Howard County, Maryland - Department of Public Works

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

INDEX OF SHEETS

GENERAL NOTES

1. ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.

2. APPROXIMATE LOCATIONS OF THE EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE HOWARD COUNTY ENGINEER BY THE CONTRACTOR AND AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

   MISS UTILITY, 1-800-257-7777
   CONSTRUCTION INSPECTION DIVISION, HOWARD COUNTY, 410-313-5712
   BUREAU OF UTILITIES, HOWARD COUNTY, 410-313-4900
   BALTIMORE GAS & ELECTRIC COMPANY, 410-685-0123
   VERIZON OCCLS, 410-712-0202
   COMCAST, 410-931-4600
   COMCAST FIBER, 410-427-9600

3. THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND /OR INFORMATION REGARDING:
   A. EXISTING/PROPOSED RIGHT-OF-WAY
   B. UTILITY RELOCATION
   C. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION
   D. EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT
   E. HORIZONTAL/VERTICAL CONTROL
   F. GRADING PERMIT

4. PLACE REGULATION "ROAD WORK" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS AT LIMIT OF WORK ALONG LANDING ROAD AND ILCHESTER ROAD.

5. ALL GRADING SHALL BE LIMITED TO EXISTING RIGHT-OF-WAY OR TEMPORARY CONSTRUCTION EASEMENTS, AS SHOWN ON THE PLANS, INCLUDING SIDE SLOPES AND STABILIZATION. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED IN ACCORDANCE WITH THE SEDIMENT CONTROL NOTES AND DETAILS.

6. THE CURRENT EDITION OF THE "HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION - VOL IV" UTILIZES THE SHA "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" (JAN, 2001) AS AN APPENDAGE. ALL REVISIONS, SPECIAL PROVISIONS INSERTS, AND SPECIAL PROVISIONS ARE MADE PART OF THE SPECIFICATIONS.

   IN THE EVENT OF ANY DISCREPANCY BETWEEN THESE SPECIFICATIONS AND OTHER DOCUMENTS, THE FOLLOWING HIERARCHY WILL GOVERN:
   1. CONTRACT DRAWINGS
   2. CONTRACT SPECIFICATIONS
   3. SPECIAL PROVISIONS
   4. GENERAL CONDITIONS
   5. HOWARD COUNTY VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION
   6. SHA SPECIAL PROVISION INSERTS AND SPECIAL PROVISIONS FOR JANUARY 2001 SPECIFICATIONS
   7. SHA "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" (JAN, 2001)

   FOR MORE INFORMATION, REFER TO THE PRE-FACE IN THE CURRENT EDITION OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV.

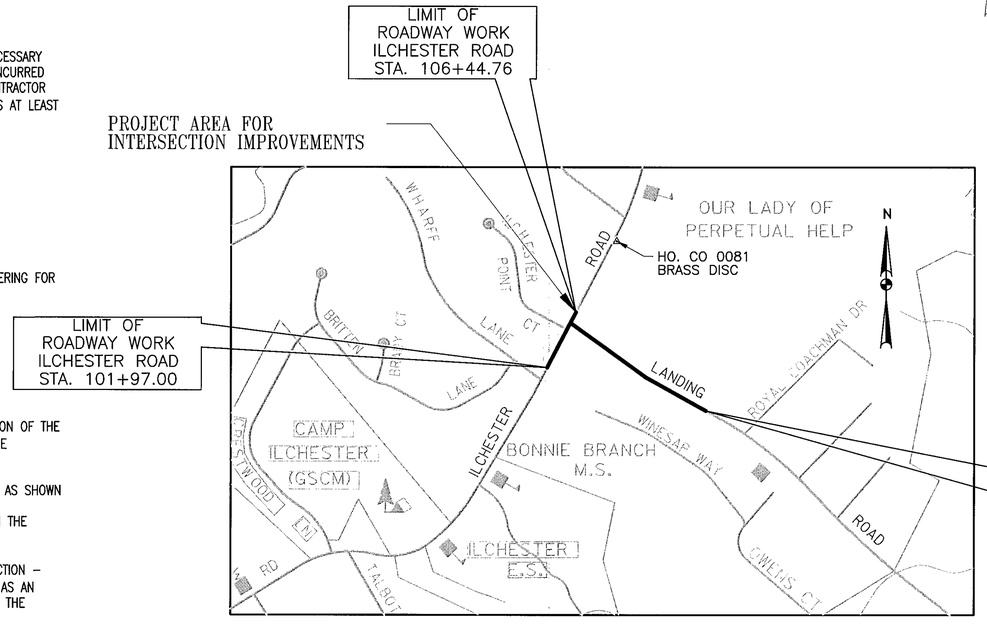
8. STAGING AND STOCKPILE AREA WILL BE DETERMINED BY CONTRACTOR.

9. SURVEY COMPLETED IN JANUARY 2011 BY:
   MERCADO CONUSLTANTS, INC.
   17830 NEW HAMPSHIRE AVE., SUITE 200
   ASHTON, MD 20861

   HORIZONTAL DATUM IS MARYLAND STATE PLANE COORDINATE SYSTEM NAD 83/2007 IN SURVEY FEET AS ESTABLISHED BY RTK GPS SURVEY FROM HOWARD COUNTY CONTROL MONUMENT 0081 USING THE PUBLISHED COORDINATE VALUE.

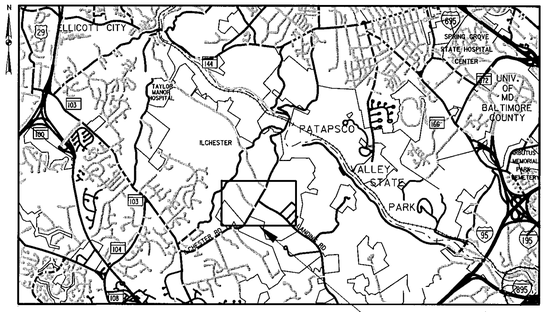
   0081: BRASS DISC
   N 572335.3648
   E 1377504.0126
   ELEV 477.886

   VERTICAL DATUM IS NAVD88 AS REFERENCED TO THE SAME STATION.



LOCATION MAP

600' 0 600' 1200'
SCALE: 1" = 600'



VICINITY MAP

5000' 0 5000' 10000'
SCALE: 1" = 5000'

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/11/2015 ."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER R. WHITMAN — 19165 — REGISTERED PROFESSIONAL ENGINEER

DES: VAK							
DRN: VAK							
CHK: BRT							
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	ADC MAP NO. 4936	GRID G3	

CAPITAL PROJECT NO. J-4228
ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 21

ROAD	CLASSIFICATION	DESIGN SPEED	POSTED SPEED	DESIGN VEHICLE
ILCHESTER RD	SCENIC RD/MINOR COLLECTOR	35 MPH	30 MPH	S-BUS-36
LANDING RD	SCENIC RD/MINOR COLLECTOR	35 MPH	30 MPH	S-BUS-36

GRADED AGGREGATE FOR MOT			
℄	STATION TO STATION	REMARKS	SF
LANDING	202+74 TO 202+94	LEFT	242

REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM			
℄	STATION TO STATION	LF	OFFSET
ILCHESTER	104+35 TO 105+65	135	VARIES RT.
LANDING	200+33 TO 201+34	101	VARIES LT.

7" CONCRETE COMBINATION CURB AND GUTTER HoCo STD. NO. R-3.01			
℄	STATION	LF	OFFSET
ILCHESTER*	102+94 TO 103+81	87	VARIES RT.
ILCHESTER*	103+81 TO 104+89	107	26.00' RT.
ILCHESTER*	104+89 TO 105+16	29	VARIES RT.
LANDING	200+33 TO 200+60	29	VARIES RT.
LANDING	200+60 TO 200+84	24	14.00' RT.
LANDING	200+36 TO 200+91	58'	VARIES LT.
LANDING	200+91 TO 202+59	170'	14.00' LT.

*SEE ILCHESTER ROAD CURB LAYOUT, SHEET 6.

TRAFFIC BARRIER W BEAM USING 8 FT POST MD STD. NO. 605.31			
℄	STATION	LF	OFFSET
ILCHESTER	104+75 TO 105+13	41	VARIES RT.
LANDING	200+40 TO 201+61	123	VARIES RT.

TYPE C TRAFFIC BARRIER END TREATMENT MD STD. NO. 605.03			
℄	STATION	LF	OFFSET
ILCHESTER	104+25 TO 104+75	50	33' RT.

TYPE G TRAFFIC BARRIER END TREATMENT MD STD. NO. 605.08			
℄	STATION	LF	OFFSET
LANDING	201+61 TO 202+00	39	VARIES RT.

4" CONCRETE SIDEWALK HoCo STD. NO. R-3.05			
℄	STATION TO STATION	REMARKS	SF
ILCHESTER	101+97 TO 105+16	RIGHT	1451

DETECTABLE WARNING SURFACE HoCo STD. NO. R-4.07		
STATION	OFFSET	SF
105+12	33' RT	11

SIDEWALK RAMP SEE DETAIL SHEET 6		
STATION	OFFSET	REMARKS
105+12	33' RT	ILCHESTER ROAD

DRAINAGE STRUCTURE SCHEDULE				
STRUCTURE NO.	STATION	OFFSET	TYPE	REMARKS
ES-1	202+97	21' LT.	15" RCP END SECTION - D-5.51	℄ LANDING
ES-2	202+79	25' LT.	15" RCP END SECTION - D-5.51	℄ LANDING
I-1	202+56	14' LT.	5' COG OPENING - MD-374.68	℄ LANDING

CLASS I RIPRAP FOR SLOPE AND CHANNEL PROTECTION			
LOCATION	LENGTH (FT)	WIDTH (FT)	S.Y.
STA. 200+33 TO 202+74, LT.	270	6	180
STA. 203+03 TO 202+74, LT.	190	6	127

PIPE SCHEDULE						
FROM	TO	SIZE	TYPE	LENGTH	INV.IN	INV.OUT
ES-1	ES-2	15"	RCP	19'	440.00	438.50

TOE OF SLOPE LANDING ROAD LT	
STATION	OFFSET
200+50	55.64' LT
201+00	31.55' LT
201+50	30.13' LT
202+00	23.08' LT
202+50	21.37' LT
203+00	20.67' LT
203+50	19.36' LT
204+00	17.62' LT
204+50	14.75' LT

TEST HOLE SCHEDULE		
NO.	DEPTH	REMARKS
TH-1	3.70'	6" WRAPPED STEEL GAS PIPE
TH-2	2.73'	4" PLASTIC GAS PIPE
TH-3	3.62'	4" PLASTIC GAS PIPE
TH-4	5.74'	12" CAST IRON WATER PIPE

*SEE TEST HOLE REPORTS, SHEET 17.

LEGEND

- FULL-DEPTH PVMT
- REMOVE EX. PVMT (SEE NOTE 1)
- SIDEWALK
- GRADED AGGREGATE FOR MOT
- 445 PR. CONTOUR
- LIMIT OF DISTURBANCE
- PR. W-BEAM
- F LIMIT OF FILL
- C LIMIT OF CUT
- TEMPORARY CONSTRUCTION EASEMENT

NOTES:

1. REMOVE ALL EXISTING ROADWAY TO SUBGRADE AND BACKFILL TO EXISTING GRADE (MIN). FOR SLOPES 2:1 PLACE 2" TOPSOIL, FOR SLOPES FLATTER THAN 2:1, PLACE 4" TOPSOIL. SEED AND MULCH.
2. CONTRACTOR MUST MAINTIAN ACCESS TO TRAILER AND DRIVEWAY TO CASCADE OVERLOOK DURING CONSTRUCTION.
3. SEE SOIL BORING LOGS ON SHEET 17.

SCALE: 1" = 30'-0"

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STATE OF MARYLAND — WALTER P. WHITMAN — No. 19165 — PROFESSIONAL ENGINEER

DES: VAK						
DRN: VAK						
CHK: BRT						
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	ADC MAP NO. 4936	GRID G3

ROADWAY PLAN

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE 1"=30'

SHEET 2 OF 21

SURVEY CONTROL POINTS AND BENCHMARK ELEVATIONS			
TRAV. PT.	NORTH	EAST	EL. (FT.)
201	571767.7151	1377163.4663	471.88
203	571672.1419	1377163.4612	469.79
204	571318.1995	1377862.4895	425.66
205	571515.9177	1377537.1139	429.15
206	571785.6804	1377213.3686	471.55
250	571409.4088	1377610.0817	427.97
251	571593.6736	1377429.7464	439.05
253	571520.3397	1377078.9115	469.74

POINT	FIGURE	NORTHING	EASTING	ELEV	TYPE
1	1	571697.62	1377150.41	471.42	POB
2	1	571631.06	1377319.89	454.61	PC
3	1	571559.19	1377451.58	437.21	PT
4	1	571330.92	1377768.82	427.88	POE
5	2	571221.24	1376902.97	469.27	POB
6	2	571864.63	1377237.15	473.50	POE
7	3	571473.62	1377055.70	469.87	POB/PC
8	3	571487.62	1377063.88	469.94	PT
9	3	571533.32	1377093.47	470.21	PC
10	3	571547.77	1377101.88	470.29	PT
11	3	571643.62	1377151.66	470.62	PC
12	3	571662.41	1377201.78	467.88	PT
13	3	571653.82	1377223.65	465.88	POE
14	4	571787.29	1377211.98	471.89	POB/PC
15	4	571732.59	1377193.43	471.12	PCC
16	4	571690.82	1377212.58	468.01	PCC
17	4	571677.32	1377240.42	465.12	PT
18	4	571644.09	1377325.01	454.21	PC
19	4	571610.67	1377396.30	444.97	PT/POE

FIGURE	CURVE/ TANGENT	STATION/ TYPE	TANGENT LENGTH	CURVE LENGTH	DELTA	DC	RADIUS	BEARING	NORTHING	EASTING
1		199+99.69 POB							571697.62	1377150.41
	L1		182.08					S 68^33'28" E		
		201+81.77 PC							571631.06	1377319.89
	C1	202+57.38 PI		150.42	14^21'52"	9^32'57"	600.00		571603.42	1377390.27
		203+32.19 PT							571559.19	1377451.58
	L2		390.82					S 54^15'48" E		
		207+23.01 POE							571330.92	1377768.82
2		100+00.00 POB							571221.24	1376902.97
	L3		725.00					N 27^26'51" E		
		107+25.00 POE							571864.63	1377237.15
3		0+00.00 POB/PC							571473.62	1377055.70
	C2	0+08.12 PI		16.22	5^18'38"	32^44'26"	175.00		571480.81	1377059.46
		0+16.22 PT							571487.62	1377063.88
	L4		54.44					N 32^55'30" E		
		0+70.66 PC							571533.32	1377093.47
	C3	0+79.03 PI		16.73	5^28'39"	32^44'26"	175.00		571540.34	1377098.02
		0+87.39 PT							571547.77	1377101.88
	L5		108.00					N 27^26'51" E		
		1+95.39 PC							571643.62	1377151.66
	C4	2+31.40 PI		58.64	83^59'41"	143^14'22"	40.00		571675.58	1377168.26
		2+54.03 PT							571662.41	1377201.78
	L6		23.50					S 68^33'28" E		
		2+77.53 POE							571653.82	1377223.65
4		0+00.00 POB/PC							571787.29	1377211.98
	C5	0+29.18 PI		57.96	16^36'15"	28^38'52"	200.00		571761.29	1377198.71
		0+57.96 PCC							571732.59	1377193.43
	C6	0+86.03 PI		48.95	70^06'43"	143^14'22"	40.00		571704.98	1377188.35
		1+06.91 PCC							571690.82	1377212.58
	C7	1+22.42 PI		30.96	8^52'14"	28^38'52"	200.00		571682.99	1377225.98
		1+37.87 PT							571677.32	1377240.42
	L7		90.88					S 68^33'28" E		
		2+28.76 PC							571644.09	1377325.01
	C8	2+68.21 PI		78.79	7^21'10"	9^19'54"	614.00		571629.67	1377361.73
		3+07.55 PT/POE							571610.67	1377396.30

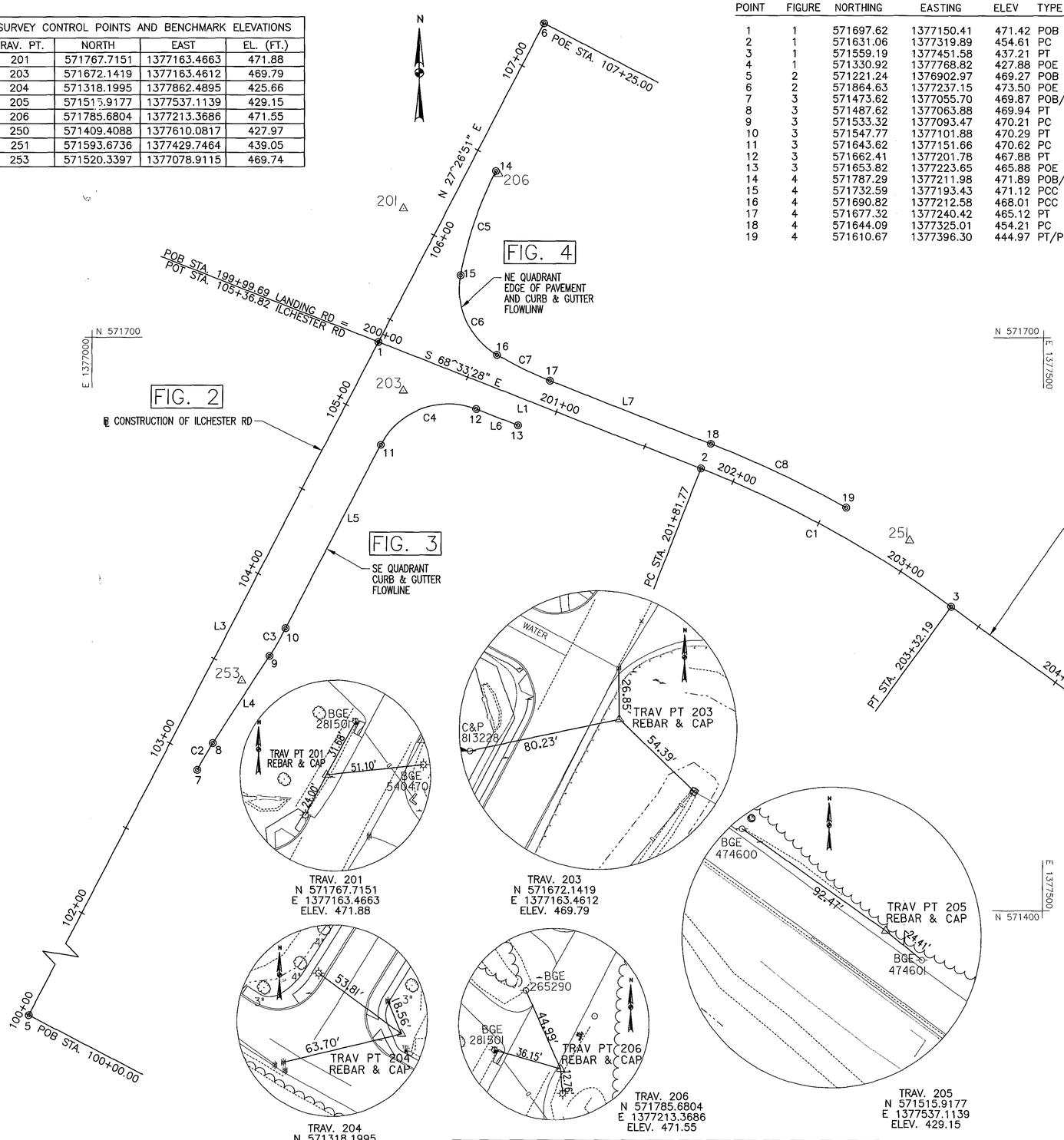

FIG. 1

NO.	LENGTH	DEGREE OF CURVATURE	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BEARING
C1	150.42'	9^32'57"	14^21'52"	75.61	ARC	600.00	150.03	S 61^22'32" E
C2	16.22'	32^44'26"	5^18'38"	8.12	ARC	175.00	16.21	N 30^16'11" E
C3	16.73'	32^44'26"	5^28'39"	8.37	ARC	175.00	16.72	N 30^11'10" E
C4	58.64'	143^14'22"	83^59'41"	36.01	ARC	40.00	53.53	N 69^26'42" E
C5	57.96'	28^38'52"	16^36'15"	29.18	ARC	200.00	57.76	S 18^43'37" W
C6	48.95'	143^14'22"	70^06'43"	28.07	ARC	40.00	45.95	S 24^37'52" E
C7	30.96'	28^38'52"	8^52'14"	15.51	ARC	200.00	30.93	S 64^07'21" E
C8	78.79'	9^19'54"	7^21'10"	39.45	ARC	614.00	78.74	S 64^52'53" E

NO.	DIRECTION	DISTANCE
L1	S 68^33'28" E	182.08
L2	S 54^15'48" E	390.82
L3	N 27^26'51" E	725.00
L4	N 32^55'30" E	54.44
L5	N 27^26'51" E	108.00
L6	S 68^33'28" E	23.50
L7	S 68^33'28" E	90.88

0 15' 30' 60'
SCALE: 1" = 30'-0"

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GEOMETRY SHEET

ADC MAP NO. 4936 GRID G3

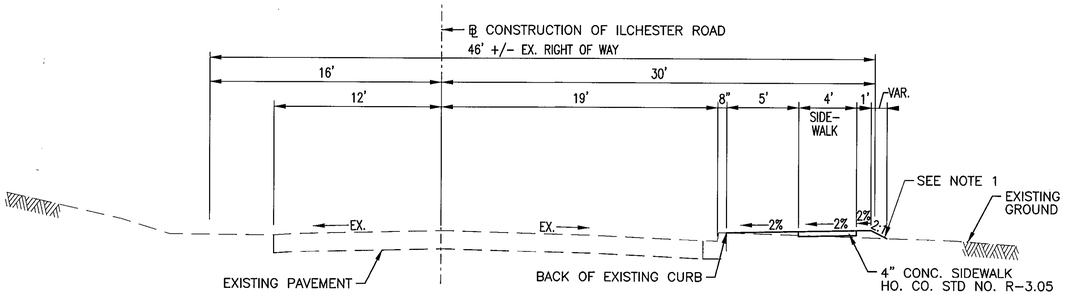
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

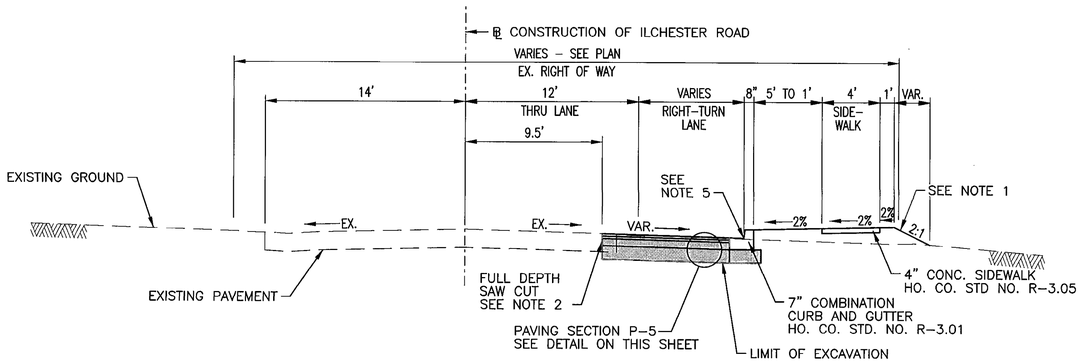
SCALE 1"=30'

SHEET 3 OF 21



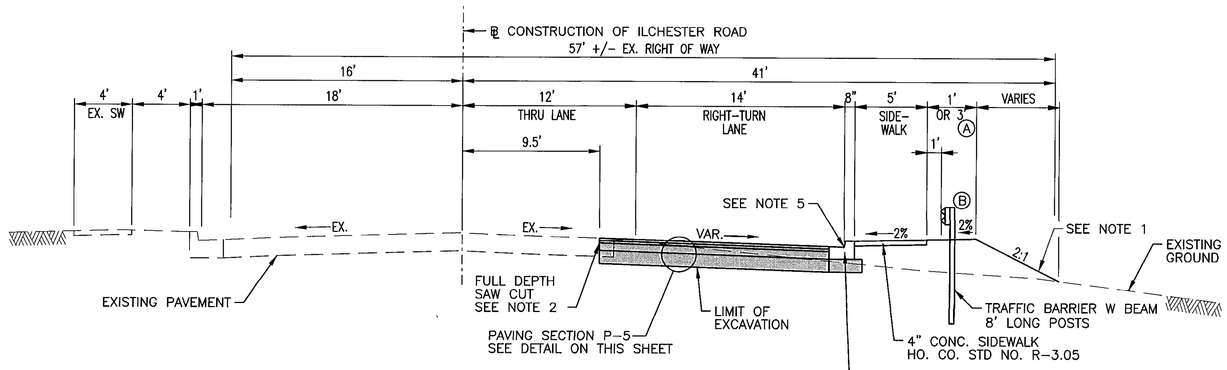
ILCHESTER ROAD SIDEWALK SECTION

STA. 101+97 TO STA. 102+94



ILCHESTER ROAD TAPER SECTION

STA. 102+94 TO STA. 103+42



ILCHESTER ROAD RIGHT TURN SECTION

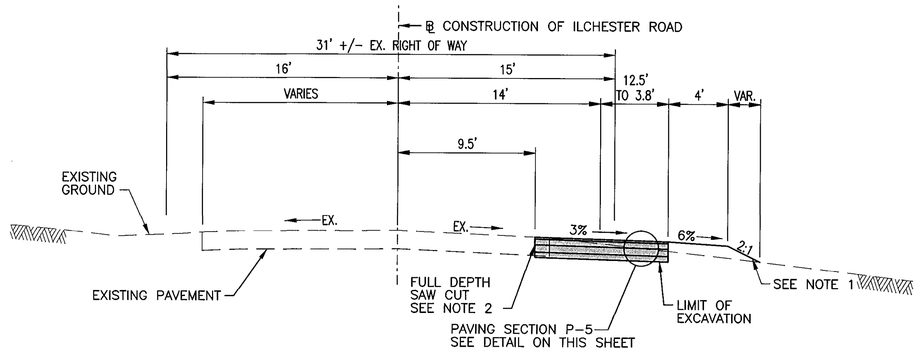
STA. 103+42 TO STA. 105+16

(A) 1' FROM STA. 103+42 TO STA. 104+00
TRANSITION FROM 1' TO 3' FROM STA. 104+00 TO STA. 104+25
3' FROM STA. 104+25 TO STA. 105+16

(B) 8' LONG POST W BEAM FROM STA. 104+75 TO STA. 105+16

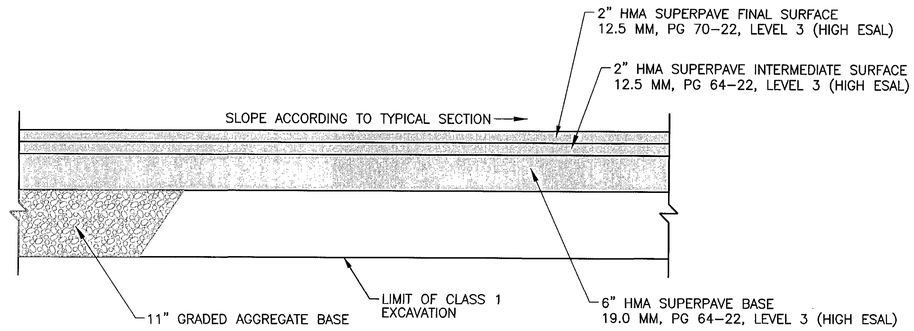
NOTES:

1. PLACE 2 INCHES OF FURNISHED TOPSOIL ON SLOPES 2:1 AND FLATTER AND ESTABLISH TURF.
2. FULL-DEPTH SAWCUTS SHALL BE INCIDENTAL TO THE COST OF CLASS I EXCAVATION.
3. SEE GEOMETRY SHEET FOR EDGE OF PAVEMENT AND CURB AND GUTTER FLOWLINE LOCATION.
4. SEE ROADWAY PLAN FOR LIMITS OF CURB AND GUTTER, LIMITS OF 8' POST W BEAM AND END TREATMENTS, AND TOE OF SLOPE.
5. SEE CURB LAYOUT DRAWING (SHEET 6) FOR FLOWLINE ELEVATIONS.



ILCHESTER ROAD WIDEN SECTION

STA. 105+87 TO STA. 106+44



TYPICAL PAVEMENT SECTION, P-5

SCALE: 1" = 1'

NOTES:

1. HMA SUPERPAVE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.5" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2" MAX).
2. GEOTEXTILE THAT MEETS THE REQUIREMENTS OF AASHTO DESIGNATION M-288, CLASS 2 SHALL BE PLACED ON THE SUBGRADE PIOR TO THE PLACEMENT OF GRADED AGGREGATE BASE (GAB). GAB TO BE PLACED AND COMPACTED IN 6" MAX COMPACTED THICKNESS LAYERS.
3. THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.

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DES:	VAK
DRN:	VAK
CHK:	BRT
DATE:	9/28/2012

BY	NO.	DESCRIPTION	DATE

TYPICAL SECTIONS + DETAILS

ADC MAP NO. 4936 — GRID G3

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

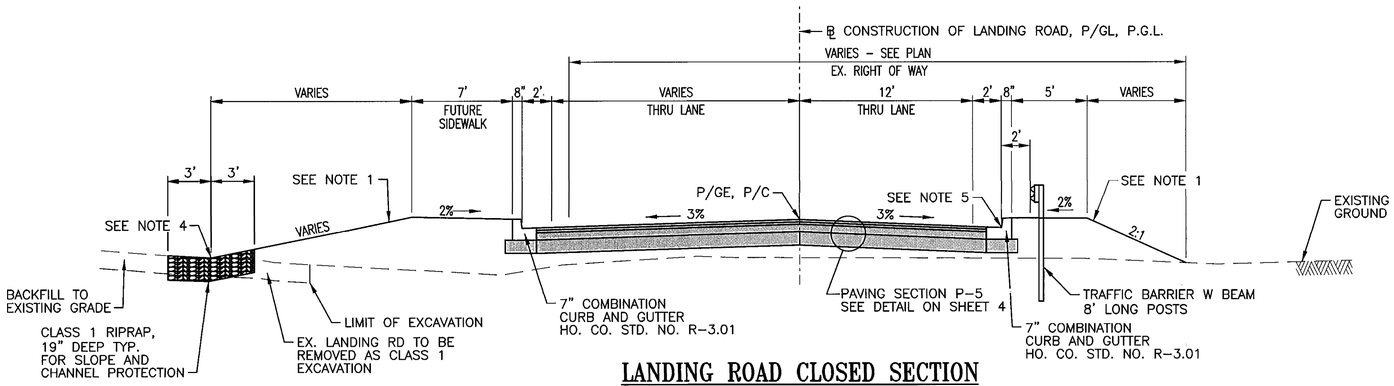
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE 1"=5'

SHEET 4 OF 21

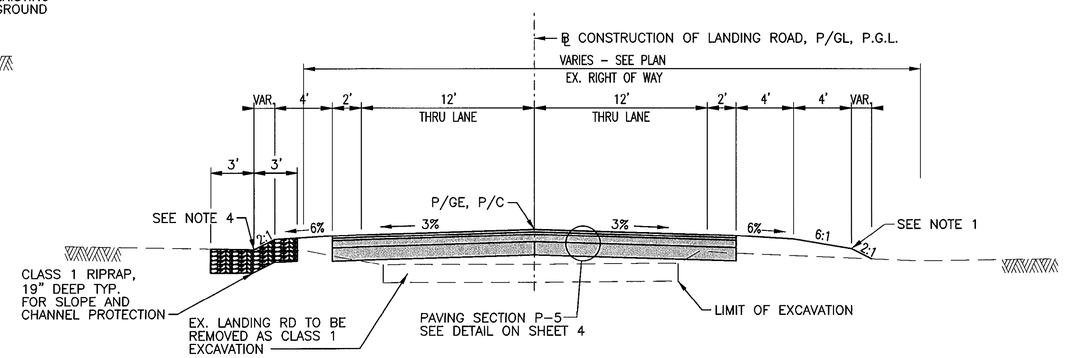
NOTES:

1. PLACE 2 INCHES OF FURNISHED TOPSOIL ON SLOPES 2:1 AND FLATTER AND ESTABLISH TURF.
2. FULL-DEPTH SAWCUTS SHALL BE INCIDENTAL TO THE COST OF CLASS I EXCAVATION.
3. SEE GEOMETRY SHEET FOR EDGE OF PAVEMENT AND CURB AND GUTTER FLOWLINE LOCATION.
4. SEE ROADWAY PLAN FOR LIMITS OF CURB AND GUTTER, LIMITS OF 8' POST W BEAM AND END TREATMENTS, AND TOE OF SLOPE.
5. SEE CURB LAYOUT DRAWING (SHEET 6) FOR FLOWLINE ELVATIONS.



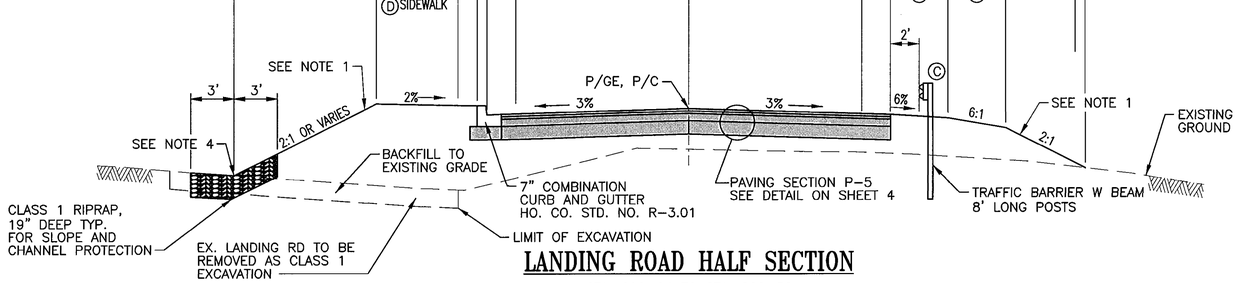
LANDING ROAD CLOSED SECTION

STA. 200+60 TO STA. 200+84



LANDING ROAD OPEN SECTION

STA. 202+58 TO STA. 204+91



LANDING ROAD HALF SECTION

STA. 200+84 TO STA. 202+58

Ⓐ 4' TO 12' FROM STA. 201+25 TO STA. 201+75
12' FROMS TA. 201+75 TO STA. 202+00
12' TO 2' FROM STA. 202+00 TO STA. 202+50
2' FROM STA. 202+50 TO 202+58

Ⓑ 4' TO 0' FROM STA. 201+25 TO STA. 201+50
0' FROM STA. 201+50 TO 202+58

Ⓒ 8' LONG POSTS W BEAM FROM STA. 200+83 TO STA. 202+00

Ⓓ 7' TO 2' FROM STA. 201+80 TO STA. 202+00
2' FROM STA. 202+00 TO STA. 202+58

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/11/2015 ."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. WILLIAMS — NO. 19165 — PROFESSIONAL ENGINEER

DES:	VAK
DRN:	VAK
CHK:	BRT
DATE:	9/28/2012

BY	NO.	DESCRIPTION	DATE

TYPICAL SECTIONS

ADC MAP NO. 4936 | GRID G3

CAPITAL PROJECT NO. J-4228

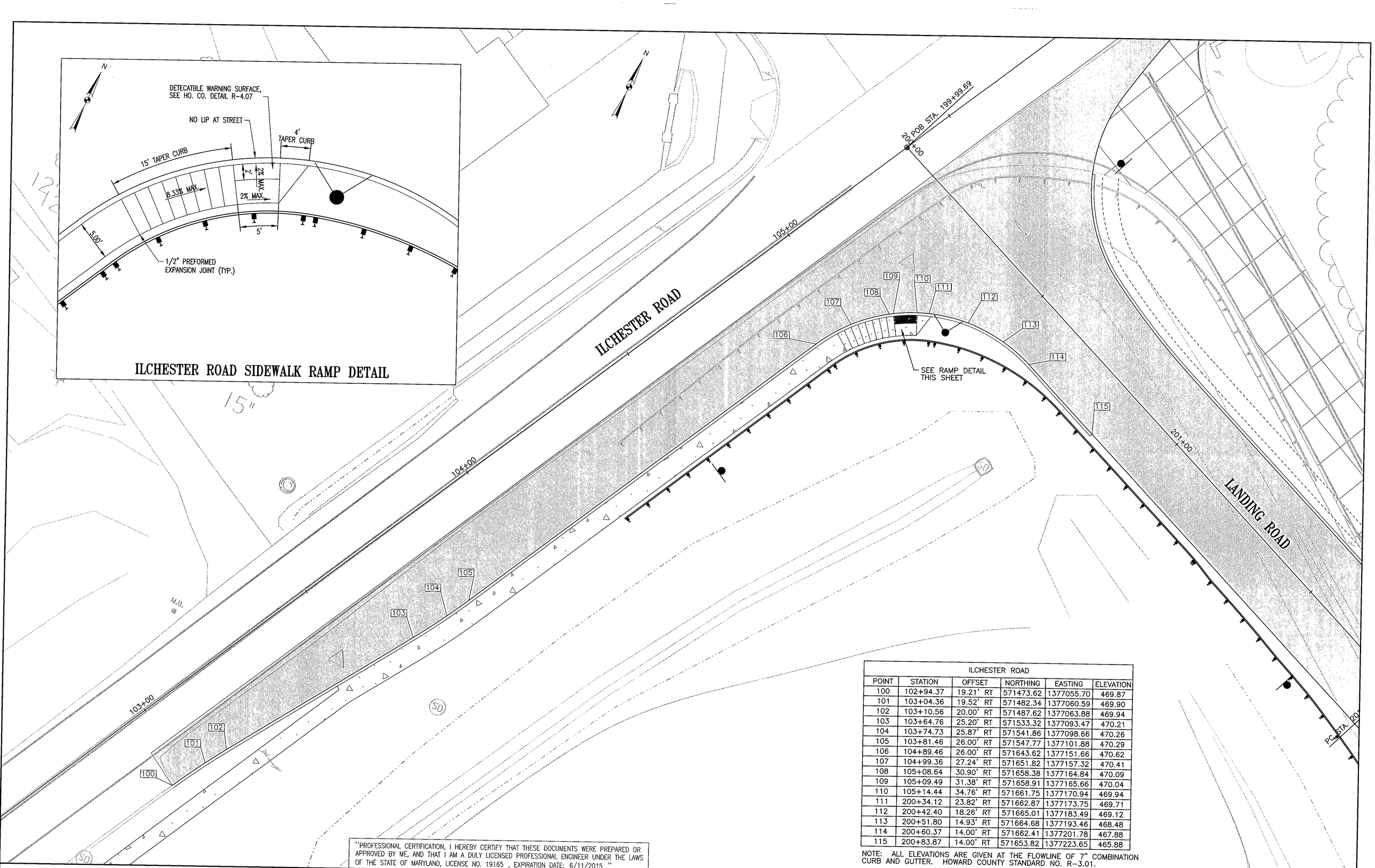
ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE 1"=5'

SHEET 5 OF 21

ILCHESTER ROAD SIDEWALK RAMP DETAIL



ILCHESTER ROAD					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
100	102+94.37	19.21' RT	571473.62	1377055.70	469.87
101	103+04.36	19.52' RT	571482.34	1377060.59	469.90
102	103+10.56	20.00' RT	571487.62	1377063.88	469.94
103	103+64.76	25.20' RT	571533.32	1377093.47	470.21
104	103+74.73	25.87' RT	571541.86	1377098.66	470.26
105	103+81.46	26.00' RT	571547.77	1377101.88	470.29
106	104+89.46	26.00' RT	571643.62	1377151.66	470.62
107	104+99.36	27.24' RT	571651.82	1377157.32	470.41
108	105+08.64	30.90' RT	571658.38	1377164.84	470.09
109	105+09.49	31.38' RT	571658.91	1377165.66	470.04
110	105+14.44	34.76' RT	571661.75	1377170.94	469.94
111	200+34.12	23.82' RT	571662.87	1377173.75	469.71
112	200+42.40	18.26' RT	571665.01	1377183.49	469.12
113	200+51.80	14.93' RT	571664.68	1377193.46	468.48
114	200+60.37	14.00' RT	571662.41	1377201.78	467.88
115	200+83.87	14.00' RT	571653.82	1377223.65	465.88

NOTE: ALL ELEVATIONS ARE GIVEN AT THE FLOWLINE OF 7" COMBINATION CURB AND GUTTER. HOWARD COUNTY STANDARD NO. R-3.01.

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13

CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13

CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13

CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MILLS — 19165 — REGISTERED PROFESSIONAL ENGINEER

DES: VAK
DRN: VAK
CHK: BRT
DATE: 9/28/2012

BY	NO.	DESCRIPTION	DATE

CURB LAYOUT AND SIDEWALK DETAIL

ADC MAP NO. 4936 | GRID G3

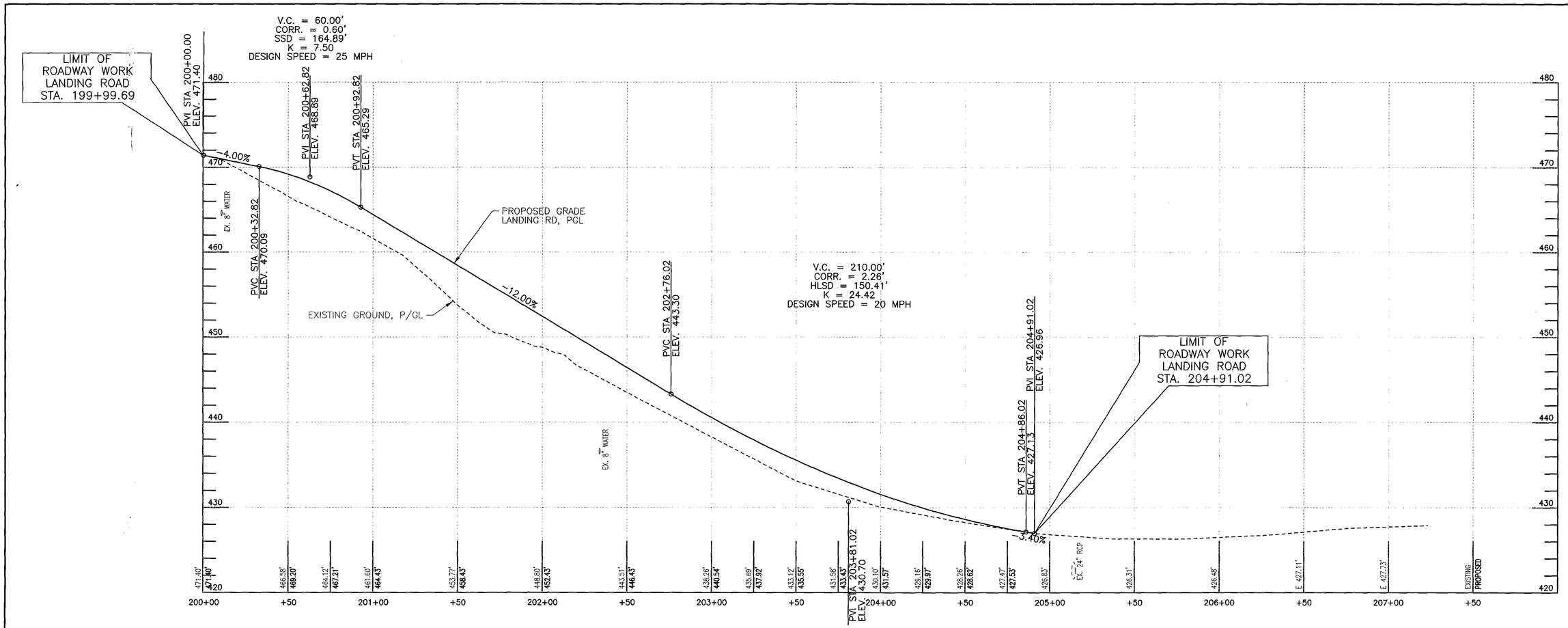
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

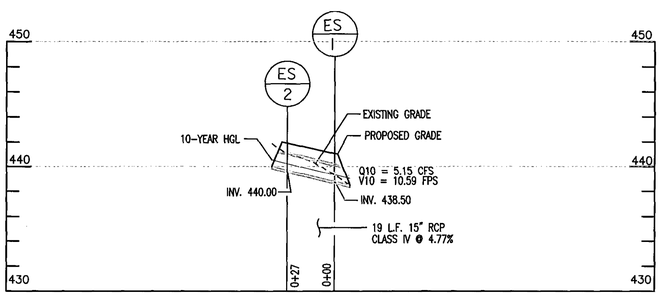
SCALE 1"=10'

SHEET 6 OF 21



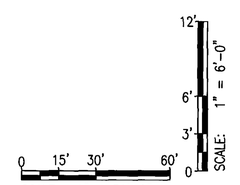
LANDING ROAD

SCALE:
H: 1" = 30'
V: 1" = 6'



STA. 202+79 LT TO STA. 202+97 LT B LANDING ROAD

SCALE:
H: 1" = 30'
V: 1" = 6'



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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/6/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MILLER — No. 19165 — PROFESSIONAL ENGINEER

DES:				
DRN:				
CHK:				
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE

ROADWAY AND PIPE PROFILE

ADC MAP NO. 4936 — GRID G3

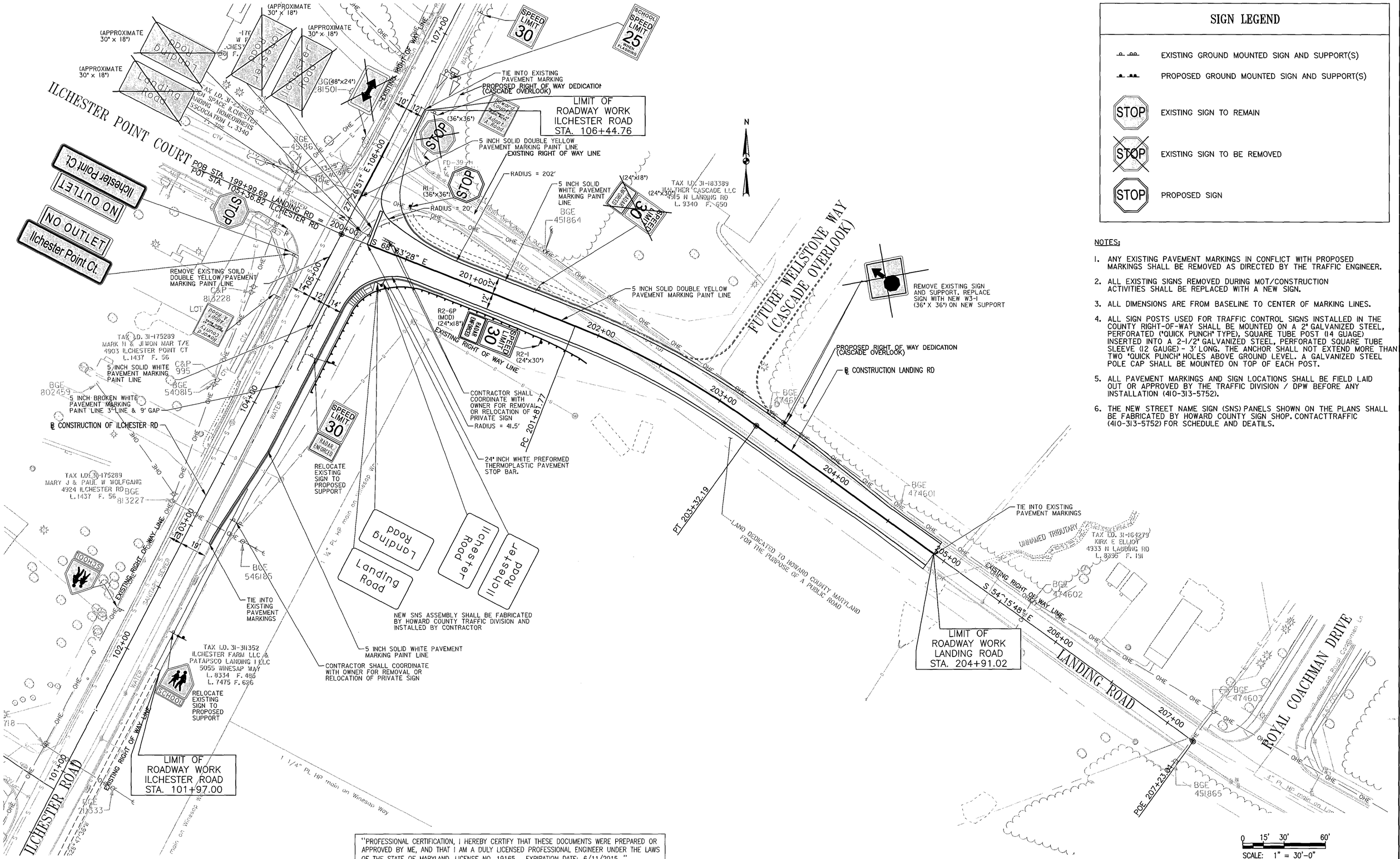
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 7 OF 21



SIGN LEGEND

	EXISTING GROUND MOUNTED SIGN AND SUPPORT(S)
	PROPOSED GROUND MOUNTED SIGN AND SUPPORT(S)
STOP	EXISTING SIGN TO REMAIN
STOP	EXISTING SIGN TO BE REMOVED
STOP	PROPOSED SIGN

NOTES:

1. ANY EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED MARKINGS SHALL BE REMOVED AS DIRECTED BY THE TRAFFIC ENGINEER.
2. ALL EXISTING SIGNS REMOVED DURING MOT/CONSTRUCTION ACTIVITIES SHALL BE REPLACED WITH A NEW SIGN.
3. ALL DIMENSIONS ARE FROM BASELINE TO CENTER OF MARKING LINES.
4. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ('QUICK PUNCH' TYPE), SQUARE TUBE POST (14 GUAGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO 'QUICK PUNCH' HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
5. ALL PAVEMENT MARKINGS AND SIGN LOCATIONS SHALL BE FIELD LAID OUT OR APPROVED BY THE TRAFFIC DIVISION / DPW BEFORE ANY INSTALLATION (410-313-5752).
6. THE NEW STREET NAME SIGN (SNS) PANELS SHOWN ON THE PLANS SHALL BE FABRICATED BY HOWARD COUNTY SIGN SHOP. CONTACT TRAFFIC (410-313-5752) FOR SCHEDULE AND DEATILS.

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/11/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MOORE — No. 19165 — PROFESSIONAL ENGINEER

DES: JM					
DRN: SS					
CHK: JM					
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	

SIGNING & MARKING PLAN

ADC MAP NO. 4936 GRID G3

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE 1" = 30'

SHEET 8 OF 21

WORK ZONE TRAFFIC CONTROL PLAN GENERAL NOTES / WORK RESTRICTIONS

1. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE LATEST VERSION OF THE MARYLAND STATE HIGHWAY ADMINISTRATION'S (MSHA) BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES AND MSHA'S MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MdMUTCD).
2. EXISTING TRAFFIC SIGNS IN CONFLICT WITH THE WORK ZONE TRAFFIC CONTROL PLANS SHALL BE COVERED. TEMPORARY TRAFFIC SIGNS SHALL BE INSTALLED ONLY AS NECESSARY FOR EACH INDIVIDUAL PHASE OF CONSTRUCTION, WITH SIGNS RELOCATED AS APPLICABLE BETWEEN SEPARATE PHASES.
3. ALL EXISTING PAVEMENT MARKINGS AND/OR TEMPORARY PAVEMENT MARKINGS FROM A PREVIOUS PHASE OF CONSTRUCTION IN CONFLICT WITH TEMPORARY PAVEMENT MARKINGS (IN CURRENT PHASE) SHALL BE REMOVED, AS DIRECTED BY THE ENGINEER.
4. CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIAL FROM THE TRAVELED PORTION OF THE ROADWAY. ALSO, EQUIPMENT AND MATERIALS SHOULD NOT BE STORED IN SUCH A MANNER AS TO OBSTRUCT SIGHT DISTANCE AT ANY INTERSECTING ROAD.
5. WHEN FLAGGING IS NECESSARY DURING THE SAWCUTTING PROCESS, REFERENCE MD STD.104.02-10 AND MD STD.104.02-14.
6. ALL OPEN EXCAVATIONS AND TRENCHES SHALL BE PLATED AT THE END OF EACH WORK DAY WITH W8-8(4) (36"x36") "STEEL PLATES" SIGNS DISPLAYED IN ADVANCE AND ALL EDGES OF PLATES SHALL HAVE COLD PATCH APPLIED.
7. DROP-OFFS ADJACENT TO TRAVEL LANES IN EXCESS OF 2.5 INCHES SHALL BE CORRECTED AT THE END OF THE WORK DAY IN ACCORDANCE WITH SHA STD. MD 104.00-14 (PARAGRAPH 14) AND STD. NO. MD 104.01-28.

MAINTENANCE OF TRAFFIC ACTIVITIES

PHASE 1

1. INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THE PLANS.
2. REMOVE (BY GRINDING ONLY)/COVER THE EXISTING PAVEMENT MARKINGS AND INSTALL TEMPORARY PAVEMENT MARKINGS ON ILCHESTER ROAD AS SHOWN ON THE PLANS.
3. INSTALL TRAFFIC CONTROL DRUMS AS SHOWN ON THE PLANS.
4. SAWCUTTING AND FULL-DEPTH PAVING OF ILCHESTER ROAD WILL REQUIRE CLOSURES OF NORTHBOUND ILCHESTER ROAD AS NOTED.
5. 14 DAYS PRIOR TO END OF PHASE 1/ CLOSURE OF LANDING ROAD, INSTALL PORTABLE VARIABLE MESSAGE SIGNS (PVMS) WITH APPROVED MESSAGE FROM TRAFFIC DIVISION. INSTALL ON LANDING ROAD APPROACHING ILCHESTER ROAD AND ON SOUTHBOUND AND NORTHBOUND ILCHESTER ROAD PRIOR TO LANDING ROAD.

PHASE 2

1. INSTALL DETOUR FOR LANDING ROAD AND CLOSE LANDING ROAD.
2. REMOVE THE TRAFFIC CONTROL DEVICES UTILIZED IN PHASE 1 THAT ARE NOT APPLICABLE TO PHASE 2.
3. INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THE PLANS.
4. INSTALL TRAFFIC CONTROL DRUMS AS SHOWN ON THE PLANS.

CONSTRUCTION ACTIVITIES

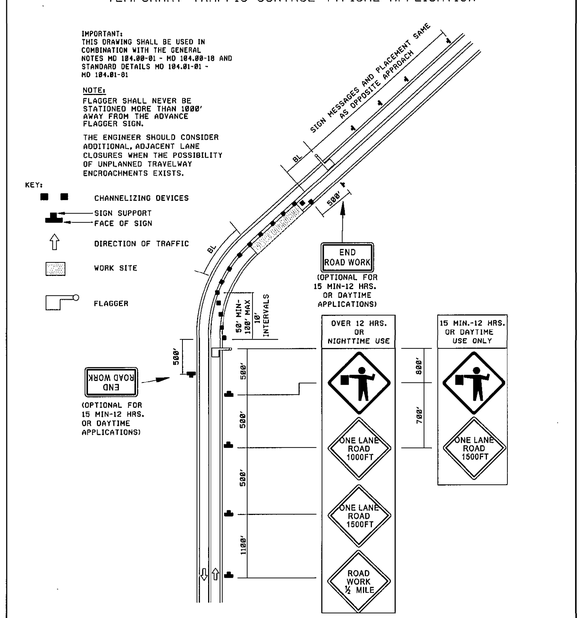
PHASE 1

1. SAWCUT ALONG THE PROPOSED SAWCUT LINE FROM ILCHESTER ROAD STATION 102+94.16 TO 105+37.82 AS SHOWN ON PLANS.
2. CONSTRUCT FULL-DEPTH PAVEMENT AS SHOWN ON PLANS.
3. CONSTRUCT 4 INCH SIDEWALK AS SHOWN ON PLANS.

PHASE 2

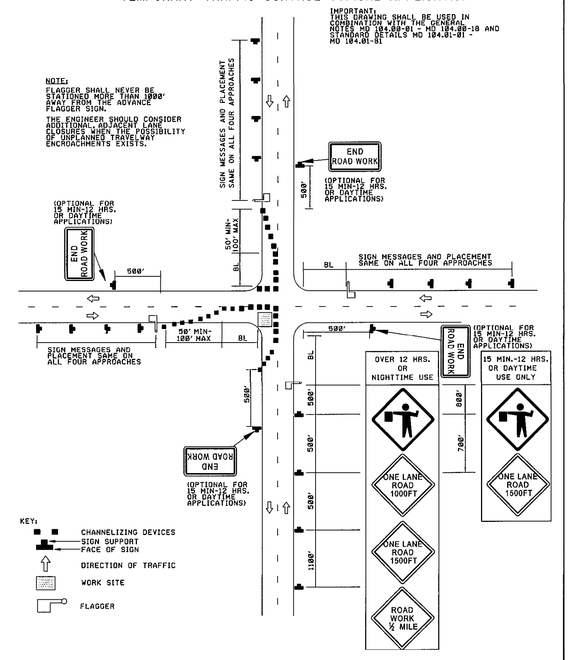
1. SAWCUT ALONG THE PROPOSED SAWCUT LINE FROM ILCHESTER ROAD STATION 105+37.82 TO 106+44.76.
2. CONSTRUCT FULL-DEPTH PAVEMENT AS SHOWN ON PLANS.
3. INSTALL TRAFFIC BARRIER W BEAM AS SHOWN ON PLANS.
4. INSTALL PERMANENT SIGNING, MARKINGS, AND LANDSCAPING.

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



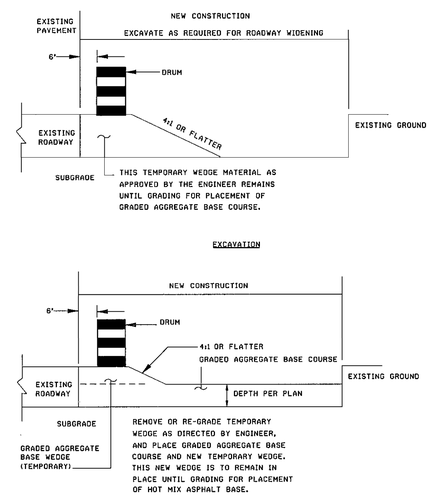
FLAGGING OPERATION/2-LANE, 2-WAY
EQL/LESS THAN 40 MPH
MD 104.02-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



INTERSECTION FLAGGING OPERATION
2-LANE,2-WAY EQL/LESS THAN 40 MPH
MD 104.02-14

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



STAGED ROADWAY CONSTRUCTION
MD 104.01-28

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. JAMES — No. 19165 — PROFESSIONAL ENGINEER

DES: SS					
DRN: SS					
CHK: JM					
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	

MAINTENANCE OF TRAFFIC GENERAL NOTES

ADC MAP NO. 4936 — GRID G3

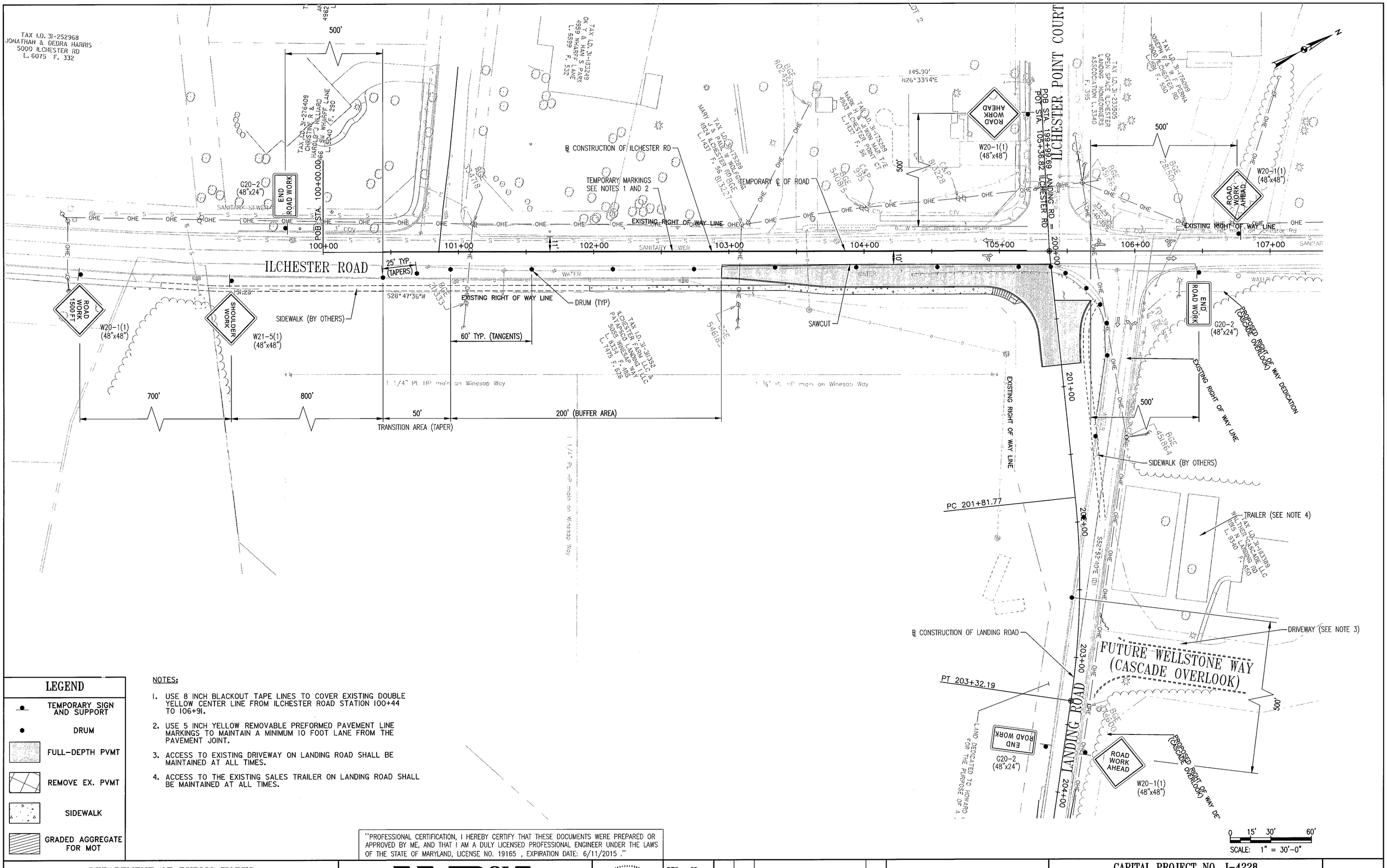
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE: 1"=30'

SHEET 9 OF 21



LEGEND

- TEMPORARY SIGN AND SUPPORT
- DRUM
- FULL-DEPTH PVMT
- REMOVE EX. PVMT
- SIDEWALK
- GRADED AGGREGATE FOR MOT

NOTES:

1. USE 8 INCH BLACKOUT TAPE LINES TO COVER EXISTING DOUBLE YELLOW CENTER LINE FROM ILCHESTER ROAD STATION 100+44 TO 106+91.
2. USE 5 INCH YELLOW REMOVABLE PREFORMED PAVEMENT LINE MARKINGS TO MAINTAIN A MINIMUM 10 FOOT LANE FROM THE PAVEMENT JOINT.
3. ACCESS TO EXISTING DRIVEWAY ON LANDING ROAD SHALL BE MAINTAINED AT ALL TIMES.
4. ACCESS TO THE EXISTING SALES TRAILER ON LANDING ROAD SHALL BE MAINTAINED AT ALL TIMES.

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HOWARD COUNTY, MARYLAND

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CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

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801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MOORE — 19165 — REGISTERED PROFESSIONAL ENGINEER

DES: SS					
DRN: SS					
CHK: JM					
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	

MAINTENANCE OF TRAFFIC
PHASE 1

ADC MAP NO. 4936 — GRID G3

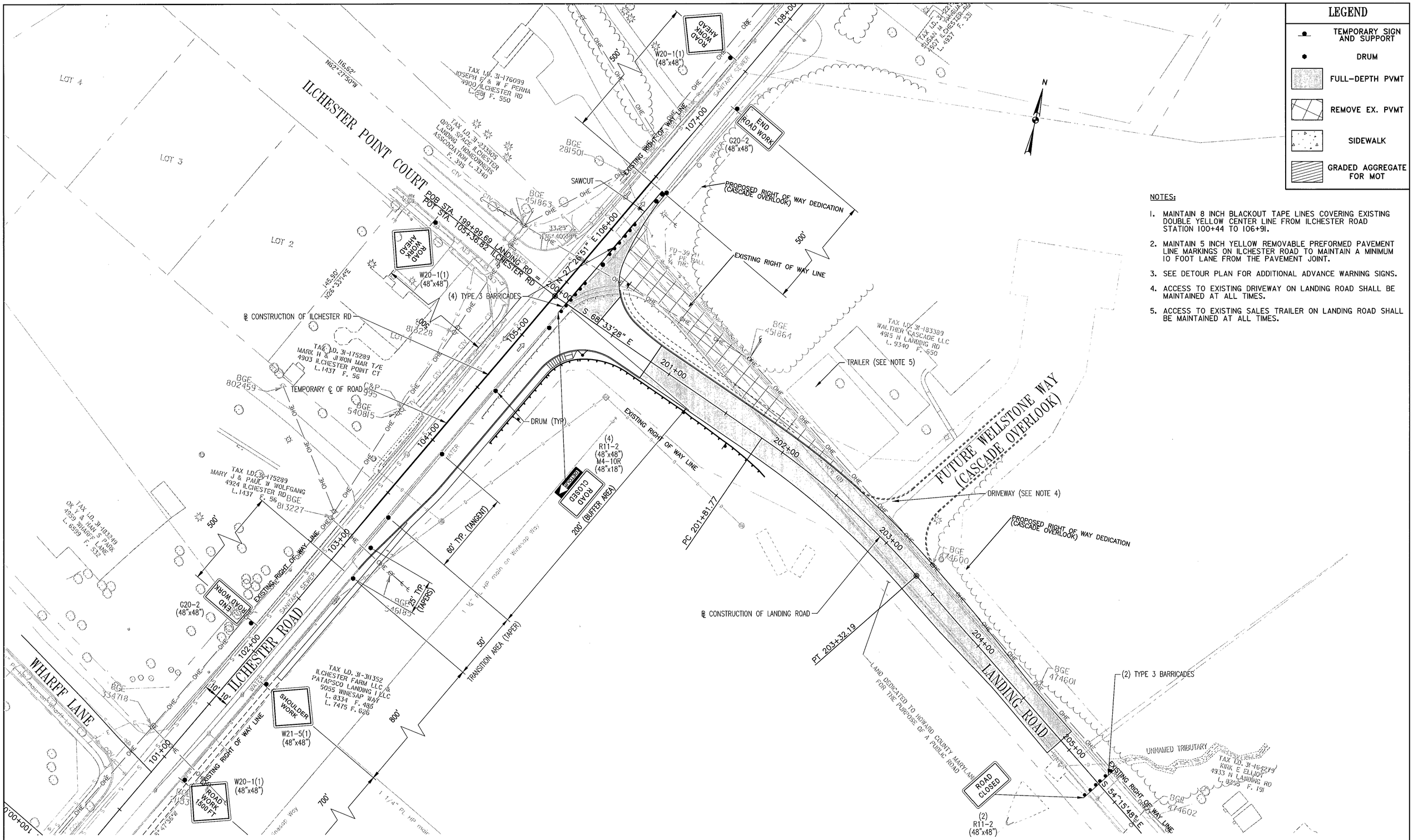
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD
INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE: 1"=30'

SHEET 10 OF 21



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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

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801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MILLER — NO. 19165 — PROFESSIONAL ENGINEER

DES: SS
DRN: SS
CHK: JM
DATE: 9/28/2012

BY	NO.	DESCRIPTION	DATE

MAINTENANCE OF TRAFFIC PHASE 2

ADC MAP NO. 4936 | GRID G3

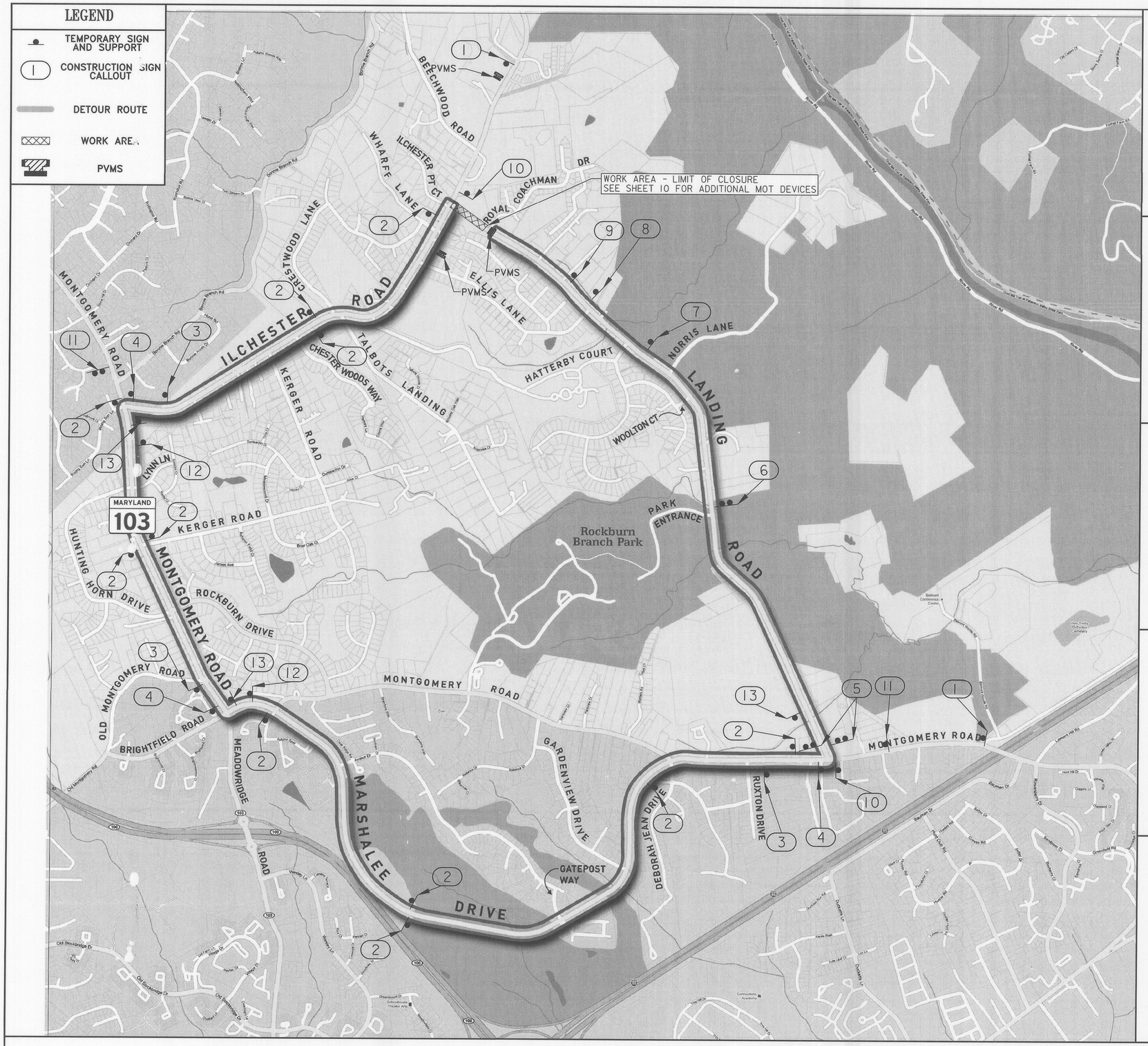
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE: 1"=30'

SHEET 11 OF 21



(1) DETOUR AHEAD W20-2(1) MOD (48"×48")	(2) Landing Rd / DETOUR M4-9(1) (30" × 12") M4-9 (30" × 24")	(3) Landing Rd / DETOUR M4-9(1) (30" × 12") M4-9L MOD (30" × 24")
(4) Landing Rd / DETOUR M4-9(1) (30" × 12") M4-9L (30" × 24")	(5) ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY / DETOUR R11-3a (60"×30") M4-10R (48"×18") ON TYPE III BARRICADES	(6) ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY R11-3a (60"×30") ON POSTS OR TYPE III BARRICADE
(7) ROAD CLOSED ½ MILE W20-3(1) (48"×48")	(8) ROAD CLOSED 1500 FT W20-3(1) (48"×48")	(9) ROAD CLOSED 800 FT W20-3(1) (48"×48")
(10) END DETOUR M4-8a(1) (36"×24")	(11) NOTICE / Landing Rd CLOSED AT Ilchester Rd / FOLLOW DETOUR 0.75" 1.25" BLK/FY 3" BLK/W 66" 60" BLK/FO 5.6875" 6"D .8125" 1.25" .625" 6'/4.50°C .625" 6"C .625" 6'/4.50°C .625" 1.25" .4375" 5"C 6.1875"	(12) Landing Rd / DETOUR M4-9(1) (30" × 12") M4-9R MOD (30" × 24")
(13) Landing Rd / DETOUR M4-9(1) (30" × 12") M4-9R (30" × 24")		

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NOTES:

1. CONTRACTOR SHALL CONTACT HOWARD COUNTY TRAFFIC FOR ALL PVMS MESSAGES.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/10/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. WILES — NO. 19165 — PROFESSIONAL ENGINEER

DES: JM
DRN: SS
CHK: JM
DATE: 9/28/2012

BY	NO.	DESCRIPTION	DATE

MAINTENANCE OF TRAFFIC DETOUR PLAN

ADC MAP NO. 4936 | GPID G3

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE: 1"=700'

SHEET 12 OF 21

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

Purpose

Vegetative Stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

Conditions Where Practice Applies

This practice shall be used on decided areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

Effects on Water Quality and Quantity

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

Section I- Vegetative Stabilization Methods and Materials

A. Site Preparation

I. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.

II. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

III. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.

C. Seedbed Preparation

SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.

D. Seed Specifications

I. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

II. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 - 80°F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

I. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.

b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

II. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

III. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (In order of preference)

I. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

II. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

c. WCFM, including dye, shall contain no germination or growth inhibiting factors.

d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

e. WCFM material shall contain no elements or compounds at concentration levels that will be phyto-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

I. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

II. When straw mulch is used, it shall be spread over all seedbed areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used , the rate should be increased to 2.5 tons/acre.

III. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs.of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

II). A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

II. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

III. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

IV. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I. Incremental Stabilization - Cut Slopes

a. All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

b. Perform phase I excavation, dress, and stabilize as necessary..

c. Perform phase 2 excavation, dress, and stabilize. Overseed phase I areas as necessary.

d. Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

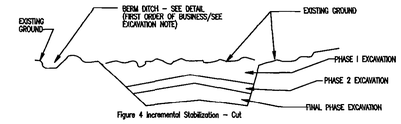

Figure 4 Incremental Stabilization - Cut

Incremental Stabilization of Embankments - Fill Slopes

I. Embankments shall be constructed in lifts as prescribed on the plans.

II. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.

III. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

Iv. Construction sequence: Refer to Figure 5 (below).

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct Slope Silt Fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.

b. Place phase 1 embankment, dress and stabilize.

c. Place phase 2 embankment, dress and stabilize.

d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization. turfgrass areas, refer to the University of Maryland publication 'Lawn Care in Maryland' Bulletin No.171.

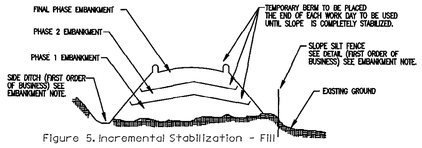

Figure 5. Incremental Stabilization - Fill

Section II- Temporary Seeding

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover. Permanent Seeding is required.

A. Seed Mixtures - Temporary Seeding

SEE HOWARD COUNTY SEEDING NOTES ON SHEET EP-03.

Section III- Permanent Seeding

Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.

A. Seed Mixtures - Permanent Seeding

SEE HOWARD COUNTY SEEDING NOTES ON THIS SHEET.

Table 24 Maintenance Fertilization for Permanent Seedings

Use Soil Test Results or Rates Shown Below

Seeding Mixture	Type	lb/ac	lb/1000 sf	Time	Mowing
Tall fescue makes up 70% or more of cover	10-10-10	500	11.5	Yearly or as needed. Fall	Not closer than 3" if occasional mowing is desired.
	or 30-10-10	400	9.2		
Crownvetch Sericea Lespedeza Birdsfoot Trefoil	0-20-0	400	9.2	Spring, the year following establishment and every 4-5 years thereafter	Do not mow crownvetch
Fairly uniform stand of tall fescue and sericea lespedeza, or birdsfoot trefoil	50-10-10	500	11.5	Fall the year following establishment and every 4-5 years thereafter	Not required, no closer than 4" in the fall after seed has matured.
Weeping lovegrass & sericea lespedeza fairly uniform plant distribution.	5-10-10	500	11.5	Spring, the year following establishment and every 3-4 years thereafter	Not required, not closer than 4" in fall after seed has matured.
Red & chewing fescue, Kentucky bluegrass, hard fescue mixtures	20-10-10	250	5.8	September, 30 days later December, May 20, June 30, if needed	Mow no closer than 2" for red fescue and K. bluegrass 3" for fescue.
		100	2.3		

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

A. General Specifications

I. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.

II. Sod shall be machine cut at a uniform soil thickness of 3/4 ", plus or minus 1/4 ", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers' width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.

III. Standard size sections of sod shall 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.

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

v. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.

B. Sod Installation

I. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.

II. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered 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.

III. Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on lopes and to ensure solid contact between sod roots and the underlying surface.

Iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soils surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for and piece of sod shall be completed within eight hours.

C. Sod Maintenance

I. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to depth of 4". Watering should be done during the heat of the day to prevent wilting.

II. After the first week, sod watering is required as necessary to maintain adequate moisture content.

III. The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2" and3" unless otherwise specified.

Section V - Turfgrass Establishment

Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

Note: 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 consumer protection and assures a pure genetic line.

A. Turfgrass Mixtures

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/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the 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/1000 square feet. A minimum of 3 Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 35% of the 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 - 100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate: 5 to 8 lb/1000 sf. 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 area. Mixture Includes; certified Kentucky Bluegrass Cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 lbs/1000 square feet. A minimum of 3 Kentucky bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, 'Turfgrass Cultivar Recommendations for Maryland'.

B. Ideal times of seeding

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

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

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

C. Irrigation

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

D. Repair and Maintenance

Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season.

I. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.

II. If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.

III. If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.

Iv. Maintenance fertilizer rates for permanent seedings are shown in Table 24. For lawns and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication 'Lawn Care in Maryland' Bulletin No.171.

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

John K. Robertson 5/30/13

HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATION

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

SIGNATURE OF ENGINEER DATE
(PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

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

SIGNATURE OF DEVELOPER DATE
(PRINT NAME BELOW SIGNATURE)

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/11/2015."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

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WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MILLER — No. 19165 — PROFESSIONAL ENGINEER

	BY	NO.	DESCRIPTION	DATE
DES: CSC				
DRN: CSC				
CHK: JDC				
DATE: 9/28/2012				

SEDIMENT AND EROSION CONTROL NOTES

ADC MAP NO. 4936 GRID G3

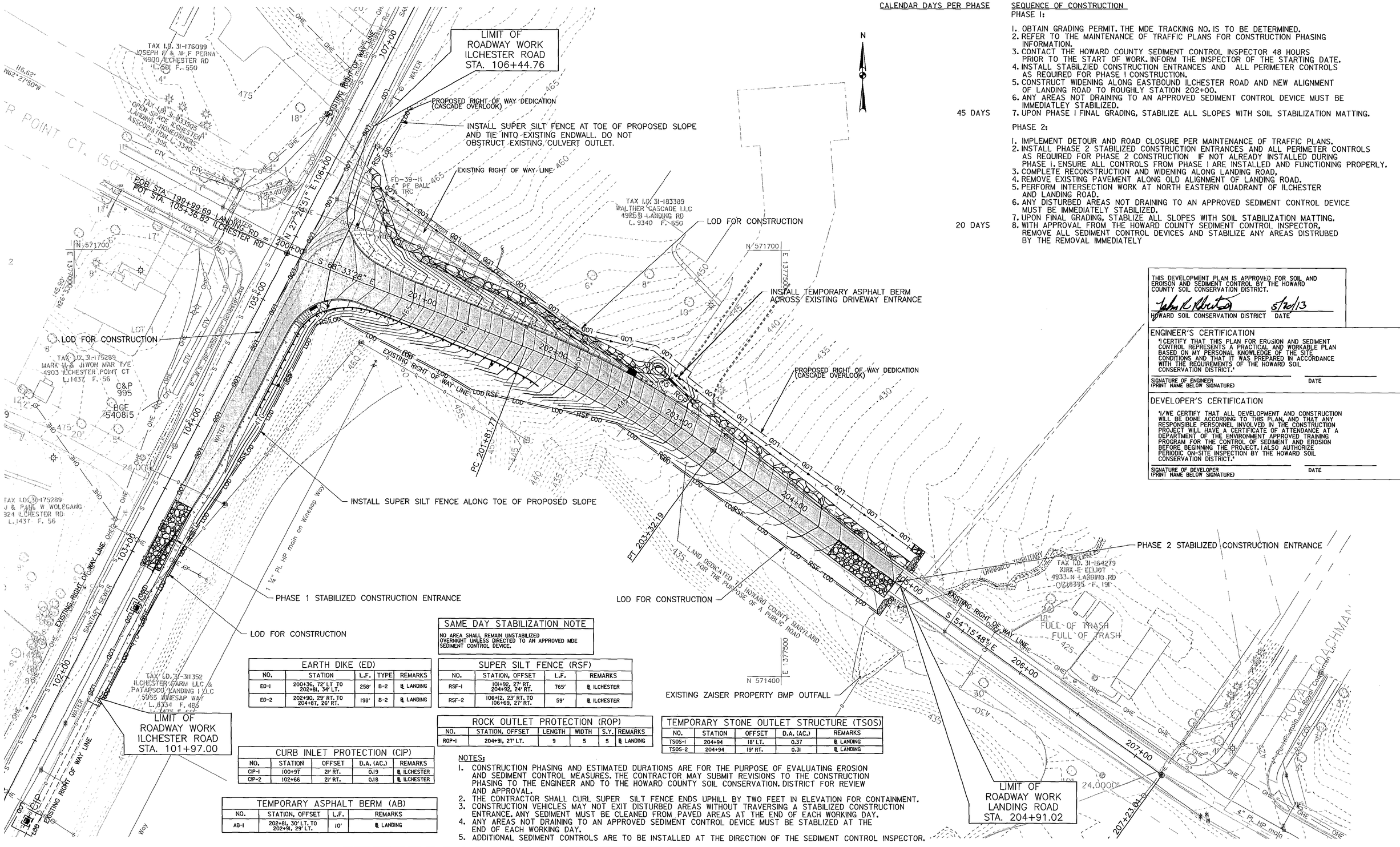
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE NONE

SHEET 14 OF 21



CALENDAR DAYS PER PHASE

45 DAYS

20 DAYS

SEQUENCE OF CONSTRUCTION

PHASE I:

1. OBTAIN GRADING PERMIT. THE MDE TRACKING NO. IS TO BE DETERMINED.
2. REFER TO THE MAINTENANCE OF TRAFFIC PLANS FOR CONSTRUCTION PHASING INFORMATION.
3. CONTACT THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO THE START OF WORK. INFORM THE INSPECTOR OF THE STARTING DATE.
4. INSTALL STABILZIED CONSTRUCTION ENTRANCES AND ALL PERIMETER CONTROLS AS REQUIRED FOR PHASE I CONSTRUCTION.
5. CONSTRUCT WIDENING ALONG EASTBOUND ILCHESTER ROAD AND NEW ALIGNMENT OF LANDING ROAD TO ROUGHLY STATION 202+00.
6. ANY AREAS NOT DRAINING TO AN APPROVED SEDIMENT CONTROL DEVICE MUST BE IMMEDIATLEY STABILIZED.
7. UPON PHASE I FINAL GRADING, STABILIZE ALL SLOPES WITH SOIL STABILIZATION MATTING.

PHASE 2:

1. IMPLEMENT DETOUR AND ROAD CLOSURE PER MAINTENANCE OF TRAFFIC PLANS.
2. INSTALL PHASE 2 STABILIZED CONSTRUCTION ENTRANCES AND ALL PERIMETER CONTROLS AS REQUIRED FOR PHASE 2 CONSTRUCTION IF NOT ALREADY INSTALLED DURING PHASE I. ENSURE ALL CONTROLS FROM PHASE I ARE INSTALLED AND FUNCTIONING PROPERLY.
3. COMPLETE RECONSTRUCTION AND WIDENING ALONG LANDING ROAD,
4. REMOVE EXISTING PAVEMENT ALONG OLD ALIGNMENT OF LANDING ROAD.
5. PERFORM INTERSECTION WORK AT NORTH EASTERN QUADRANT OF ILCHESTER AND LANDING ROAD.
6. ANY DISTURBED AREAS NOT DRAINING TO AN APPROVED SEDIMENT CONTROL DEVICE MUST BE IMMEDIATELY STABILIZED.
7. UPON FINAL GRADING, STABLIZE ALL SLOPES WITH SOIL STABILIZATION MATTING.
8. WITH APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTRUBED BY THE REMOVAL IMMEDIATELY

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL AND EROISON AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 5/20/13

ENGINEER'S CERTIFICATION

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE

DEVELOPER'S CERTIFICATION

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE

SAME DAY STABILIZATION NOTE

NO AREA SHALL REMAIN UNSTABILIZED OVERNIGHT UNLESS DIRECTED TO AN APPROVED MDE SEDIMENT CONTROL DEVICE.

EARTH DIKE (ED)

NO.	STATION	L.F.	TYPE	REMARKS
ED-1	200+36, 72' LT TO 202+81, 34' LT.	258'	B-2	@ LANDING
ED-2	202+90, 29' RT. TO 204+87, 26' RT.	198'	B-2	@ LANDING

SUPER SILT FENCE (RSF)

NO.	STATION, OFFSET	L.F.	REMARKS
RSF-1	101+92, 27' RT, 204+32, 24' RT.	765'	@ ILCHESTER
RSF-2	106+12, 23' RT. TO 106+69, 27' RT.	59'	@ ILCHESTER

ROCK OUTLET PROTECTION (ROP)

NO.	STATION, OFFSET	LENGTH	WIDTH	S.Y.	REMARKS
ROP-1	204+91, 27' LT.	9	5	5	@ LANDING

TEMPORARY STONE OUTLET STRUCTURE (TSOS)

NO.	STATION	OFFSET	D.A. (AC.)	REMARKS
TSOS-1	204+94	18' LT.	0.37	@ LANDING
TSOS-2	204+94	19' RT.	0.31	@ LANDING

CURB INLET PROTECTION (CIP)

NO.	STATION	OFFSET	D.A. (AC.)	REMARKS
CIP-1	100+97	21' RT.	0.19	@ ILCHESTER
CIP-2	102+66	21' RT.	0.18	@ ILCHESTER

TEMPORARY ASPHALT BERM (AB)

NO.	STATION, OFFSET	L.F.	REMARKS
AB-1	202+81, 30' LT. TO 202+91, 29' LT.	10'	@ LANDING

NOTES:

1. CONSTRUCTION PHASING AND ESTIMATED DURATIONS ARE FOR THE PURPOSE OF EVALUATING EROSION AND SEDIMENT CONTROL MEASURES. THE CONTRACTOR MAY SUBMIT REVISIONS TO THE CONSTRUCTION PHASING TO THE ENGINEER AND TO THE HOWARD COUNTY SOIL CONSERVATION. DISTRICT FOR REVIEW AND APPROVAL.
2. THE CONTRACTOR SHALL CURL SUPER SILT FENCE ENDS UPHILL BY TWO FEET IN ELEVATION FOR CONTAINMENT.
3. CONSTRUCTION VEHICLES MAY NOT EXIT DISTURBED AREAS WITHOUT TRAVERSING A STABILIZED CONSTRUCTION ENTRANCE. ANY SEDIMENT MUST BE CLEANED FROM PAVED AREAS AT THE END OF EACH WORKING DAY.
4. ANY AREAS NOT DRAINING TO AN APPROVED SEDIMENT CONTROL DEVICE MUST BE STABLIZED AT THE END OF EACH WORKING DAY.
5. ADDITIONAL SEDIMENT CONTROLS ARE TO BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/14/2015."

SCALE: 1" = 30'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6/11/13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

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DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE

SEDIMENT AND EROSION CONTROL PLAN

ADC MAP NO. 4936 — GRID G3

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE 1"=30'

SHEET 13 OF 21

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADUATION.

CONDITIONS WHERE PRACTICE APPLIES

I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2.I OR FLATTER SLOPES WHERE:

a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIALS TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2.I REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2.I SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COURSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN I ** IN DIAMETER.

II. TOP SOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABLIZATION - SECTION I- VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:

a. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.

b. ORGANIC CONTENT OF TOPSOIL SHALL NOT BE LESS THAN I.5 PERCENT BY WEIGHT.

c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.

d. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEEK CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (I4 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABLIZATION - SECTION I- VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION

I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOP SILT FENCE AND SEDIMENT TRAPS AND BASINS.

II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4* - 8* HIGHER ELEVATION.

III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4* - 8* LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4*. SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKET.

IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATIONS.

VI. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:

I. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.

a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.

b. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST I PERCENT NITROGEN, I.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.

c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF I TON/I,000 SQUARE FEET.

v. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4LB/I,000 SQUARE FEET, AND I/3 THE NORMAL LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-VA, PUB #I, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

I. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:I, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC.B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

6. SITE ANALYSIS:
TOTAL AREA OF SITE: 0.97 ACRES
AREA DISTURBED: 0.97 ACRES
AREA TO BE ROOFED OR PAVED: 0.29 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 0.68 ACRES
TOTAL CUT: 873 CU. YDS.
TOTAL FILL: 1787 CU. YDS.
OFFSITE WASTE/BORROW ARE LOCATION
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7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

9. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 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 BE STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

HOWARD SOIL CONSERVATION DISTRICT TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: -- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: -- APPLY 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.).

SEEDING: -- FOR PERIODS MARCH 1 -- MAY 15 AND FROM AUGUST 15 -- OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 IBS/1000 SQ. FT.). FOR THE PERIOD MAY 16 -- AUGUST 14, SEED WITH 3 IBS/ACRE OF WEEPING LOVEGRASS (.07 IBS/1000 SQ. FT.). FO~ THE PERIOD OCTOBER 16 -- FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: -- APPLY L-1/2 TO 2 TONS/ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

HOWARD SOIL CONSERVATION DISTRICT PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1. PREFERRED -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.) AND 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 IBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 IBS/1000 SQ. FT.)

2. ACCEPTABLE -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.) AND 1000 IBS/ACRE 10-10-10 FERTILIZER (23 IBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING -- FOR THE PERIODS MARCH 1 -- MAY 15, AND AUGUST 15 -- OCTOBER 15, SEED WITH 60 IBS/ACRE (1.4 IBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 16 -- AUGUST 14, SEED WITH 60 IBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 IBS/ACRE (.05 IBS/1001 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 -- FEBRUARY 28, PROTECT SITE BY:
OPTION 1 - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
OPTION 2 -USE SOD.
OPTION 3 - SEER: WITH 60 IBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

STANDARD SYMBOLS

EARTH DIKE — A-2 / B-3
TEMPORARY SWALE — A-2 / B-3
PERIMETER DIKE/SWALE — PD/S-1
STONE CHECK DAM — CD
STONE OUTLET STRUCTURE — TSOS
SILT FENCE — SF
SUPER SILT FENCE — RSF
STRAW BALES — SB
STANDARD INLET PROTECTION — SIP
AT GRADE INLET PROTECTION — AGIP
CURB INLET PROTECTION — CIP
MEDIAN INLET PROTECTION — MIP
GABION INFLOW PROTECTION — GM
RIPRAP INFLOW PROTECTION
SUMP PIT — SP
REMOVABLE PUMPING STATION — RPS
PORTABLE SEDIMENT TANK — PST
INTERCEPTOR BERM — IB
TEMPORARY BERM — TB
PIPE SLOPE DRAIN
STABILIZED CONSTRUCTION ENTRANCE — SCE
SOIL STABILIZATION MATTING
PLACED RIPRAP DITCH
GABIONS
CONCRETE GUTTER
STONE OUTLET SEDIMENT TRAP — SOST
RIPRAP OUTLET SEDIMENT TRAP — ROST
STONE/RIPRAP OUTLET SEDIMENT TRAP — SROST
PIPE OUTLET SEDIMENT TRAP — POST
LIMIT OF DISTURBANCE — LOD
EXISTING CONTOURS — 100
PROPOSED CONTOURS — 100
TEMPORARY GABION OUTLET STRUCTURE — TGOS
ASPHALT BERM
ESC DEVICE DRAINAGE AREA BOUNDARY

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL AND EROISON AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

John K Robertson 5/31/13
HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATION

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

DEVELOPER'S CERTIFICATION

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/11/2015."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/4/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/4/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MOORE — NO. 19165 — PROFESSIONAL ENGINEER

DES: CSC					
DRN: CSC					
CHK: JDC					
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	

SEDIMENT AND EROSION CONTROL NOTES

ADC MAP NO. 4936 | GRID G3

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

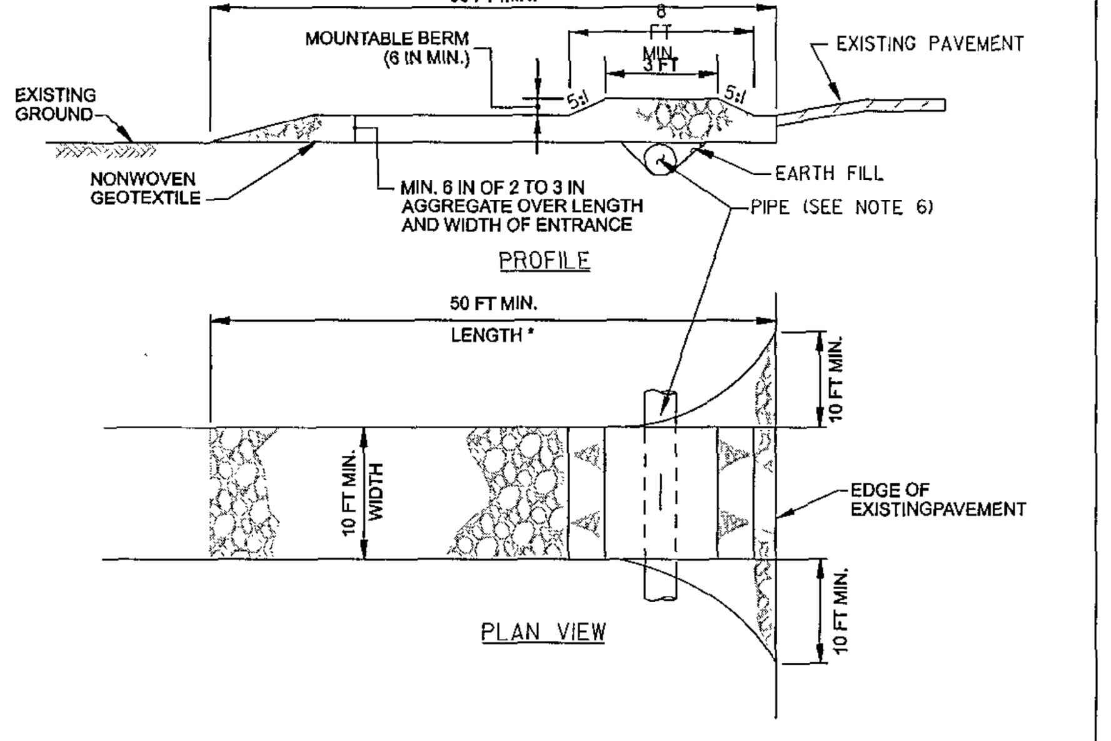
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE NONE

SHEET 15 OF 21

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

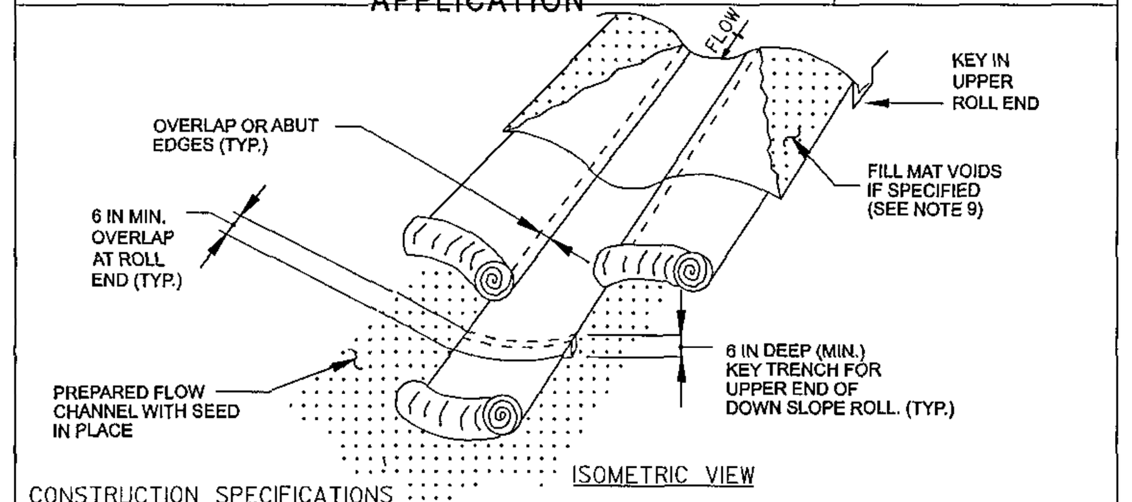
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. 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.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. 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

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

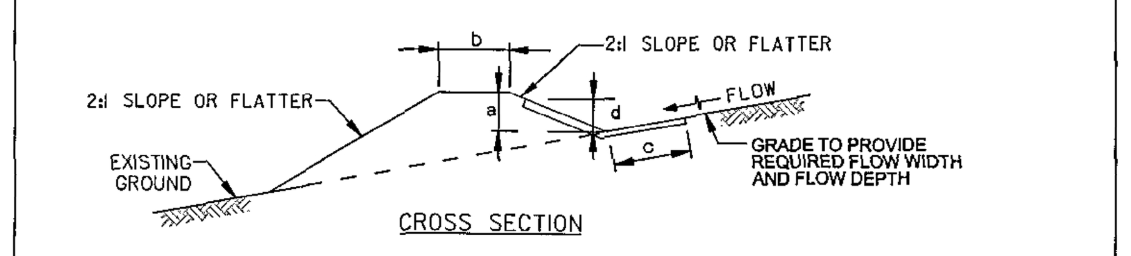
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. 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.
3. 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 ½ 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, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. 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 SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. 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.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED 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.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

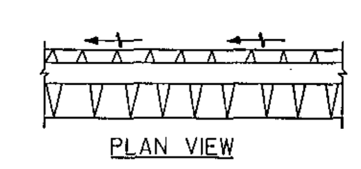
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1





	DIKE TYPE A	DIKE TYPE B
a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

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

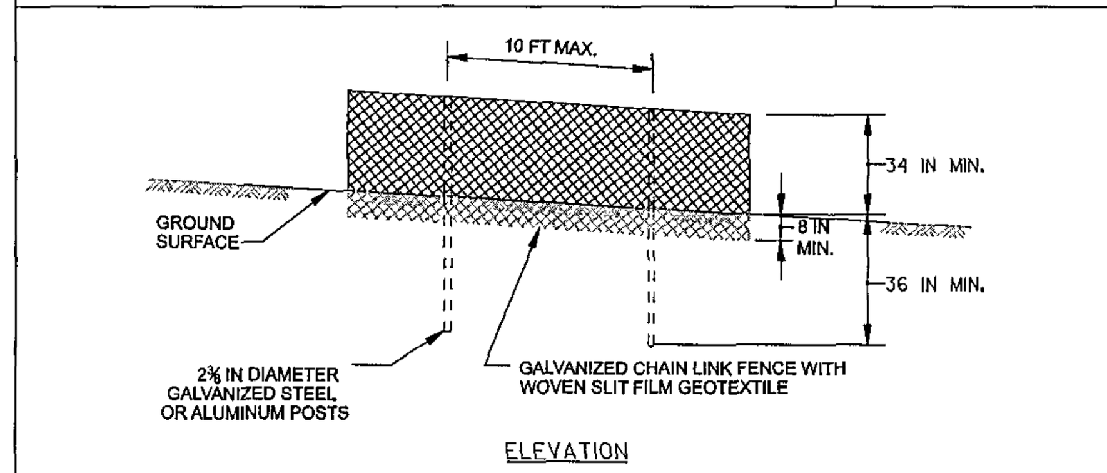
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT 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 MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, 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.

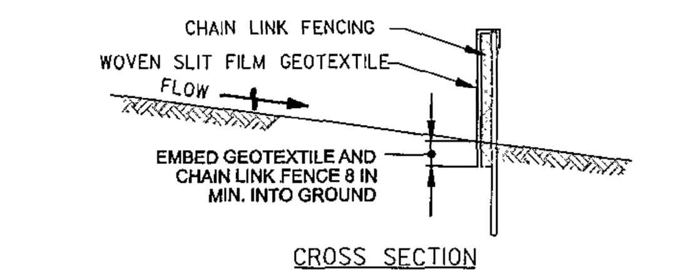
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF





CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ 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.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT 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.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. 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.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. 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.

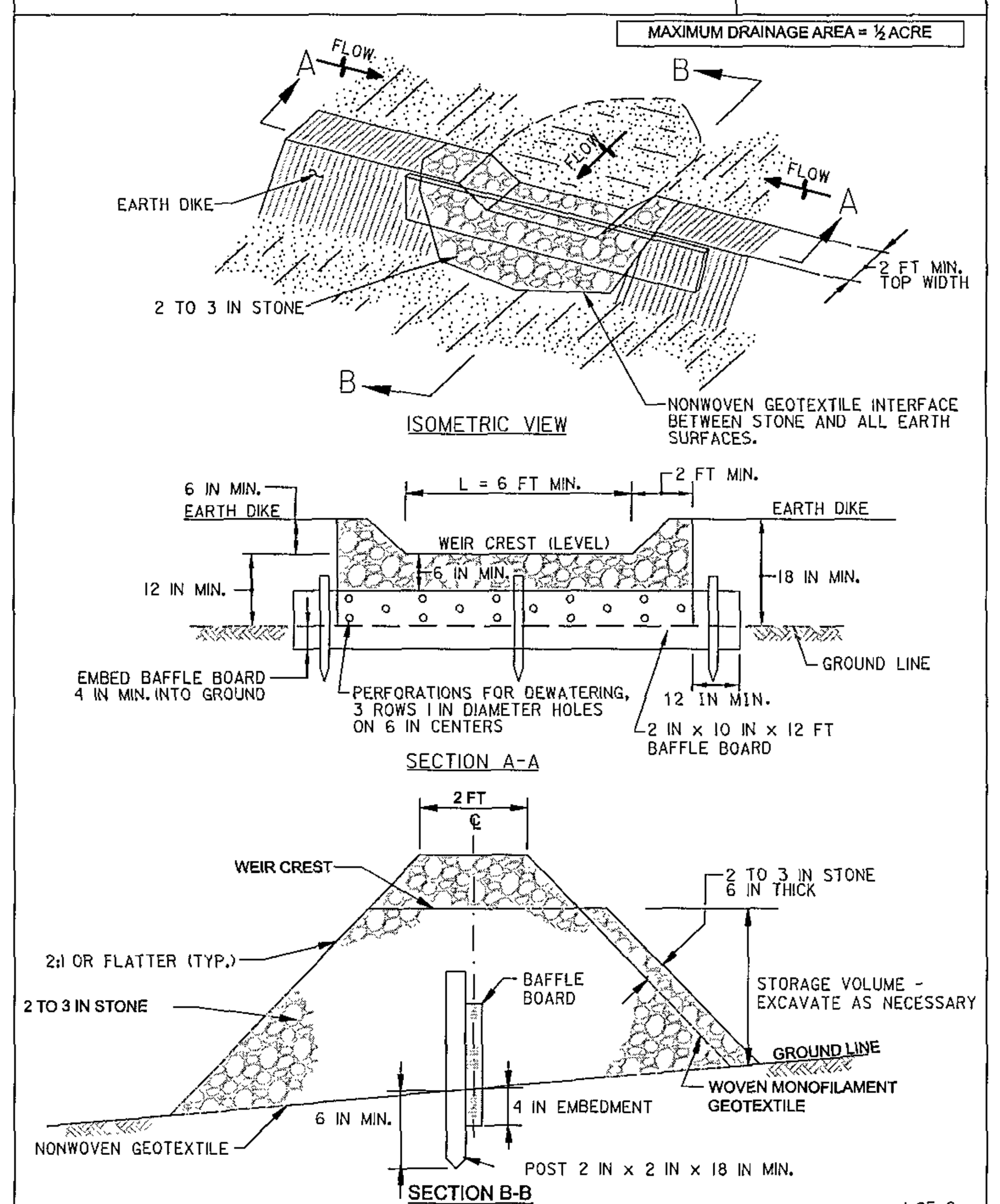
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

MAXIMUM DRAINAGE AREA = ½ ACRE



1 OF 2

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: 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 BAFFEL 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.

2 OF 2

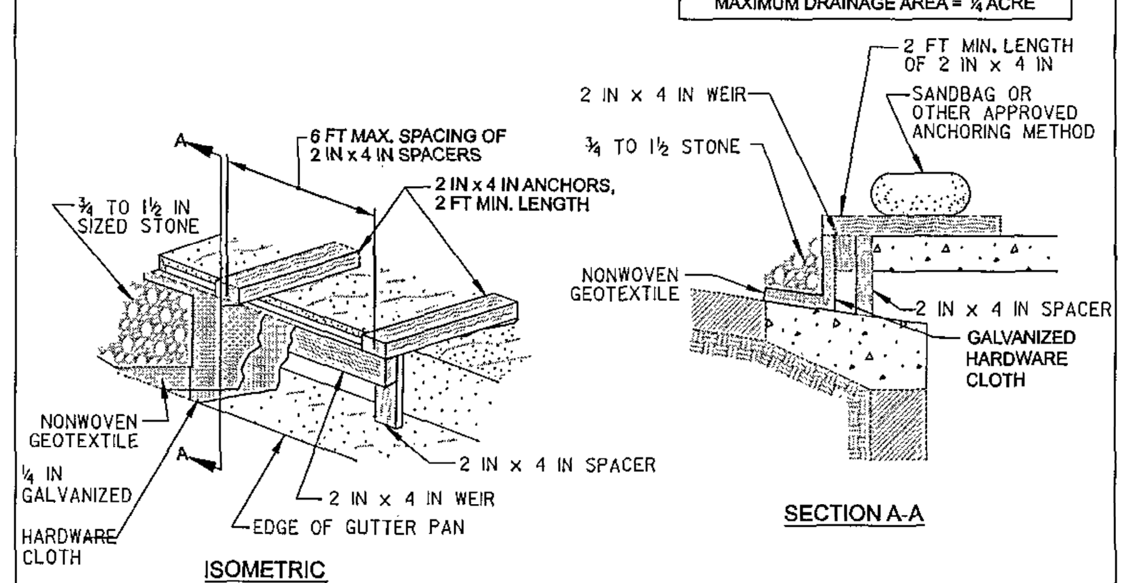
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



CONSTRUCTION SPECIFICATIONS

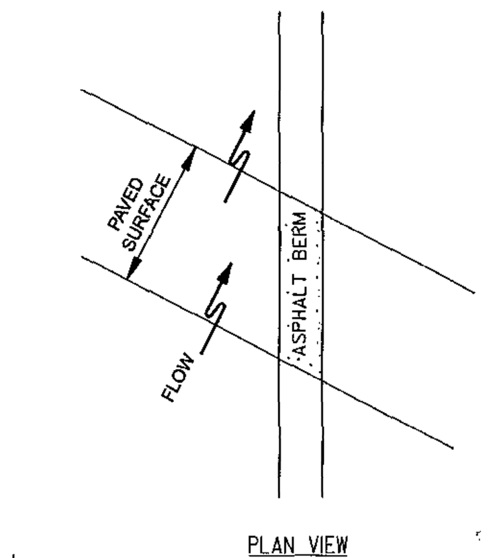
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. 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.
6. 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.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. 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 ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. 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.

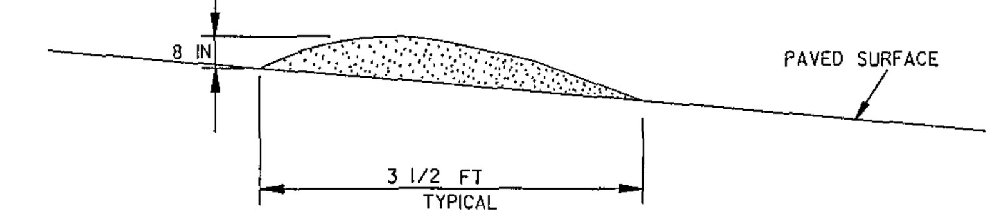
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-5 TEMPORARY ASPHALT BERM

STANDARD SYMBOL: TAB





CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3X;1#2X; FEET.
3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
4. COMPACT ASPHALT BERM.
5. REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
6. 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

BORDER REV. DATE: July 1, 2005

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL AND EROISON AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 5/30/13

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/11/2015."

ENGINEER'S CERTIFICATION

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE

DEVELOPER'S CERTIFICATION

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER ... — PROFESSIONAL ENGINEER — No. 19165

DES: CSC				
DRN: CSC				
CHK: JDC				
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE

SEDIMENT AND EROSION CONTROL DETAILS

ADC MAP NO. 4936 — GRID G3

CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE NONE

SOIL BORING LOG

Client: Whitman, Requardt & Associates, LLP — Boring # B-1
Project Name: Ilchester and Landing Road Intersection — Job # WRSA W.O.# 31760
Location: Ilchester and Landing Road---Ellicott City Maryland 21043

Datum: — Driller: Dane Loomis — Hammer Type: 140 LBS. — Boring Method: HSA
Surf. Elev.: Ft. — Inspector: Jesse Cunningham — Sampler Type: SPT — Borehole Diameter: 6" In.
Date Started: 02/10/2011 — Date Completed: 02/10/2011 — Rig Type: MOBIL-B57 — Rock Core Size: NA

SOIL DESCRIPTION (Color, Moisture, Density, Size, Geology)	ELEV.	GRAPHIC LOG	SAMPLE No.	SAMPLE Type	SAMPLE Blows/6"	SAMPLE Rec.	PID (ppm)	BORING & SAMPLING NOTES
Brown, damp, medium dense, sandy clay, with trace of gravel and mica, and roots, **FILL**	0.0		1	SPT	4-5-5	10"		1) No water encountered.
			2	SPT	2-5-8	11"		2) Bulk sample collected from 1.0 to 8.0 feet.
	5.0		3	SPT	3-8-7	11"		
Tan, dry, very dense to dense, medium to coarse, **SAND AND GRAVEL**	8.0		4	SPT	5-34-35	15"		3) Boring grouted from 1.0 to 5.0 feet at completion.
	10.0		5	SPT	8-23-23	18"		
Tan, damp, medium dense, **SILTY SAND, WITH TRACE OF SAND AND GRAVEL LAYERS**	14.0		6	SPT	6-8-11	17"		
	20.0		7	SPT	6-8-9	16"		
Bottom of test boring 20.0 feet.								

BORING METHOD: HSA – HOLLOW STEM AUGERS; HA/TR–HAND AUGER & TRIPOD; DC – DRIVING CASING; MD – MUD DRILLING; AR – AIR ROTARY/AIR HAMMER
SAMPLER TYPE: SPT – STANDARD PENETRATION TEST SPLIT SPOON; ST – SHELBY TUBE; AS – AUGER SAMPLE; RC – ROCK CORE
GROUNDWATER DEPTH: AT COMPLETION Dry FT., AFTER — HRS. — FT., AFTER 24 HRS. N/A FT., CAVED AT 3.5 FT.
Geotechnical Drilling Inc. 410-242-9220 Baltimore MD

SPT–Standard Penetration Test: Driving 2 Inch OD Sampler 10 foot with 140 pound Hammer Falling 30 Inches; Blow Count Recorded at 6 Inch Intervals
PID – Photoionization Detector (parts per million)

03/16/2011 09:11 4102429222 GEOMATRIX DRILLING PAGE 03/03

SOIL BORING LOG

Client: Whitman, Requardt & Associates, LLP — Boring # B-2
Project Name: Ilchester and Landing Road Intersection — Job # WRSA W.O.# 31760
Location: Ilchester and Landing Road---Ellicott Maryland 21043

Datum: — Driller: Dane Loomis — Hammer Type: 140 LBS. — Boring Method: HSA
Surf. Elev.: Ft. — Inspector: Jesse Cunningham — Sampler Type: SPT — Borehole Diameter: 6" In.
Date Started: 02/10/2011 — Date Completed: 02/10/2011 — Rig Type: MOBIL-B57 — Rock Core Size: NA

SOIL DESCRIPTION (Color, Moisture, Density, Size, Geology)	ELEV.	GRAPHIC LOG	SAMPLE No.	SAMPLE Type	SAMPLE Blows/6"	SAMPLE Rec.	PID (ppm)	BORING & SAMPLING NOTES
9" Asphalt **PAVEMENT.**	0.75		1	SPT	6-8-8	16"		1) No water encountered.
Light brown, dry, very stiff, **SILTY CLAY.**			2	SPT	4-10-18	18"		2) Bulk sample collected from 1.0 to 8.0 feet.
	5.0		3	SPT	4-10-14	17"		
	10.0		4	SPT	6-8-12	18"		3) Boring grouted from 1.0 to 5.0 feet at completion, and capped with cold patch.
Bottom of test boring 10.0 feet.								

BORING METHOD: HSA – HOLLOW STEM AUGERS; HA/TR–HAND AUGER & TRIPOD; DC – DRIVING CASING; MD – MUD DRILLING; AR – AIR ROTARY/AIR HAMMER
SAMPLER TYPE: SPT – STANDARD PENETRATION TEST SPLIT SPOON; ST – SHELBY TUBE; AS – AUGER SAMPLE; RC – ROCK CORE
GROUNDWATER DEPTH: AT COMPLETION DRY FT., AFTER — HRS. — FT., AFTER 24 HRS. N/A FT., CAVED AT 5.5 FT.
Geotechnical Drilling Inc. 410-242-9220 Baltimore MD

SPT–Standard Penetration Test: Driving 2 Inch OD Sampler 10 foot with 140 pound Hammer Falling 30 Inches; Blow Count Recorded at 6 Inch Intervals
PID – Photoionization Detector (parts per million)

03/16/2011 09:11 4102429222 GEOMATRIX DRILLING PAGE 03/04

SOIL BORING LOG

Client: Whitman, Requardt & Associates, LLP — Boring # SWM-1
Project Name: Ilchester and Landing Road Intersection — Job # WRSA W.O.# 31760
Location: Ilchester and Landing Road---Ellicott Maryland 21043

Datum: — Driller: Dane Loomis — Hammer Type: 140 LBS. — Boring Method: HSA
Surf. Elev.: Ft. — Inspector: Laura Garcia — Sampler Type: SPT — Borehole Diameter: 6" In.
Date Started: 03/21/2012 — Date Completed: 03/21/2012 — Rig Type: MOBIL-B57 — Rock Core Size: NA

SOIL DESCRIPTION (Color, Moisture, Density, Size, Geology)	ELEV.	GRAPHIC LOG	SAMPLE No.	SAMPLE Type	SAMPLE Blows/6"	SAMPLE Rec.	PID (ppm)	BORING & SAMPLING NOTES
Brown, moist, loose to medium dense, **SILTY SAND, WITH A LITTLE CLAY .**	0.0		1	SPT	2-4-4-4	21"		1) Encountered water at 12.0 feet.
			2	SPT	2-3-8-13	24"		
Orange, moist, medium dense, **SILTY SAND, WITH A LITTLE CLAY AND SMALL GRAVEL.**	8.0		3	SPT	4-5-13-25	23"		
			4	SPT	6-8-7-11	14"		
Tan, very loose, **SILTY SAND, AND GRAVEL.**	10.0		5	SPT	3-5-4-7	15"		
Orange to brown, moist to wet, **SILTY SAND AND GRAVEL, WITH A LITTLE CLAY.**			6	SPT	2-4-4-6	20"		
			7	SPT	2-3-3-4	16"		
Brown, wet, loose to dense, **SILTY SAND, WITH SOME GRAVEL.**	14.0		8	SPT	2-2-7-12	18"		
			9	SPT	7-14-16-20	23"		
			10	SPT	9-21-25-48	24"		
Bottom of test boring 20.0 feet.	20.0							

BORING METHOD: HSA – HOLLOW STEM AUGERS; HA/TR–HAND AUGER & TRIPOD; DC – DRIVING CASING; MD – MUD DRILLING; AR – AIR ROTARY/AIR HAMMER
SAMPLER TYPE: SPT – STANDARD PENETRATION TEST SPLIT SPOON; ST – SHELBY TUBE; AS – AUGER SAMPLE; RC – ROCK CORE
GROUNDWATER DEPTH: AT COMPLETION 7.83 FT., AFTER — HRS. — FT., AFTER 24 HRS. 10.4 FT., CAVED AT 12 FT.
Geotechnical Drilling Inc. 410-242-9220 Baltimore MD

SPT–Standard Penetration Test: Driving 2 Inch OD Sampler 10 foot with 140 pound Hammer Falling 30 Inches; Blow Count Recorded at 6 Inch Intervals
PID – Photoionization Detector (parts per million)

03/22/2012 13:16 4102429222 GEOMATRIX DRILLING PAGE 03/05

SOIL BORING LOG

Client: Whitman, Requardt & Associates, LLP — Boring # SWM-2
Project Name: Ilchester and Landing Road Intersection — Job # WRSA W.O.# 31760
Location: Ilchester and Landing Road---Ellicott Maryland 21043

Datum: — Driller: Dane Loomis — Hammer Type: 140 LBS. — Boring Method: HSA
Surf. Elev.: Ft. — Inspector: Laura Garcia — Sampler Type: SPT — Borehole Diameter: 6" In.
Date Started: 03/21/2012 — Date Completed: 03/21/2012 — Rig Type: MOBIL-B57 — Rock Core Size: NA

SOIL DESCRIPTION (Color, Moisture, Density, Size, Geology)	ELEV.	GRAPHIC LOG	SAMPLE No.	SAMPLE Type	SAMPLE Blows/6"	SAMPLE Rec.	PID (ppm)	BORING & SAMPLING NOTES
Brown, dry, medium dense to brown, too, **SILTY SAND AND GRAVEL, WITH A TRACE OF CLAY.**	3.0		1	SPT	4-7-8-9	19"		1) Encountered water at 18.0 feet.
			2	SPT	8-7-3-1	13"		
Brown, moist, very soft to medium stiff, **SANDY CLAY, WITH A LITTLE GRAVEL.**			3	SPT	WOH-1-1-1	24"		
			4	SPT	1-10-7-9	14"		
			5	SPT	6-5-6-8	16"		
	10.0		6	SPT	3-3-4-7	21"		
Brown, moist to wet, loose to very dense, fine, **SILTY SAND, WITH A LITTLE GRAVEL, AND TRACE OF CLAY.**			7	SPT	8-13-18-23	22"		
			8	SPT	13-33-35-45	19"		
			9	SPT	18-19-12-10	14"		
	18.25		10	SPT	9-40-64/3"	13"		
Bottom of test boring 18.25 feet.								

BORING METHOD: HSA – HOLLOW STEM AUGERS; HA/TR–HAND AUGER & TRIPOD; DC – DRIVING CASING; MD – MUD DRILLING; AR – AIR ROTARY/AIR HAMMER
SAMPLER TYPE: SPT – STANDARD PENETRATION TEST SPLIT SPOON; ST – SHELBY TUBE; AS – AUGER SAMPLE; RC – ROCK CORE
GROUNDWATER DEPTH: AT COMPLETION DRY FT., AFTER — HRS. — FT., AFTER 24 HRS. N/A FT., CAVED AT 10 FT.
Geotechnical Drilling Inc. 410-242-9220 Baltimore MD

SPT–Standard Penetration Test: Driving 2 Inch OD Sampler 10 foot with 140 pound Hammer Falling 30 Inches; Blow Count Recorded at 6 Inch Intervals
PID – Photoionization Detector (parts per million)

03/22/2012 13:16 4102429222 GEOMATRIX DRILLING PAGE 03/06

TEST HOLE REPORT

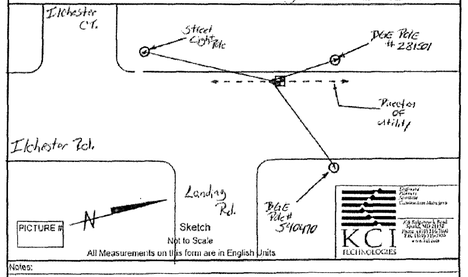
Client: Howard County DPW — Client Job No: — KCI Job No: 01071667BD
Project Name: ILCHESTER RD — Project Location: Ilchester Rd/Landing Rd.
Utility Requested: Gas — Form By: A.Granville — Test Hole: 1
Outside Diameter & Type of Utility Found — Paving Type: Asphalt — Date Dug: 2-13-12
Approx: 6" Wrapped Steel Gas Pipe — Soil Composition: Rock, Sand, Clay
Physical Appearance of Utility: Yellow

Elev Survey Marker — Existing Grade — Installed: Hub or PK at existing grade of ground level
Cover (Top): 3.10' — Asphalt
Elev (Top) — Cover (Bottom) — Elev (Bottom)
Approx. Width (Utility): 6"

Test Hole Survey Information ☒ Not Applicable
Northing: Easting: Baseline: Station: Offset:
Quality Control Checks:
☒ Field Check: NB (Initials) Date: 2-13-12
☒ Office Check: JJ (Initials) Date: 2/15/12
☒ Final Check: JJ (Initials) Date: 2/15/12

Note: All measurements taken from PK set 12" South of Test Hole placed over centerline of utility.

Swing Tie Measurements:
1 BGE Pole # 281501: 23.00
2 BGE Pole # 340470: 38.25
3 Street Light Pole: 35.95



KCI TECHNOLOGIES

Notes:

TEST HOLE REPORT

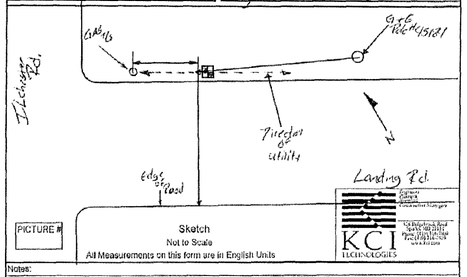
Client: Howard County DPW — Client Job No: — KCI Job No: 01071667BD
Project Name: ILCHESTER RD — Project Location: Landing Road
Utility Requested: Gas — Form By: A.Granville — Test Hole: 2
Outside Diameter & Type of Utility Found — Paving Type: Asphalt — Date Dug: 2-13-12
Approx: 4" Plastic Gas Pipe — Soil Composition: Rock, Sand, Clay
Physical Appearance of Utility: Yellow

Elev Survey Marker — Existing Grade — Installed: Hub or PK at existing grade of ground level
Cover (Top): 2.75' — N/A
Elev (Top) — Cover (Bottom) — Elev (Bottom)
Approx. Width (Utility): 4"

Test Hole Survey Information ☒ Not Applicable
Northing: Easting: Baseline: Station: Offset:
Quality Control Checks:
☒ Field Check: NB (Initials) Date: 2-13-12
☒ Office Check: JJ (Initials) Date: 2/15/12
☒ Final Check: JJ (Initials) Date: 2/15/12

Note: All measurements taken from NB set 12" NW of Test Hole placed over centerline of utility.

Swing Tie Measurements:
G+E Pole # 451849: 70.40'
Gas T/S: 19.15'
Edge of Road: 21.53'



KCI TECHNOLOGIES

Notes:

TEST HOLE REPORT

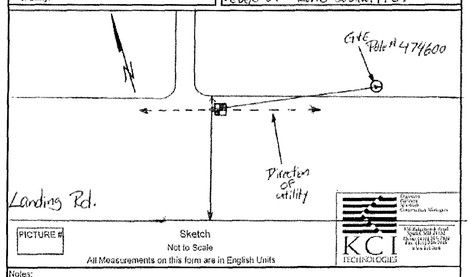
Client: Howard County DPW — Client Job No: — KCI Job No: 01071667BD
Project Name: ILCHESTER RD — Project Location: Landing Road
Utility Requested: Gas — Form By: A.Granville — Test Hole: 3
Outside Diameter & Type of Utility Found — Paving Type: Asphalt — Date Dug: 2-13-12
Approx: 4" Plastic Gas Pipe — Soil Composition: Rock, Sand, Clay
Physical Appearance of Utility: Yellow

Elev Survey Marker — Existing Grade — Installed: Hub or PK at existing grade of ground level
Cover (Top): 3.62' — Asphalt
Elev (Top) — Cover (Bottom) — Elev (Bottom)
Approx. Width (Utility): 4"

Test Hole Survey Information ☒ Not Applicable
Northing: Easting: Baseline: Station: Offset:
Quality Control Checks:
☒ Field Check: NB (Initials) Date: 2-13-12
☒ Office Check: JJ (Initials) Date: 2/15/12
☒ Final Check: JJ (Initials) Date: 2/15/12

Note: All measurements taken from PK set 12" West of Test Hole placed over centerline of utility.

Swing Tie Measurements:
G+E Pole # 474600: 40.98'
Edge of Road North: 18.10'
EDGE of Road South: 1.27'



KCI TECHNOLOGIES

Notes:

TEST HOLE REPORT

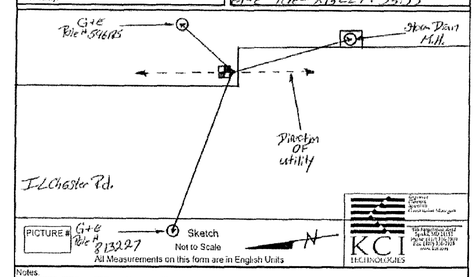
Client: Howard County DPW — Client Job No: — KCI Job No: 01071667BD
Project Name: ILCHESTER RD — Project Location: Ilchester Rd
Utility Requested: Water — Form By: A.Granville — Test Hole: 4
Outside Diameter & Type of Utility Found — Paving Type: Asphalt — Date Dug: 2-13-12
Approx: 12" Cast Iron Water Pipe — Soil Composition: Rock, Sand, Clay
Physical Appearance of Utility: Black

Elev Survey Marker — Existing Grade — Installed: Hub or PK at existing grade of ground level
Cover (Top): 5.74' — 6" Asphalt
Elev (Top) — Cover (Bottom) — Elev (Bottom)
Approx. Width (Utility): 12"

Test Hole Survey Information ☒ Not Applicable
Northing: Easting: Baseline: Station: Offset:
Quality Control Checks:
☒ Field Check: NB (Initials) Date: 2-13-12
☒ Office Check: JJ (Initials) Date: 2/15/12
☒ Final Check: JJ (Initials) Date: 2/15/12

Note: All measurements taken from PK set 12" South of Test Hole placed over centerline of utility.

Swing Tie Measurements:
G+E Pole # 346185: 23.04'
Storm Drain Manhole: 31.67'
G+E Pole # 213227: 35.15'



KCI TECHNOLOGIES

Notes:

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165 , EXPIRATION DATE: 6/11/2015 ."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/10/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MOORE — No. 19165 — PROFESSIONAL ENGINEER

DES: VAK					
DRN: VAK					
CHK: BRT					
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	

SOIL BORINGS LOGS AND TEST PIT REPORTS

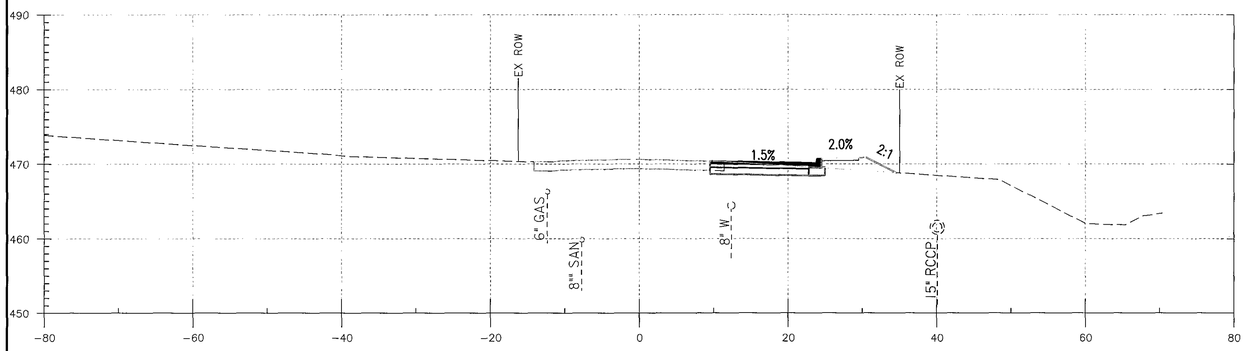
ADC MAP NO. 4936 — GRID G3

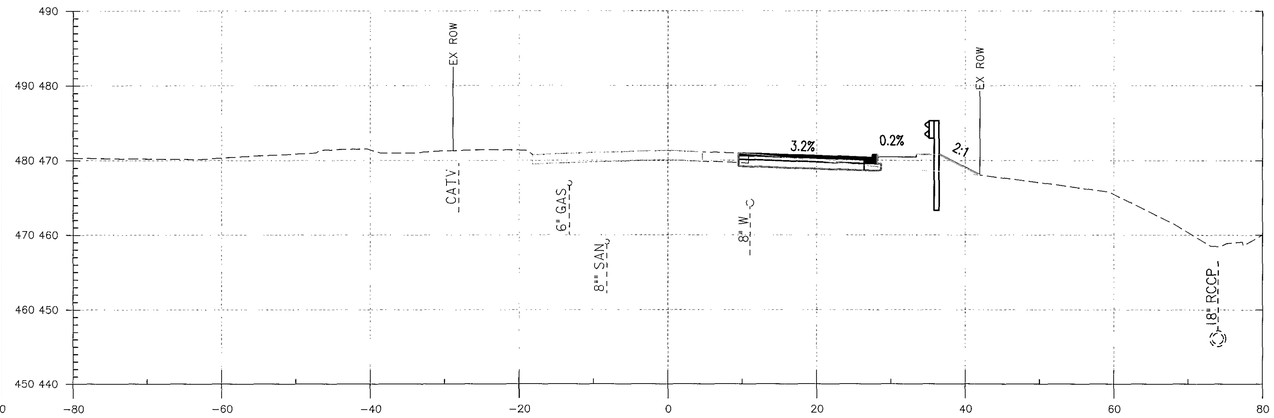
CAPITAL PROJECT NO. J-4228
ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE: 1"=30'

SHEET 17 OF 21





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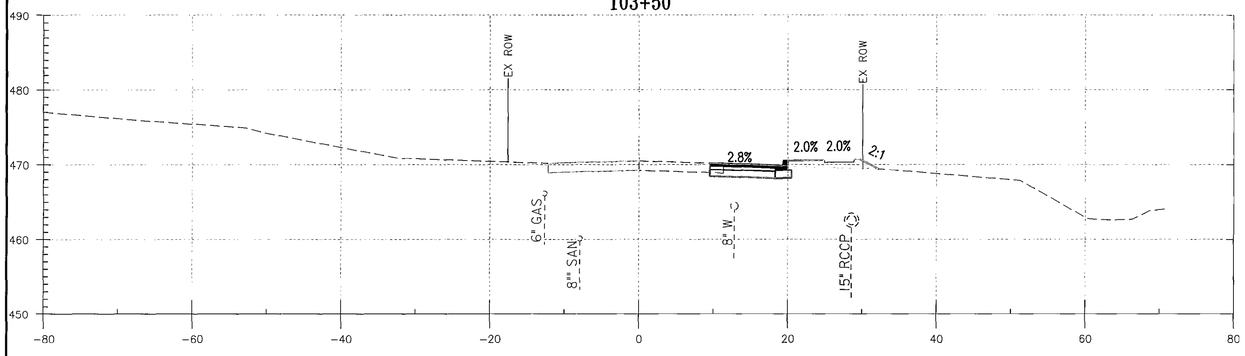

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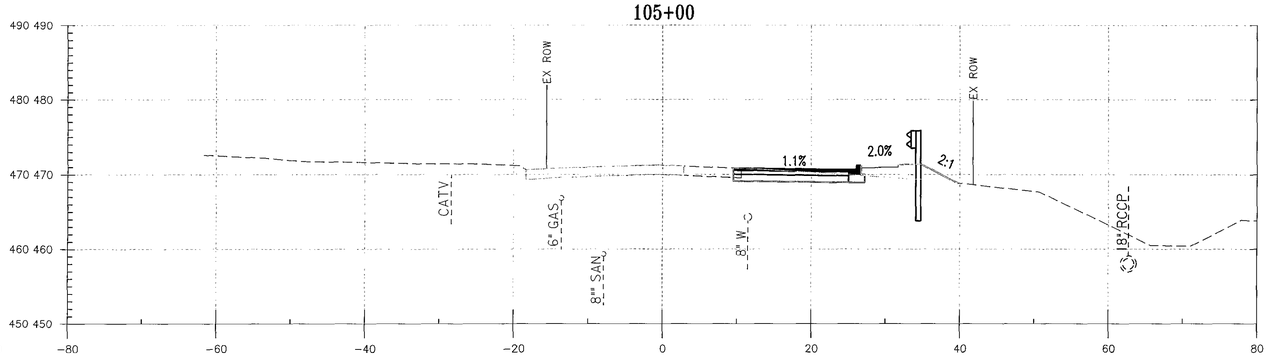

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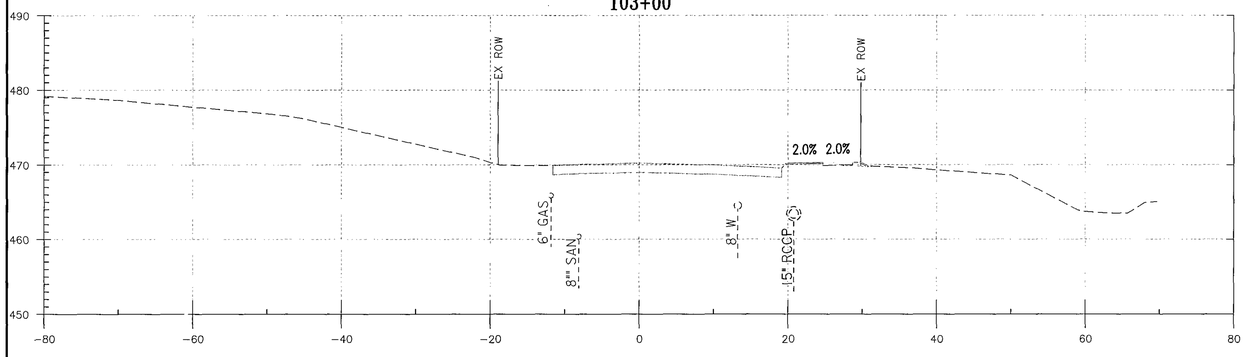

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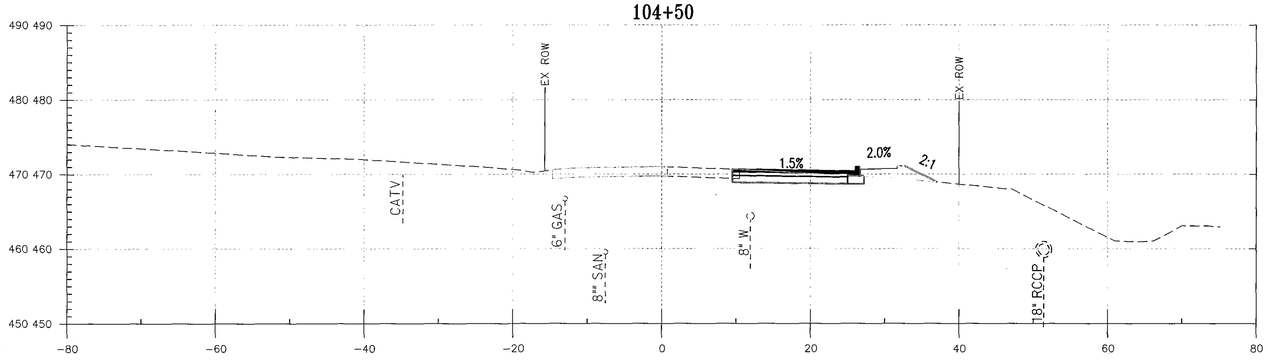

102+50

104+00

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0 5' 10' 20'
SCALE: 1" = 10'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

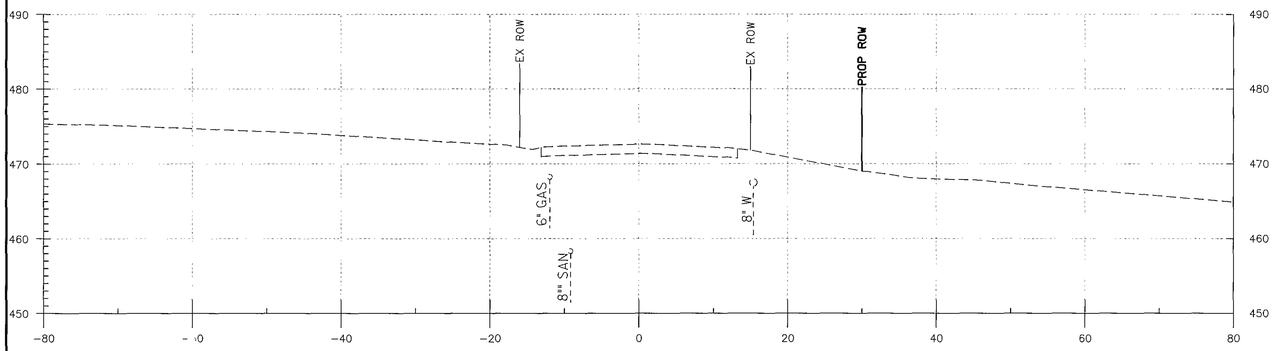
WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MOORE — 19165 — PROFESSIONAL ENGINEER

DES: VAK					CROSS SECTIONS ILCHESTER ROAD	CAPITAL PROJECT NO. J-4228 ILCHESTER ROAD AND LANDING ROAD INTERSECTION IMPROVEMENTS
DRN: VAK						
CHK: BRT						
DATE: 9/28/2012	BY	NO.	DESCRIPTION	DATE	ADC MAP NO. 4936 GRID G3	1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 18 OF 21



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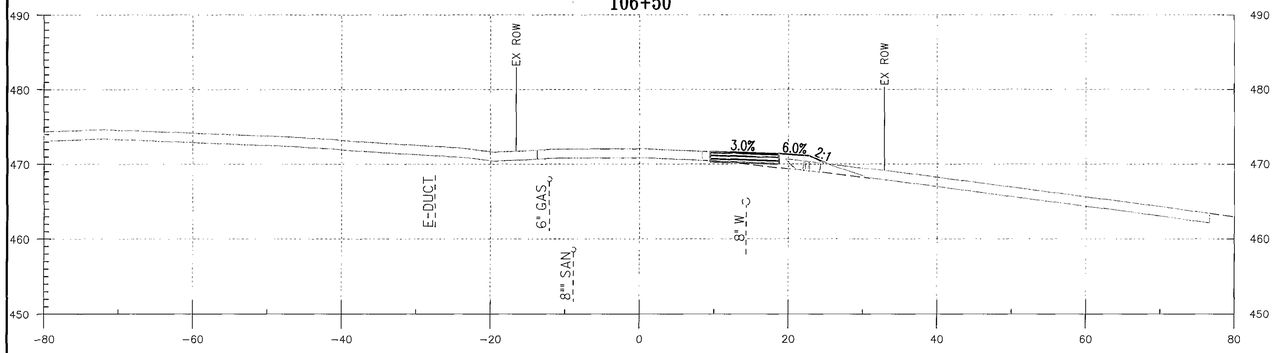

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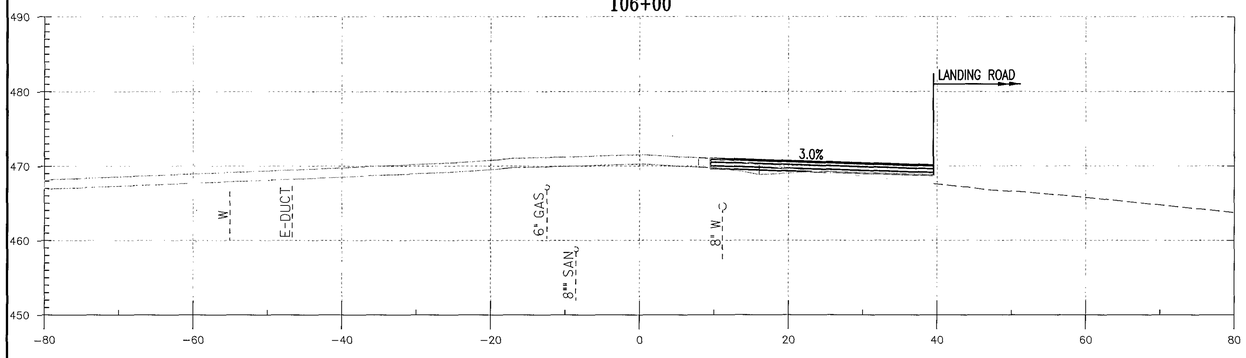

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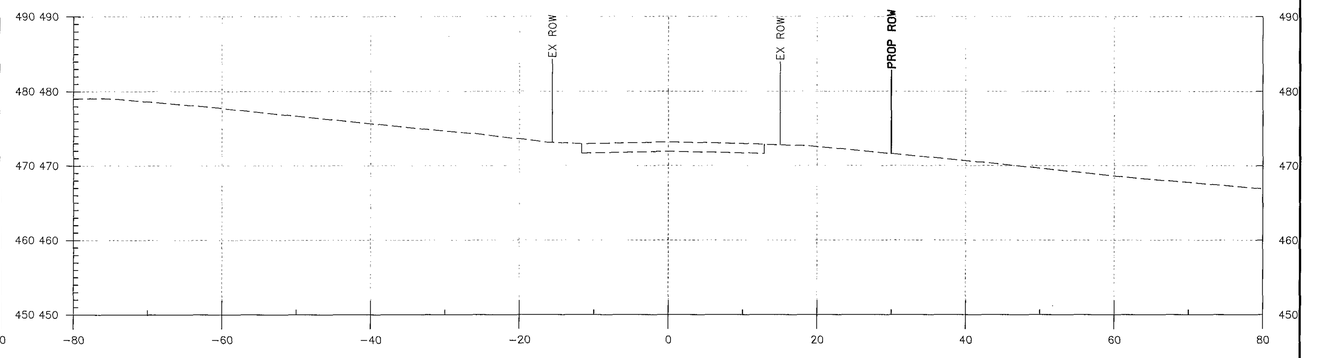

107+00

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0 5' 10' 20'
SCALE: 1" = 10'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MOORE — No. 19165 — PROFESSIONAL ENGINEER

DES:	VAK
DRN:	VAK
CHK:	BRT
DATE:	9/28/2012

BY	NO.	DESCRIPTION	DATE

CROSS SECTIONS
ILCHESTER ROAD

ADC MAP NO. 4936 | GRID G3

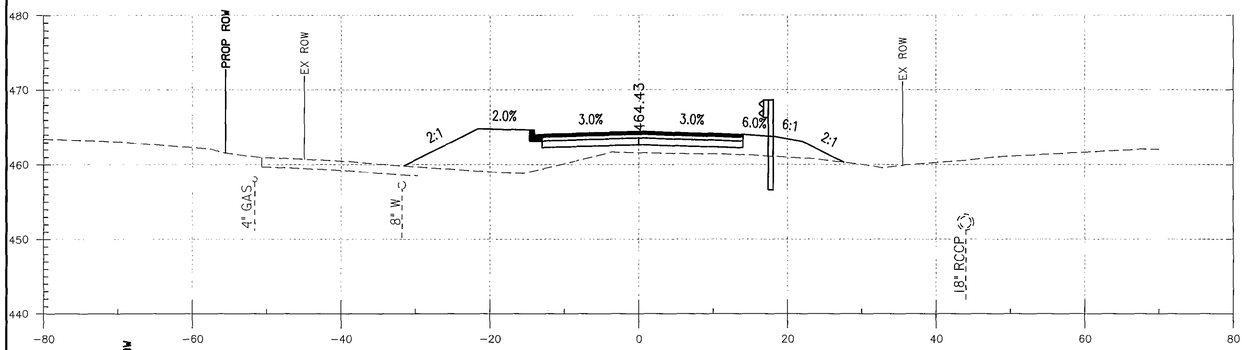
CAPITAL PROJECT NO. J-4228

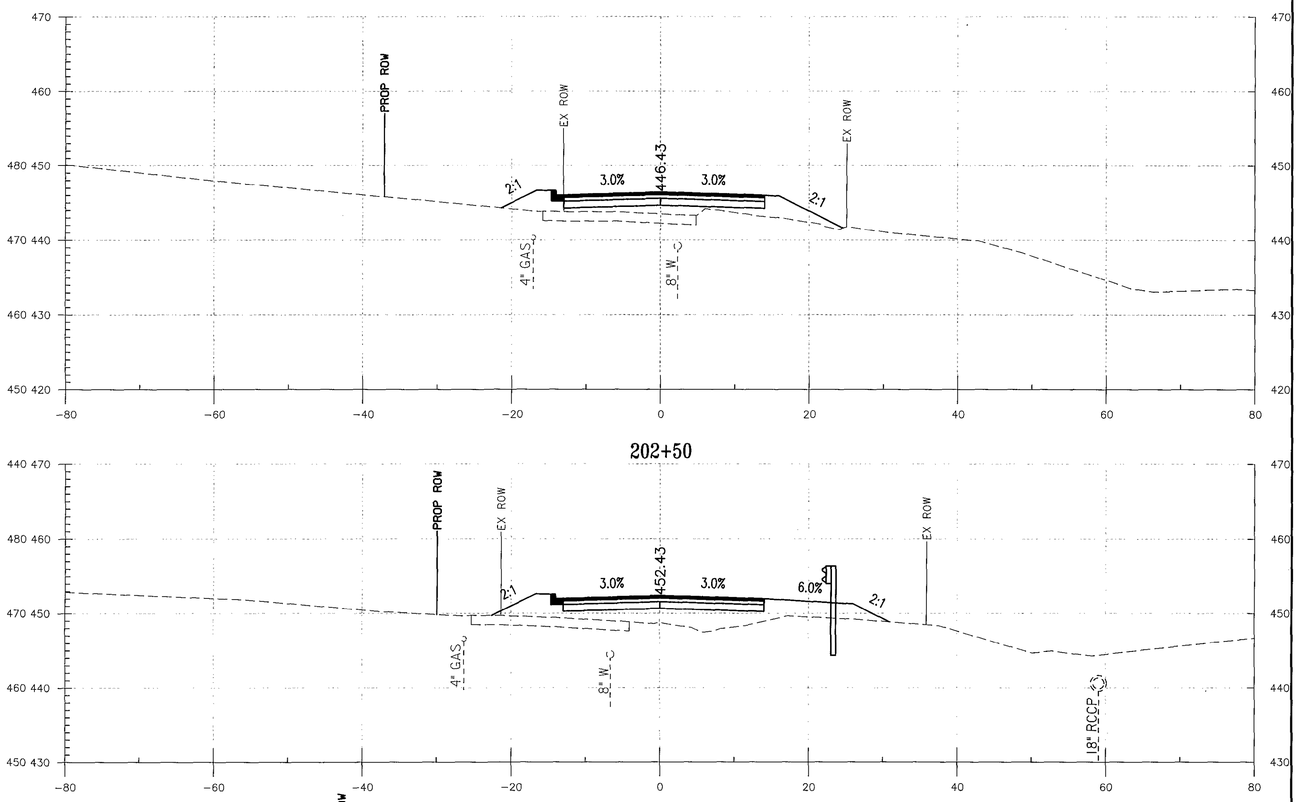
ILCHESTER ROAD AND LANDING ROAD
INTERSECTION IMPROVEMENTS

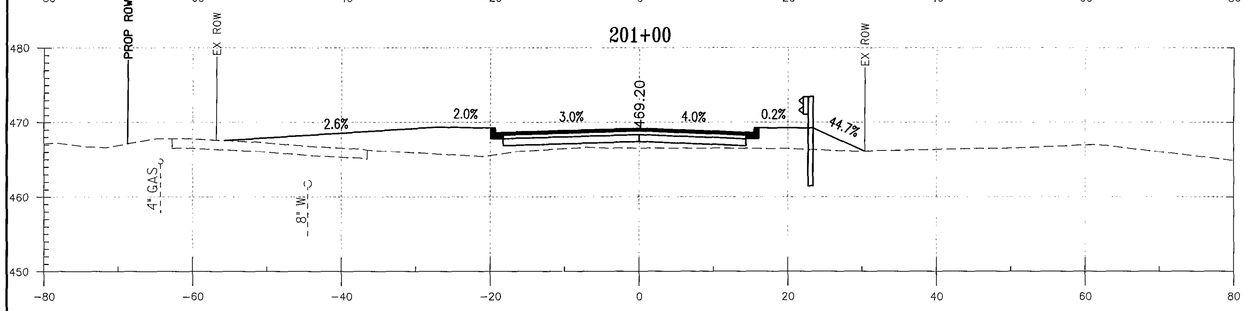
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

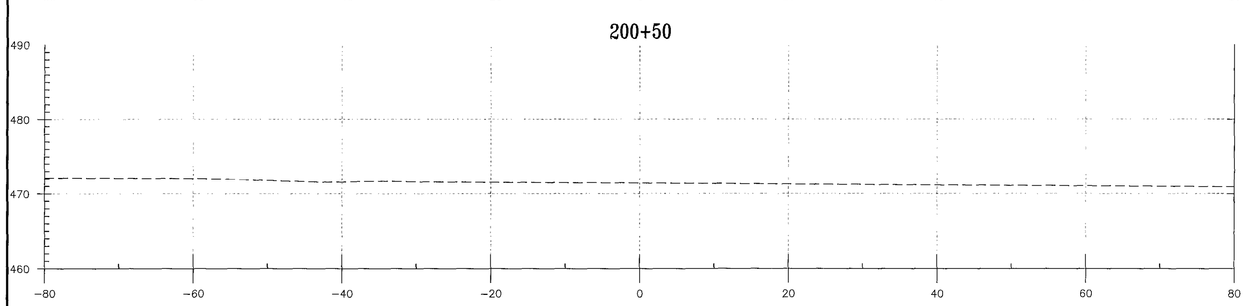
SCALE AS SHOWN

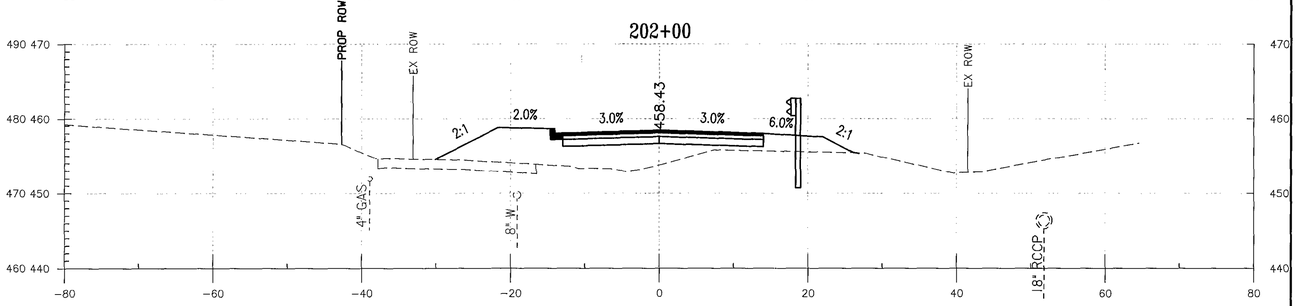
SHEET 19 OF 21











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SCALE: 1" = 10'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. WHITMAN — 19165 — PROFESSIONAL ENGINEER

DES:	VAK
DRN:	VAK
CHK:	BRT
DATE:	9/28/2012

BY	NO.	DESCRIPTION	DATE

CROSS SECTIONS
LANDING ROAD

ADC MAP NO. 4936 — GRID G3

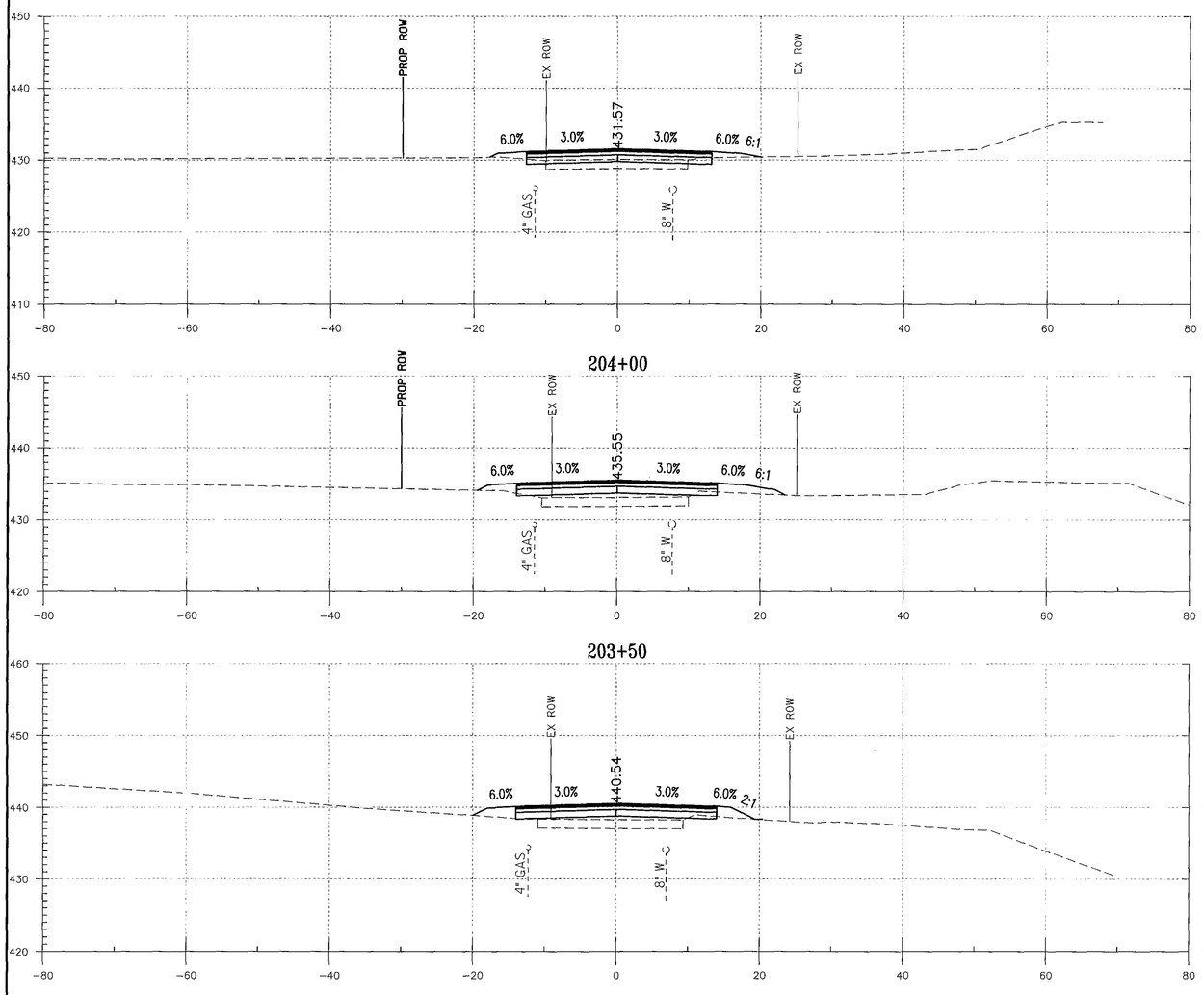
CAPITAL PROJECT NO. J-4228

ILCHESTER ROAD AND LANDING ROAD
INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 20 OF 21



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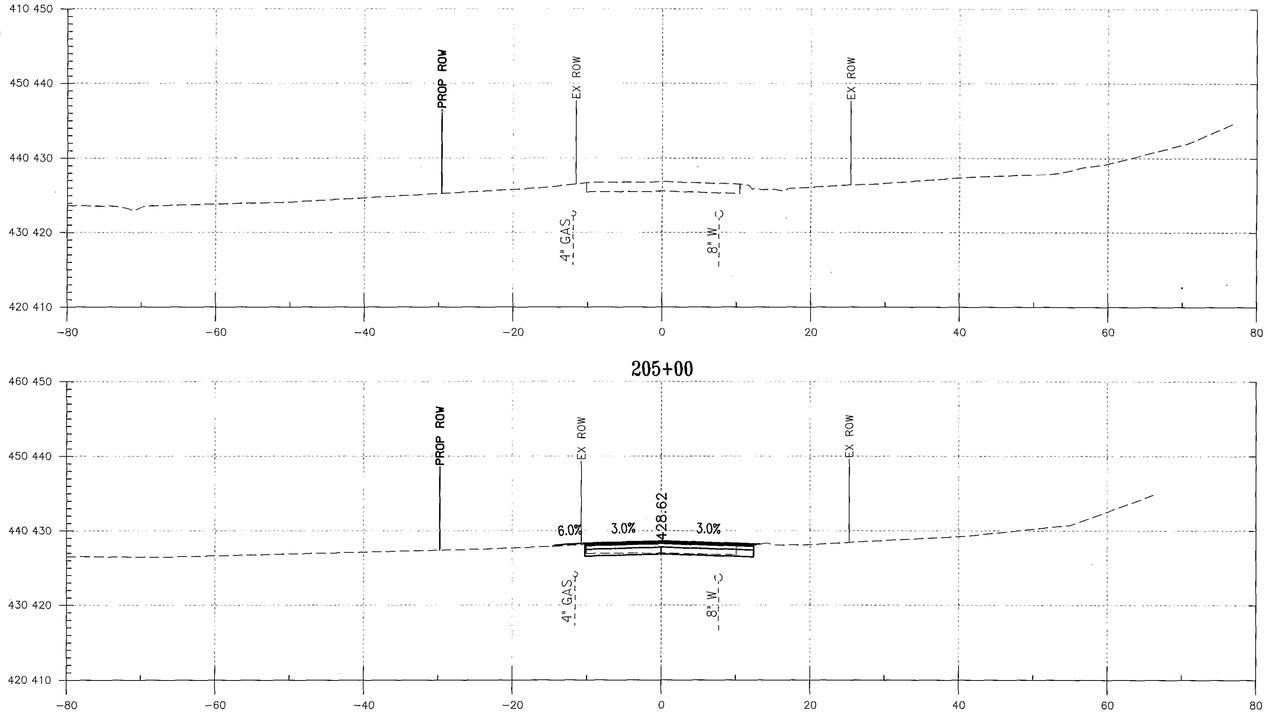

205+00

204+50

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0 5' 10' 20'
SCALE: 1" = 10'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/11/13
CHIEF, BUREAU OF ENGINEERING — DATE 6/10/13
CHIEF, BUREAU OF HIGHWAYS — DATE 6-11-13
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS — DATE 6/7/13

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND — WALTER P. MILLER — No. 19165 — PROFESSIONAL ENGINEER

DES:	VAK
DRN:	VAK
CHK:	BRT
DATE:	9/28/2012

BY	NO.	DESCRIPTION	DATE

CROSS SECTIONS
LANDING ROAD

ADC MAP NO. 4936 | GRID G3

CAPITAL PROJECT NO. J-4228
ILCHESTER ROAD AND LANDING ROAD
INTERSECTION IMPROVEMENTS

1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 21 OF 21