, BUREAU OF HIGHWAYS DATE

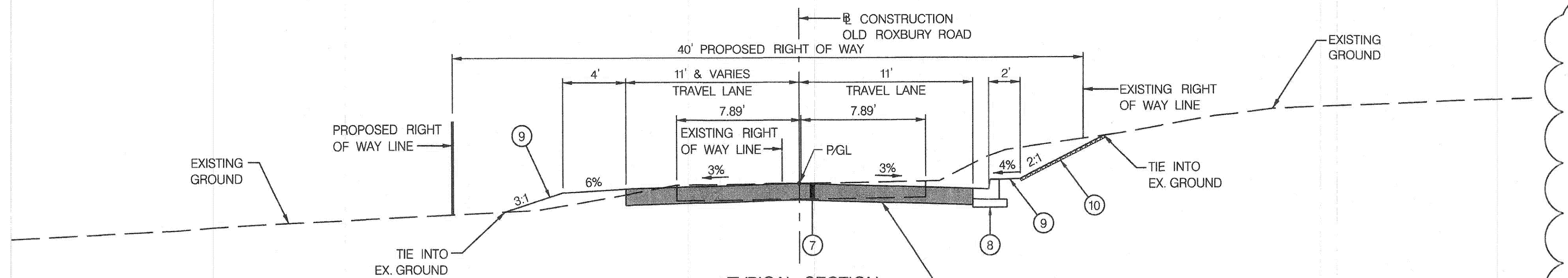
PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



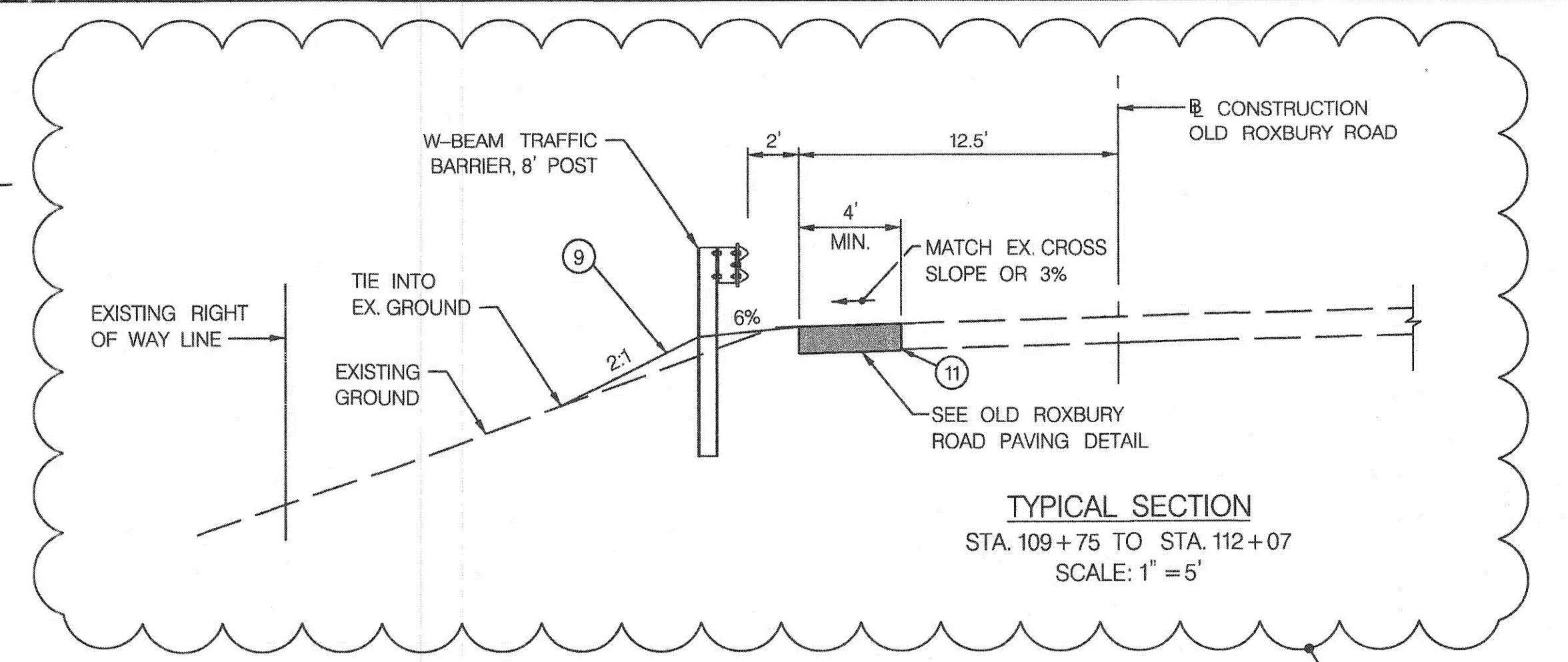
DES: DMT			
DRN: DMT			
CHK: DTM			
DATE: 03/2018	BY NO.	REVISION	DATE

TITLE SHEET
SCALE MAP NO. 21 BLOCK NO. 19

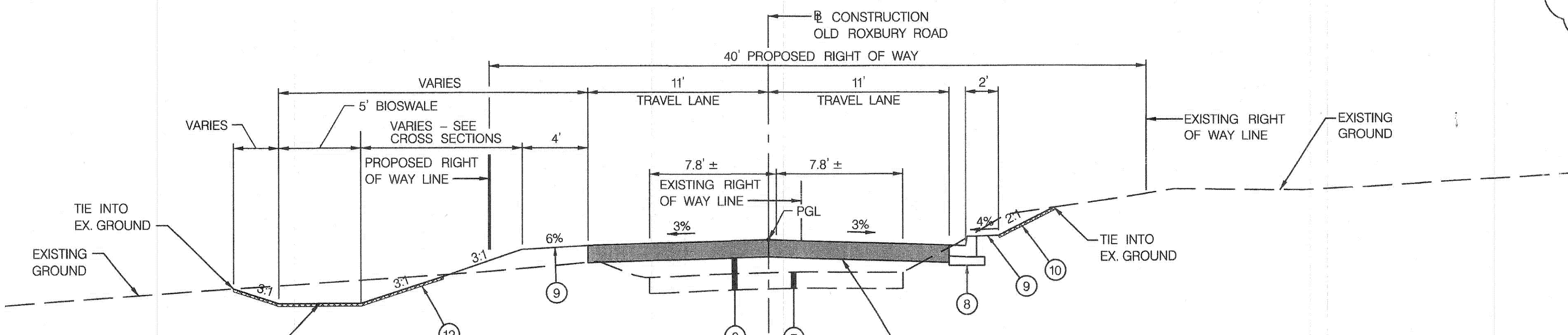
SCALE AS SHOWN
SHEET 1 OF 19
OLD ROXBURY ROAD
ROADWAY WIDENING
MD 97 TO WEST OF RIVERCREST COURT
5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND



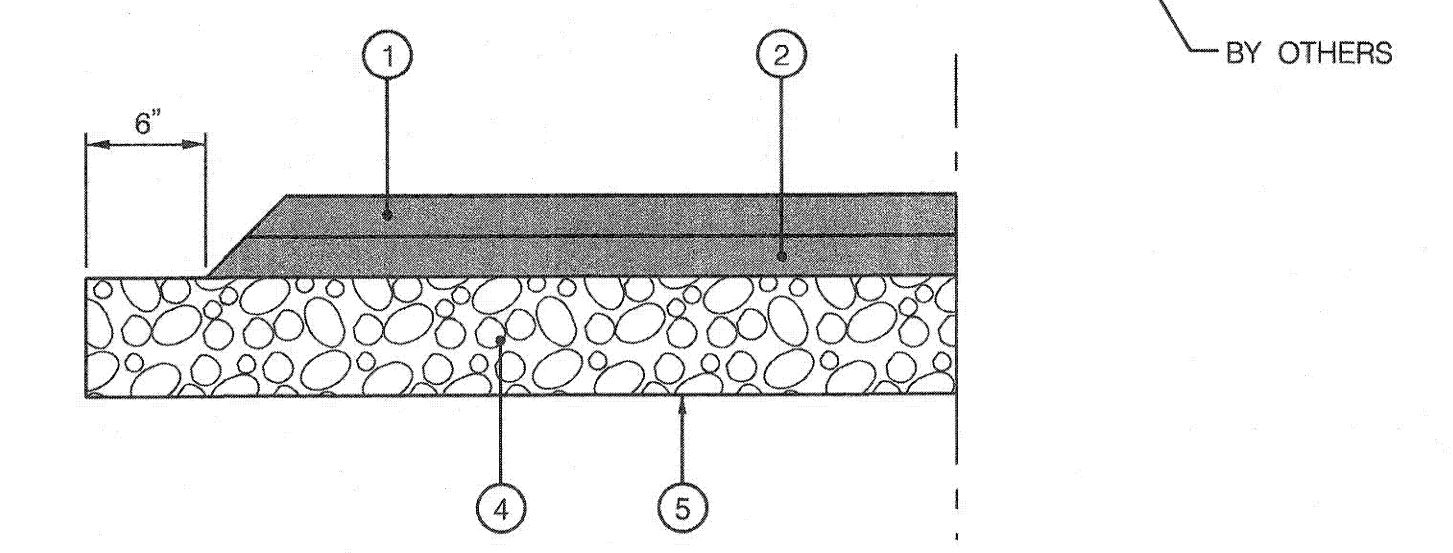
TYPICAL SECTION
STA. 100+22 TO STA. 101+10
SCALE: 1" = 5'



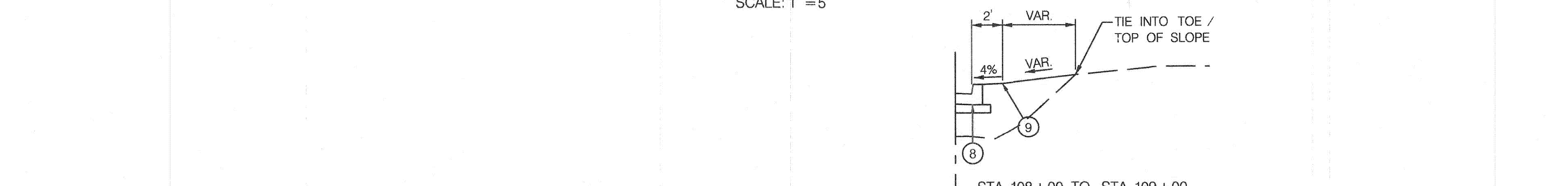
TYPICAL SECTION
STA. 109+75 TO STA. 112+07
SCALE: 1" = 5'



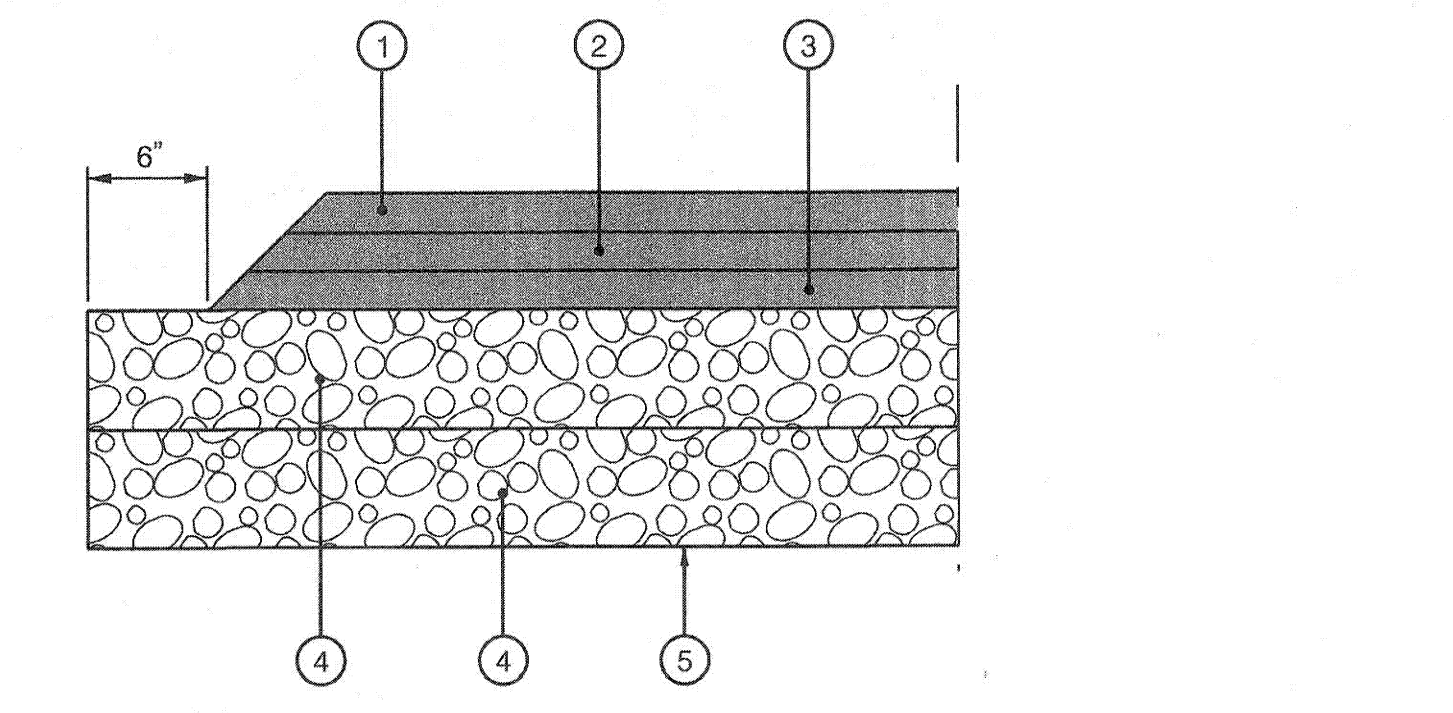
TYPICAL SECTION
STA. 101+10 TO STA. 104+25
SCALE: 1" = 5'



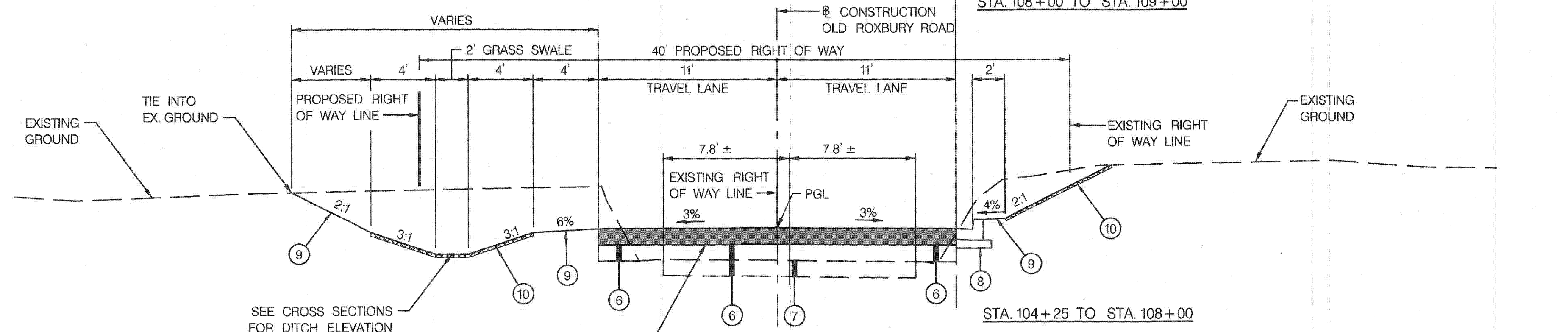
DRIVEWAY PAVING DETAIL
N.T.S.



TYPICAL SECTION
STA. 104+25 TO STA. 108+00
SCALE: 1" = 5'

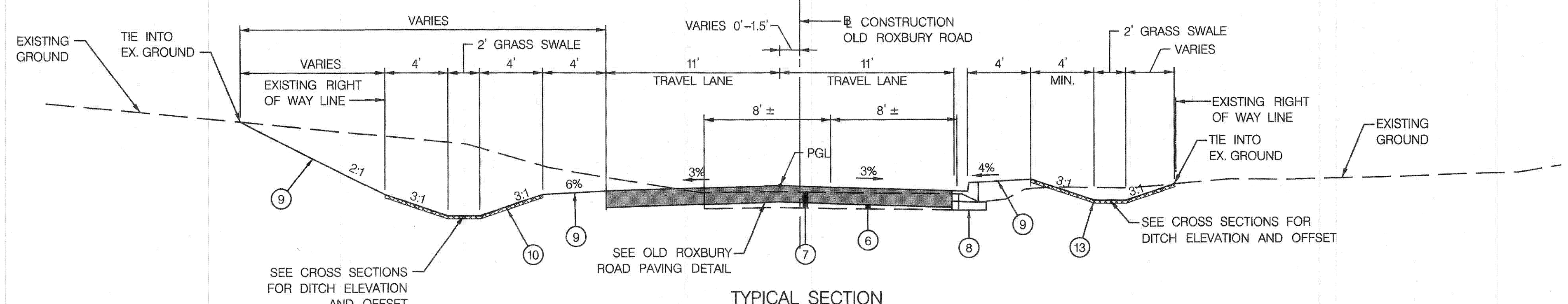


OLD ROXBURY ROAD PAVING DETAIL
N.T.S.



TYPICAL SECTION
STA. 104+25 TO STA. 109+00
SCALE: 1" = 5'

- 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



TYPICAL SECTION
STA. 109+00 TO STA. 109+75
SCALE: 1" = 5'

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."

- 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.

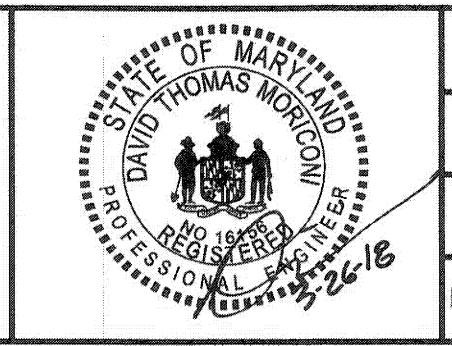
AS-BUILT
JUNE, 2019

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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

[Signature] 4/10/2018
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION 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

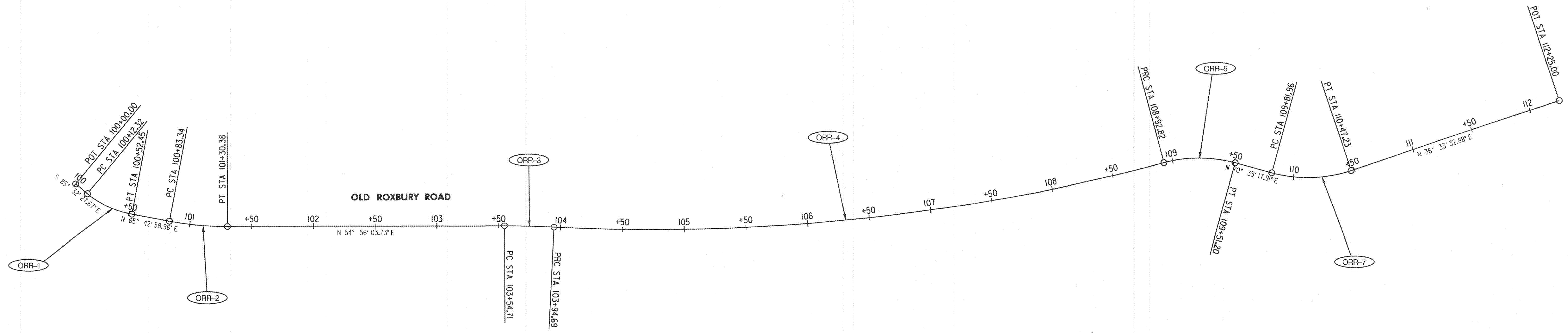
SCALE MAP NO. _____ BLOCK NO. _____

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+81.96	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

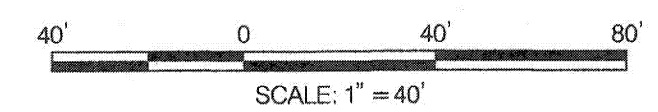
1. THE CONTRACTOR SHALL COORDINATE TIME OF CONSTRUCTION WITH THE PROPERTY OWNERS AND HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
2. CONSTRUCTION OF THE PROPOSED CURB AND GUTTER AND FULL DEPTH PAVEMENT SECTIONS SHALL BE PERFORMED UNDER A FLAGGING OPERATION AS PER MD SHA STD. 104.02-10.

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.

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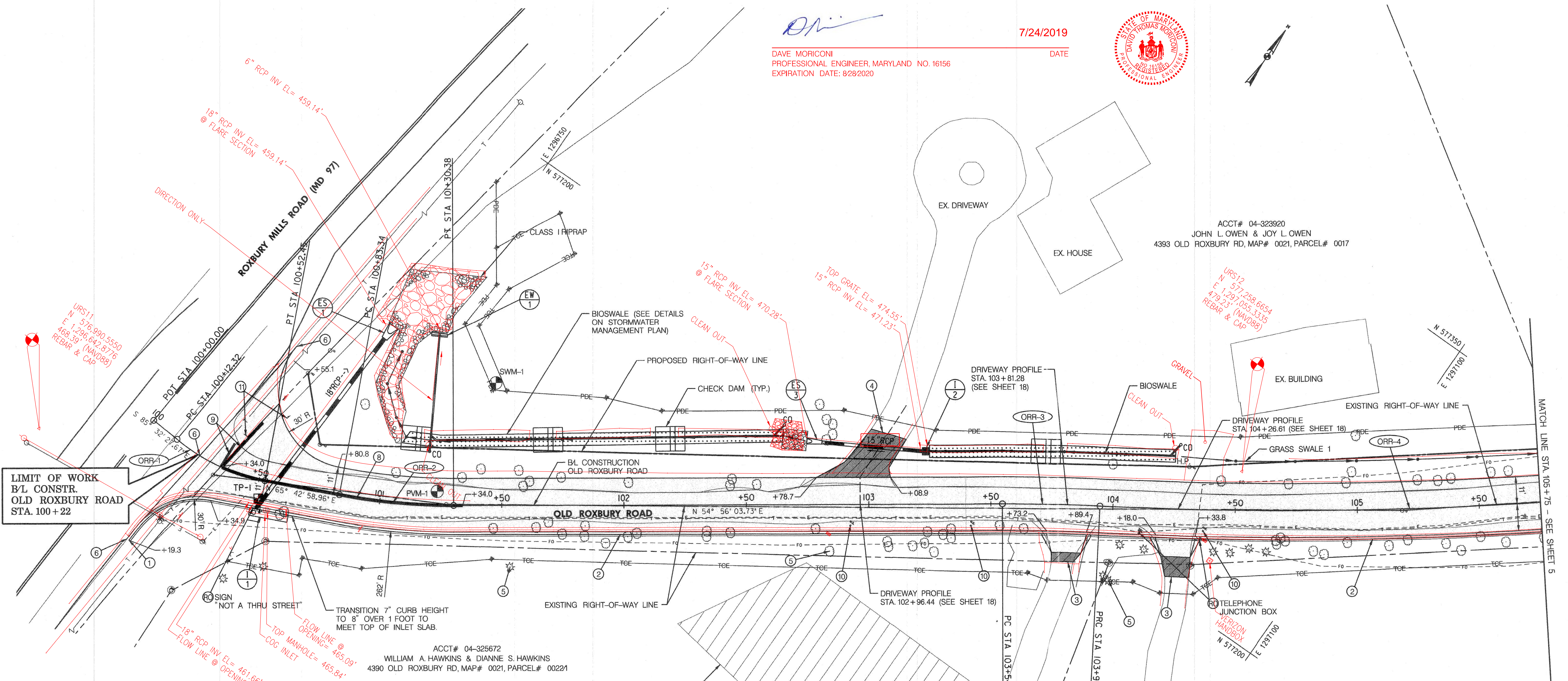
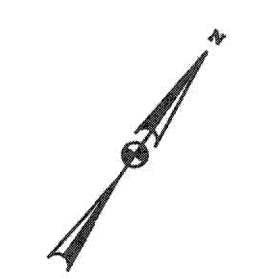
AS-BUILT
 JUNE, 2019



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS DATE: 4/11/18	PREPARED BY URS 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220	DAVID THOMAS MORFORD PROFESSIONAL ENGINEER LICENSE NO. 16156 EXPIRES 8/28/2018	DES: DMT DRN: DMT CHK: DTM DATE: 03/2018	GEOMETRY PLAN	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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AS BUILT CERTIFICATION
 THIS BLOCK IS TO CERTIFY THAT THIS AS-BUILT PLAN WAS PREPARED BY ME OR THAT I WAS IN RESPONSIBLE CHARGE OVER IT'S PREPARATION AND THE SURVEYING WORK REFLECTED IN IT. THIS PLAN IS IN COMPLIANCE WITH COMAR SECTION 09.13.06.12 OF THE MINIMUM STANDARDS OF PRACTICE AS NOW ADOPTED BY THE BOARD FOR PROFESSIONAL LAND SURVEYORS. ALSO, THIS IS TO CERTIFY THAT THE ELEVATIONS AND LOCATIONS OF IMPROVEMENTS ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND THAT THE PRINCIPAL METES, BOUNDS, LINES, AND LEVELS OF THE PROJECT ARE ACCURATELY POSITIONED AS SHOWN ON THIS SURVEY

DM
 7/24/2019 DATE
 DAVE MORICONI
 PROFESSIONAL ENGINEER, MARYLAND NO. 16156
 EXPIRATION DATE: 8/28/2020



LIMIT OF WORK
 B/L CONSTR.
 OLD ROXBURY ROAD
 STA. 100+22

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

URS12
 N 577,258.6654
 E 1,297,055.3335
 478.23' (NAD83)
 REBAR & CAP

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

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

- 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
 - 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

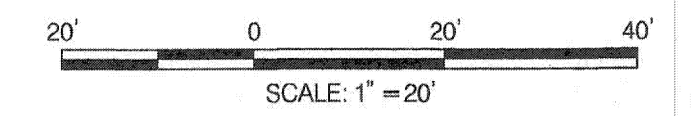
NO.	UTILITY	NORTHING	EASTING	SURFACE ELEVATION	REMARKS
TP-1	*TELEPHONE /ELECTRIC	577,020.0319	1,296,731.0361	465.72	NOT FOUND

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.

AS-BUILT
 JUNE, 2019



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

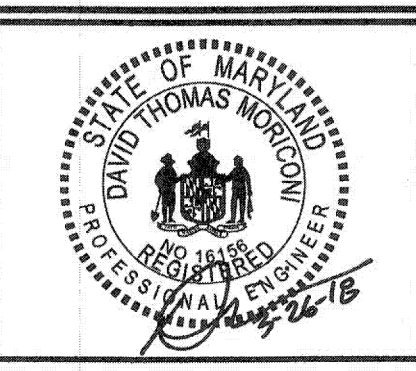
John Decker 4/19/18
 DIRECTOR OF PUBLIC WORKS DATE

Thomas Butler 4/19/18
 CHIEF, BUREAU OF ENGINEERING DATE

Michael 4/19/18
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

Michael 4/19/18
 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	DTM	AS-BUILT SURVEY	06/2019
BY NO.	1	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

AS BUILT CERTIFICATION
 THIS BLOCK IS TO CERTIFY THAT THIS AS-BUILT PLAN WAS PREPARED BY ME OR THAT I WAS IN RESPONSIBLE CHARGE OVER ITS PREPARATION AND THE SURVEYING WORK REFLECTED IN IT. THIS PLAN IS IN COMPLIANCE WITH COMAR SECTION 09.13.06.12 OF THE MINIMUM STANDARDS OF PRACTICE AS NOW ADOPTED BY THE BOARD FOR PROFESSIONAL LAND SURVEYORS. ALSO, THIS IS TO CERTIFY THAT THE ELEVATIONS AND LOCATIONS OF IMPROVEMENTS ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND THAT THE PRINCIPAL METES, BOUNDS, LINES, AND LEVELS OF THE PROJECT ARE ACCURATELY POSITIONED AS SHOWN ON THIS SURVEY

DM

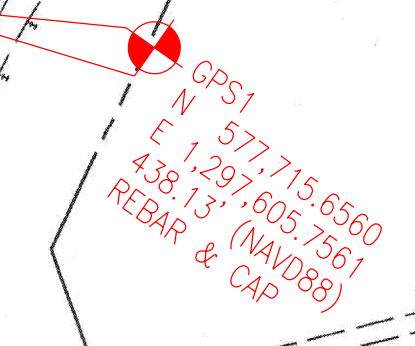
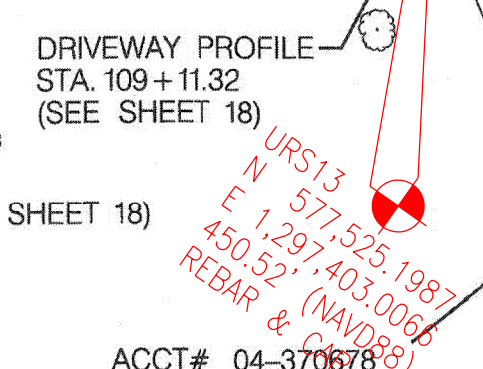
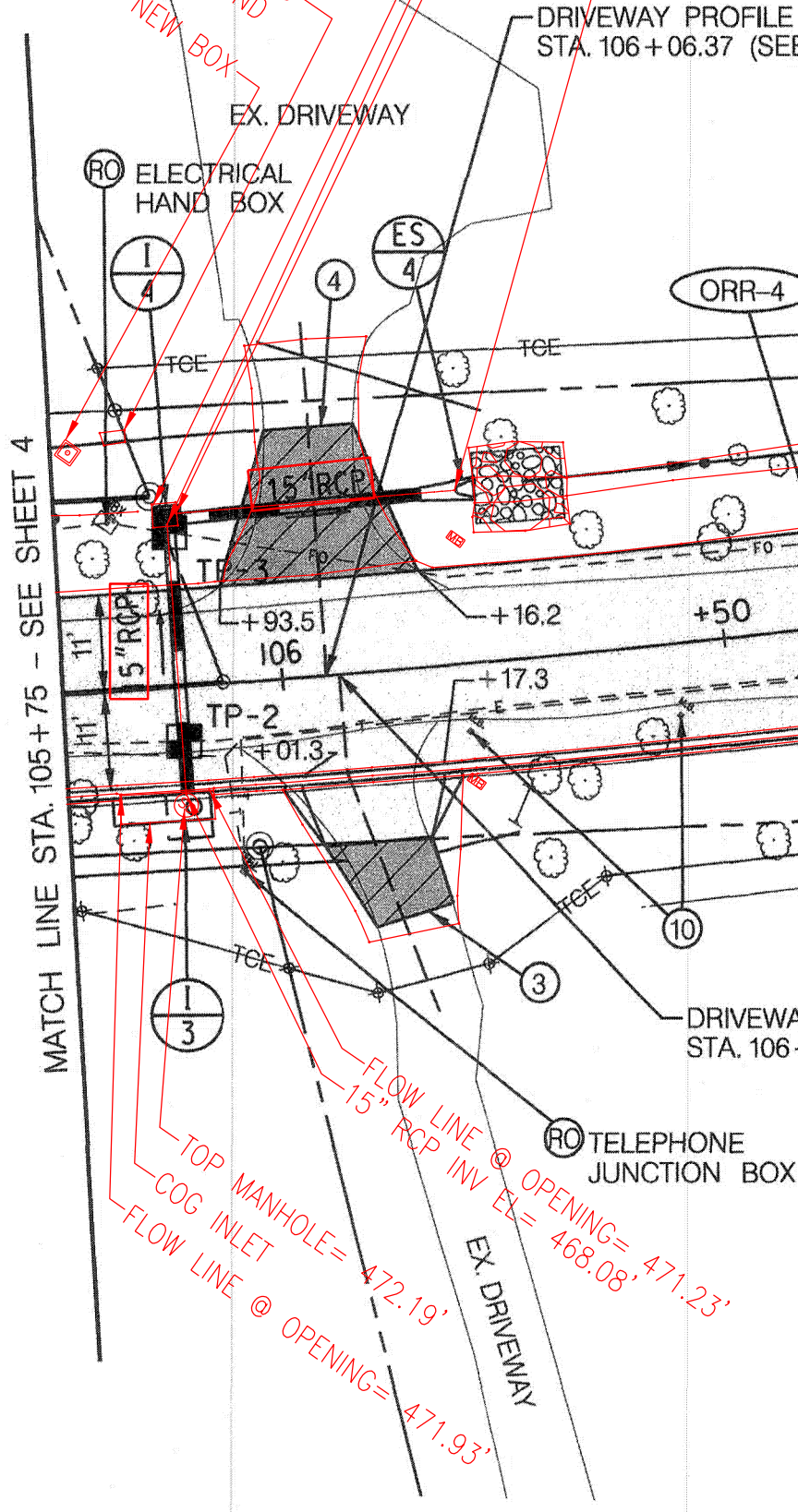
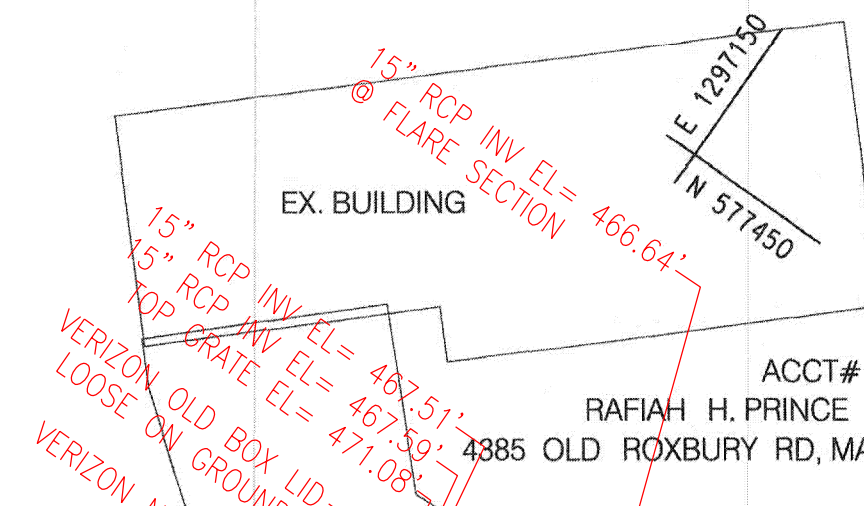
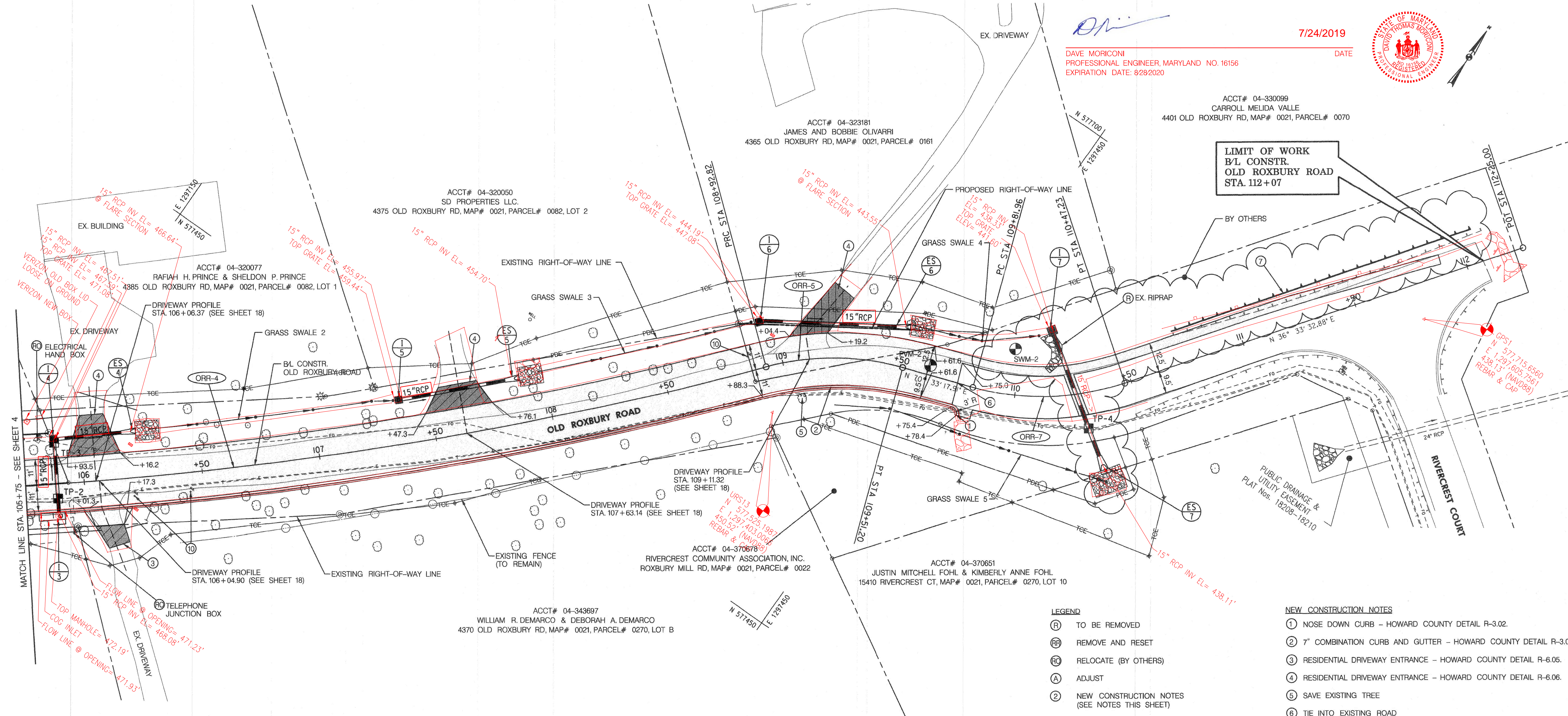
7/24/2019



DAVE MORICONI
 PROFESSIONAL ENGINEER, MARYLAND NO. 16156
 EXPIRATION DATE: 8/28/2020

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

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



LEGEND

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

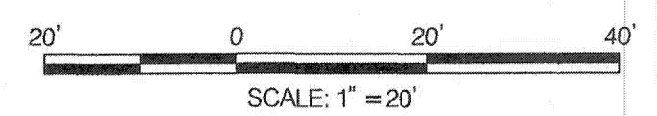
NEW CONSTRUCTION NOTES

- 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.

AS-BUILT
 JUNE, 2019



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."

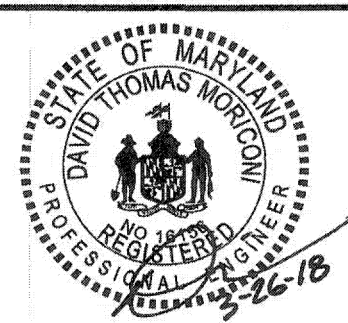
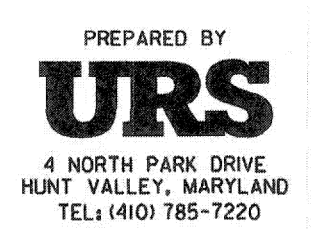
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John A. ... 4/11/18
 DIRECTOR OF PUBLIC WORKS DATE

Thomas E. ... 4/11/18
 CHIEF, BUREAU OF ENGINEERING DATE

Red ... 4/11/18
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

Thomas ... 4/11/2018
 CHIEF, BUREAU OF HIGHWAYS DATE



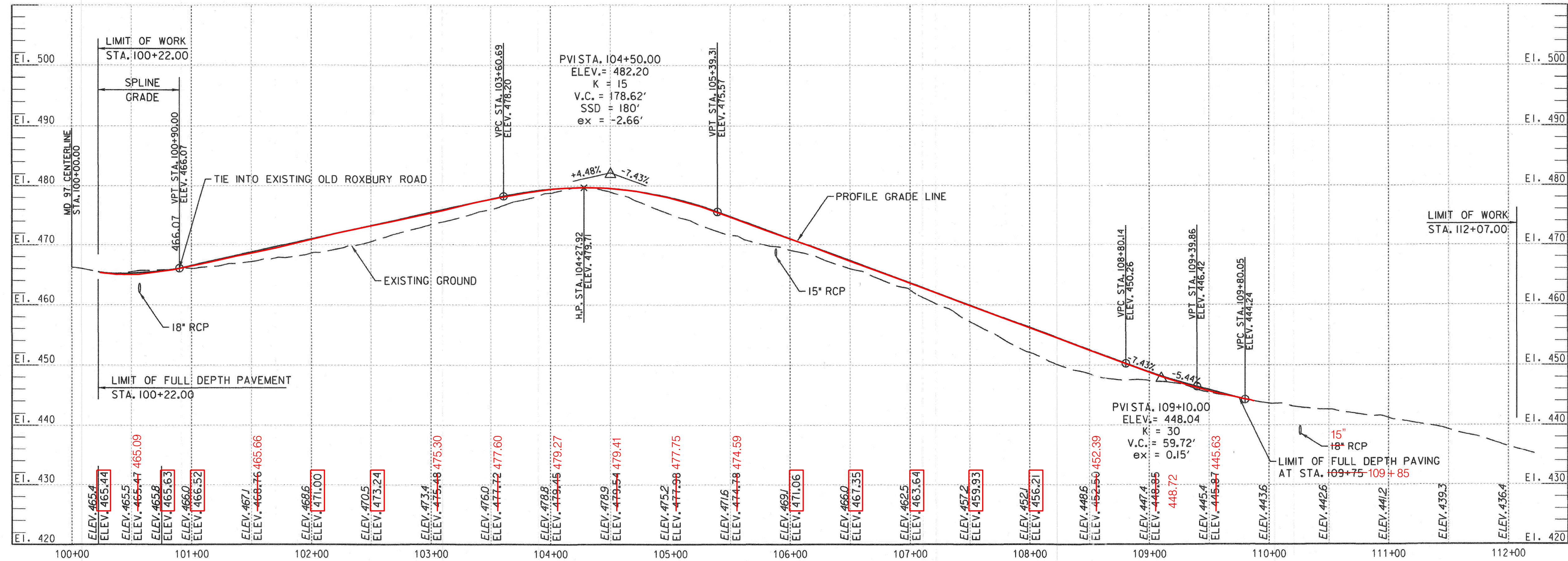
DES: DMT			
DRN: DMT			
CHK: DTM			
DATE: 03/2018	DTM	AS-BUILT SURVEY	06/2019
BY NO.		REVISION	DATE

ROADWAY PLAN - 2

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

SCALE
 1" = 20'
 SHEET
 5 OF 19

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND



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

LEGEND

ELEV. 465.63 AS BUILT ELEVATION CONFIRMED
+/- 0.1 OF PROPOSED ELEVATION

AS BUILT CERTIFICATION

THIS BLOCK IS TO CERTIFY THAT THIS AS-BUILT PLAN WAS PREPARED BY ME OR THAT I WAS IN RESPONSIBLE CHARGE OVER ITS PREPARATION AND THE SURVEYING WORK REFLECTED IN IT. THIS PLAN IS IN COMPLIANCE WITH COMAR SECTION 09.13.06.12 OF THE MINIMUM STANDARDS OF PRACTICE AS NOW ADOPTED BY THE BOARD FOR PROFESSIONAL LAND SURVEYORS. ALSO, THIS IS TO CERTIFY THAT THE ELEVATIONS AND LOCATIONS OF IMPROVEMENTS ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND THAT THE PRINCIPAL METES, BOUNDS, LINES, AND LEVELS OF THE PROJECT ARE ACCURATELY POSITIONED AS SHOWN ON THIS SURVEY

DM
DAVE MORICONI
PROFESSIONAL ENGINEER, MARYLAND NO. 16156
EXPIRATION DATE: 8/28/2020
DATE: 7/24/2019



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: 8/28/2020"

AS-BUILT
JUNE, 2019

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *4/1/16*
Chief, Transportation and Special Projects Division: *4/9/16*

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

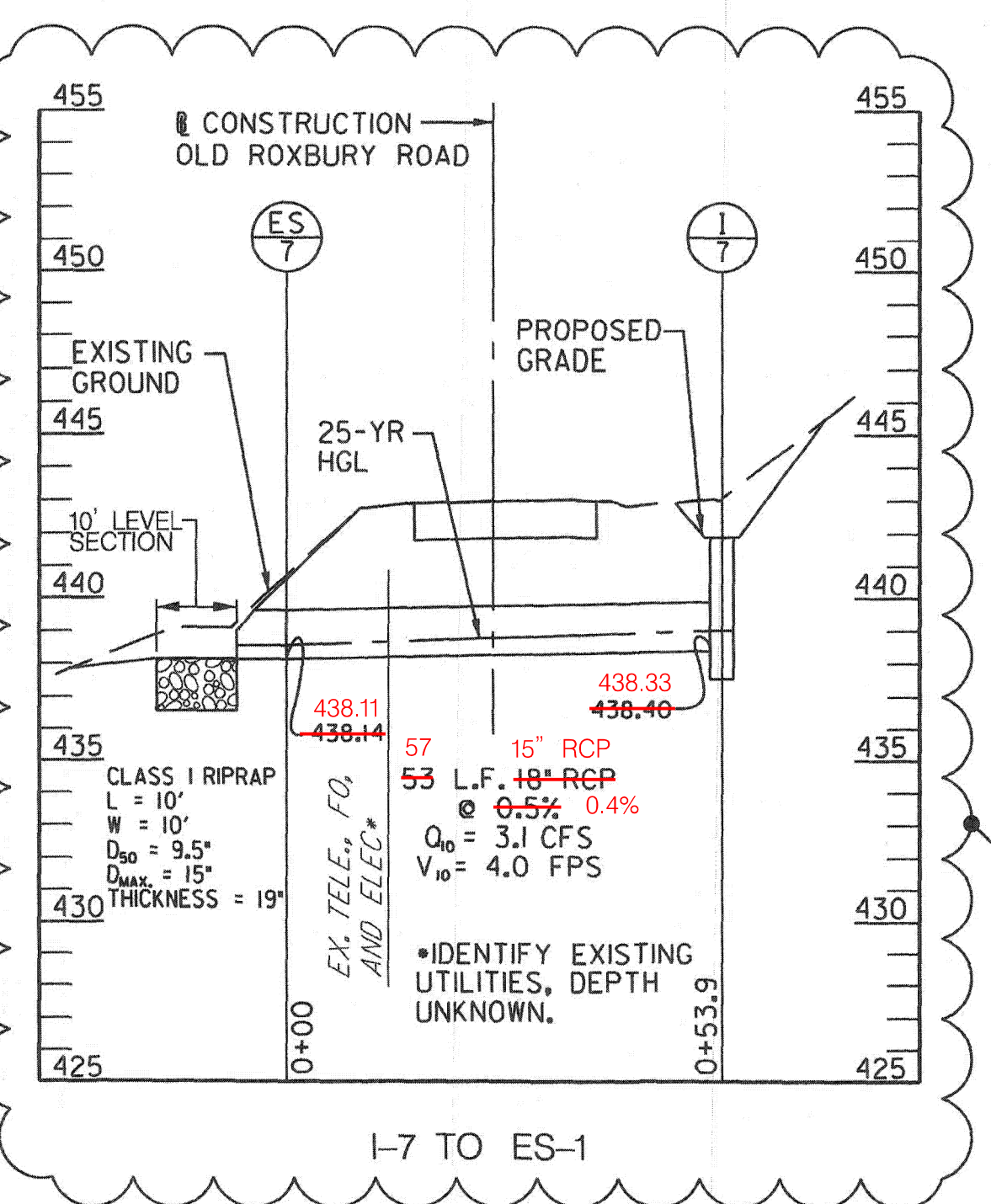
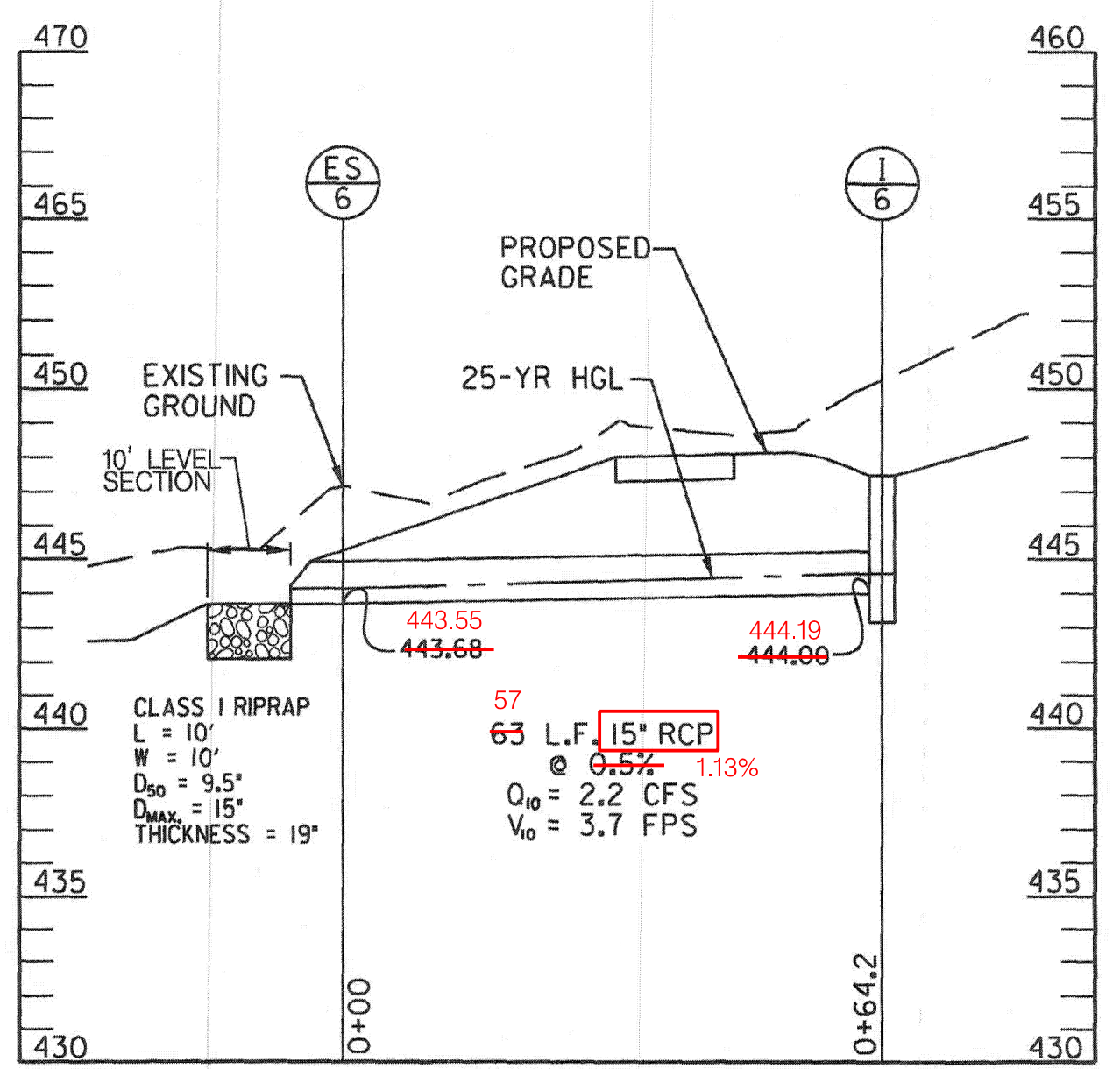
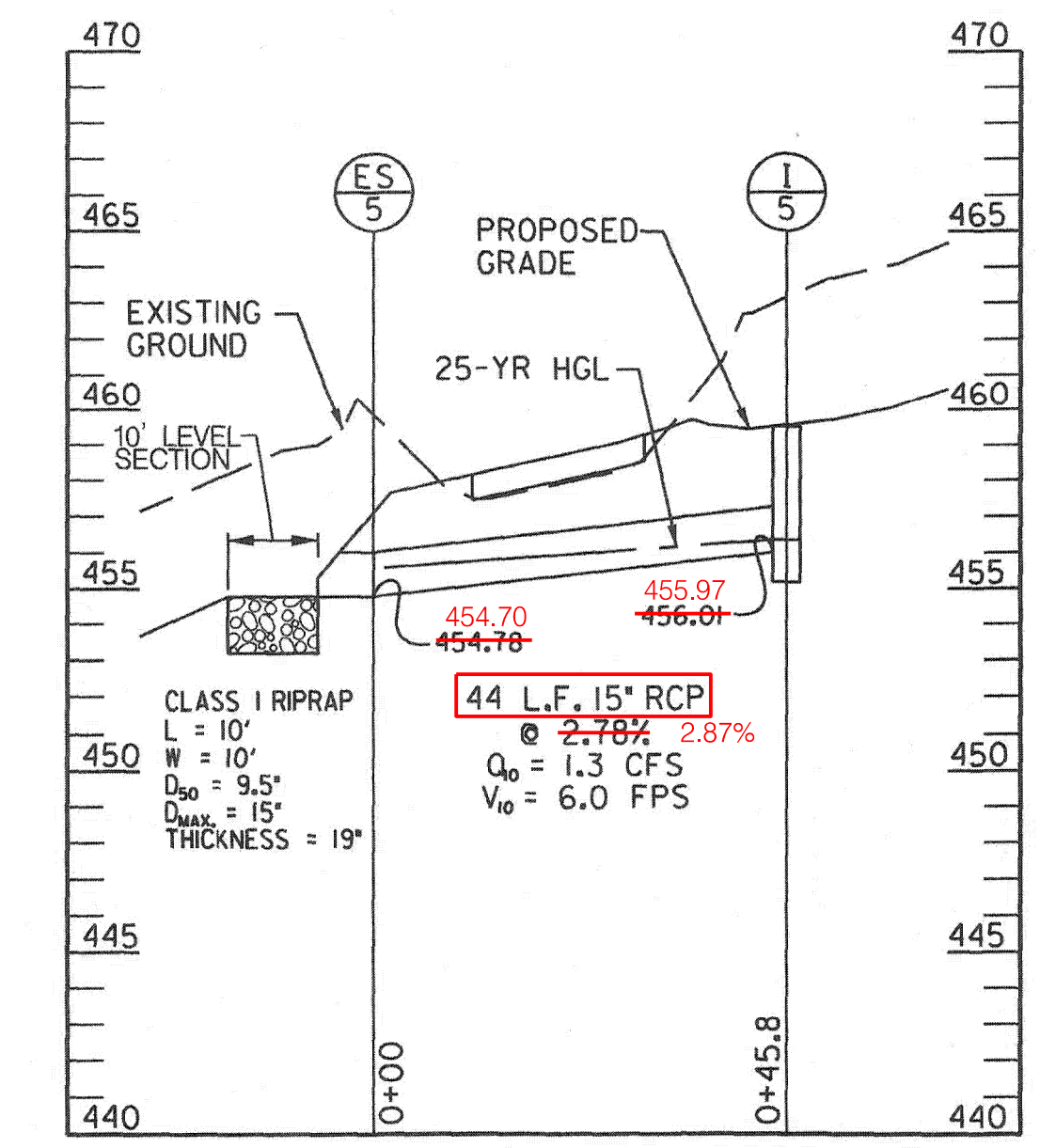
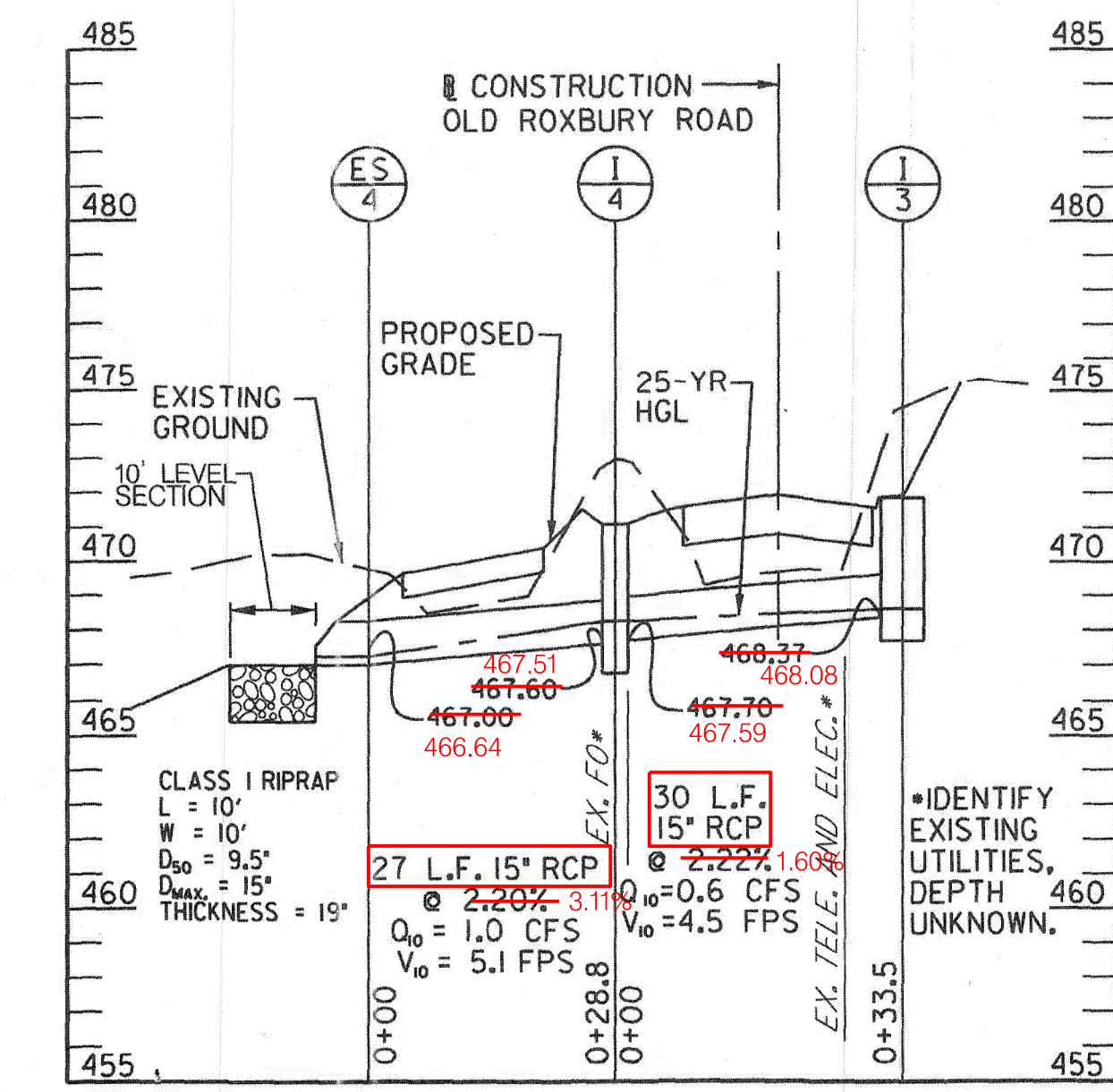
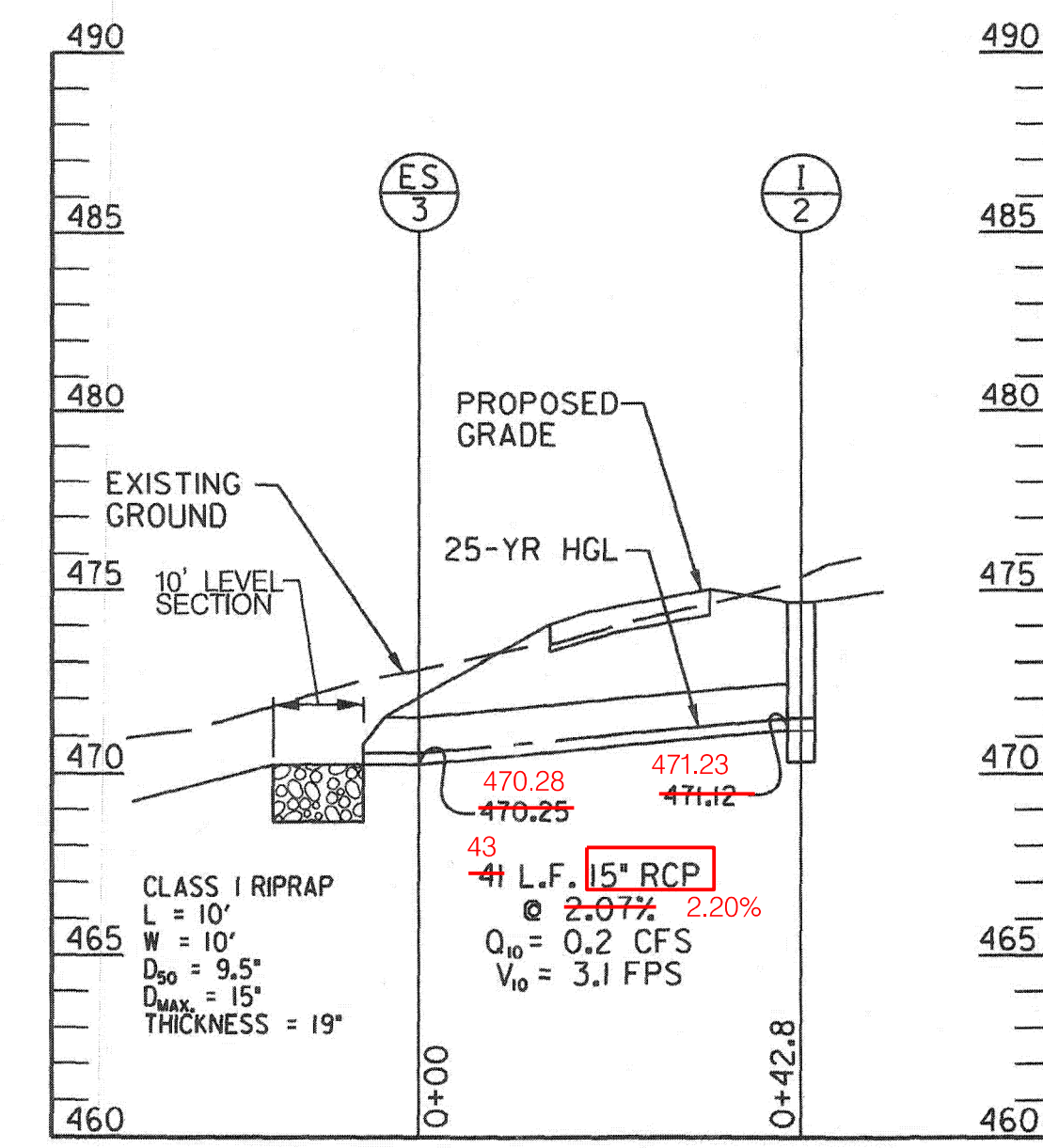
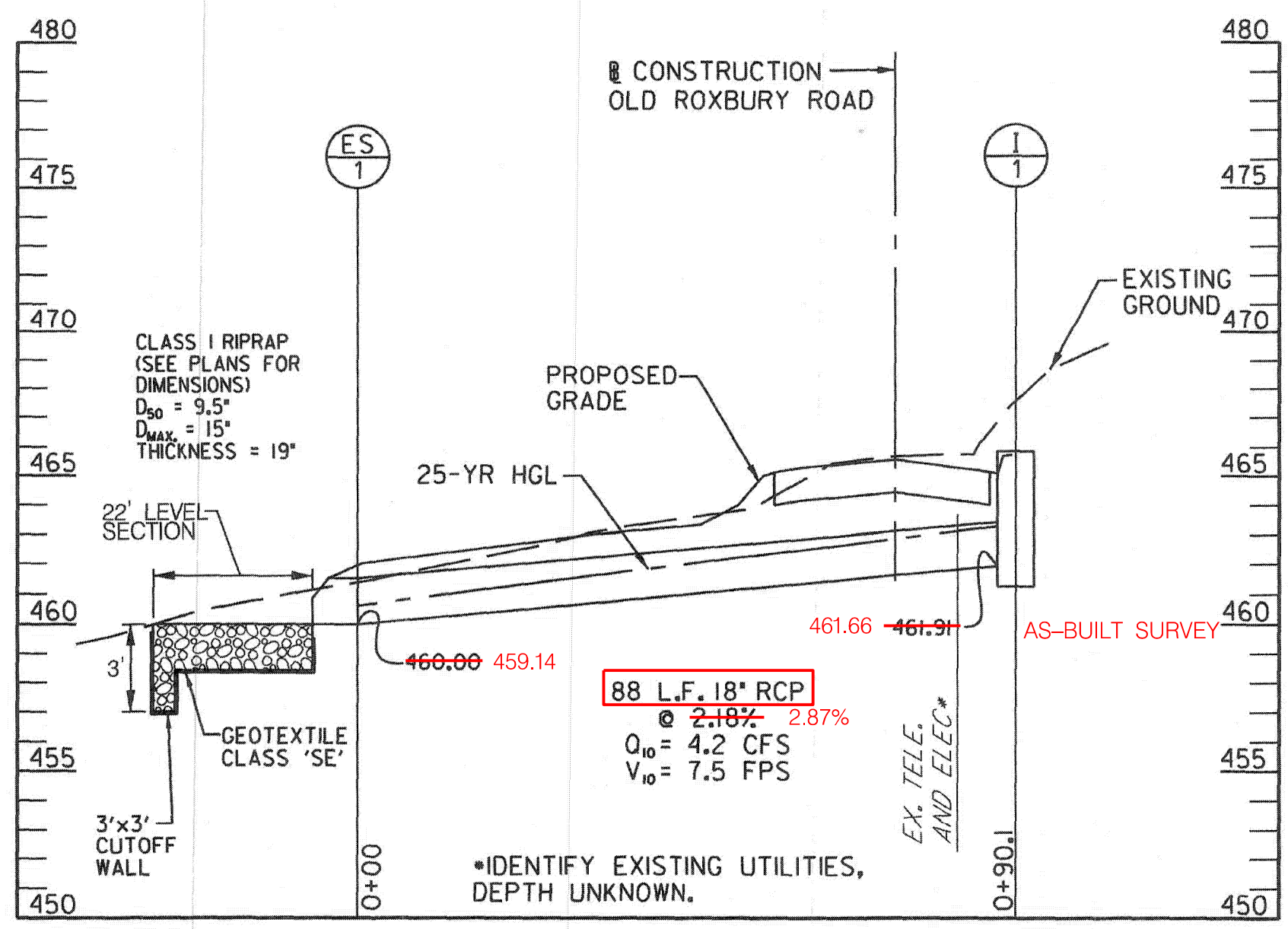


DES:	DMT			
DRN:	DMT			
CHK:	DTM			
DATE:	03/2018	DTM	<input checked="" type="checkbox"/>	
BY:	NO.	AS-BUILT SURVEY	REVISION	DATE
				06/2019

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



ES-3 TO I-2

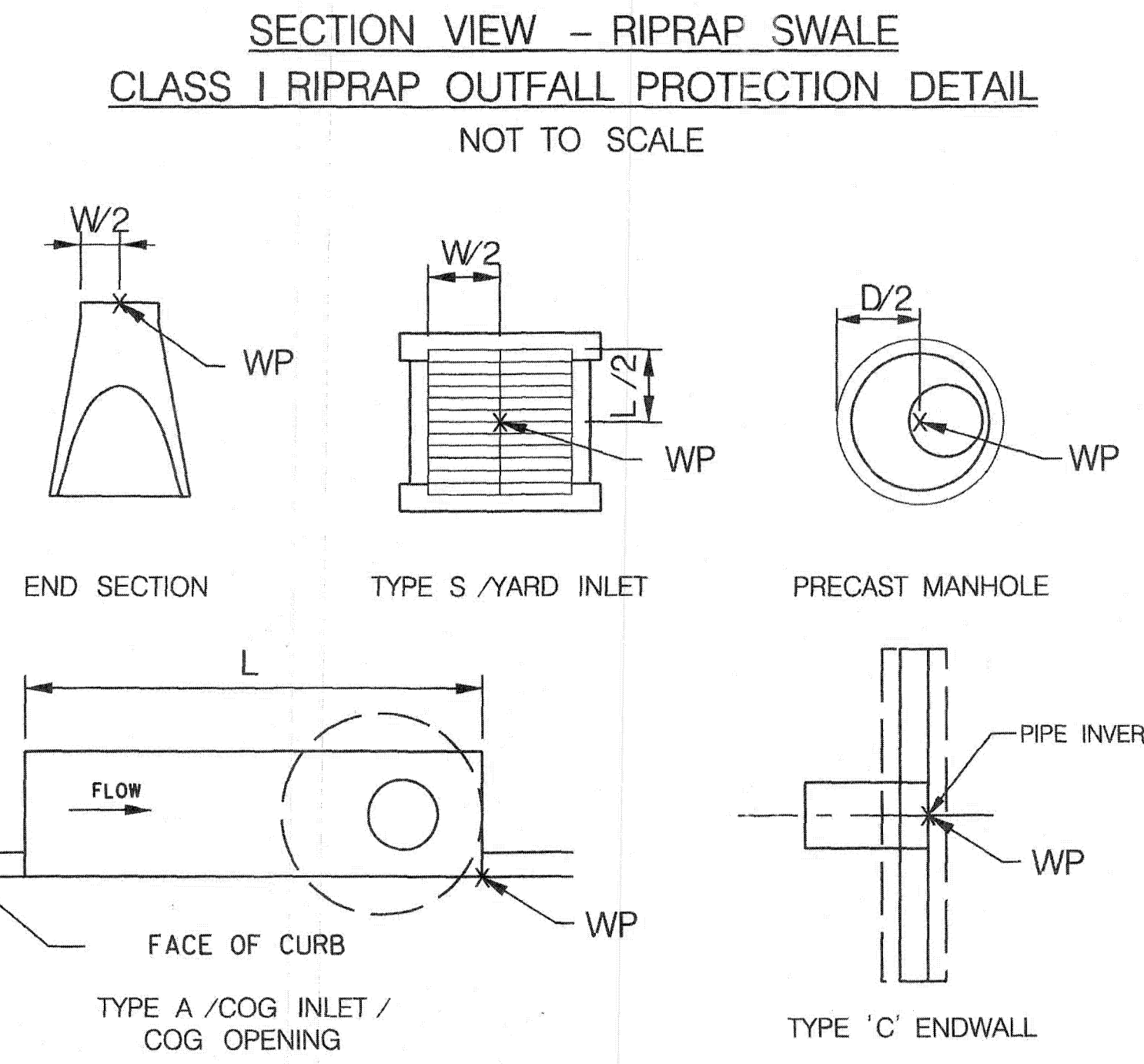
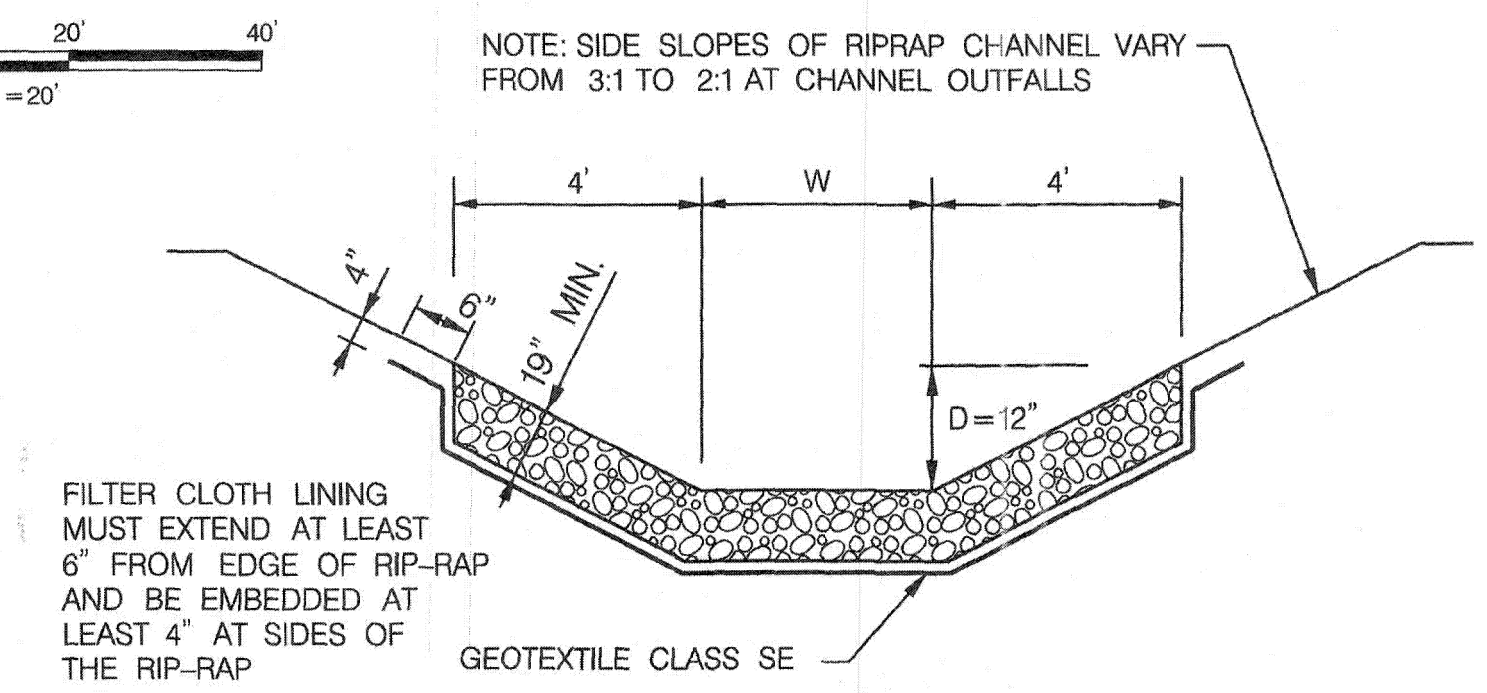
ES-4 TO I-3

ES-5 TO I-5

I-1 TO ES-1

ES-6 TO I-6

I-7 TO ES-1

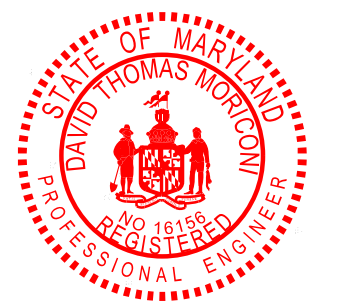


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DM

DAVE MORICONI
 PROFESSIONAL ENGINEER, MARYLAND NO. 16156
 EXPIRATION DATE: 8/28/2020

7/24/2019



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	471.12	
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' LT.	CONCRETE END SECTION	D-5.51	---	---	444.25	
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: 8/28/2018."

NOTES:
 1. 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.

AS-BUILT
 JUNE, 2019

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *John A. ...* 4/1/16
 Chief, Transportation and Special Projects Division: *...* 4/19/16

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

Chief, Bureau of Engineering: *Thomas S. ...* 4/1/18
 Chief, Bureau of Highways: *Maurice ...* 4/10/2018

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

BY: *DMT*

DATE: 03/2018

AS-BUILT SURVEY
 REVISION: 06/2019

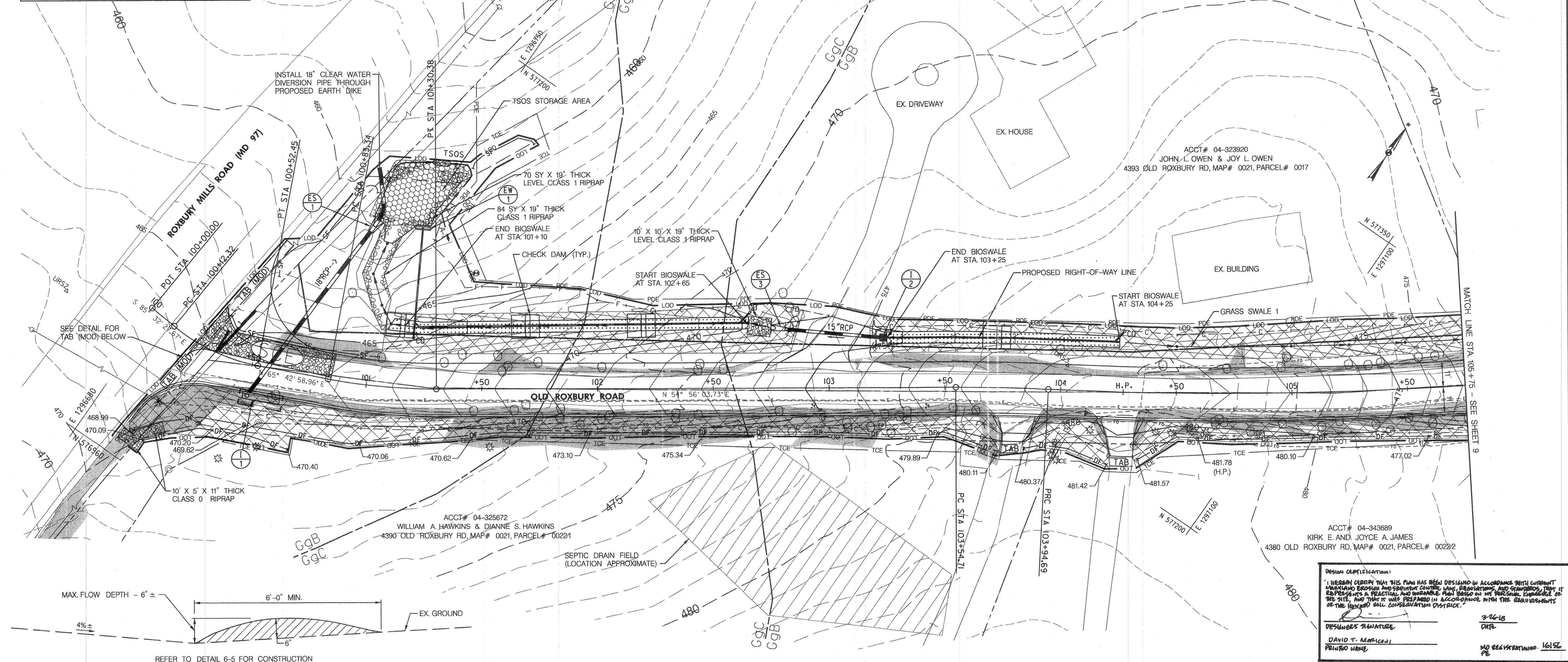
SCALE MAP NO. _____ BLOCK NO. _____

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

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

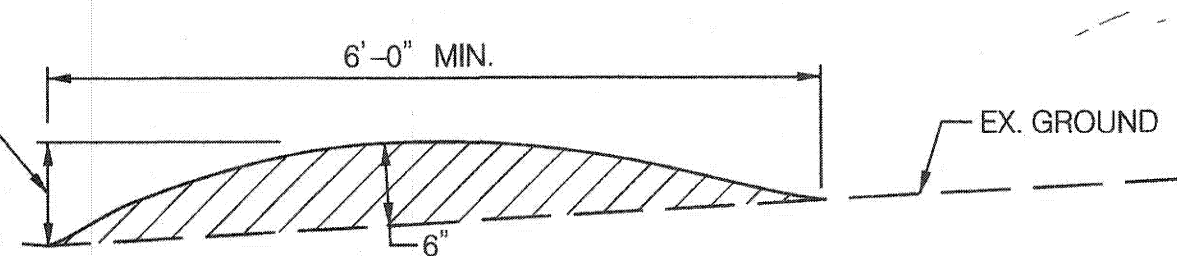
SCALE: AS SHOWN
 SHEET 7 OF 19

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

REFER TO DETAIL 6-5 FOR CONSTRUCTION SPECIFICATIONS. BERM DIMENSIONS HAVE BEEN MODIFIED.



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 HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WORK DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN INCLUDING OPERATING AND MAINTAINING CONTROLS AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AS A WORKER IN THE DEPARTMENT OF THE ENVIRONMENT (UNDER APPROVED TRAINING PROGRAM) FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO DEMONSTRATING THE PROJECT. I CERTIFY THAT I AM THE DESIGNER OF THIS PROJECT AND I AM THE EVALUATOR OF HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDOT."
 [Signature]
 OWNER'S DEVELOPER'S SIGNATURE
 [Signature]
 PRINTED NAME & TITLE
 DATE: 4/17/18

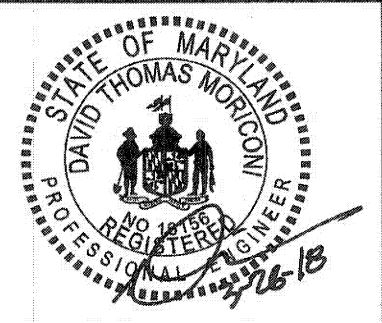
PROFESSIONAL CERTIFICATION
 "I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16156. EXPIRATION DATE: 8/28/2018."
 [Signature]
 DATE: 4/17/18

AS-BUILT
JUNE, 2019

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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 [Signature]
 DATE: 4/17/18
 [Signature]
 DATE: 4/17/18
 [Signature]
 DATE: 4/17/18

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



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

EROSION & SEDIMENT CONTROL PLAN 1

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
 - SOIL STABILIZATION MATTING (SSM) (SEE TYPICALS FOR TYPE)
 - STABILIZED CONSTRUCTION ENTRANCE (SCE)
 - TCE — TEMPORARY CONSTRUCTION EASEMENT
 - PDE — PERPETUAL DRAINAGE EASEMENT
 - STEEP SLOPES
 - 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 LAW, REGULATIONS AND STANDARDS, THAT IT REPRESENTS A REASONABLE AND DURABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REGULATIONS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature]
 DATE: 3/26/18
 DESIGNER'S SIGNATURE
 DAVID T. MARDIANI
 PRINTED NAME
 NO. 086497870000 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 PROJECT WILL HAVE A CERTIFICATE OF TRAINING AS A MINIMUM AND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT FROM CONSTRUCTION. I CERTIFY THAT THE PLAN IS BEING USED FOR THE PROJECT AS SHOWN ON THIS CERTIFICATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

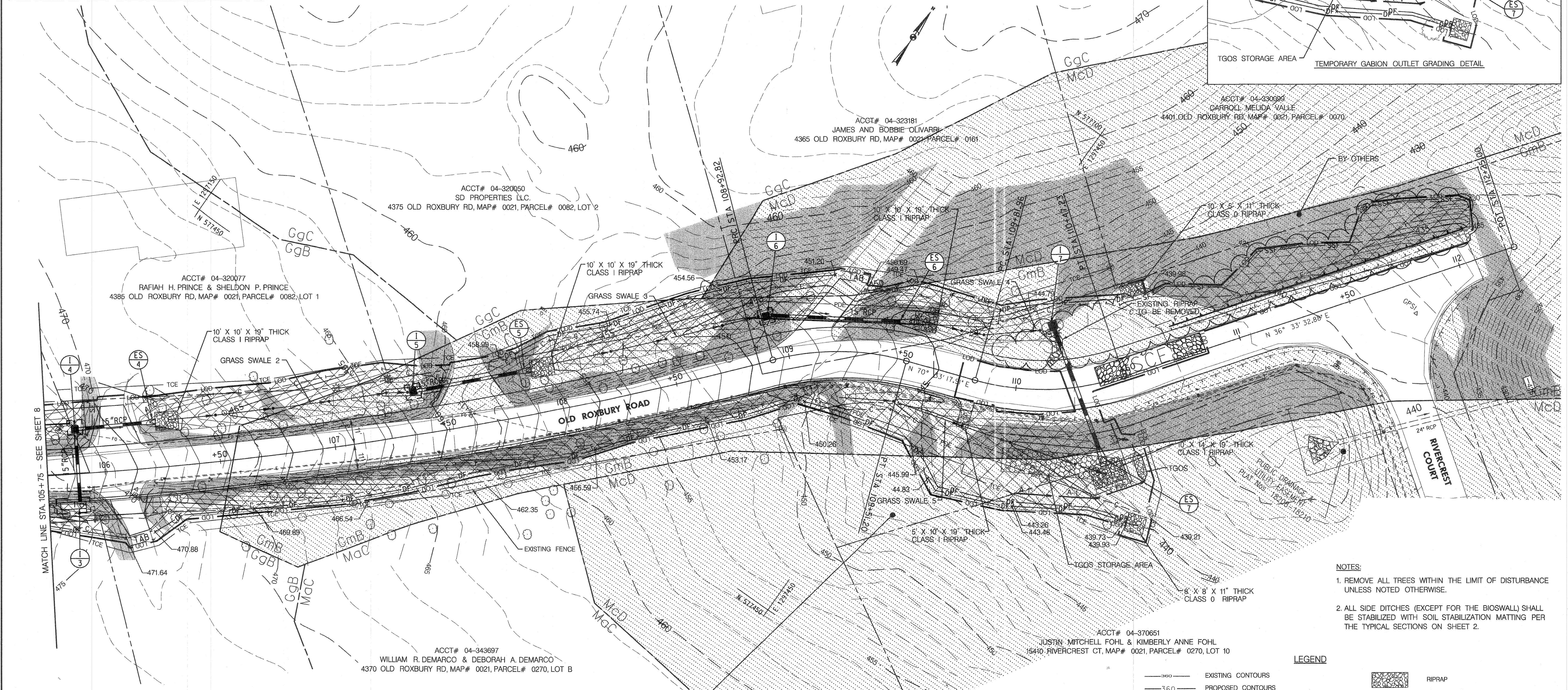
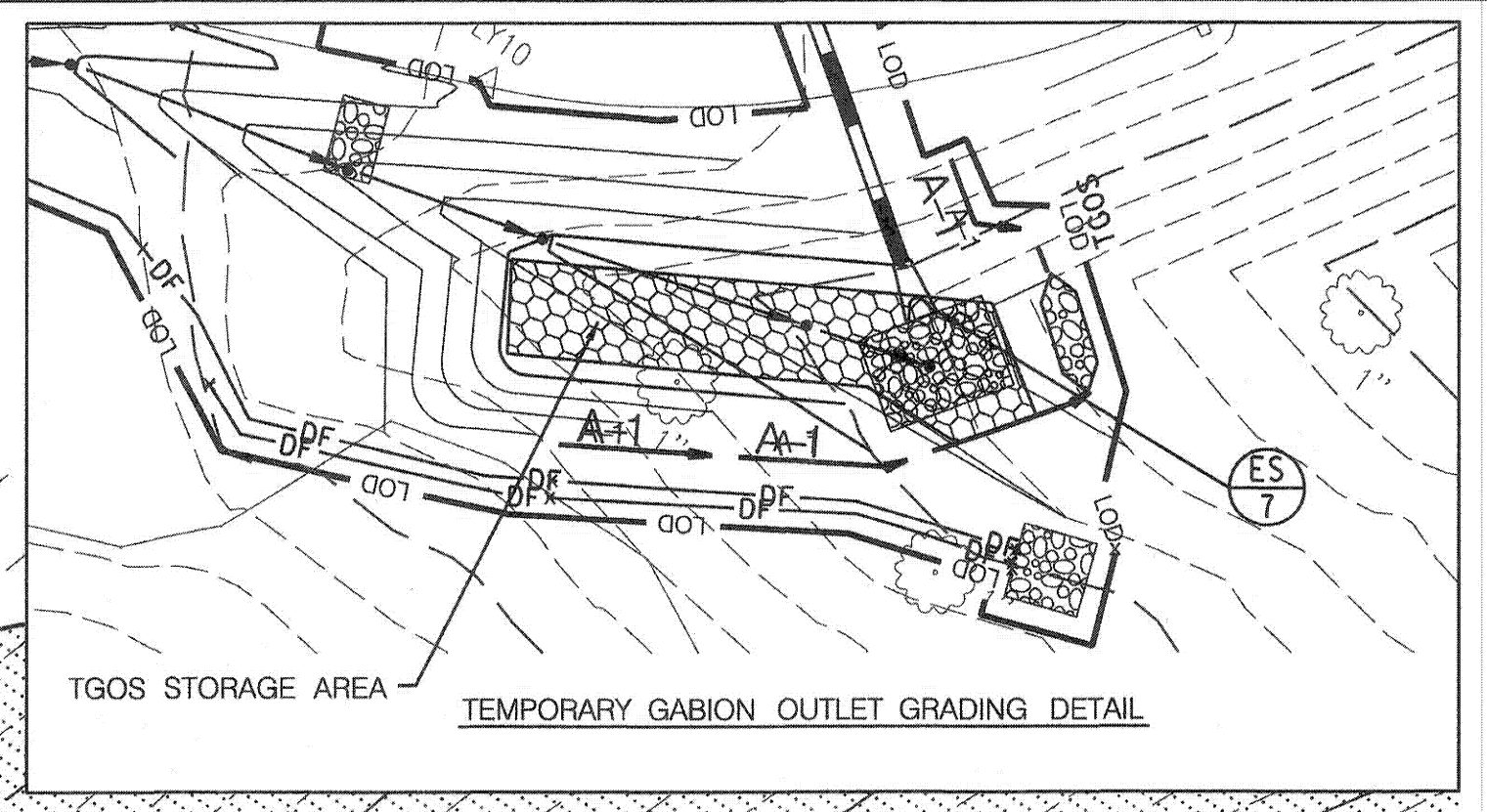
OWNER'S/DEVELOPER'S SIGNATURE _____ DATE _____
 PRINTED NAME & TITLE _____

DESIGN CERTIFICATION:
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND DESIGN AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PROFESSIONAL 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. MADRIGALI NO REGISTRATION IN ILIEX
 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

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

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.

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

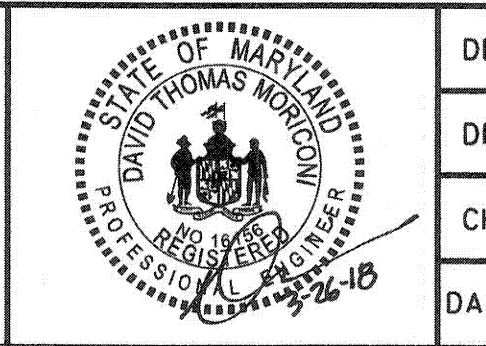
AS-BUILT
 JUNE, 2019

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 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.

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...

2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
i. Soil pH between 6.0 and 7.0.
ii. Soluble salts less than 500 parts per million (ppm).

B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth...

C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more...

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...

OWNER'S/DEVELOPER'S SIGNATURE: [Signature]
DATE: 4/19/18

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS: [Signature]
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION: [Signature]

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

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.

A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to testing by a recognized seed laboratory...

Table: Temporary Seeding Summary. Columns: No., Species, Application Rate (lb/acre), Seeding Date, Seeding Depth, Fertilizer Rate (lb/acre), Lime Rate.

2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1...

B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color...

2. Application
a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches...

DESIGN CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS...

DESIGNER'S SIGNATURE: [Signature]
DATE: 3/26/18
DAVID T. MORICONI
PRINTED NAME

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...

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

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.

SEQUENCE OF CONSTRUCTION

THE FOLLOWING SEQUENCE OF CONSTRUCTION DESCRIBES, IN PART, THE STEPS REQUIRED TO COMPLETE THE PROPOSED WORK. CONTRACTOR IS RESPONSIBLE FOR DETERMINING INTERIM SEQUENCE OF CONSTRUCTION MEANS, METHODS, MATERIALS, LABOR AND/OR EQUIPMENT NECESSARY TO SATISFACTORILY CONSTRUCT THE FEATURES AS SHOWN ON THE PLANSET...

- 1. WORK TO BE PERFORMED BY THE RIVERCREST DEVELOPER PRIOR TO J-4239 IS AS FOLLOWS:
a. CONSTRUCTION OF THE POND WITHIN THE RIVERCREST DEVELOPMENT (F-04-57) IS COMPLETE.
b. CONSTRUCT ROAD WIDENING (STA 109+75 TO 111+90 LT).

- 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 THE PLANS: SILT FENCE (SF), SUPER SILT FENCE (SSF), DIVERSION FENCE (DF), TEMPORARY ASPHALT BERM (TAB) AND MODIFIED TAB ALONG MD97 (6 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.

EROSION AND SEDIMENT CONTROL DETAILS AND NOTES - 1
SCALE MAP NO. BLOCK NO.
DATE REVISION

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.

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

- 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID, THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT...

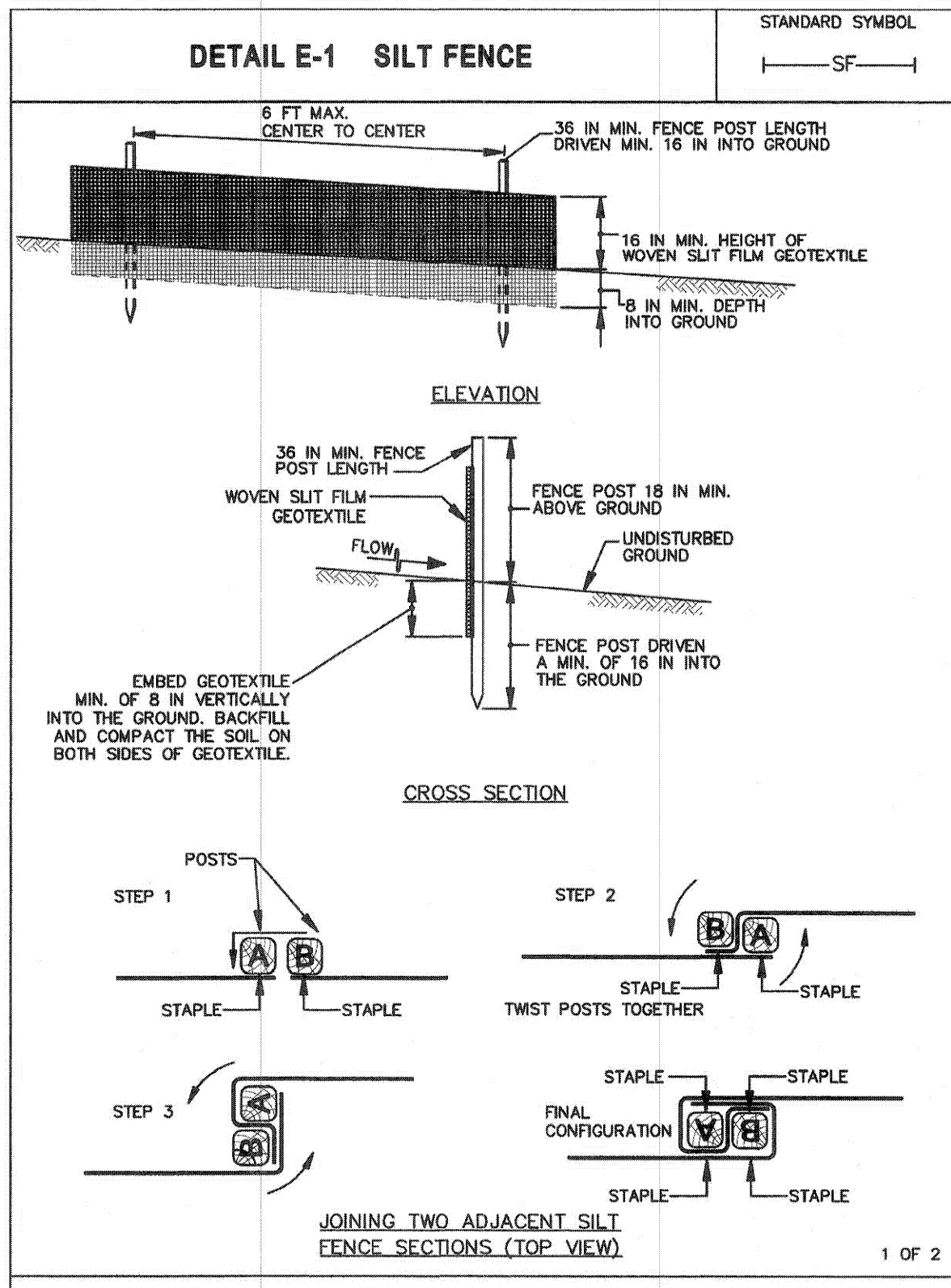
- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

- 11. 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 AREA 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.

- 12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

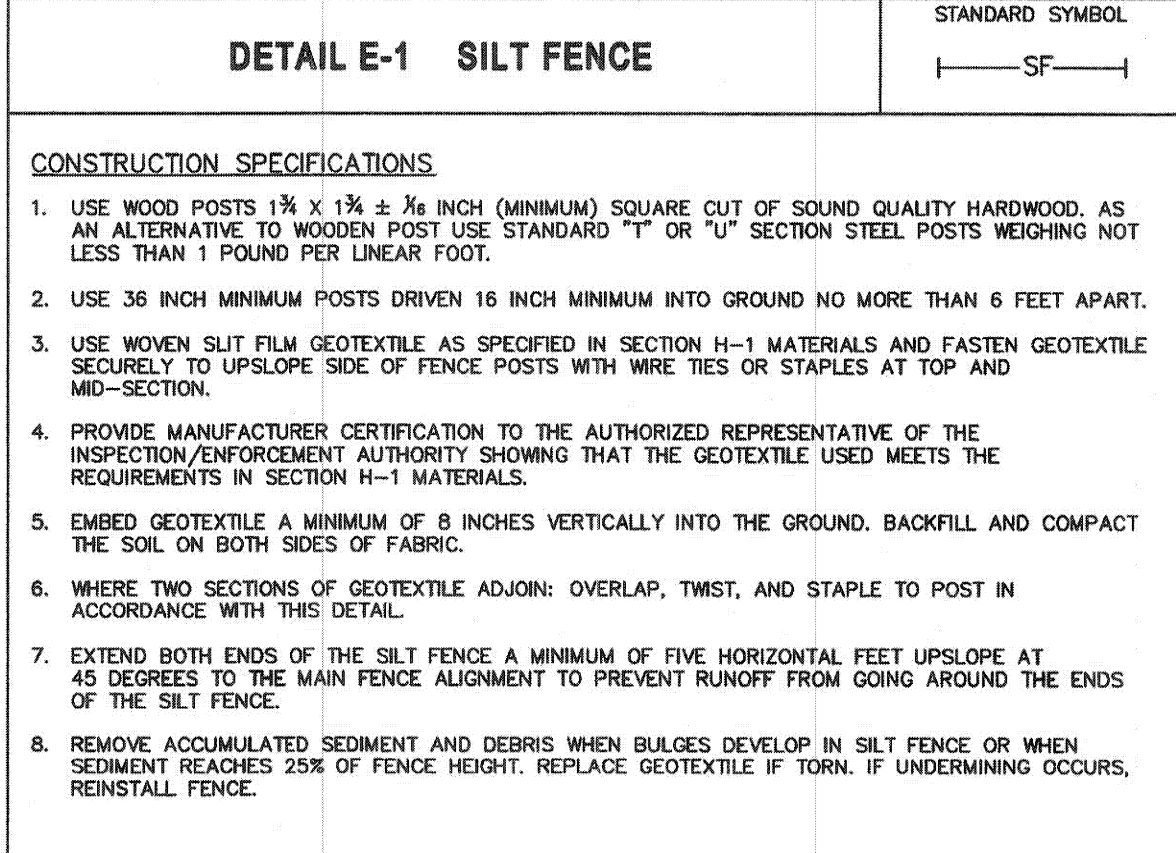
- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
USE I AND II: MARCH 1 - JUNE 15
USE III: OCTOBER 1 - APRIL 30
USE IV: MARCH 1 - MAY 31

AS-BUILT
JUNE, 2019
OLD ROXBURY ROAD
ROADWAY WIDENING
MD 97 TO WEST OF RIVERCREST COURT
5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND



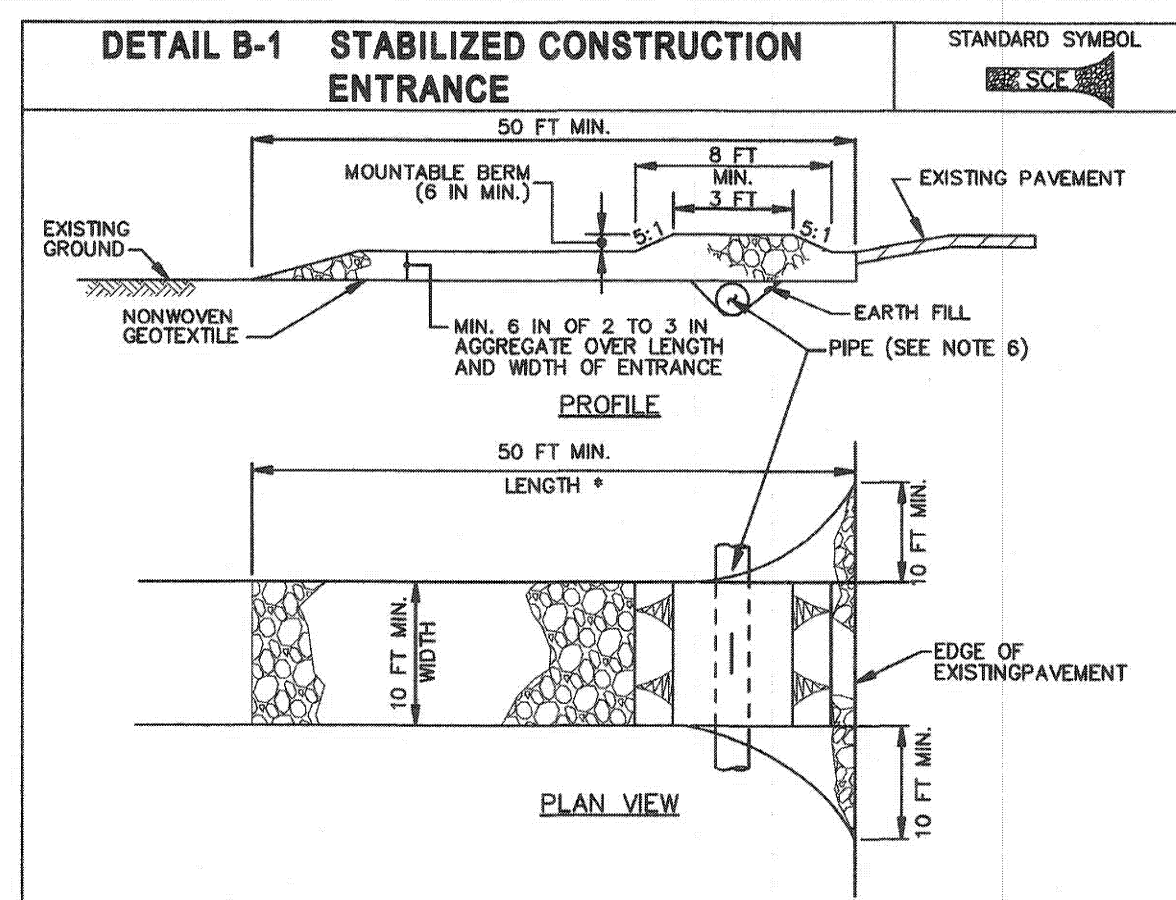
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

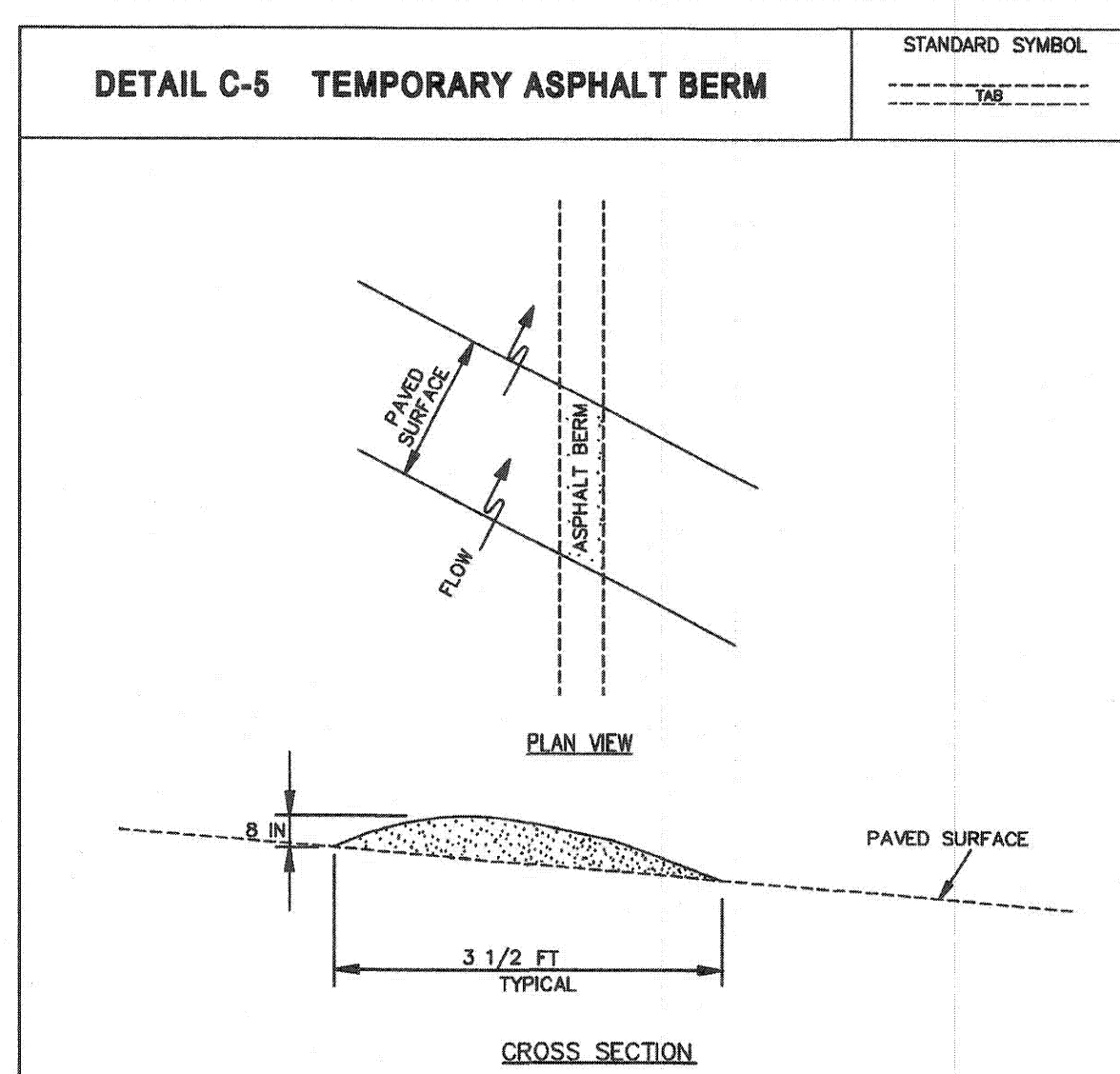


CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (130 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE PROTECT PIPE INSTALLED THROUGH THE SCE 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 SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE 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 TO COVER THE GEOTEXTILE.
- 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

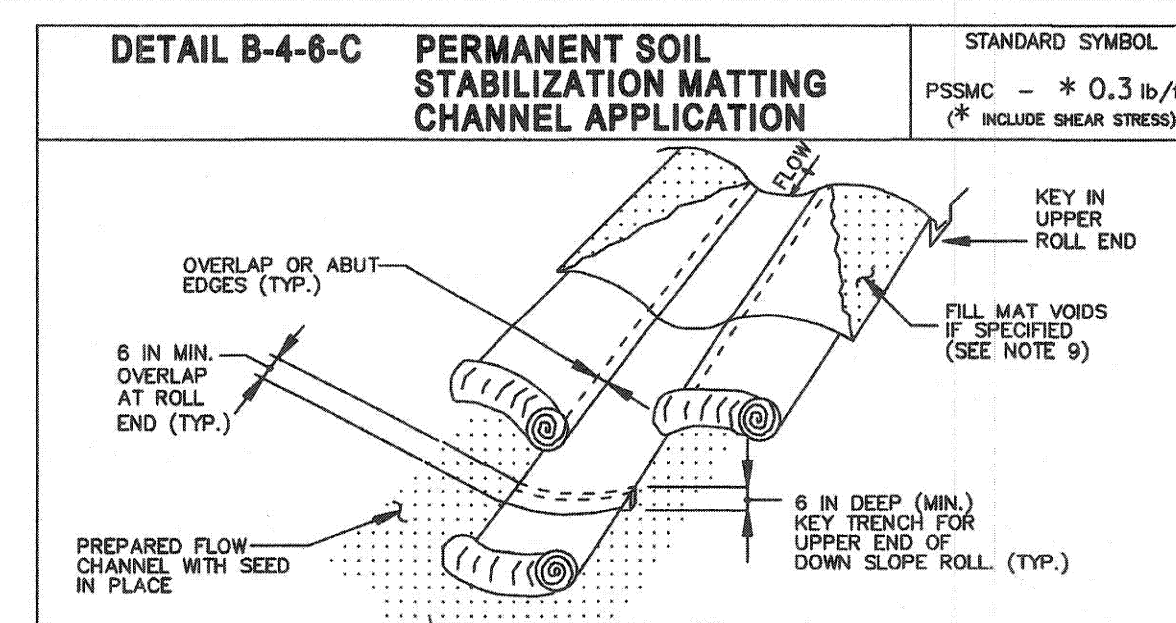


CONSTRUCTION SPECIFICATIONS

- 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 3/8 FEET.
- PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
- COMPACT ASPHALT BERM.
- REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
- UPON 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

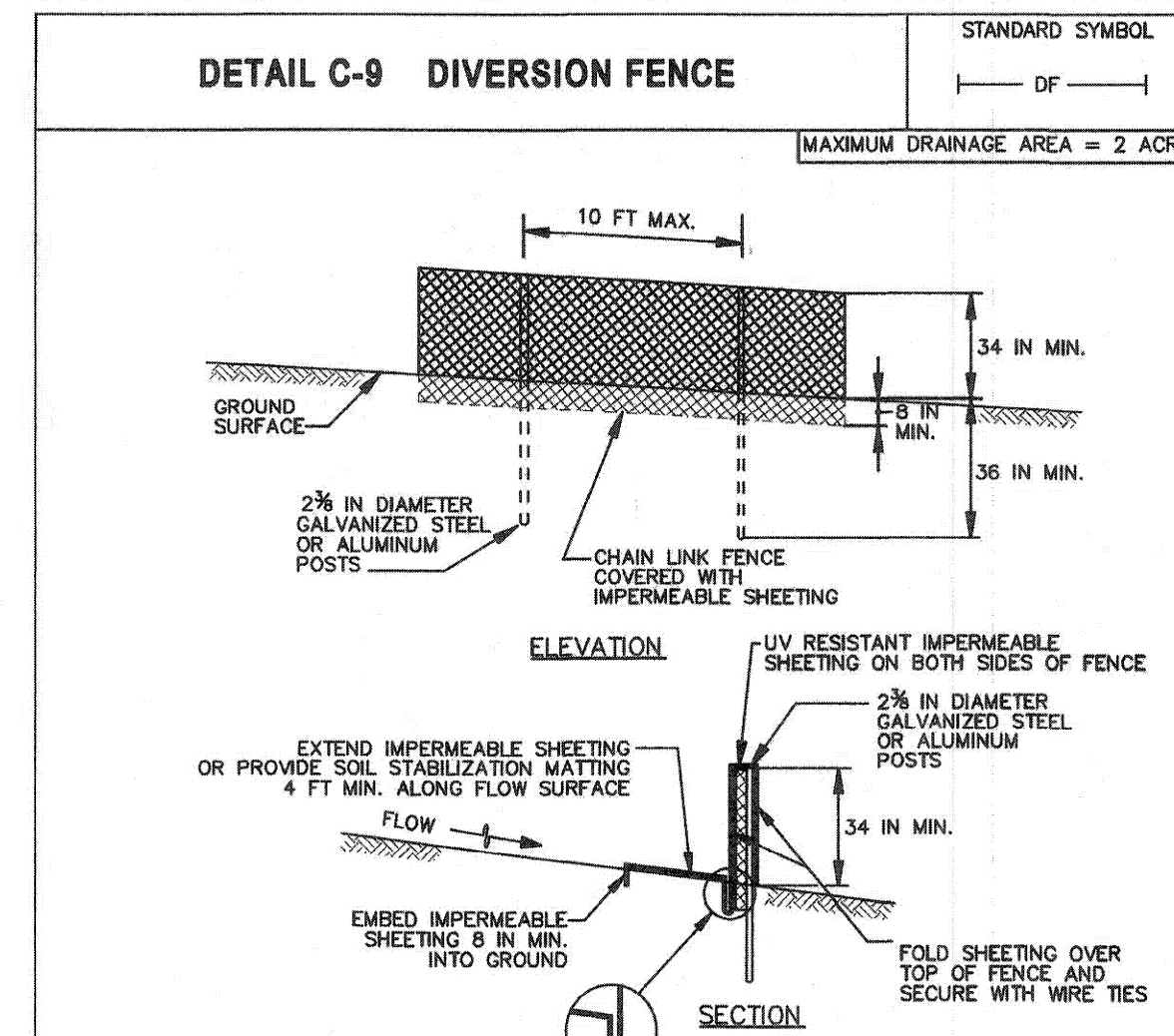


CONSTRUCTION SPECIFICATIONS

- 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 STAKES. 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 STAKES 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, SEEDING 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 SEEDING 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.
- STAPLES/STAKE MATS 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 E-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

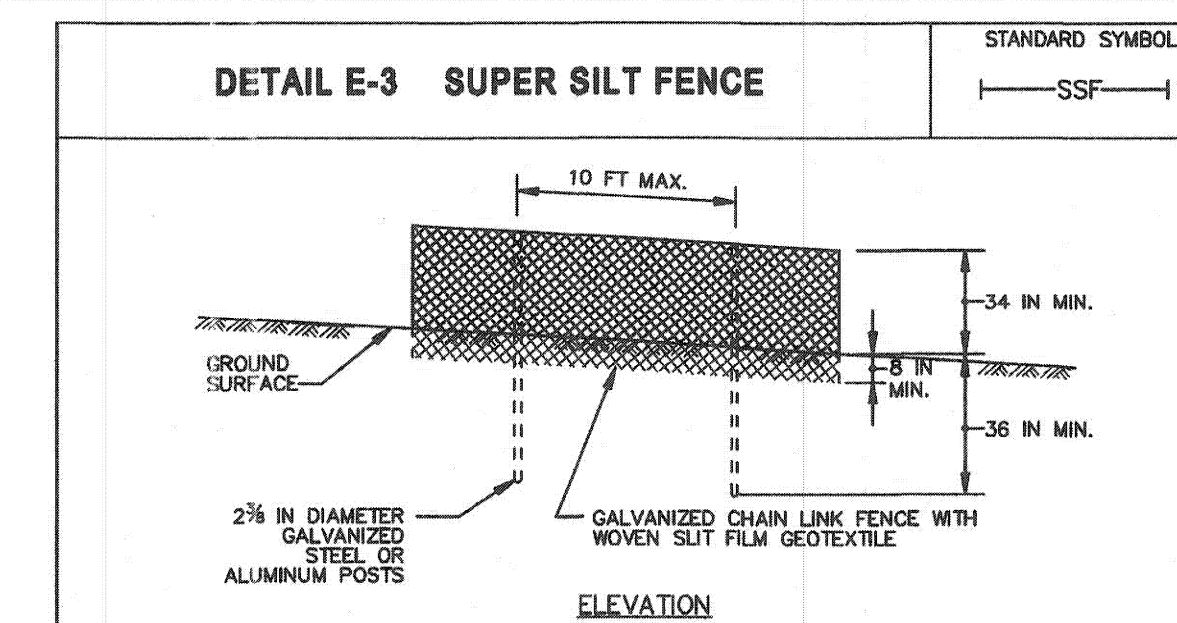


CONSTRUCTION SPECIFICATIONS

- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 1/2 INCH MAXIMUM OPENING).
- USE 2 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 10 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 6 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

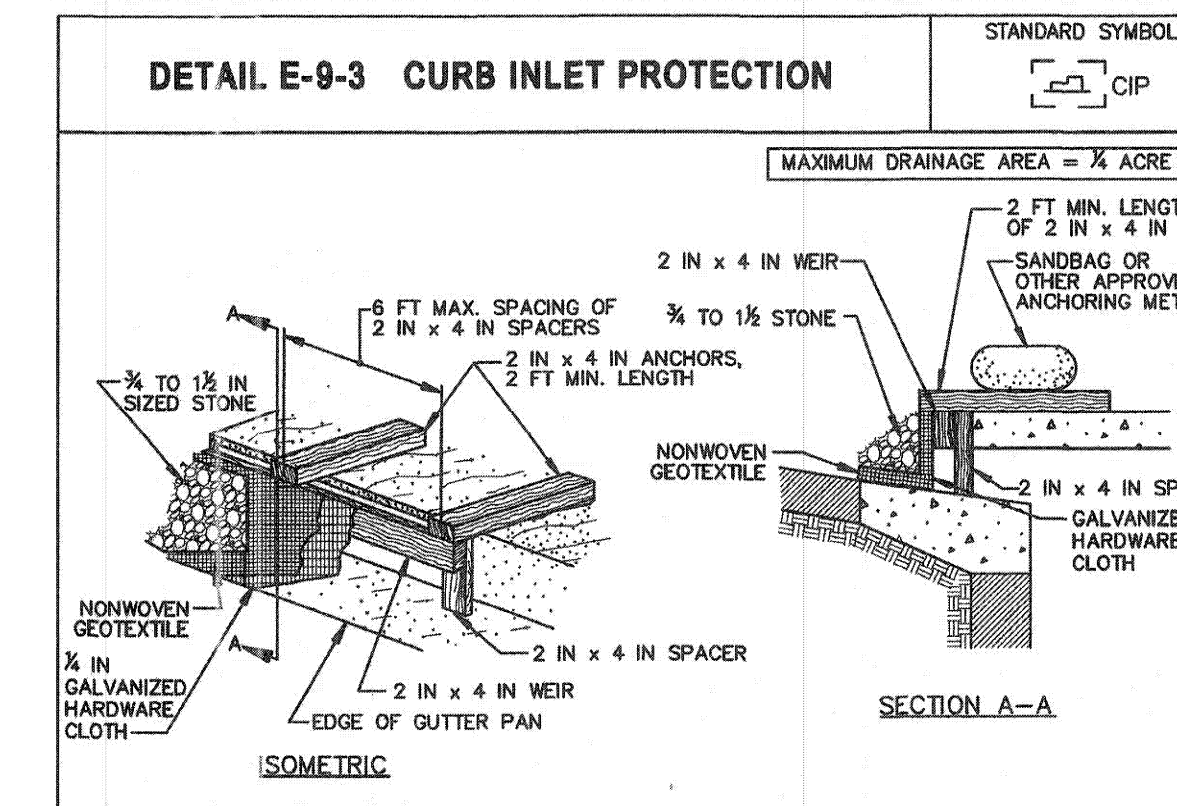


CONSTRUCTION SPECIFICATIONS

- 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

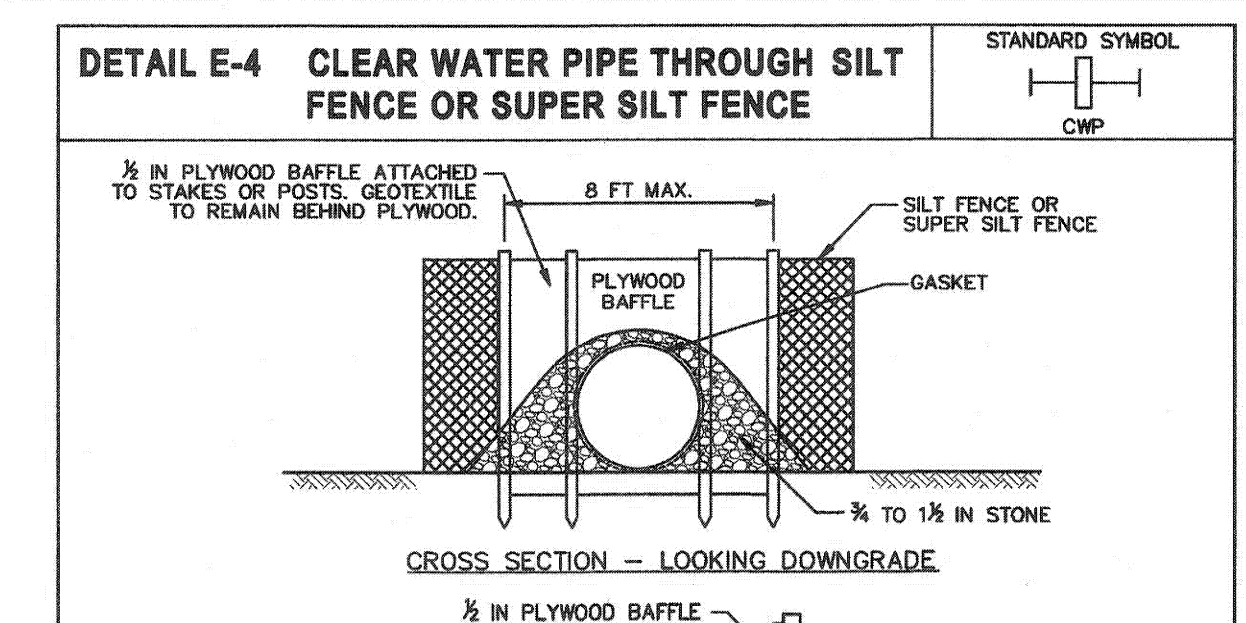


CONSTRUCTION SPECIFICATIONS

- USE NOMINAL 2 INCH x 4 INCH LUMBER
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
- ATTACH A CONTINUOUS PIECE OF 1/2 INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
- PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
- PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
- INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
- FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
- AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
- 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

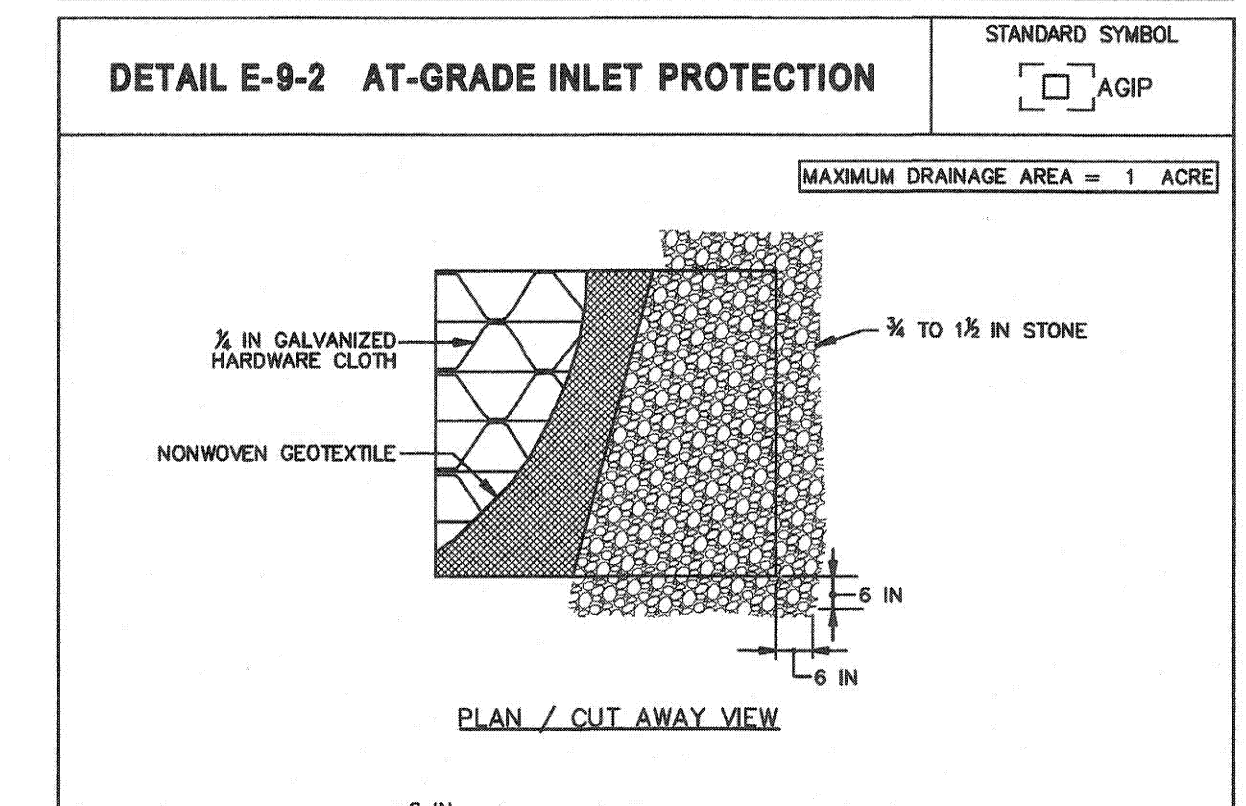


CONSTRUCTION SPECIFICATIONS

- 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 ADJACENT STAKES 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 STAKES 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."

AS-BUILT
JUNE, 2019

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."

[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: 4/19/18

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

DES: DMT
DRN: 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 Zones: 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/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (lb/20-20)			Lime Rate
					N	P ₂ O ₅	K ₂ 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				

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

1. General Specifications

a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.

b. 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.

c. 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.

d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

e. 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

a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.

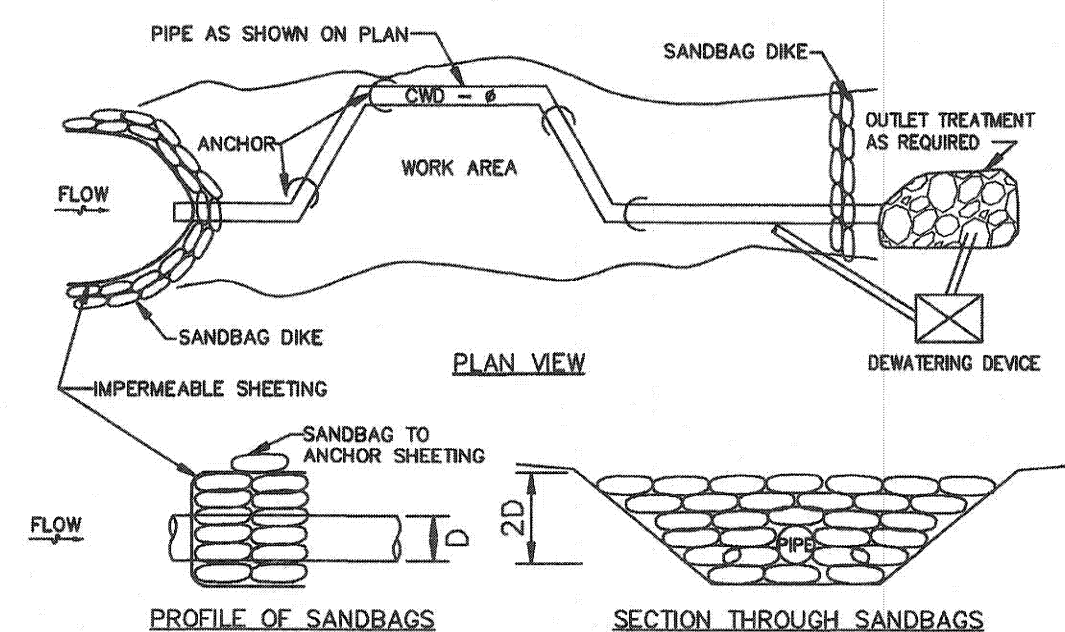
b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

c. Wherever 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.

d. 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.

DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL
C6-1
DEFINITION C6-12 REFERS TO 12 INCH CLEAR WATER DIVERSION



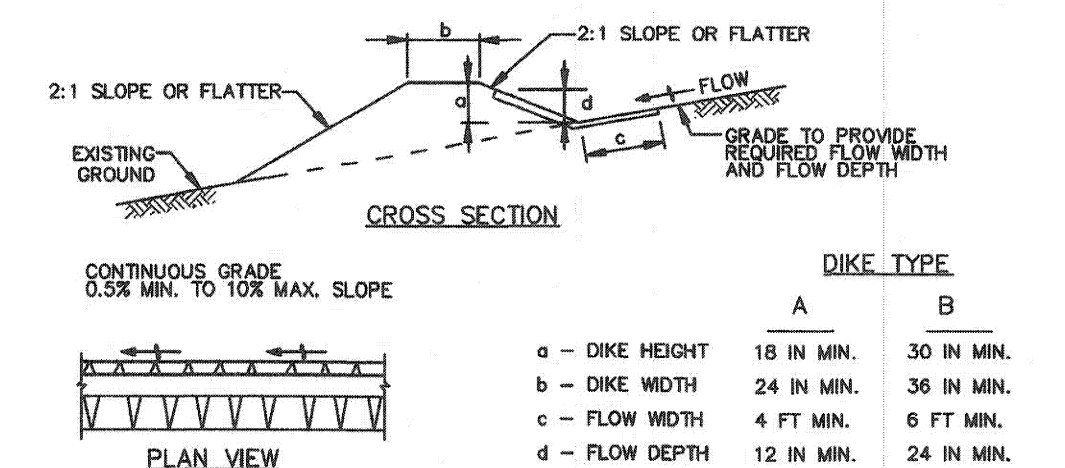
CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL
C1-1
DEFINITION C1-12 REFERS TO 12 INCH EARTH DIKE



FLOW CHANNEL STABILIZATION

- A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION).
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

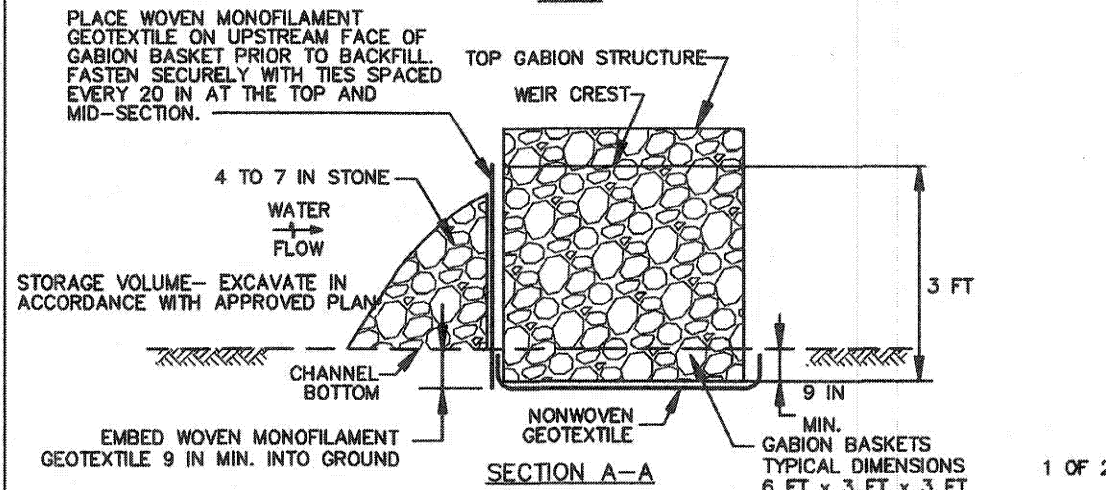
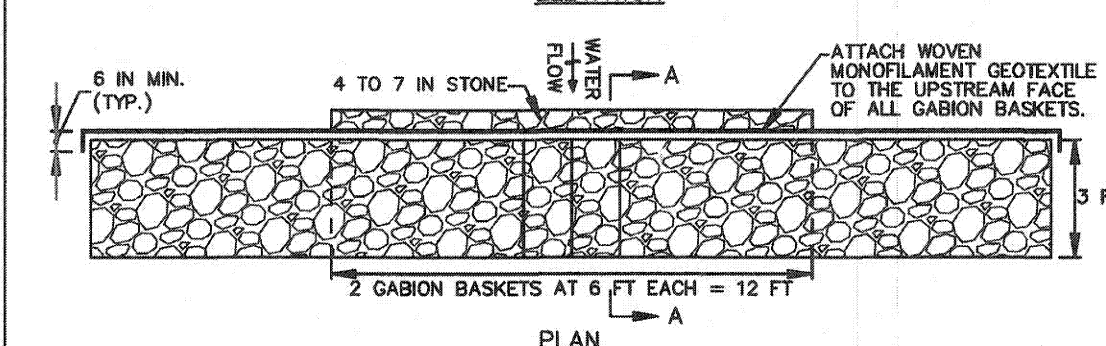
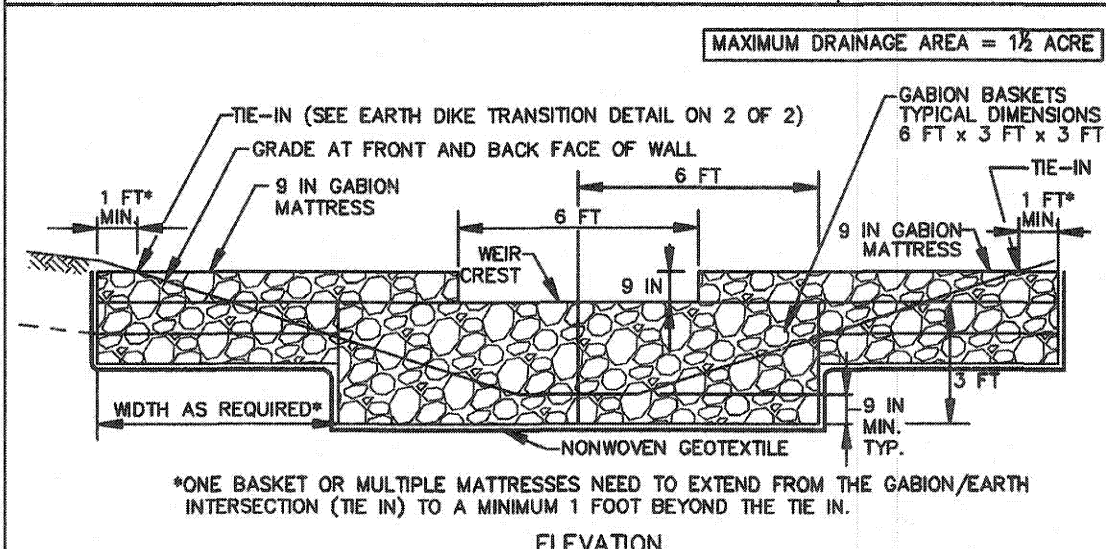
CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND, WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, 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

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

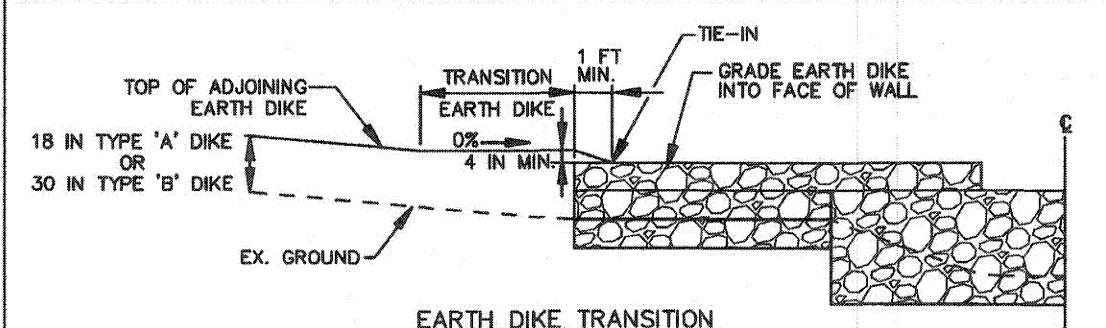
STANDARD SYMBOL
E8-1
TGOS



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

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL
E8-1
TGOS



- NOTES:
1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
 2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
 3. COMPACT FILL.
 4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

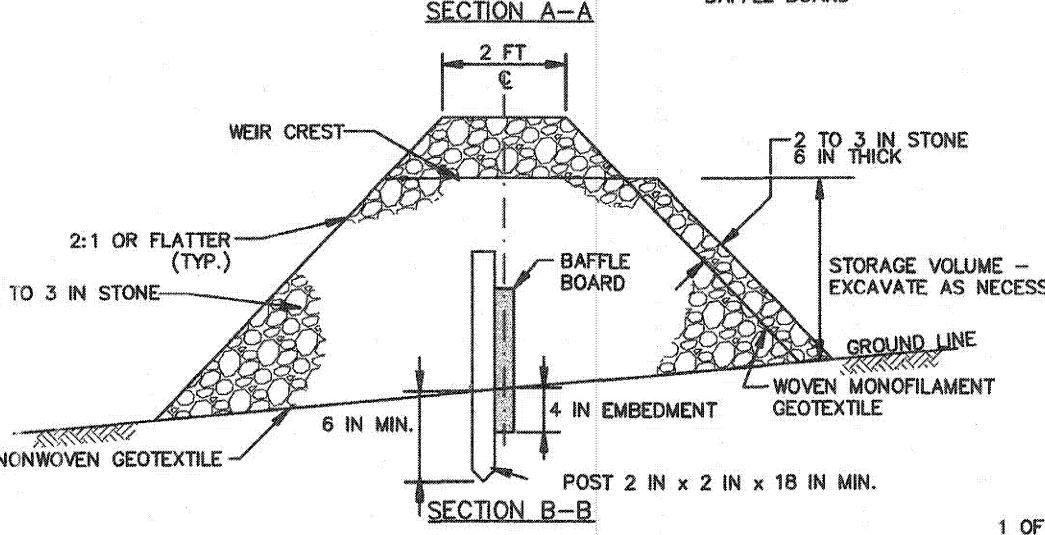
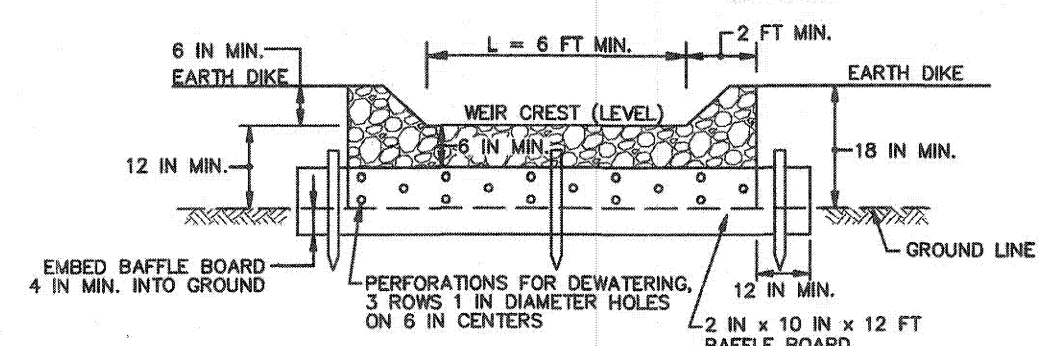
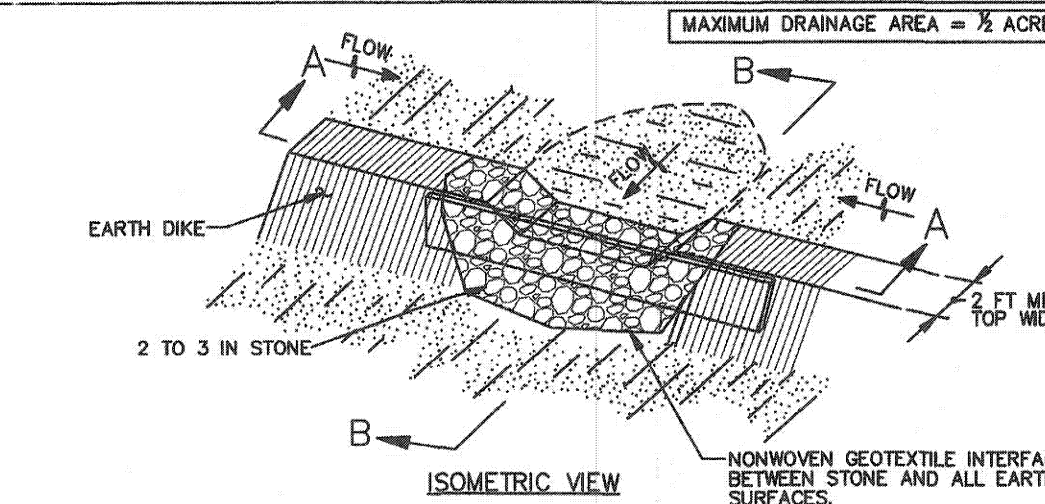
CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND, WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, 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

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL
E7-1
TSOS



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

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL
E7-1
TSOS

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE NONWOVEN GEOTEXTILE ON INTERFACE BETWEEN GROUND AND STONE.
3. PERFORATE BAFFLE BOARD WITH 3 ROWS OF 1 INCH DIAMETER HOLES 6 INCHES ON CENTER. EMBED A MINIMUM OF 4 INCHES INTO GROUND, AND EXTEND BAFFLE BOARD MINIMUM OF 12 INCHES INTO EARTH DIKE.
4. USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE.
5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
6. SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.
8. UPON REMOVAL OF STONE OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND, WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, 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

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/WE 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

AS-BUILT
JUNE, 2019

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"

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 4/10/2018

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

BY NO. _____ REVISION _____ DATE _____

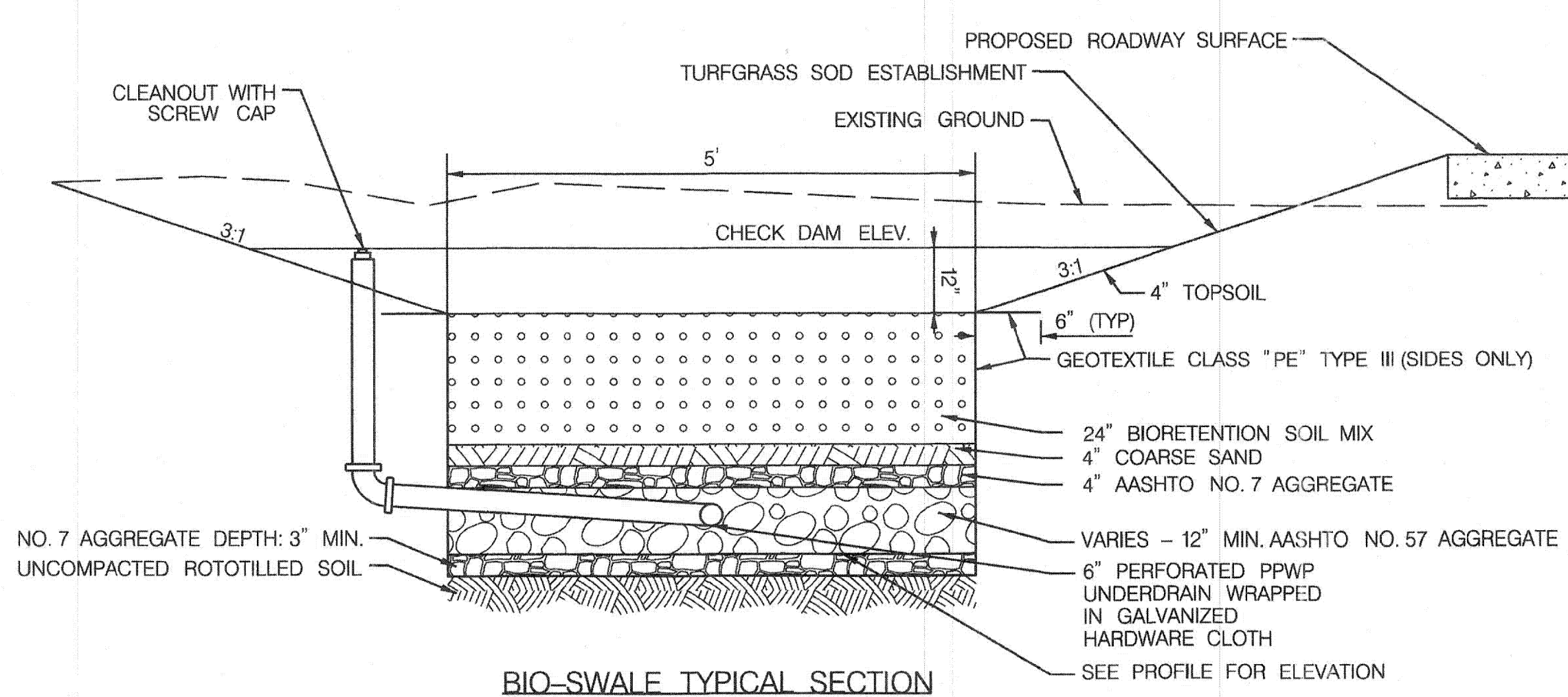
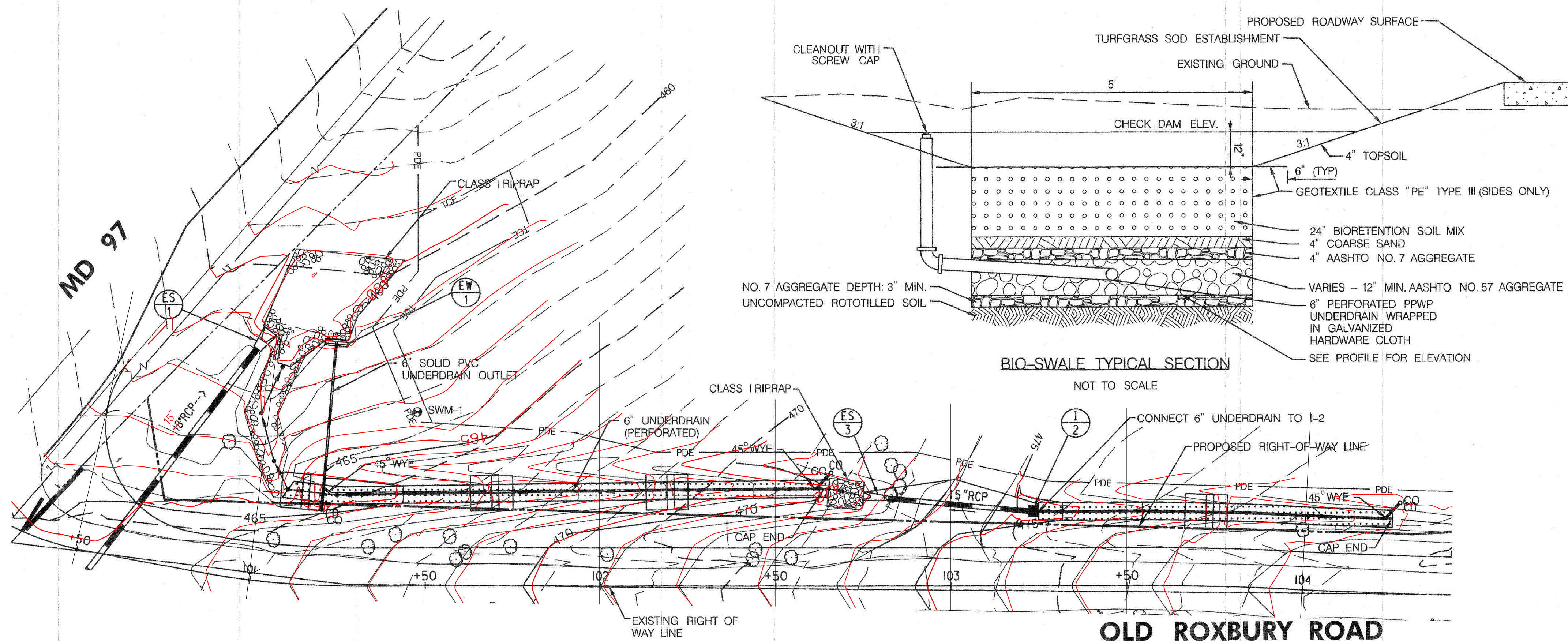
**EROSION AND SEDIMENT CONTROL
DETAILS AND NOTES - 3**

SCALE MAP NO. _____ BLOCK NO. _____

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

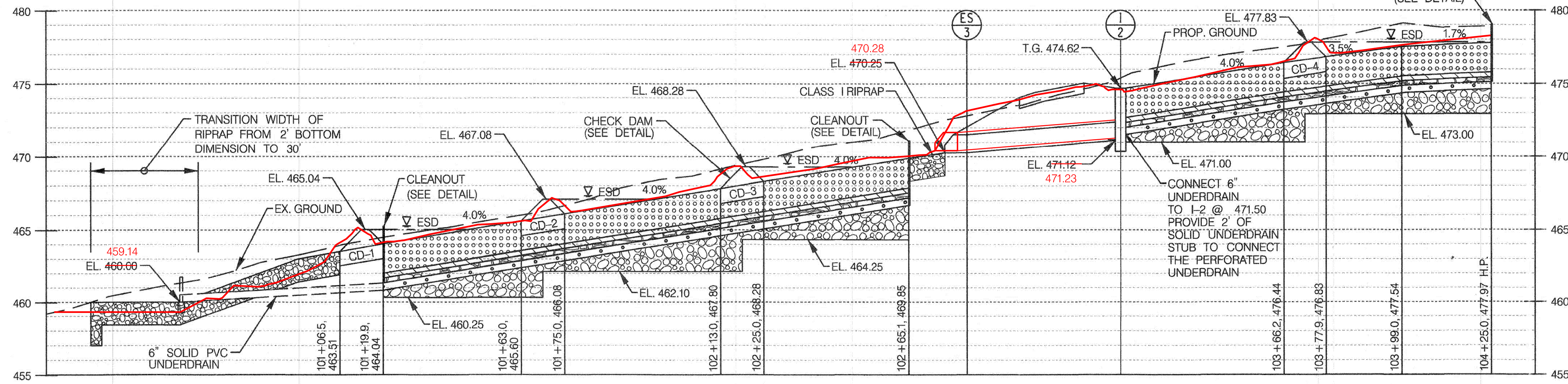
5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE N/A
SHEET 12 OF 19



BIOSWALE - PLAN
SCALE: 1" = 20'

OLD ROXBURY ROAD



BIOSWALE - PROFILE
SCALE: HOR: 1" = 20' VER: 1" = 5'

AS BUILT CERTIFICATION
THIS BLOCK IS TO CERTIFY THAT THIS AS-BUILT PLAN WAS PREPARED BY ME OR THAT I WAS IN RESPONSIBLE CHARGE OVER ITS PREPARATION AND THE SURVEYING WORK REFLECTED IN IT. THIS PLAN IS IN COMPLIANCE WITH COMAR SECTION 09.13.06.12 OF THE MINIMUM STANDARDS OF PRACTICE AS NOW ADOPTED BY THE BOARD FOR PROFESSIONAL LAND SURVEYORS. ALSO, THIS IS TO CERTIFY THAT THE ELEVATIONS AND LOCATIONS OF IMPROVEMENTS ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND THAT THE PRINCIPAL METES, BOUNDS, LINES, AND LEVELS OF THE PROJECT ARE ACCURATELY POSITIONED AS SHOWN ON THIS SURVEY.

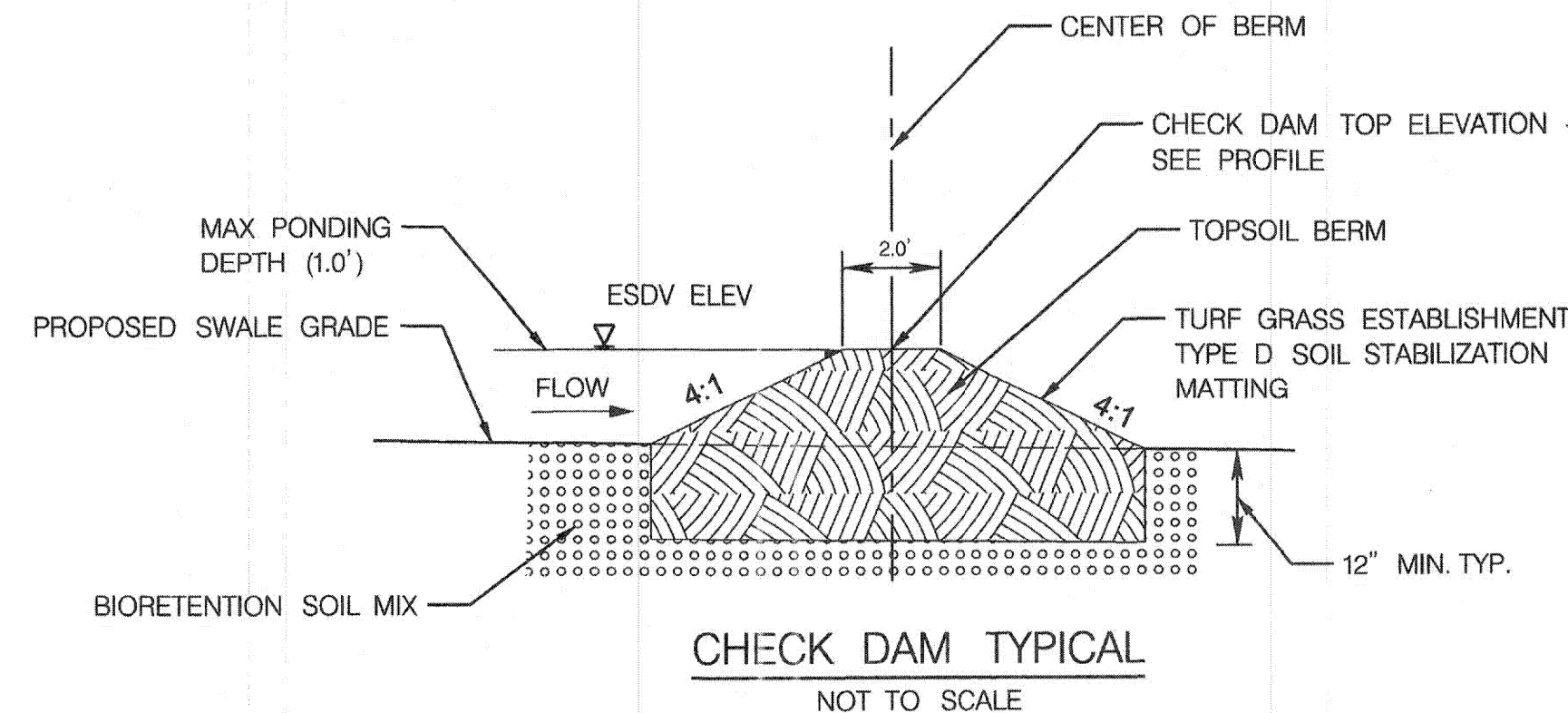


DAVE MORICONI
PROFESSIONAL ENGINEER, MARYLAND NO. 16156
EXPIRATION DATE: 8/28/2020
DATE: 7/24/2019

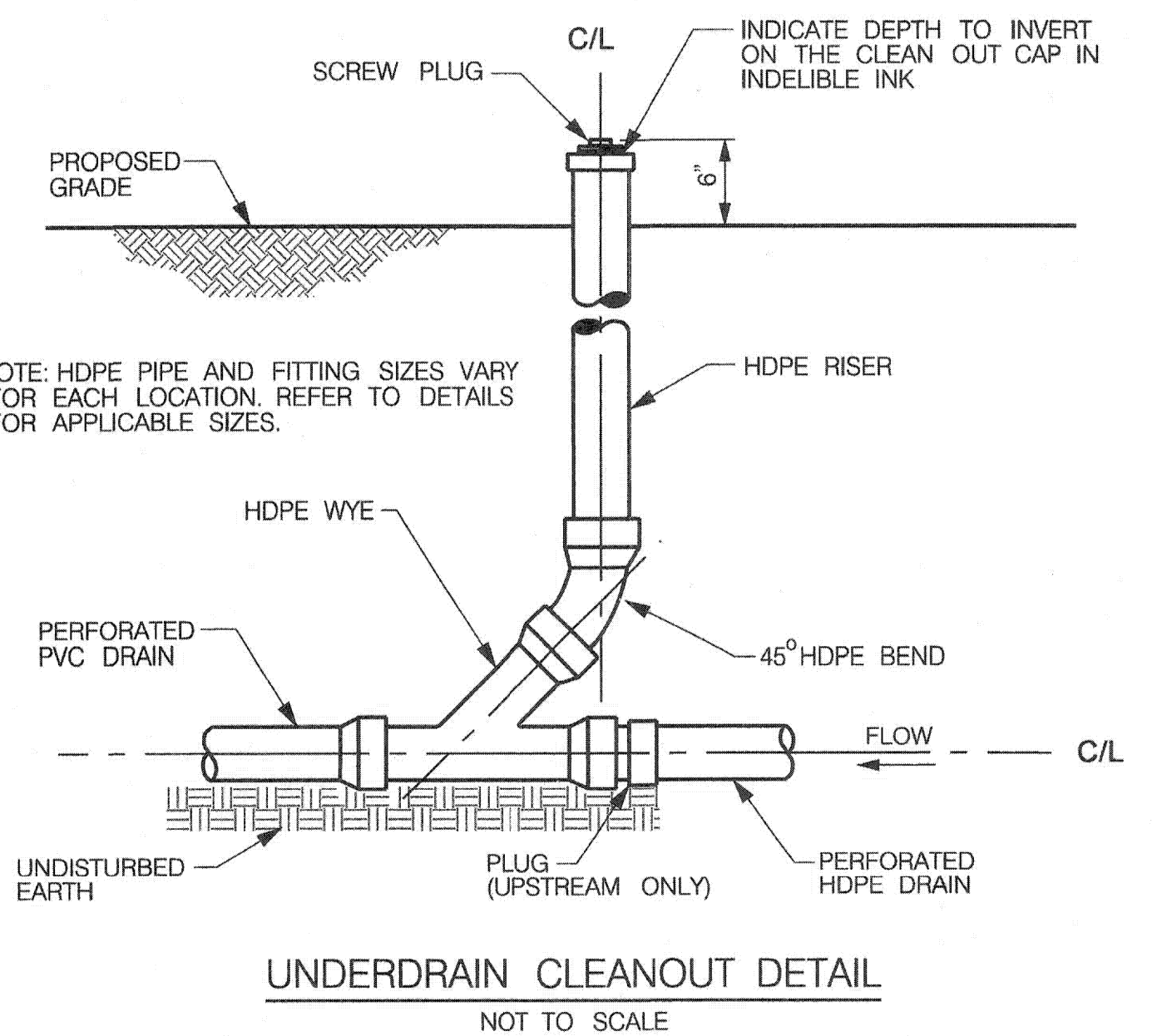
BORING LOCATIONS			
NO.	NORTHING	EASTING	ELEVATION
SWM-1	577,144.1947	1,296,783.8049	463.45

AS-BUILT
JUNE, 2019

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

As-Built Inspection Tabulations/Checklist for BMP Number:

Name	MARK COOK
Date	APRIL, 2019

M-8 BIO-SWALES MDE TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Bottom width	5'	5'	0	M.C.	APRIL, 2019
Left side slope (ft/ft)	3:1	3:1	0	M.C.	APRIL, 2019
Right side slope (ft/ft)	3:1	3:1	0	M.C.	APRIL, 2019
Length	260'	260'	0	M.C.	APRIL, 2019
Number of Check Dams/Weirs	4	4	0	M.C.	APRIL, 2019
10-Year Freeboard	2'	2'	0	M.C.	APRIL, 2019
Maximum Channel slope (ft/ft)	0.04	0.042	0.002	M.C.	APRIL, 2019
Underdrain Pipe Diameter	6"	6"	0	M.C.	APRIL, 2019
Thickness of Filter Media	24"	24"	0	M.C.	APRIL, 2019
Composition of Filter Media	BSM	BSM		M.C.	APRIL, 2019

BIOSWALES CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location	FEB., 2019	M.C. R.W.	APRIL, 2019
Underdrain system and/or observation well installed according to plans	FEB., 2019	M.C. R.W.	APRIL, 2019
Placement of geotextiles and filter fabric according to plans	FEB., 2019	M.C. R.W.	APRIL, 2019
Placement of gravel diaphragm, weirs, and/or check dams	FEB., 2019	M.C. R.W.	APRIL, 2019
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan	FEB., 2019	M.C. R.W.	APRIL, 2019
Placement of and backfill of underdrain system	FEB., 2019	M.C. R.W.	APRIL, 2019
Composition of filter media	FEB., 2019	M.C. R.W.	APRIL, 2019

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.

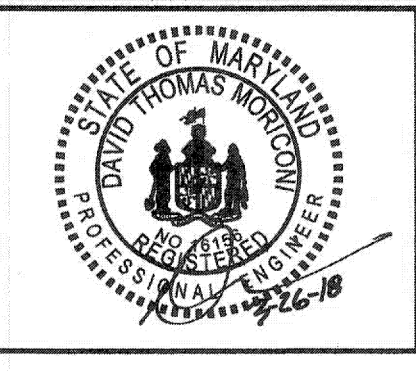
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] 4/1/18
Chief, Transportation and Special Projects Division: [Signature] 4/1/18

Prepared by: [Signature] 4/1/18
Chief, Bureau of Engineering: [Signature] 4/1/18

Chief, Bureau of Highways: [Signature] 4/1/18

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-1220



DES:	DMT			
DRN:	DMT			
CHK:	DTM			
DATE:	03/2018			
BY:	DMT	1		
NO.:				
AS-BUILT SURVEY		062019		
REVISION				
DATE:				

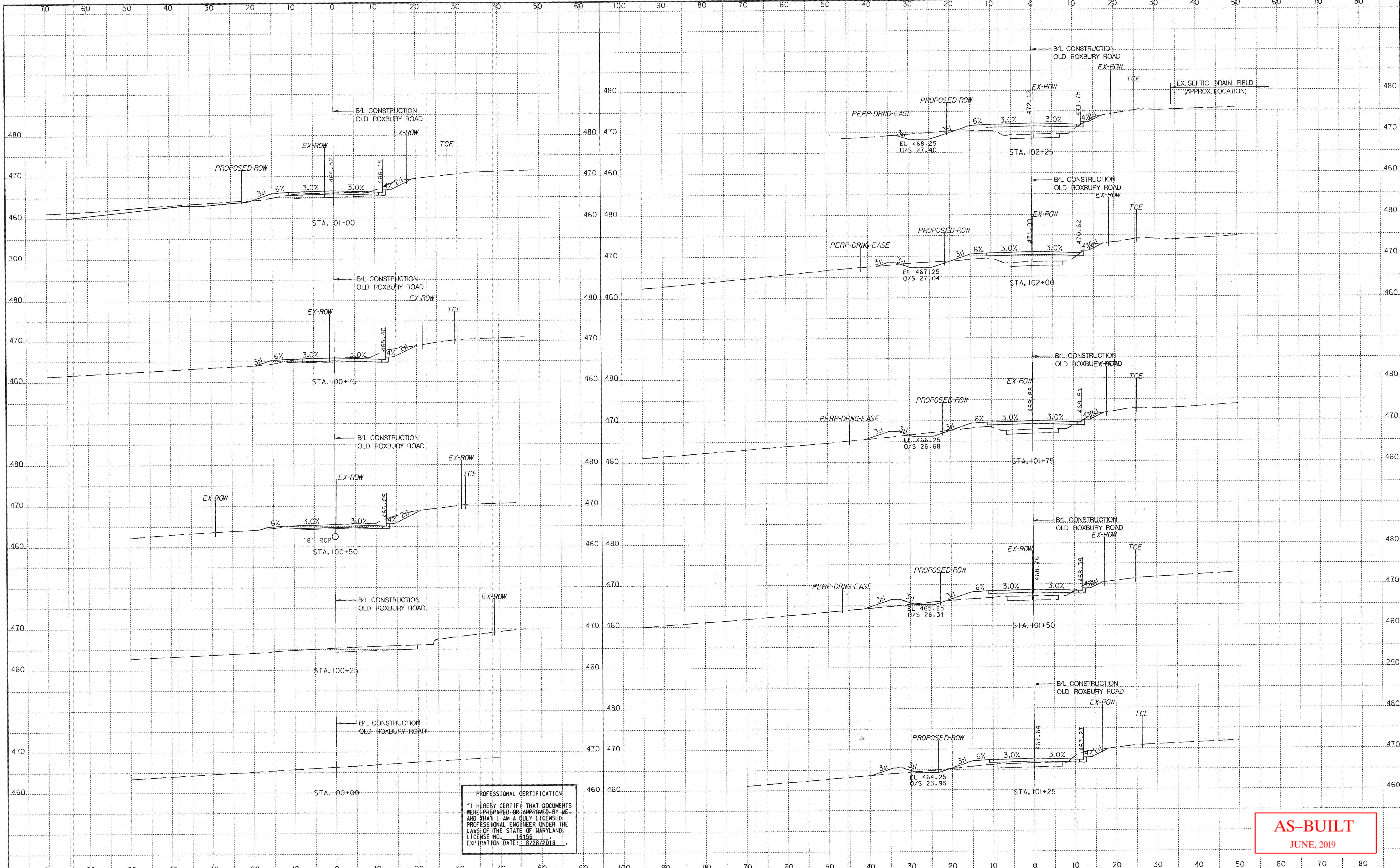
STORMWATER MANAGEMENT PLAN

SCALE MAP NO. _____ BLOCK NO. _____

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

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 13 OF 19

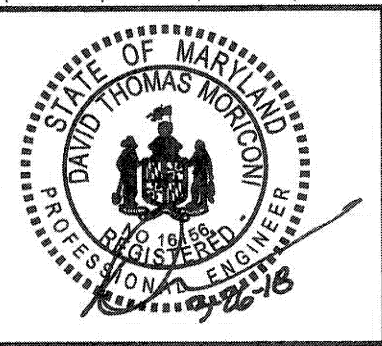


PROFESSIONAL CERTIFICATION
 "I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16156 EXPIRATION DATE: 8/28/2018"

AS-BUILT
 JUNE, 2019

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *[Signature]* 4/11/18
 Chief, Transportation and Special Projects Division: *[Signature]* 4/11/18
 Chief, Bureau of Engineering: *[Signature]* 4/11/18
 Chief, Bureau of Highways: *[Signature]* 4/11/18

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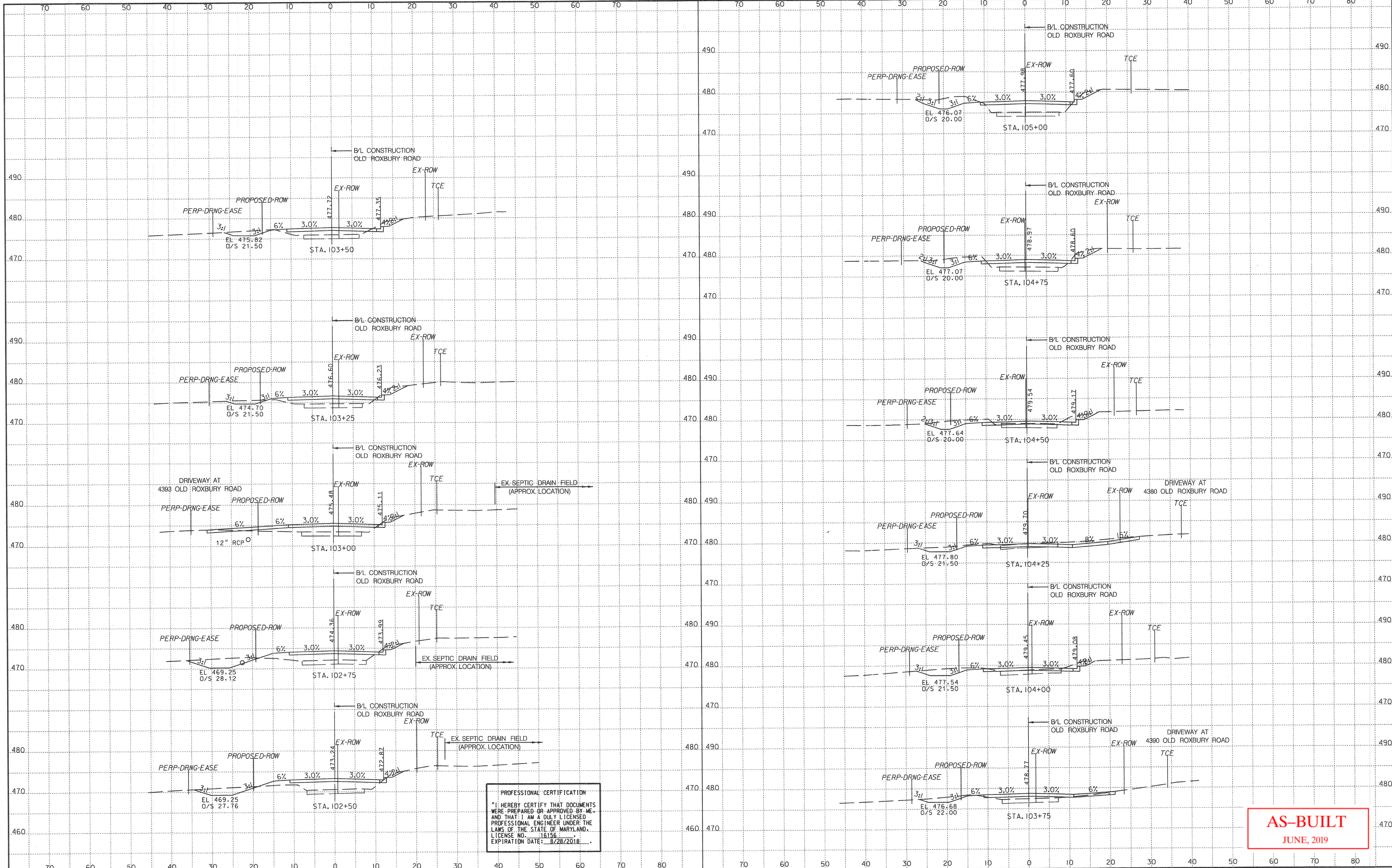


DES:	DMT		
DRN:	DMT		
CHK:	DTM		
DATE:	02/2018		
BY:		NO.	
		REVISION	
		DATE	

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



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AS-BUILT
 JUNE, 2019

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

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 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: 410I 755-7220



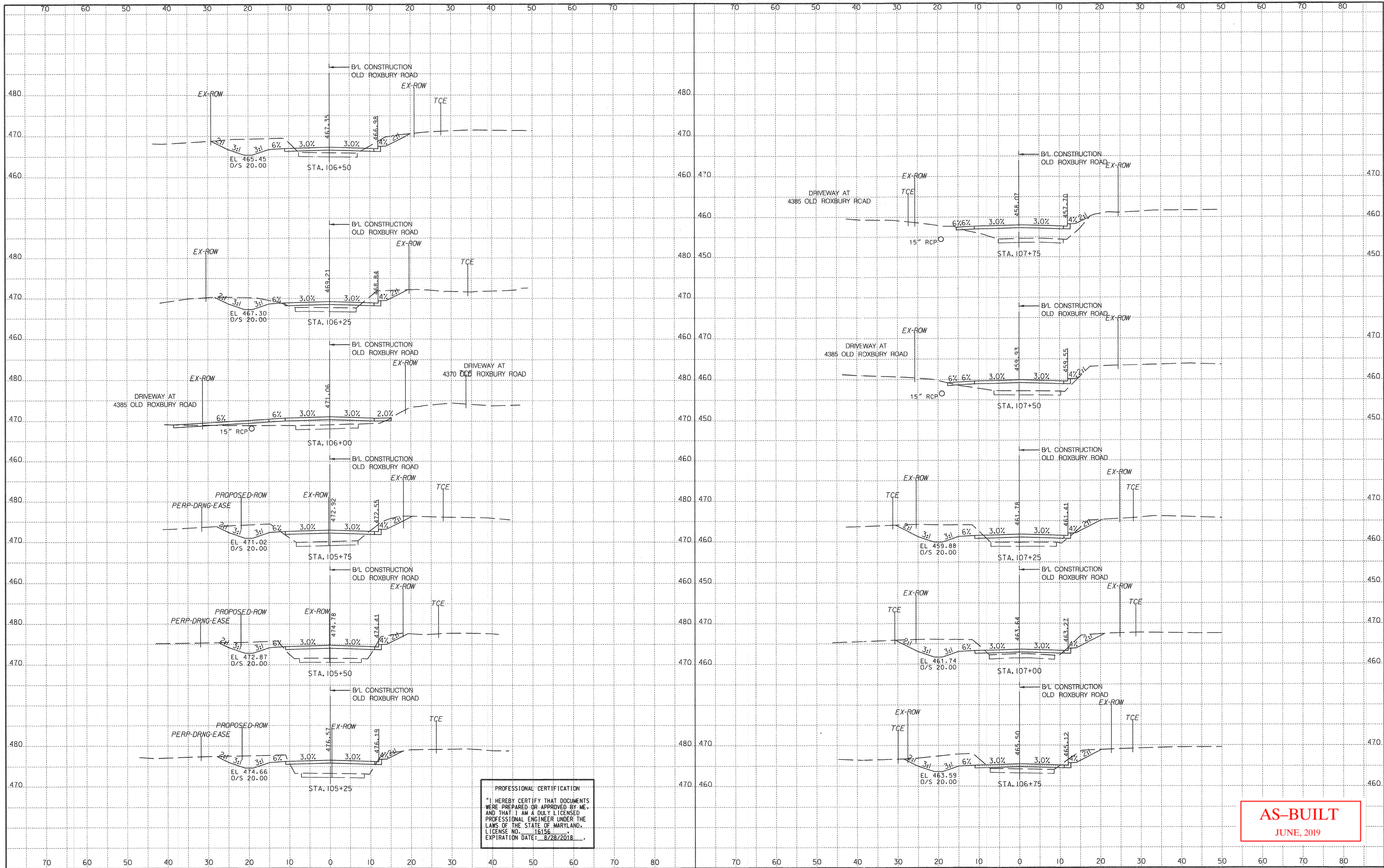
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DRN:	DMT		
CHK:	DTM		
DATE:	02/2018	BY:	NO.
REVISION:		DATE:	

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: 1" = 10'
 SHEET 15 OF 19



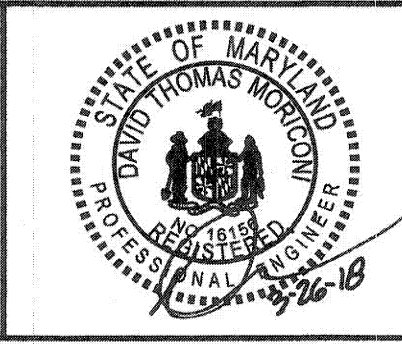
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 LICENSE NO. 16156
 EXPIRATION DATE: 8/28/2018

AS-BUILT
 JUNE, 2019

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 4/1/18
 Chief, Bureau of Engineering: *[Signature]* 4/10/2018
 Chief, Bureau of Highways: *[Signature]* 4/10/2018

PREPARED BY
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 4 NORTH PARK DRIVE
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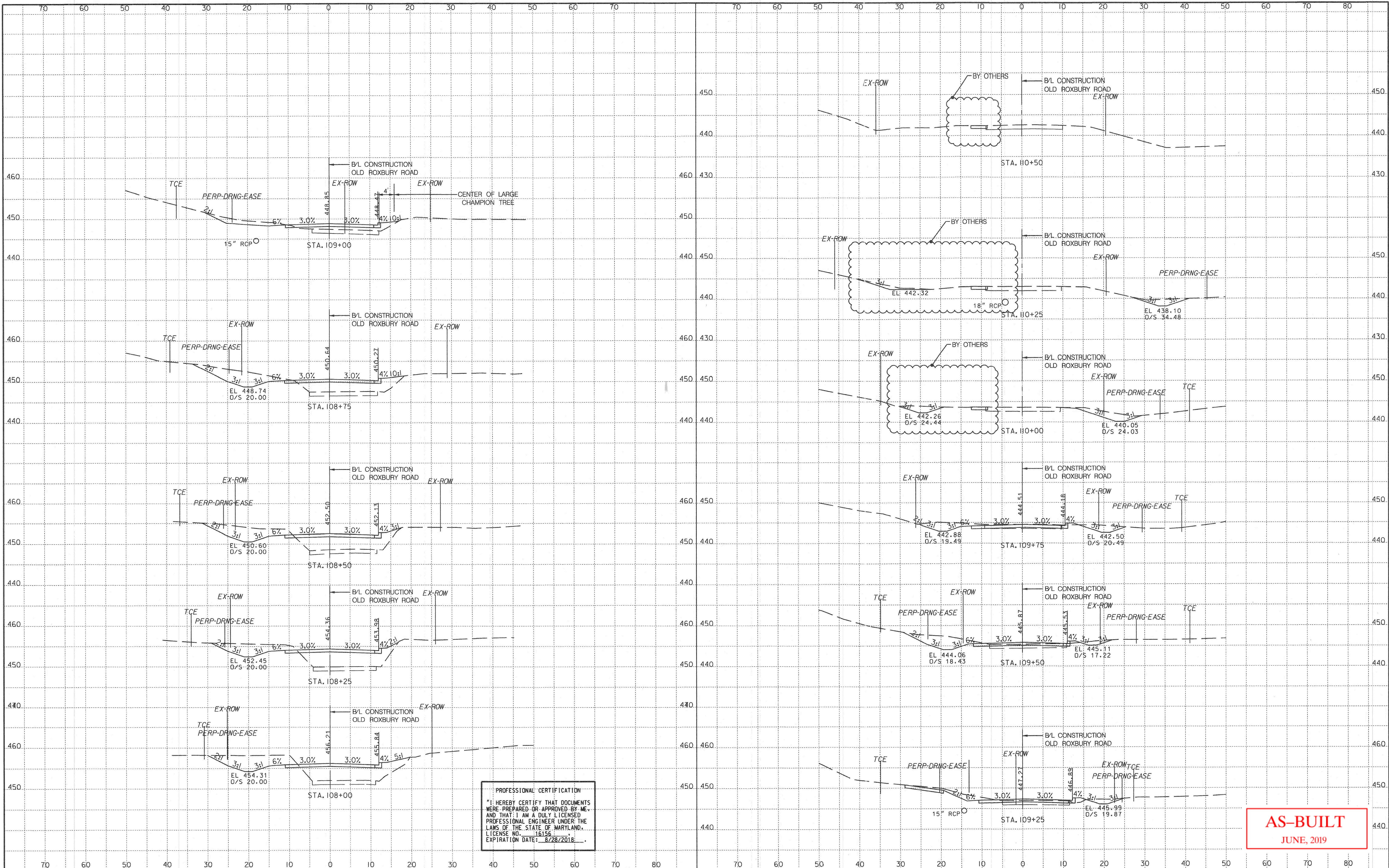
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DRN:	DMT		
CHK:	DTM		
DATE:	02/2018		
BY:	NO.	REVISION	DATE

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
 1" = 10'
 SHEET
 16 OF 19



PROFESSIONAL CERTIFICATION
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AS-BUILT
 JUNE, 2019

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John J. Shible 4/10/18
 DIRECTOR OF PUBLIC WORKS DATE

Thomas E. Suttle 4/10/18
 CHIEF, BUREAU OF ENGINEERING DATE

John J. Shible 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: 02/2018	BY: NO.	REVISION	DATE

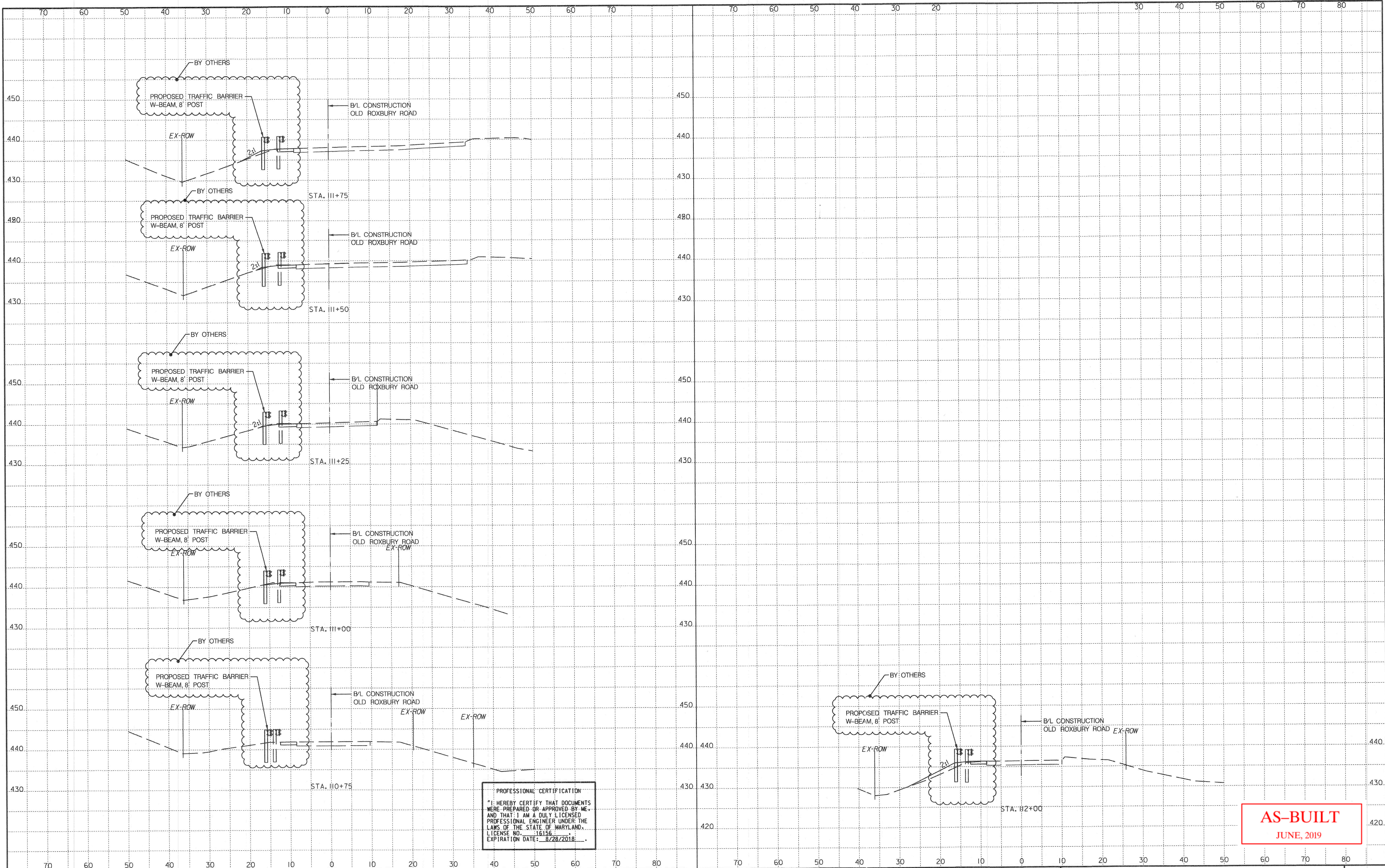
CROSS SECTIONS

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
 17 OF 19



AS-BUILT
JUNE, 2019

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

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4 NORTH PARK DRIVE
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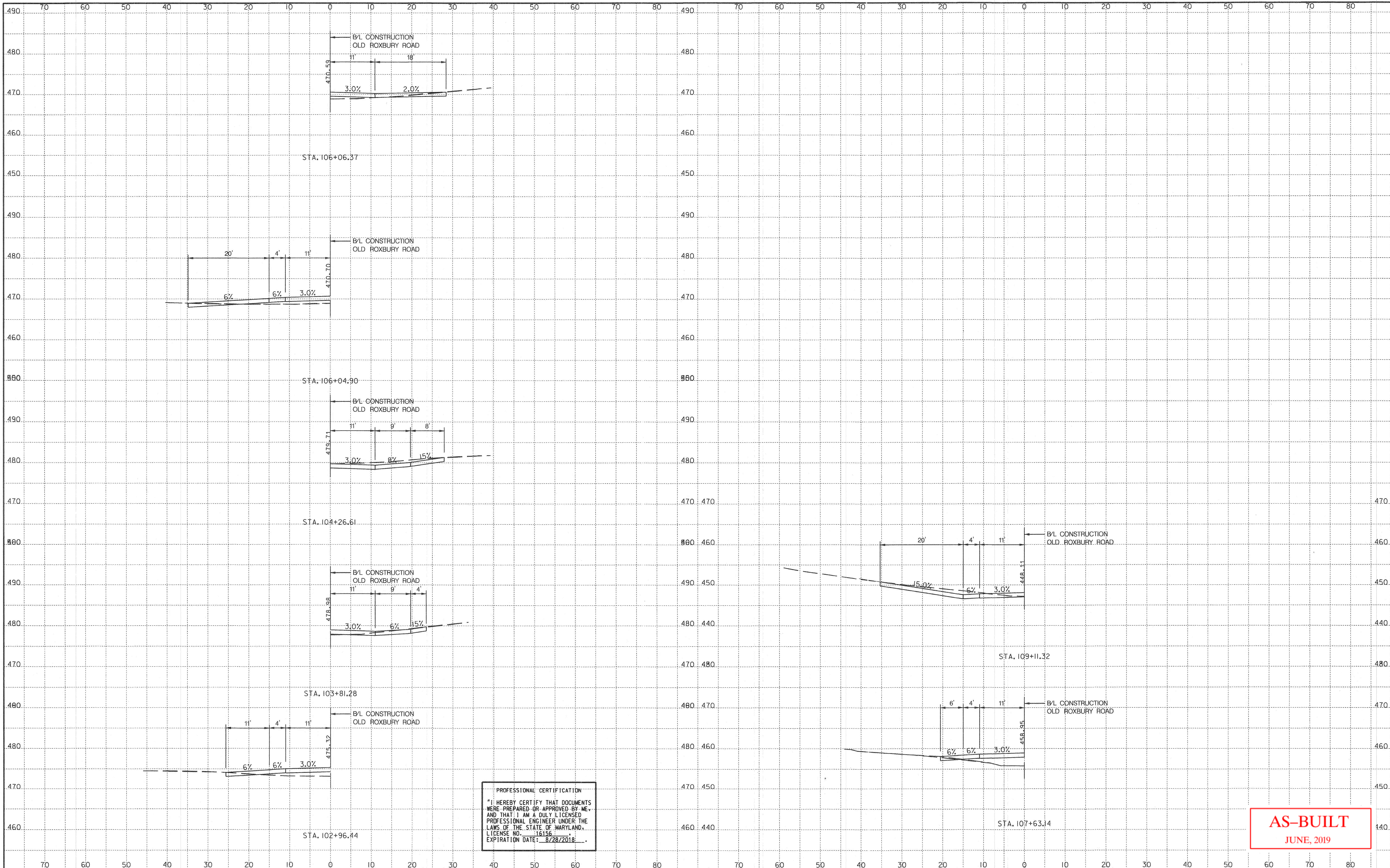
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CHK:	DTM			
DATE:	02/2018			

CROSS SECTIONS

SCALE MAP NO. _____ BLOCK NO. _____

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

SCALE
1" = 10'
SHEET
18 OF 19



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AS-BUILT
 JUNE, 2019

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. _____

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

SCALE
 1" = 10'

SHEET
 19 OF 19