HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
PINE TREE ROAD & GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS
HOWARD COUNTY CAPITAL PROJECT D–1140
PHASE 1 (PH. 1) CONSTRUCTION

GENERAL NOTES

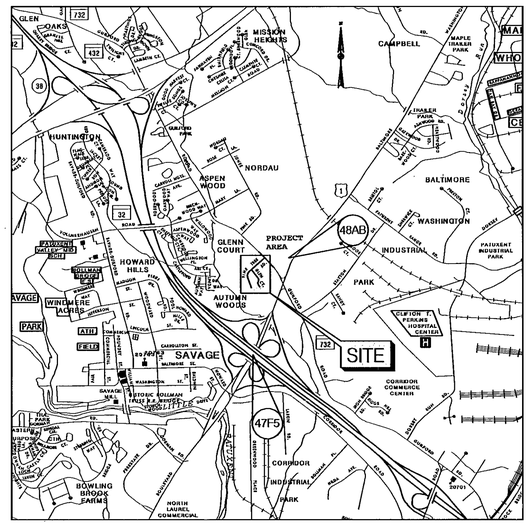
1. This contract shall be constructed under provisions of the Maryland Department of Transportation, State Highway Administration (S.H.A.) "Standard Specifications for Construction and Materials," dated January 2001, including all revisions thereof and additions thereto, except where noted otherwise; 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.
2. 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.
3. 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) 291–5834
   BGE Electric Division (410) 855–6958
   Verizon (410) 224–9980
   Comcast (410) 497–0232
4. Project Background: Location: Savage, Maryland
   Tax Map: 47
   Election District: 6
5. Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
6. 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.
7. 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.
8. 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 1,365,653.5044 Elev. 235.045 & 48AB N 538,384.4557 E 1,366,415.8225 Elev. 225.702
9. 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.
10. 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 1994, published jointly by Water Management Administration, Soil Conservation Service, and State Soil Conservation Committee.
11. 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.
12. This drawing is based on a field ran topographic survey performed by Associated Engineering Services, Inc. (AESI) 34 West Franklin St, Hagerstown, Maryland 21740 on or about October 2006 and May 2008.
13. All sign posts used for traffic control signs installed in the County Right–of–Way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2–1/2" galvanized steel, perforated, square tube sleeve (12 gauge) – 3' long. A galvanized steel pole cap shall be mounted on top of each post.
14. A staging and stockpile area will be determined by the contractor and approved by the Howard County Engineer.
15. 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 allowences to provide positive drainage from them to the proposed curb and gutter flow line.

MAINTENANCE OF TRAFFIC (MOT)

1. All work shall be done in accordance with MD SHA Standard Detail MD 104.02–10, MD 104.00–14(13.0) Pavement Edge Drop Off, and MD 104.06–11. Refer to Sheet 14A for additional information.
2. Contractor to maintain a minimum 10' travel lane at all times. Refer to section for MOT for storm drain construction along Pine Tree Road (see sheet 14) for additional information. Also refer to Sheet 14A.
3. 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 Manual of Uniform Traffic Control Devices (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 maintainance of traffic.

FOREST CONSERVATION NOTES

1. 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.
2. 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.



LOCATION MAP
SCALE: 1" = 2000'

CHARLES S. NOLAN, P.E. — DATE 5/22/12

"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. 15212, EXPIRATION DATE: 12/24/2014."

CONSTRUCTION ASBUILT CERTIFICATION
I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.
W F Aubertin 1-5-15
Wayne F. Aubertin, Prof. L.S. Maryland Reg. #21330 Exp. 01/07/17
Snider & Associates, Land Surveyors
20270 Goldenrod Lane, Suite 110
Germantown, MD 20876 Ph. 301-948-5100 Fax 301-948-1286

PLAN LOCATION OF TEST PIT

NOTE:
ROADWAY BORING AND TEST PIT LOG SUMMARY SHEETS ARE INCLUDED IN THE INFORMATION FOR BID (IFB) BOOK

INDEX OF DRAWINGS

OWNER / DEVELOPER CERTIFICATION

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendence at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning project. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Steve Sharar — 5/21/12
Signature of Owner/Developer — Date
Print name below signature

ENGINEER 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. This Plan was prepared in accordance with the requirements of the Howard Soil Conservation District."

5/22/12
Signature of Engineer — Date
Charles S. Nolan

These plans are approved for soil erosion and sediment control by the Howard Soil Conservation District.

John R. Robertson — 5/22/12
Howard S.C.D. — Date
EP-11-204

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/28/12
CHIEF, BUREAU OF ENGINEERING — DATE 5/25/12
CHIEF, BUREAU OF HIGHWAYS — DATE 5-30-12
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE Steve Sharar 5/21/12

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

STATE OF MARYLAND — CHARLES S. NOLAN — 15212 — 5/22/12 — PROFESSIONAL ENGINEER

DES: GWF/JW				
DRN: JRW				
CHK: GWF				
DATE: APRIL 2012	BY	NO.	REVISION	DATE

TITLE SHEET

600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

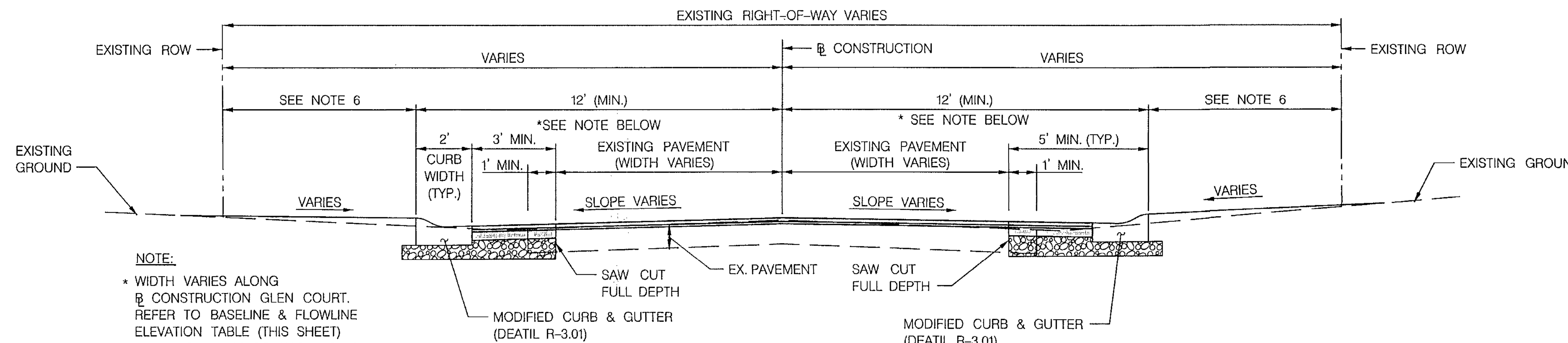
SCALE: AS SHOWN

SHEET 1 OF 14A

AS BUILT

NOTES

1. WIDTH OF EXISTING PAVEMENT MAY EXTEND BEYONDS 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 2 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. DURING CONSTRUCTION OF STORM DRAIN ALONG GUILFORD ROAD IF TRENCH EXCAVATION CANNOT BE BACKFILLED AND TOPPED WITH HMA AT END OF WORKDAY. STEEL PLATE SHALL BE INSTALLED OVER OPEN EXCAVATION. THE EXISTING PAVEMENT SHALL BE NOTCHED OR GROUND TO A DEPTH OF PLATES TO ENSURE SECURE INSTALLATION.
6. AREA TO BE STABILIZED WITH 4-INCH TOPSOIL AND TURFGRASS ESTABLISHMENT UNLESS NOTED OTHERWISE.



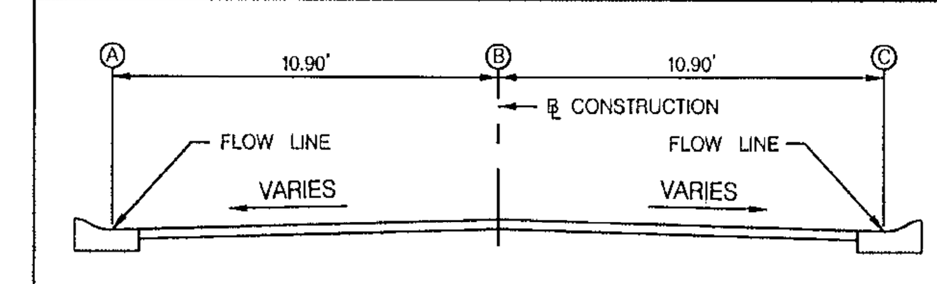
NOTE:
* WIDTH VARIES ALONG ℄ CONSTRUCTION GLEN COURT. REFER TO BASELINE & FLOWLINE ELEVATION TABLE (THIS SHEET) AND FLOW LINE CONTROL POINT LOCATION PLAN.

ROADWAY TYPICAL SECTION
SCALE: 1" = 3'

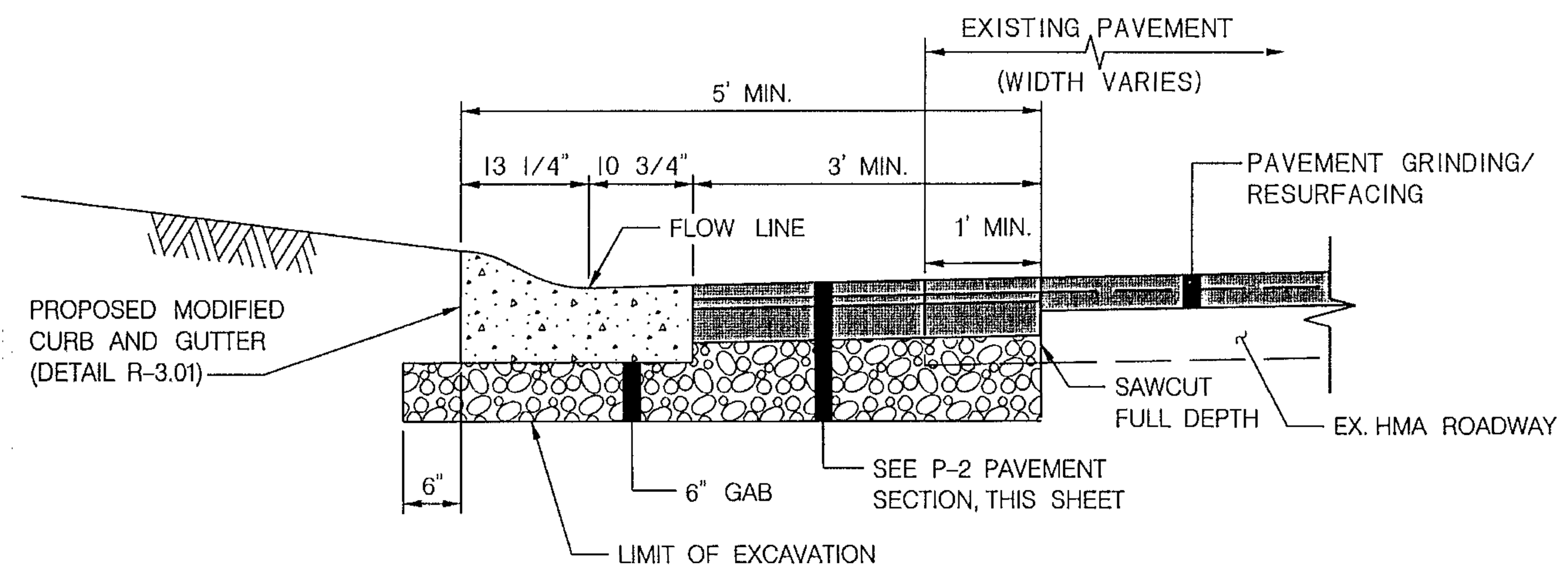
PINE TREE ROAD
STA. 99+98.24 TO STA. 107+48.16

GLEN COURT
STA. 200+32.88 TO STA. 201+50

BASELINE & FLOW LINE ELEVATION TABLE

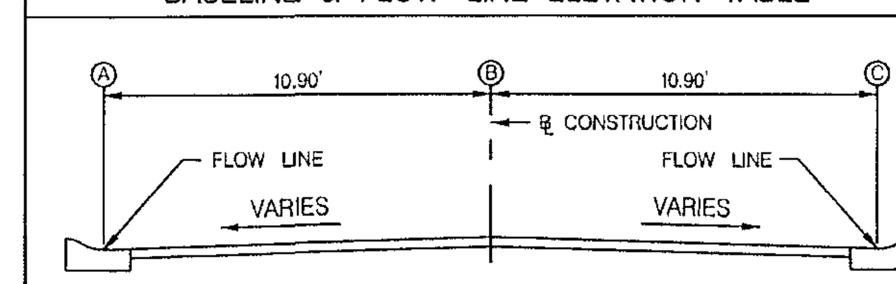


PINE TREE ROAD				
	Ⓐ	Ⓑ		Ⓒ
STATION	PROP.	EXIST.	PROP.	PROP.
99+95.24	MEET EXISTING			
99+91.48	MEET EXISTING			
100+25	224.00	224.57	224.65	224.06
100+50	223.10	223.65	223.73	223.10
100+75	222.66	222.90	223.17	222.54
101+00	222.31	222.18	222.64	222.01
101+25	221.82	221.67	222.10	221.47
101+50	221.43	221.30	221.56	220.99
101+75	220.91	220.88	221.14	220.53
102+00	220.45	220.56	220.65	220.17
102+25	220.00	220.11	220.25	219.72
102+50	219.53	219.64	219.93	219.30
102+75	219.05	219.28	219.56	218.93
103+00	218.61	218.90	219.14	218.51
103+25	218.22	218.49	218.67	218.04
103+50	217.67	217.98	218.13	217.54
103+75	217.09	217.49	217.61	216.98
104+00	216.62	216.89	217.03	216.59
104+25	215.92	216.36	216.48	215.88
104+50	215.62	215.82	215.89	215.26
104+75	INTER.	215.47	215.74	215.11
105+00	214.74	215.05	215.13	214.72
105+25	214.30	214.72	214.81	214.55
105+50	214.21	214.38	214.54	214.41
105+75	213.93	214.08	214.16	214.02
106+00	213.86	213.84	214.06	213.24
106+25	213.79	213.88	213.96	213.14
106+50	213.74	213.78	213.86	213.51
106+75	213.84	213.66	213.97	213.60
107+00	213.68	213.35	213.43	212.96
107+25	213.61	213.08	213.17	212.57
107+50	213.31	212.71	212.79	212.16
107+75	212.94	213.33	212.41	211.78



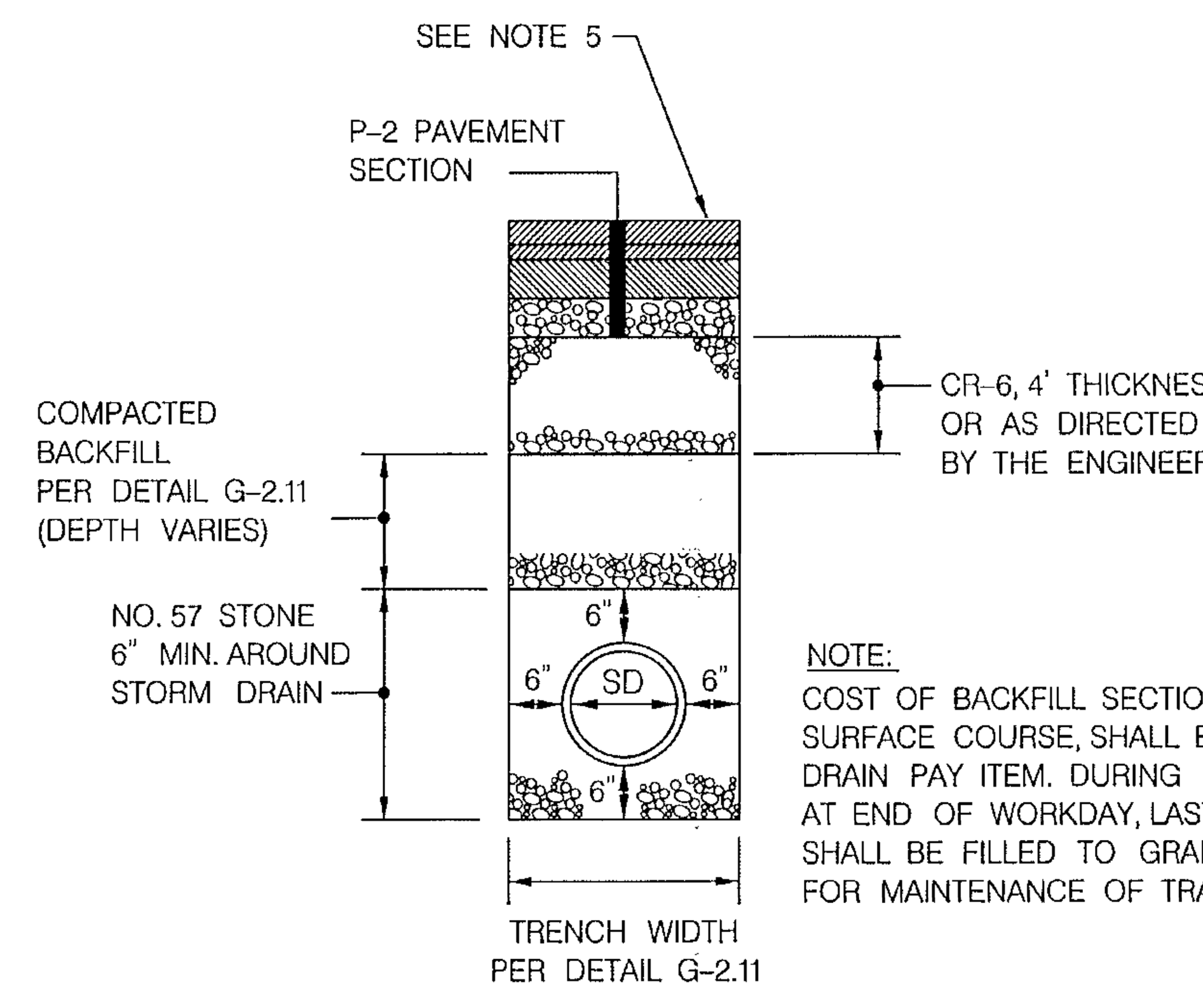
DETAIL FOR MODIFIED COMBINATION CURB AND GUTTER CONSTRUCTION
NOT TO SCALE

BASELINE & FLOW LINE ELEVATION TABLE



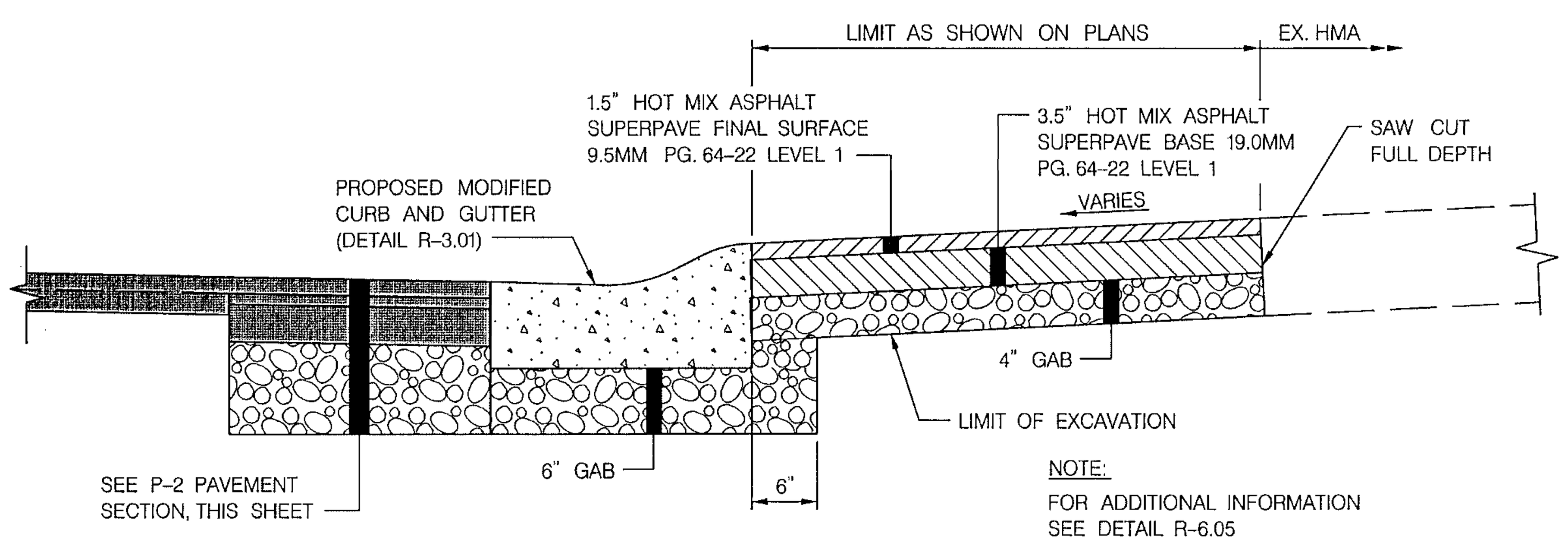
GLEN COURT				
	Ⓐ	Ⓑ		Ⓒ
STATION	PROP.	EXIST.	PROP.	PROP.
200+25	215.99 ①	215.94	216.13	215.61 ②
200+50	216.23	216.28	216.37	215.96
200+75	216.42	216.55	216.64	216.42
201+00	216.69	216.81	216.89	216.56
201+25	216.71	216.82	216.91	216.57
201+50	216.52	216.76	216.84	216.39

OFFSET DISTANCE FROM ℄ TO FLOWLINE
① 12.23'
② 11.31'



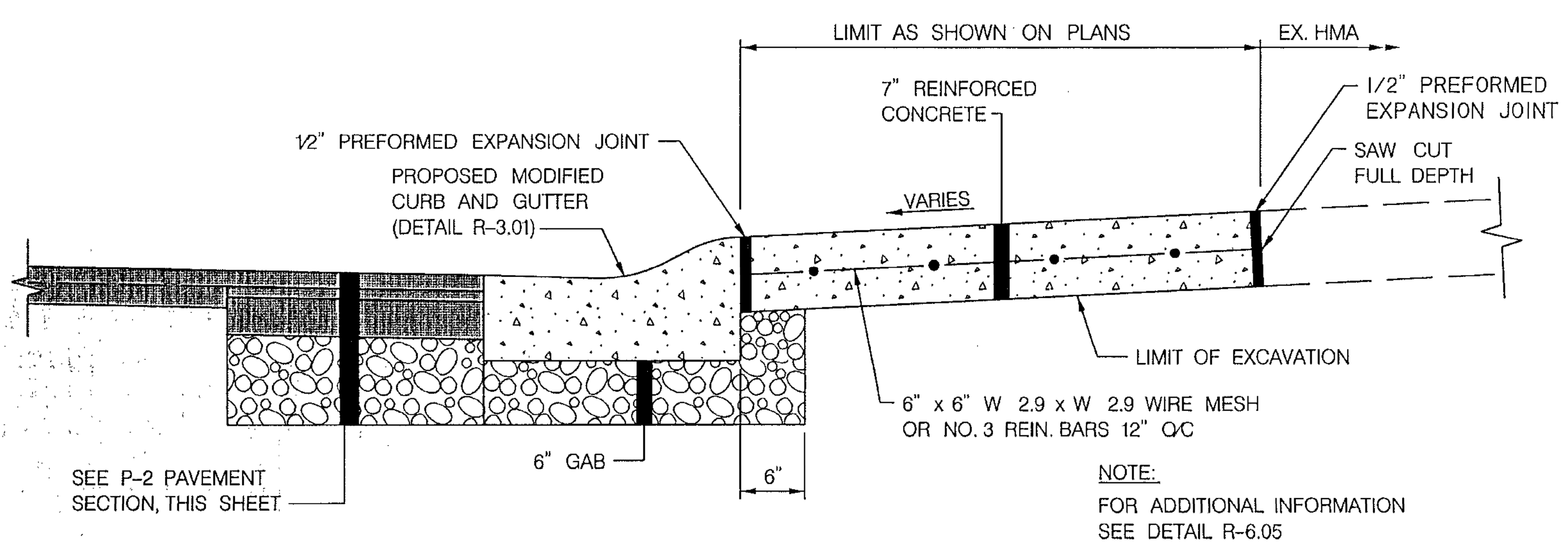
NOTE:
COST OF BACKFILL SECTION, UP TO 1.5" HMA FINAL SURFACE COURSE, SHALL BE INCIDENTAL TO STORM DRAIN PAY ITEM. DURING STORM DRAIN CUSTRUCTION AT END OF WORKDAY, LAST 3 INCHES OF TRENCH SHALL BE FILLED TO GRADE WITH HOT MIX ASPHALT FOR MAINTENANCE OF TRAFFIC (PER PAY ITEM).

DETAIL FOR STORM DRAIN PIPE TRENCH BACKFILL
NOT TO SCALE



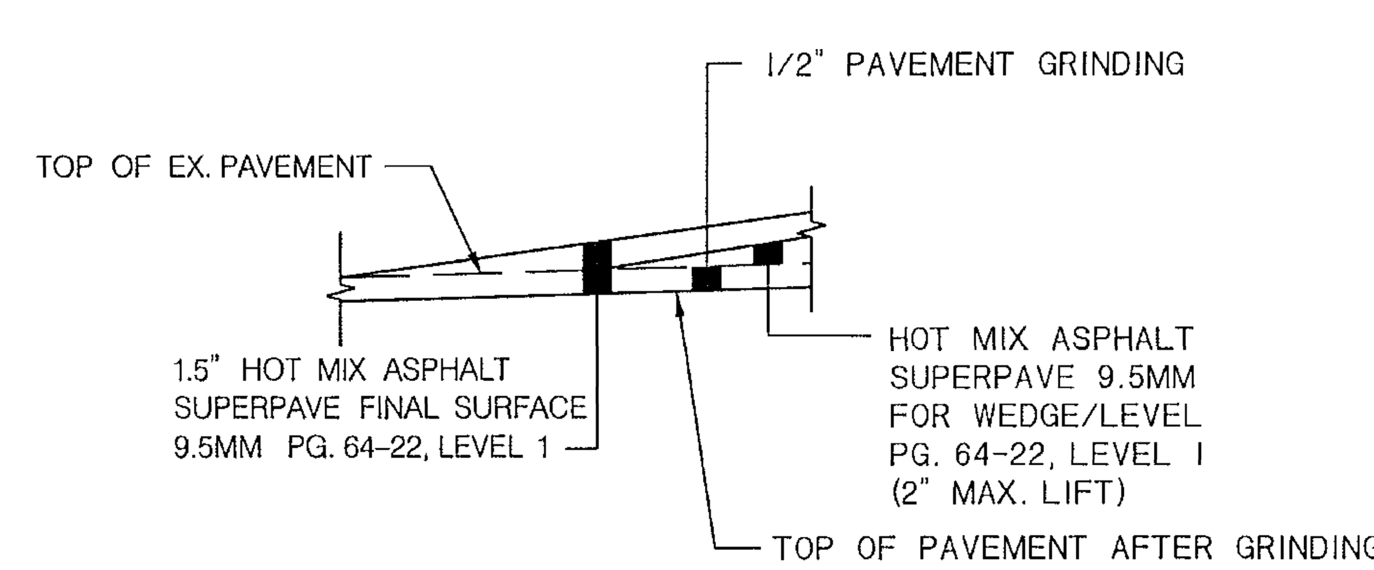
NOTE:
FOR ADDITIONAL INFORMATION SEE DETAIL R-6.05

P-1 PAVEMENT SECTION FOR DRIVEWAY RECONSTRUCTION
NOT TO SCALE

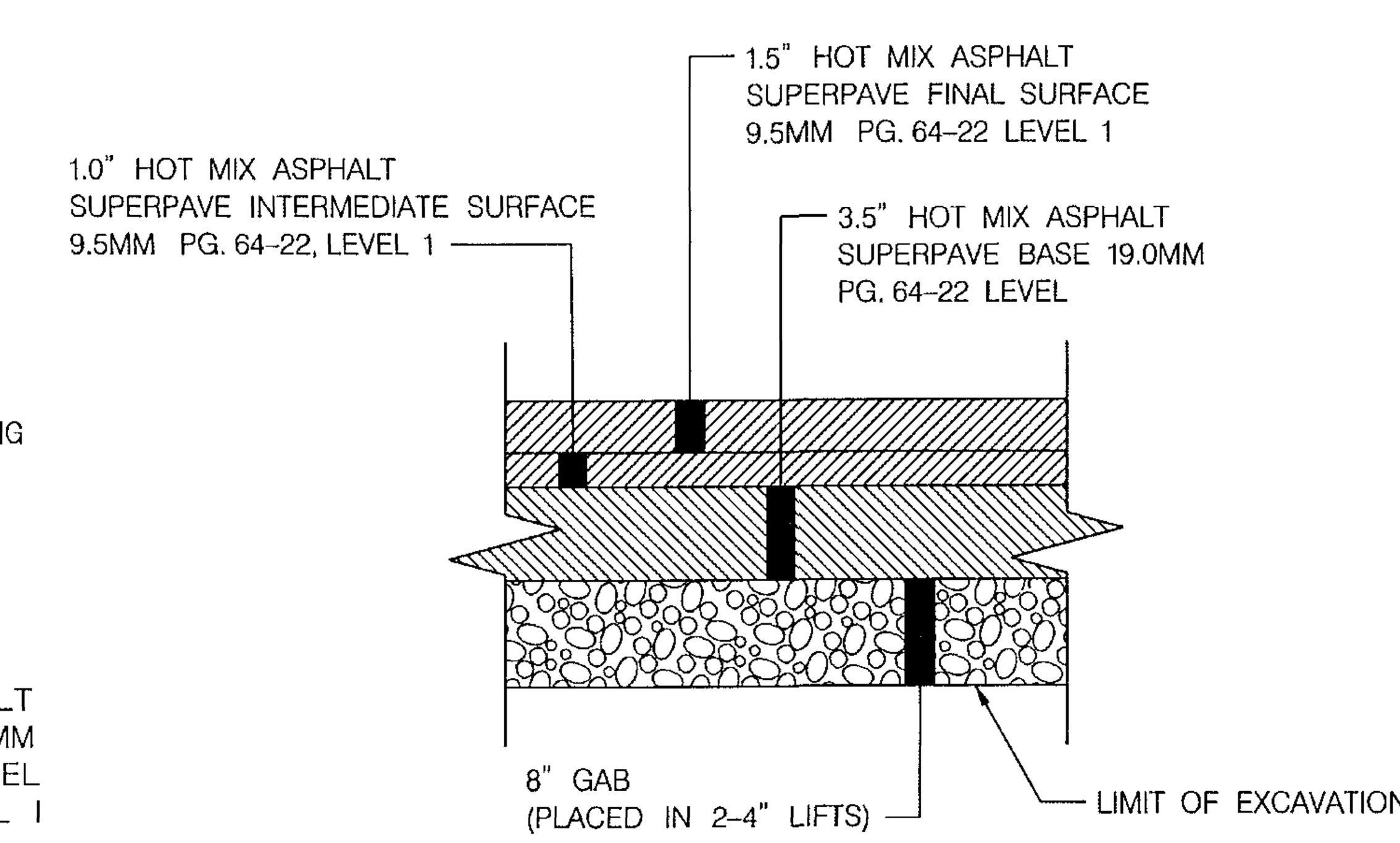


NOTE:
FOR ADDITIONAL INFORMATION SEE DETAIL R-6.05

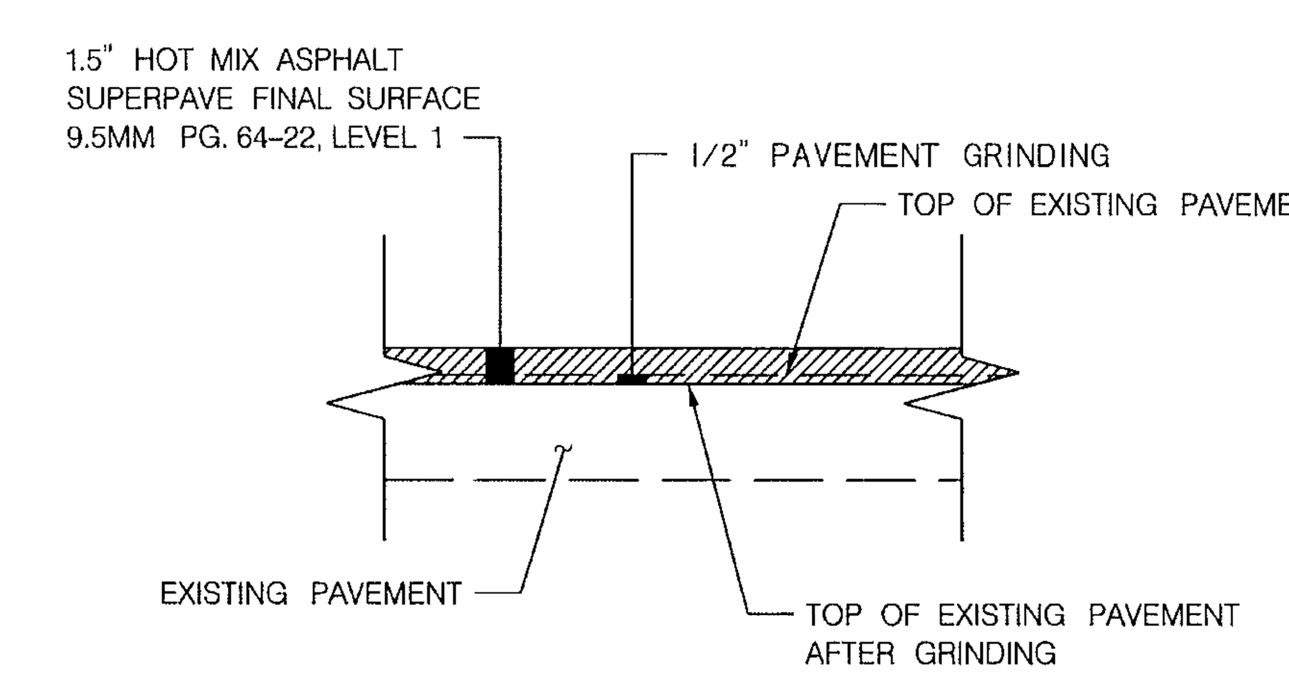
REINFORCED CONCRETE SECTION FOR DRIVEWAY RECONSTRUCTION
NOT TO SCALE



PAVEMENT WEDGE/LEVEL DETAIL
NOT TO SCALE



P-2 PAVEMENT SECTION DETAIL FOR ROADWAY PAVEMENT RECONSTRUCTION
NOT TO SCALE

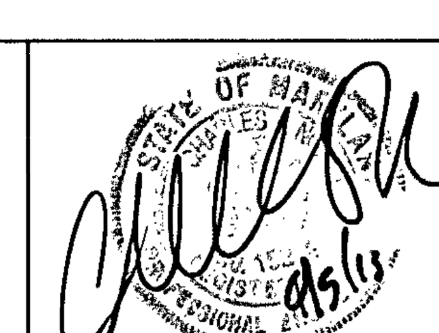


PAVEMENT GRINDING/RESURFACING DETAIL
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

4/9/13 DIRECTOR OF PUBLIC WORKS DATE	4/8/13 CHIEF, BUREAU OF ENGINEERING DATE
4-9-13 CHIEF, BUREAU OF HIGHWAYS DATE	Steve Shaver 4/5/13 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

NOLAN Associates, Inc.
Engineers · Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone (410) 995-3651 Fax (410) 995-1363



DES: GWF/JW				
DRN: JRW				
CHK: GWF				
DATE: FEB 2013	BY	NO.	REVISION	DATE

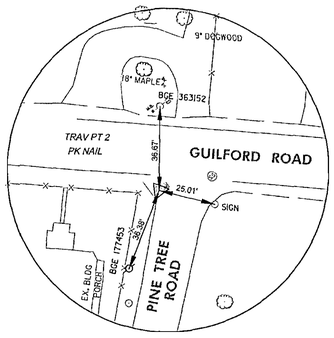
TYPICAL ROADWAY SECTIONS AND DETAILS

600' SCALE MAP NO. ________ BLOCK NO. ________

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 2 OF 14A



TRAVERSE PT 2
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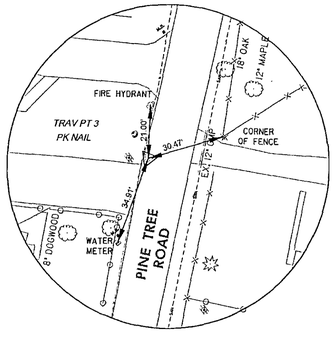
ELEV. 225.86
NOT TO SCALE



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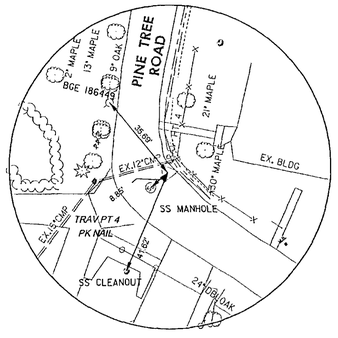

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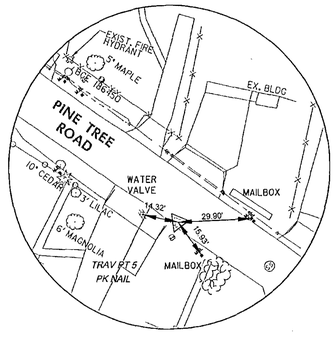
NOT TO SCALE



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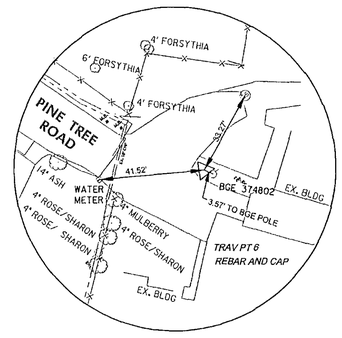
NOT TO SCALE



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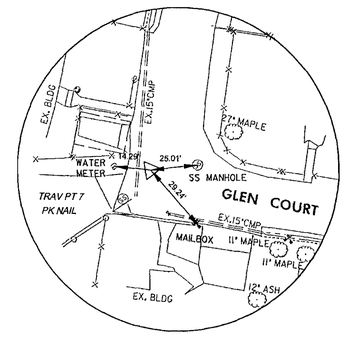

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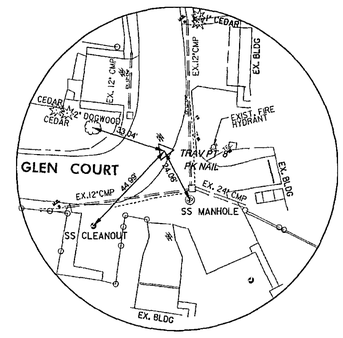
NOT TO SCALE



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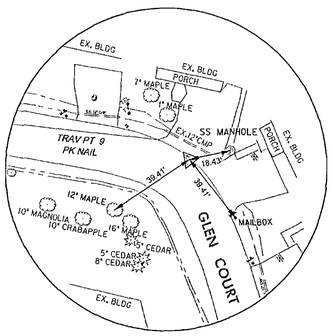
NOT TO SCALE



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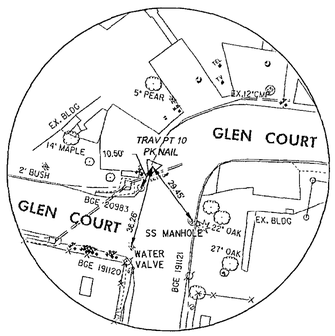

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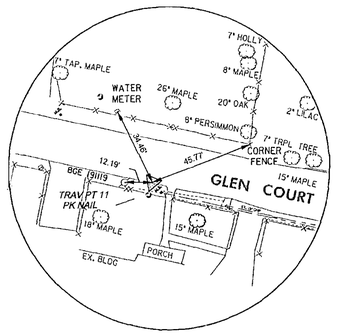

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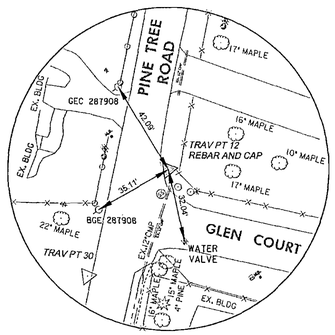
NOT TO SCALE



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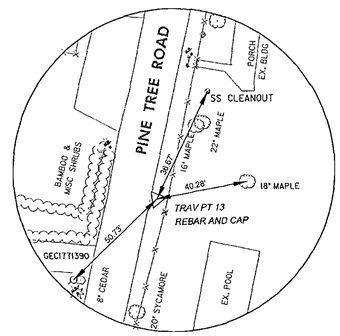

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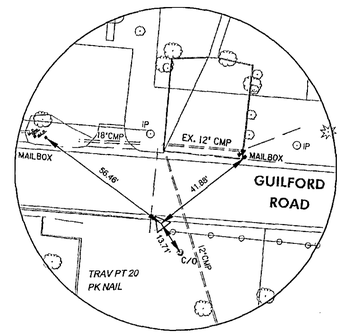
NOT TO SCALE



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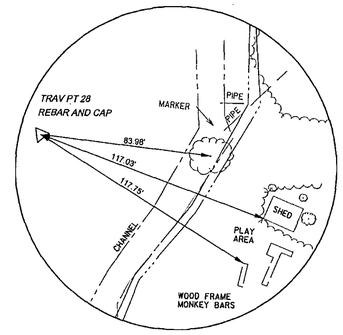
NOT TO SCALE



TRAVERSE PT 28
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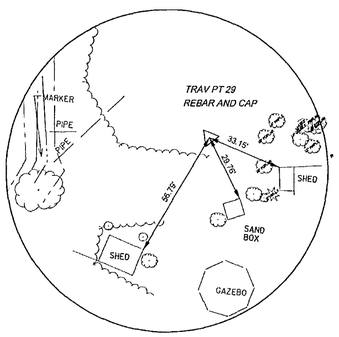
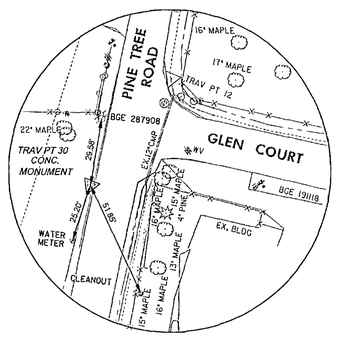
ELEV. 203.96
NOT TO SCALE



TRAVERSE PT 29
N 538675.2723
E 1365339.2353
ELEV. 208.10
NOT TO SCALE



TRAVERSE PT 30
N 538520.1816
E 1365468.3333
ELEV. 214.81
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5/30/12	CHIEF, BUREAU OF ENGINEERING — DATE 5/25/12
CHIEF, BUREAU OF HIGHWAYS — DATE 5-30-12	CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 5/25/12

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

DES: GWF/JW				
DRN: JRW				
CHK: GWF				
DATE: APRIL 2012	BY	NO.	REVISION	DATE

TRAVERSE CONTROL POINT LOCATION

600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 3 OF 14A

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'

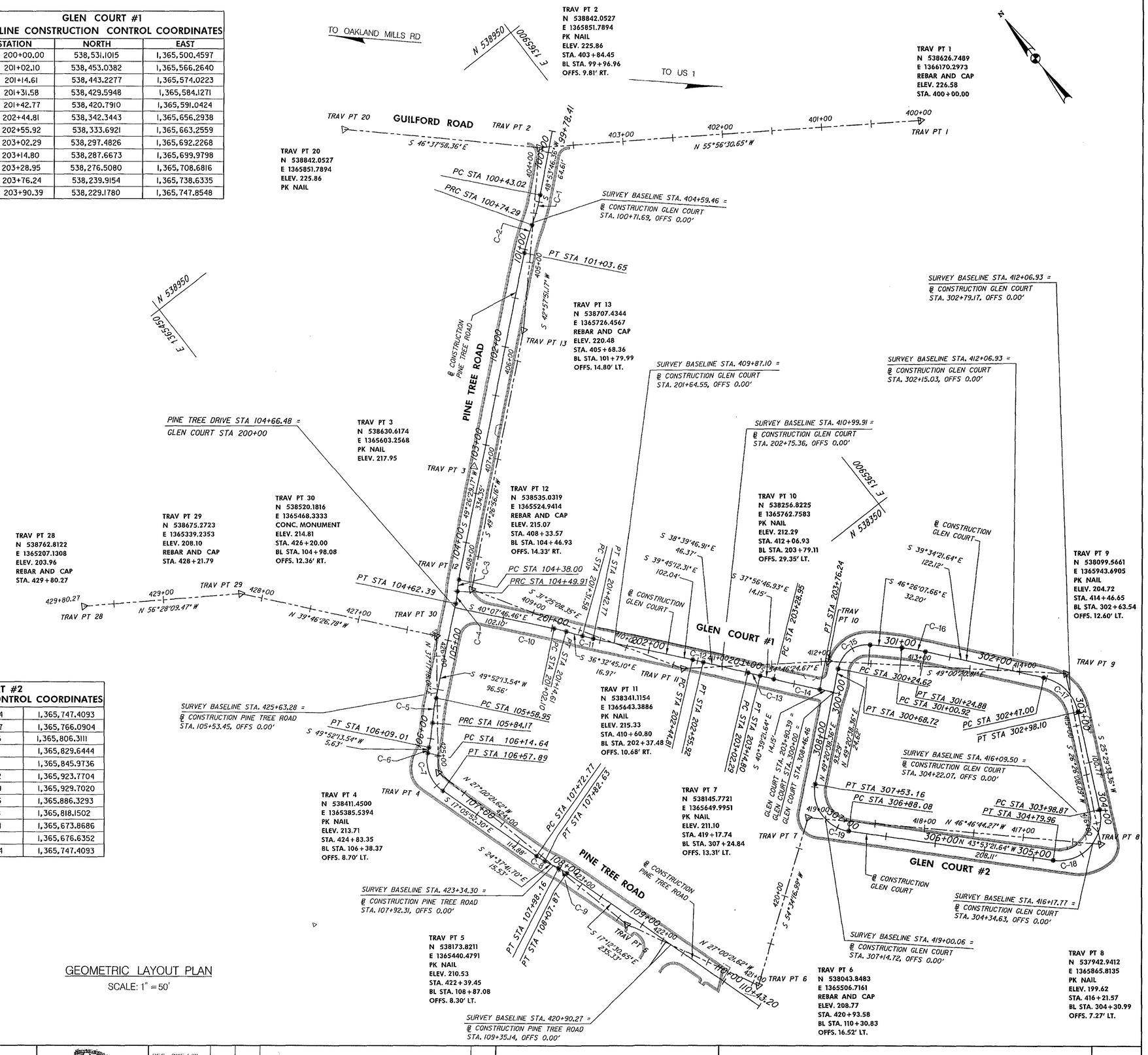
CURVE DATA – GLEN COURT #1					
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH
C-10	3°35'01.37" RT	28°38'52.40"	200.00'	6.26'	12.51'
C-11	3°12'27.22" LT	28°38'52.40"	200.00'	5.60'	11.20'
C-12	0°19'05.33" RT	2°51'53.24"	2000.00'	5.55'	11.11'
C-13	0°42'59.98" RT	5°43'46.48"	1000.00'	6.25'	12.51'
C-14	2°42'34.71" LT	5°43'46.48"	1000.00'	23.65'	47.29'
CURVE DATA – GLEN COURT #2					
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH
C-15	84°13'13.98" RT	190°59'09.35"	30.00'	27.12'	44.10'
C-16	6°51'46.02" RT	28°38'52.40"	200.00'	11.99'	23.96'
C-17	65°04'00.00" RT	127°19'26.24"	45.00'	28.71'	51.10'
C-18	110°37'00.00" RT	136°25'06.68"	42.00'	60.67'	81.09'
C-19	93°14'00.00" RT	143°14'22.02"	40.00'	42.32'	65.09'

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

GLEN COURT #1 BASELINE CONSTRUCTION CONTROL COORDINATES		
STATION	NORTH	EAST
POB 200+00.00	538,531.1015	1,365,500.4597
PC 201+02.10	538,453.0382	1,365,566.2640
PT 201+14.61	538,443.2277	1,365,574.0223
PC 201+31.58	538,429.5948	1,365,584.1271
PT 201+42.77	538,420.7910	1,365,591.0424
PC 202+44.81	538,342.3443	1,365,656.2938
PT 202+55.92	538,333.6921	1,365,663.2559
PC 203+02.29	538,297.4826	1,365,692.2268
PT 203+14.80	538,287.6673	1,365,699.9798
PC 203+28.95	538,276.5080	1,365,708.6816
PT 203+76.24	538,239.9154	1,365,738.6335
POE 203+90.39	538,229.1780	1,365,747.8548

GLEN COURT #2 BASELINE CONSTRUCTION CONTROL COORDINATES		
POB 300+00.00	538,228.7954	1,365,747.4093
PC 300+24.63	538,244.8387	1,365,766.0904
PT 300+68.72	538,243.8176	1,365,806.3111
PC 301+00.92	538,221.6251	1,365,829.6444
PT 301+24.88	538,204.1167	1,365,845.9736
PC 302+47.00	538,109.9852	1,365,923.7704
PT 302+98.10	538,061.9489	1,365,929.7020
PC 303+98.87	537,970.9915	1,365,886.3293
PT 304+79.96	537,959.9518	1,365,818.1502
PC 306+88.08	538,109.9384	1,365,673.8686
PT 307+53.17	538,168.0145	1,365,676.6352
POE 308+46.46	538,228.7954	1,365,747.4093



GEOMETRIC LAYOUT PLAN
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5/30/12
CHIEF, BUREAU OF ENGINEERING — DATE 5/25/12
CHIEF, BUREAU OF HIGHWAYS — DATE 5-30-12
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 5/25/12

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

DES: GWF/JW
DRN: JRW
CHK: GWF
DATE: APRIL 2012

BY	NO.	REVISION	DATE

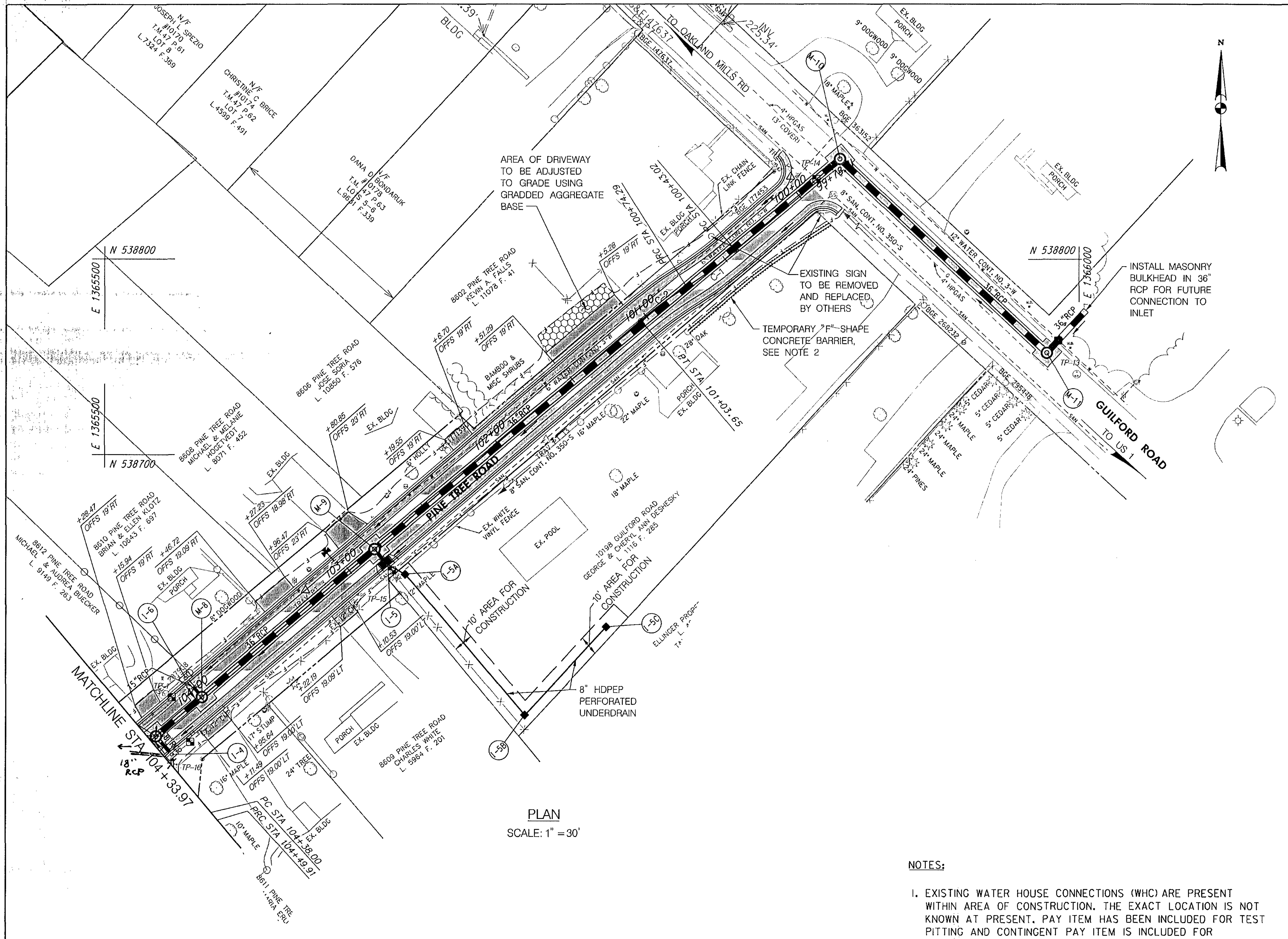
600' SCALE MAP NO. _____ BLOCK NO. _____

GEOMETRIC LAYOUT

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 4 OF 14A



PLAN
SCALE: 1" = 30'

REMOVE EXISTING PIPE CULVERT
STA. 103+18.5 TO 103+25, LT. - 17 LF
STA. 103+93 TO 104+13, LT. - 20 LF

REMOVE AND RESET EXISTING FENCE
STA. 100+58 TO STA. 101+01, RT. - 50 LF
STA. 103+48.5 TO STA. 104+12.5, RT. - 65 LF
• STA. 104+33 TO STA. 104+66, RT. - 35 LF

• NOTE - SEE ROADWAY PLAN, SHEET 6

RELOCATE EXISTING FIRE HYDRANT (PER HO. CO. STD. DETAIL W-1.11)
STA. 103+03, RT. - 1 EA

RELOCATE / ADJUST EXISTING SANITARY CLEANOUT
STA. 100+83, RT. - 1 EA
STA. 102+60.5, RT. - 1 EA
STA. 103+15, RT. - 1 EA

RELOCATE / ADJUST EXISTING WATER VALVE
STA. 101+60, RT. - 1 EA
STA. 103+24, RT. - 1 EA

RELOCATE / ADJUST EXISTING WATER METER
STA. 100+70.5, RT. - 1 EA
STA. 102+55, RT. - 1 EA
STA. 103+58, RT. - 1 EA

REMOVE EXISTING TREE
STA. 102+03, RT. - 1 EA

INSTALL 7-INCH COMBINATION CURB AND GUTTER
STA. 99+95.24 TO STA. 100+05.17, RT. - 13 L.F.
STA. 99+91.48 TO STA. 100+01.45, LT. - 13 L.F.
(PROVIDE NOSE DOWN PER DETAIL R-3.02)

RECONSTRUCT DRIVEWAY WITH P-1 PAVEMENT
STA. 101+05.28 TO STA. 101+51.29, RT. - 322 S.F.
STA. 102+06.70 TO STA. 102+19.55, RT. - 90 S.F.
STA. 102+77.31 TO STA. 102+96.86, RT. - 193 S.F.
STA. 103+27.23 TO STA. 103+46.72, RT. - 137 S.F.
STA. 103+10.53 TO STA. 103+22.19, LT. - 81 S.F.
STA. 103+95.64 TO STA. 104+11.49, LT. - 110 S.F.
STA. 104+17.32 TO STA. 104+30.20, RT. - 89 S.F.

CONSTRUCT MODIFIED CURB AND GUTTER
STA. 100+05.17(1) TO STA. 104+33.97, RT. - 446 L.F.
STA. 100+01.45(1) TO STA. 104+33.97, LT. - 448 L.F.

(1): TRANSITION CURB FROM 7" C&G TO MODIFIED C&G IN 10' DISTANCE

GRIND EXISTING PAVEMENT
STA. 99+92 TO STA. 104+33.97, RT. - ~~655~~ 670 S.Y.

NOTES:

1. EXISTING WATER HOUSE CONNECTIONS (WHC) ARE PRESENT WITHIN AREA OF CONSTRUCTION. THE EXACT LOCATION IS NOT KNOWN AT PRESENT. PAY ITEM HAS BEEN INCLUDED FOR TEST PITTING AND CONTINGENT PAY ITEM IS INCLUDED FOR RELOCATION OF WHC.
2. INSTALL 90 L.F OF "F"-SHAPE CONCRETE BARRIER STA. 99+98 TO 100+87, LT. TO PREVENT POSSIBLE VEHICULAR TRAFFIC ACROSS RESIDENTIAL PROPERTY. BARRIER TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED. COST OF BARRIER, PLACEMENT & REMOVAL SHALL BE INCIDENTAL TO MAINTENANCE OF TRAFFIC PAY ITEM.

LEGEND

- PROPERTY LINE
- R.O.W. LINE
- EX. 12" RCP — EXISTING STORM DRAIN
- PROP. 15" RCP — PROPOSED STORM DRAIN
- TP-1 — TEST PIT LOCATION
- PROPOSED RIP RAP
- PROPOSED HOT MIX ASPHALT PAVING
- PROPOSED GRINDING AND OVERLAY
- C — F — PROPOSED CUT OR FILL LINE
- PROPOSED DRIVEWAY GRADDED AGGREGATE BASE

CONSTRUCTION ASBUILT CERTIFICATION

I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.

[signature] 1-5-15

Wayne F. Aubertin, Prof. L.S. Maryland Reg. #21330 Exp. 01/07/17
Snider & Associates, Land Surveyors
20270 Goldenrod Lane, Suite 110
Germantown, MD 20876 Ph. 301-948-5100 Fax 301-948-1286

STATE OF MARYLAND · WAYNE FRANCIS AUBERTIN · No. 21330 · PROFESSIONAL LAND SURVEYOR

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/9/13	CHIEF, BUREAU OF ENGINEERING — DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13	Steve Sharar — CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/5/13

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

[seal] 4/5/13

	BY	NO.	REVISION	DATE
DES: GWF/JW	MND	1	Revise Qty for Grind Ex. Pav. to 670	6/7/13
DRN: JRW				
CHK: GWF				
DATE: FEB 2013				

ROADWAY PLAN

600' SCALE MAP NO. ______ BLOCK NO. ______

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 5 OF 14A

AS BUILT

RECONSTRUCT DRIVEWAY WITH P-1 PAVEMENT
STA. 105+48.35 TO STA. 105+68.02, RT. - 118 S.F.
STA. 106+28.50 TO STA. 106+44.51, RT. - 123 S.F.
STA. 106+88.01 TO STA. 107+31.28, RT. - 303 S.F.
STA. 107+61.96 TO STA. 107+81.79, LT. - 145 S.F.
STA. 200+55.62 TO STA. 200+88.66, RT. - 232 S.F.
STA. 201+29.58 TO STA. 201+45.67, RT. - 209 S.F.

REMOVE EXISTING BUSH / HEDGE
STA. 107+98, RT. - 1 EA
STA. 107+83, LT. - 1 EA

CONSTRUCT MODIFIED CURB AND GUTTER
STA. 104+33.97 TO STA. 201+50, LT. - 153 L.F.
STA. 200+10.90 TO STA. 201+50, RT. - 384 L.F. (STA. 200+10.90 OFFS 25.90' RT. = PINE TREE RD. ℄ CONSTRUCTION STA. 104+92.38, 10.90' LT.)
① STA. 104+33.97 TO STA. 106+00, RT. - 166 L.F.
I-2 TO STA. 107+98.16, RT. - 196 L.F.
STA. 104+92.38, LT. TO STA. 107+98.16, RT. - 292 L.F.

① TRANSITION FROM MOD. TO 7" COMB. C&G STA. 105+90 TO STA. 106+00

NOTES:

1. EXISTING WATER HOUSE CONNECTIONS (WHC) ARE PRESENT WITHIN AREA OF CONSTRUCTION. THE EXACT LOCATION IS NOT KNOWN AT PRESENT. PAY ITEM HAS BEEN INCLUDED FOR TEST PITTING AND CONTINGENT PAY ITEM IS INCLUDED FOR RELOCATION OF WHC.
2. EXISTING DRAIN TO BE EXTENDED AND DAYLIGHTED PER DIRECTION OF THE ENGINEER. CONTINGENT PAY ITEM HAS BEEN INCLUDED AS PART OF CONTRACT.
3. SAW CUT AND BULKHEAD ENTRANCE TO EXISTING CULVERT STA. 106+38, RT.
4. NOSE DOWN CURB TO MEET EXISITNG FIELD CONDITION.
5. THE INITIAL INSTALLATION OF CLASS I RIPRAP AS INDICATED ON THESE CONTRACT DOCUMENTS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID PRICE. ANY ADDITIONAL CLASS I RIPRAP INSTALLATION WILL BE PAID AS PART OF THE CONTINGENT PRICE PAY ITEM.

NOTE: ADJUSTMENT OF ALL GUY WIRES IDENTIFIED ON THIS PLAN WILL BE DETERMINED IN THE FIELD DURING CONSTRUCTION

LEGEND

- PROPERTY LINE
- R.O.W. LINE
- EXISTING STORM DRAIN (EX. 12" RCP)
- PROPOSED STORM DRAIN (PROP. 15" RCP)
- TEST PIT LOCATION (TP-1)
- PROPOSED RIP RAP
- PROPOSED HOT MIX ASPHALT PAVING
- PROPOSED GRINDING AND OVERLAY
- EXIST. PAVEMENT TO BE REMOVED
- PROPOSED CUT OR FILL LINE (—C—F—)

REMOVE EXISTING TREES	
STA. 105+91, RT.	1 EACH
STA. 106+03, LT.	1 EACH
STA. 106+01, RT.	1 EACH
STA. 106+02, RT.	1 EACH
STA. 106+03, LT.	1 EACH
STA. 106+18, RT.	1 EACH
STA. 106+19, RT.	1 EACH
STA. 106+27, RT.	1 EACH
STA. 106+32, LT.	1 EACH

INSTALL 98 S.Y CLASS I RIPRAP (19" DEPTH) ALONG ES-1 OUTFALL- (SEE LOCATION PLAN ON SHEET NO. 9 AND NOTE 5, THIS SHEET)

RECONSTRUCT DRIVEWAY WITH REINFORCED CONCRETE
STA. 106+60.49 TO STA. 106+81.42, RT. - 20 S.Y.
STA. 107+22.40 TO STA. 107+61.96, LT. - 16 S.Y.

CONSTRUCT 7-INCH COMBINATION CURB AND GUTTER
PINE TREE ROAD STA. 106+00, RT. TO I-2 - 23 L.F.

PLAN
SCALE: 1" = 30'

GRIND EXISTING PAVEMENT
STA. 200+09.10 TO STA. 201+50 - ~~222~~ S.Y.
STA. 104+33.97 TO STA. 107+98.16 - ~~460~~ 560 S.Y.

RELOCATE / ADJUST EXISTING WATER METER	
STA. 200+58, RT.	1 EACH
STA. 105+23, LT.	1 EACH

RELOCATE / ADJUST EXISTING SANITARY CLEANOUT	
STA. 201+45, RT.	1 EACH

CONSTRUCTION ASBUILT CERTIFICATION
I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.
1-5-15
Wayne F. Aubertin, Prof. L.S. Maryland Reg. #21330 Exp. 01/07/17
Snider & Associates, Land Surveyors
20270 Goldenrod Lane, Suite 110
Germantown, MD 20876 Ph. 301-948-5100 Fax 301-948-1286

REMOVE EXISTING PIPE CULVERT
STA. 104+53.5 TO 104+92, LT. - 41 LF
STA. 106+33, LT TO 106+38, RT. - 50 LF (SEE NOTE 3)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/9/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — Steve Shaver — DATE 4/5/13

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone (410) 995-3651 Fax (410) 995-1363

DES: GWF/JW	BY	NO.	REVISION	DATE
DRN: JRW	MND	1	Revised Qty in Grind Ex. Pavement	6/7/13
CHK: GWF				
DATE: FEB 2013				

ROADWAY PLAN

600' SCALE MAP NO. ______ BLOCK NO. ______

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET 6 OF 14A

ASBUILT

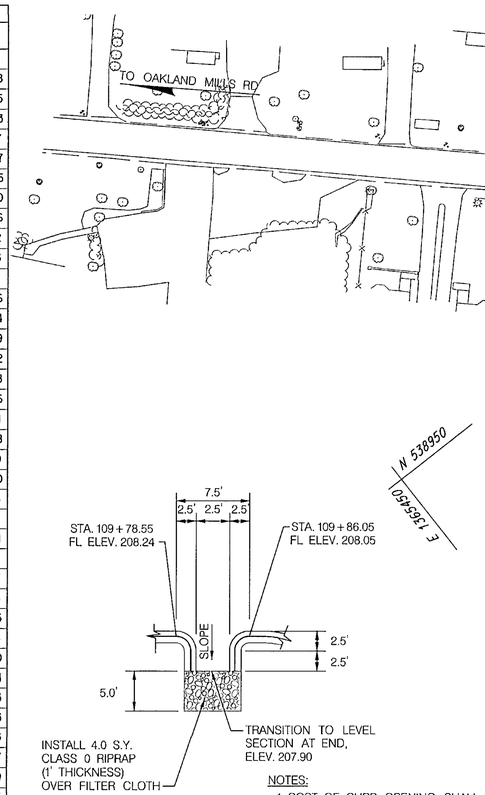
CONTROL POINTS

CONTROL POINT	STATION	OFFSET	BASELINE	ELEVATION	NORTH	EAST
1	99+95.24	22.10' RT	PINE TREE RD	MEET EXIST.	538,852.45	1,365,845.01
2	100+05.17	10.90' RT	PINE TREE RD	225.26	538,837.49	1,365,844.88
3	99+91.48	20.10' LT	PINE TREE RD	MEET EXIST.	538,823.16	1,365,875.55
4	100+01.45	10.90' LT	PINE TREE RD	225.33	538,823.51	1,365,862.03
5	100+43.02	10.90' RT	PINE TREE RD	223.77	538,812.61	1,365,816.37
6	100+74.29	10.90' RT	PINE TREE RD	222.59	538,794.99	1,365,792.67
7	101+03.65	10.90' RT	PINE TREE RD	221.93	538,776.65	1,365,767.75
8	100+43.02	10.90' LT	PINE TREE RD	223.34	538,796.18	1,365,830.70
9	100+74.29	10.90' LT	PINE TREE RD	222.58	538,776.53	1,365,804.26
10	101+03.65	10.90' LT	PINE TREE RD	222.24	538,760.09	1,365,781.92
11	104+38.00	10.90' RT	PINE TREE RD	215.58	538,559.25	1,365,513.73
12	104+49.91	10.90' RT	PINE TREE RD	215.26	538,549.59	1,365,504.11
13	104+62.39	10.90' RT	PINE TREE RD	215.19	538,542.07	1,365,496.56
14	104+31.63	10.90' LT	PINE TREE RD	215.90	538,546.83	1,365,532.74
15	200+32.88	10.90' LT	GLEN COURT #1	215.90	538,512.99	1,365,529.99
16	200+25.90	10.90' RT	GLEN COURT #1	215.61	538,504.27	1,365,508.82
17	104+92.38	10.90' LT	PINE TREE RD	214.96	538,506.07	1,365,487.68
18	105+58.95	10.90' LT	PINE TREE RD	214.11	538,463.07	1,365,436.66
19	105+84.17	10.90' LT	PINE TREE RD	213.91	538,446.70	1,365,419.54
23	106+24.44	15.85' RT	PINE TREE RD	213.13	538,435.11	1,365,369.68
24	106+44.23	14.36' RT	PINE TREE RD	213.38	538,408.65	1,365,361.90
25	106+14.64	10.90' LT	PINE TREE RD	213.81	538,424.98	1,365,396.30
26	106+57.89	10.90' LT	PINE TREE RD	213.70	538,397.36	1,365,388.18
27	107+72.77	10.90' RT	PINE TREE RD	211.82	538,281.14	1,365,401.12
28	107+82.63	10.90' RT	PINE TREE RD	211.76	538,270.60	1,365,405.14
29	107+98.16	10.90' RT	PINE TREE RD	211.72	538,256.48	1,365,411.61
30	108+07.87	10.90' RT	PINE TREE RD	211.65	538,248.73	1,365,414.57
31	107+72.77	10.90' RT	PINE TREE RD	212.93	538,287.55	1,365,421.96
32	107+82.63	10.90' LT	PINE TREE RD	212.89	538,279.68	1,365,424.95
33	107+98.16	10.90' LT	PINE TREE RD	212.76	538,265.56	1,365,431.43
34	108+07.87	10.90' LT	PINE TREE RD	212.55	538,255.18	1,365,435.40
35	109+91.55	10.90' LT	PINE TREE RD	209.44	538,079.72	1,365,489.74
36	109+02.03	10.90' RT	PINE TREE RD	210.05	538,158.79	1,365,442.43
37	109+16.68	24.74' RT	PINE TREE RD	209.45	538,140.41	1,365,433.63
38	109+17.34	29.35' RT	PINE TREE RD	209.32	538,138.70	1,365,429.33
39	109+41.24	27.06' RT	PINE TREE RD	209.32	538,115.71	1,365,436.47
40	109+41.41	29.34' RT	PINE TREE RD	209.34	538,116.56	1,365,438.59
41	109+56.19	10.90' RT	PINE TREE RD	209.59	538,107.05	1,365,458.45
42	201+02.10	10.90' LT	GLEN COURT #1	216.69	538,460.06	1,365,574.60
43	201+14.61	10.90' LT	GLEN COURT #1	216.70	538,449.72	1,365,582.78
44	201+02.10	10.90' RT	GLEN COURT #1	216.56	538,446.01	1,365,557.93
45	201+14.61	10.90' RT	GLEN COURT #1	216.57	538,436.74	1,365,565.57
46	201+31.58	10.90' RT	GLEN COURT #1	216.52	538,423.07	1,365,575.40
47	201+44.75	10.90' RT	GLEN COURT #1	216.43	538,412.31	1,365,583.93
48	201+25.03	10.90' LT	GLEN COURT #1	216.66	538,441.35	1,365,588.99
49	201+44.75	10.90' LT	GLEN COURT #1	216.56	538,426.25	1,365,600.69
50	202+70.50	10.97' LT	GLEN COURT #1	214.86	538,329.15	1,365,680.93
51	202+92.07	10.90' LT	GLEN COURT #1	214.46	538,312.28	1,365,694.35
52	202+70.85	10.83' RT	GLEN COURT #1	215.05	538,315.27	1,365,664.13
53	202+91.51	10.90' RT	GLEN COURT #1	214.59	538,299.09	1,365,676.98
54	203+02.29	10.90' RT	GLEN COURT #1	214.26	538,304.29	1,365,700.74
55	203+14.80	10.90' LT	GLEN COURT #1	213.94	538,294.37	1,365,708.58
56	203+02.29	10.90' RT	GLEN COURT #1	214.31	538,290.67	1,365,683.72
57	203+14.80	10.90' RT	GLEN COURT #1	213.94	538,280.97	1,365,691.38
58	203+28.95	10.90' LT	GLEN COURT #1	213.62	538,283.21	1,365,717.28
59	203+73.45	10.90' LT	GLEN COURT #1	212.66	538,249.12	1,365,745.11
60	300+17.49	10.90' LT	GLEN COURT #2	212.47	538,248.46	1,365,753.58
61	203+76.39	10.90' RT	GLEN COURT #1	212.24	538,232.70	1,365,730.47
62	308+33.04	10.90' LT	GLEN COURT #2	212.19	538,228.33	1,365,730.13
63	300+69.84	12.90' LT	GLEN COURT #2	211.01	538,252.40	1,365,816.00
64	300+84.30	12.90' LT	GLEN COURT #2	210.67	538,211.87	1,365,744.43
65	308+33.16	10.90' RT	GLEN COURT #2	211.07	538,225.17	1,365,763.68
66	300+09.98	13.40' RT	GLEN COURT #2	210.95	538,236.62	1,365,773.25
67	300+24.62	10.90' RT	GLEN COURT #2	210.86	538,235.92	1,365,798.80
68	300+68.72	10.90' RT	GLEN COURT #2	210.18	538,213.73	1,365,822.13
69	301+00.92	10.90' RT	GLEN COURT #2	208.89	538,197.17	1,365,837.57
70	301+24.88	10.90' RT	GLEN COURT #2	207.98	538,114.47	1,365,934.20
71	302+49.56	11.00' LT	GLEN COURT #2	205.22	538,060.14	1,365,940.91
72	302+95.54	11.00' LT	GLEN COURT #2	202.96	538,103.04	1,365,915.37
73	302+47.00	10.90' RT	GLEN COURT #2	204.76	538,066.64	1,365,919.86
74	302+98.10	10.90' RT	GLEN COURT #2	202.98	537,975.68	1,365,876.49
75	303+98.87	10.90' RT	GLEN COURT #2	199.74	537,967.51	1,365,826.01

CONTROL POINTS

CONTROL POINT	STATION	OFFSET	BASELINE	ELEVATION	NORTH	EAST
76	304+79.96	10.90' RT	GLEN COURT #2	199.85	537,935.67	1,365,881.56
77	304+22.83	20.90' LT	GLEN COURT #2	199.23	537,922.64	1,365,861.88
78	304+37.76	25.80' LT	GLEN COURT #2	198.67	537,937.60	1,365,824.53
79	304+64.54	14.60' LT	GLEN COURT #2	199.48	538,125.26	1,365,644.01
80	307+10.38	20.00' LT	GLEN COURT #2	209.39	538,155.60	1,365,645.45
81	307+30.86	20.00' LT	GLEN COURT #2	211.40	538,117.50	1,365,681.72
82	306+88.08	10.90' RT	GLEN COURT #2	207.48	538,159.75	1,365,683.74
83	307+53.16	10.90' RT	GLEN COURT #2	211.03	538,159.75	1,365,683.74
84	106+09.01	10.90' LT	PINE TREE ROAD	213.83	538,428.61	1,365,400.61
85	203+28.95	10.90' RT	GLEN COURT #1	213.55	538,269.81	1,365,700.09
86	301+09.04	11.56' LT	GLEN COURT #2	209.74	538,223.96	1,365,843.71
87•	200+17.00	16.87' LT	GLEN COURT #1	216.10	538,529.98	1,365,524.32
88	301+24.88	10.90' LT	GLEN COURT #2	208.81	538,211.06	1,365,854.38
89	302+47.00	10.90' LT	GLEN COURT #2	205.32	538,116.93	1,365,932.17
90	302+98.10	10.90' LT	GLEN COURT #2	202.74	538,057.26	1,365,939.54
91	303+98.87	10.90' LT	GLEN COURT #2	199.52	537,966.30	1,365,896.17
92	304+76.96	10.90' LT	GLEN COURT #2	199.65	537,952.40	1,365,810.29
93	306+88.08	10.90' LT	GLEN COURT #2	207.01	538,102.38	1,365,666.01
94	307+53.16	10.90' LT	GLEN COURT #2	212.20	538,176.28	1,365,669.53
95	300+25.73	10.90' LT	GLEN COURT #2	212.30	538,253.83	1,365,759.83
96	106+57.89	10.90' LT	PINE TREE ROAD	213.54	538,390.95	1,365,367.34
97	110+00.30	10.90' RT	PINE TREE ROAD	208.17	538,064.92	1,365,471.50
98	105+67.99	11.11' RT	PINE TREE ROAD	213.31	538,423.69	1,365,415.44
99	105+77.51	10.41' RT	PINE TREE ROAD	213.29	538,466.22	1,365,408.73
100	106+09.41	10.41' RT	PINE TREE ROAD	213.22	538,444.65	1,365,386.58
101	106+19.86	14.51' RT	PINE TREE ROAD	213.19	538,439.36	1,365,374.72

• - HIGH POINT ALONG FLOW LINE



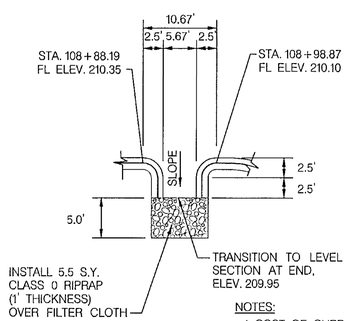
NOTES:

1. COST OF CURB OPENING SHALL BE INCIDENTAL TO MODIFIED COMBINATION CURB PAY ITEM

(STA. 109+78.55 TO STA. 109+86.05)

CURB OPENING DETAIL

NOT TO SCALE



NOTES:

1. COST OF CURB OPENING SHALL BE INCIDENTAL TO MODIFIED COMBINATION CURB PAY ITEM

(STA. 108+88.19 TO STA. 108+98.87)

CURB OPENING DETAIL

NOT TO SCALE

PLAN

SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5/30/12

CHIEF, BUREAU OF ENGINEERING — DATE 5/25/12

CHIEF, BUREAU OF HIGHWAYS — DATE 5-30-12

CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 5/25/12

NOLAN Associates, Inc.
Engineers · Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

5/30/12

DES: GWF/JW				
DRN: JRW				
CHK: GWF				
DATE: APRIL 2012	BY	NO.	REVISION	DATE

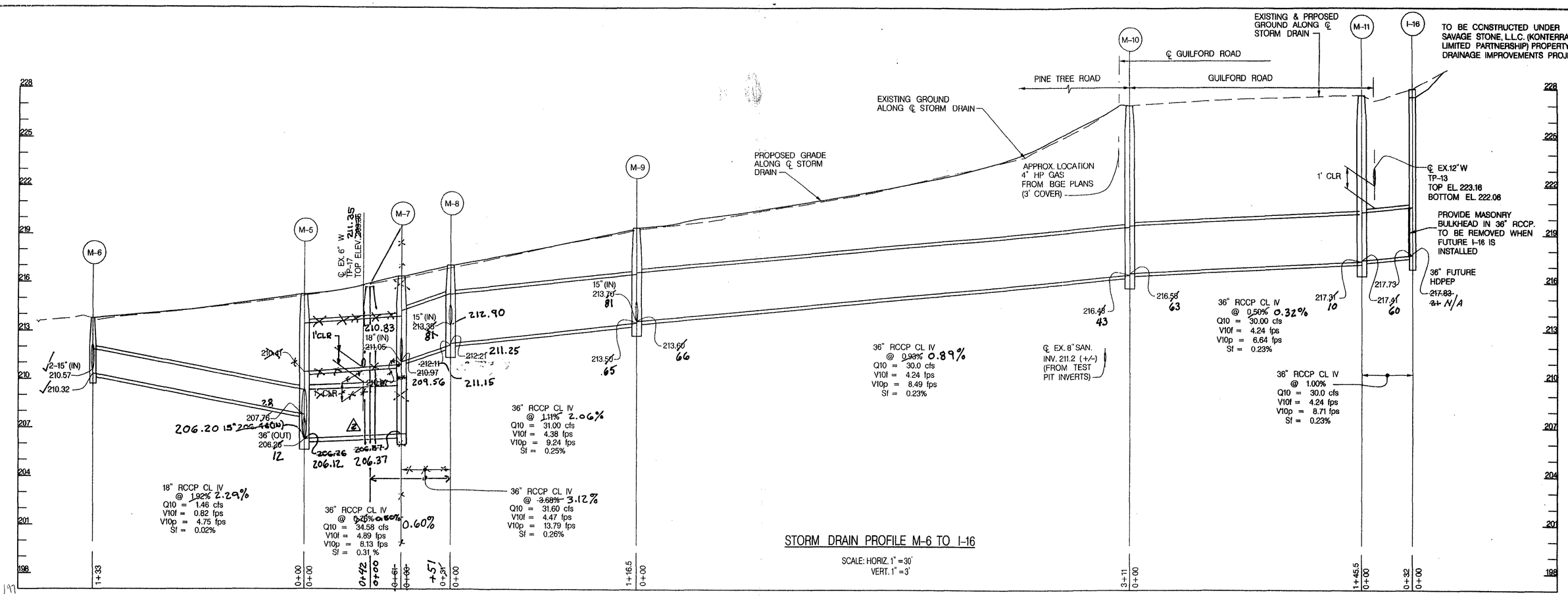
FLOW LINE CONTROL POINT LOCATION PLAN AND DETAILS

600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

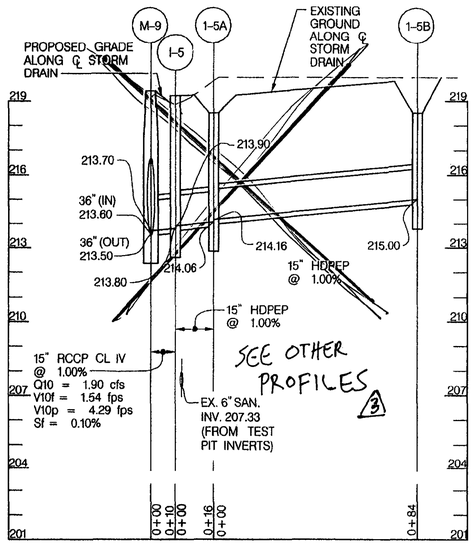
SCALE: AS SHOWN

SHEET 7 OF 14A



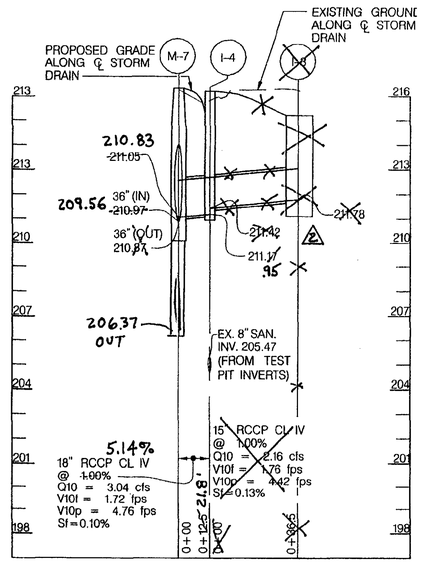
STORM DRAIN PROFILE M-6 TO I-16

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



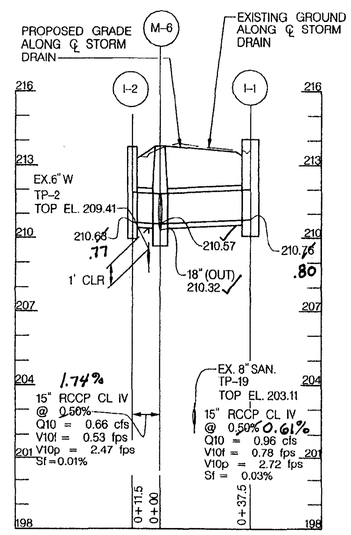
STORM DRAIN PROFILE M-9 TO I-5

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



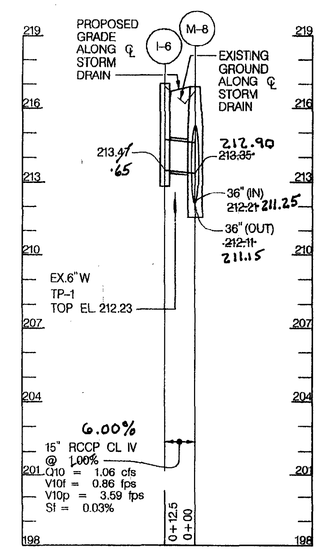
STORM DRAIN PROFILE M-7 TO I-3

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



STORM DRAIN PROFILE I-2 TO I-1

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



STORM DRAIN PROFILE I-6 TO M-8

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'

CONSTRUCTION ASBUILT CERTIFICATION

I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.

1-5-15

Wayne F. Aubertin, Prof. L.S. Maryland Reg. #21330 Exp. 01/07/17
Snider & Associates, Land Surveyors
20270 Goldenrod Lane, Suite 110
Germantown, MD 20876 Ph. 301-948-5100 Fax 301-948-1286

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5/25/12
CHIEF, BUREAU OF ENGINEERING — DATE 5/25/12
CHIEF, BUREAU OF HIGHWAYS — DATE 5/30/12
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 5/25/12

NOLAN Associates, Inc.
Engineers · Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3051 Fax: (410) 995-1303

DES: GWF	GPI.	2	REVISE S.D. PROFILES M-5 TO M-7, I-3 TO I-9	11/19/13
DRN: JW/JAH	MND	3	PROFILE ON OTHER SHEET	1/14/15
CHK: GWF				
DATE: MAY 2010				
	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

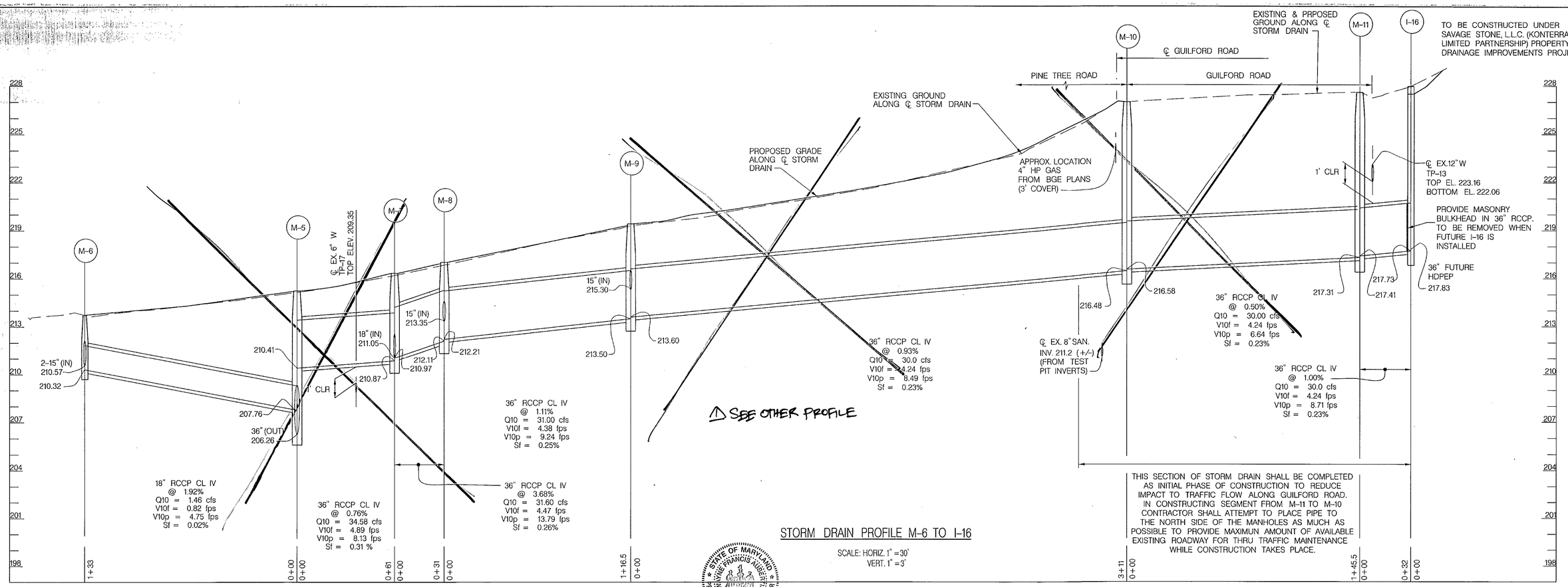
600' SCALE MAP NO. _____ BLOCK NO. _____

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

SCALE: AS SHOWN

SHEET 8 OF 14

AS BUILT



STORM DRAIN PROFILE M-6 TO I-16

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'

CONSTRUCTION ASBUILT CERTIFICATION

I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.

1.5.15

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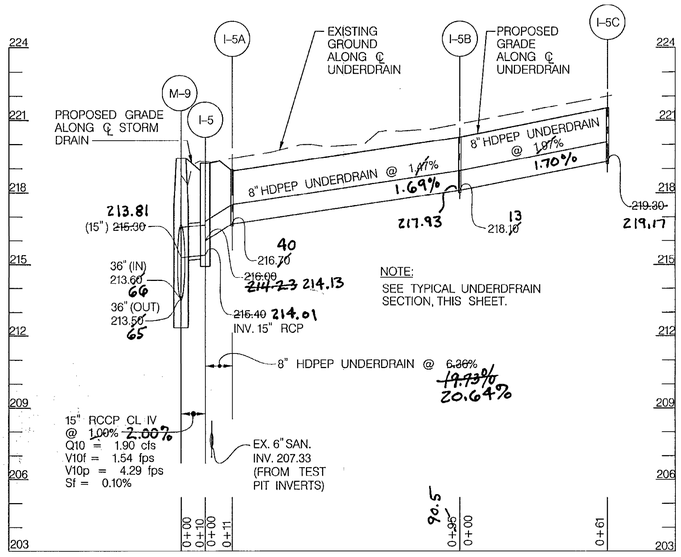
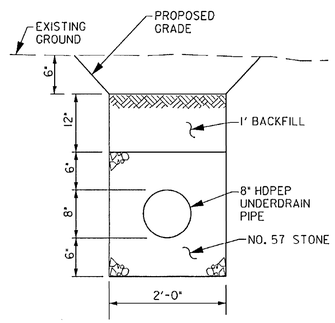


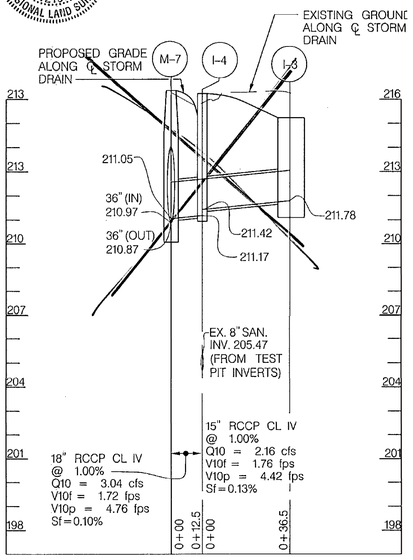
UNDERDRAIN PROFILE I-5 TO I-5C

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



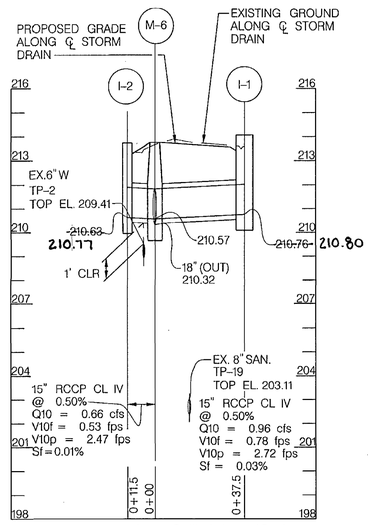
TYPICAL UNDERDRAIN SECTION

NOT TO SCALE



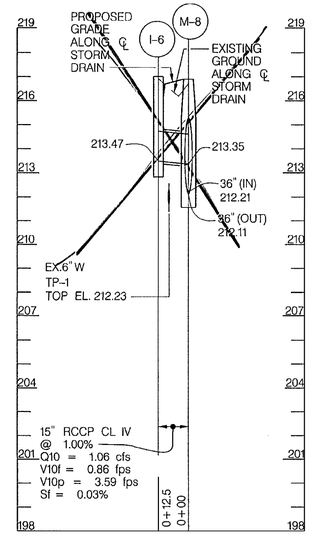
STORM DRAIN PROFILE M-7 TO I-3

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



STORM DRAIN PROFILE I-2 TO I-1

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



STORM DRAIN PROFILE I-6 TO M-8

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/9/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/5/13

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Engineers · Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3851 Fax: (410) 995-1363

4/5/13

DES: GWF	MND	⚠	PROFILE ON OTHER SHEET	1/14/15
DRN: JW/JAH				
CHK: GWF				
DATE: MAY 2010	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. _____ BLOCK NO. _____

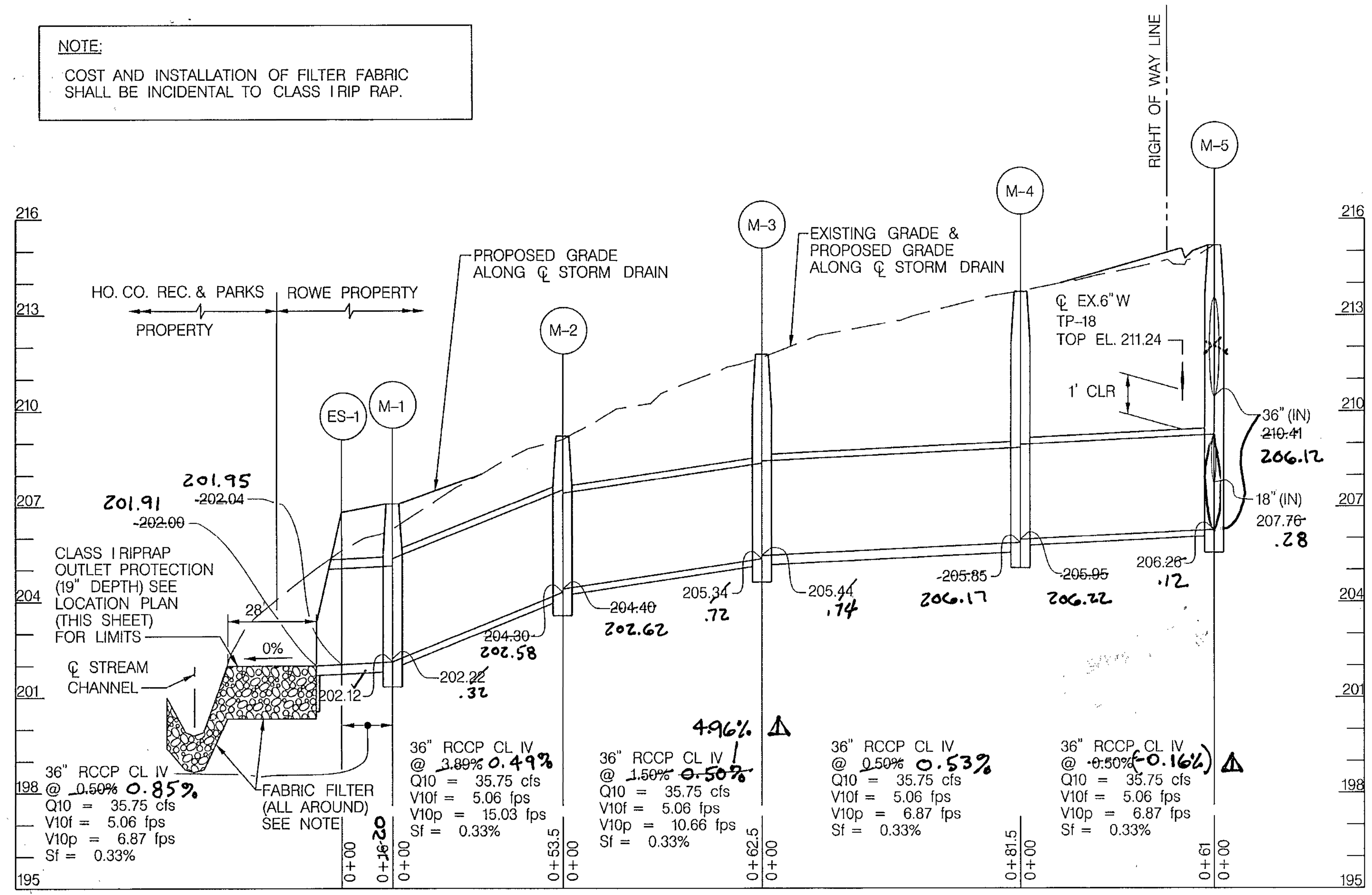
PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 8 OF 14A

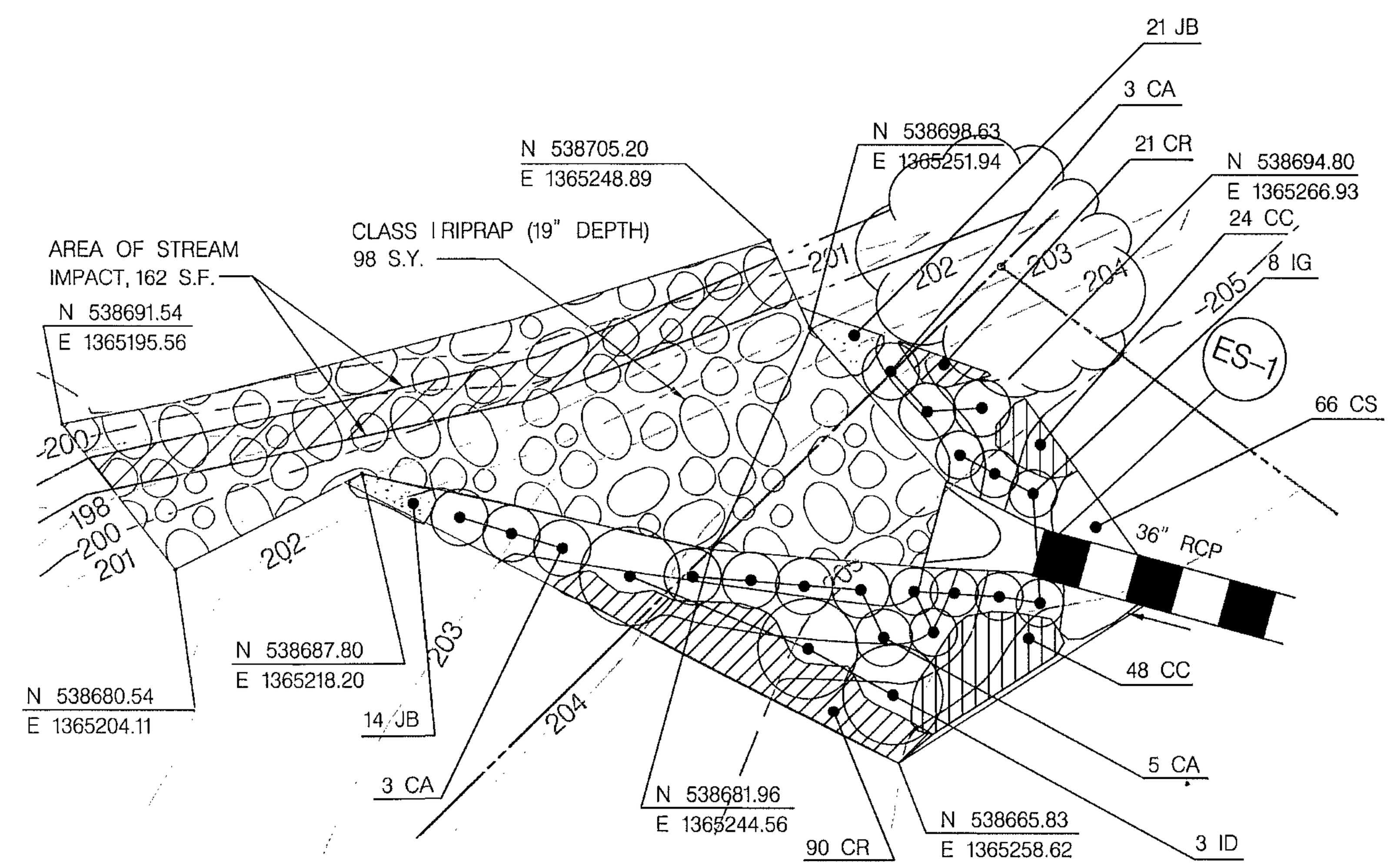
ASBUILT

NOTE:
COST AND INSTALLATION OF FILTER FABRIC SHALL BE INCIDENTAL TO CLASS I RIP RAP.



STORM DRAIN PROFILE ES-1 TO M-5

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



LOCATION PLAN FOR
ES-1 OUTFALL STABILIZATION PLANTING AND CLASS I RIPRAP
STREAM CHANNEL PROTECTION

SCALE: 1" = 10'

ES-1 OUTFALL STABILIZATION PLANTING LIST				
PLANT LIST				
SHRUBS				
SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	NUMBER
CA	CORNUS AMMOMUM	SILKY DOGWOOD	3G	11
ID	ILEX VERTICILLATA	HOLLY WINTERBERRY	3G	3
IG	ILEX GLABRA	INKBERRY	3G	8
HERBACEOUS PLANTS				
CC•	CAREX CRISTATELLA	CRESTED SEDGE	Q	72
CR•	CAREX RETRORSA	RETRORSE SEDGE	Q	111
CS•	CAREX SQUARROSA	NARROW-LEAVED CATTAIL-SEDGE	Q	66
JB•	JUNCUS TOREYII	TORREY'S RUSH	Q	35
• ONE FOOT SPACING				

CONSTRUCTION ASBUILT CERTIFICATION

I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.

1-5-15

Wayne F. Aubertin, Prof. L.S. Maryland Reg. #21330 Exp. 01/07/17
Snider & Associates, Land Surveyors
20270 Goldenrod Lane, Suite 110
Germantown, MD 20876 Ph. 301-948-5100 Fax 301-948-1286

STATE OF MARYLAND · WAYNE FRANCIS AUBERTIN · No. 21330 · PROFESSIONAL LAND SURVEYOR

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE 4/9/13	CHIEF, BUREAU OF ENGINEERING	DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS	DATE 4-9-13	CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION	DATE 4/5/13

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

DES: GWF	MND	⚠	SLOPE CORRECTIONS for AS-BUILT	1/14/15
DRN: JW/JAH				
CHK: GWF				
DATE: MAY 2010	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. ________ BLOCK NO. ________

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 9 OF 14A

AS BUILT

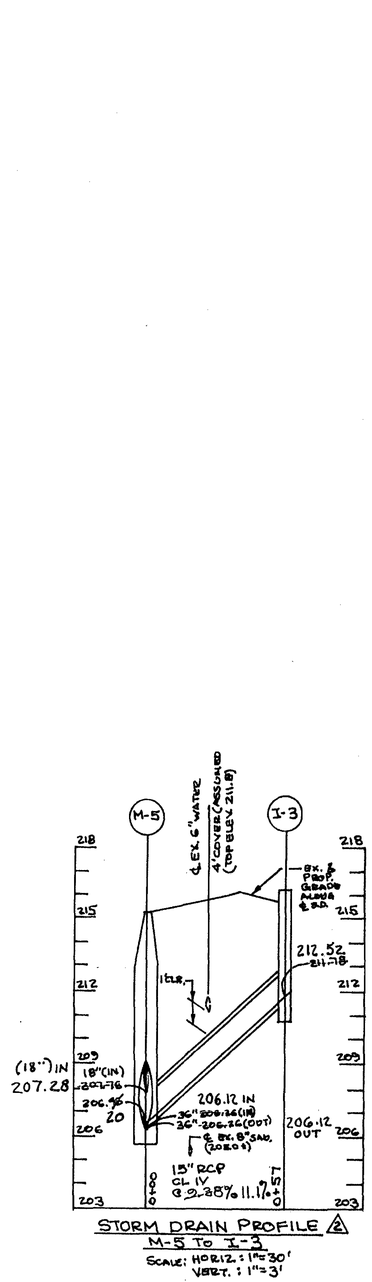
CURB AND GUTTER TRANSITION TABLE FOR STORMDRAIN INLETS

INLET	LOCATION	REMARKS
I-1	STA. 106+36.26 TO STA. 106+78.59, LT.	PER DETAIL R-3.06
I-2	END TRANSITION STA. 106+30.80, RT.	TRANSITION LENGTH FROM DOWN STATION END OF I-2 INLET TO STA. 106+30.8 LESS 15'. ADJUST TRANSITION WITHIN LIMITS.
I-3	END TRANSITION, STA. 200+59.28, LT. (SEE REMARKS)	7" COMBINATION CURB AND GUTTER SECTION TO RUN ALONG CURVE FILLET FROM END OF I-4 TO BEGINING OF I-3
I-4	STA. 104+12.47, LT. TO I-3 (SEE REMARKS)	7" COMBINATION CURB AND GUTTER SECTION TO RUN ALONG CURVE FILLET FROM END OF I-4 TO BEGINING OF I-3
I-5	STA. 102+66.8 TO STA. 102+99.3, LT.	PER DETAIL R-3.06
I-6	STA. 103+81.5 TO STA. 104+17.5, RT.	PER DETAIL R-3.06

DRAINAGE PIPE SCHEDULE

FROM STRUCT.	TO STRUCT.	SIZE (IN.)	TYPE	LENGTH (FT.)
I-1	M-6	15"	RCCP CL IV	38
I-2	M-6	15"	RCCP CL IV	12
M-6	M-5	18"	RCCP CL IV	133
M-5	M-7	36"	RCCP CL IV	61
I-3	~~M-5~~ M-4	15"	RCCP CL IV	~~32~~ 57
I-4	M-7	18"	RCCP CL IV	13
M-7	M-8	36"	RCCP CL IV	31
I-6	M-8	15"	RCCP CL IV	13
M-8	M-9	36"	RCCP CL IV	117
I-5	M-9	15"	RCCP CL IV	10
M-9	M-10	36"	RCCP CL IV	311
M-10	M-11	36"	RCCP CL IV	146
M-11	STUB (1)	36"	RCCP CL IV	32
ES-1	M-1	36"	RCCP CL IV	16
M-1	M-2	36"	RCCP CL IV	54
M-2	M-3	36"	RCCP CL IV	63
M-3	M-4	36"	RCCP CL IV	82
M-4	M-5	36"	RCCP CL IV	61
I-5B	I-5A	8"	HDPEP U.D.	95
I-5A	I-5	8"	HDPEP U.D.	11
I-5B	I-5C	8"	HDPEP U.D.	61

(1) END OF PIPE SHALL BE BULKHEADED WITH TEMPORARY MASONRY WALL



STORM DRAIN PROFILE M-5 TO I-3 (2)

SCALE: HORIZ.: 1"=30'
VERT.: 1"=3'

DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP EL.	STD. NO.	TOP EL.	INV. OUT	INV. IN
I-1	A-5 PRECAST INLET	STA. 106+60.59, 11.0' LT.	——	210.~~36~~80	214.~~08~~25	HO. CO. STD. D-4.01	——	——	——
I-2	A-5 PRECAST INLET	STA. 106+21.23, 16.75'RT.	——	210.~~63~~77	~~213.73~~ •	HO. CO. STD. D-4.01 •	214.22	——	——
I-3	A-10 PRECAST INLET	STA. 200+38.78, 11.0' LT.	——	~~211.78~~	~~216.22~~ •	HO. CO. STD. D-4.02 •	216.78	212.52	——
I-4	A-5 PRECAST INLET	STA. 104+30.47, 11.0' LT.	~~214.42~~	211.~~79~~95	~~216.22~~ •	HO. CO. STD. D-4.01 •	216.90	——	——
I-5	PRECAST DOUBLE WR COMB. INLET	STA. 102+83, 11.0' LT.	~~216.70~~	~~216.00~~	~~218.90~~ ••	HO. CO. STD. D-4.35 ✓	219.13	214.01	~~214.23~~ 214.13
I-6	A-5 PRECAST INLET	STA. 103+99.5, 11.0' RT.	——	213.~~91~~65	~~216.91~~ •	HO. CO. STD. D-4.01 ✓	217.20	——	——
I-5A	DRAINAGE BASIN	STA. 102+80, 20' LT.	216.~~30~~50	216.~~30~~39	219.0039	SEE NOTE 1	——	——	——
I-5B	DRAINAGE BASIN	STA. 102+80, 114.6' LT.	218.~~13~~ ~~218.30~~13	218.~~10~~	220.30✓	SEE NOTE 1	——	217.93	~~217.33~~
I-5C	DRAINAGE BASIN	STA. 102+19, 107.5' LT.	——	219.~~30~~17	~~221.55~~	SEE NOTE 1 •	220.86	——	——
M-1	60" DIA. PRECAST MANHOLE	N 538677.58 E 1365284.53	202.~~28~~32	202.12✓	207.~~08~~38	HO. CO. STD. G-5.11	——	——	——
M-2	60" DIA. PRECAST MANHOLE	N 538635.41 E 1365317.52	~~204.40~~	~~204.30~~	~~209.23~~	HO. CO. STD. G-5.11 •	208.78	202.58	202.62
M-3	60" DIA. PRECAST MANHOLE	N 538611.62 E 1365375.31	205.~~44~~74	205.~~34~~72	211.~~78~~89	HO. CO. STD. G-5.11	——	——	——
M-4	60" DIA. PRECAST MANHOLE	N 538563.12 E 1365441.16 ~~206.46(15")~~	~~205.95~~	~~205.85~~	~~213.73~~	HO. CO. STD. G-5.11 •	214.12	206.17	206.22
M-5	60" DIA. PRECAST MANHOLE	STA. 104+91.5, 2.0' RT.	~~207.76 (18")~~ ~~208.41 (36")~~ ~~208.26~~	206.~~26~~12	215.~~24~~34	HO. CO. STD. G-5.11	——	——	207.28(18") 206.12(36") 206.20(15")
M-6	48" DIA. PRECAST MANHOLE	STA. 106+23.4, 5.6' RT.	210.57 (15") 210.57 (15") ✓	210.32 ✓	213.~~76~~97	HO. CO. STD. G-5.12	——	——	——
M-7	60" DIA. PRECAST MANHOLE	STA. 104+30.47, 0.0' RT.	~~211.05~~ (18") ~~210.97~~	~~210.87~~	216.~~35~~01	HO. CO. STD. G-5.11	——	206.37	210.83 209.56 (18") (30"
M-8	60" DIA. PRECAST MANHOLE	STA. 103+99.5, 0.0' RT.	~~213.35 (15")~~ ~~212.21 (36")~~	~~212.11~~	~~217.04~~	HO. CO. STD. G-5.11 •	216.75	211.15	212.90 211.25 (15" (36"
M-9	60" DIA. PRECAST MANHOLE	STA. 102+83.0, 0.0' RT.	~~215.30 (15")~~ 213.~~60~~6(36")	213.~~50~~65	219.~~45~~23	HO. CO. STD. G-5.11	——	——	213.81 (15"IN)
M-10	60" DIA. PRECAST MANHOLE	STA. 99+72.0, 0.0' RT.	216.~~58~~63	216.~~98~~43	~~227.00~~	HO. CO. STD. G-5.11 ✓	226.93	——	——
M-11	60" DIA. PRECAST MANHOLE	N 538751.94 E 1365983.56	217.~~91~~60	217.~~31~~10	227.~~54~~70	HO. CO. STD. G-5.11	——	——	——
ES-1	CONC. END SECTION 36" DIA. PIPE	N 538681.78 E 1365269.22	~~202.04~~ 201.95	~~202.00~~ 201.91	——	HO. CO. STD. D-5.51	——	——	——

• - TOP OF SLAB ELEVATION

•• - TOP OF GRATE ELEVATION AT FLOW LINE

NOTES;

1. DRAINAGE BASIN TO BE 12-INCH ADVANCED DRAINAGE SYSTEMS, INC. (ADS) DRAIN BASIN (PROD. CODE 2812AG) WITH STD H-20 GRATE (PROD. CODE 1299CGS) OR APPROVED EQUAL.

2. ALL DRAINAGE STRUCTURES AND MANHOLES, EXCEPT FOR DRAINAGE BASINS SHALL BE FITTED WITH KNOCK-OUTS TO ACCOMODATE 6-INCH UNDERDRAIN. CONTRACTOR SHALL FABRICATE STRUCTURES WITH 6-INCH BY 6-INCH OPENINGS LOCATED AT THE SAME ELEVATION OF INCOMING/ OUTGOING STORM DRAIN PIPES. PER DIRECTION OF THE ENGINEER, THE CONTRACTOR SHALL ALSO PROVIDE 6-INCH PERFORATED PIPE WRAPPED IN FILTER CLOTH EXTENDING 12-INCHES OUT FROM STRUCTURE WALL ON ALL SIDES. THE UNDERDRAIN PIPE AND INLETS SHALL BE SURROUNDED BY NO. 57 STONES. THE COST OF KNOCK-OUTS, UNDERDRAIN, FILTER CLOTH AND STONE SHALL BE IINCIDENTAL TO THE THE CONTRACT UNIT COST PER EACH STRUCTURE.

3. ALL STORM DRAIN PIPE SHALL HAVE 6-INCH OF NO. 57 STONE BEDDING.

CONSTRUCTION ASBUILT CERTIFICATION

I hereby certify the as-built information shown hereon (in red) is correct to the best of my knowledge and belief and that is the result of a field run survey performed under my direct supervision in accordance with the laws regulating land surveys in the State of Maryland.

1-5-15

Wayne F. Aubertin, Prof. L.S. Maryland Reg. #21330 Exp. 01/07/17
Snider & Associates, Land Surveyors
20270 Goldenrod Lane, Suite 110
Germantown, MD 20876 Ph. 301-948-5100 Fax 301-948-1286

STATE OF MARYLAND · WAYNE FRANCIS AUBERTIN · No. 21330 · PROFESSIONAL LAND SURVEYOR

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/4/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/4/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/5/13

NOLAN Associates, Inc.
Engineers · Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3661 Fax: (410) 995-1383

4/5/13

DES: GWF/JW
DRN: JRW
CHK: GWF
DATE: FEB 2013

BY	NO.	REVISION	DATE
GPI	2	ADD M-5 TO I-3 S.D. PROFILE, REV. STRUCT. & PIPE SCH.	11/8/13

STORM DRAIN PROFILES
DRAINAGE / PIPE STRUCTURE SCHEDULES AND INLET CURB AND GUTTER TRANSITION TABLE

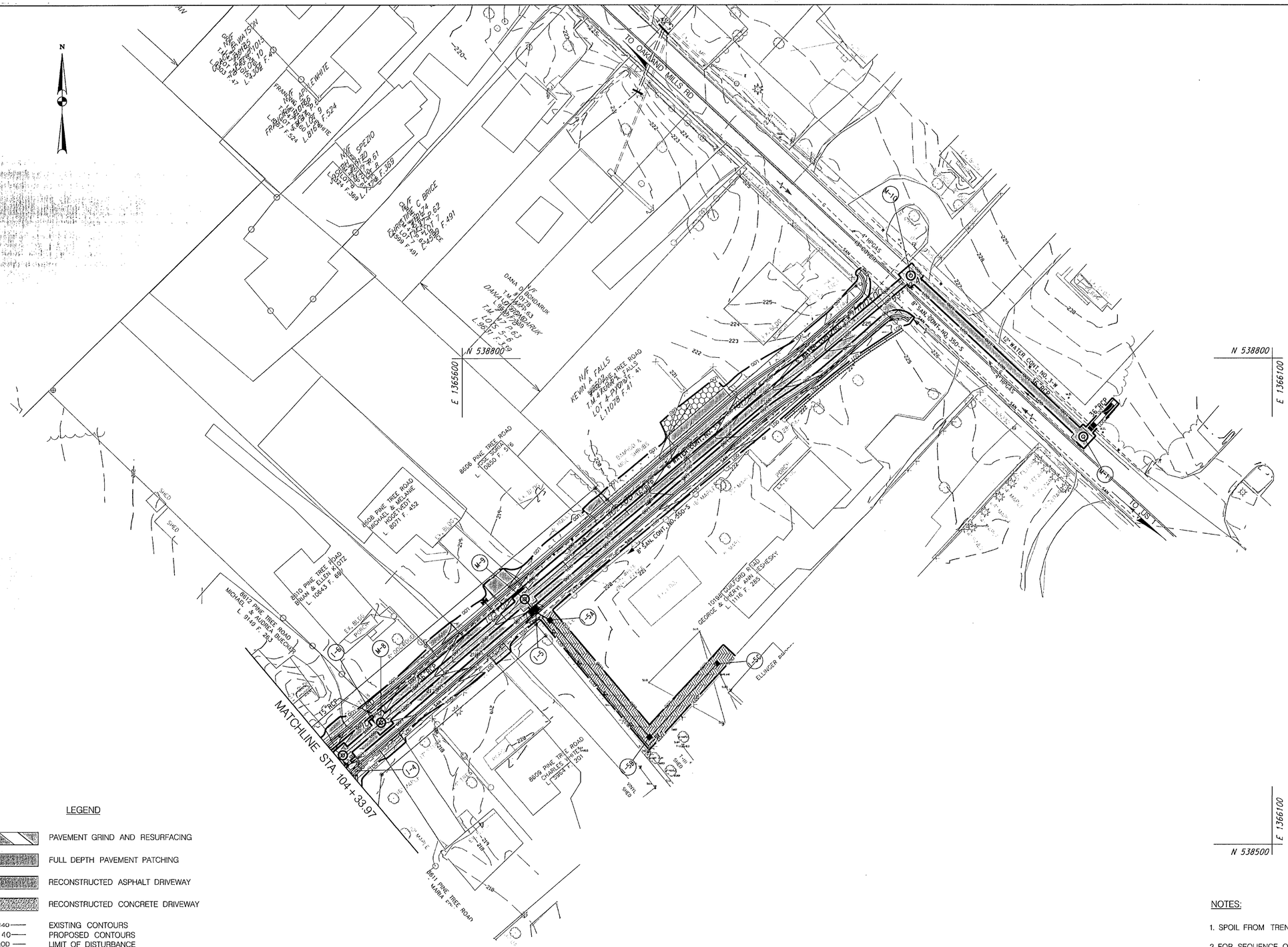
600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 10 OF 14A

ASBUILT



PLAN
SCALE: 1" = 30'

INSTALL SILT FENCE
STA. 103+71 TO 103+85, LT - 120 L.F.

INSTALL TURFGRASS SOD
STA. 102+08 TO 102+84, LT - 189 S.Y.

INSTALL INLET PROTECTION (SEE NOTE 1 UNDER SEQUENCE OF CONTRUCTION ON SHEET 13)
I-4 - 1 EACH I-5 - 1 EACH I-6 - 1 EACH

LEGEND

- PAVEMENT GRIND AND RESURFACING
- FULL DEPTH PAVEMENT PATCHING
- RECONSTRUCTED ASPHALT DRIVEWAY
- RECONSTRUCTED CONCRETE DRIVEWAY
- 140 EXISTING CONTOURS
- 140 PROPOSED CONTOURS
- LOD LIMIT OF DISTURBANCE
- SSF SUPER SILT FENCE
- SFD SUPER FENCE DIVERSION
- IP INLET PROPTECTION
- SCE STABILIZED CONSTRUCTION ENTRANCE
- SODDING

NOTES:

1. SPOIL FROM TRENCHING OPERATION IS TO BE PLACED ON THE UPHILL SIDE OF EXCAVATION.
2. FOR SEQUENCE OF CONSTRUCTION, SEE SHEET 13.
3. THE INITIAL EROSION AND SEDIMENT CONTROL INSTALLATIONS AS INDICATED ON THESE CONTRACT DOCUMENTS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID PRICE. ANY ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICE INSTALLATION WILL BE PAID AS PART OF CONTINGENT PRICE PAY ITEM.
4. REFER TO SHEETS 14 AND 14A FOR DETAIL ON MAINTENANCE OF TRAFFIC ON GUILFORD AND PINE TREE ROAD.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/8/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/5/13

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DES: GWF/JW				
DRN: JRW				
CHK: GWF				
DATE: FEB 2013	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 11 OF 14A

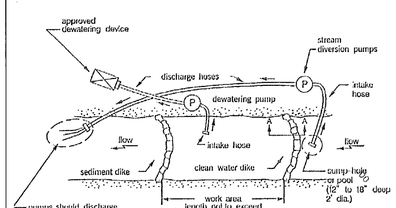
INSTALL OUTFALL STABILIZATION PLANTING
AS INDICATED ALONG ES-I OUTFALL (SEE DETAIL ON SHEET 9 FOR ADDITIONAL INFORMATION)

INSTALL TURFGRASS SOD	
STA. 104+81 TO 105+01, RT.	565 SY

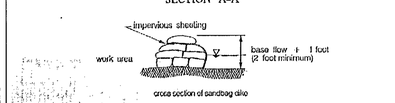
INSTALL INLET PROTECTION (SEE NOTE 1 UNDER SEQUENCE OF CONTRUCTION ON SHEET 13)
I-1 - 1 EACH
I-2 - 1 EACH
I-3 - 1 EACH
I-7 - 1 EACH
I-8 - 1 EACH
I-9 - 1 EACH
I-10 - 1 EACH
I-11 - 1 EACH
I-12 - 1 EACH
I-13 - 1 EACH
I-14 - 1 EACH
I-15 - 1 EACH

NOT IN CONTRACT

PLAN VIEW



SECTION A-A



WATER MANAGEMENT ADMINISTRATION	PUMP-AROUND PRACTICE	Approved On: NOVEMBER 2000 Chief, Waterway Permits	WPD 1.2

LEGEND

- PAVEMENT GRIND AND RESURFACING
- FULL DEPTH PAVEMENT PATCHING
- RECONSTRUCTED ASPHALT DRIVEWAY
- RECONSTRUCTED CONCRETE DRIVEWAY
- 140 — EXISTING CONTOURS
- 140 — PROPOSED CONTOURS
- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFD — SUPER FENCE DIVERSION
- IP — INLET PROPTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- ③ — TCF LOCATION POINT
- SODDING

INSTALL SILT FENCE	
AS INDICATED ALONG ES-I OUTFALL	- 80 LF
STA. 105+00 TO 105+47, RT	- 55 LF
STA. 105+69 TO 106+30, RT	- 75 LF
STA. 106+45 TO 106+59, RT	- 32 LF
STA. 106+82 TO 106+87, RT	- 12 LF
STA. 107+32 TO 107+98.16, RT	- 71 LF
STA. 108+84 TO 108+88, RT	- 13 LF
STA. 108+99 TO 109+17, RT	- 26 LF
STA. 109+44 TO 109+78, RT	- 47 LF
STA. 109+86 TO 110+03, RT	- 21 LF
STA. 302+87 TO 303+08, LT	- 30 LF
STA. 303+30 TO 303+45, LT	- 18 LF
STA. 303+24 TO 303+34, RT	- 41 LF
STA. 303+65 TO 303+80, LT	- 15 LF
STA. 304+08 TO 304+27, LT	- 39 LF
STA. 307+15 TO 307+78, RT	- 49 LF
STA. 307+90 TO 300+24, RT	- 85 LF

NOT IN CONTRACT

INSTALL STABILIZED CONSTRUCTION ENTRANCE
STA. 104+92, RT. - 40 TON

PLAN
SCALE: 1" = 30'

TCF LOCATION POINTS TABLE		
POINT	NORTH	EAST
①	538,536.85	1,365,476.24
②	538,570.47	1,365,448.05
③	538,616.19	1,365,385.48
④	538,644.95	1,365,324.36
⑤	538,686.31	1,365,290.25
⑥	538,691.75	1,365,270.46
⑦	538,695.69	1,365,267.42
⑧	538,698.00	1,365,260.97
⑨	538,675.34	1,365,237.79
⑩	538,664.68	1,365,258.68
⑪	538,671.27	1,365,268.96
⑫	538,668.70	1,365,278.84
⑬	538,628.76	1,365,311.79
⑭	538,598.91	1,365,375.23
⑮	538,555.77	1,365,434.27
⑯	538,524.86	1,365,460.07

INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE	
POINT ① TO POINT ⑧	280 LF
POINT ⑨ TO POINT ⑯	285 LF

NOTES:

1. SPOIL FROM TRENCHING OPERATION IS TO BE PLACED ON THE UPHILL SIDE OF EXCAVATION.
2. FOR SEQUENCE OF CONSTRUCTION, SEE SHEET 13.
3. THE INITIAL EROSION AND SEDIMENT CONTROL INSTALLATIONS AS INDICATED ON THESE CONTRACT DOCUMENTS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID PRICE. ANY ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICE INSTALLATION WILL BE PAID AS PART OF CONTINGENT PRICE PAY ITEM.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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DES: GWF/JW				
DRN: JRW				
CHK: GWF				
DATE: FEB 2013	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 12 OF 14A

SPECIFICATIONS FOR VEGETATION ESTABLISHMENT

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

Seeding—For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue and 2 lbs per acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) – 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) – Use sod. Option (3) – Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

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

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

TEMPORARY SEEDING NOTES

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

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

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

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

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

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

STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 24 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, (313-1850).
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 redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec.51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis (Total Project)

Total Area of Site	2.13	Acres
Area Disturbed	1.51	Acres (0.80 Ac. PH.1)
Area to be roofed or paved	0.43	Acres
Area to be vegetatively stabilized	0.94	Acres
Total Cut	700	Cu. Yds.
Total Fill	500	Cu. Yds.

Offsite Waste/Borrow Area Location To Be Determined By Contractor at a site with an active grading permit.

*It is the responsibility of the contractor to identify the soil/borrow site and notify and gain the approval from the sediment control inspector of the site and its grading permit number at the time of construction.

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

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 gradation.

Conditions Where Practice Applies

I. This practice 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.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 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, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
   ii. Topsoil 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 Stabilization – Section I – Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 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 be not less than 1.5 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 weed control until sufficient time has elapsed (14 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 appropriate authority, may be used in lieu of natural topsoil.
   ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – 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, Slope 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 in 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 in order to prevent the formation of depressions or water pockets.
   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 preparation.

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 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 Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a 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 the rate of 1 ton/1,000 square feet.
   ii. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1000 square feet, and 1/3 the normal lime application rate.

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. CONSTRUCT STORM DRAIN SYSTEM FROM M-10 TO 36" RCCP STUB OUT PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE ENDOF WORK DAY. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. REFER TO STORM DRAIN PROFILE AND SHEET 14A FOR ADDITIONAL INFORMATION REGARDING MAINTENANCE OF TRAFFIC.
4. INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE AND CONSTRUCT STORM DRAIN SYSTEM FROM ES-1 TO M-5 PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF WORK DAY (SEE NOTE 1 BELOW). INSTALL SILT FENCE AS SHOWN IN AREA OF ES-1. SILT FENCE TO REMAIN IN UNTIL SEEDING & PLANTING HAVE STABILZED AREA. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. INSTALL RIPRAP AND OUTFALL STABILIZATION PLANTING ALONG ES-1 OUTFALL. INSTALL TURFGRASS SOD WITHIN LOD AS NOTED ON PLAN.
5. CONSTRUCT STORM DRAIN SYSTEM FROM I-1 TO M-5 PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF WORK DAY. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. (SEE NOTE NO. 2 BELOW)
6. CONSTRUCT STORM DRAIN SYSTEM FROM M-5 TO M-10, I-5 TO I-5C PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF WORK DAY. PLACE SOD ALONG STORM DRAIN FROM I-5A TO I-5C. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. (SEE NOTE NO. 2 BELOW).

NOT IN CONTRACT

7. CONSTRUCT STORM DRAIN SYSTEM FROM I-7 TO I-11 PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF WORK DAY. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. (SEE NOTE NO. 1 BELOW).

NOT IN CONTRACT

8. CONSTRUCT STORM DRAIN SYSTEM FROM I-7 TO I-14 PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF WORK DAY. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. (SEE NOTE NO. 2 BELOW).
9. CONSTRUCT STORM DRAIN SYSTEM FROM I-7 TO I-15 PROCEEDING UPGRADE WITH THE AMOUNT OF OPEN EXCAVATION THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF WORK DAY. STABILIZATION TO INCLUDE METAL PLATES FOR OPEN SECTION OF ROADWAY. (SEE NOTE NO. 2 BELOW).
10. REMOVE EXISTING PAVEMENT PER ROADWAY PLANS AND EXCAVATE FULL DEPTH PAVEMENT SECTION ALONG PINE TREE ROAD AND GLEN COURT. LIMIT THE AMOUNT OF WORK THAT CAN BE DONE AND STABILIZED WITH GRADED AGGREGATE BASE (G.A.B.) AT THE END OF THE WORK DAY. (SEE NOTE NO. 3 BELOW).
11. CONSTRUCT CURB AND GUTTER ALONG PINE TREE ROAD & GLEN COURT ALONG WITH CURB OPENINGS AND RIPRAP AS PER PLANS.
12. CONSTRUCT FULL DEPTH PAVEMENT SECTION PER ROADWAY PLANS.
13. RECONSTRUCT DRIVEWAY ENTRANCES AS PER ROADWAY PLANS. LIMIT THE AMOUNT OF WORK THAT CAN BE EXCAVATED AND STABILIZED WITH G.A.B. AT THE END OF THE WORK DAY.
14. PROVIDE REQUIRED BACKFILL, TOPSOIL, SEED & MULCH FOR GRADE TIE-IN AREA BEHIND CURB AND GUTTER. LIMIT THE AMOUNT OF WORK THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF THE WORK DAY. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE EXISTING VEGETATION AND PRIVATE PROPERTY.
15. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, GRIND AND OVERLAY ROADWAYS PER ROADWAY PLANS.

NOTES:

1. INSTREAM WORK AT OUTFALL ES-1 SHALL BE DONE ONLY AFTER THE THERE IS A PERIOD OF NO FOR RAIN 72 HOURS PRIOR TO START OF WORK. SHOULD STREAM BASE FLOW BE ENCOUNTERED, THEN THE CONTRACTOR SHALL USE A PUMP AROUND DIVERSION PRACTICE AS SHOWN PER DETAIL 1.2 ON SHEET 12 TO DIVERT WATER AROUND WORK AREA UNTIL CLASS I RIP RAP HAS BEEN INSTALLED.
2. DETAILS HAVE BEEN PROVIDED FOR INLET PROTECTION. IT SHALL BE AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR BASED ON FIELD CONDITIONS TO IMPLEMENT THE INSTALLATION OF SAID PROTECTION. AS THE MAXIMUM DRAINAGE AREA (1/4 AC.) TO INLETS I-1, I-3, I-4, I-5, I-6, I-7, I-11, I-12, I-13 AND I-14 IS EXCEEDED THE INLET PROTECTION SHALL BE UPGRADED BY WRAPPING THE INLET WITH "SUPER SILT FENCE". THE SEDIMENT CONTROL INSPECTOR SHALL INSTRUCT THE CONTRACTOR AS TO PROPER PROCEDURE TO UPGRADE THE INLET PROTECTION. ANY ADDITIONAL COST TO PERFORM UPGRADE SHALL BE INCIDENTAL TO THE UNIT COST PAY ITEM FOR INLET PROTECTION. — NOT IN CONTRACT
3. DETAILS HAVE BEEN PROVIDED FOR SILT FENCE AND SUPER SILT FENCE DIVERSION. SAME DAY STABILIZATION HAS BEEN NOTED BUT DUE TO VARYING FIELD CONDITIONS, IT MAY BE NECESSARY TO IMPLEMENT THE INSTALLATION OF SAID CONTROL, IT SHALL BE AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR TO DIRECT THE IMPLEMENTATION OF THE CONTROLS BY THE CONTRACTOR TO DIVERT CLEAN OFF SITE WATER AROUND OR THROUGH THE CONSTRUCTION AREA. CONTINGENT QUANTITIES OF SILT FENCE AND SUPER SILT FENCE HAS BEEN INCLUDED IN THE CONTRACT TO COVER THE POSSIBLE IMPLEMENTATION.

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 slopes and to ensure solid contact between sod roots and the underlying soil surface.
   iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any 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 a 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" and 3" unless otherwise specified.

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL PURPOSE ONLY

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/9/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/5/13

NOLAN Associates, Inc.
Engineers - Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone: (410) 995-3651 Fax: (410) 995-1363

DES: GWF/JW
DRN: JRW
CHK: GWF
DATE: FEB 2013

BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

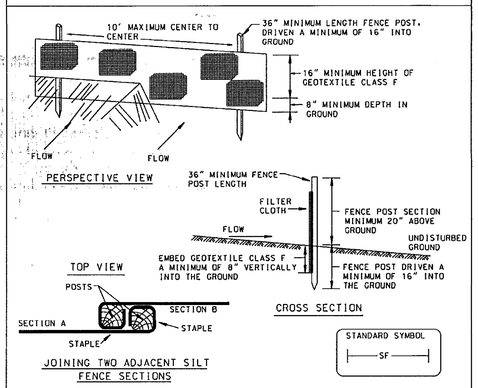
600' SCALE MAP NO. ________ BLOCK NO. ________

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 13 OF 14A

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

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

Tensile Strength	50 lbs/in (min.)	Test: ASTM D-4595
Tensile Modulus	20 lbs/in (min.)	Test: ASTM D-4595
Flow Rate	0.3 gal ft²/ minute (max.)	Test: ASTM D-5141
Filtering Efficiency	75% (min.)	Test: ASTM D-5141

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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SILT FENCE

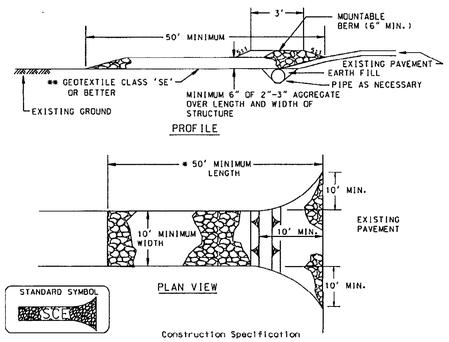
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

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

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

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

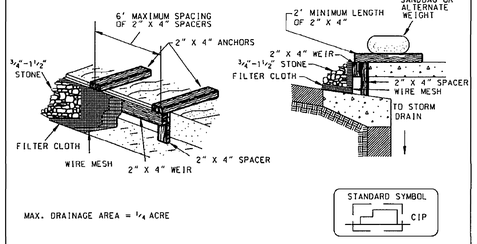
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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

6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 17 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C – CURB INLET PROTECTION (COG OR COS INLETS)



Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

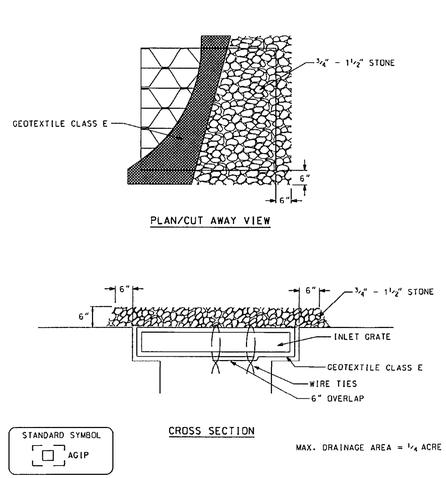
6. Form the ½" x ½" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean ¾" x 1½" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 16 – 5B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23B – AT GRADE INLET PROTECTION



MAX. DRAINAGE AREA = ¼ ACRE

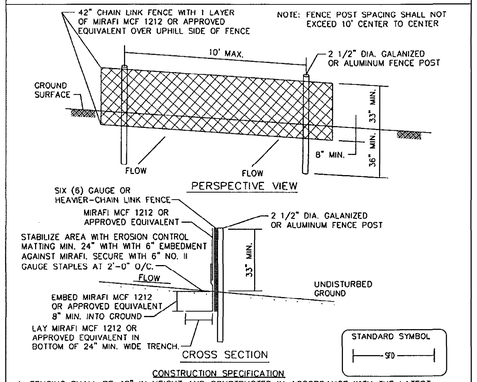
Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place ¾" to 1½" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 16 – 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER FENCE DIVERSION



CONSTRUCTION SPECIFICATION

1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATIONS FOR A 6'–0" FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.

2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.

3. CHAIN LINK FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.

4. MIRAFI MCF 1212 OR APPROVED EQUIVALENT SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.

5. MIRAFI MCF 1212 OR APPROVED EQUIVALENT SHALL BE EMBEDDED MINIMUM OF 8" INTO THE GROUND.

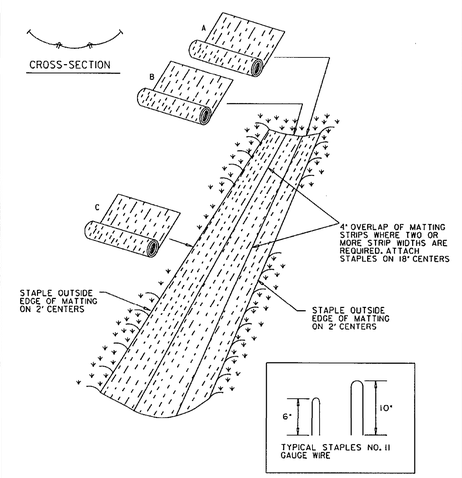
6. WHEN THE TWO SECTIONS OF MIRAFI MCF 1212 OR APPROVED EQUIVALENT ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.

7. MAINTENANCE SHALL BE PERFORMED AS NEEDED.

8. MAXIMUM FLOW SLOPE 10.0%

9. MAXIMUM DRAINAGE AREA 5 Ac

DETAIL 30 – EROSION CONTROL MATTING



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G – 22 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4' down slope from the trench. Spacing between staples is 6'.

2. Staple the 4' overlap in the channel center using an 18' spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

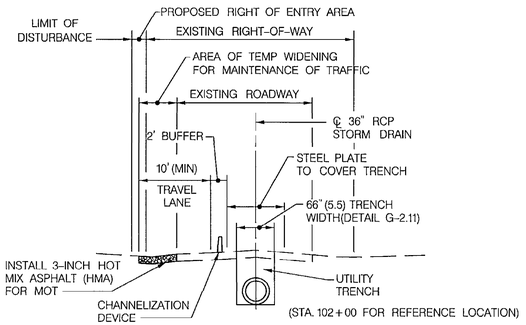
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4', shiplap fashion. Reinforce the overlap with a double row of staples spaced 6' apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G – 22 – 2A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



SECTION FOR MAINTENANCE OF TRAFFIC FOR STORM DRAIN CONSTRUCTION ALONG PINE TREE ROAD

SCALE: HORIZ. 1" = 1'
VERT. 1" = 1'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/6/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/6/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/6/13

NOLAN Associates, Inc.
Engineers · Civil/Structural/Inspections
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Ellicott City, Maryland 21042
Phone: (410) 995-3051 Fax: (410) 995-1363

DES: GWF/JW
DRN: JRW
CHK: GWF
DATE: FEB 2013

BY	NO.	REVISION	DATE

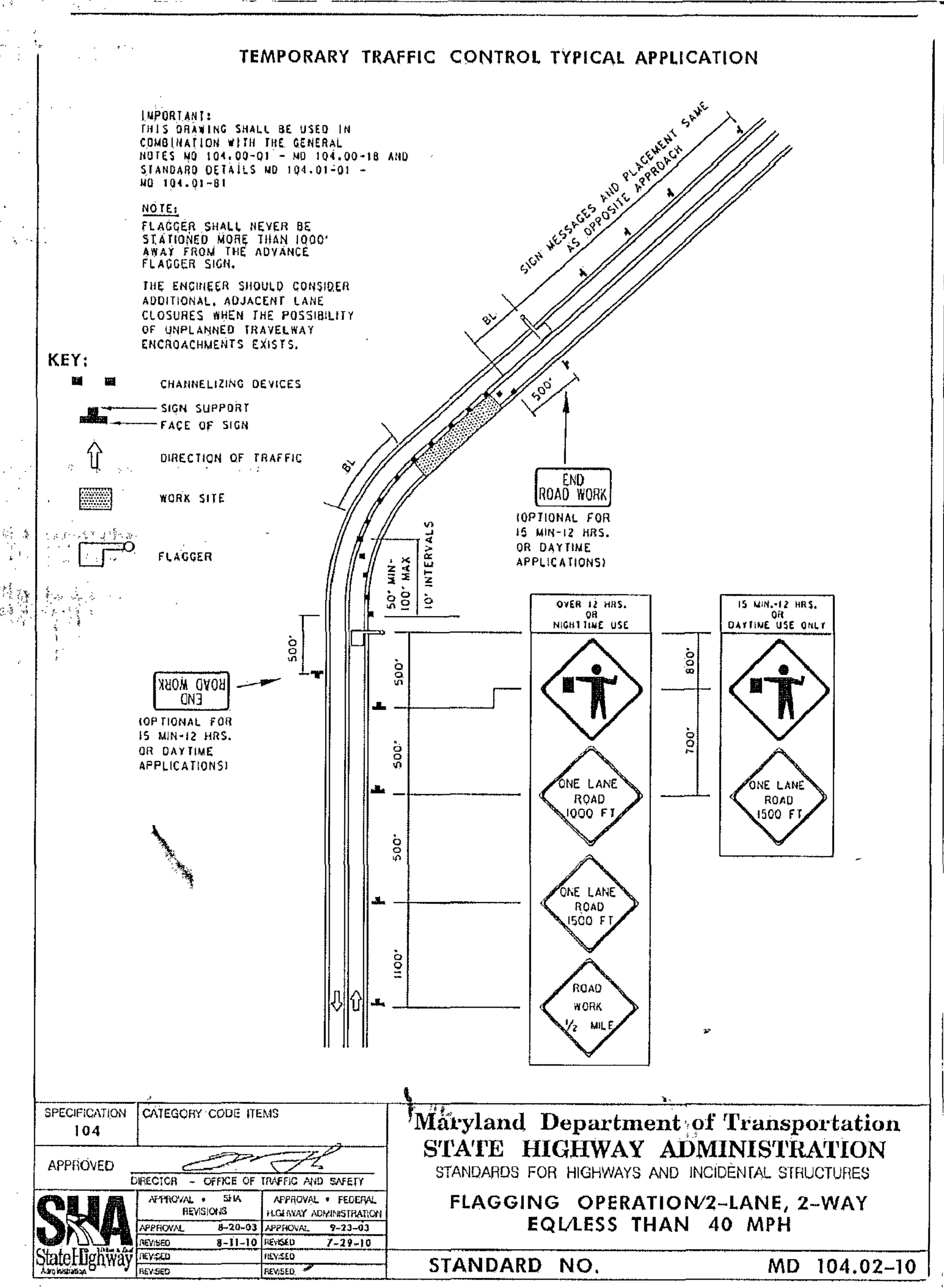
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

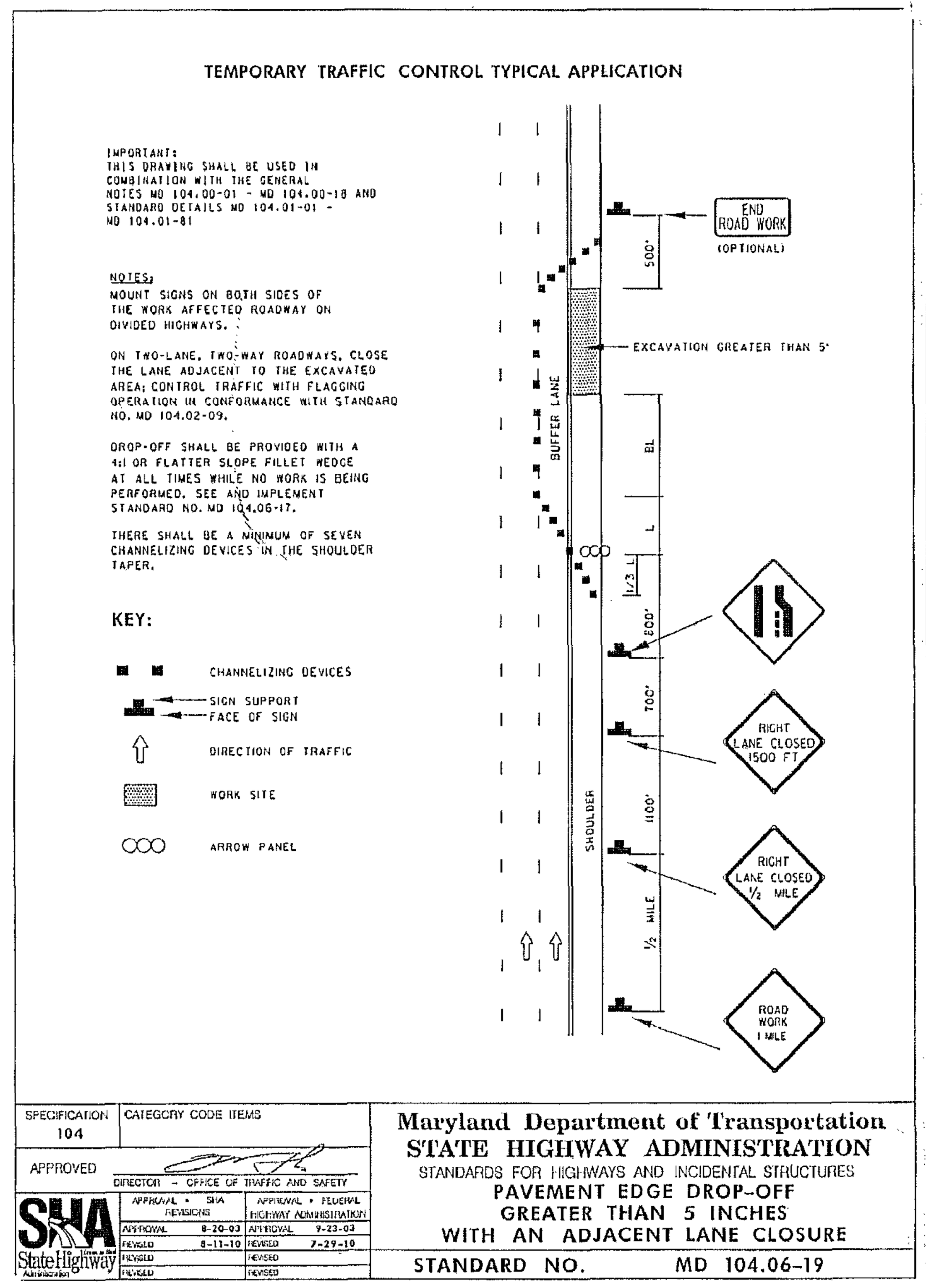
600' SCALE MAP NO. _____ BLOCK NO. _____

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 14 OF 14A





12.0 WORK HOUR RESTRICTIONS

12.1 Unless otherwise specified in the Contract Document or permitted by the Engineer, work within a lane, within 15 feet of the nearest edge line (open section roadway), or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 a.m. – 9 a.m. and 3 p.m. – 7 p.m., Monday – Friday. Also, such work is not permitted on Saturdays, Sundays, National or State holidays, or days preceding and following said holidays.

13.0 TEMPORARY LIGHTING

13.1 Roadway lighting shall be considered during the planning of temporary traffic control plans. Lighting may be required due to nighttime work zone traffic operations or for new traffic patterns (e.g., new exit or lane shift). Once the need for temporary lighting is identified, it should be provided in one of two ways:

1. If practical, permanent lighting that is being installed as part of the project should be installed in the early stages so that it can be used for illuminating travel lanes through the work zone throughout the project.
2. If installation of permanent lighting is not a part of project, then temporary lighting (temporary light poles or flood lights) should be provided to illuminate travel path.

Contractor shall maintain existing lighting.

13.2 The Contractor shall submit a Situation Plan to the Engineer showing the locations and aiming of floodlights. The floodlighting system shall be capable of maintaining 20 ft–c without producing a disabling glare condition for approaching road users. The adequacy of the floodlight placement and the absence of glare should be field–verified by the Engineer and Contractor. This involves driving through and observing the floodlighted area from each direction on all approaching roadways immediately after the initial floodlight setup, at night, and periodically.

14.0 PAVEMENT DROP-OFF

14.1 When pavement drop–offs are present, the placement of temporary traffic control devices, including signs, channelizing devices, and barriers, as well as slope fillet wedges, shall follow SHA Standard Nos. MD 104.06–15, MD 104.06–16, MD 104.06–17, MD 104.06–18, MD 104.06–19, and MD 104.01–28. The Engineer may recommend alternative methods to protect the pavement edge drop–off, considering factors such as: pedestrian, bicycle, and traffic volumes, vehicle speeds, size of work zone, duration of work, etc.

SPECIFICATION	CATEGORY CODE ITEMS		
APPROVED	DIRECTOR - OFFICE OF TRAFFIC AND SAFETY		
	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
	APPROVAL 8-20-03		APPROVAL 9-23-03
	REVISED 7-1-09		REVISED 7-27-09
	REVISED 8-11-10		REVISED 7-29-10
	REVISED		REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

GENERAL NOTES

STANDARD NO. MD 104.00-14

GUILFORD ROAD MAINTENANCE OF TRAFFIC NOTES

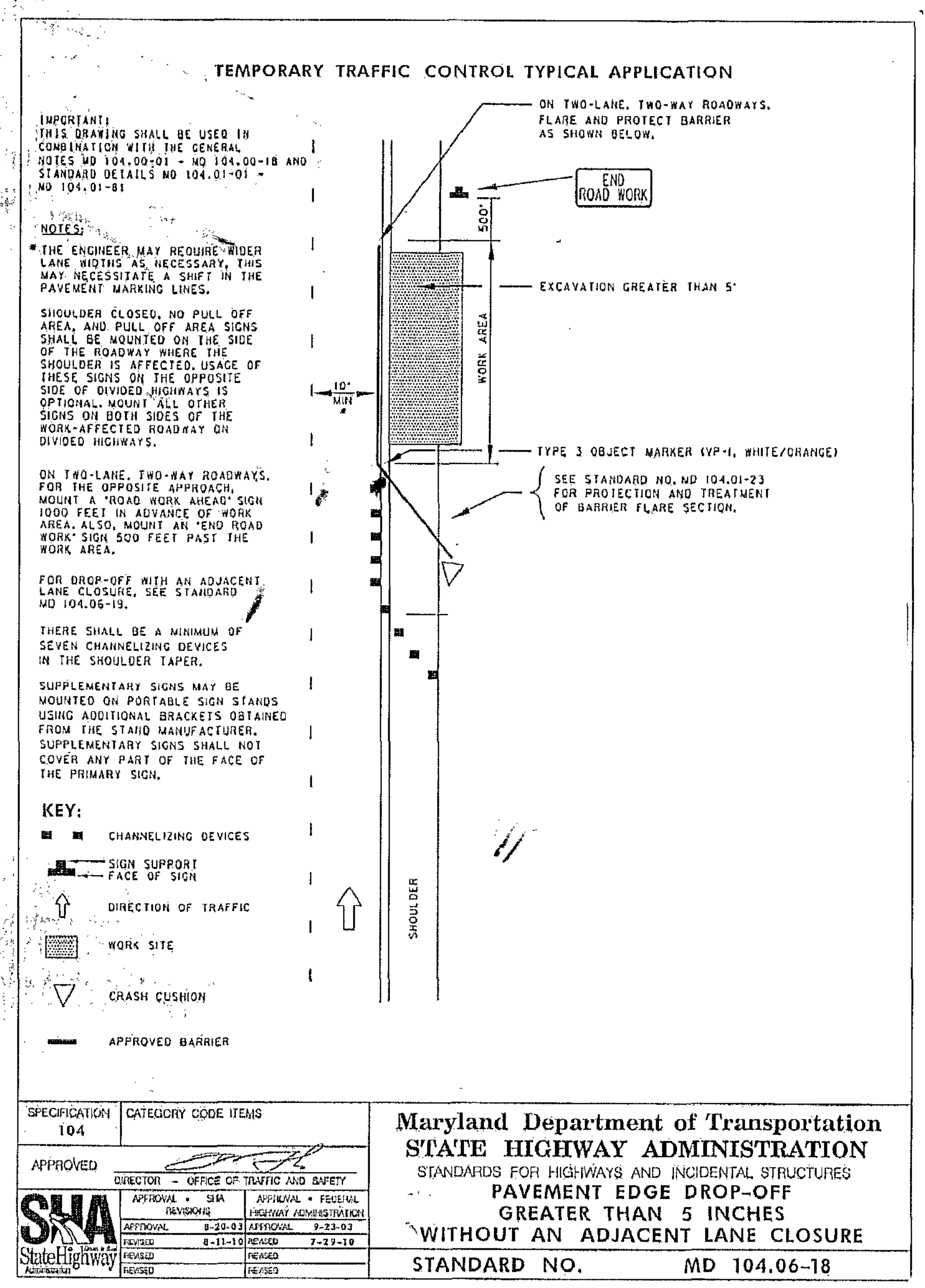
(SEE GENERAL NOTE BELOW)

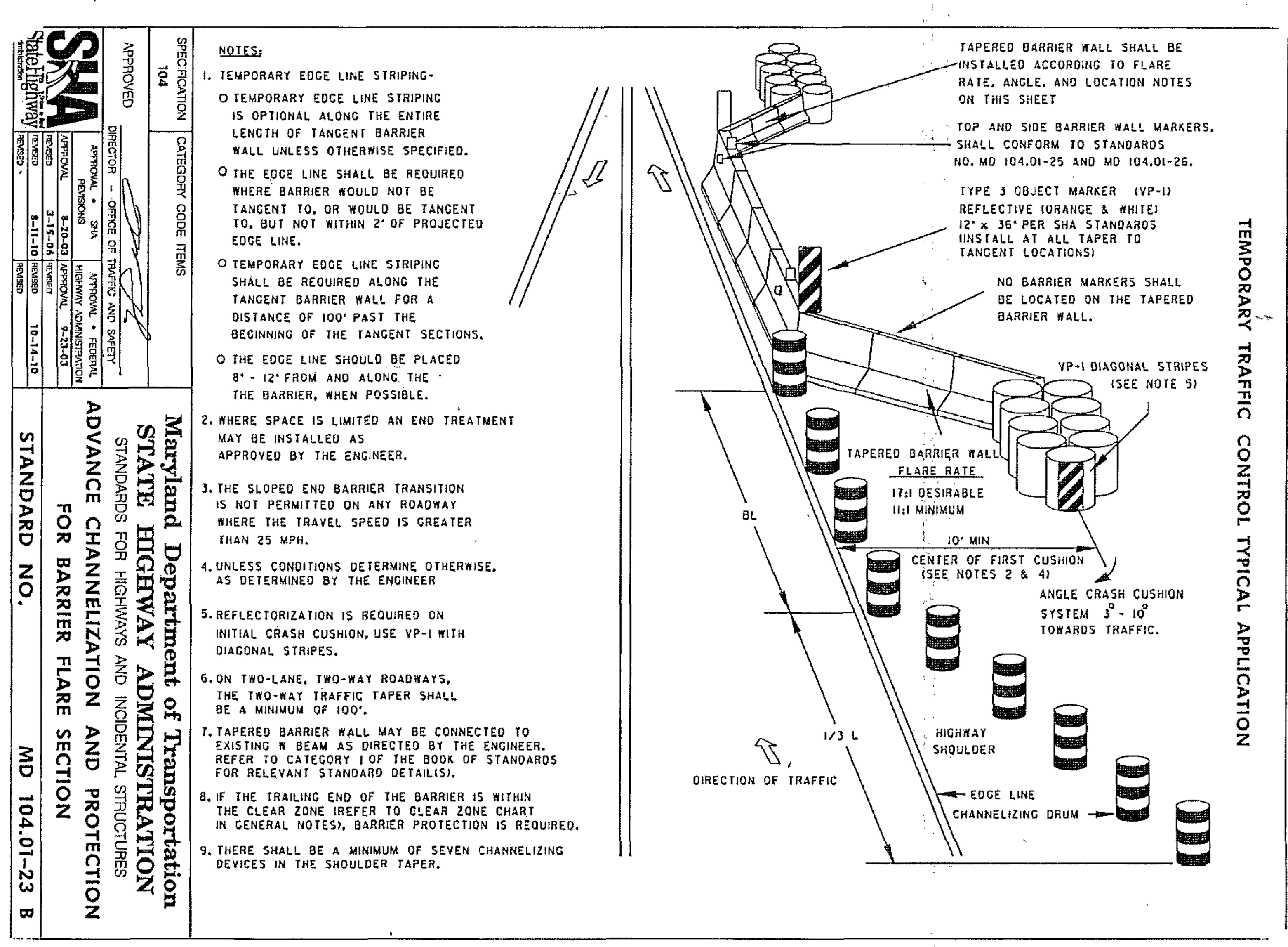
1. FOR THE INSTALLATION OF THE STORM DRAIN ALONG GUILFORD ROAD FROM M-11 TO APPROXIMATELY 30 FEET BEYOND M-10, THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO HOWARD COUNTY FOR APPROVAL PRIOR TO CONSTRUCTION.
2. DETAILS HAVE BEEN PROVIDED TO AID THE CONTRACTOR IN PREPARATION OF THE MAINTENANCE OF TRAFFIC PLAN. CONSTRUCTION OF THE STORM DRAIN SYSTEM ALONG GUILFORD ROAD MAY BE CONSTRUCTED IN PHASES UTILIZING A FLAGGING OPERATION. AT LEAST ONE LANE OF TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON GUILFORD ROAD OR A DETOUR PLAN MUST BE DEVELOPED AND APPROVED BY HOWARD COUNTY.
3. WORK HOURS FOR CONSTUCTION ACTIVITY SHALL BE BETWEEN THE HOURS OF 9 AM TO 3 PM AS STATED IN THE STD. NO. MD 104.00-14.
4. QUANTITIES FOR SIGNAGE, CHANNALIZATION DEVICES (DRUMS) AND TEMPORARY "F" SHAPE CONCRETE BARRIER HAVE BEEN INCLUDED WITHIN THE SCHEDULE OF PRICES BASED ON APPLICABLE STANDARDS.
5. STEEL PLATES SHALL BE USED TO COVER OPEN EXCAVATION TRENCHES THAT CANNOT BE BACKFILLED (PER DETAIL INCLUDED IN THE CONTRACT DRAWINGS) IN AREAS THAT MUST BE OPENED TO TRAFFIC AT THE END OF THE WORKDAY. EXISTING ROADWAY SURFACE SHALL BE GROUND OR MILLED TO ALLOW THE STEEL PLATES TO BE PLACED FLUSH WITH THE ROADWAY SURFACE. THE COST FOR THE STEEL PLATES, PAVEMENT GRINDING, ETC., SHALL BE INCIDENTAL TO THE STORM DRAIN LINEAR FOOT PAY PER ITEM.
6. REDUCED SPEED SIGNS SHALL BE INCORPORATED INTO THE MAINTENANCE OF TRAFFIC PLAN FOR GUILFORD ROAD. THE POSTED REDUCED SPEED WILL BE PROVIDED TO THE CONTRACTOR BY HOWARD COUNTY.

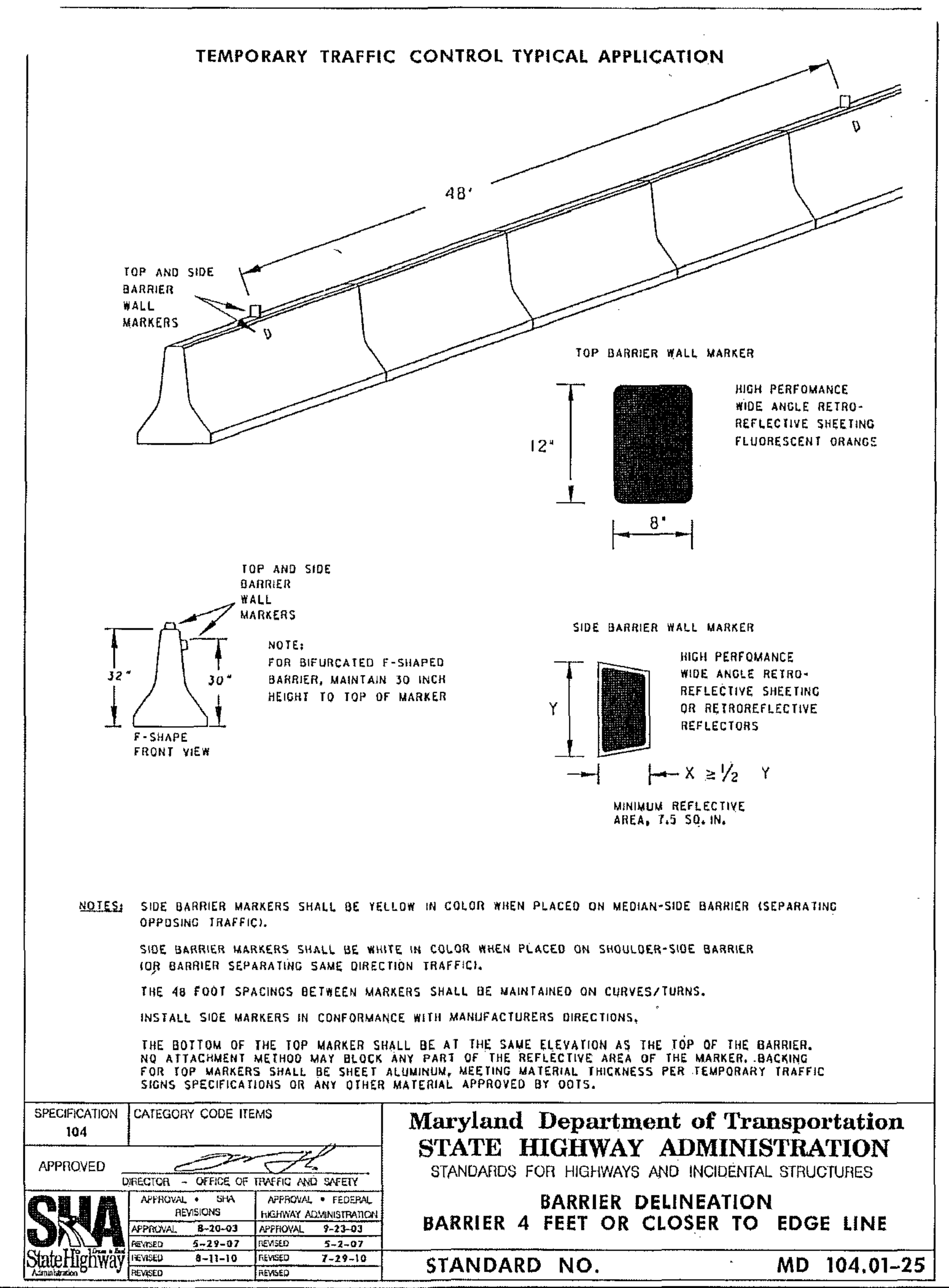
PINE TREE MAINTENANCE OF TRAFFIC

(SEE GENERAL NOTE BELOW)

1. A DETAIL HAS BEEN PROVIDED ON SHEET 14 FOR USE IN THE CONSTRUCTION OF THE STORM DRAIN ALONG PINE TREE ROAD.
2. MAINTENANCE OF TRAFFIC SHALL BE PROVIDED UTILIZING A FLAGGING OPERATION.
3. STEEL PLATES SHALL BE USED TO COVER OPEN EXCAVATION TRENCHES THAT CANNOT BE BACKFILLED (PER DETAIL) IN AREAS THAT MUST BE OPENED TO TRAFFIC AT THE END OF THE WORK DAY. THE STEEL PLATES SHALL SIT FLAT ON THE PAVEMENT SURFACE AND SECURED WITH HMA FOR MAINTENANCE OF TRAFFIC.
4. NOTE THAT ACCESS TO AND FROM RESIDENTIAL DRIVEWAYS MUST BE MAINTAINED AT ALL TIMES.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ACCOMODATIONS FOR EMERGENCY VEHICLES INGRESS AND EGRESS DURING THE CONTRUCTION PERIOD.







GENERAL NOTE:

THE INITIAL MAINTENANCE OF TRAFFIC (MOT) SET UP AS INDICATED ON THESE CONTRACT DOCUMENTS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID PRICE. ANY ADDITIONAL MOT ITEMS REQUIRED WILL BE PAID AS PART OF THE CONTINGENT PRICE PER PAY ITEM.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/9/13
CHIEF, BUREAU OF ENGINEERING — DATE 4/8/13
CHIEF, BUREAU OF HIGHWAYS — DATE 4-9-13
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 4/8/13

NOLAN Associates, Inc.
Engineers · Civil/Structural/Inspections
4785 Dorsey Hall Drive
Suite 124
Ellicott City, Maryland 21042
Phone (410) 995-3651 Fax (410) 995-3363

DES: GWF/JW
DRN: JRW
CHK: GWF
DATE: FEB 2013

BY	NO.	REVISION	DATE

MAINTENANCE OF TRAFFIC DETAILS

600' SCALE MAP NO. ______ BLOCK NO. ______

PINE TREE ROAD/GLEN COURT
DRAINAGE AND ROADWAY IMPROVEMENTS, PH. 1
CAPITAL PROJECT D-1140
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 14A OF 14A