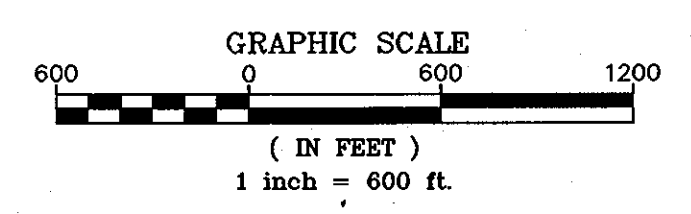


VICINITY MAP  
SCALE: 1" = 600'



# LITTLE PATUXENT PARALLEL INTERCEPTOR SEWER CAPITAL PROJECT S-6175 CONTRACT NO. 20-4636

HOWARD COUNTY, MARYLAND

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	OVERALL PROFILE
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4	PLAN AND PROFILE SHEET
5	PLAN AND PROFILE SHEET
6	PLAN AND PROFILE SHEET
7	MISCELLANEOUS DETAILS
8	JUNCTION CHAMBER 1201 PLAN AND SECTIONS
9	JUNCTION CHAMBER 1201 REINFORCING DETAILS
10	JUNCTION CHAMBER 1201 WALL SECTIONS & DETAILS
11	ACCESS ROAD PLAN & PROFILE
12	ACCESS PLAN & PROFILE AND MAINTENANCE OF TRAFFIC
13	DETOUR PLAN TEN MILLS ROAD
14	EROSION AND SEDIMENT CONTROL PLAN
15	EROSION AND SEDIMENT CONTROL PLAN
16	EROSION AND SEDIMENT CONTROL PLAN
17	EROSION AND SEDIMENT CONTROL NOTES & DETAILS
18	EROSION AND SEDIMENT CONTROL NOTES & DETAILS
19	EROSION AND SEDIMENT CONTROL NOTES & DETAILS
20	EROSION AND SEDIMENT CONTROL NOTES & DETAILS

BILL OF MATERIALS

ITEM	ESTIMATED QUANTITIES	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
27" PVE-OR FRP SEWER	1,812 LF	1,753 LF		HOBAS PIPE, USA
30" PVE-OR FRP SEWER	1,726 LF	1,697 LF		HOBAS PIPE, USA
5' Ø PRECAST MANHOLE	6 EA.	6.0 EA.	PRECAST	ATLANTIC CONCRETE PROD. INC.
6' Ø PRECAST MANHOLE	2 EA.	2.0 EA.	PRECAST	" " " "
8' Ø PRECAST MANHOLE	1 EA.	1.0 EA.	PRECAST	" " " "
5' Ø DOGHOUSE MANHOLE	3 EA.	3 EA.	PRECAST	" " " "
5' Ø MH ADDITIONAL DEPTH	44 V.F.	54.26 V.F.		
6' Ø MH ADDITIONAL DEPTH	27 V.F.	27.41 V.F.		
8' Ø MH ADDITIONAL DEPTH	6 V.F.	6.63 V.F.		
JUNCTION CHAMBER	1 EA.	1.0 EA.	CAST IN PLACE	

NAME OF UTILITY CONTRACTOR : W. F. WILSON  
CHECK BOX :  
AS-BUILT DATE :

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on these plans.

BY THE DEVELOPER :

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

BY THE ENGINEER :

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

PROFESSIONAL CERTIFICATION :

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10966, EXPIRATION DATE MAY 31, 2014.

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.  
*John R. Roberts*  
HOWARD SOIL CONSERVATION DISTRICT

*W. F. Wilson*  
DATE: 6-20-2012  
DEVELOPER

*Thomas N. Dallapala*  
DATE: 6/11/12  
ENGINEER

*Thomas N. Dallapala*  
DATE: 6/11/12  
THOMAS N. DALLAPALA

4-10-2013  
AS-BUILTS  
*EP-12-042*

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: *John A. Gish*  
Chief, Bureau of Engineering: *Thomas N. Dallapala*  
Chief, Bureau of Utilities: *John A. Gish*  
Chief, Utility Design Division: *John A. Gish*

**Dewberry**  
Dewberry & Davis LLC  
3106 LORD BALTIMORE DRIVE  
SUITE 110  
BALTIMORE, MD 21244-2662  
410.265.9500  
FAX: 410.265.5875

DES: LAL	
DRN: RLI	
CHK: TND	
DATE: JUNE 2012	
BY NO.	
REVISIONS	
DATE	

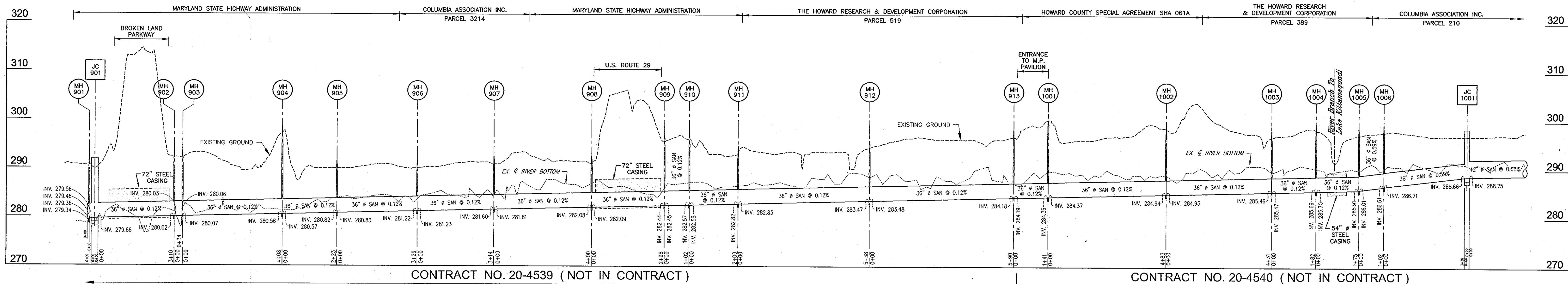
TITLE SHEET  
600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14

LITTLE PATUXENT PARALLEL INTERCEPTOR  
CAPITAL PROJECT S-6175  
CONTRACT NO. 20-4636  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MARYLAND

ESC 1 OF 8  
SCALE: SHOWN  
SHEET 1 OF 20

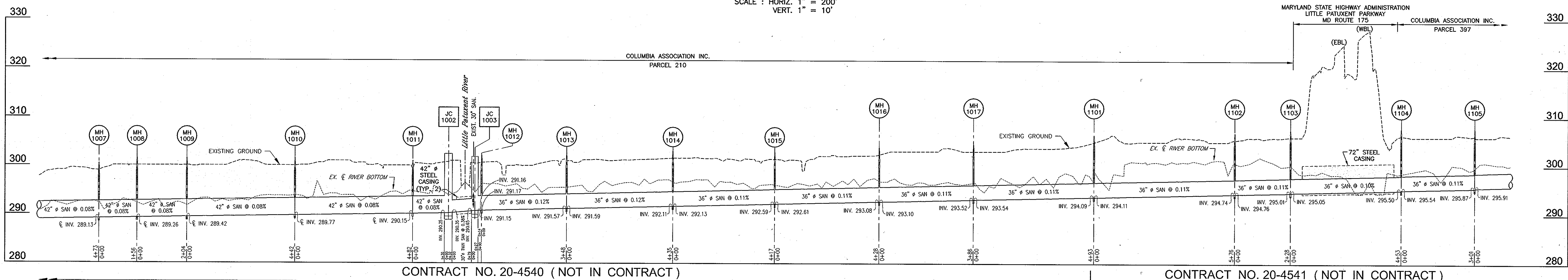
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 Plot Device: HP DesignJet 2400  
 Plot Style: AS-BUILT.ctb  
 Plot Range: Window  
 Plot Scale: 1:1  
 Plot Orientation: Landscape  
 Plot Color: Black  
 Plot Lineweight: 0.20  
 Plot Linetype: Solid  
 Plot Font: Arial, 10  
 Plot Title: LITTLE PATUXENT PARALLEL INTERCEPTOR SEWER  
 Plot Date: 6/20/2012  
 Plot User: jroberts





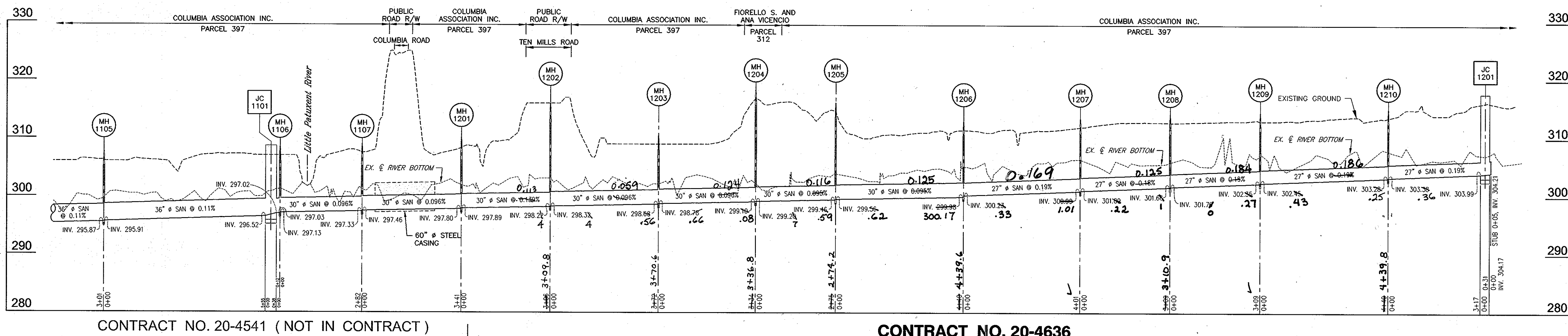
PROFILE

SCALE : HORIZ. 1" = 200'  
VERT. 1" = 10'



PROFILE

SCALE : HORIZ. 1" = 200'  
VERT. 1" = 10'



PROFILE

SCALE : HORIZ. 1" = 200'  
VERT. 1" = 10'

4-10-2013  
S.BULLIS

<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND Director of Public Works: [Signature] DATE: 6/13/12 Chief, Bureau of Engineering: [Signature] DATE: 6/13/12 Chief, Bureau of Utilities: [Signature] DATE: 6/13/12		<b>Dewberry</b> Dewberry & Davis LLC 3106 LORD BALTIMORE DRIVE SUITE 110 BALTIMORE, MD 21244-2662 410.265.5500 FAX: 410.265.8875		DES: LAL DRN: RLI CHK: TND DATE: JUNE 2012		<b>OVERALL PROFILE</b> 600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14		<b>LITTLE PATUXENT PARALLEL INTERCEPTOR</b> CAPITAL PROJECT S-6175 CONTRACT NO. 20-4636 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND		SCALE: SHOWN SHEET 2 OF 20	
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GENERAL NOTES

- Approximate location of existing mains are shown. The Contractor will take all necessary precautions to protect existing mains and services and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer by the Contractor at the Contractor's expense.
- Topographic field surveys were performed in August of 2006 by Dewberry & Davis LLC.
- Horizontal and Vertical Survey Controls:  
The coordinates shown on the drawings are based on Maryland State Reference System NAD 83/91 as projected by Howard County Geodetic Control Stations Howard Co. B.M. 30 BA and B.M. 30 G4. All vertical control are based on NAVD 88. Vertical controls provided on the drawings are B.M. 30 BA and B.M. 30 G4.
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- Clear all utilities by a minimum of 12". Clear all poles by 5'-0" minimum or tunnel as required unless otherwise noted. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the Contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from monies owed the Contractor. The Contractor shall coordinate with the utility companies to schedule the bracing of the poles.
- For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction (Latest Edition). The Contractor shall have a copy of Volume IV on the job at all times.
- All existing utilities shall be test pitted/located as necessary and in advance of the proposed construction, in order to properly make all required utility crossings and/or connections. Any discrepancies or utility conflicts shall be immediately reported to the Engineer. Where test pits have been made on existing utilities, they are noted by the symbol  $\square$  at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings or specifications. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the Contractor two (2) weeks in advance of construction operations at his own expense.
- Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:  
AT&T ..... 1-800-252-1133  
BGE - Contractor Services ..... 410-850-4620  
BGE - Emergency ..... 410-685-1400  
Colonial Pipeline Co. .... 410-795-1390  
Howard County Bureau of Highways ..... 410-313-7450  
Howard County Bureau of Utilities (DPW) ..... 410-313-4900  
Miss Utility ..... 1-800-257-7777  
State Highway Administration ..... 410-531-5533  
Verizon ..... 1-800-743-0033 / 410-224-9210  
Trees and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the Contractor.
- Contractor shall remove trees, stumps and roots along the line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- The Contractor shall notify the Howard County Bureau of Highways at (410) 313-7450 at least five (5) working days before any open cut, boring/jacking or trenchless installation operation of any county roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.
- The Contractor shall provide all necessary lines, grades and elevations, and cut sheets shall be prepared based on the lines and grades shown on the Contract drawings.
- Spoil from trenching operations is to be placed on the uphill side of the trench.
- MDE Tracking No. 20076408/07-NT-3268.
- The Contractor shall be responsible for repairing and replacing any existing fences, concrete curb, driveways, paving, curb and gutter pan, paved park pathways, ramps and bridges, etc. damaged or removed during construction. All disturbed areas shall be returned to their original or better condition.
- All existing fill shall be removed from the 100 year floodplain & preconstruction contours shall be restored once the utility has been installed and substantially accepted.
- There shall be no mounding or wasting of materials within the LOD.
- Contractor will stockpile top 6" of excavated soil to be utilized for final layer of trench backfill 6" thick minimum. See Technical Specification 02660. Stockpile wetland topsoil separately for reinstallation of wetland.
- Temporary culvert and/or bridge access crossings should be designed and submitted in advance for approval and constructed in accordance with MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION guidelines ISSUED SEPTEMBER 1999, REVISED NOVEMBER, 2000.

SANITARY SEWER MAIN NOTES

- All sanitary sewer mains shall be FRP, PVC C905, or PVC SDR 25 unless otherwise noted. For pipe to manhole and junction chamber connections, see Sheet 7.
- Distances shown for the sanitary sewer main in profile are along the centerline of the pipe from manhole centerline to manhole centerline. Estimated quantities shown on the Bill of Materials exclude distances within manhole interiors.
- Manhole diameters are as indicated on the plans.
- Manholes designated as W.T. in Plan and Profile shall have watertight frames and covers similar to, Standard Detail G5.52 / G5.53 (and as specified in the Special Provisions). Where watertight frame and cover is used, set top of frame 1'-6" above existing ground unless otherwise noted on Drawings.

HOWARD COUNTY GEODETIC SURVEY CONTROL			
CONTROL NO.	COORDINATES		ELEVATION
	NORTHING	EASTING	
30BA	N 573,149.0857	E 1,357,083.1827	397.124
30G4	N 567,815.2315	E 1,353,271.2411	360.234
36DB	N 559,940.8266	E 1,350,945.589	344.632
36DA	N 560,849.3435	E 1,350,037.4477	363.635
36EA	N 556,986.8135	E 1,354,535.2071	354.849

TRAVERSE TABLE			
NO.	LOCATION		
KCI-215	N 558,017.72	E 1,353,093.30	
KCI-216	N 558,250.74	E 1,353,305.40	
KCI-217	N 558,429.68	E 1,353,388.24	
LPS-15	N 558,462.31	E 1,353,453.01	
KCI-220	N 558,639.76	E 1,353,641.69	
KCI-221	N 558,866.84	E 1,353,374.43	
KCI-222	N 558,783.12	E 1,353,217.52	
KCI-223	N 558,907.19	E 1,353,034.33	
KCI-225	N 559,414.93	E 1,353,051.00	
KCI-226	N 559,681.09	E 1,352,983.21	
KCI-227	N 559,905.90	E 1,352,711.75	
KCI-228	N 560,080.77	E 1,352,554.62	
KCI-229	N 560,299.70	E 1,352,318.33	
KCI-230	N 560,586.72	E 1,352,444.11	
KCI-231	N 560,801.61	E 1,352,548.30	
KCI-232	N 561,067.13	E 1,352,659.37	
KCI-233	N 561,361.99	E 1,352,813.97	
LPS-12	N 561,761.78	E 1,352,647.07	
KCI-538	N 561,882.76	E 1,353,103.80	
KCI-537	N 562,313.29	E 1,353,242.49	
KCI-536	N 562,563.90	E 1,353,487.40	
KCI-535	N 562,854.26	E 1,353,632.47	
KCI-534	N 563,261.94	E 1,353,787.40	
KCI-533	N 563,536.01	E 1,353,853.57	
LPS-10	N 563,818.90	E 1,353,966.39	
LPS-09	N 564,332.70	E 1,354,093.03	
KCI-530	N 564,572.15	E 1,354,332.85	
KCI-529	N 565,139.40	E 1,354,327.57	
KCI-528	N 565,672.89	E 1,354,326.35	
KCI-527	N 566,148.50	E 1,354,342.94	
KCI-526	N 566,546.94	E 1,354,361.92	
KCI-525	N 566,980.63	E 1,354,406.68	
LPS-07	N 567,364.97	E 1,354,478.56	
KCI-522	N 567,730.00	E 1,354,597.26	
KCI-521	N 568,074.60	E 1,354,669.36	
KCI-520	N 568,451.37	E 1,354,755.74	
KCI-519	N 568,804.24	E 1,354,824.94	
KCI-518	N 569,311.34	E 1,354,877.54	
LPS-05	N 569,479.21	E 1,353,979.70	
KCI-517	N 569,616.98	E 1,354,393.16	
KCI-516	N 569,821.76	E 1,354,121.65	
KCI-515	N 570,073.28	E 1,354,000.00	
LPS-04	N 570,268.59	E 1,353,973.08	
KCI-512	N 570,483.98	E 1,354,166.85	
LPS-03	N 570,800.41	E 1,354,209.87	
KCI-509	N 570,962.71	E 1,354,086.58	
KCI-508	N 571,165.07	E 1,354,309.39	
KCI-507	N 571,574.40	E 1,354,441.07	
KCI-506	N 571,565.56	E 1,354,761.51	
KCI-505	N 571,824.43	E 1,354,999.29	
KCI-504	N 572,028.28	E 1,355,174.38	
KCI-503	N 572,235.57	E 1,355,386.06	
KCI-502	N 572,541.95	E 1,355,640.90	
KCI-501	N 572,771.68	E 1,355,567.27	
LPS-01	N 572,796.86	E 1,355,364.85	

STRUCTURE SCHEDULE						
STRUCTURE NUMBER	DETAIL SHEET NO.	TYPE	LOCATION	INV. IN	INV. OUT	RIM ELEV.
MH-1202	SHEET 7	6' PRECAST MANHOLE	N 570,104 <sup>35</sup> 6.54 E 1,353,973 <sup>42</sup> 1.91	298.32 <sup>4</sup>	298.22 <sup>4</sup>	316.00 <sup>60</sup>
MH-1203	SHEET 7	8' PRECAST MANHOLE	N 570,440 <sup>23</sup> 3.25 E 1,354,133 <sup>32</sup> 5.17	298.78 <sup>61</sup>	298.60 <sup>6</sup>	316.68 <sup>179</sup>
MH-1204	SHEET 7	6' PRECAST MANHOLE	N 570,730 <sup>57</sup> 2.61 E 1,353,968 <sup>66</sup> 9.64	299.29 <sup>7</sup>	299.10 <sup>8</sup>	316.68 <sup>2034</sup>
MH-1205	SHEET 7	5' PRECAST MANHOLE	N 570,984 <sup>29</sup> 5.94 E 1,354,076 <sup>60</sup> 4.66	299.56 <sup>62</sup>	299.46 <sup>59</sup>	315.23 <sup>784</sup>
MH-1206	SHEET 7	5' PRECAST MANHOLE	N 571,269 <sup>92</sup> 70.03 E 1,354,410 <sup>99</sup> 1.6	300.25 <sup>23</sup>	300.09 <sup>17</sup>	313.49 <sup>02</sup>
MH-1207	SHEET 7	5' PRECAST MANHOLE	N 571,527 <sup>54</sup> 6.33 E 1,354,717 <sup>80</sup> 8.61	301.09 <sup>22</sup>	300.99 <sup>101</sup>	313.64 <sup>38</sup>
MH-1208	SHEET 7	5' PRECAST MANHOLE	N 571,766 <sup>80</sup> 8.09 E 1,354,913 <sup>81</sup> 4.05	301.76 <sup>0</sup>	301.66 <sup>1</sup>	314.43 <sup>294</sup>
MH-1209	SHEET 7	5' PRECAST MANHOLE	N 572,006 <sup>80</sup> 4.8 E 1,355,109 <sup>84</sup> 10.66	302.45 <sup>3</sup>	302.35 <sup>27</sup>	314.60 <sup>1</sup>
MH-1210	SHEET 7	5' PRECAST MANHOLE	N 572,306 <sup>43</sup> 5.22 E 1,355,433 <sup>32</sup> 2.26	303.38 <sup>6</sup>	303.28 <sup>5</sup>	315.24 <sup>04</sup>
MH-1210A	SHEET 7	5' DOGHOUSE MANHOLE	N 572,527 <sup>38</sup> 28.31 E 1,355,618 <sup>33</sup> 3.6	304.00 <sup>7</sup>	303.99 <sup>404</sup>	317.40 <sup>04</sup>
MH-1210B	SHEET 7	5' DOGHOUSE MANHOLE	N 572,686 <sup>72</sup> 16.65 E 1,355,629 <sup>52</sup> 4.0	304.32 <sup>9</sup>	304.30 <sup>27</sup>	317.58 <sup>60</sup>
JC-1201	SHEETS 8, 9, & 10	JUNCTION CHAMBER	POINT 1, SEE SHEET 6 N 572,589 <sup>65</sup> 4.14 E 1,355,696 <sup>68</sup> 2.124 POINT 2, SEE SHEET 6 N 572,504 <sup>79</sup> 0.97 E 1,355,040 <sup>93</sup> 19.99	304.47 <sup>37</sup>	303.99 <sup>413</sup>	317.72 <sup>800</sup>
MH 1202A	SHEET 7	5' DOGHOUSE MANHOLE	N 570,137.50 E 1,353,989.26	INV. 298.30		316.90

LEGEND

	EX. BUILDING		EX. EVERGREEN TREE
	EX. UNDERGROUND CABLE		EX. DECIDUOUS TREE
	EX. UNDERGROUND ELECTRIC		EX. SPECIMEN TREE (DEWBERRY)
	EX. OVERHEAD ELECTRIC LINES		EX. SPECIMEN TREE (KCI)
	EX. 100 YR. FLOODPLAIN EASEMENT		EX. ELECTRICAL MANHOLE
	EX. UTILITY EASEMENT		EX. SEWER MANHOLE
	EX. CHAIN LINK FENCE		EX. WATER METER
	EX. WOOD FENCE		EX. AIR RELEASE MANHOLE
	EX. 100 YR. FLOODPLAIN		EX. STORM DRAIN MANHOLE
	EX. UNDERGROUND GAS MAIN		EX. TELEPHONE MANHOLE
	EX. 5 & 10 FOOT CONTOURS		EX. LIGHT POLE
	EX. 1 FOOT CONTOURS		EX. GAS MANHOLE
	EX. FOOT PATH		EX. UTILITY PEDESTAL
	EX. PROPERTY BOUNDARY		EX. UTILITY POLE
	EX. ADJACENT PROPERTY BOUNDARY		EX. SIGN
	EX. BRIDGE		BENCHMARK
	EX. CENTERLINE ROAD		SOIL BORING
	EX. CURB & GUTTER		TRAVERSE
	EX. EDGE OF PAVEMENT		TEST PIT
	EX. GUARDRAIL		CLAY DAM (SEE DETAIL SHEET 9)
	EX. WATER MAIN, FIRE HYDRANT, VALVE & REDUCER		EX. PAVEMENT MARKINGS
	PROPOSED UTILITY EASEMENT		EX. ROAD RIGHT-OF-WAY
	TEMPORARY CONSTRUCTION STRIP		EX. RIVER
	TEMPORARY ACCESS EASEMENT		EX. RAILROAD TRACKS
	PROPOSED SANITARY SEWER MAIN		EX. SANITARY SEWER
	PROPOSED 10 FOOT CONTOUR		EX. STORM DRAIN
	PROPOSED 2 FOOT CONTOUR		EX. UNDERGROUND TELEPHONE LINE
	EARTH DIKE		EX. WOODS LINE
	LIMIT OF DISTURBANCE		EX. SIDEWALK
	SILT FENCE		EX. WALLS
	SUPER SILT FENCE		EX. STREAM
	TREE PROTECTION FENCE		EX. WATERS OF THE U.S.
	ABANDONED EXISTING SEWER		EX. WETLANDS
			EX. WETLAND BUFFER
			EX. VEGETATION BUFFER

4-10-2013  
AS-BUILTS

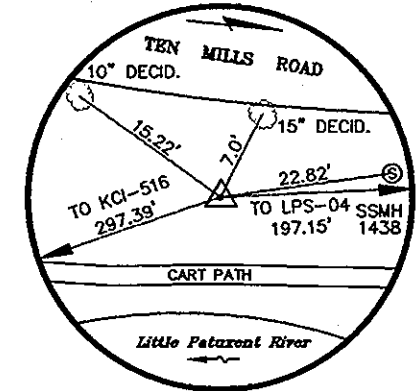
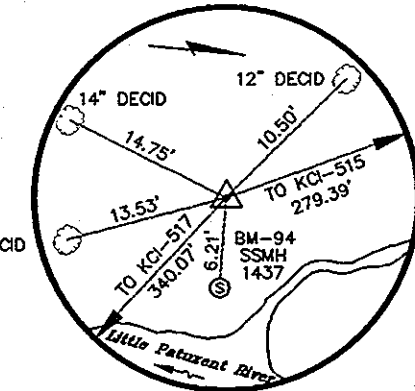
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<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND  DIRECTOR OF PUBLIC WORKS  CHIEF, BUREAU OF UTILITIES	 <b>Dewberry &amp; Davis LLC</b> 3106 LORD BALTIMORE DRIVE SUITE 110 BALTIMORE, MD 21244-2662 410.285.9500 FAX: 410.265.8875	 DES: LAL DRN: RLI CHK: TND DATE: JUNE 2012	GENERAL NOTES	<b>LITTLE PATUXENT PARALLEL INTERCEPTOR</b> CAPITAL PROJECT S-6175 CONTRACT NO. 20-4636	SCALE: SHOWN
					SHEET 3 OF 20
600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14				ELECTION DISTRICT NO. 5	HOWARD COUNTY, MARYLAND



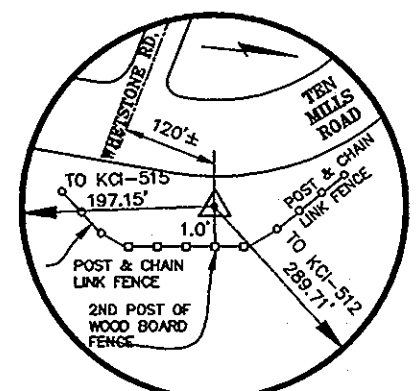
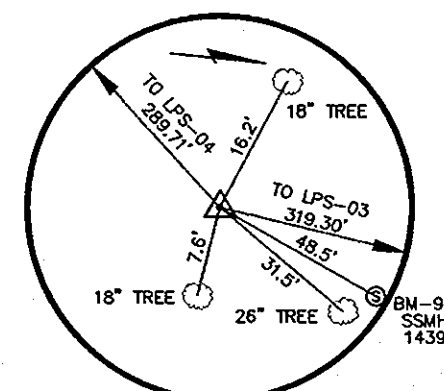
**BENCH MARK BM-94**  
 MANHOLE # 1437 ELEV. 311.97  
 "X" CUT ON MANHOLE RIM  
 N 569,825 E 1,354,127

**BENCH MARK BM-95**  
 MANHOLE # 1439 ELEV. 312.42  
 "X" CUT ON MANHOLE RIM  
 N 570,523 E 1,354,186



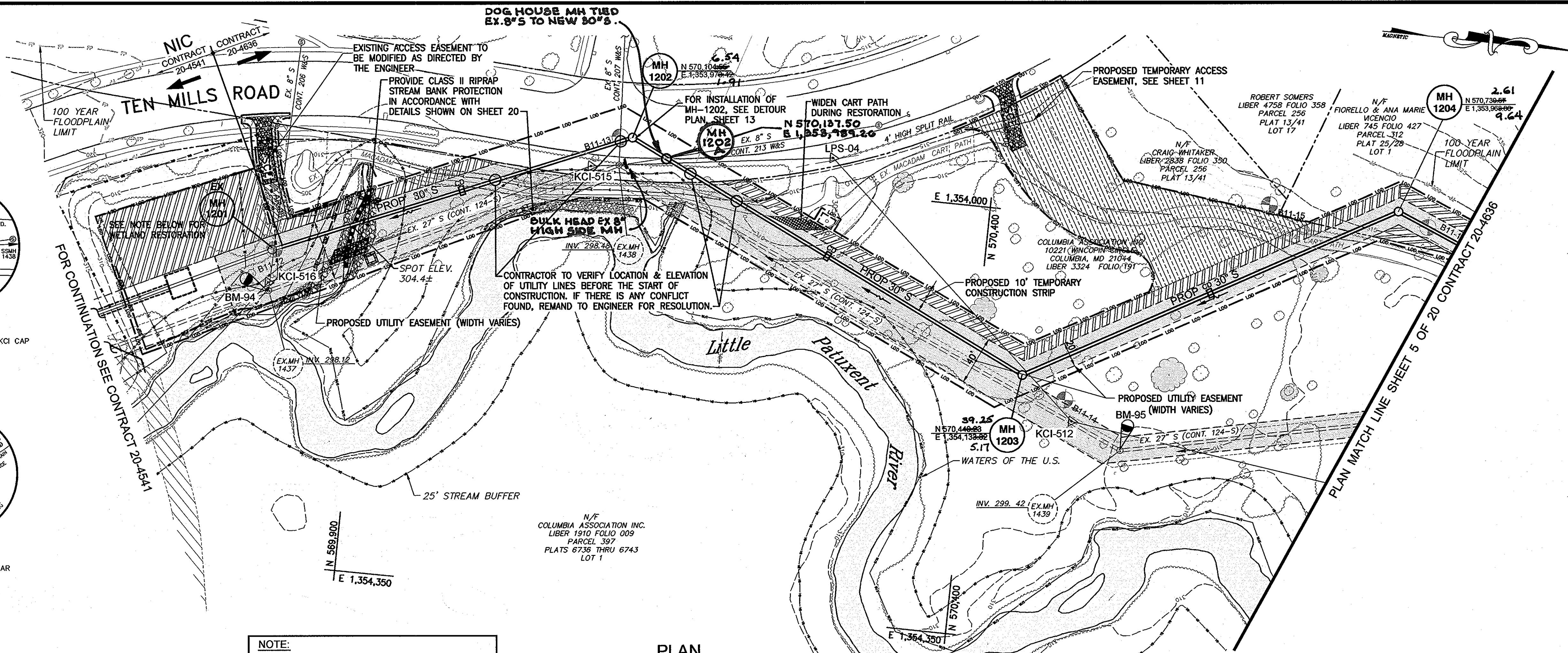
**KCI-516**  
 3/4" REBAR W/ RED KCI CAP  
 N 569,821.83  
 E 1,354,121.62  
 ELEV. 308.59

**KCI-515**  
 3/4" REBAR W/ RED KCI CAP  
 N 570,073.35  
 E 1,353,999.97  
 ELEV. 316.94



**KCI-512**  
 3/4" REBAR W/ RED KCI CAP  
 N 570,484.02  
 E 1,354,166.81  
 ELEV. 309.13

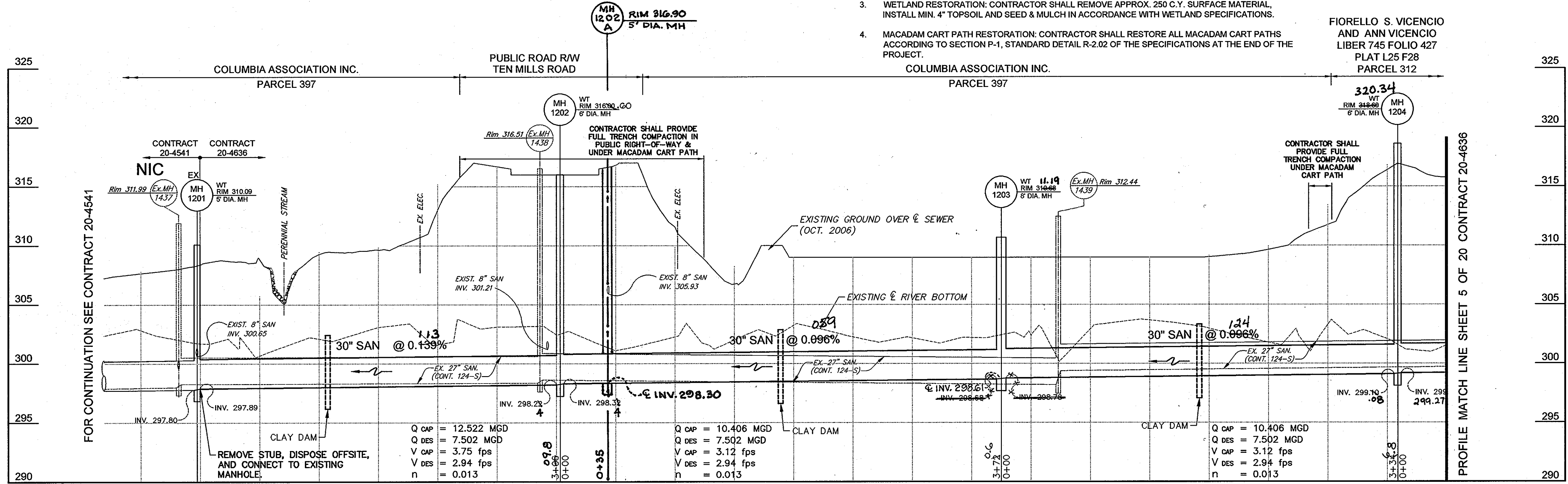
**LPS-04**  
 3/4" REBAR AND COLLAR  
 N 570,268.65  
 E 1,353,973.03  
 ELEV. 318.09



**NOTE:**  
 THE LOD IS COINCIDENT WITH THE PROPOSED UTILITY EASEMENT LINE AND SHOWN FIVE (5) FEET OUTSIDE THE ACTUAL LIMIT OF DISTURBANCE FOR CLARITY

**PLAN**  
 SCALE: 1" = 50'

- NOTE:**
- PRECONSTRUCTION CONTOURS SHALL BE RESTORED AFTER THE UTILITY HAS BEEN INSTALLED AND ALL EXCESS SPOIL SHALL BE REMOVED FROM SITE. THERE SHALL BE NO MOUNDING OR DISPOSING OF MATERIALS WITHIN THE LIMITS OF DISTURBANCE OR ANYWHERE ELSE ON SITE.
  - SEE GENERAL NOTES ON SHEET 3.
  - WETLAND RESTORATION: CONTRACTOR SHALL REMOVE APPROX. 250 C.Y. SURFACE MATERIAL, INSTALL MIN. 4" TOPSOIL AND SEED & MULCH IN ACCORDANCE WITH WETLAND SPECIFICATIONS.
  - MACADAM CART PATH RESTORATION: CONTRACTOR SHALL RESTORE ALL MACADAM CART PATHS ACCORDING TO SECTION P-1, STANDARD DETAIL R-2.02 OF THE SPECIFICATIONS AT THE END OF THE PROJECT.



**PROFILE**  
 SCALE: HORIZ. 1" = 50'  
 VERT. 1" = 5'

**AS-BUILTS 4-10-2013**

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

*John C. ...* DATE 6/13/12  
 DIRECTOR OF PUBLIC WORKS

*Monica S. ...* DATE 6/13/12  
 CHIEF, BUREAU OF UTILITIES

**Dewberry**  
 Dewberry & Davis LLC  
 3100 LORD BALTIMORE DRIVE  
 SUITE 110  
 BALTIMORE, MD 21244-2602  
 410.285.9500  
 FAX: 410.268.9875



DES: LAL	BY	NO.	REVISIONS	DATE
DRN: RLJ				
CHK: TND				
DATE: JUNE 2012				

**PLAN AND PROFILE SHEET**  
 600' SCALE MAP NO. 30  
 BLOCK NO. 8, 9, & 14

**LITTLE PATUXENT PARALLEL INTERCEPTOR**  
 CAPITAL PROJECT S-6175  
 CONTRACT NO. 20-4636  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND

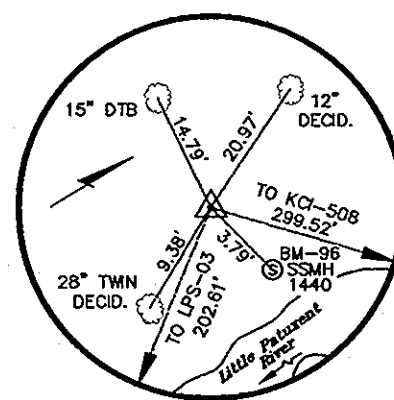
SCALE: SHOWN  
 SHEET 4 OF 20



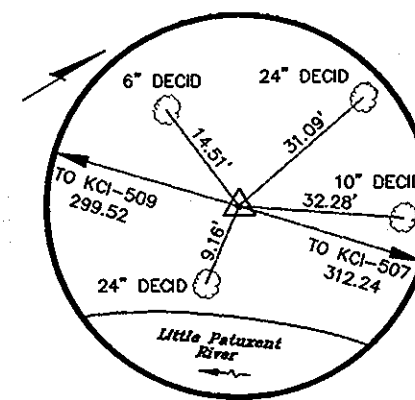
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**BENCH MARK BM-96**  
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 N 570,962 E 1,354,092

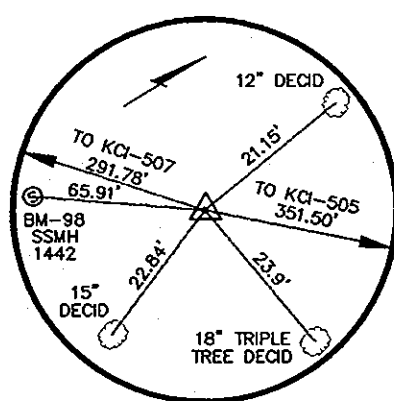
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 N 571,514 E 1,354,723



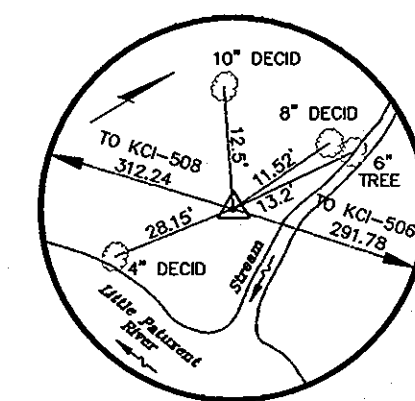
**KCI-509**  
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 N 570,962.71 E 1,354,088.56  
 ELEV. 311.98



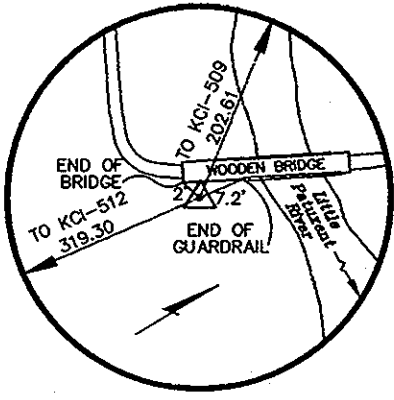
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 N 571,165.06 E 1,354,309.39  
 ELEV. 311.00



**KCI-506**  
 3/4" REBAR W/ RED KCI CAP  
 N 571,565.52 E 1,354,761.53  
 ELEV. 312.40



**KCI-507**  
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 N 571,374.37 E 1,354,541.08  
 ELEV. 311.27



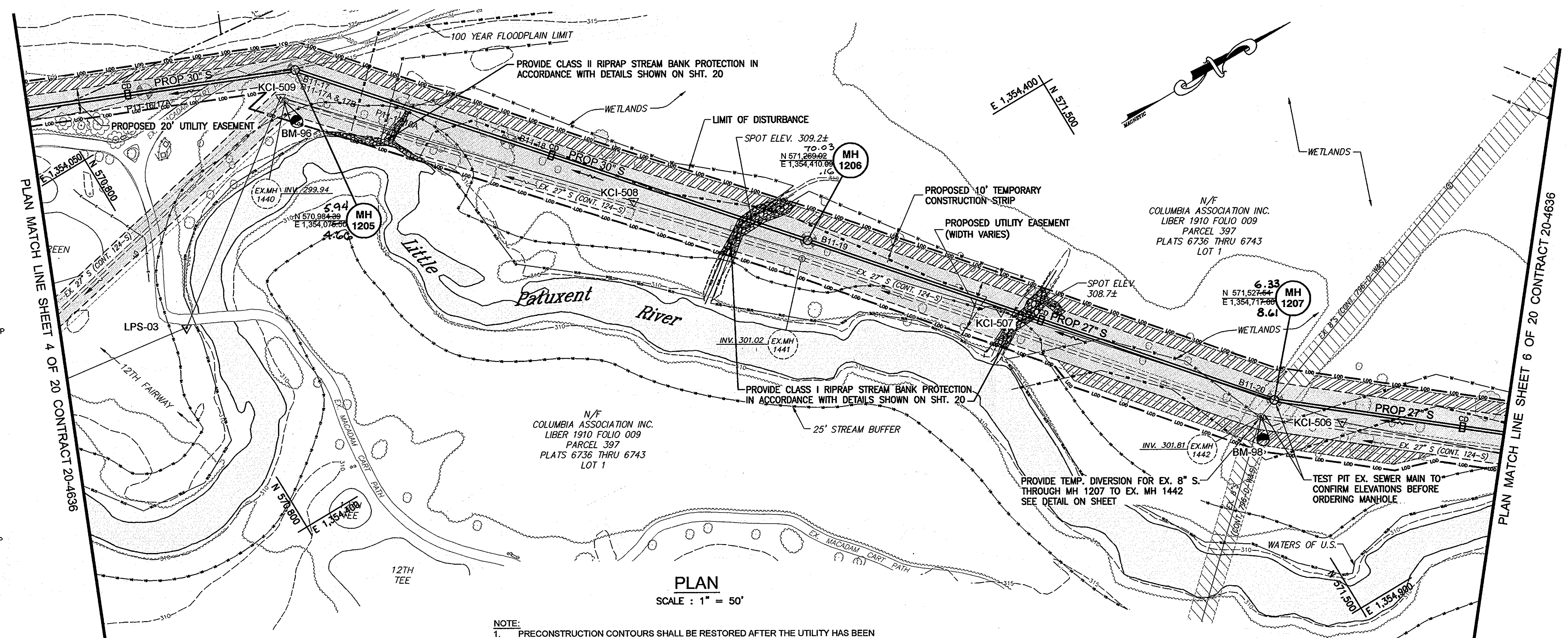
**LPS-03**  
 3/4" REBAR W/ RED CAP  
 N 570,800.41 E 1,354,209.84  
 ELEV. 312.27

**FIORIELLO S. VICENCIO AND ANN VICENCIO**  
 LIBER 745 FOLIO 427  
 PLAT L25 F28  
 PARCEL 312

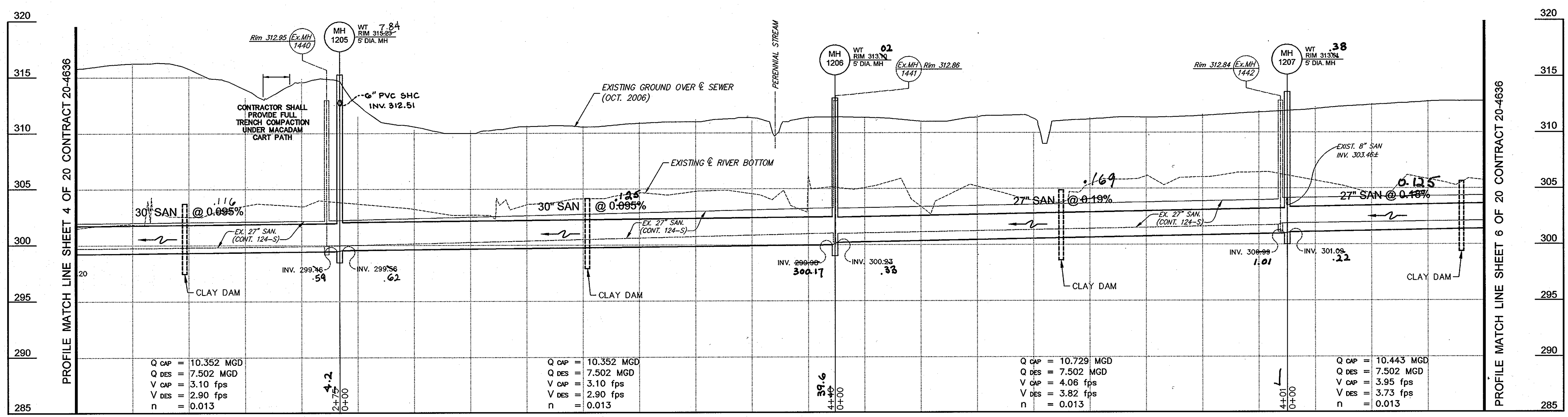
**NOTE:**  
 THE LOD IS COINCIDENT WITH THE PROPOSED UTILITY EASEMENT LINE AND SHOWN FIVE (5) FEET OUTSIDE THE ACTUAL LIMIT OF DISTURBANCE FOR CLARITY

**NOTE:**  
 1. PRECONSTRUCTION CONTOURS SHALL BE RESTORED AFTER THE UTILITY HAS BEEN INSTALLED AND ALL EXCESS SPOIL SHALL BE REMOVED FROM SITE. THERE SHALL BE NO MOUNDING OR DISPOSING OF MATERIALS WITHIN THE LIMITS OF DISTURBANCE OR ANYWHERE ELSE ON SITE.  
 2. SEE GENERAL NOTES ON SHEET 3.

COLUMBIA ASSOCIATION INC.  
 PARCEL 397



**PLAN**  
 SCALE: 1" = 50'



**PROFILE**  
 SCALE: HORIZ. 1" = 50'  
 VERT. 1" = 5'

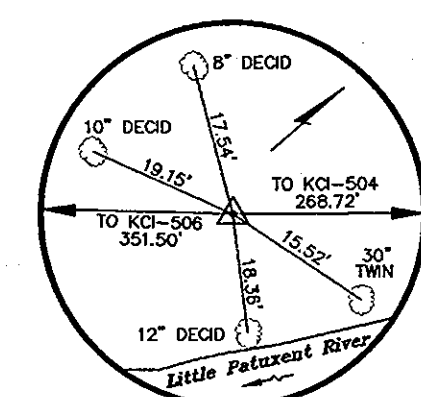
**4-10-2013**

<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND Director of Public Works: <i>John K. Clark</i> Chief, Bureau of Utilities: <i>John K. Clark</i>		<b>Dewberry</b> Dewberry & Davis LLC 3106 LORD BALTIMORE DRIVE SUITE 110 BALTIMORE, MD 21244-2062 410.295.0500 FAX: 410.295.9875		DES: LAL DRN: RLJ CHK: TND DATE: JUNE 2012		<b>PLAN AND PROFILE SHEET</b> 600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14		<b>LITTLE PATUXENT PARALLEL INTERCEPTOR</b> CAPITAL PROJECT S-6175 CONTRACT NO. 20-4636 ELECTION DISTRICT NO. 5		SCALE: SHOWN SHEET 5 OF 20 HOWARD COUNTY, MARYLAND	
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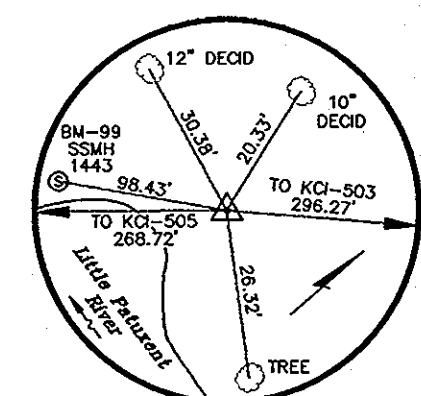


**BENCH MARK BM-99**  
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 "X" CUT ON MANHOLE RIM  
 N 571,968 E 1,355,097

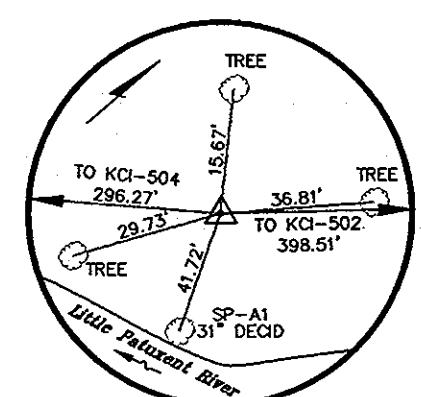
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 N 572,570 E 1,355,636



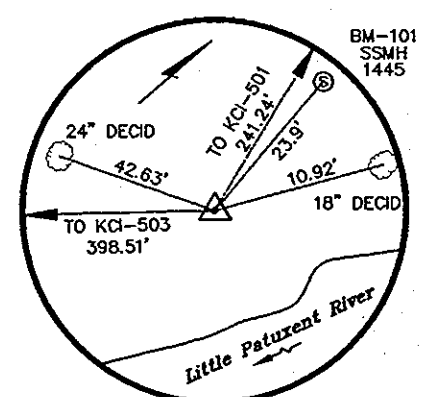
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 E 1,354,999.31  
 ELEV. 312.63



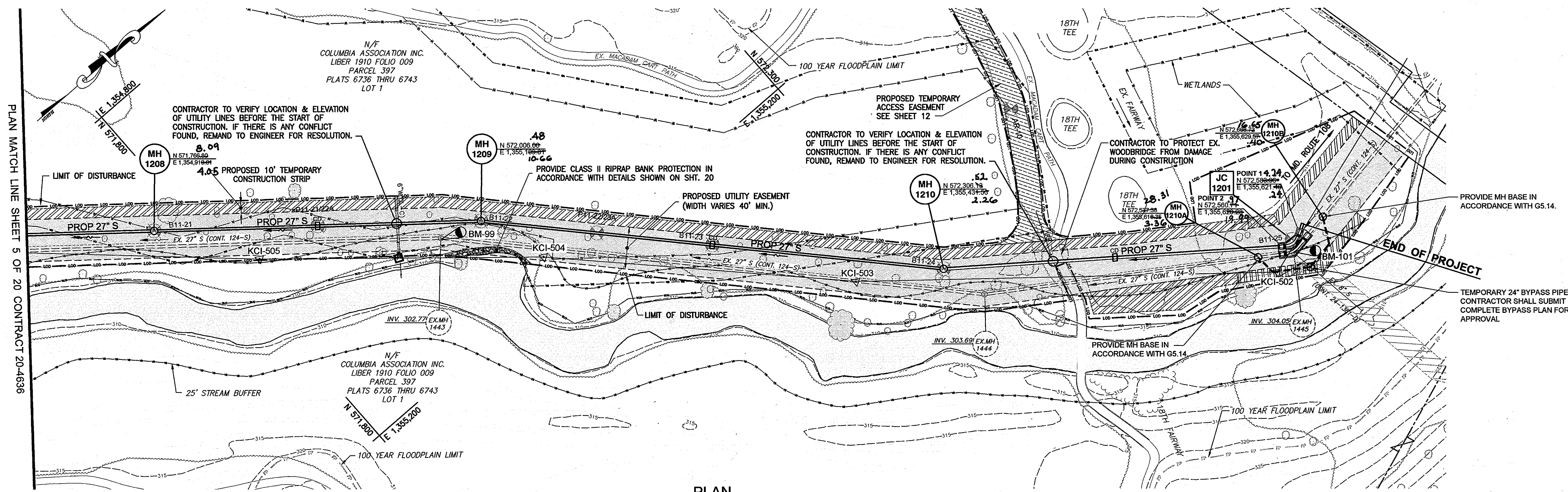
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 3/4" REBAR W/ RED KCI CAP  
 N 572,028.23  
 E 1,355,174.41  
 ELEV. 312.81



**KCI-503**  
 3/4" REBAR W/ RED KCI CAP  
 N 572,235.53  
 E 1,355,386.08  
 ELEV. 312.87



**KCI-502**  
 3/4" REBAR W/ RED KCI CAP  
 N 572,941.91  
 E 1,355,640.91  
 ELEV. 316.38

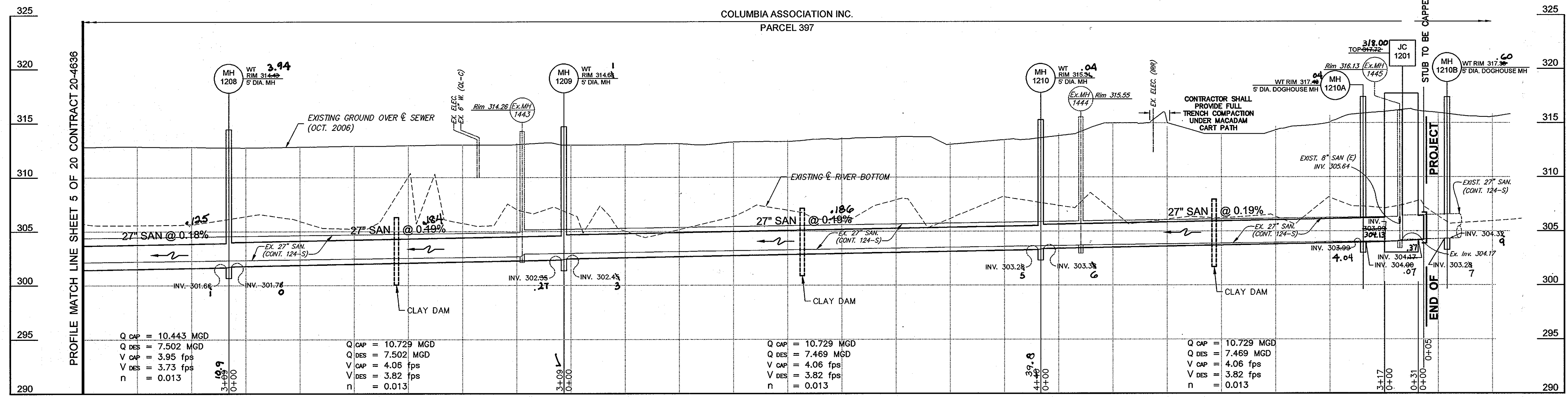


**PLAN**  
 SCALE : 1" = 50'

**NOTE:**  
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  - SEE GENERAL NOTES ON SHEET 3.

**NOTE:**  
 FOR CONSTRUCTION OF JUNCTION CHAMBER 1201 SEE SHEETS 8, 9, AND 10 OF 20.



**PROFILE**  
 SCALE : HORIZ. 1" = 50'  
 VERT. 1" = 5'

**ASBLS 4-10-2013**

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

*John C. Williams*  
 DIRECTOR OF PUBLIC WORKS  
 DATE: 6/13/12

*Morgan S. Rutledge*  
 CHIEF, BUREAU OF ENGINEERING  
 DATE: 6/13/12

*John C. Williams*  
 CHIEF, BUREAU OF UTILITIES  
 DATE: 6/13/12

**Dewberry**  
 Dewberry & Davis LLC  
 3106 LORD BALTIMORE DRIVE  
 SUITE 110  
 BALTIMORE, MD 21244-2662  
 410.295.9200  
 FAX: 410.295.9875



DES: LAL			
DRN: RLI			
CHK: TND			
DATE: JUNE 2012	BY NO.	REVISIONS	DATE

**PLAN AND PROFILE SHEET**

600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14  
 ELECTION DISTRICT NO. 5

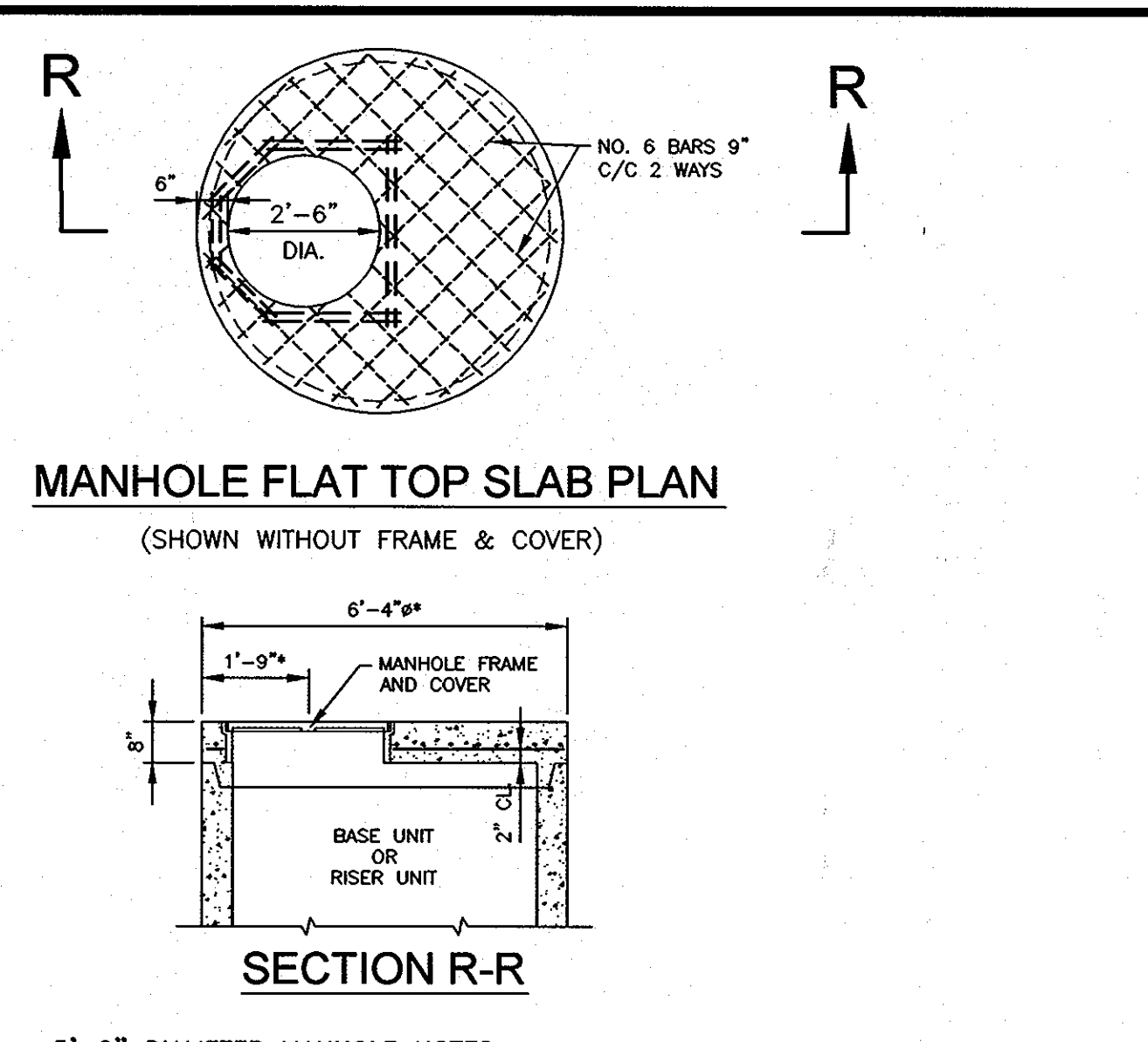
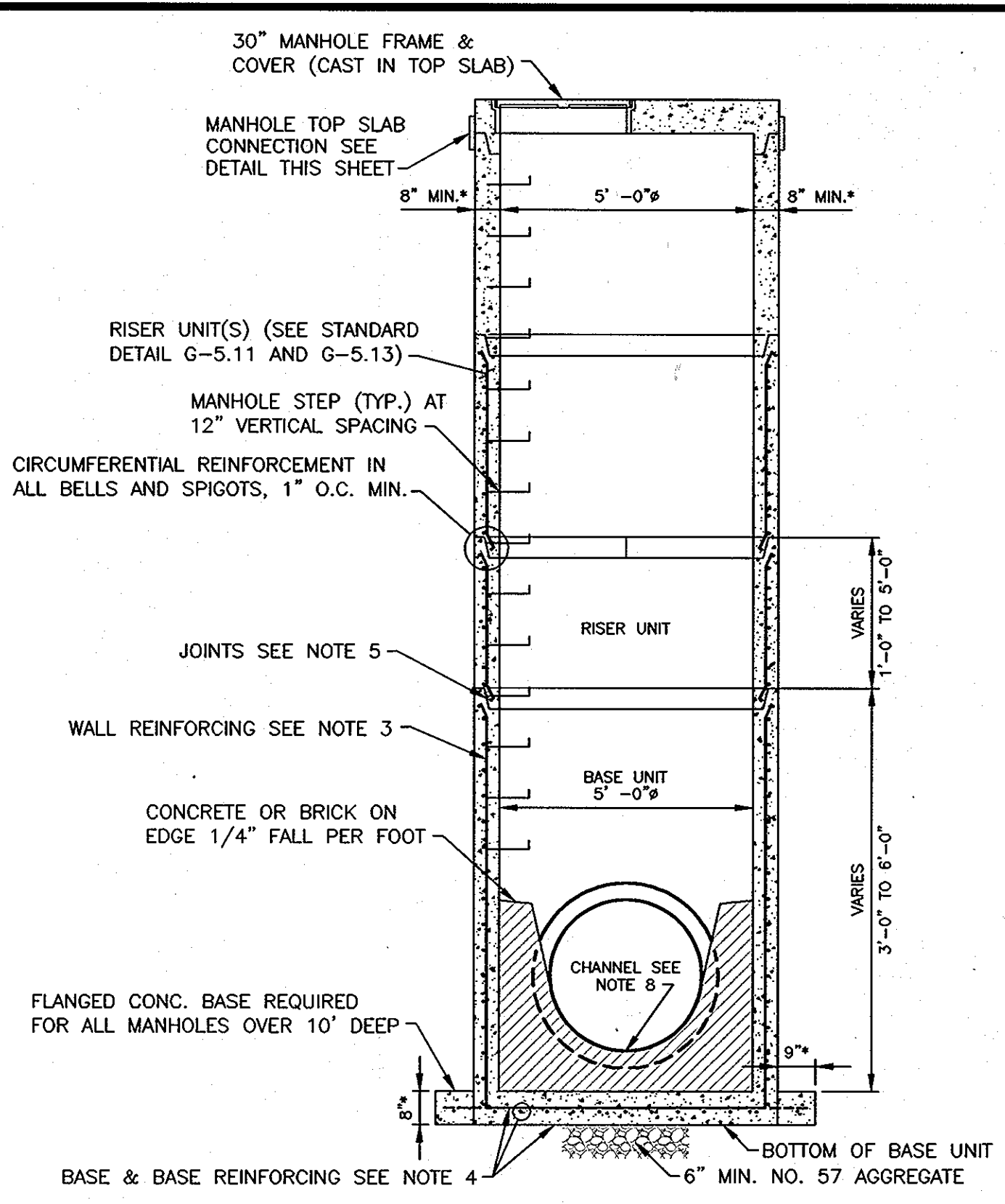
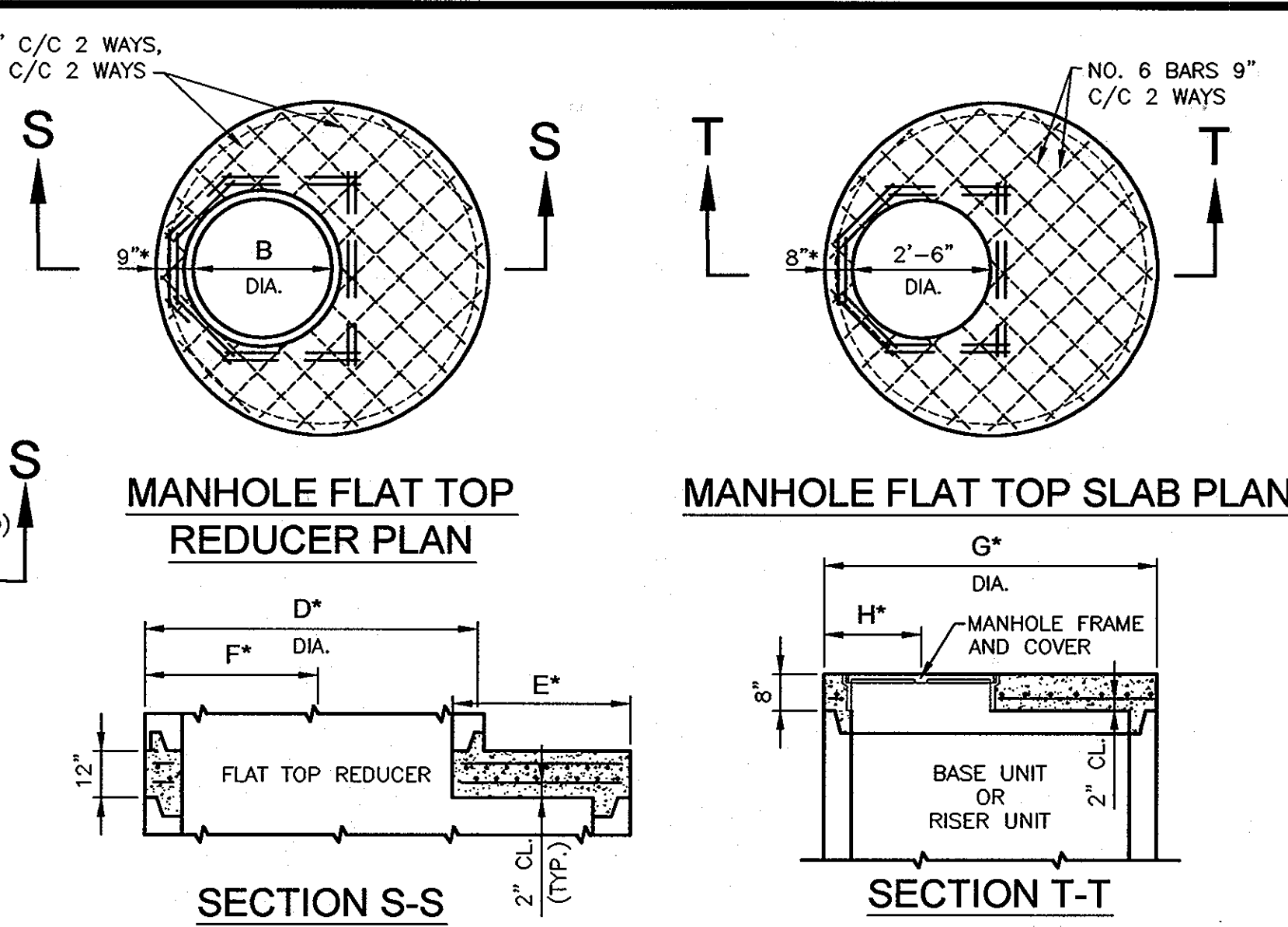
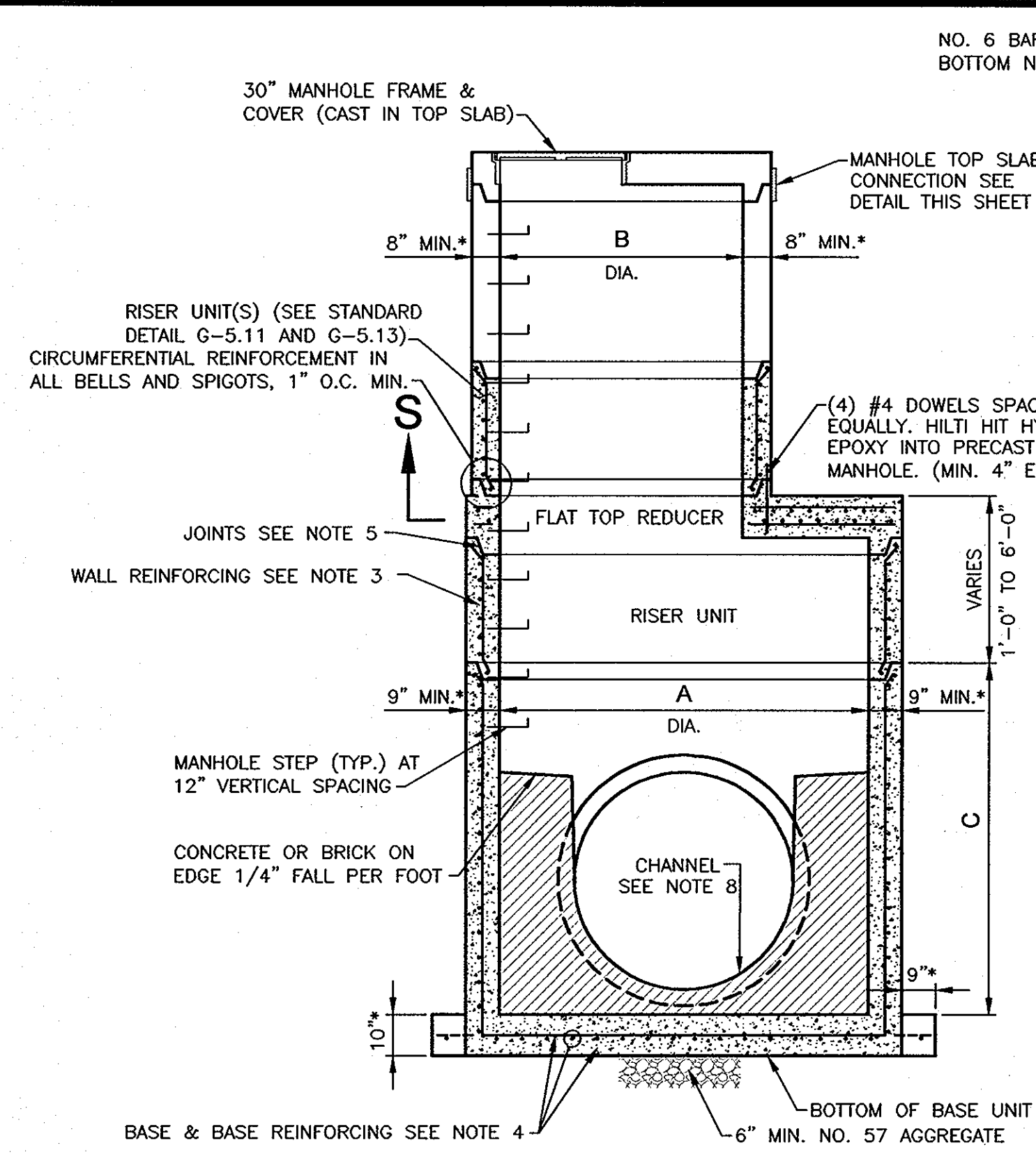
**LITTLE PATUXENT PARALLEL INTERCEPTOR**  
 CAPITAL PROJECT S-6175  
 CONTRACT NO. 20-4636

HOWARD COUNTY, MARYLAND

SCALE: SHOWN  
 SHEET 6 OF 20

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 Plot PlotterWebPage200: http://www.hp.com/go/designjet





- 6'-0" & 8'-0" DIAMETER MANHOLE NOTES:**
- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 AND THE GENERAL NOTES APPLICABLE TO PRECAST MANHOLES ON STANDARD DETAIL G-5.11.
  - CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
  - WALL REINFORCEMENT FOR BASE AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.28 IN<sup>2</sup>/FT FOR THE 72" DIAMETER MANHOLES AND 0.37 IN<sup>2</sup>/FT. FOR THE 96" DIAMETER MANHOLES, RESPECTIVELY. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND A-82. REINFORCEMENT BARS SHALL MEET ASTM A-615, GRADE 60.
  - BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.28 IN<sup>2</sup>/FT. FOR THE 72" DIAMETER MANHOLES AND 0.37 IN<sup>2</sup>/FT. FOR THE 96" DIAMETER MANHOLES, RESPECTIVELY. THE BASE SHALL BE MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
  - THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATER-TIGHT USING RUBBER O-RING GASKETS ASTM A-361 & C-443.
  - MINIMUM DISTANCE BETWEEN PIPE OPENINGS IN MANHOLE WALL SHALL BE 12 INCHES FROM THE EDGE OF ONE OPENING TO THE EDGE OF THE NEXT.
  - LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
  - MIX NO. 6 PRECAST CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED AND SHALL SLOPE TOWARD OUTLET AS DIRECTED BY THE ENGINEER.
  - NO MORE THAN ONE 1' HIGH RISER SECTION MAY BE USED PER MANHOLE.
  - MANHOLE INTERIOR LINER REQUIRED. REFER TO "SANITARY SEWER MANHOLES" SECTION OF THE SPECIAL PROVISIONS.

**5'-0" DIAMETER PRECAST MANHOLE**

\* DIMENSIONS TO BE CONFIRMED BY THE MANUFACTURER.

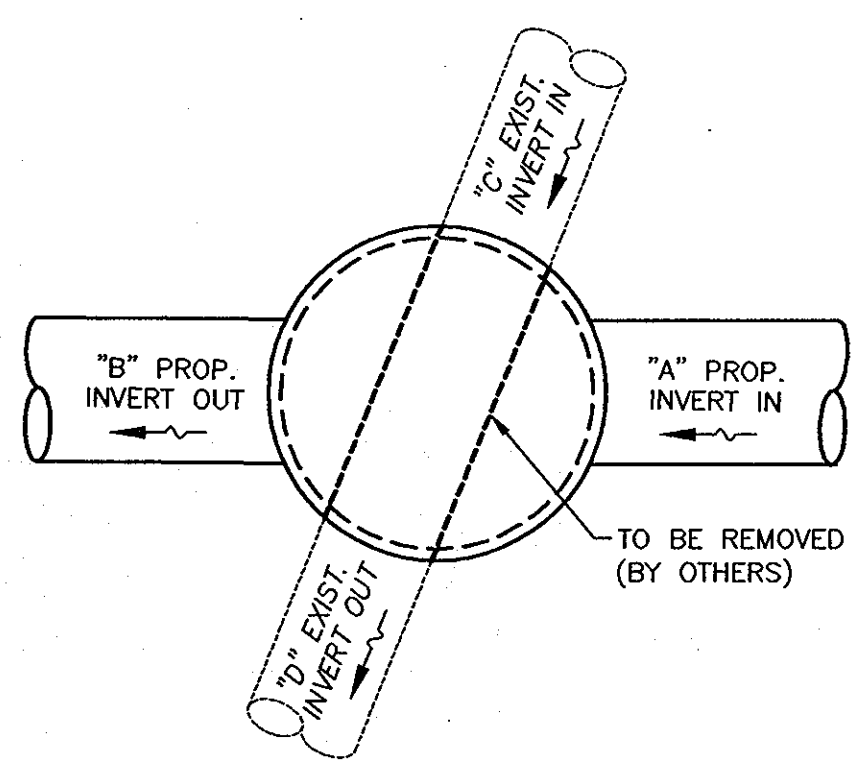
**NOTE:**  
"STANDARD DETAIL" REFERS TO DETAILS IN HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.

- 5'-0" DIAMETER MANHOLE NOTES:**
- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 AND THE GENERAL NOTES APPLICABLE TO PRECAST MANHOLES ON STANDARD DETAIL G-5.11.
  - CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
  - WALL REINFORCEMENT FOR BASE AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.23 IN<sup>2</sup>/FT. FOR THE 60" DIAMETER MANHOLES, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND A-82. REINFORCEMENT BARS SHALL MEET ASTM A-615, GRADE 60.
  - BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.23 IN<sup>2</sup>/FT. THE BASE SHALL BE MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
  - THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATER-TIGHT USING RUBBER O-RING GASKETS ASTM A-361 & C-443.
  - MINIMUM DISTANCE BETWEEN PIPE OPENINGS IN MANHOLE WALL SHALL BE 12 INCHES FROM THE EDGE OF ONE OPENING TO THE EDGE OF THE NEXT.
  - LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
  - MIX NO. 6 PRECAST CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED AND SHALL SLOPE TOWARD OUTLET AS DIRECTED BY THE ENGINEER.
  - NO MORE THAN 1' RISER SECTION MAY BE USED PER MANHOLE.
  - MANHOLE INTERIOR LINER REQUIRED. REFER TO "SANITARY SEWER MANHOLES" SECTION OF THE SPECIAL PROVISIONS.

**6' AND 8' DIAMETER MANHOLE DIMENSION SCHEDULE**

MH DIA.	A	B	C	D*	E*	F*	G*	H*
6'	6'	4'	6'	7'-4"	2'-8"	2'-8"	5'-4"	1'-11"
8'	8'	5'	8'	9'-6"	3'-9"	3'-3"	6'-4"	1'-11"

**6'-0" & 8'-0" DIAMETER PRECAST MANHOLE**  
NO SCALE

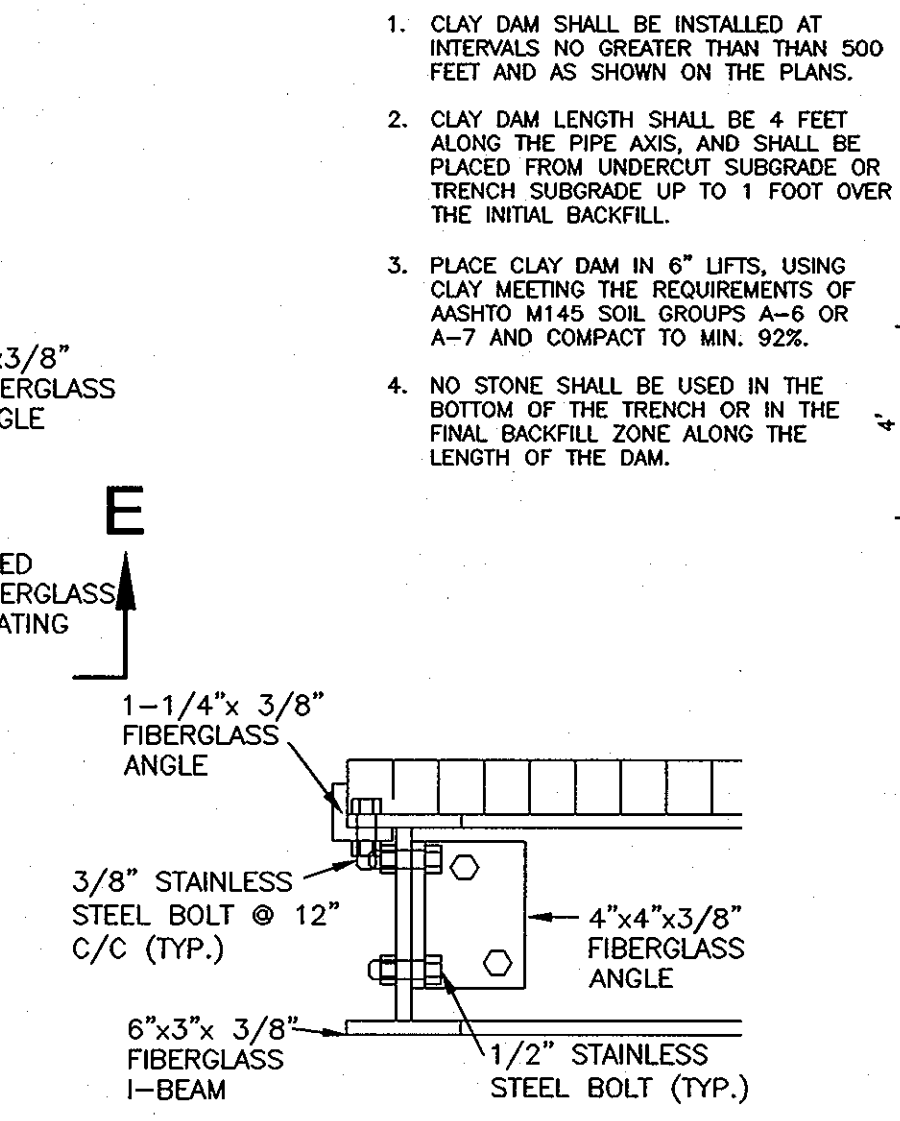
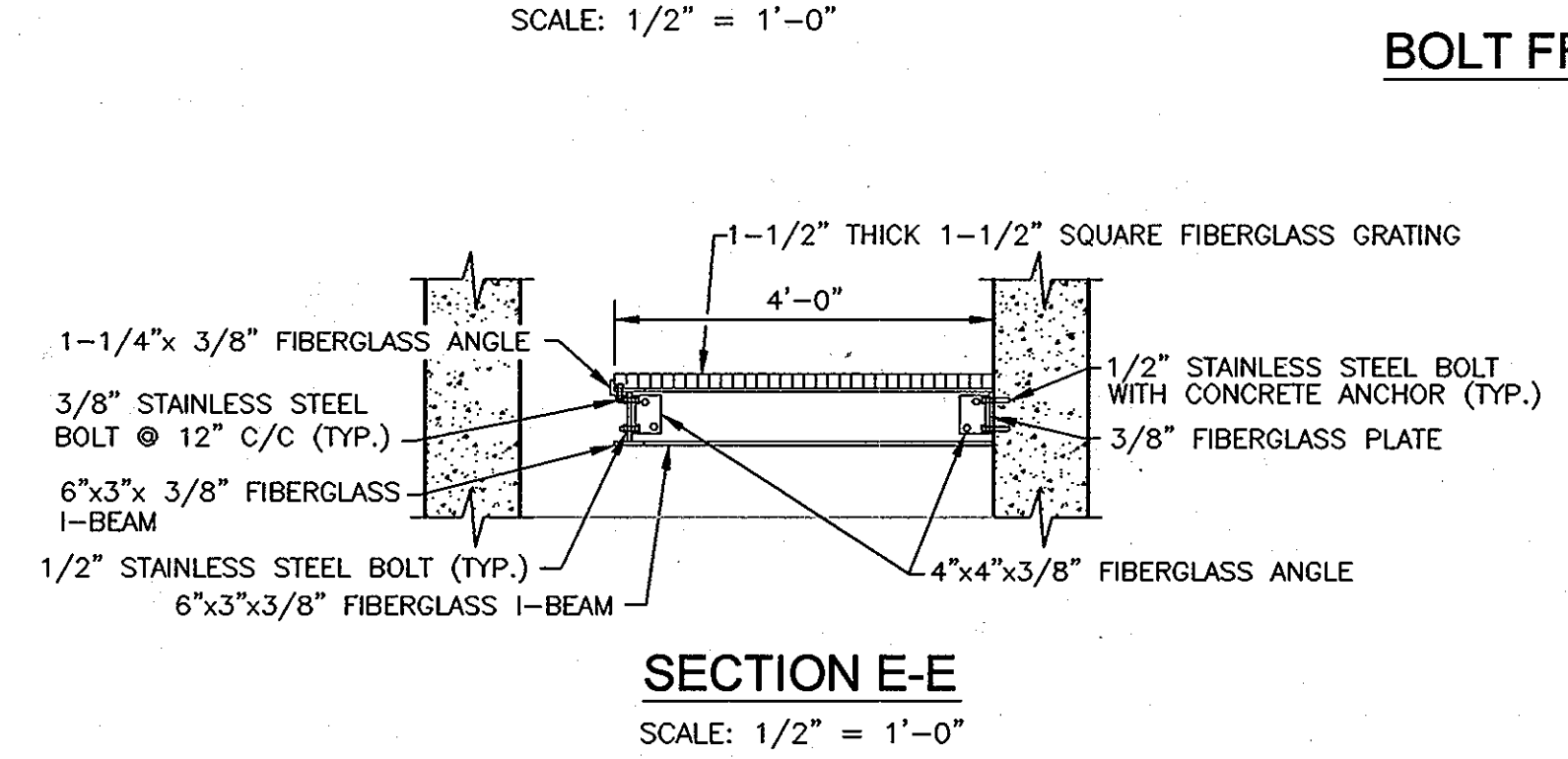
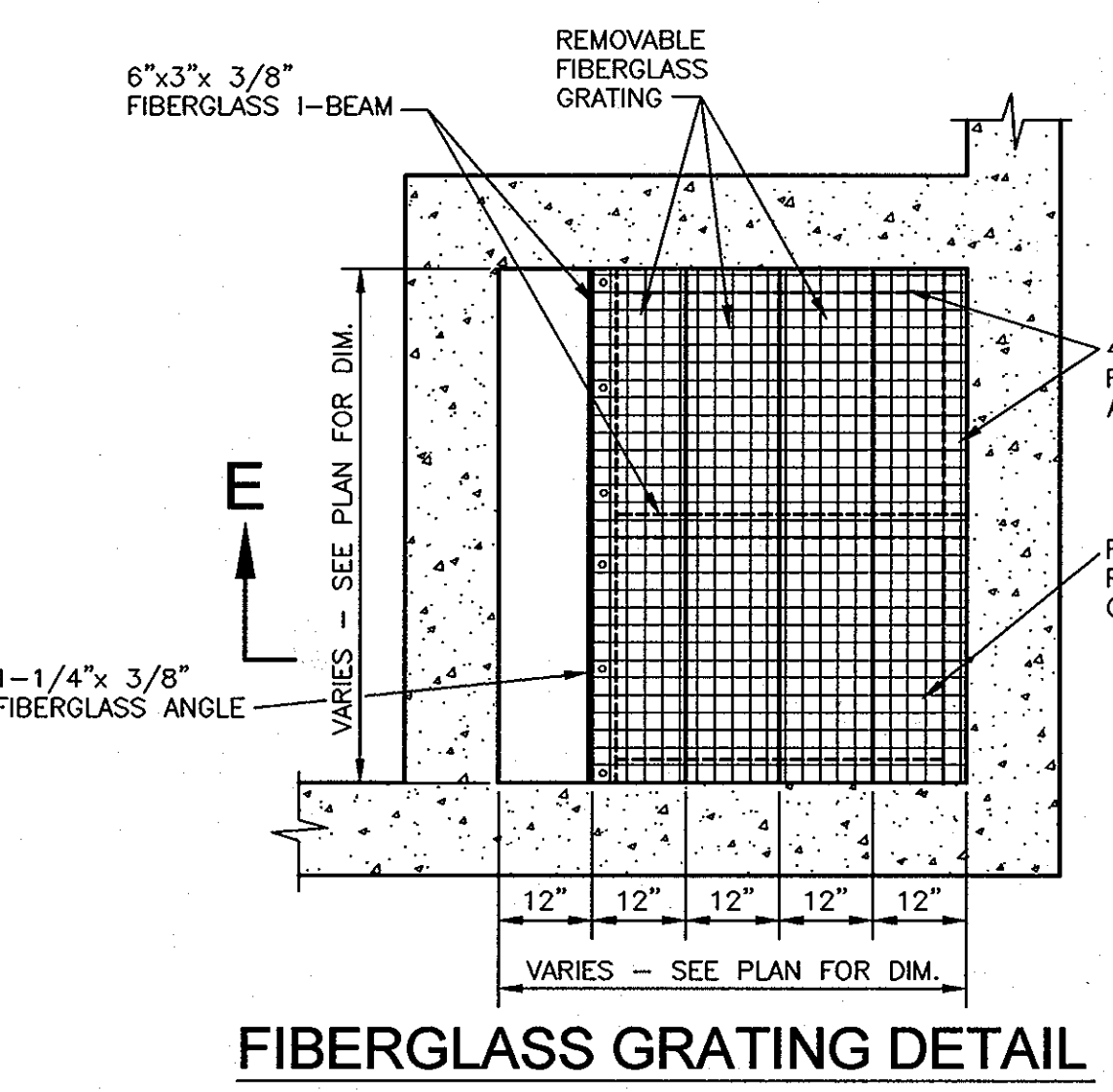


**TEMPORARY PIPE DIVERSION INVERT SCHEDULE**  
MH-1207

A	B	C	D
27"	27"	8"	8"
301.09	300.99	303.44	303.44

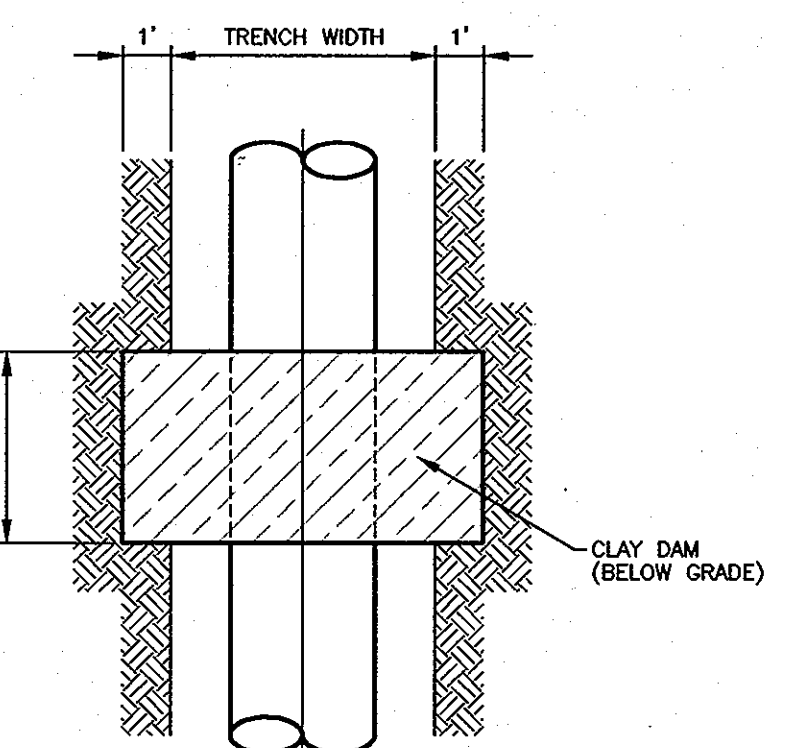
**TEMPORARY PIPE DIVERSION THROUGH PROPOSED MANHOLES**  
NOT TO SCALE

- NOTES:**
- TEMPORARILY REMOVE EXISTING SANITARY SEWER AND RE-LAY PIPE THROUGH PRE-CAST OPENINGS IN PROPOSED MANHOLE AS NECESSARY, KEEPING A STRAIGHT ALIGNMENT.
  - SEAL PIPE TO MANHOLE OPENINGS WITH NON-SHRINK GROUT.
  - REMOVAL OF TEMPORARY DIVERSION THROUGH MANHOLE WILL BE BY OTHERS WHEN ALL DOWNSTREAM NEW SEWER IS PLACED IN-SERVICE
  - ALL EXISTING SEWER PIPE INVERTS SHALL BE CHECKED BY TEST PIT PRIOR TO ORDERING MANHOLES.

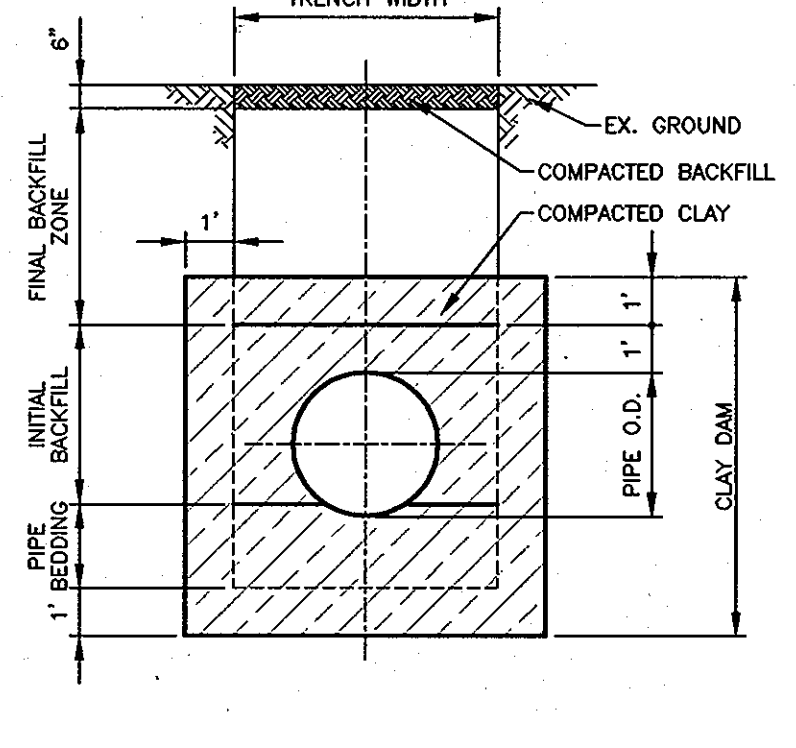


**BOLT FROM E-E DETAIL**  
SCALE: NTS

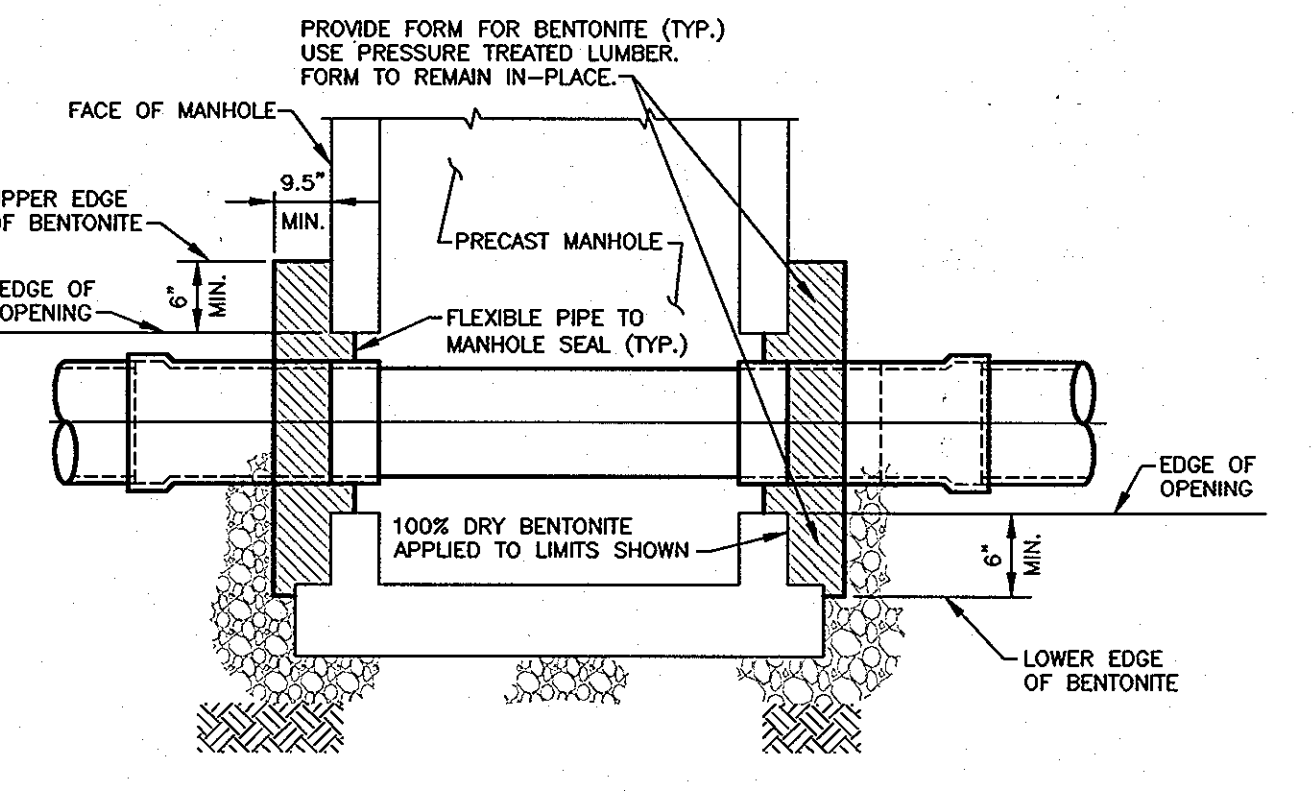
- CLAY DAM NOTES:**
- CLAY DAM SHALL BE INSTALLED AT INTERVALS NO GREATER THAN 500 FEET AND AS SHOWN ON THE PLANS.
  - CLAY DAM LENGTH SHALL BE 4 FEET ALONG THE PIPE AXIS, AND SHALL BE PLACED FROM UNDERCUT SUBGRADE OR TRENCH SUBGRADE UP TO 1 FOOT OVER THE INITIAL BACKFILL.
  - PLACE CLAY DAM IN 6" LIFTS, USING CLAY MEETING THE REQUIREMENTS OF ASTM M145 SOIL GROUPS A-6 OR A-7 AND COMPACT TO UNIFORM 92%.
  - NO STONE SHALL BE USED IN THE BOTTOM OF THE TRENCH OR IN THE FINAL BACKFILL ZONE ALONG THE LENGTH OF THE DAM.



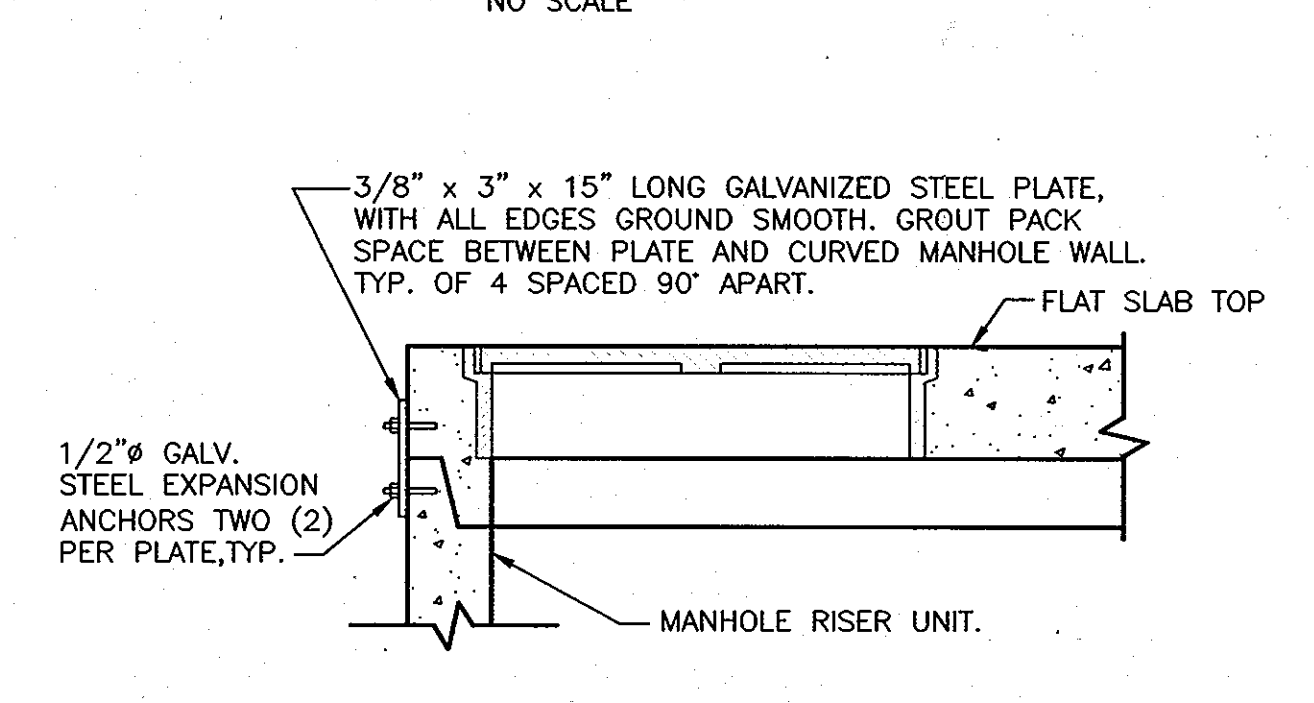
**PIPE BEDDING DETAIL**  
NO SCALE



**CLAY DAM TYPICAL**  
NO SCALE



**PIPE TO MANHOLE CONNECTION**  
NO SCALE



**MANHOLE SLAB TOP CONNECTION**  
NO SCALE

**AS-BUILT 4-10-2013**

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 Scale: 1/2" = 1'-0"  
 Plotter: HP DesignJet 5000 Series  
 Plot Size: 36" x 48"  
 Plot Style: hwd.ctb  
 Plot Device: HP DesignJet 5000 Series  
 Plot Date: Jun 08, 2012 11:42:29 AM  
 Plot User: JH

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature]  
 Chief, Bureau of Utilities: [Signature]  
 Date: 6/13/12

Chief, Bureau of Engineering: [Signature]  
 Chief, Utility Design Division: [Signature]  
 Date: 6/13/12

**Dewberry**  
Dewberry & Davis LLC

3100 LORD BALTIMORE DRIVE  
 SUITE 110  
 BALTIMORE, MD 21244-2662  
 410.265.9500  
 FAX: 410.265.9875

STATE OF MARYLAND

DES: LAL  
 DRN: RU/CD  
 CHK: TND  
 DATE: JUNE 2012

**MISCELLANEOUS DETAILS**

600' SCALE MAP NO. 30  
 BLOCK NO. 8, 9, & 14  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND

**LITTLE PATUXENT PARALLEL INTERCEPTOR**

CAPITAL PROJECT S-6175  
 CONTRACT NO. 20-4636

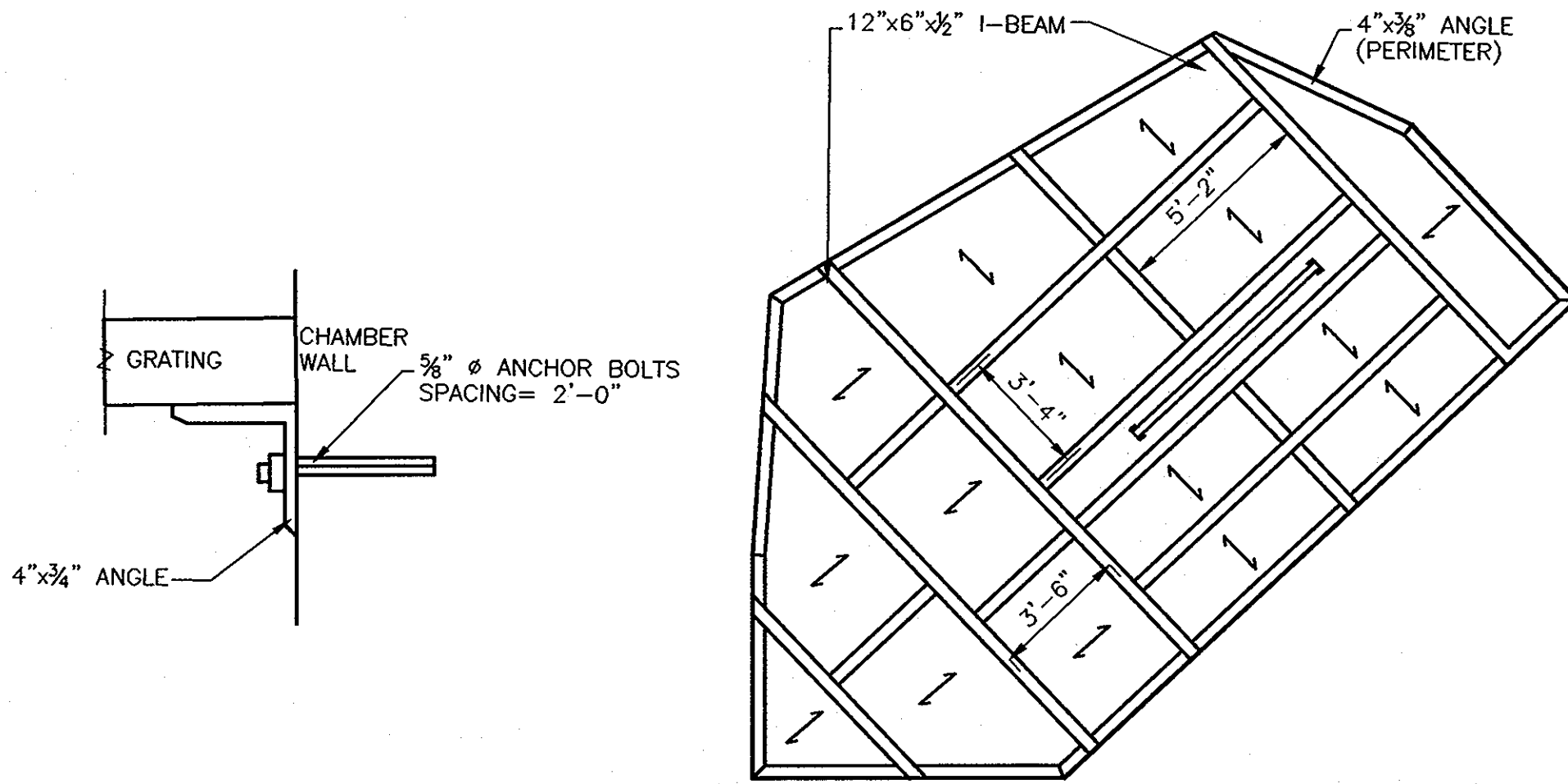
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SHEET 7 OF 20







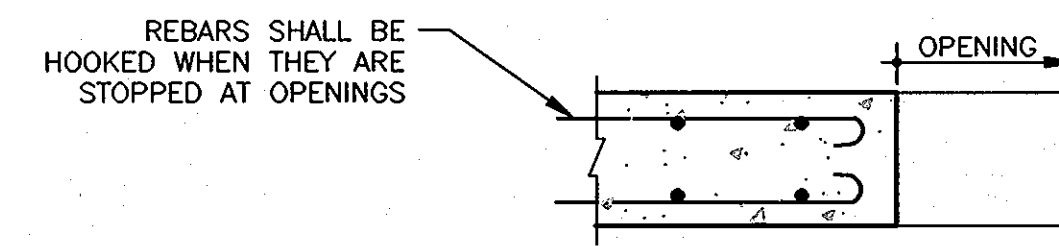


**GRATING ANCHOR**  
SCALE: NTS

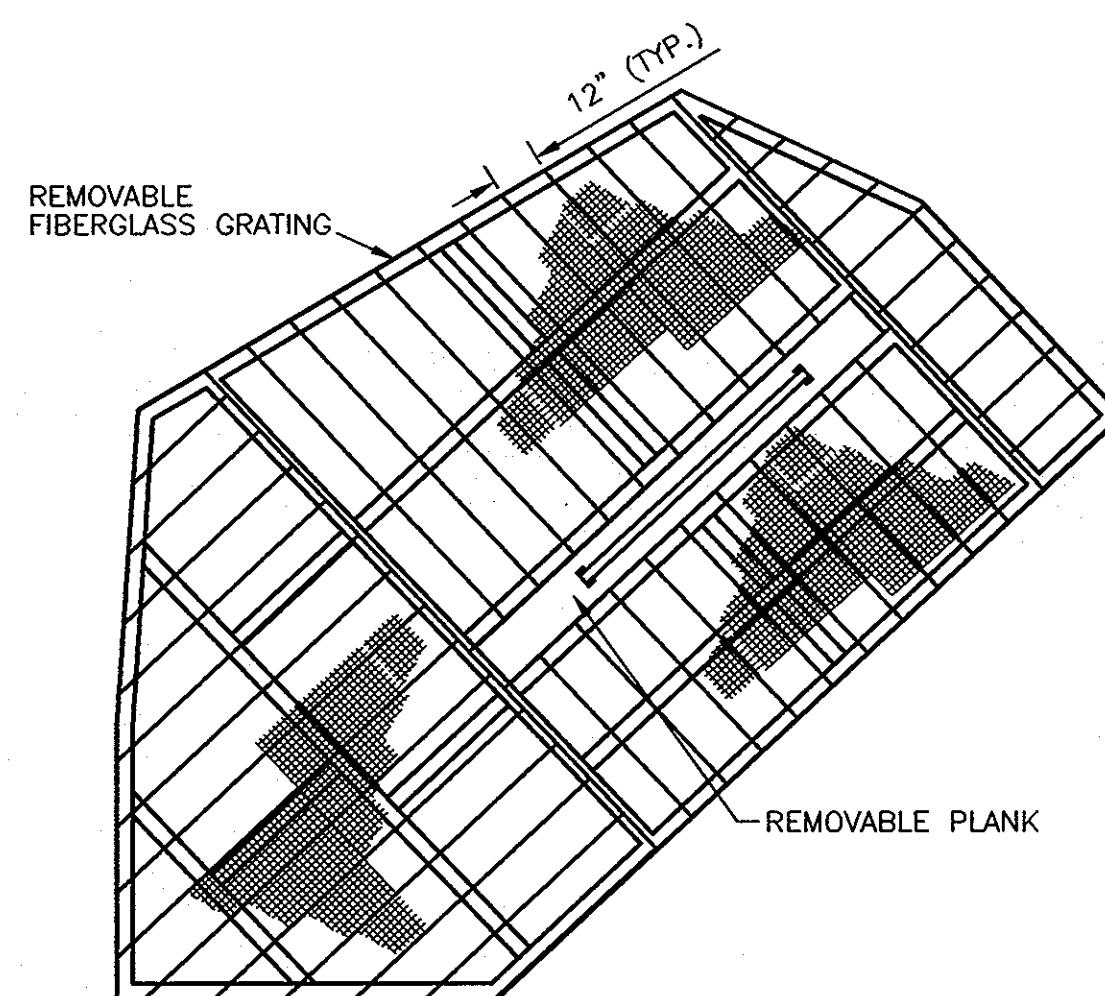
**GRATING SUPPORTS**  
SCALE: 1/4" = 1'-0"

**NOTES:**

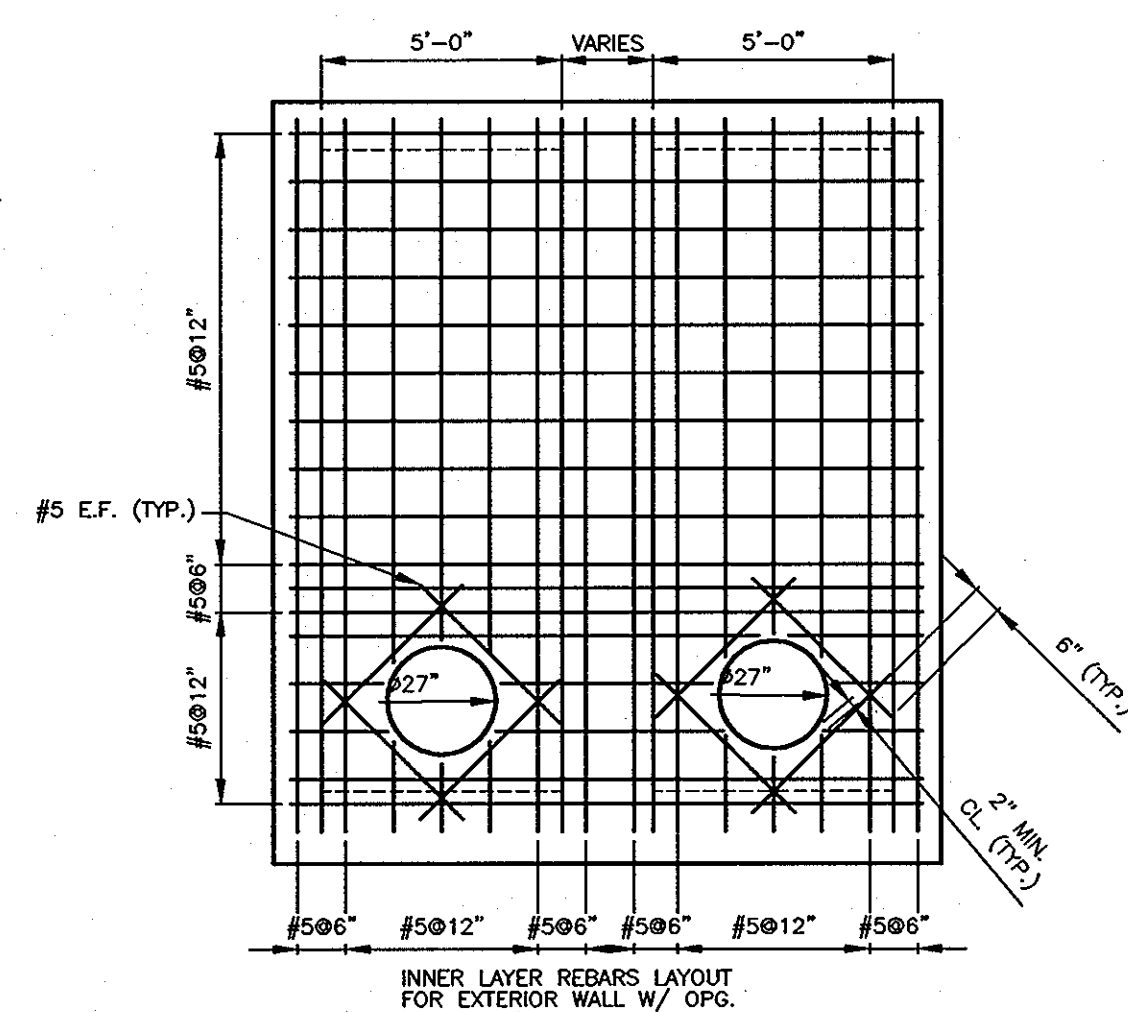
1. BEAM SIZE NOT SHOWN ARE 8" x 4" x 3/8" I-BEAM.
2. ↑ INDICATES DIRECTION OF GRATING.
3. 1-1/2" DEPTH x 1-1/2" x 1-1/2" SQUARE FIBERGLASS GRATING
4. GRATING TO BEAM CONNECTION PER MANUFACTURER'S REQUIREMENT
5. MINIMUM EMBEDMENT OF ANCHOR BOLTS IS 4-1/2".



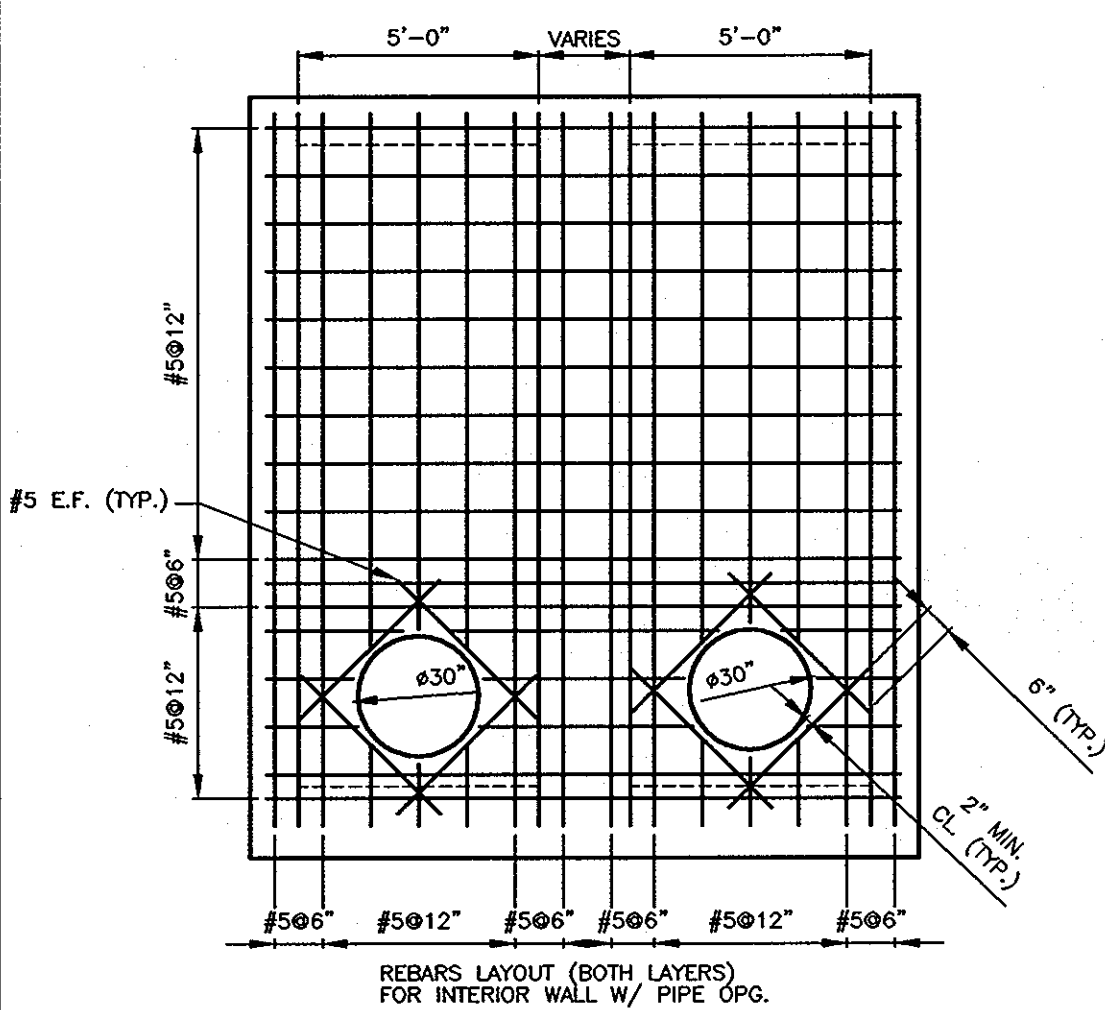
**SECTION Q-Q**  
SCALE: NTS



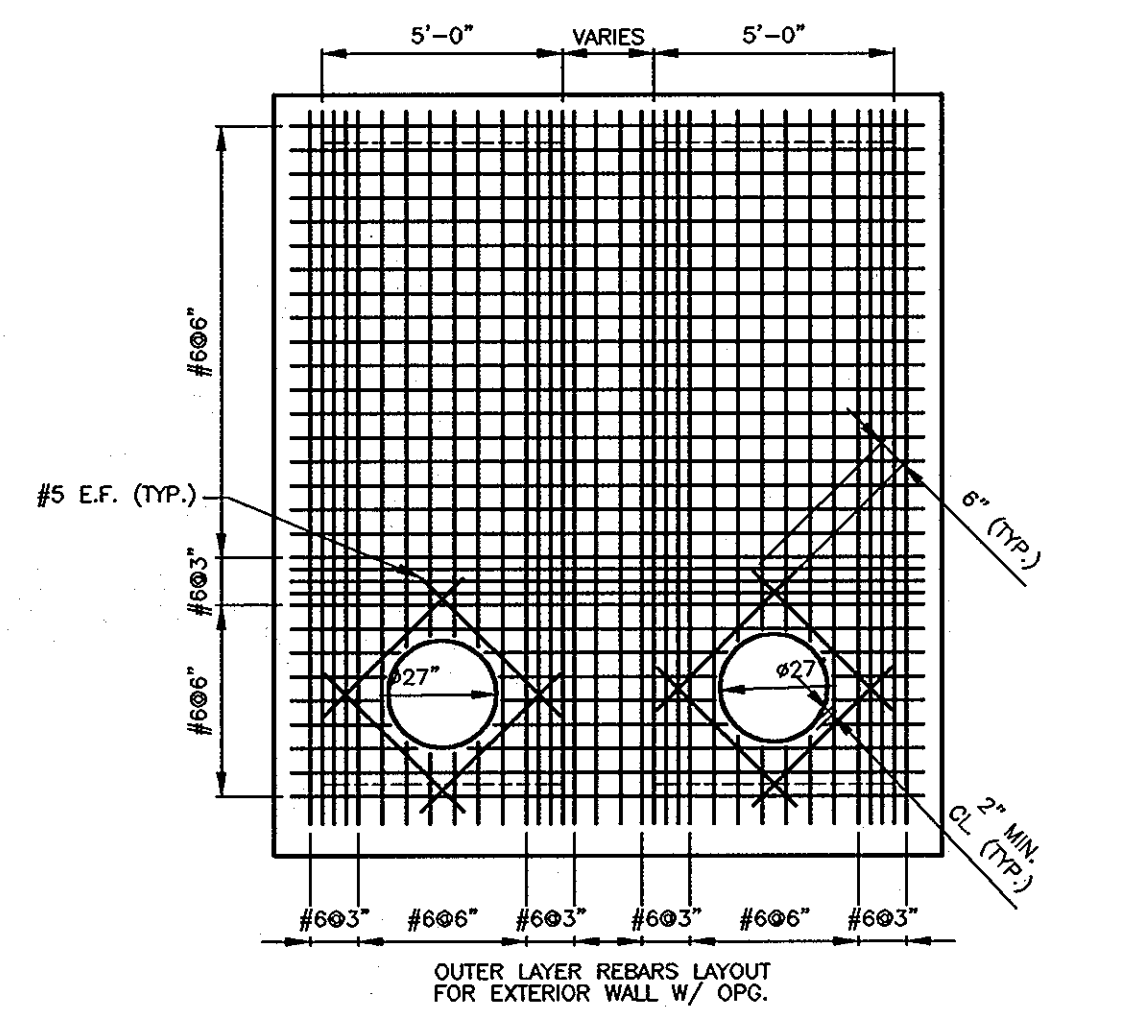
**GRATING**  
SCALE: 1/4" = 1'-0"



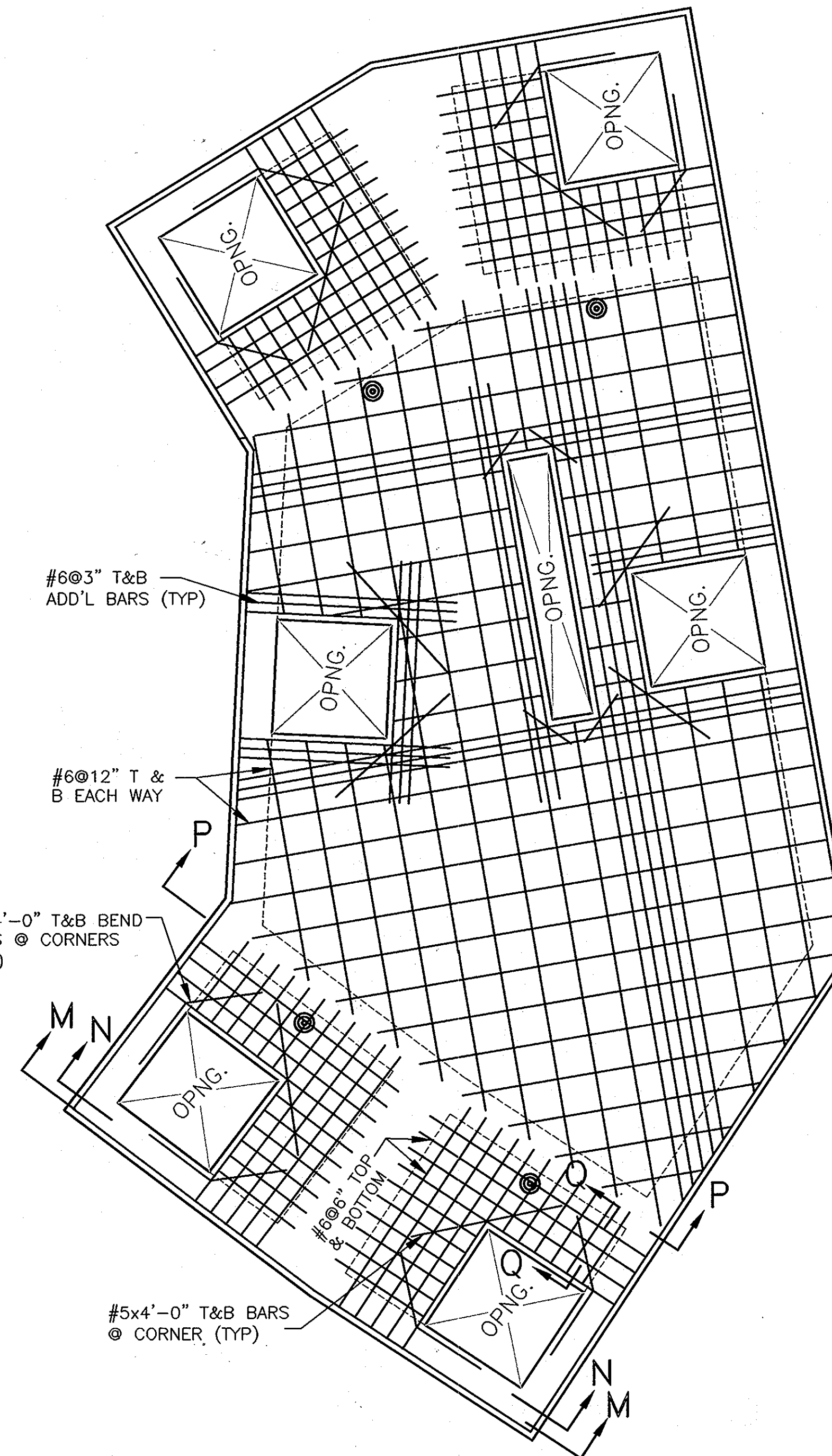
**SECTION N-N**  
SCALE: 1/4" = 1'-0"



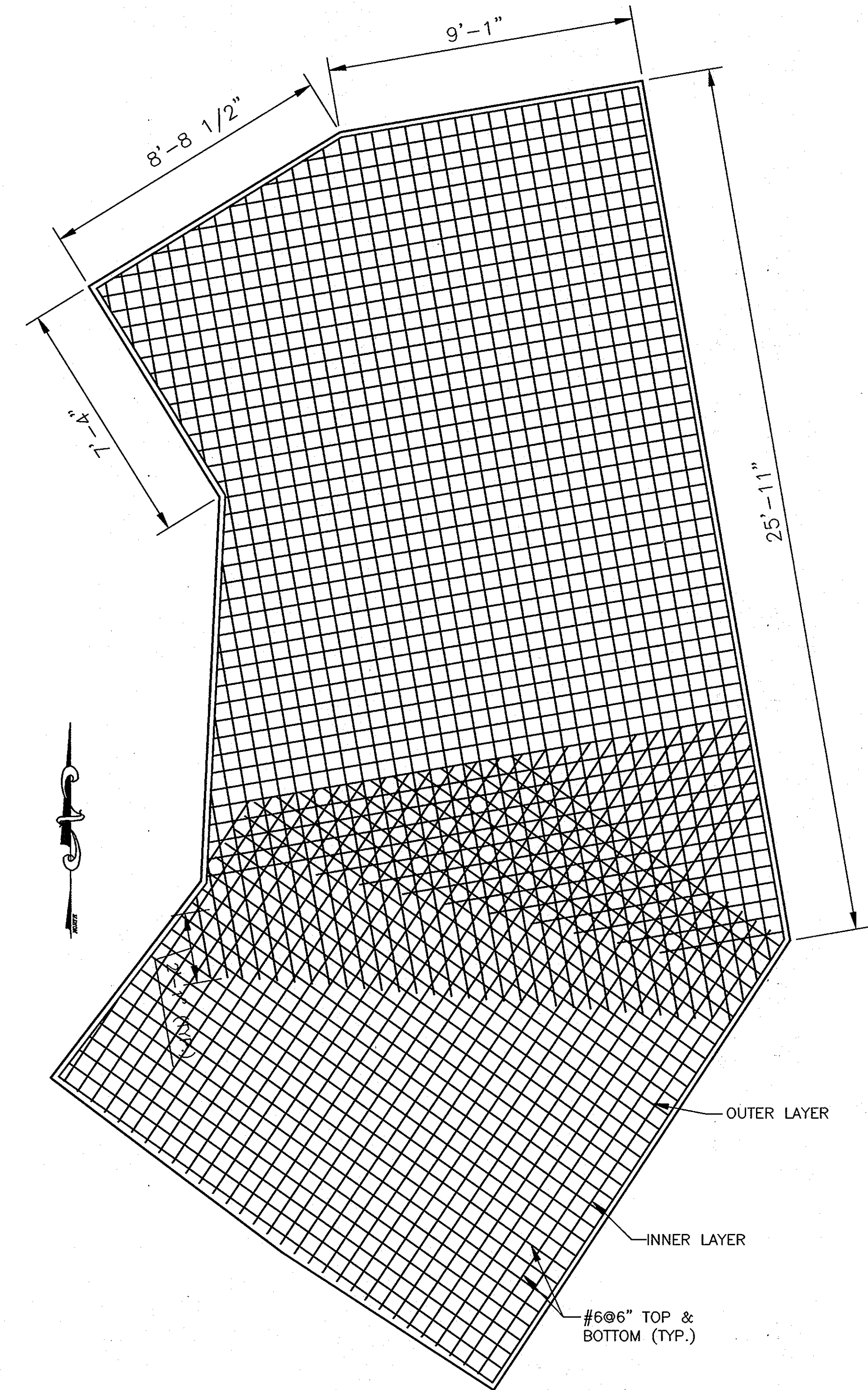
**SECTION P-P**  
SCALE: 1/4" = 1'-0"



**SECTION M-M**  
SCALE: 1/4" = 1'-0"



**TOP SLAB PLAN**  
SCALE: 3/8" = 1'-0"



**BOTTOM SLAB**  
SCALE: 3/8" = 1'-0"

AS-BUILTS 4-10-2013

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jay L. ...*  
DIRECTOR OF PUBLIC WORKS  
*...*  
CHIEF, BUREAU OF UTILITIES

**Dewberry**  
Dewberry & Davis LLC  
3100 LORD BALTIMORE DRIVE  
SUITE 110  
BALTIMORE, MD 21244-2682  
410.295.9500  
FAX: 410.295.8875



DES: LAL  
DRN: RLJ  
CHK: TND  
DATE: JUNE 2012

JUNCTION CHAMBER 1201  
REINFORCING DETAILS

LITTLE PATUXENT PARALLEL INTERCEPTOR  
CAPITAL PROJECT S-6175  
CONTRACT NO. 20-4636

SCALE:  
SHOWN  
SHEET  
9 OF 20

600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14

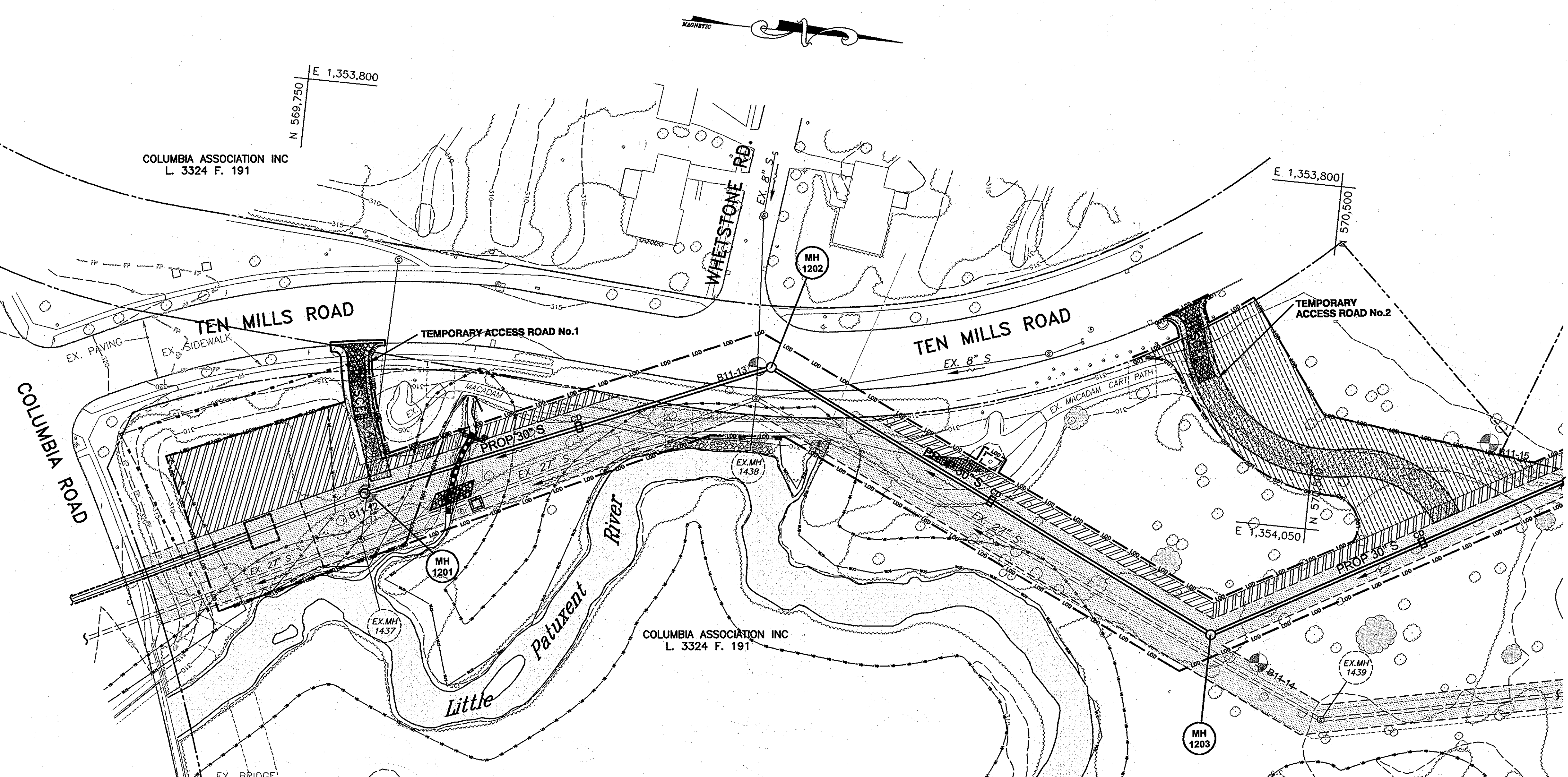
ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

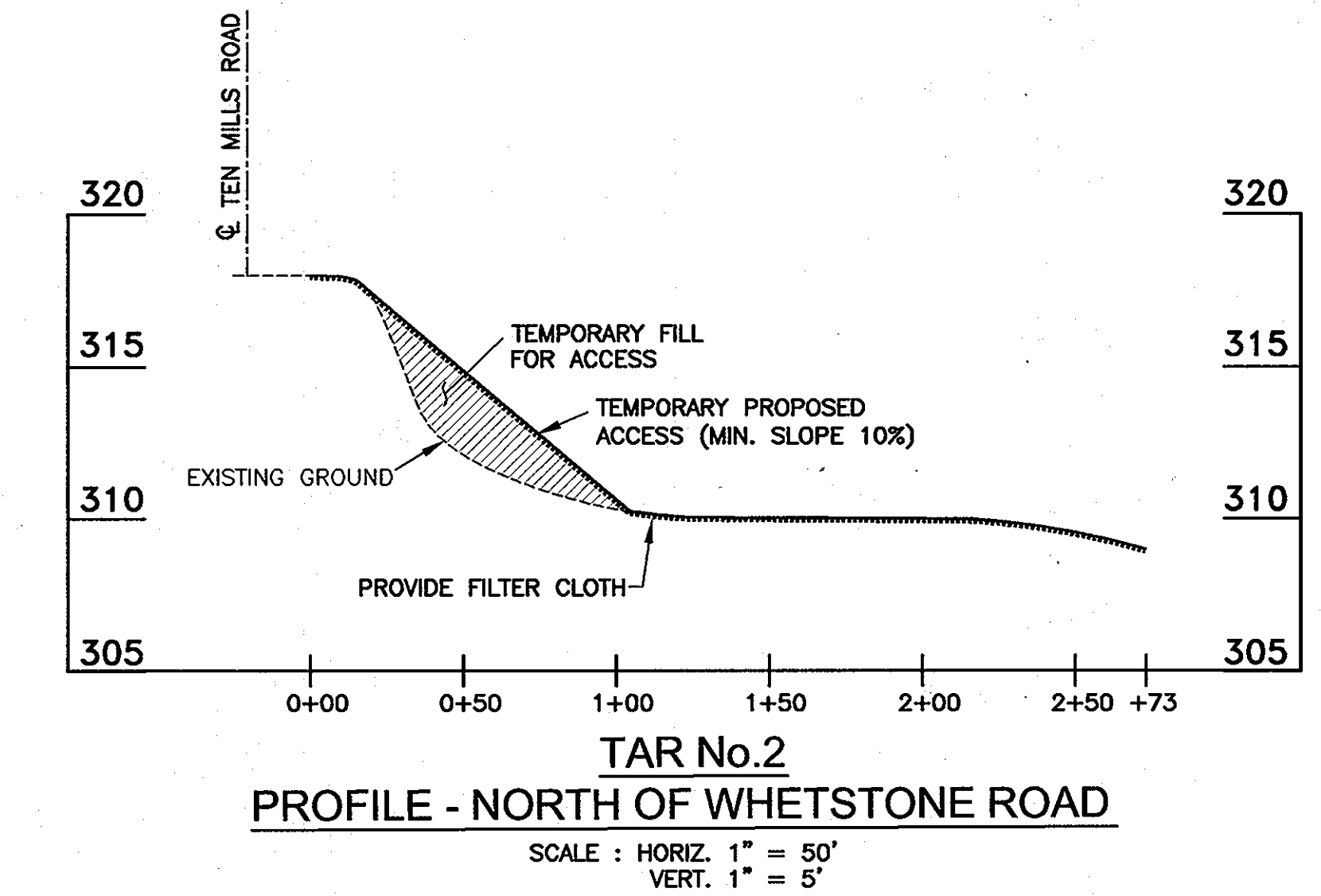
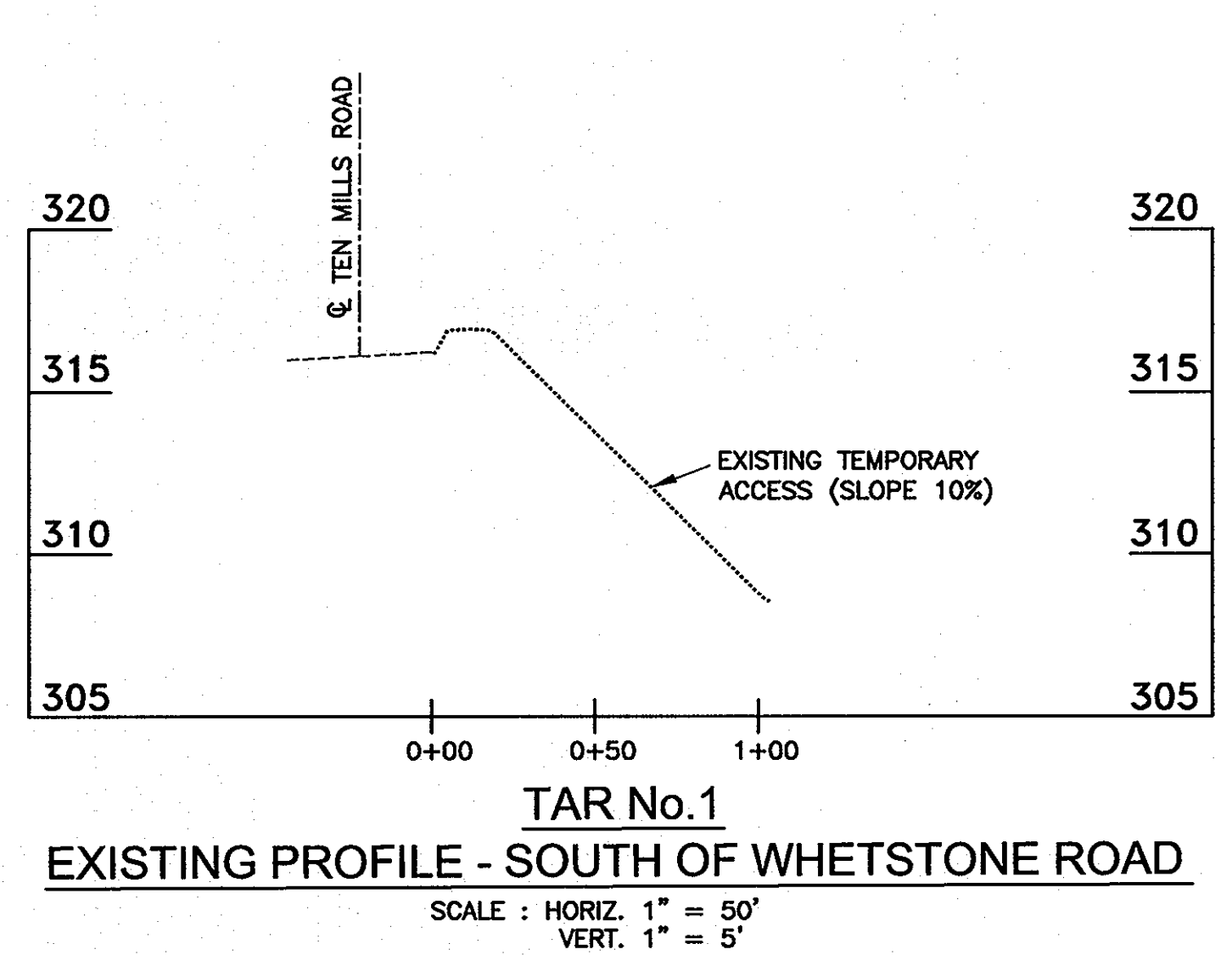








**PLAN**  
SCALE: 1" = 50'



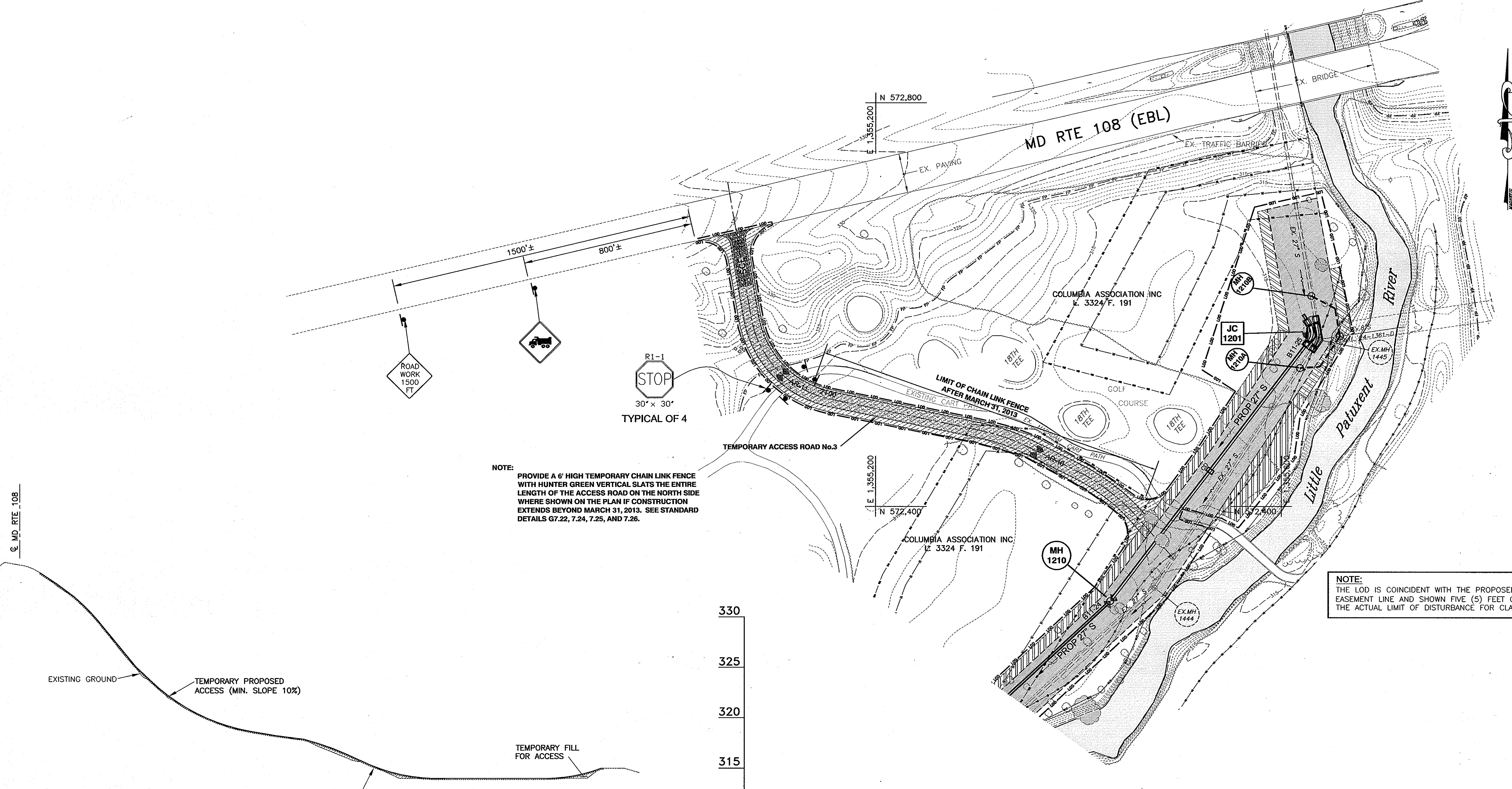
- NOTE:**
- PRECONSTRUCTION CONTOURS SHALL BE RESTORED AFTER THE UTILITY HAS BEEN INSTALLED AND ALL EXCESS SPOIL SHALL BE REMOVED FROM SITE. THERE SHALL BE NO MOUNDING OR DISPOSING OF MATERIALS WITHIN THE LIMITS OF DISTURBANCE OR ANYWHERE ELSE ON SITE.
  - SEE GENERAL NOTES ON SHEET 3.
  - CONTRACTOR SHALL REMOVE TEMPORARY ACCESS ROADS (TAR) AT CONCLUSION OF PROJECT AS FOLLOWS:
    - A. **TAR No. 1 IN PUBLIC R/W:** COMPLETELY REMOVE AND GRADE TO PRE-EXISTING CONTOURS. REPLACE CONCRETE SIDEWALK AND CURB AS NECESSARY. TOPSOIL, SEED, AND MULCH DISTURBED LAWN AREAS.
    - TAR No. 1 IN CA LAND:** LEAVE MOST OF STONE ACCESS ROAD IN PLACE. REMOVE JERSEY BARRIERS, WOOD BEAMS, AND FENCING. GRADE AND SHAPE SHOULDERS, TOPSOIL, SEED, & MULCH UNDER THE DIRECTION OF THE ENGINEER.
    - B. **TAR No. 2 IN PUBLIC R/W:** COMPLETELY REMOVE ACCESS ROAD AND GRADE TO PRE-EXISTING CONTOURS. REPLACE CONCRETE CURB AS NECESSARY. TOPSOIL, SEED, AND MULCH DISTURBED LAWN AREAS.
    - TAR No. 2 IN CA LAND:** COMPLETELY REMOVE ACCESS ROAD AND GRADE TO PRE-CONSTRUCTION CONTOURS. REPLACE MACADAM CART PATH TO SPECIFICATIONS FOR PAVING SECTION P-1, STD DETAIL B-2.01. REPLACE TOPSOIL TO ALL DISTURBED AREAS, INSTALL SOD IN STRIPS 10 FEET WIDE ALONG BOTH SIDES OF THE NEW MACADAM CART PATH. SEED AND MULCH ALL REMAINING DISTURBED AREAS.

AS-BUILTS 4-10-2013

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>[Signature]</i> DATE DIRECTOR OF PUBLIC WORKS</p> <p><i>[Signature]</i> DATE CHIEF, BUREAU OF UTILITIES</p>	<p><b>Dewberry</b> Dewberry &amp; Davis LLC</p> <p>3100 LORD BALTIMORE DRIVE SUITE 110 BALTIMORE, MD 21244-2662 410.265.9500 FAX: 410.265.8675</p>	<p>STATE OF MARYLAND DEPARTMENT OF PUBLIC WORKS</p>	DES: LAL		<p><b>ACCESS ROAD PLAN AND PROFILE</b></p>	<p><b>LITTLE PATUXENT PARALLEL INTERCEPTOR</b> CAPITAL PROJECT S-6175 CONTRACT NO. 20-4636</p>	SCALE: SHOWN
			DRN: RLJ				DATE: JUNE 2012
<p>600' SCALE MAP NO. 30 BLOCK NO. 8, 9, &amp; 14</p>			<p>HOWARD COUNTY, MARYLAND</p>		<p>SHEET 11 OF 20</p>		

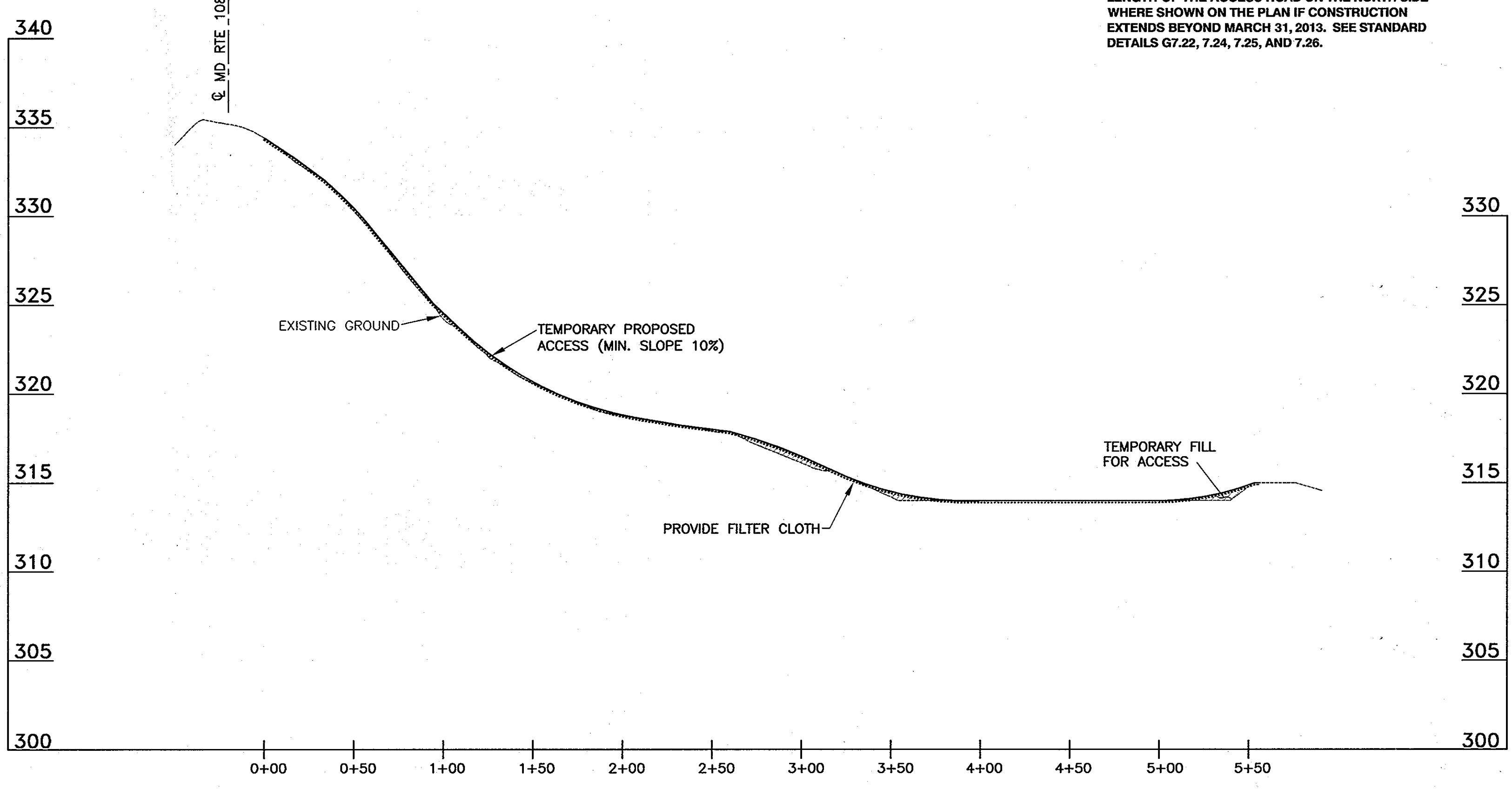


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 Date: 8/10/12  
 Title: ACCESS PLAN & PROFILE



**NOTE:**  
 PROVIDE A 6' HIGH TEMPORARY CHAIN LINK FENCE WITH HUNTER GREEN VERTICAL SLATS THE ENTIRE LENGTH OF THE ACCESS ROAD ON THE NORTH SIDE WHERE SHOWN ON THE PLAN IF CONSTRUCTION EXTENDS BEYOND MARCH 31, 2013. SEE STANDARD DETAILS G7.22, 7.24, 7.25, AND 7.26.

**NOTE:**  
 THE LOD IS COINCIDENT WITH THE PROPOSED UTILITY EASEMENT LINE AND SHOWN FIVE (5) FEET OUTSIDE THE ACTUAL LIMIT OF DISTURBANCE FOR CLARITY.



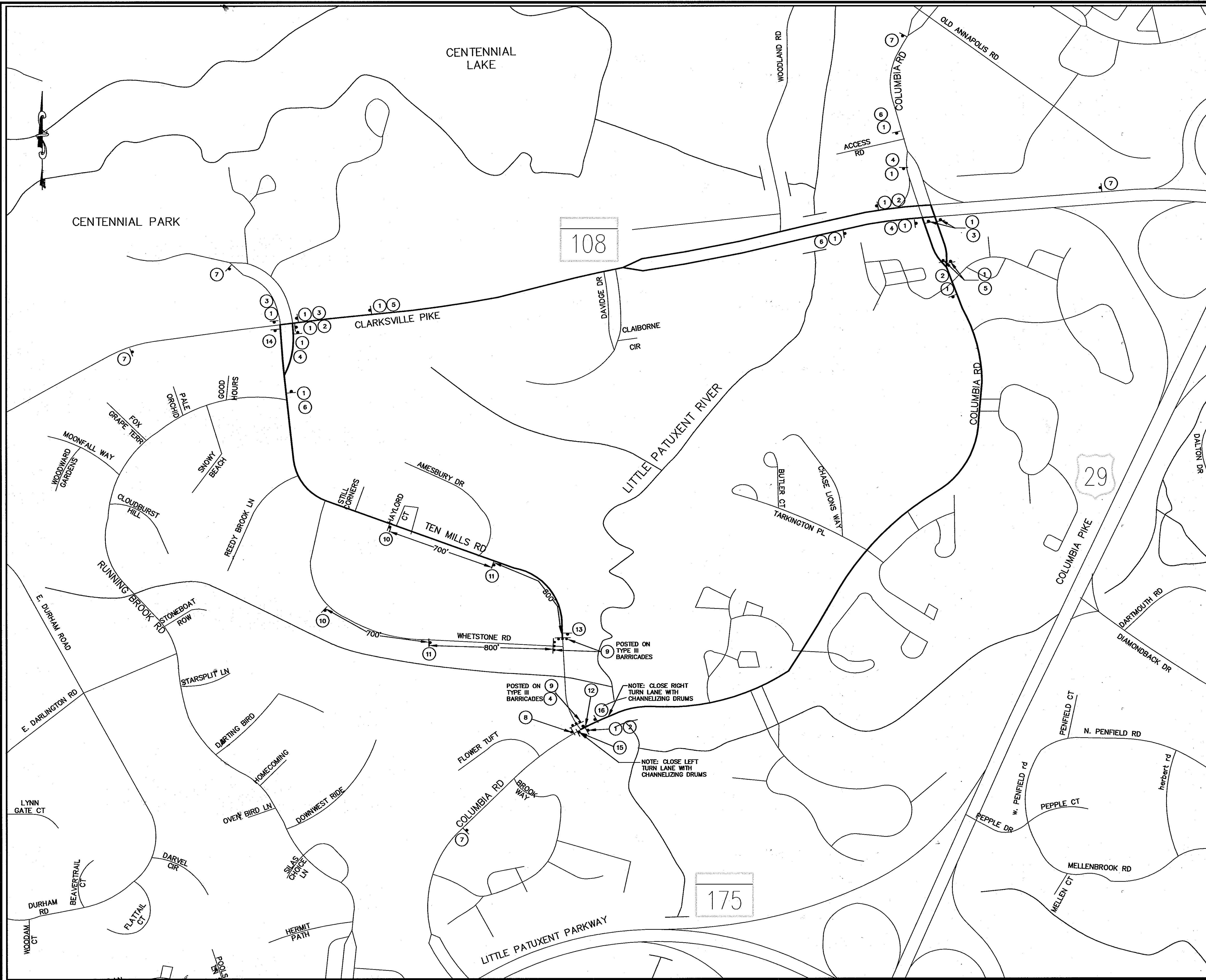
**PLAN**  
 SCALE: 1" = 50'

- NOTE:**
- PRECONSTRUCTION CONTOURS SHALL BE RESTORED AFTER THE UTILITY HAS BEEN INSTALLED AND ALL EXCESS SPOIL SHALL BE REMOVED FROM SITE. THERE SHALL BE NO MOUNDING OR DISPOSING OF MATERIALS WITHIN THE LIMITS OF DISTURBANCE OR ANYWHERE ELSE ON SITE.
  - SEE GENERAL NOTES ON SHEET 3.
  - CONTRACTOR SHALL REMOVE TAR No.3 AT PROJECT CONCLUSION AS FOLLOWS: COMPLETELY REMOVE ACCESS ROAD, REPLACE TOPSOIL, GRADE TO PRE-CONSTRUCTION CONTOURS, SEED AND MULCH. RESTORE OR REPLACE AS NECESSARY ANY PORTIONS OF DAMAGED CART PATH AND BRIDGE. INSTALL SOD ALONG ANY AREAS ADJACENT TO THE CART PATH WHICH BECOME DISTURBED DURING CONSTRUCTION AT THE DIRECTION OF THE ENGINEER.
  - TRAFFIC CONTROL SIGNS SHALL BE COVERED WHEN STABILIZED CONSTRUCTION ENTRANCE IS NOT IN USE.

**REVISED 4.10.2013**  
**REPLACEMENT SHEET**

<p><b>DEPARTMENT OF PUBLIC WORKS</b>                  HOWARD COUNTY, MARYLAND</p> <p>DATE: 9/10/12                  DATE: 9/10/12</p>	<p><b>Dewberry</b><sup>®</sup>                  Dewberry &amp; Davis LLC</p> <p>3106 LORD BALTIMORE DRIVE                  SUITE 110                  BALTIMORE, MD 21244-2662                  410.265.9500                  FAX: 410.265.8875</p>	<p>DES: LAL                  DRN: RLJ                  CHK: TND                  DATE: AUG. 2012</p>	<table border="1"> <tr><td>BY</td><td>NO.</td><td>REVISIONS</td><td>DATE</td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	BY	NO.	REVISIONS	DATE					<p><b>ACCESS ROAD PLAN &amp; PROFILE &amp; MAINTENANCE OF TRAFFIC</b></p> <p>600' SCALE MAP NO. 30 BLOCK NO. 8, 9, &amp; 14</p>	<p><b>LITTLE PATUXENT PARALLEL INTERCEPTOR</b></p> <p>CAPITAL PROJECT S-6175                  CONTRACT NO. 20-4636</p> <p>ELECTION DISTRICT NO. 5</p>	<p>SCALE: SHOWN                  SHEET 12 OF 20                  HOWARD COUNTY, MARYLAND</p>
				BY	NO.	REVISIONS	DATE							
<p>DATE: 9/10/12                  DATE: 9/10/12</p>														
<p>DATE: 9/10/12                  DATE: 9/10/12</p>														

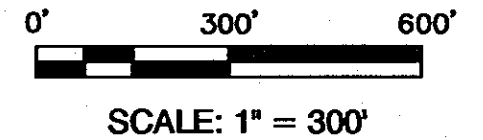




**LEGEND**

- SIGN SUPPORT
- FACE OF SIGN
- TYPE III BARRICADE
- SIGN
- M4-9(1) TEN MILLS ROAD 20" 30" (1)
- M4-8 DETOUR (2)
- M4-9L DETOUR (3)
- M4-9R DETOUR (4)
- M5-1L DETOUR (5)
- M5-1R DETOUR (6)
- BLACK ON YELLOW NOTICE TEN MILLS ROAD CLOSED AT COLUMBIA ROAD FOLLOW DETOUR (7)
- BLACK ON WHITE
- BLACK ON ORANGE
- M4-8A END DETOUR (8)
- R11-2 ROAD CLOSED (9)
- W20-3 ROAD CLOSED 1500 FT (10)
- W20-3 ROAD CLOSED 800 FT (11)
- M4-9b (L) DETOUR (12)
- M4-9b (R) DETOUR (13)
- R11-3a ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY (14)
- R3-1L (15)
- R3-1R (16)

NOTE: ALL SIGNS SHALL BE COVERED WITH NON-TRANSPARENT COVERING WHENEVER DETOUR IS NOT IN USE.



**REVISED 4-10-2013**

**REPLACEMENT SHEET**

**DEPARTMENT OF PUBLIC WORKS**  
**HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* DATE: 9/13/12  
 Chief, Bureau of Engineering: *[Signature]* DATE: 9/12/12  
 Chief, Bureau of Utilities: *[Signature]* DATE: 9/12/12

**Dewberry**  
 Dewberry & Davis LLC  
 3106 LORD BALTIMORE DRIVE  
 SUITE 110  
 BALTIMORE, MD 21244-2682  
 410.265.9500  
 FAX: 410.265.8875



DES: LAL			
DRN: RLJ			
CHK: TND			
DATE: AUG. 2012	BY:	NO.:	
	REVISIONS		DATE

**DETOUR PLAN TEN MILLS ROAD**

600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14

**LITTLE PATUXENT PARALLEL INTERCEPTOR**

CAPITAL PROJECT S-6175  
 CONTRACT NO. 20-4636

ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND

SCALE: SHOWN  
 SHEET 13 OF 20

Prepared by: (copy) on file, Date: Aug. 09, 2012 - 10:51am  
 Checked by: [Name], Date: [Date]  
 Approved by: [Name], Date: [Date]  
 Project: Interceptor Construction, Block No. 8, 9, & 14  
 Scale: 1" = 300'















STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Section I - Vegetative Stabilization Methods and Materials

- A. Site Preparation
  - i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
  - ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  - iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
- B. Soil Amendments (Fertilizer and Lime Specifications)
  - i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  - ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
  - iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 95-100% will pass through a #20 mesh sieve.
  - iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- C. Seeded Protection
  - i. Temporary Seeding
    - a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable construction equipment such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
    - b. Apply fertilizer and lime as prescribed on the plans.
    - c. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
  - ii. Permanent Seeding
    - a. Minimum soil conditions required for permanent vegetative establishment:
      - 1. Soil pH shall be between 6.0 and 7.0.
      - 2. Soluble salts shall be less than 500 parts per million (ppm).
      - 3. The soil shall contain less than 40% clay but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or sericea lespedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
      - 4. Soil shall contain 1.5% minimum organic matter by weight.
      - 5. Soil must contain sufficient pore space to permit adequate root penetration.
      - 6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
    - b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
    - c. Apply soil amendments as per soil tests or as included on the plans.
    - d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

- D. Seed Specifications
  - i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
  - Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
  - ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydrosowing. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80° F. can weaken bacteria and make the inoculant less effective.

- E. Methods of Seeding
  - i. Hydrosowing: Apply seed uniformly with hydrosower (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.
    - a. If fertilizer is being applied at the time of seeding, the application rate amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P2O5 (phosphorus); 200 lbs/acre; K2O (potassium); 200 lbs/acre.
    - b. Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydrosowing). Normally, not more than 2 tons are applied by hydrosowing at any one time. Do not use burnt or hydrated lime when hydrosowing.
    - c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
  - ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
    - a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
    - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
    - iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      - a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. Mulch Specifications (In order of preference)
  - i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  - ii. Wood Cellulose Fiber Mulch (WCFM)
    - a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
    - c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
    - d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    - e. WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
    - f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.8% maximum and water holding capacity of 90% minimum.

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

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

- i. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
- ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
- iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon site of area and erosion hazard:
  - i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
  - ii. Wood Cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  - iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should be applied uniform binder - such as acrylic DLR (Agra-Tack), DCA-70, Petrostet, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
  - iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I. Incremental Stabilization - Cut Slopes

- i. All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
  - ii. Construction sequence (refer to Figure 4 below):
    - a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
    - b. Perform phase 1 excavation, dress and stabilize.
    - c. Perform phase 2 excavation, dress, and stabilize. Overseed phase 1 areas as necessary.
    - d. Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

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

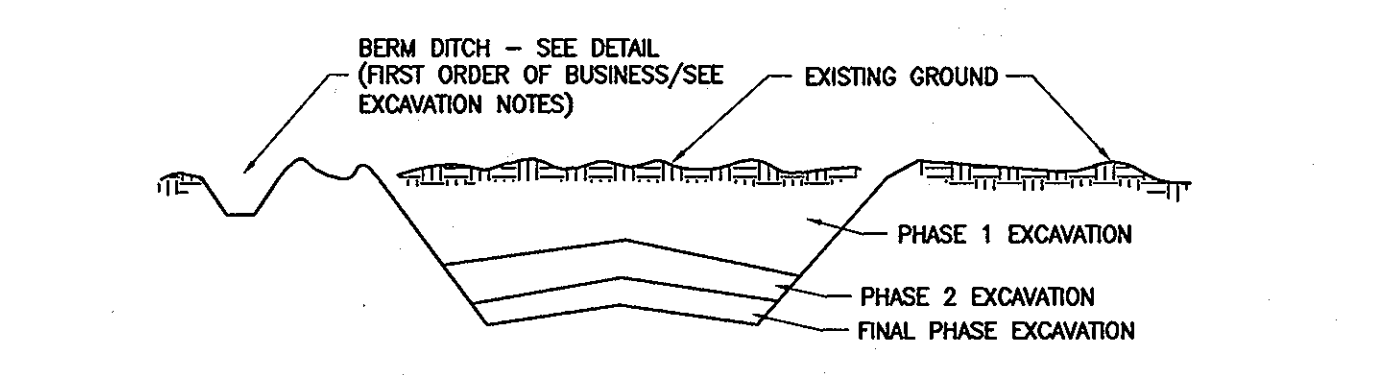


Figure 4 Incremental Stabilization - Cut

J. Incremental Stabilization of Embankments - Fill Slopes

- i. Embankments shall be constructed in lifts as prescribed on the plans.
- ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.
- iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
- iv. Construction sequence: Refer to Figure 5 (below):
  - a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct Slope Silt Fence on low side of fill as shown in Figure 4, unless other methods shown on the plans address this area.
  - b. Place phase 1 embankment, dress and stabilize.
  - c. Place phase 2 embankment, dress and stabilize.
  - d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

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

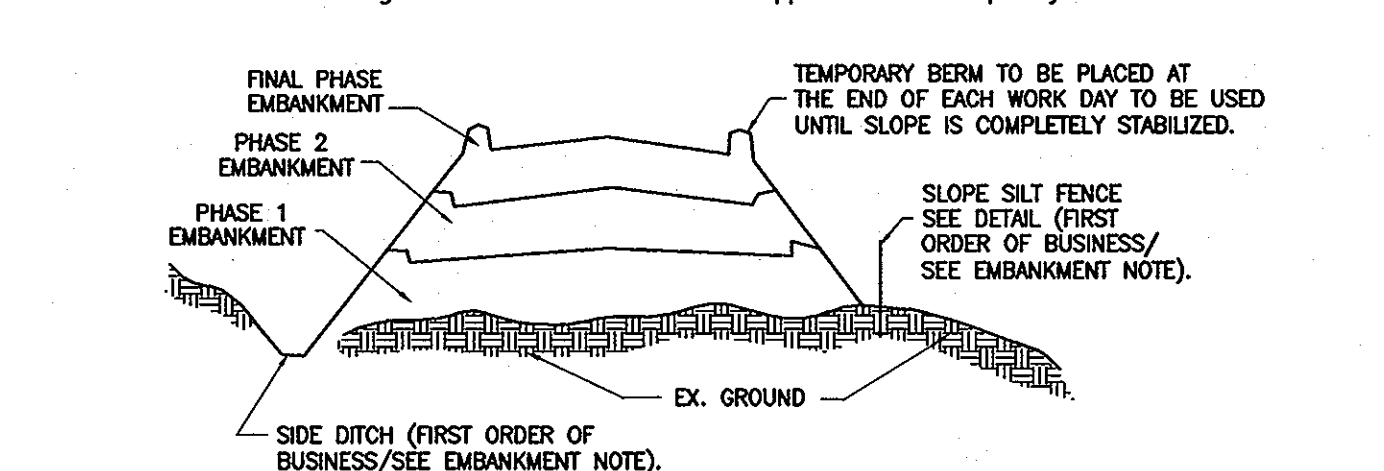


Figure 5 Incremental Stabilization - Embankment Fill Comply with MD 378 Specifications.

Section II - Temporary Seeding

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

- A. Seed Mixtures - Temporary Seeding
  - i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this Summary is not put on the plans and completed, then Table 26 must be put on the plans.
  - ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

SEED MIXTURE (HARDINESS ZONE - 6b)					SEEDING DEPTHS	FERTILIZER RATE (10-10-10)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS			
	ANNUAL RYEGRASS	50 LB/AC	3/1 - 4/30 8/15 - 11/1	1/4" - 1/2"	600 LB/AC (15 LB/1000 SF)	2 TONS/AC (100 LB/1000 SF)	
	MILLET	50 LB/AC	5/1 - 8/14	1/2"			

Section III: Permanent Seeding

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

- A. Seed Mixtures - Permanent Seeding
  - i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Permanent Seed Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. This Summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-ARS Technical Field Office Guide, Section 342 - Critical Area Planting. For special low maintenance areas, see Section IV Sod and V Turfgrass.
  - ii. For sites having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.
  - iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/acre), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

SEED MIXTURE (HARDINESS ZONE 6B) FROM TABLE 25					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P205	K20	
1	CREeping RED FESCUE (30%) CHEWINGS FESCUE (30%) ROUGH BLUE GRASS (20%) CATALINA PERENNIAL RYEGRASS (20%)	200	3/1 - 5/15 AND 8/15 - 10/15	1"	80 LB/AC (2 LB/1000 SF)	175 LB/AC (4 LB/1000 SF)	175 LB/AC (4 LB/1000 SF)	2 TONS/AC (100 LB/1000 SF)

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 supplier's 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.

Section IV - Turfgrass Establishment

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

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

- A. Permanent Seeding
  - i. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
  - ii. Kentucky Bluegrass/Perennial Rye - Full sun mixture - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Rye/Certified Kentucky Bluegrass Seeding rate: 2 pounds mixture/1000 square feet. A minimum of 3 Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.
  - iii. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue Cultivars 95-100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate: 5 to 8 lbs/1000 sq. ft. One or more cultivars may be blended.
  - iv. Kentucky Bluegrass/Fine Fescue - Shade Mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: certified Kentucky Bluegrass Cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 lbs/1000 square feet. A minimum of 3 Kentucky bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
- Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland".
- B. Ideal times of seeding
  - Western MD: March 15 - June 1, August 1 - October 1 (Hardiness Zones - 5b, 6a)
  - Central MD: March 1 - May 15, August 15 - October 15 (Hardiness Zone - 6b)
  - Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15 (Hardiness Zones - 7a,7b)
- C. Irrigation
  - If soil moisture is deficient, supply new seedlings with adequate water for plant growth (23/64" 0 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

D. Repairs and Maintenance

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

- i. Once the vegetation is established, the site shall have 95% ground cover to be considered adequately stabilized.
- ii. If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seeded preparation and seeding recommendations.
- iii. If the stand provides between 40% and 94% ground coverage, overseed and fertilizing half of the rates originally applied may be necessary.
- iv. Maintenance fertilizer rates for permanent seedings are shown in table 24. For laws and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No. 171.

SEDIMENT CONTROL GENERAL NOTES

- 1. A minimum of 48 hours notice must be given to Howard County Construction Inspection Division, Sediment Control Division prior to the start of any construction. 410-313-1855.
- 2. All vegetative and structural practices are to be installed according to the provisions of the plan and are to be in conformance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control and revisions thereto.
- 3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 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 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. III), sod (Sec. III) temporary seeding (Sec. II) and mulching (Sec. I). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 5. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- 6. Site Analysis
  - Total Area of Site: 6.01 Acres
  - Area Disturbed: 6.01 Acres
  - Area to be paved: 0 Sq. Yds.
  - Area to be Vegetatively Stabilized: 5.87 Acres
  - Total Cut: 11,130 Cu. Yds.
  - Total Fill: 11,130 Cu. Yds.
  - Offsite waste/borrow area location: To be determined by contractor.
- 7. Any sediment control practices which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 8. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 9. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- 10. Trenches for the construction of utilities is limited to that which shall be back-filled and stabilized by the end of each work day.
- 11. Spoil from trench excavation shall be placed on the uphill side of the excavation.
- 12. Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
- 13. Cut and fill quantities provided under site analysis do not represent bid quantities. These quantities do not distinguish between topsoil, structural fill or embankment material, nor do they reflect consideration of undercutting or removal of unsuitable material. The contractor shall familiarize himself with site conditions which may affect the work.

ASBUILTS 4-10-2013

ESC 5 OF 8

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *John J. ...*  
 Chief, Bureau of Utilities: *...*  
 Date: *4/13/12*

**Dewberry**  
Dewberry & Davis LLC

3106 LORD BALTIMORE DRIVE  
SUITE 110  
BALTIMORE, MD 21244-2682  
410.265.9500  
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DES: LAL  
DRN: RLI  
CHK: TND  
DATE: JUNE 2012

EROSION AND SEDIMENT CONTROL NOTES & DETAILS

600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14

LITTLE PATUXENT PARALLEL INTERCEPTOR

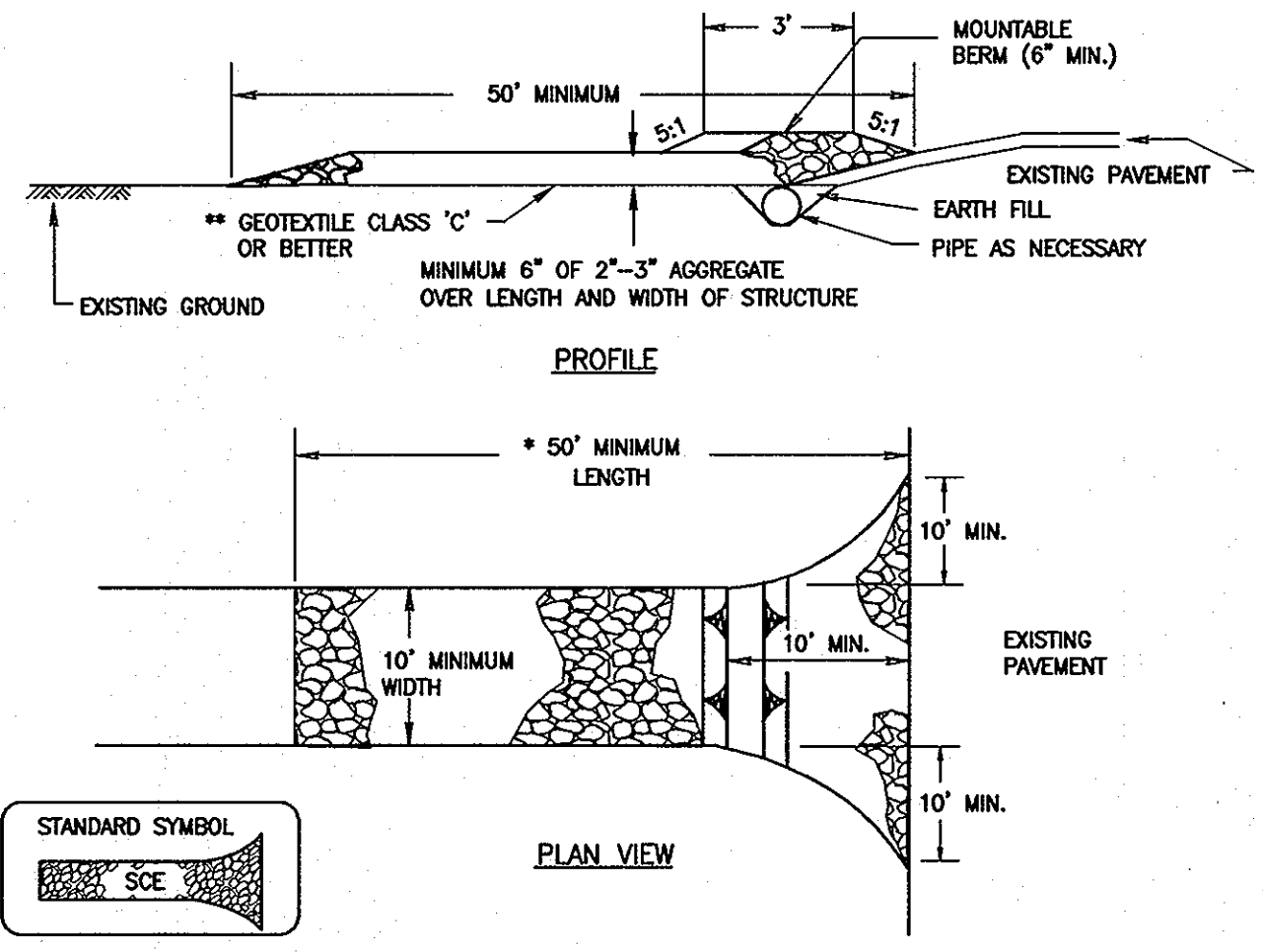
CAPITAL PROJECT S-6175  
CONTRACT NO. 20-4636

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SHEET 17 OF 20



**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

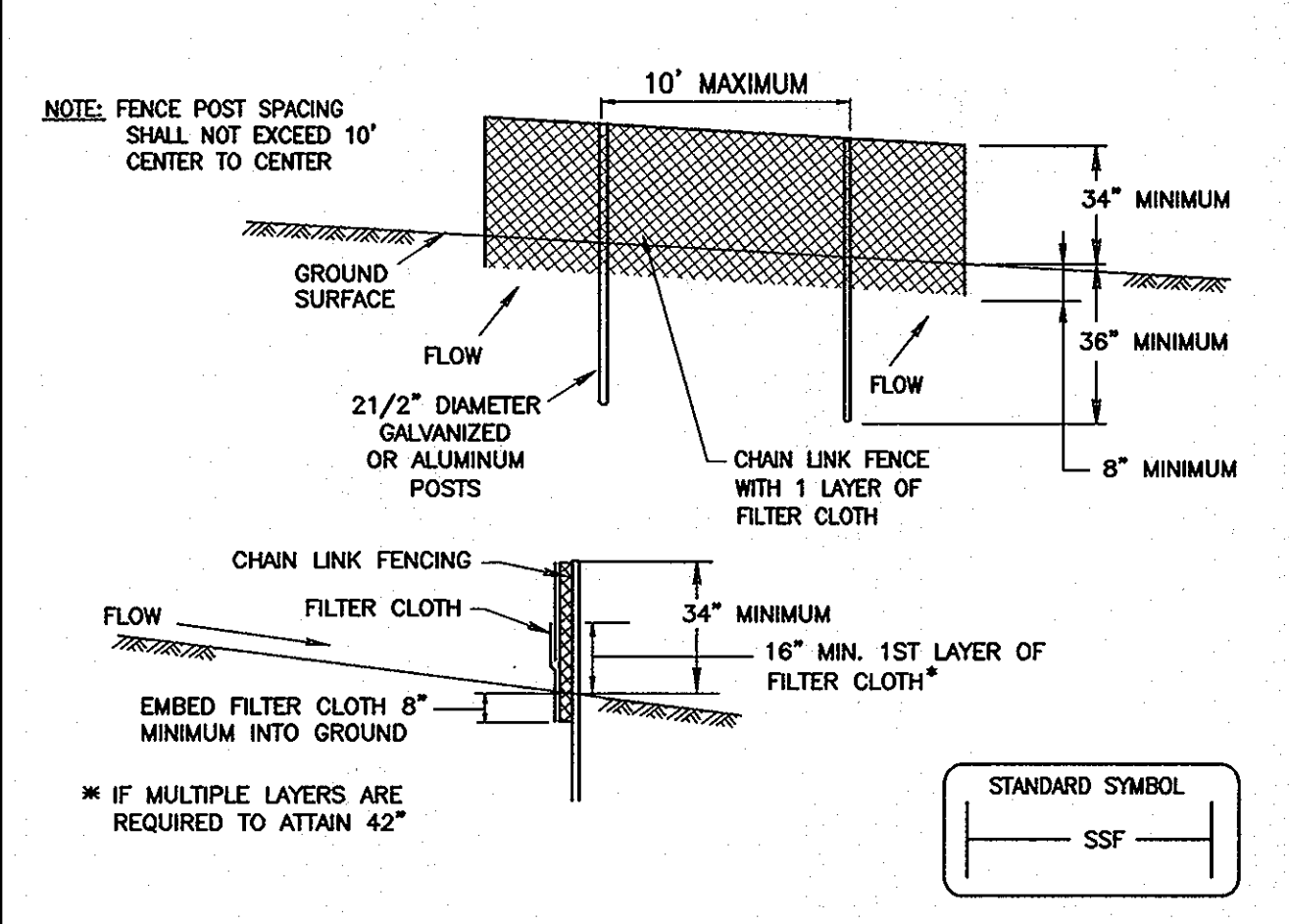


**Construction Specifications**

- Length - minimum of 50' (\*30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- 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.
- 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.
- 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 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.
- Location - A stabilized construction entrance shall be located at every point 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 33 - SUPER SILT FENCE**



**Construction Specifications**

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fences shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth 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: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H - 26 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

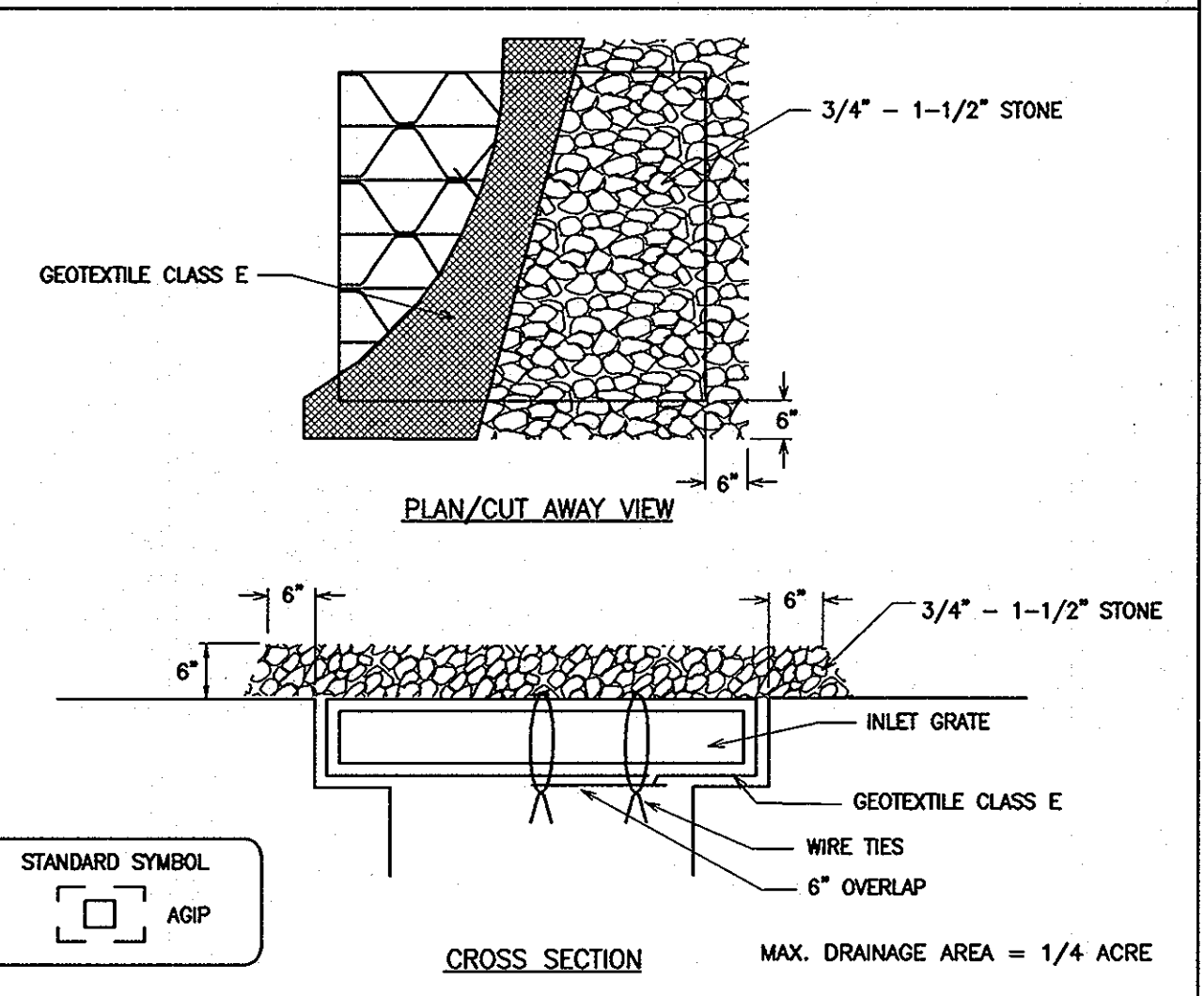
**PROJECT SEQUENCE OF CONSTRUCTION**

- Notify Miss Utility (1-800-257-7777) at least 48 hours prior to beginning work.
- Notify Howard County Construction Inspection Division (1-410-313-3800) at least 48 hours prior to beginning work on-site and obtain grading permit.
- Clear and grub for sediment and erosion control measures or devices only. (7 days)
- Install all sediment and erosion control measures or devices including stabilized construction entrance(s). (10 days)
- Notify Howard County Construction Inspection Division upon completion of the installation work noted above. (1 day)
- With the approval of the Howard County Construction Inspection Division, clear and grub the remainder of the site and stabilize immediately. (21 days)
- Begin excavation and installation of utilities. Work shall be limited to that which can be backfilled and stabilized in one day per Standard Sediment Control Note No. 10. Stabilize work area at the end of each work day. (100 days)
- Connect to existing utilities where applicable. (7 days)
- With permission from the Sediment Control Inspector, remove stabilized construction entrance(s). (2 days)
- Stabilize all disturbed areas. (14 days)
- Following approval from the Howard County Construction Inspection Division Inspector, remove all remaining sediment control measures and stabilize any remaining areas. (7 days)

**BEST MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAIN**

- No excess fill, construction material, or debris shall be stockpiled or stored in non-tidal wetlands, non-tidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of non-tidal wetlands, non-tidal wetland buffers, waterways, or 100-year floodplain.
- Do not use excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to non-tidal wetlands, non-tidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of non-tidal wetlands, non-tidal wetland buffers, waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- Rectify any non-tidal wetlands, non-tidal wetland buffers, waterways, or the 100-year floodplain temporarily impacted by any construction.
- All stabilization in the non-tidal wetland and non-tidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uliola sp.), and/or Rye (Secale cereale). These species will allow for stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Non-tidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- To protect aquatic species, in-stream work is prohibited as determined by classification of the stream:  
Use 1 waters: in-stream work shall not be conducted during the period of March 1 through June 15, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culverts shall be constructed and any riprap placed so as not to obstruct the movement of the aquatic species, unless the purpose of the activity is to impound water.

**DETAIL 23B - AT GRADE INLET PROTECTION**



**Construction Specifications**

- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 3/4" to 1-1/2" 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 SILT FENCE**

Design Criteria			
Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

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APPROVED 4-10-2013

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *Joseph A. ...* DATE: *4/13/12*  
 Chief, Bureau of Engineering: *Mona E. ...* DATE: *6/13/12*  
 Chief, Bureau of Utilities: *...* DATE: *...*  
 Chief, Utility Design Division: *...* DATE: *...*

**Dewberry**  
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DES: LAL			
DRN: RLI			
CHK: TND			
DATE: JUNE 2012	BY	NO.	
	REVISIONS		DATE

**EROSION AND SEDIMENT CONTROL NOTES & DETAILS**

60' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14

**LITTLE PATUXENT PARALLEL INTERCEPTOR**

CAPITAL PROJECT S-6175  
CONTRACT NO. 20-4636

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE: SHOWN

SHEET 18 OF 20

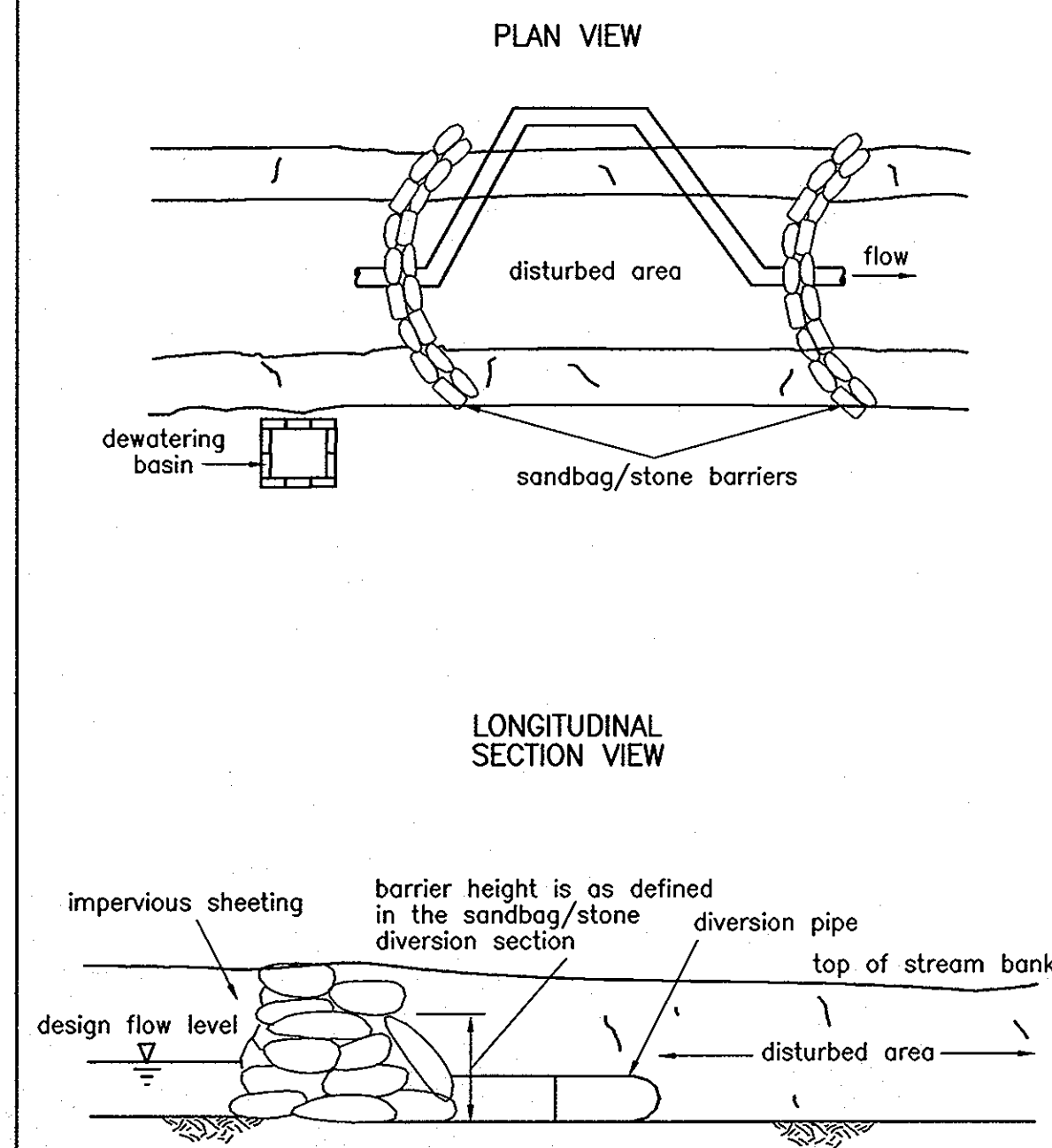
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Maryland's Guidelines To Waterway Construction  
DETAIL 1.4: DIVERSION PIPE



TEMPORARY INSTREAM CONSTRUCTION MEASURES  
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MGWC 1.4: DIVERSION PIPE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing flow diversion pipes in combination with sandbag or stone diversions when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversion pipes with an insufficient flow capacity can cause the channel diversion to fail thereby resulting in severe erosion of the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low flow.

MATERIAL SPECIFICATIONS

Materials for stream diversions should meet the following requirements:

- **Riprap:** Stone should be washed and have a minimum diameter of 6 inches (15 centimeters).
- **Sandbags:** Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
- **Sheeting:** Sheeting should consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

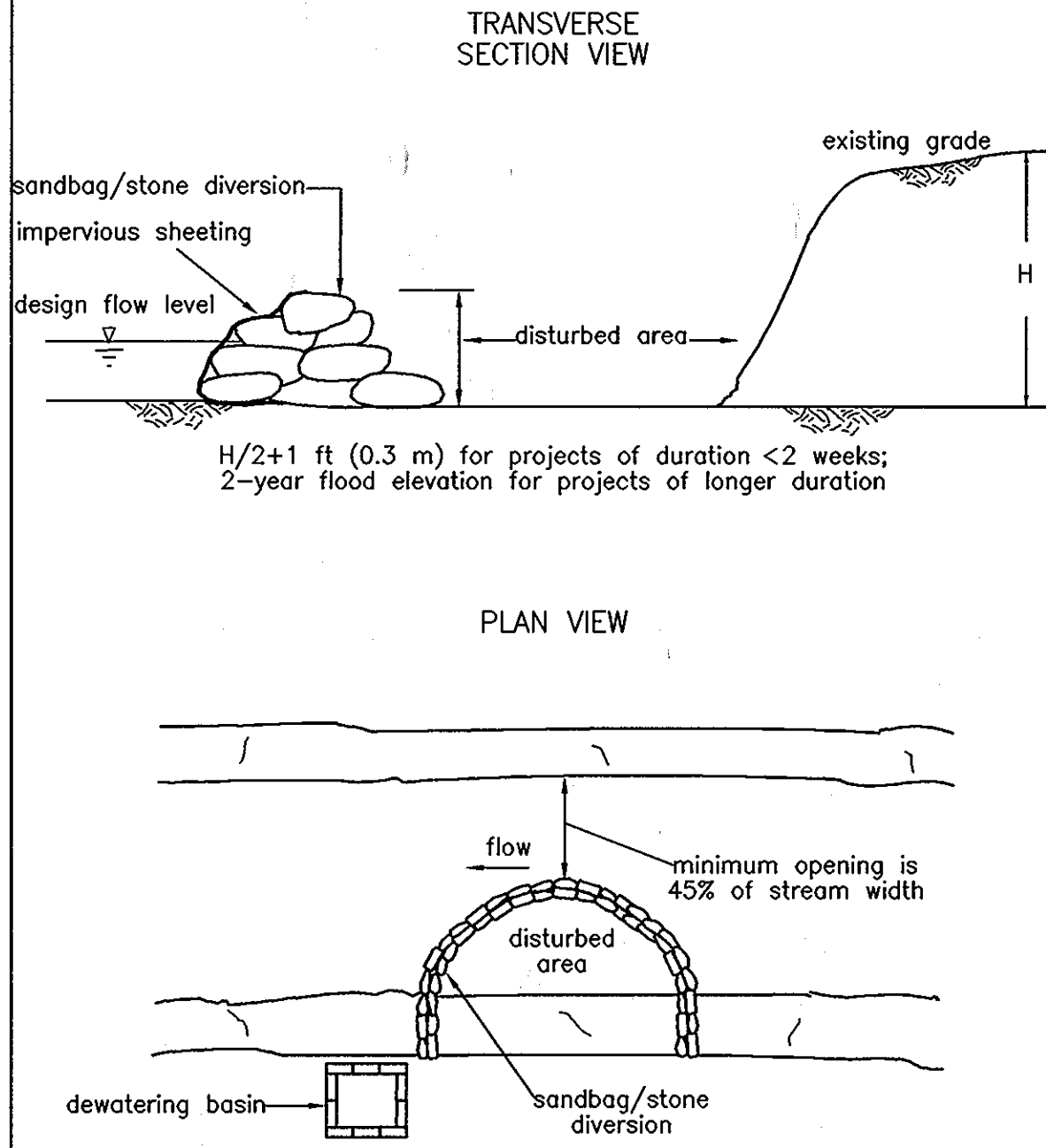
All erosion and sediment control devices including mandatory dewatering basins should be installed as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during low flow conditions. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Diversion pipes with sandbag or stone barriers should be completed as follows (refer to Detail 1.4):

1. Sandbag/stone barriers should be sized and installed as detailed in MGWC 1.5: Sandbag/Stone Diversion. The materials should be sized to withstand baseflow velocities.
2. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
3. Sediment-laden water from the construction area should be pumped to a dewatering basin.
4. The diversion pipe should have a minimum capacity sufficient to convey the 2-year flow for projects with a duration of two weeks or greater. For projects of shorter duration, the capacity of the pipe can be reduced accordingly.
5. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.
6. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal.

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Maryland's Guidelines To Waterway Construction  
DETAIL 1.5: SANDBAG/STONE DIVERSION



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MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- **Riprap:** Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- **Sandbags:** Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- **Sheeting:** Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

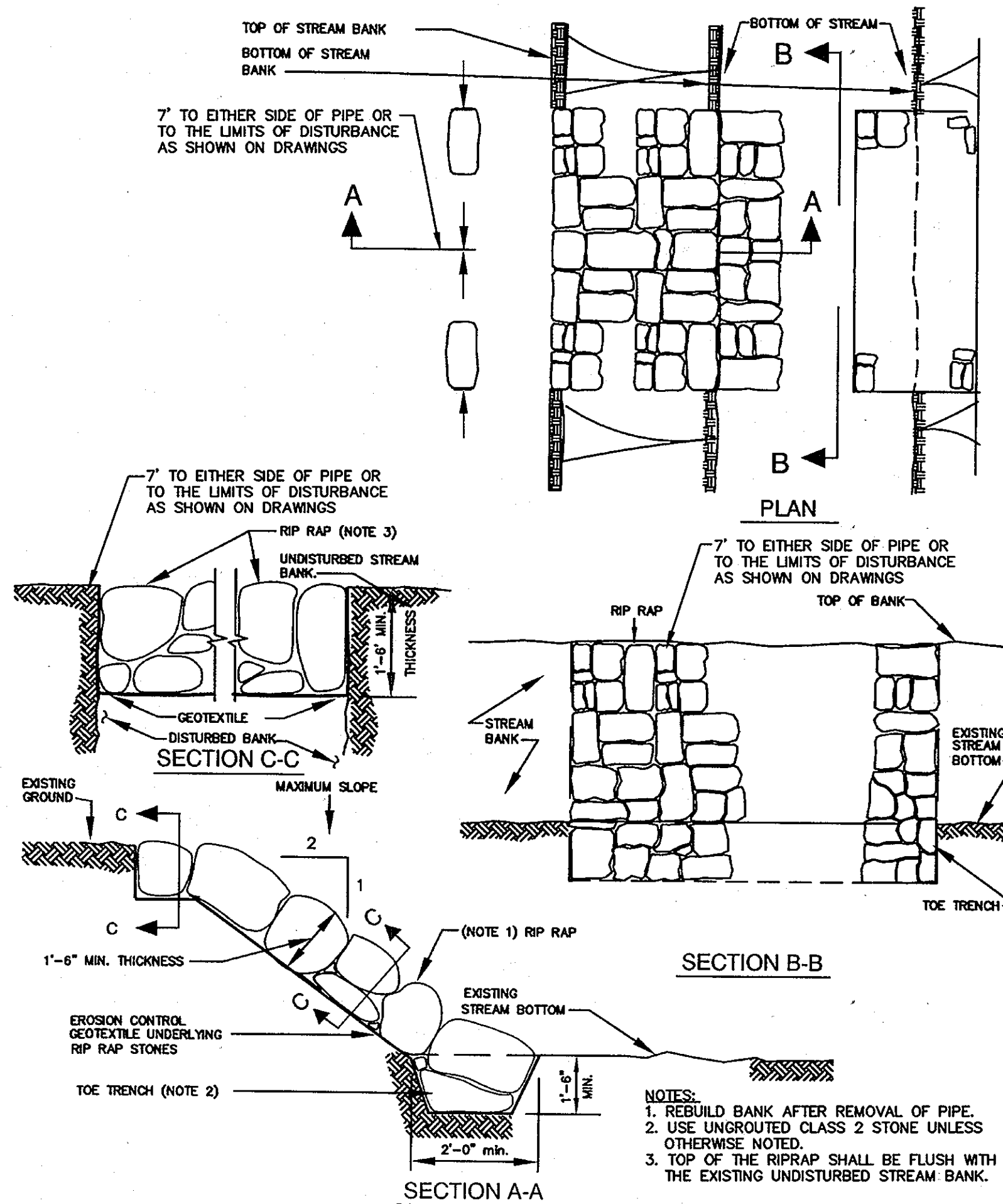
1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than two weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment-laden water from the construction area should be pumped to a dewatering basin.

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MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

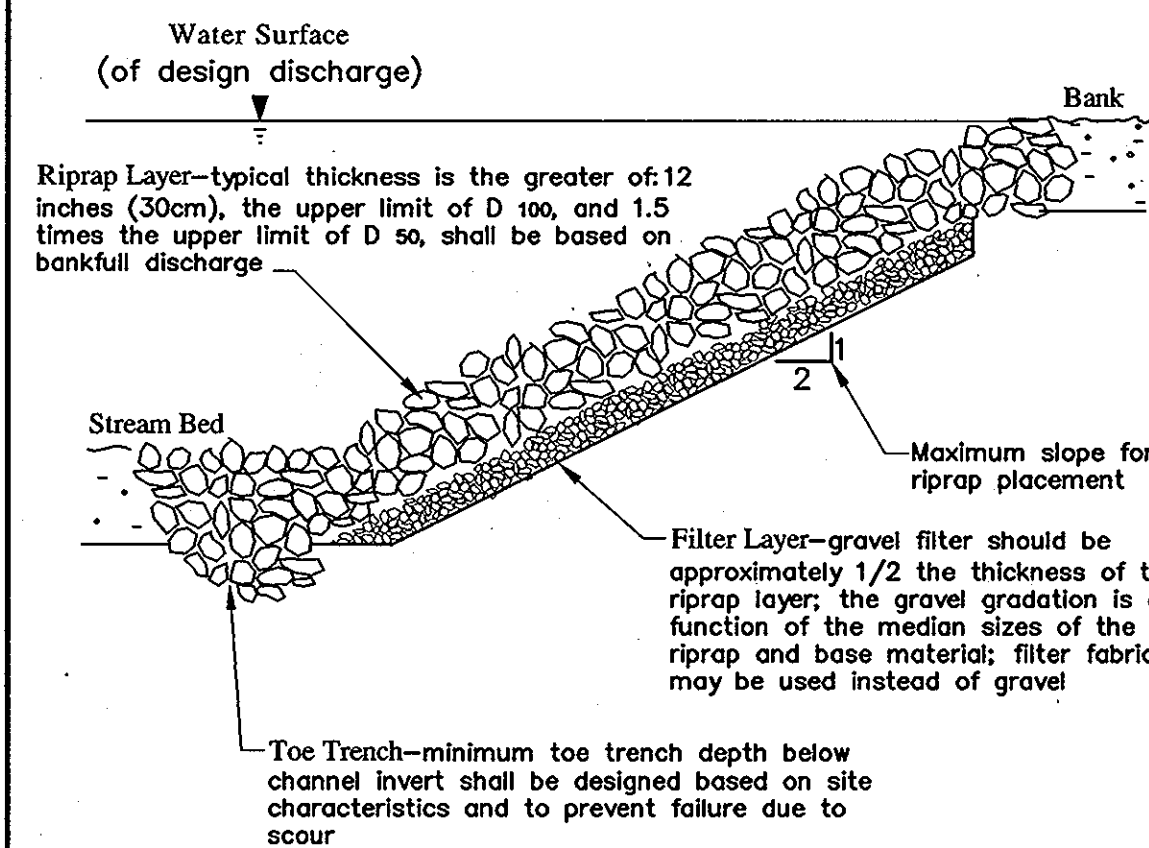
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STREAM BANK PROTECTION  
NO SCALE

Maryland Guidelines to Waterway Construction  
DETAIL 2.1: RIPRAP

SECTION VIEW



SLOPE PROTECTION AND STABILIZATION TECHNIQUES  
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MGWC 2.1: RIPRAP

CLASS	STONE SIZE	% TOTAL WEIGHT-GIVEN SIZE
I	150 LB (70 KG)	100
	2 LB (1 KG)	10 MAX.
II	700 LB (320 KG)	100
	20 LB (10 KG)	10 MAX.
III	2000 LB (910 KG)	100
	40 LB (20 KG)	10 MAX.

\*UNIFORM GRADE RIPRAP SHOULD INCORPORATE ANGULAR ROCK TO PROMOTE INTERLOCKING.

INSTALLATION GUIDELINES

ALL EROSION AND SEDIMENT CONTROL DEVICES, INCLUDING DEWATERING BASINS, SHOULD BE IMPLEMENTED AS THE FIRST ORDER OF BUSINESS ACCORDING TO A PLAN APPROVED BY THE WMA OR LOCAL AUTHORITY. ONCE A SLOPE STABILIZATION PROJECT IS INITIATED, PREPARATION AND PLACEMENT OF THE RIPRAP SHOULD IMMEDIATELY FOLLOW THE INITIAL DISTURBANCE TO MINIMIZE THE CHANCES FOR FURTHER SLOPE DEGRADATION. THE RECOMMENDED CONSTRUCTION PROCEDURE FOR RIPRAP IS AS FOLLOWS BEGINNING WITH INITIAL SLOPE PREPARATIONS (REFER TO DETAIL 2.1):

1. THE CONTRACTOR SHOULD INSTALL ALL SEDIMENT AND EROSION CONTROL DEVICES AS THE FIRST ORDER OF BUSINESS.
2. EXCAVATION SHOULD BE MADE IN REASONABLY CLOSE CONFORMITY WITH THE EXISTING STREAM SLOPE AND BED.
3. ALL FILL IN THE SUBGRADE SHOULD BE COMPACTED TO A DENSITY APPROXIMATING THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. PROMIONS MUST BE MADE TO ANCHOR THE RIPRAP AT THE STREAM BED SO AS TO PROVIDE PROTECTION AGAINST UNDERMINING. IF THIS CANNOT BE ACCOMPLISHED BY CREATING A TOE TRENCH, AN ALTERNATIVE METHOD OF PROTECTION MUST RECEIVE PRIOR WRITTEN APPROVAL FROM THE WMA OR LOCAL AUTHORITY.
5. THE FILTER LAYER OR BLANKET SHOULD BE PLACED IMMEDIATELY AFTER SLOPE PREPARATION. THE STONE FOR GRANULAR FILTERS SHOULD BE SPREAD IN A UNIFORM LAYER TO THE SPECIFIED DEPTH. WHEN MORE THAN ONE LAYER IS EMPLOYED, THEY SHOULD BE SPREAD SUCH THAT THERE IS MINIMAL MIXING. WHEN CLOTH FILTERS ARE USED, SPECIAL CARE SHOULD BE TAKEN NOT TO DAMAGE THE FABRIC DURING RIPRAP PROTECTION.
6. RIPRAP PLACEMENT SHOULD BEGIN WITH THE TOE. THE LARGER STONES, AS SPECIFIED BY THE DESIGN GRADATION, SHOULD BE PLACED IN THE TOE AND ALONG THE PERIMETER OF THE SLOPE AND CHANNEL PROTECTION. THE RIPRAP SHOULD BE PLACED WITH SUITABLE EQUIPMENT IN SUCH A MANNER AS TO PRODUCE A REASONABLY GRADED MASS OF STONES WITH ZERO DROP HEIGHT. THE PLACING OF STONES THAT CAUSE EXTENSIVE SEGREGATION IS NOT ALLOWED. WHERE APPROPRIATE, A LOW FLOW CHANNEL SHALL BE CONSTRUCTED THROUGH THE RIPRAP.
7. ANY EXCAVATION VOIDS EXISTING ALONG THE EDGES OF THE COMPLETED SLOPE AND CHANNEL PROTECTION SHOULD BE BACKFILLED AND COMPACTED.
8. ALL DISTURBED AREAS SHOULD BE PERMANENTLY STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.

DATE 4-10-2013

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *John K. Gish*  
 Chief, Bureau of Engineering: *Thomas J. Little*  
 Chief, Bureau of Utilities: *Shahid*  
 Chief, Utility Design Division: *Shahid*

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DES: LAL			
DRN: RLI			
CHK: TND			
DATE: JUNE 2012	BY: NO.	REVISIONS	DATE

EROSION AND SEDIMENT CONTROL NOTES & DETAILS

600' SCALE MAP NO. 30 BLOCK NO. 8, 9, & 14

LITTLE PATUXENT PARALLEL INTERCEPTOR

CAPITAL PROJECT S-6175  
CONTRACT NO. 20-4636

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SHEET 20 OF 20