

# HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS PINE TREE ROAD & GLEN COURT DRAINAGE AND ROADWAY IMPROVEMENTS HOWARD COUNTY CAPITAL PROJECT D-1140 PHASE 3 (PH. 3) CONSTRUCTION

**GENERAL NOTES**

- This contract shall be constructed under provisions of the Maryland Department of Transportation, State Highway Administration (S.H.A.) "Standard Specifications for Construction and Materials," dated January 2001, including all revisions thereof and additions thereto, except where noted otherwise; the Special Provisions included in the invitation for bids book; the Administration Book of Standards for Highways and incidental Structures; as well as the latest Howard County Design Manual Standards and Specifications & Details for Construction dated 2006 and revisions thereof and additions thereto.
- The Contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1870 at least five (5) working days prior to the start of work.
- The Contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work. The Contractor shall contact the following utilities at least 5 days prior to beginning any work under this contract. For additional information and requirements with respect to utilities, see Special Provisions.  
BGE Gas Division (410) 291-5534  
BGE Electric Division (410) 855-6958  
Verizon (410) 224-9980  
Comcast (410) 497-0232
- Project Background: Location: Savage, Maryland  
Tax Map: 47  
Election District: 6
- Traffic control devices, markings, and signing and their locations shall be in accordance with the latest edition of the Maryland Manual on Uniform Traffic Control Devices (MdMUTCD).
- Any damage caused by the Contractor to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the Contractor's expense.
- The existing utilities shown hereon are located from the best information available, but no guarantee is made to their accuracy. The approximate location of existing utilities are shown for the Contractor's information and convenience. The Contractor shall locate existing utilities to his/her own satisfaction and well in advance of any construction activities. Additionally, the Contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
- Horizontal and vertical datums based on to the Maryland State Plane Coordinate System NAD 83 and NAVD 88 and is referenced to Howard County Survey Control Monuments: 47F5 N 535,985.0356 E 1,365,853.5044 Elev. 235.045 & 48AB N 538,384.4557 E 1,366,415.8225 Elev. 225.702
- Clearing shall be limited to the "Limit of Disturbance" as shown on the sediment and erosion control plan. Grading shall be done in such a manner as to provide positive drainage. Contractor shall seed and mulch all disturbed areas except as otherwise directed.
- The contractor shall take extreme caution not to disturb the existing vegetation outside the limits of disturbance. Soil stabilization shall conform to "Maryland Standards and Specifications for Soil Erosion and Sediment Control," dated 2011, published jointly by Water Management Administration, Soil Conservation Service, and State Soil Conservation Committee.
- All fill areas shall be compacted to a minimum of 95% of the maximum dry density as determined and verified in accordance with AASHTO T-180.
- This drawing is based on a field ran topographic survey performed by GPI on July 2016 and Associated Engineering Services, Inc. (AESI) 34 West Franklin St, Hagerstown, Maryland 21740 on or about October 2006 and May 2008.
- 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"), square tube post (1 1/2 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeves (1/2 gauge) - 3' long. The anchor shall not extend more than two (2) (Quick Punch) holes above ground level. A galvanized steel pole cap shall be mounted on top of each post.
- A staging and stockpile area will be determined by the contractor and approved by the Howard County Engineer.
- There are numerous residential sump pump outlet pipes present within the area of this project. The contractor shall walk the project with the engineer to note the exact location of these pipes and make allowances to provide positive drainage from them to the proposed curb and gutter flow line.

**MAINTENANCE OF TRAFFIC (MOT)**

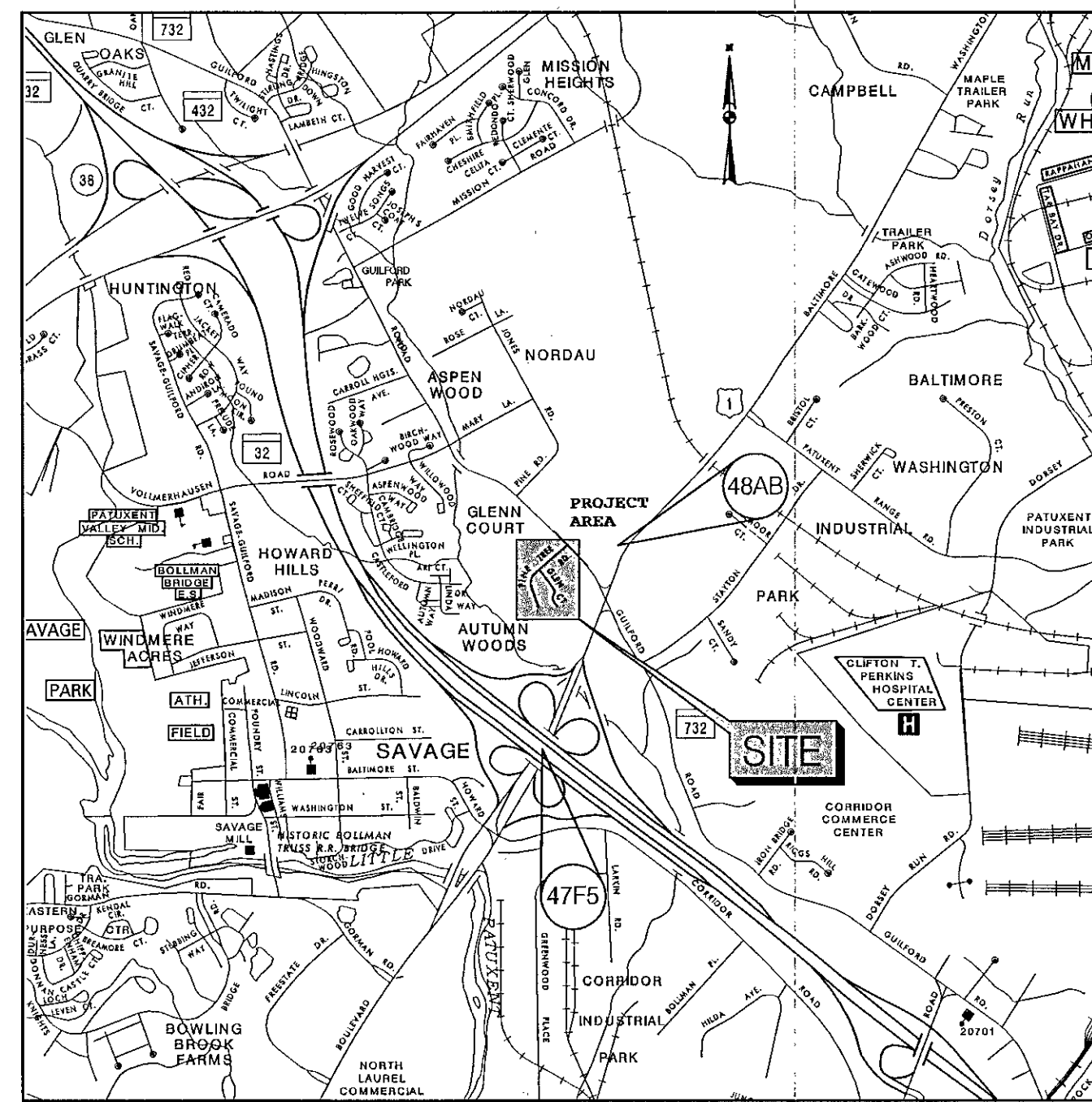
- All work shall be done in accordance with MD SHA Standard Detail MD 104.02-10, MD 104.00-14 Pavement Edge Drop Off, and MD 104.06-18. Note, Contractor shall obtain a copy of the required Standard Details and retain for reference.
- Contractor to maintain a minimum 10' travel lane at all times.
- Throughout the period of construction, traffic will be maintained by implementing standard traffic control work zone typical plans in accordance with the latest plans and manuals of the Maryland State Highway Administration. The contractor will be required to adhere to the Maryland Manual of Uniform Traffic Control Devices (MdMUTCD), (2009 edition and all revisions). All open trenches shall be plated and construction barriers shall be removed during non-working hours (4:00pm-9:00am). The contractor is required to maintain access to all driveways at all times for the duration of the project. If the contractor is unable to reconstruct existing driveway aprons after curb installation, contractor shall provide graded aggregate backfill behind curb to maintain use of driveways. All items not listed in the itemized schedule of prices, required for maintaining traffic, including but not limited to signing, barriers, drums, temporary aggregate and pavement, shall be included in the lump sum unit bid price for maintenance of traffic.

**FOREST CONSERVATION NOTES**

- This project is exempt from Forest Conservation requirements. For the encroachment along the Rowe Property, 8614 Pine Tree Road for the installation of the storm drain system the linear project exemption is applicable because it is a single lot clearing less than 20,000 square feet of forest.
- For the Open Space beyond the ES-1 outfall, the Forest Conservation obligations have already been met under F-95-15 for the Winterbook Subdivision.

**INDEX OF DRAWINGS**

SHEET NO.	TITLE
1	TITLE SHEET
2	TYPICAL ROADWAY SECTIONS AND DETAILS
3	TRAVERSE CONTROL POINT LOCATIONS
4	GEOMETRIC LAYOUT
5	ROADWAY PLAN
6	EROSION AND SEDIMENT CONTROL PLAN
7,8	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS



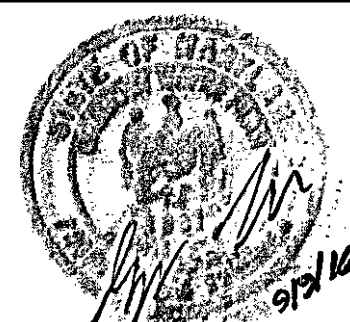
**LOCATION MAP**  
SCALE: 1" = 2000'

*Gregory W. Filar*  
GREGORY W. FILAR, P.E.      2/3/16  
DATE

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS ARE PREPARED OR APPROVED BY ME, AND THAT I AM, A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20762, EXPIRATION DATE: 3/08/2017."

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: *James M. ...* 9/13/16  
Chief, Bureau of Highways: *James M. ...* 9/13/16  
Chief, Bureau of Engineering: *Thomas E. Butler* 9/13/16  
Chief, Transportation and Special Projects Division: *Robert ...* 9/13/16

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS  
10211 GALEFORD RD., ANNAPOLIS JUNCTION, MD 20701  
BELL, MD 410-890-3005  
FAX: 410-890-2849 www.gpiinc.com



DES: GWF					
DRN: AWW					
CHK: GWF					
DATE: SEPT, 2016	BY:	NO.:	REVISION:	DATE:	600' SCALE MAP NO. _____ BLOCK NO. _____

TITLE SHEET

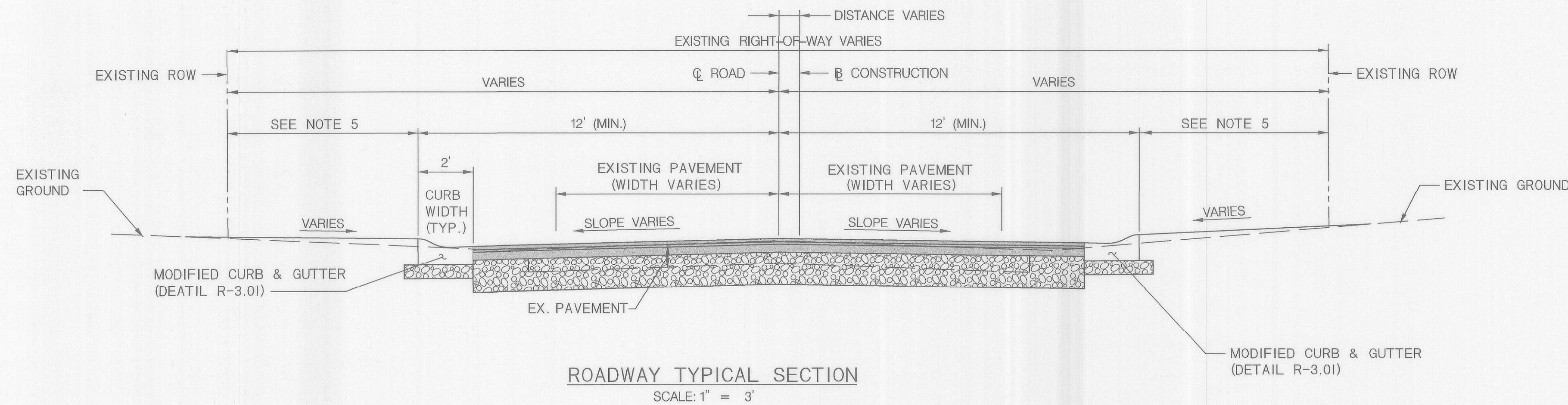
PINE TREE /GLEN COURT  
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3  
CAPITAL PROJECT D-1140  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE:  
AS SHOWN  
SHEET  
1 OF 8



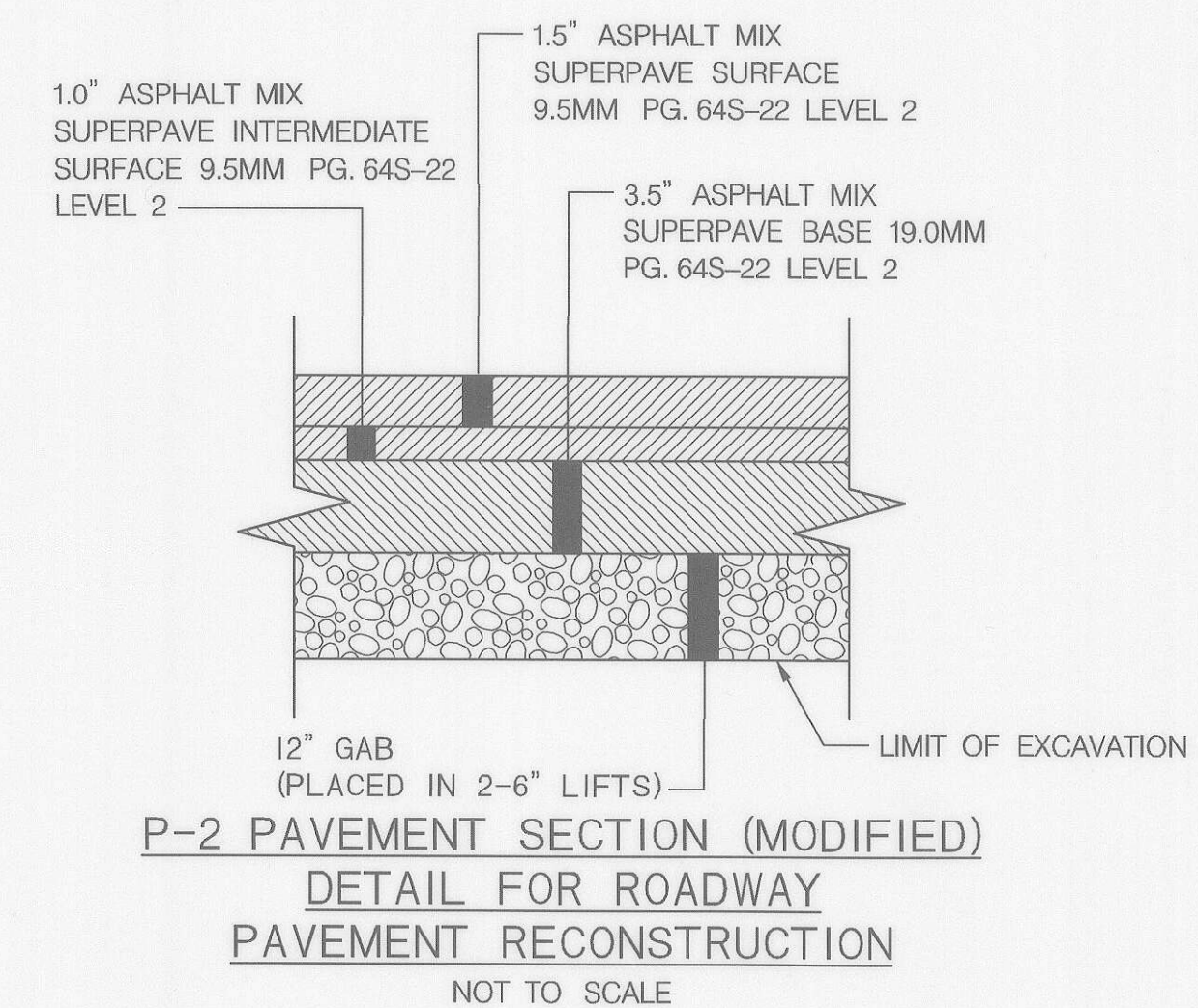
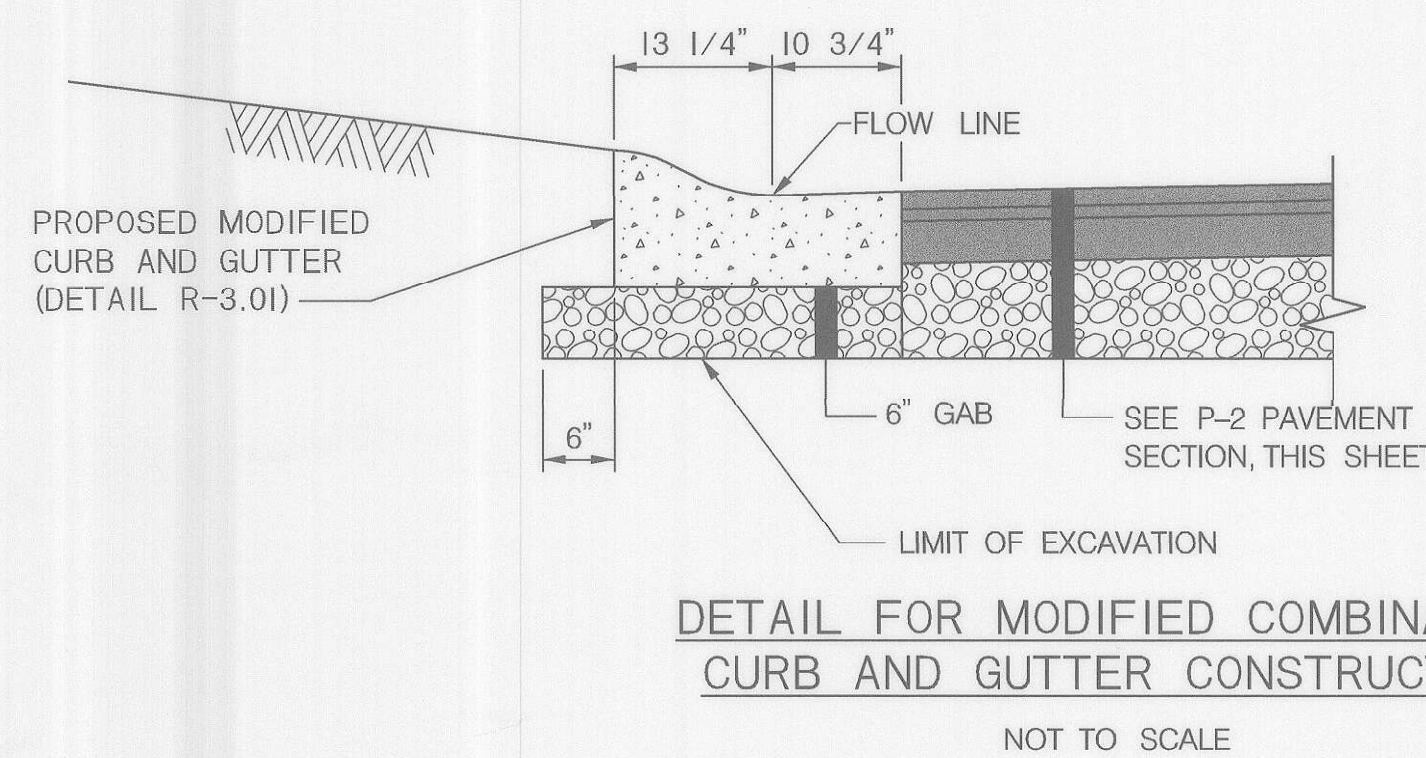
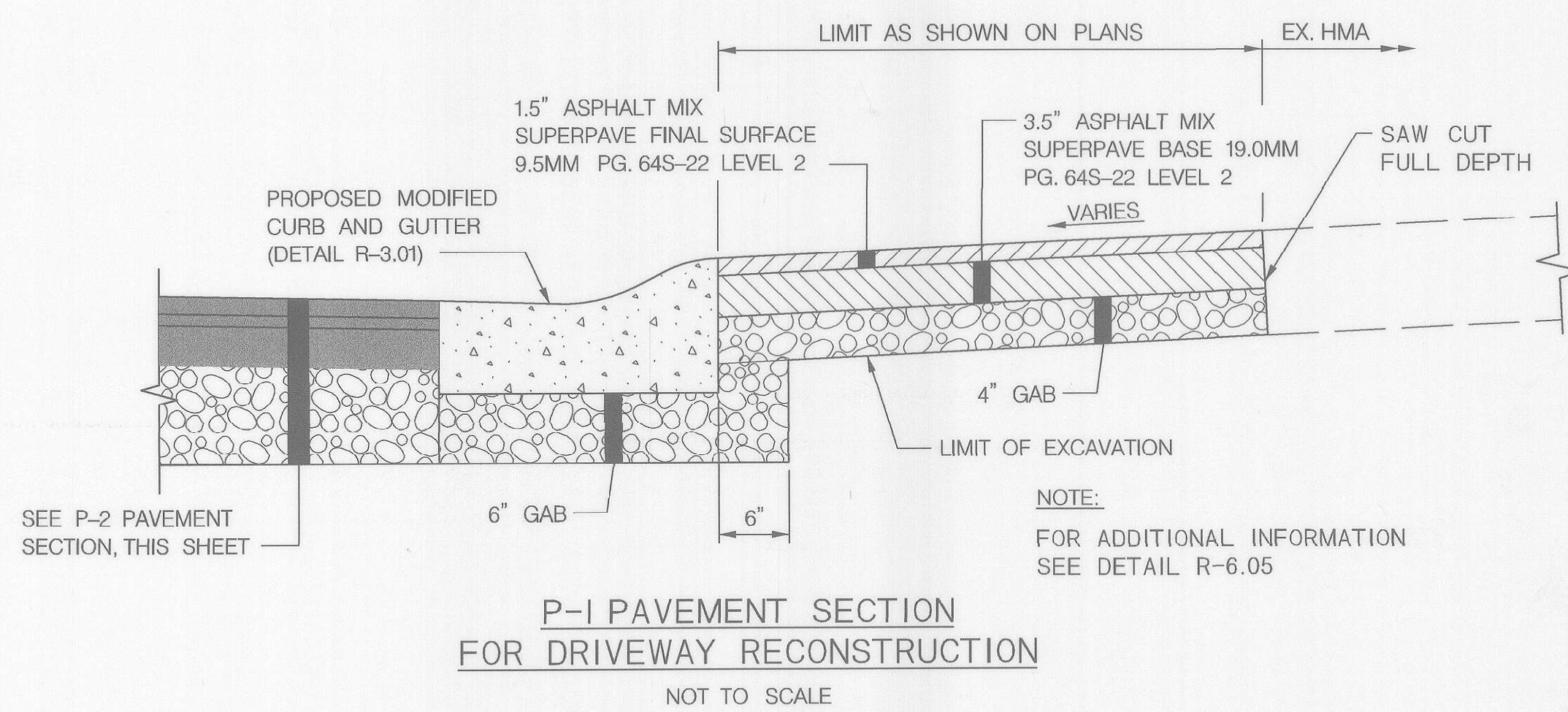
**NOTES**

1. WIDTH OF EXISTING PAVEMENT MAY EXTEND BEYOND LIMIT OF PROPOSED CURB AND GUTTER. IF REQUIRED, REMOVE EXISTING ROADWAY PAVEMENT BEYOND FACE OF NEW CURB GUTTER PAN. REMOVAL OF PAVEMENT SHALL BE INCIDENTAL TO CLASS I EXCAVATION.
2. AREA BEHIND BACK OF CURB TO BE ADJUSTED TO MEET EXISTING GROUND, WHERE DRIVEWAY MEETS CURB CONTRACTOR TO RECONSTRUCT DRIVEWAY APRON SIMILAR TO HO. CO. STD. DETAIL R-6.05 EXCEPT THAT DRIVEWAY WIDTH SHALL MATCH THE WIDTH OF EXISTING DRIVEWAY. DRIVEWAY APRON RECONSTRUCTION TO CONSIST OF P-1 PAVEMENT SECTION, OR REINFORCED CONCRETE AS NOTED.
3. ALL FULL DEPTH SAW CUTS REQUIRED WILL NOT BE MEASURED BUT THE COST WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE FOR THE CURB AND GUTTER PAY ITEM.
4. THE GAB PLACED UNDER AND BEHIND CURB & GUTTER WILL NOT BE MEASURED BUT THE COST WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE FOR THE CURB & GUTTER PAY ITEM.
5. AREA TO BE STABILIZED WITH 4-INCH TOPSOIL AND TURFGRASS ESTABLISHMENT UNLESS OTHERWISE NOTED.



**BASELINE & FLOW LINE ELEVATION OFFSET TABLE**

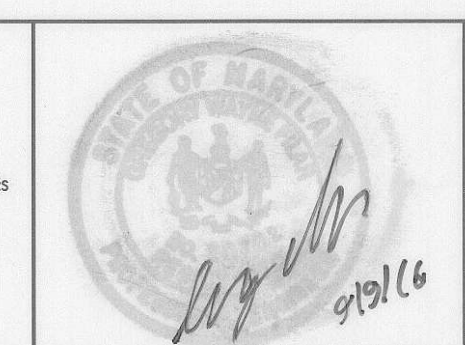
PINE TREE ROAD						
STATION	(A)		(B)		(C)	
	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET
107+90.5	LIMIT OF WORK					
108+00	212.44 EXIST.	EXIST.	211.98	0.05' RT	211.42 EXIST.	EXIST.
108+25	211.96	11.01' LT	212.09	0.14' LT	211.16	10.72' RT
108+50	211.50	11.34' LT	211.73	0.43' LT	211.00	10.48' RT
108+75	211.05	11.58' LT	211.28	0.72' LT	210.63	10.24' RT
109+00	210.59	11.82' LT	210.82	0.91' LT	EXISTING	
109+25	210.13	11.74' LT	210.06	0.82' LT	EXISTING ROADWAY	
109+50	209.68	11.63' LT	209.66	0.72' LT	EXISTING ROADWAY	
109+75	209.22	11.65' LT	209.45	0.69' LT	208.83 EXIST.	EXISTING
109+90	209.94	11.88' LT	209.19	0.96' LT	N/A	
110+00	N/A		209.20	1.07' LT	N/A	
110+03	N/A		N/A		208.91 EXIST.	EXISTING



PLOTTED: Wednesday, September 07, 2016 AT 03:22 PM  
 FILE: I:\projects\2016\16-09-07\16-09-07.dwg  
 PLOTTER: HP DesignJet 5000 Series

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *[Signature]* DATE: 9/13/16  
 Chief, Bureau of Engineering: *[Signature]* DATE: 9/13/16  
 Chief, Transportation and Special Projects Division: *[Signature]* DATE: 9/13/16

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS  
 10317 SULFORD RD., ANNAPOLIS JUNCTION, MD, 20710  
 FAX: (410) 470-2772 CALL: (410) 880-3055  
 www.gpinc.com



DES:	GWF				
DRN:	AWW				
CHK:	GWF				
DATE:	SEPT, 2016	BY:	NO.	REVISION	DATE

**TYPICAL ROADWAY SECTIONS AND DETAILS**

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

PINE TREE / GLEN COURT  
 DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3  
 CAPITAL PROJECT D-1140  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

SCALE:  
 AS SHOWN  
 SHEET  
 2 OF 8

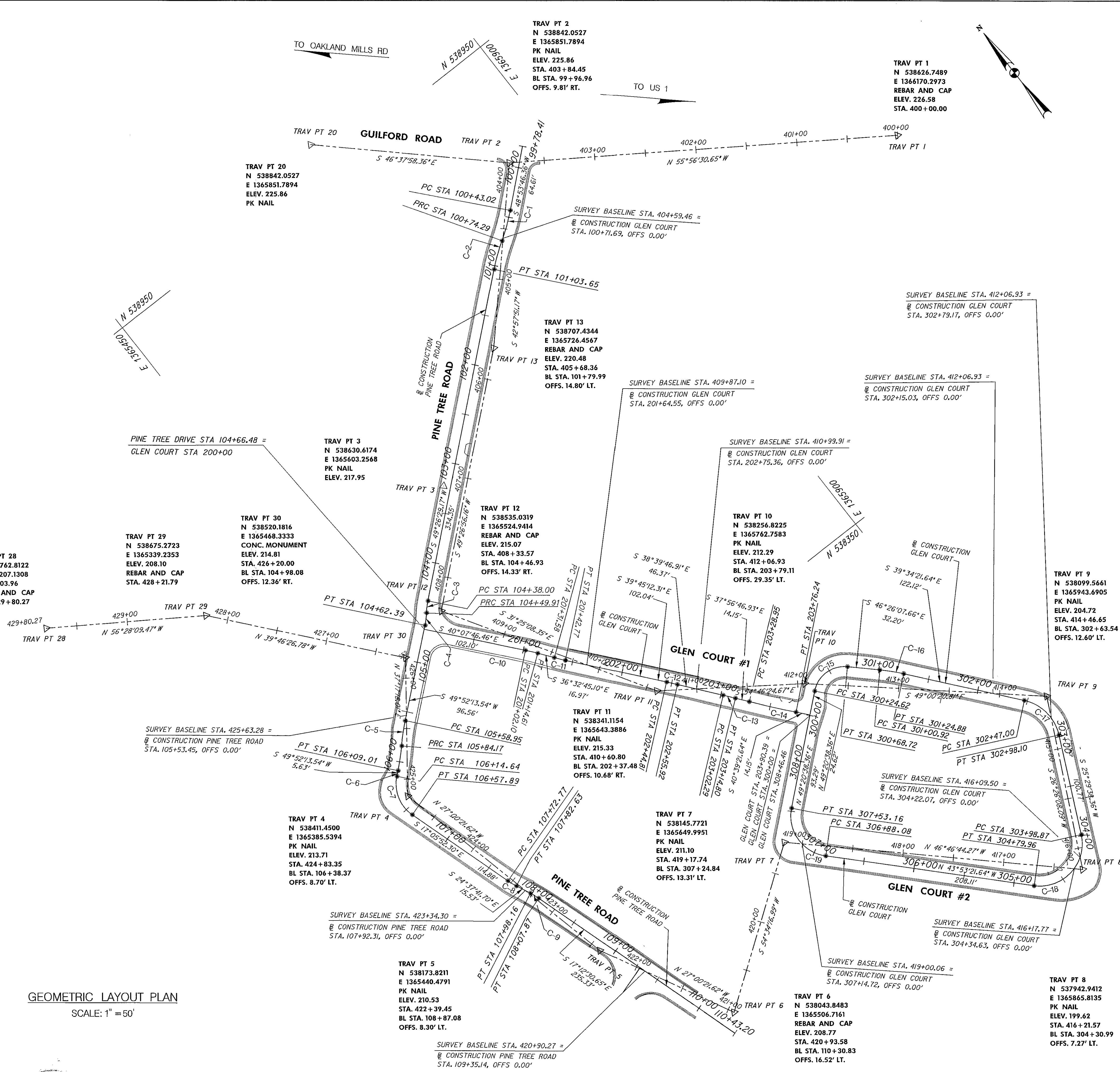




CURVE DATA - PINE TREE DRIVE					
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH
C-1	8°57'28.19" RT	28°38'52.40"	200.00'	15.67'	31.27'
C-2	8°24'45.38" LT	28°38'52.40"	200.00'	14.71'	29.37'
C-3	9°06'07.27" LT	76°23'39.74"	75.00'	5.97'	11.91'
C-4	9°31'51.63" RT	76°23'39.74"	75.00'	6.25'	12.48'
C-5	7°07'03.29" LT	28°13'28.28"	203.00'	12.63'	25.22'
C-6	7°07'03.29" RT	28°38'52.40"	200.00'	12.44'	24.85'
C-7	66°58'05.83" LT	154°51'12.45"	37.00'	24.48'	43.25'
C-8	7°31'49.41" LT	76°23'39.74"	75.00'	4.94'	9.86'
C-9	7°25'11.05" RT	76°23'39.74"	75.00'	4.86'	9.71'

TRAVERSE POINTS CONTROL COORDINATES				
POINT NO.	NORTH	EAST	ELEVATION	DESCRIPTION
TRAV PT 1	538626.7489	1366170.2973	226.58	REBAR & CAP
TRAV PT 2	538842.0527	1365851.7894	225.86	PK NAIL
TRAV PT 3	538630.6174	1365603.2568	217.95	PK NAIL
TRAV PT 4	538411.4500	1365385.5394	213.71	PK NAIL
TRAV PT 5	538173.8211	1365440.4791	210.53	PK NAIL
TRAV PT 6	538043.8483	1365506.7161	208.77	REBAR & CAP
TRAV PT 7	538145.7721	1365649.9951	211.10	PK NAIL
TRAV PT 8	537942.9412	1365865.8135	199.62	PK NAIL
TRAV PT 9	538099.5661	1365943.6905	204.72	PK NAIL
TRAV PT 10	538256.8225	1365762.7583	212.29	PK NAIL
TRAV PT 11	538341.1154	1365643.3886	215.33	PK NAIL
TRAV PT 12	538535.0319	1365524.9414	215.07	REBAR & CAP
TRAV PT 13	538707.4344	1365726.4567	220.48	REBAR & CAP
TRAV PT 20	538842.0527	1365851.7894	225.86	PK NAIL
TRAV PT 28	538762.8122	1365207.1308	203.96	REBAR & CAP
TRAV PT 29	538675.2723	1365339.2353	208.10	REBAR & CAP
TRAV PT 30	538520.1816	1365468.3333	214.81	CONC MON

PINE TREE ROAD BASELINE CONSTRUCTION CONTROL COORDINATES		
STATION	NORTH	EAST
POB 99+78.41	538,846.8684	1,365,872.2163
PC 100+43.02	538,804.3946	1,365,823.5342
PT 100+74.29	538,785.7595	1,365,798.4647
PRC 100+74.29	538,785.7595	1,365,798.4647
PT 101+03.65	538,768.3688	1,365,774.8353
PC 104+37.99	538,550.9666	1,365,520.8164
PT 104+49.91	538,542.5346	1,365,512.4164
PRC 104+49.91	538,542.5346	1,365,512.4164
PT 104+62.39	538,533.7390	1,365,503.5886
PC 105+58.95	538,471.5041	1,365,429.7597
PT 105+84.17	538,454.0965	1,365,411.5363
PRC 105+84.17	538,454.0965	1,365,411.5363
PT 106+09.01	538,436.9462	1,365,393.5822
PC 106+14.64	538,433.3178	1,365,389.2778
PT 106+57.89	538,394.1498	1,365,377.7602
PC 107+72.77	538,284.3433	1,365,411.5366
PT 107+82.63	538,275.1390	1,365,415.0446
PC 107+98.16	538,261.0199	1,365,421.5173
PT 108+07.88	538,251.9540	1,365,424.9825
POE 110+43.20	538,027.1616	1,365,494.6040



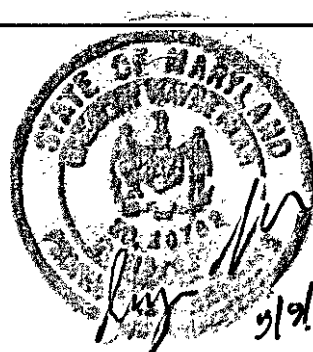
GEOMETRIC LAYOUT PLAN  
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DATE: 9/13/16  
DATE: 9/13/16  
DATE: 9/13/16

GPI

GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & SURVEYORS  
22517 GOLF COURSE RD., ANNAPOLIS, JUNCTION, MD 20710  
WASH. (301) 470-2172 BALT. (410) 890-3055  
FAX (301) 470-2019 www.gpi.com



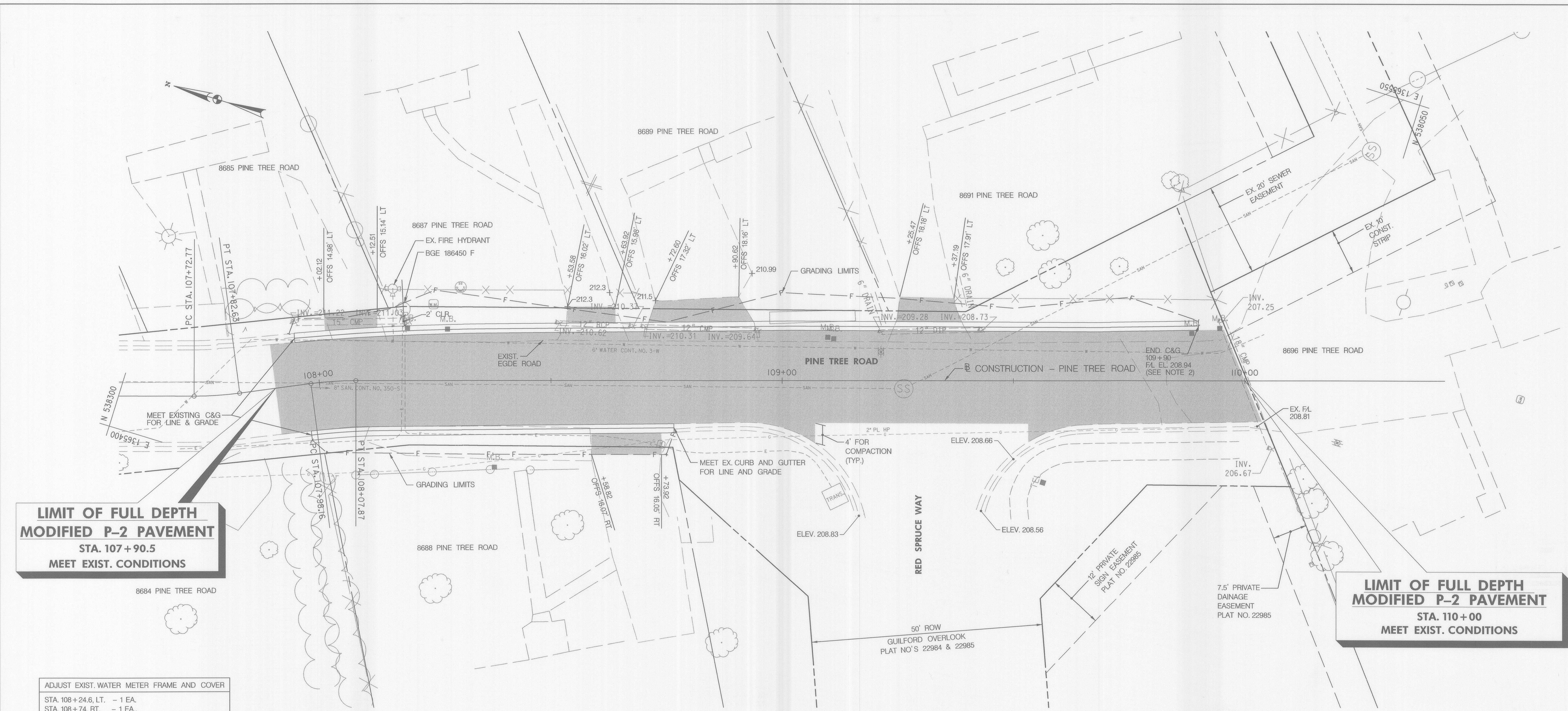
DES: GWF					
DRN: AMW					
CHK: GWF					
DATE: SEPT., 2016	BY:	NO.	REVISION	DATE	600' SCALE MAP NO. BLOCK NO.

GEOMETRIC LAYOUT

PINE TREE /GLEN COURT  
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3  
CAPITAL PROJECT D-1140  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE:  
AS SHOWN  
SHEET  
4 OF 8





**LIMIT OF FULL DEPTH MODIFIED P-2 PAVEMENT**  
**STA. 107+90.5**  
**MEET EXIST. CONDITIONS**

**LIMIT OF FULL DEPTH MODIFIED P-2 PAVEMENT**  
**STA. 110+00**  
**MEET EXIST. CONDITIONS**

ADJUST EXIST. WATER METER FRAME AND COVER  
 STA. 108+24.6, LT. - 1 EA.  
 STA. 108+74, RT. - 1 EA.

ADJUST /DAYLIGHT EXISTING 6" DRAIN  
 STA. 109+35, LT. - 1 EA.  
 STA. 109+05, LT. - 1 EA.

REMOVE EXISTING PIPE CULVERT  
 STA. 107+96.4 TO STA. 108+19.5, LT. - 25 L.F.  
 STA. 108+52 TO STA. 108+68, LT. - 16 L.F.  
 STA. 108+70.5 TO STA. 108+95, LT. - 25 L.F.  
 STA. 109+21.5 TO STA. 109+43, LT. - 22 L.F.

CLEAN EXISTING PIPE CULVERT  
 STA. 109+95, LT TO STA. 110+06, RT. - 30 L.F.

CONSTRUCT MODIFIED CURB AND GUTTER  
 STA. 107+95.5(1) TO STA. 109+90, LT. - 195.5 L.F.  
 STA. 107+97 TO STA. 108+77, RT. (1) - 78.5 L.F.

(1) MEET EXIST. CURB FOR LINE AND GRADE

REMOVE AND REPLACE EXISTING FENCE  
 STA. 109+37 TO STA. 109+95, LT. - 56 L.F.

NOTE: CONTRACTOR SHALL INVENTORY EXISTING FENCE WITH ENGINEER PRIOR TO REMOVAL TO EVALUATE CONDITION AND REPLACEMENT OPTIONS.

CONSTRUCT DRIVEWAY WITH P-1 PAVEMENT SECTION  
 STA. 108+02.2 TO STA. 108+12.9, LT. - 43 S.F.  
 STA. 108+53.6 TO STA. 108+64.0 LT. - 36 S.F.  
 STA. 108+58.8 TO STA. 108+73.9, RT. - 70 S.F.  
 STA. 108+71.1 TO STA. 108+93.8 LT. - 101 S.F.  
 STA. 109+24.7 TO STA. 109+38.9 LT. - 67 S.F.

PLAN  
 SCALE: 1" = 10'

- NOTES:
1. REMOVAL/RELOCATIONS OF EXISTING MAILBOXES SHALL BE INCIDENTAL TO CLEARING AND GRUBBING PAY ITEM.
  2. GRADE AREA BETWEEN END OF CURB AND GUTTER TO INLET OF 18" CMP CULVERT TO PROVIDE POSITIVE DRAINAGE IN AREA.

LEGEND

	FULL-DEPTH PAVEMENT
	CUT LINE
	FILL LINE
	EXISTING FENCE

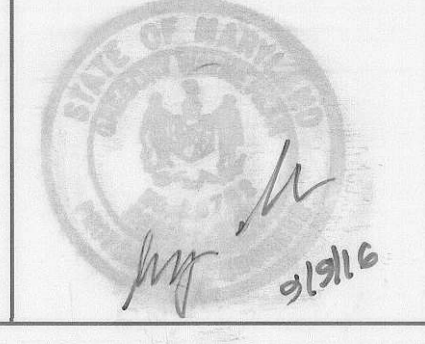
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*J. G. [Signature]* 9/16/16  
 DIRECTOR OF PUBLIC WORKS DATE

*Thomas E. Butler* 9/13/16  
 CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 9/16/16  
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS  
 10577 GUILFORD RD., ANNAPOLIS JUNCTION, MD. 20704  
 PHONE: (410) 476-2772 FAX: (410) 890-3055  
 www.gpnet.com



DES: GWF					
DRN: AWW					
CHK: GWF					
DATE: SEPT., 2016	BY:	NO.	REVISION	DATE	

ROADWAY PLAN

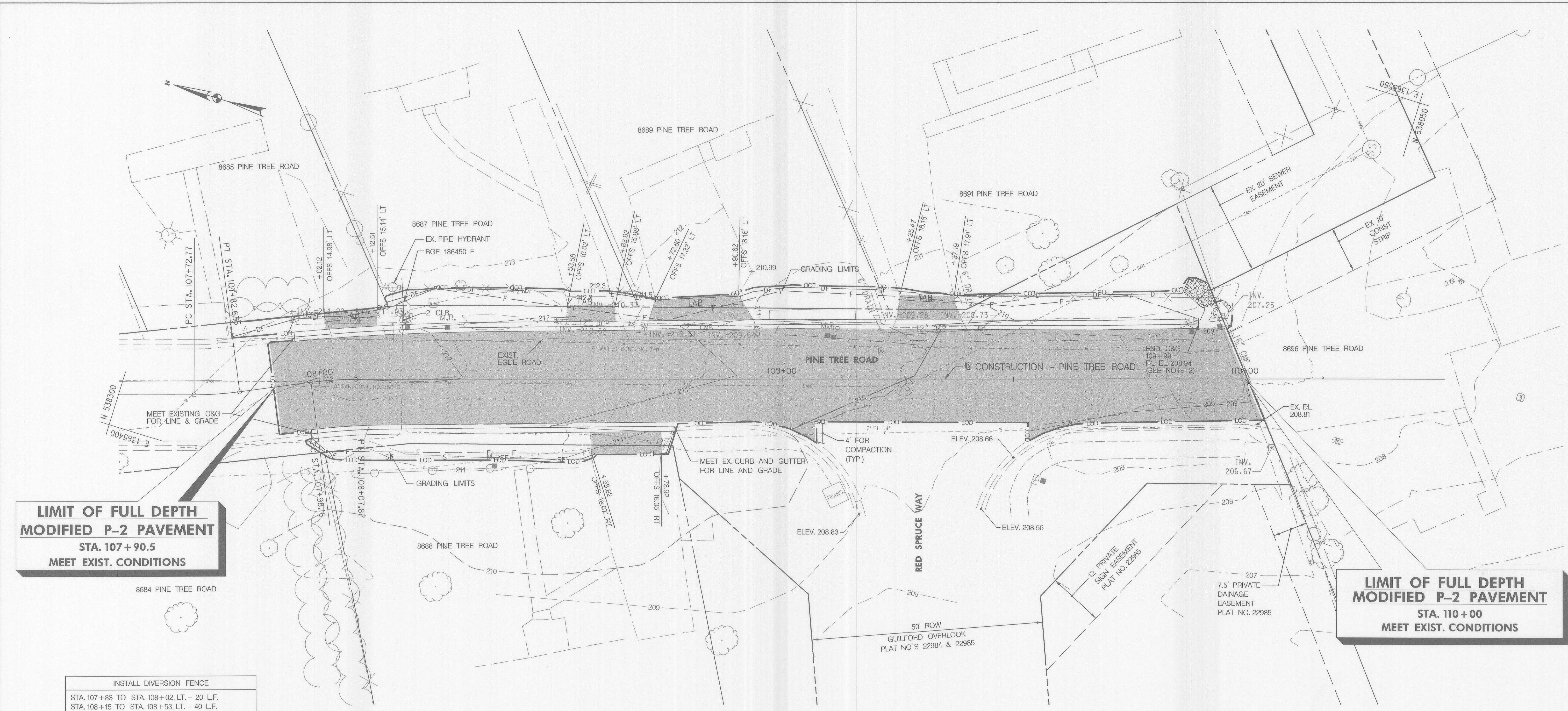
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

PINE TREE /GLEN COURT  
 DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3  
 CAPITAL PROJECT D-1140  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

SCALE:  
 AS SHOWN

SHEET  
 5 OF 8





**LIMIT OF FULL DEPTH MODIFIED P-2 PAVEMENT**  
**STA. 107+90.5**  
**MEET EXIST. CONDITIONS**

**LIMIT OF FULL DEPTH MODIFIED P-2 PAVEMENT**  
**STA. 110+00**  
**MEET EXIST. CONDITIONS**

**INSTALL DIVERSION FENCE**  
 STA. 107+83 TO STA. 108+02, LT. - 20 L.F.  
 STA. 108+15 TO STA. 108+53, LT. - 40 L.F.  
 STA. 108+63 TO STA. 108+73, LT. - 10 L.F.  
 STA. 108+91 TO STA. 109+25, LT. - 35 L.F.  
 STA. 109+37 TO STA. 109+87, LT. - 50 L.F.

NOTE: ADJUST DIVERSION FENCE AS REQUIRED TO AVOID IMPACTS TO EXISTING FENCE AS MUCH AS POSSIBLE.

**INSTALL SILT FENCE**  
 STA. 107+96 TO STA. 108+59, RT. - 62 L.F.

**INSTALL CLASS 1 RIP RAP FOR SEDIMENT CONTROL**  
 STA. 109+87 TO STA. 109+94, LT. - 2.5 TONS

NOTE: INSTALL AT TERMINUS OF DIVERSION FENCE TO INLET OF EXISTING 18" CMP CULVERT.

**PLAN**  
 SCALE: 1" = 10'

**LEGEND**

	FULL-DEPTH PAVEMENT
	SILT FENCE
	DIVERSION FENCE
	TEMPORARY ASPHALT BERM
	LIMIT OF DISTURBANCE
	RIIP RAP FOR SEDIMENT CONTROL

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*John P. ...* 9/16/16  
 DIRECTOR OF PUBLIC WORKS DATE

*Thomas E. Butler* 9/13/16  
 CHIEF, BUREAU OF ENGINEERING DATE

*John ...* 9/12/16  
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION OBSERVERS & INSPECTORS  
 10977 GUILFORD RD., ANNAPOLIS JUNCTION, MD. 20704  
 TEL: (410) 490-2772 FAX: (410) 490-3056  
 www.gpnet.com

*July 26, 2016*

DES:	GWF				
DRN:	AWW				
CHK:	GWF				
DATE:	SEPT, 2016	BY:	NO.	REVISION	DATE

**EROSION AND SEDIMENT CONTROL PLAN**

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

PINE TREE / GLEN COURT DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3  
 CAPITAL PROJECT D-1140  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
 SHEET 6 OF 8



**HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES**

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:  
a. Prior to the start of earth disturbance,  
b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,  
c. Prior to the start of another phase of construction or opening of another grading unit,  
d. Prior to the removal or modification of sediment control practices.

Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.

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 2011 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 is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.  
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 topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

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 CID.

6. Site Analysis:

Total Area of Site:	0.15	Acres
Area Disturbed:	0.15	Acres
Area to be roofed or paved:	0.12	Acres
Area to be vegetatively stabilized:	0.03	Acres
Total Cut:	...	Cu. Yds.
Total Fill:	...	Cu. Yds.

Off-site waste/borrow area location: \_\_\_\_\_

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

- Inspection date
- Inspection type (routine, pre-storm event, during rain event)
- Name and title of inspector
- Weather information (current conditions as well as time and amount of last recorded precipitation)
- Brief description of project's status (e.g., percent complete) and/or current activities
- Evidence of sediment discharges
- Identification of plan deficiencies
- Identification of sediment controls that require maintenance
- Identification of missing or improperly installed sediment controls
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Monitoring/sampling
- Maintenance and/or corrective action performed
- Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.

11. Disturbance shall not occur outside the L.O.D. 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 been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

14. All Silt Fence and Super Silt Fence shall be placed on the contour, and be imbedded at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

- Use III and IV March 1 - June 15
- Use III and IIIIP October 1 - April 30
- Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

**B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND AMENDMENTS**

**Definition:** The process of preparing the soils to sustain adequate vegetative stabilization.

**Purpose:** To provide a suitable soil medium for vegetative growth.

**Conditions Where Practice Applies:** Where vegetative stabilization is to be established.

**Criteria:**

- A. Soil Preparation
1. Temporary Stabilization
- a. Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable preparation equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
- b. Apply fertilizer and lime as prescribed on the plans.
- c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
- a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
  - i. Soil pH between 6.0 and 7.0.
  - ii. Soluble salts less than 500 parts per million (ppm).
  - iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of

moisture. An exception: If lovgrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.  
iv. Soil contains 1.5 percent minimum organic matter by weight.  
v. Soil contains sufficient pore space to permit adequate root penetration.

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake low areas to smooth the surface, remove large objects like stumps and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seeded preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

**B. Topsoiling**

1. Topsoils placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

3. Topsoiling is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

4. Areas having slopes steeper than 2:1 require special consideration and design.

5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of clinders, stones, sags, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.

c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

**6. Topsoil Application**

a. Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

**C. Soil Amendments (Fertilizer and Lime Specifications)**

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.

**B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

**Definition:** The application of seed and mulch to establish vegetative cover.

**Purpose:** To protect disturbed soils from erosion during and at the end of construction.

**Conditions Where Practice Applies:** To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

**Criteria:**

A. Seeding

1. Specifications
- a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
- b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
- c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh

inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 15 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.

d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

**2. Application**

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

i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.  
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

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

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

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.

ii. Lime: Use only ground agricultural limestone up to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

iii. Mix seed and fertilizer on site and seed immediately and without interruption.

iv. When hydroseeding do not incorporate seed into the soil.

**B. Mulching**

**1. Mulch Materials (in order of preference)**

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and must be moist, mucky, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.

b. Wood Cellulose Fiber Mulch (WCFF) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

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

ii. WCFF, including dye, must contain no germination or growth inhibiting factors.

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

iv. WCFF material must not contain elements or compounds at concentration levels that will be phyto-toxic.

v. WCFF must conform to the following physical requirements: fiber length of approximately 1.0 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 15 percent or maximum and water holding capacity of 30 percent minimum.

**2. Application**

a. Apply mulch to all seeded areas immediately after seeding.

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

**3. Anchoring**

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon the size of the area and erosion hazard:

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

ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tack II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.

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

**B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION**

**Definition:** To stabilize disturbed soils with vegetation for up to 6 months.

**Purpose:** To use fast growing vegetation that provides cover on disturbed soils.

**Conditions Where Practice Applies:** Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

**Criteria:**

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.

2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.

3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A,B and maintain until the next seeding season.

**TEMPORARY SEEDING SUMMARY**

No.	Species	Hardiness Zone (from Figure B.3): <u>6b</u>			Fertilizer Rate (10-20-20)	Lime Rate
		Seed Mixture (from Table B.1): _____				
		Application Rate (lb/ac) (1)	Seeding Dates	Seeding Depths (2)		
	Annual Ryegrass	40	3/1 to 5/15 8/1 to 10/15	0.5"	436 lb/ac (10 lb/1000 sf)	2 Tons/ac (90 lb/1000 sf)
	Barley	96	3/1 to 5/15 8/1 to 10/15	1.0"		
	Foxtail Millet	30	5/16 to 7/31	0.5"		
	Pearl Millet	20	5/16 to 7/31	0.5"		

**NOTES:**

(1) Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For small-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond seeding dates for the temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

(2) For sandy soils, plant seeds at twice the depth listed above.

**B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION**

**Definition:** To stabilize disturbed soils with permanent vegetation.

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

**Conditions Where Practice Applies:** Exposed soils where ground cover is needed for 6 months or more.

**Criteria:**

A. Seed Mixtures

1. General Use

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

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

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

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3.5 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

**2. Turfgrass Mixtures**

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

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

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

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

iii. Tall Fescue/Kentucky Bluegrass Full Sun Mixture: For use in drought-prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture (includes): Certified Tall Fescue Cultivars 35 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rates: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rates: 1.5 to 3 pounds per 1000 square feet.

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

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

c. Ideal Times of Seeding for Turf Grass Mixtures  
Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)  
Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b)  
Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by disking, or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1.5 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

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

**SEQUENCE OF CONSTRUCTION**

- 1. OBTAIN GRADING PERMIT.
- 2. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 48 HOURS BEFORE STARTING ANY WORK.
- 3. INSTALL DIVERSION FENCE, RIP RAP AND TEMPORARY ASPHALT BERMS ALONG THE EAST SIDE OF THE PROJECT AREA AND SILT FENCE ALONG THE WEST SIDE. SEE NOTE 1 AT THE END OF SEQUENCE OF CONSTRUCTION.
- 4. REMOVE EXISTING DRIVEWAY CULVERTS ALONG THE EAST SIDE OF SITE WHILE PROVIDING DRIVEWAY ACCESS TO RESIDENCES.
- 5. CONSTRUCT CURB AND GUTTER ALONG BOTH SIDES OF ROADWAY.
- 6. PROCEED TO SAW CUT ROADWAY AND CONSTRUCT FULL-DEPTH ROADWAY PAVEMENT SECTION. SEE NOTE 2 AT THE END OF SEQUENCE OF CONSTRUCTION.
- 7. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROLS AND STABILIZE OPEN SPACE AREAS.
- 8. REMOVE EXISTING DRIVEWAY AREAS AND CONSTRUCT ASPHALT DRIVEWAY AREAS. SEE NOTE 2 AT THE END OF SEQUENCE OF CONSTRUCTION.
- 9. CLEAN EXISTING 18" CMP CULVERT, FINE GRADE ANY AREAS AS REQUIRED AND PROVIDE FINAL STABILIZATION TO OPEN SPACE AREAS.

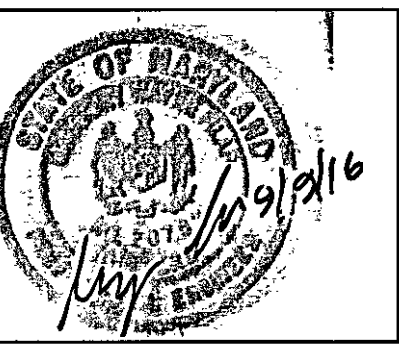
**NOTES:**

- 1. DUE TO NATURE OF SITE, THE LOCATION OF THE STABILIZED CONSTRUCTION ENTRANCE HAS NOT BEEN SHOWN. IT SHALL BE AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR TO DIRECT THE IMPLEMENTATION AND LOCATION AS REQUIRED.
- 2. THE CONTRACTOR SHALL BE AWARE THE DISTURBED AREAS THAT DO NOT FLOW TO A SEDIMENT CONTROL DEVICE SHALL BE STABILIZED AT THE END OF EACH WORKDAY. THE CONTRACTOR SHALL REVIEW DAILY WORK SCHEDULE SEQUENCE WITH THE SEDIMENT CONTROL INSPECTOR TO ENSURE THAT DAILY LIMITS OF GRADING ACTIVITIES AND COMPLIANCE WITH IMMEDIATE STABILIZATION REQUIREMENTS CAN BE ESTABLISHED. IMMEDIATE, OR DAILY STABILIZATION SHALL BE INCLUDED BUT NOT LIMITED TO PLACEMENT OF SOD; PLACEMENT OF IMPERVIOUS SHEETING, SUITABLY ANCHORED TO PREVENT BLOWING; PLACEMENT OF STONE SUBBASE OR OTHER METHODS HAVING PRIOR APPROVAL FOR THE SEDIMENT CONTROL INSPECTOR.

**THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL PURPOSE ONLY**

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS DATE: 9/13/16	<i>[Signature]</i> CHIEF, BUREAU OF ENGINEERING DATE: 9/13/16
<i>[Signature]</i> CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE: 9/13/16	<i>[Signature]</i> DATE: 9/13/16



DES: GWF  
DRN: AWW  
CHK: GWF  
DATE: SEPT., 2016

BY	NO.	REVISION	DATE

**EROSION AND SEDIMENT CONTROL NOTES AND DETAILS**

SCALE: AS SHOWN

SHEET 7 OF 8

PINE TREE /GLEN COURT DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3 CAPITAL PROJECT D-1140 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND



PERMANENT SEEDING SUMMARY

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer (10-20-20)			Lime Rate
					N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.1):								
9	SELECT ONE SPECIES OF FESCUE: Tall Fescue ( <i>Lolium arundinaceum</i> ) (formerly <i>Festuca arundinaceum</i> ) OR Hard Fescue ( <i>Festuca trachyphylla</i> ) AND ADD: Kentucky Bluegrass ( <i>Poa pratensis</i> ) Perennial Ryegrass ( <i>Lolium perenne</i> )	60 40 40 20	3/1 to 5/15 8/1 to 10/15	0.25" - 0.5"				
5	SELECT TWO GRASSES: Creeping Red Fescue ( <i>Festuca rubra</i> var. <i>rubra</i> ) OR Hard Fescue ( <i>Festuca trachyphylla</i> ) Perennial Ryegrass ( <i>Lolium perenne</i> ) OR Redtop ( <i>Agrostis gigantea</i> ) AND ADD THE FOLLOWING LEGUME: Flatpea ( <i>Lathyrus sylvestris</i> )	20 20 10 1	3/1 to 5/15 8/1 to 10/15	0.25" - 0.5"	45 lb/ac (1.0 lb/1000 sf)	90 lb/ac (2.0 lb/1000 sf)	90 lb/ac (2.0 lb/1000 sf)	2 Tons/ac (90 lb/1000 sf)
1	SELECT ONE WARM-SEASON GRASS: Switch Grass ( <i>Panicum virgatum</i> ) OR Costal Panic Grass ( <i>Panicum amarum</i> var. <i>amarulum</i> ) AND ADD: Creeping Red Fescue ( <i>Festuca rubra</i> var. <i>rubra</i> ) PLUS ONE OF THE FOLLOWING LEGUMES: Partridge Pea ( <i>Chamaecrista fasciculata</i> ) Bush Clover ( <i>Lespedeza capitata</i> ) Wild Indigo ( <i>Baptisia tinctoria</i> )	10 10 15 4 2 2	3/1 to 5/16 5/16 to 6/15	0.25" - 0.5"				
10	Orchardgrass ( <i>Dactylis glomerata</i> ) Creeping Red Fescue ( <i>Festuca rubra</i> var. <i>rubra</i> ) Redtop ( <i>Agrostis gigantea</i> ) Alsike Clover ( <i>Trifolium hybridum</i> ) White Clover ( <i>Trifolium repens</i> )	25 10 1 3 3	3/1 to 5/15 8/1 to 10/15	0.25" - 0.5"				

NOTE: FOR THE PERIOD BETWEEN 6/1 TO 8/14 PROVIDE NURSE CROPS IN ACCORDANCE WITH NOTE (1) LOCATED BELOW TEMPORARY SEEDING SUMMARY TABLE.

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

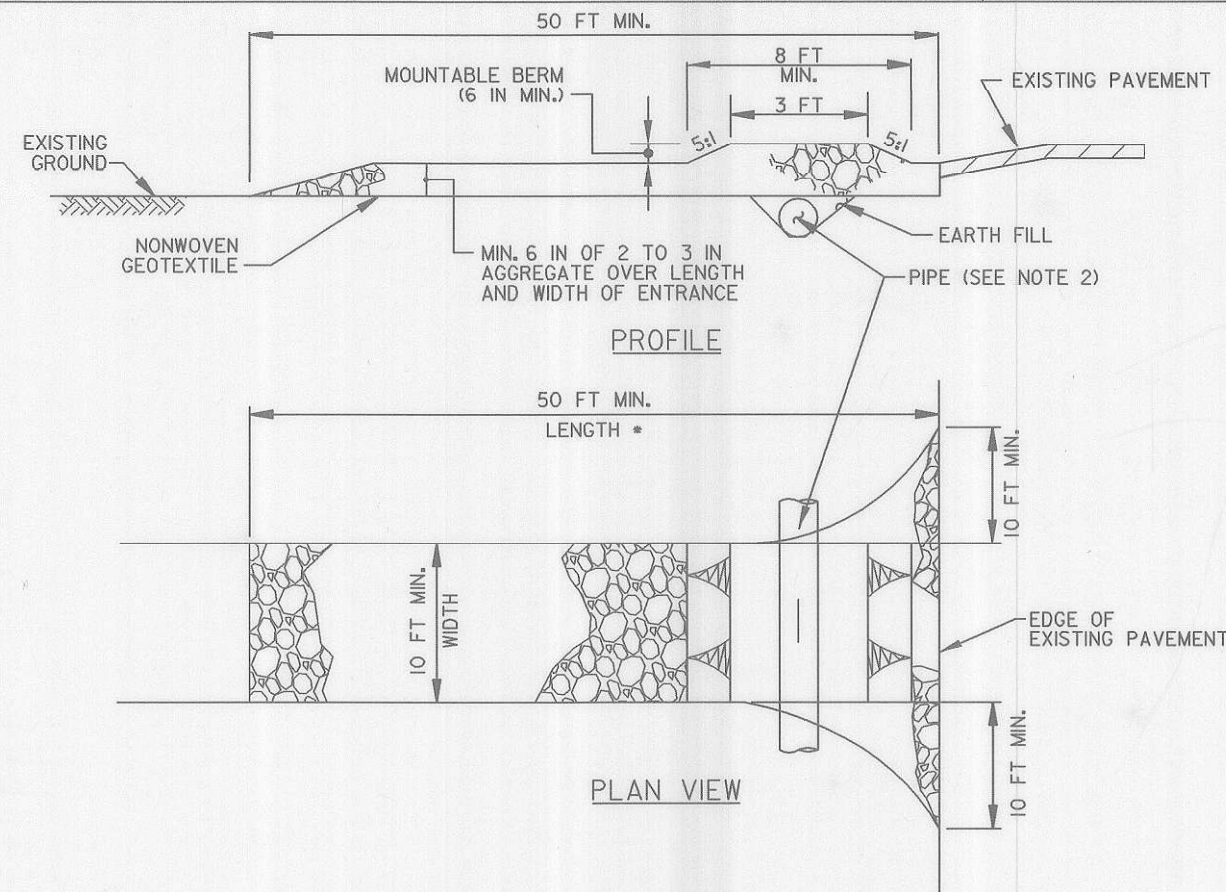
1. General Specification:

- Class of turfgrass sod must be Maryland or Virginia State Certified or Approved. Sod labels must be made available to the job foreman and inspector.
- Sod must be machine cut to a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement of thickness must exclude top growth and thatch. Individual pieces of sod must be cut to the supplier width and length. Maximum allowable deviation from standard widths and lengths must be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
- Standard size of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.

2. Sod Installation:

- During periods of excessively high temperatures or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
- Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedge against each other. Stagger lateral joint 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.
- Wherever possible, lay sod with long edges parallel to the contour and with staggered joints. Roll and tamp, peg or otherwise secure sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
- Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.

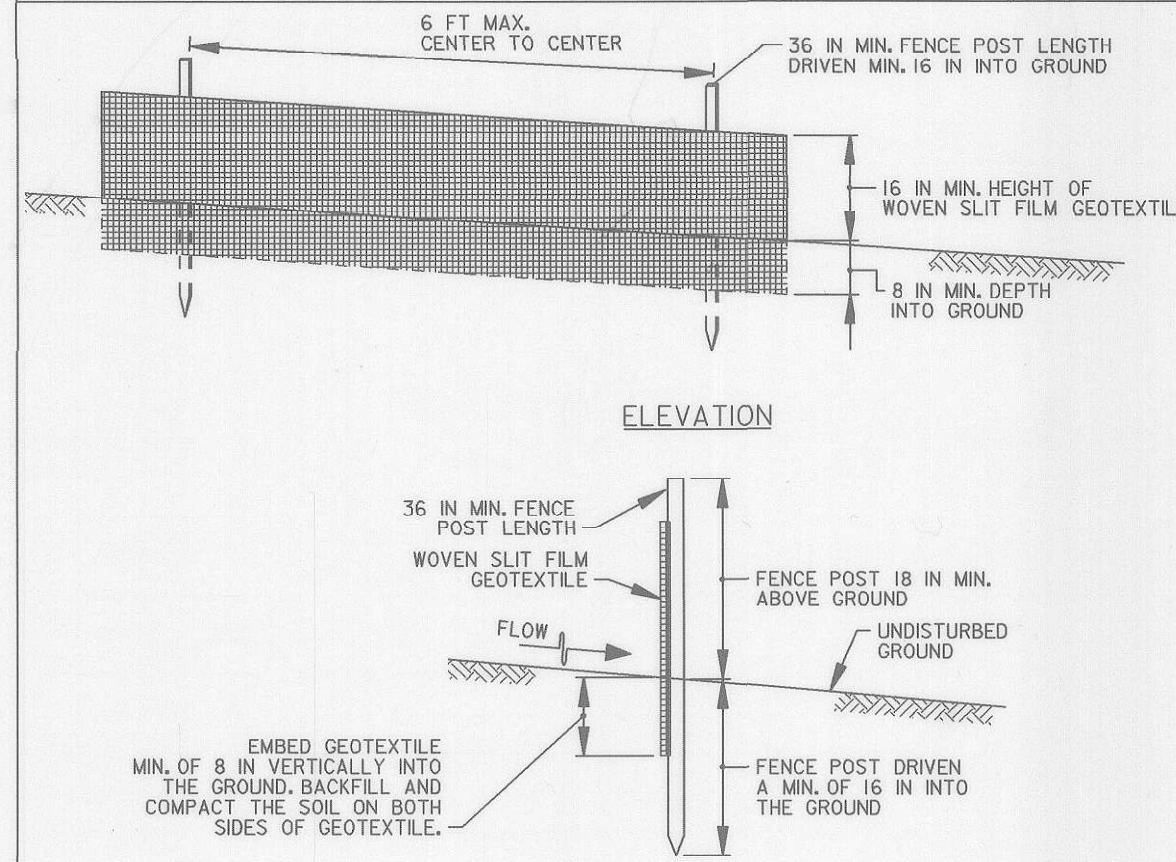
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



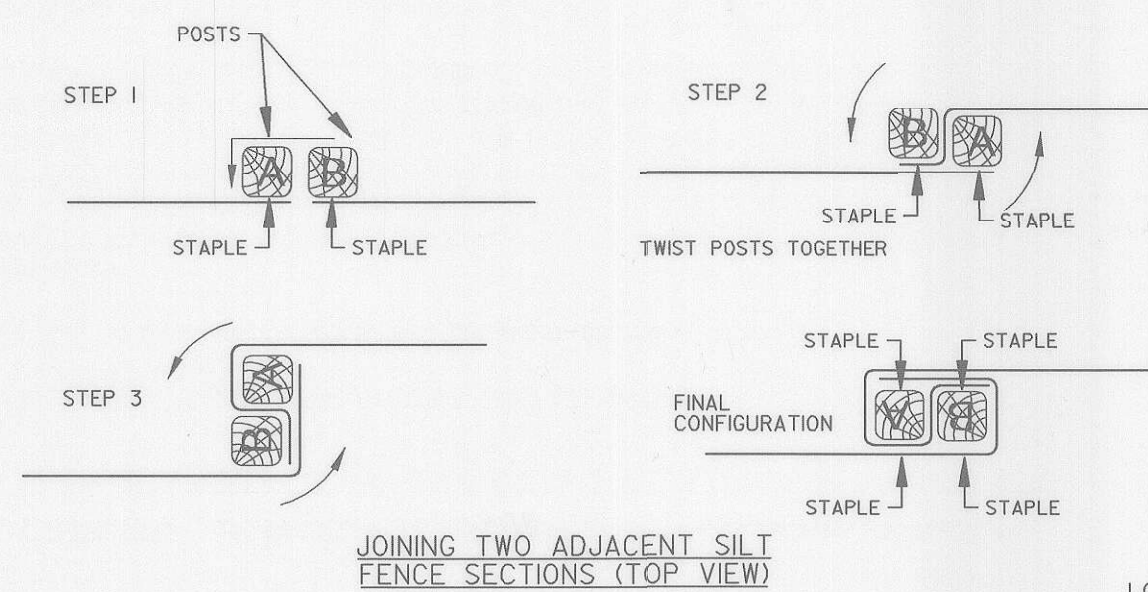
CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (+30 FEET FOR SINGLE RESIDENCE LOTS). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- 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.

DETAIL E-1 SILT FENCE



CROSS SECTION

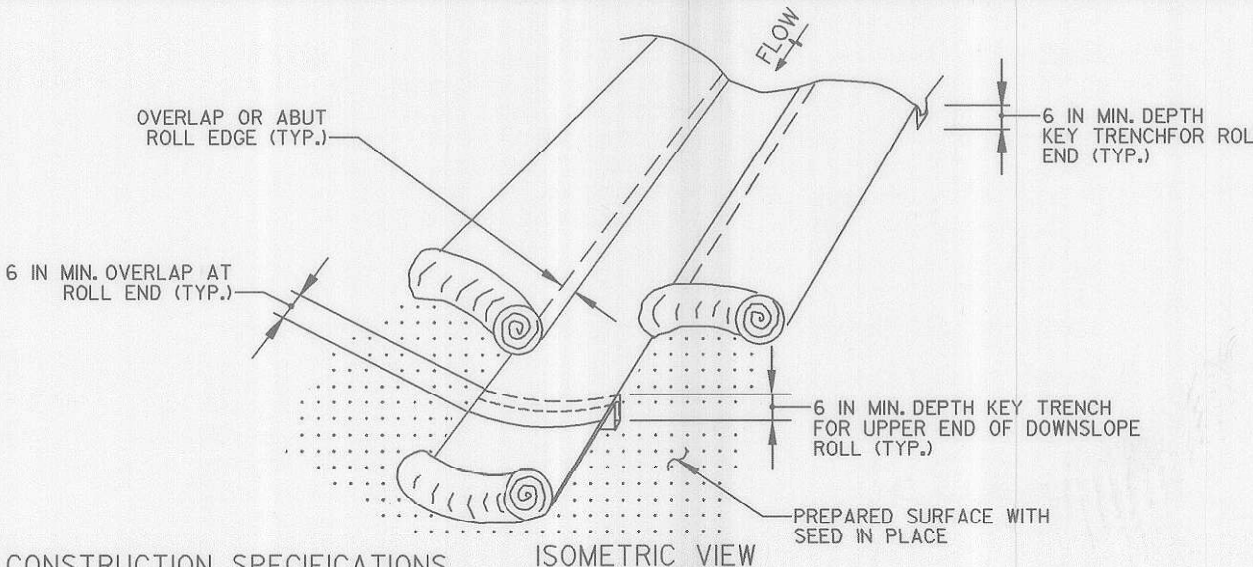


JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

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-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION



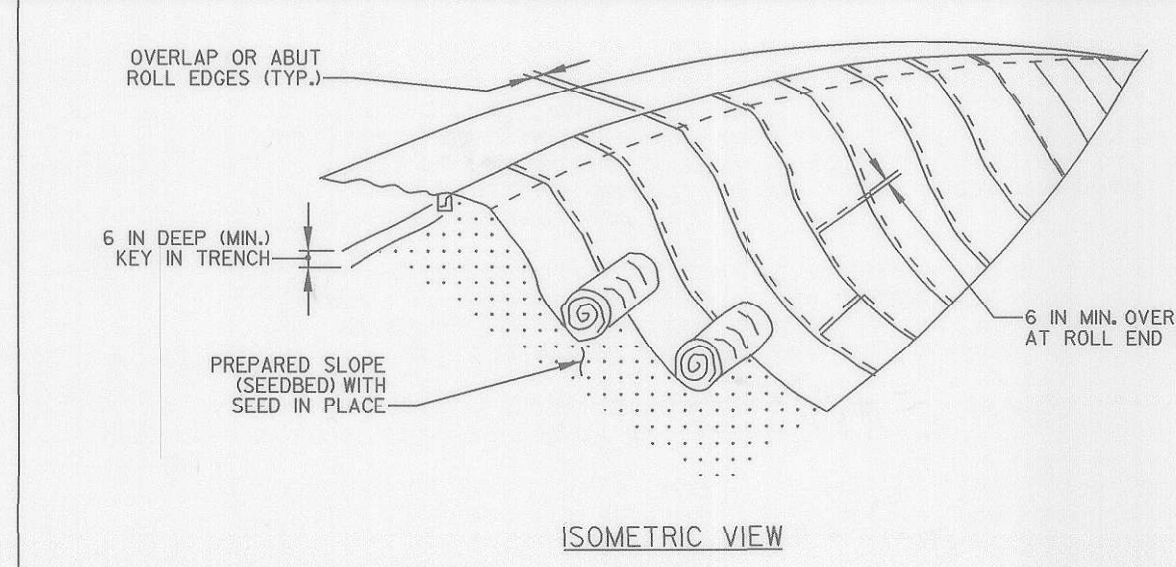
CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM NATURAL OR MAN-MADE FIBERS MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. 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.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
- OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- 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 B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION



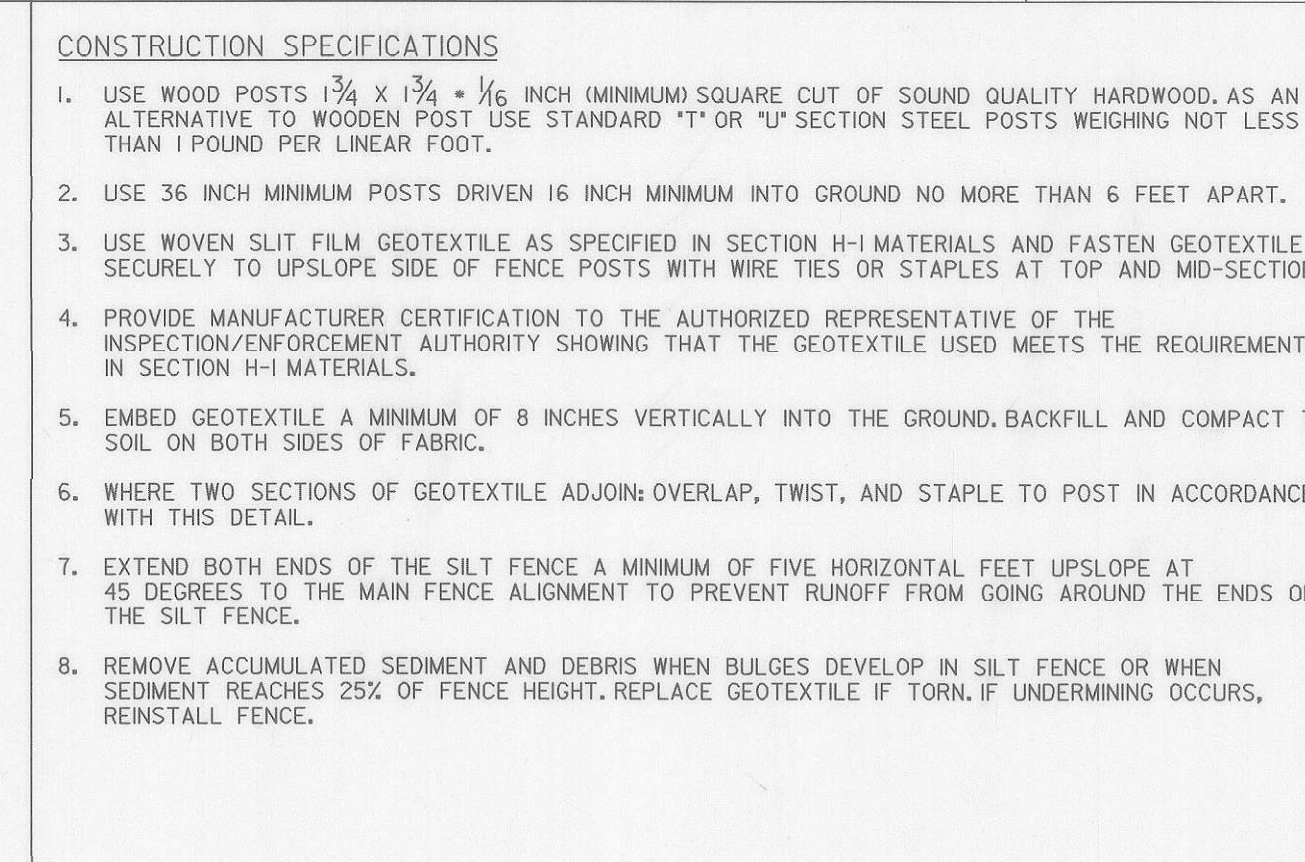
CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM NATURAL OR MAN-MADE FIBERS MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. 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.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- 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 E-1 SILT FENCE



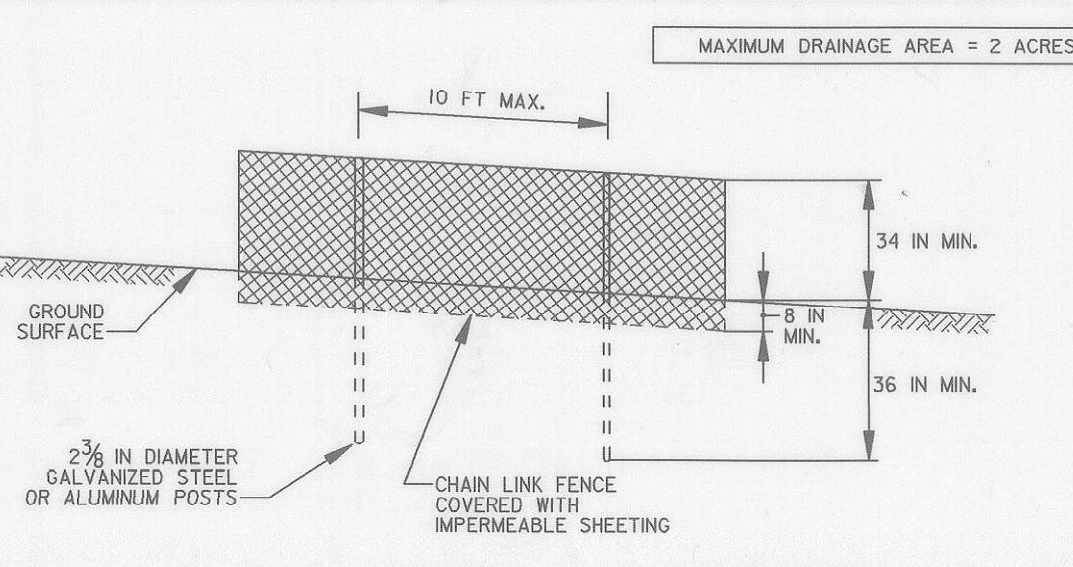
CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 3/4 x 1 3/4 x 1/6 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN, OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE 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 SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-9 DIVERSION FENCE



CONSTRUCTION SPECIFICATIONS

- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 3/8 INCH MAXIMUM OPENING).
- USE 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
- FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
- SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
- EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
- WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNSLOPE.
- KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL PURPOSE ONLY

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

DES: GWF			
DRN: AWW			
CHK: GWF			
DATE: SEPT., 2016	BY: NO.	REVISION	DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 9/13/16  
Chief, Bureau of Highways: *[Signature]* DATE: 9/13/16  
Chief, Transportation and Special Projects Division: *[Signature]* DATE: 9/13/16

GPI GREENMAN PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS  
10977 CULFORD RD., ANNAPOLIS JUNCTION, MD. 20710  
WAGL (301) 410-2772 FAXL (410) 880-3055  
WWW.GPI-INC.COM



PINE TREE / GLEN COURT  
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 3  
CAPITAL PROJECT D-1140  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
SHEET 8 OF 8