

**GENERAL NOTES**

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON APRIL 2004 BY KCI TECHNOLOGIES, INC.
- 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 NO. 358B. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE IRON BARS.
- 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. 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 MONEY OWED TO 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.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL 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. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
AT&T.....1-800-252-1133  
BGE (CONSTRUCTION SERVICES).....410-850-4620  
BGE (EMERGENCY).....410-895-1480  
BUREAU OF UTILITIES (DPW).....410-313-4900  
COLONIAL PIPELINE CO.....410-795-1390  
MISS UTILITY.....1-800-257-7777  
STATE HIGHWAY ADMINISTRATION.....410-531-5533  
VERIZON.....1-800-743-0033 / 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 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 BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN 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.
- ALL DUCTILE IRON PIPES TO BE USED ON THE PUBLIC WATER SYSTEM SHALL BE CLASS 54. DUCTILE IRON FITTINGS SHALL MEET THE REQUIREMENTS OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND SHALL BE EXTERIOR EPOXY COATED IN ACCORDANCE WITH AWWA C116.
- TOPS OF WATER MAIN SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- ALL WATER HOUSE CONNECTIONS SHALL BE COPPER MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. OUTSIDE METER SETTINGS SHALL BE CONSTRUCTED PER STANDARD DETAIL W3.31.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD DETAIL. ALL FIRE HYDRANT LEADS INCLUDING THE TEE SHALL BE DUCTILE IRON CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL WATER MAINS CONSTRUCTED IN FILL AREAS SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE FOLLOWING NOTE IS ADDED TO HOWARD COUNTY STANDARD DETAIL W2.22, BUTTRESSES AND ANCHORAGE'S FOR VERTICAL BENDS, WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH THE PIPE SURFACE SHALL BE 1-INCH WIDE BY 1/2-INCH THICK STEEL. THE REMAINING PORTION OF THE STRAP SHALL BE REINFORCING BAR SIZED IN ACCORDANCE WITH THE PERTINENT CHART SHOWN ON THE DETAIL.
- EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, ALL PUBLIC WATER MAINS SHALL BE POLYVINYLCHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA C900 DR18, PRESSURE CLASS 150 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF UTILITIES HOWARD COUNTY, 15 DAYS PRIOR TO WATER MAIN SHUT DOWNS.
- CONTINUITY TEST STATION SHALL BE PLACED ADJACENT TO EACH FIRE HYDRANT AND ANCHORAGES SHALL BE INSTALLED UNDER WATER VALVES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATION AND DETAILS.
- WATER MAINS SHALL BE FILLED WITH WATER AND BROUGHT TO 150PSI FOR 2 HOURS.
- ALL SEWER MAINS SHALL BE D.I.P. OR PVC UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL 05.52, WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED. SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.
- HOUSE (S) WITH THE SYMBOL "C.N.S" INDICATES THAT CELLAR CANNOT BE SERVED.
- THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES.

# TROTTER ROAD WATER AND SEWER EXTENSION

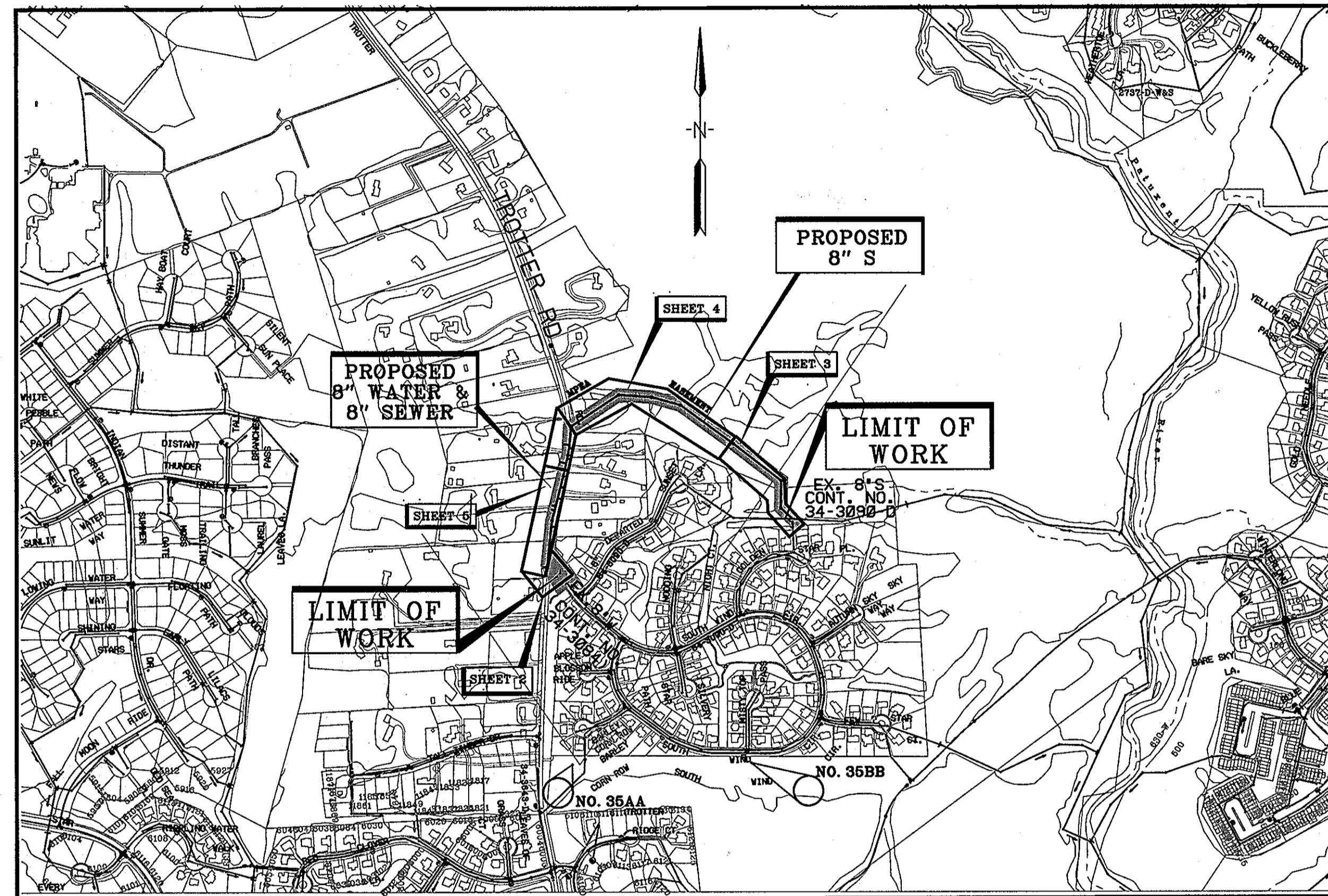
## HOWARD COUNTY, MARYLAND

### DEPARTMENT OF PUBLIC WORKS

#### CAPITAL PROJECT No. S-6239

#### CONTRACT No. 34-4345

INDEX OF SHEETS	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	8" WATER MAIN PLAN AND PROFILE
3	8" SEWER PLAN AND PROFILE
4	8" SEWER PLAN AND PROFILE
5	8" SEWER PLAN AND PROFILE
6	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
6A	8" WATER MAIN CORROSION CONTROL LAYOUT
6B	CORROSION CONTROL DETAIL 1
6C	CORROSION CONTROL DETAIL 2
6D	CORROSION CONTROL DETAIL 3



**LOCATION MAP**  
SCALE: 1" = 600'

TYPE OF BUILDING:	RESIDENTIAL	HOWARD COUNTY GEODETIC SURVEY CONTROL
NUMBER OF PARCELS:	11	NAD83(91) (HORIZONTAL)
NUMBER OF SEWER HOUSE CONNECTIONS:	10	NAVD 88 (VERTICAL)
NUMBER OF WATER HOUSE CONNECTIONS:	11	NO. 35BB
DRAINAGE AREA:	MIDDLE PATUXENT	N 560790.413
PRESSURE ZONE:	630-W	E 1336537.268
WATER TEST GRADIENT	710	ELEV. 394.26
WATER CODE:		NO. 35AA
FOR COUNTY USE ONLY: WATER NO.	104	N 560767.727
		E 1335483.841
SEWER CODE:		ELEV. 430.90
FOR COUNTY USE ONLY: SEWER NO.	6700000	

"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. 12526, EXPIRATION DATE: 9/12/2011"

QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
8" PVC WATER	L.F.	1,095	1,111	BELAIR ROAD SUPPLY
8" PVC WATER	L.F.	22		
8" VALVE	EACH	1	1	BELAIR ROAD SUPPLY
1-1/2" DRAIN	EACH	1	1	BELAIR ROAD SUPPLY
FH	EACH	3	3	BELAIR ROAD SUPPLY
6" V	EACH	3		
1" WHC	L.F.	368	408	BELAIR ROAD SUPPLY
8" SEWER	L.F.	2,558	2,283	BELAIR ROAD SUPPLY
4" SHC	L.F.	245	263	BELAIR ROAD SUPPLY
4" TYPE A DHC	L.F.	18		
STD MH 6'	EACH	6	5	ATLANTIC CONCRETE PRODUCTS INC
STD MH >6'	V.F.	21	24	ATLANTIC CONCRETE PRODUCTS INC
MH, W.T. 6'	EACH	5	6	ATLANTIC CONCRETE PRODUCTS INC
MH, W.T. >6'	V.F.	18	13	ATLANTIC CONCRETE PRODUCTS INC
W.T. MH W/ TYPE 'B' DROP CONN. 6'	EACH	1	1	ATLANTIC CONCRETE PRODUCTS INC
W.T. MH W/ TYPE 'B' DROP CONN. >6'	V.F.	10		
NAME OF UTILITY CONTRACTOR: THE MATRICIAN COMPANY				
CHECKBOX				
AS-BUILT DATE: APRIL 28, 2008				
SURVEY AND DRAFTING DIVISION				

RESTORATION SCHEDULE		
LOCATION	DISTANCE	TYPE
TROTTER RD	1835	ASPHALT
SOUTH WIND CIRCLE	100	ASPHALT
SHC	297	MULCH & SEEDING
WHC	358	MULCH & SEEDING
EX. MH 407 TO SM 7	1700	MULCH & SEEDING (SPECIAL MIX)*

\* REFER TO PERMANENT SEEDING NOTES ON SHEET 6 OF 6

LEGEND	
	DECIDUOUS TREE
	CONFIFEROUS TREE
	TRAVERSE POINT
	WATER MAIN
	FIRE HYDRANT
	VALVE
	SEWER MAIN
	MANHOLE
	LOD - LIMIT OF DISTURBANCE
	WATER HOUSE CONNECTION
	SEWER HOUSE CONNECTION
	EXISTING FIRE HYDRANT
	EXISTING VALVE
	EXISTING WATER MAIN
	EXISTING GAS MAIN
	EXISTING OVERHEAD ELECTRIC
	EXISTING UNDERGROUND SERVICE
	EXISTING TELEPHONE POLE
	EXISTING SEWER
	EASEMENT
	CONSTRUCTION STRIP
	SF - SILT FENCE
	SNF - SNOW FENCE

**AS BUILT**  
REPLACEMENT SHEET

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 PLOT: D:\proj\0109\05\05\01090505.dwg  
 FILE: MA-2009-01090505.dwg  
 PLOT: 11/27 AM 05:55 Friday, July 31, 2009  
 PLOT: D:\proj\0109\05\05\01090505.dwg  
 FILE: MA-2009-01090505.dwg

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 8/10/09  
 Chief, Bureau of Engineering: *[Signature]* DATE: 7/5/09  
 Chief, Bureau of Utilities: *[Signature]* DATE: 7/5/09  
 Chief, Utility Design Division: *[Signature]* DATE: 7/5/09

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

**KCI**  
TECHNOLOGIES

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com



DES: GW					
DRN: CK					
CHK: TW					
DATE: AUG. 06	CK				
BY: NO.					
		REVISION	DATE	SCALE	MAP NO.

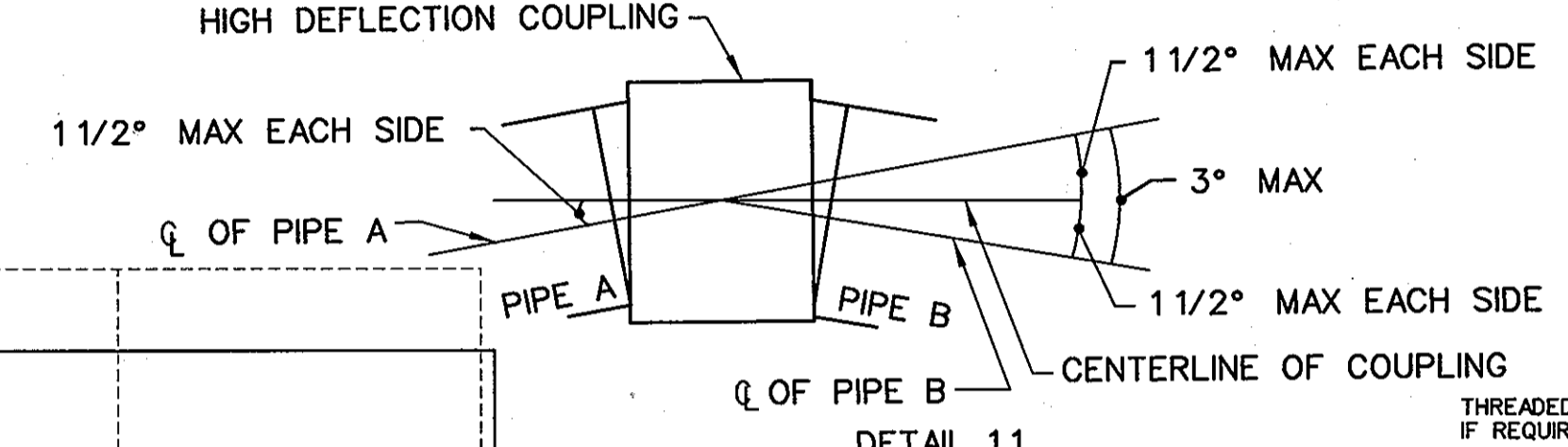
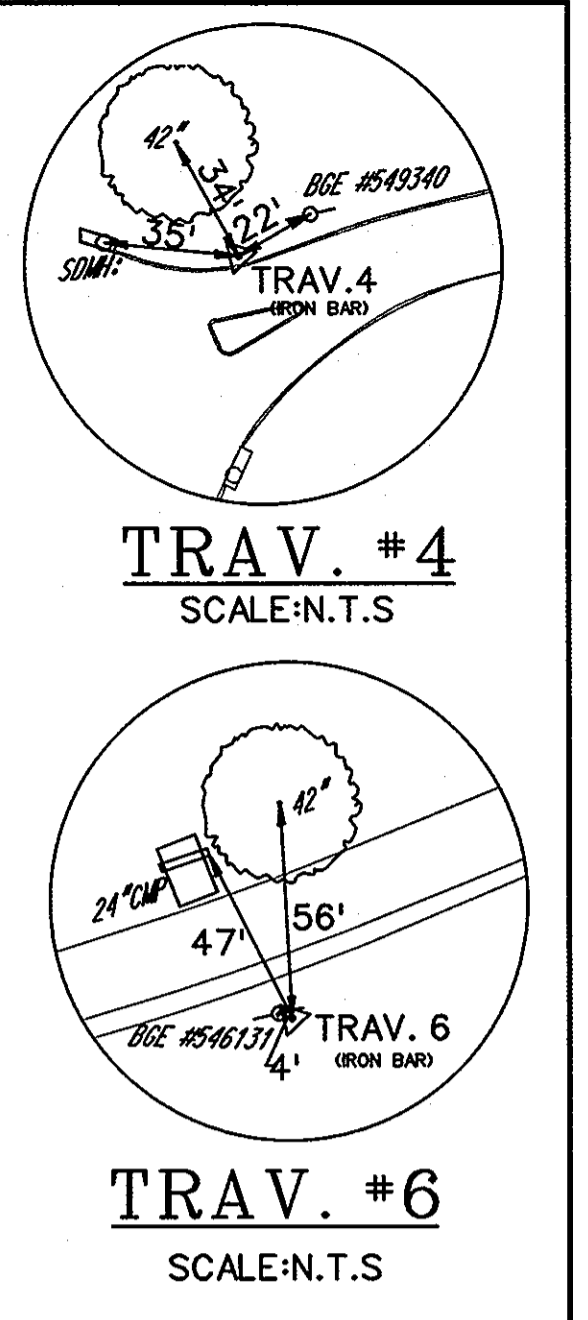
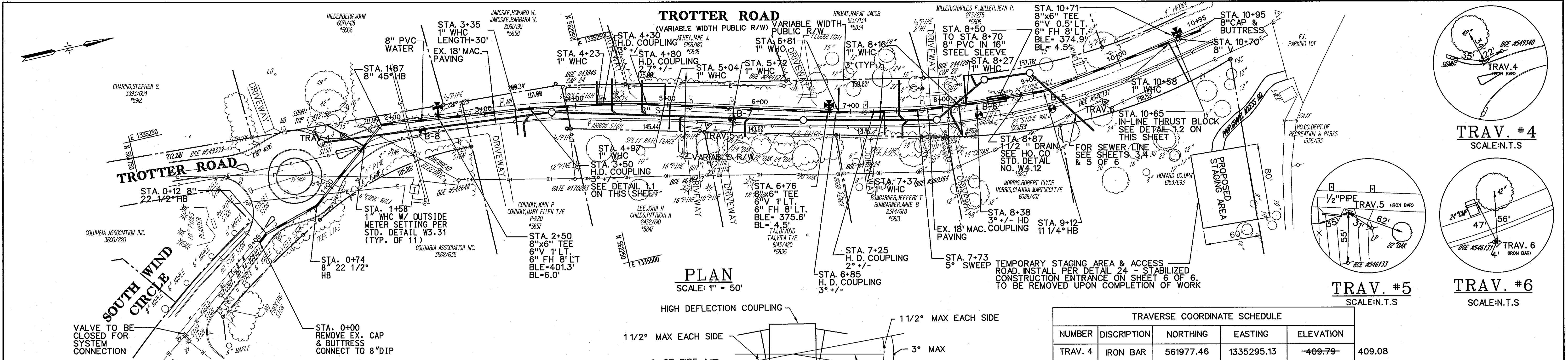
TITLE SHEET

SCALE MAP NO. 35 BLOCK NO. 2

TROTTER ROAD WATER AND SEWER EXTENSION  
CAPITAL PROJECT No. S-6239  
CONTRACT No. 34-4345

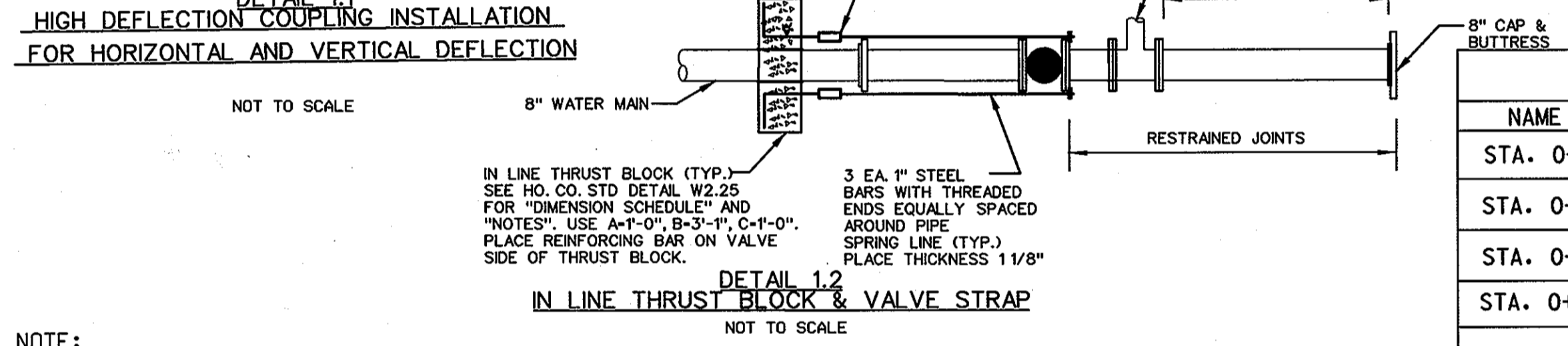
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 1 OF 6



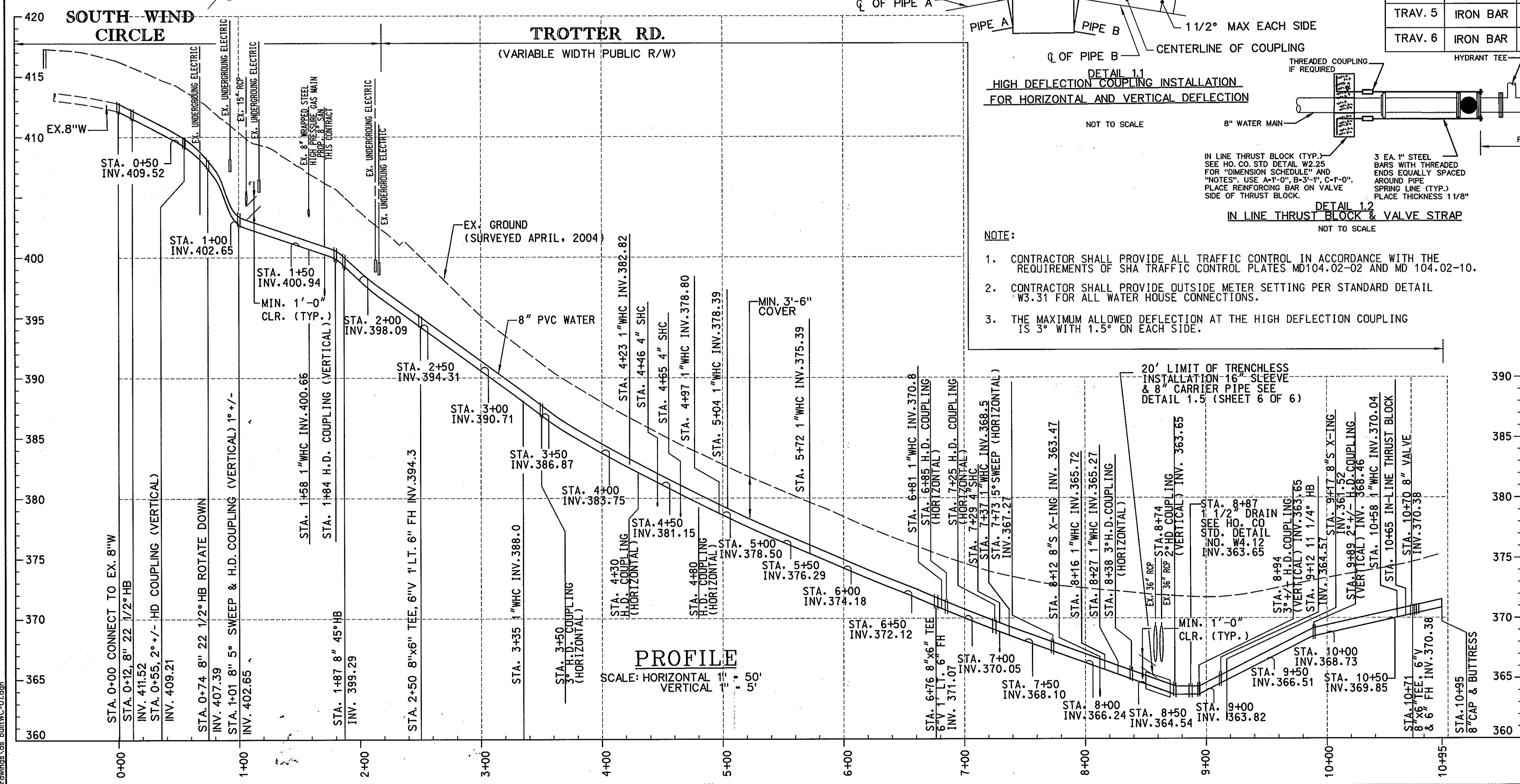
TRAVERSE COORDINATE SCHEDULE				
NUMBER	DISCRIPTION	NORTHING	EASTING	ELEVATION
TRAV. 4	IRON BAR	561977.46	1335295.13	<del>409.79</del> 409.08
TRAV. 5	IRON BAR	562367.39	1335373.40	<del>380.99</del> 380.28
TRAV. 6	IRON BAR	562794.28	1335445.76	<del>371.28</del> 370.57

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- NOTE:**
- CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL IN ACCORDANCE WITH THE REQUIREMENTS OF SHA TRAFFIC CONTROL PLATES MD104.02-02 AND MD 104.02-10.
  - CONTRACTOR SHALL PROVIDE OUTSIDE METER SETTING PER STANDARD DETAIL W3.31 FOR ALL WATER HOUSE CONNECTIONS.
  - THE MAXIMUM ALLOWED DEFLECTION AT THE HIGH DEFLECTION COUPLING IS 3° WITH 1.5" ON EACH SIDE.

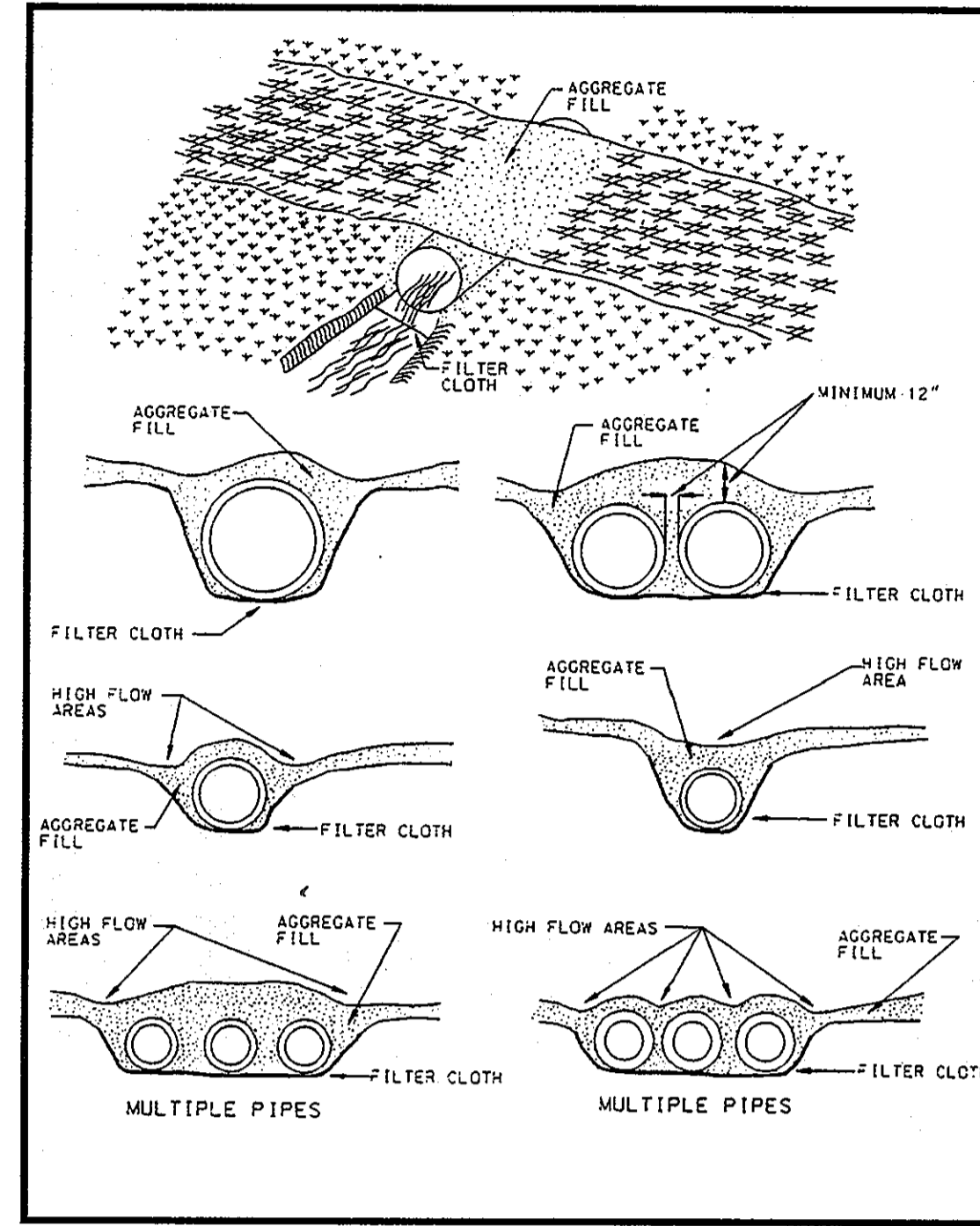
WATER STAKEOUT COORDINATES SCHEDULE				
NAME	STATION	NORTHING	EASTING	
STA. 0+00	TIE-IN	561863.10	1335388.65	
STA. 0+12	22 1/2" HB	561872.45	1335381.13	
STA. 0+55	HD COUPLING (VERTICAL)	561913.86	1335369.21	
STA. 0+74	22 1/2" HB	561932.61	1335363.81	
STA. 1+01	5° SWEEP & HD COUPLING (VERTICAL)	561953.29	1335347.31	
STA. 1+84	HD COUPLING (VERTICAL)	562018.18	1335295.56	
STA. 1+87	8" 45° HB	562020.79	1335293.48	
STA. 2+50	8"x6" TEE	562083.02	1335300.73	
STA. 3+50	HD COUPLING (HORIZONTAL)	562182.30	1335312.30	
STA. 4+30	HD COUPLING (HORIZONTAL)	562261.20	1335325.71	
STA. 4+80	HD COUPLING (HORIZONTAL)	562307.87	1335336.24	
STA. 6+76	8"x6" TEE	562499.62	1335389.15	
STA. 6+85	HD COUPLING (HORIZONTAL)	562506.38	1335391.02	
STA. 7+25	HD COUPLING (HORIZONTAL)	562546.32	1335399.84	
STA. 7+73	5° SWEEP (HORIZONTAL)	562593.73	1335408.99	
STA. 8+38	HD COUPLING (HORIZONTAL)	562658.38	1335415.68	
STA. 8+74	HD COUPLING (VERTICAL)	562694.37	1335417.51	
STA. 8+87	1 1/2" DRAIN	562707.11	1335418.16	
STA. 8+94	H.D. COUPLING (VERTICAL)	562714.37	1335418.53	
STA. 9+12	11 1/4" HB	562732.32	1335419.44	
STA. 9+89	H.D. COUPLING (VERTICAL)	562808.48	1335408.48	
STA. 10+65	IN-LINE THRUST BLOCK	562883.41	1335397.55	
STA. 10+70	8" VALVE	562888.31	1335396.99	
STA. 10+71	8"x6" TEE	562889.38	1335396.83	
STA. 10+95	8" CAP & BUTTRESS	562913.06	1335392.86	



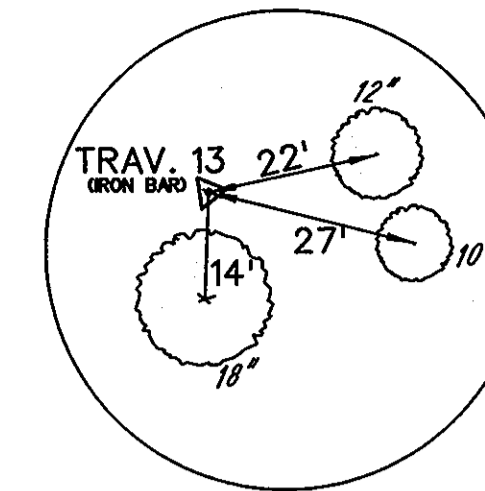
**AS BUILT**  
REPLACEMENT SHEET

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 8/24/09 DATE: 8/10/09 DATE: 7/5/09		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 10 North Park Drive Hunt Valley, MD 21030 Phone: (410) 316-7800 Fax: (410) 316-7817 www.kci.com		DES: GW DRN: CK CHK: TW DATE: AUG. 06		<b>8" WATER MAIN          PLAN AND PROFILE</b>		<b>TROTTER ROAD WATER AND          SEWER EXTENSION</b> CAPITAL PROJECT No. S-6239 CONTRACT No. 34-4345		SCALE AS SHOWN SHEET 2 OF 6	
DIRECTOR OF PUBLIC WORKS CHIEF, BUREAU OF UTILITIES		CHIEF, BUREAU OF ENGINEERING CHIEF, UTILITY DESIGN DIVISION		DATE: AUG. 06		REVISION		ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND		SCALE: 1" = 50' BLOCK NO. 2	

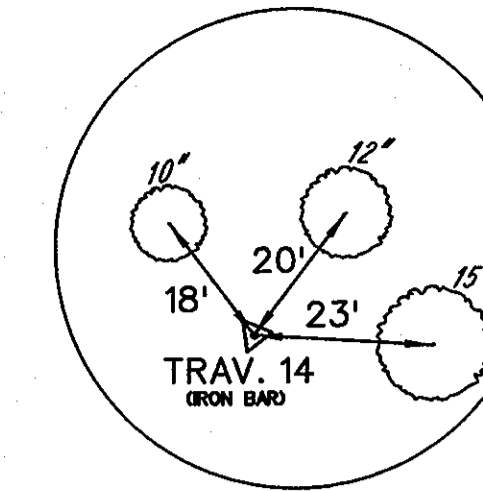
Diagram 11.0 - Temporary Access Culvert



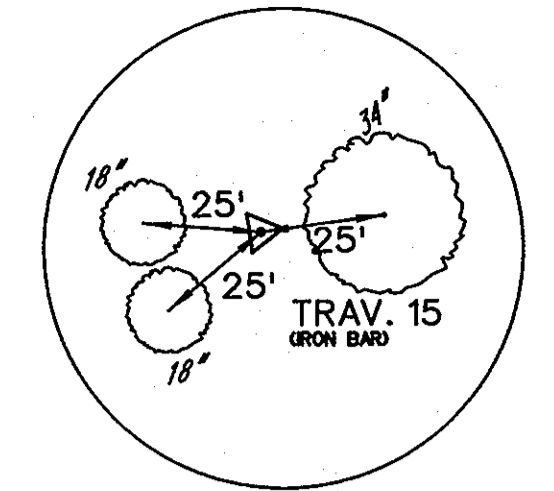
TRAVERSE COORDINATE SCHEDULE				
NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
TRAV. 13	IRON BAR	562625.72	1336430.00	355.82
TRAV. 14	IRON BAR	562504.00	1336591.25	351.29 351.35
TRAV. 15	IRON BAR	562395.42	1336702.72	347.54



TRAV. #13  
SCALE:N.T.S

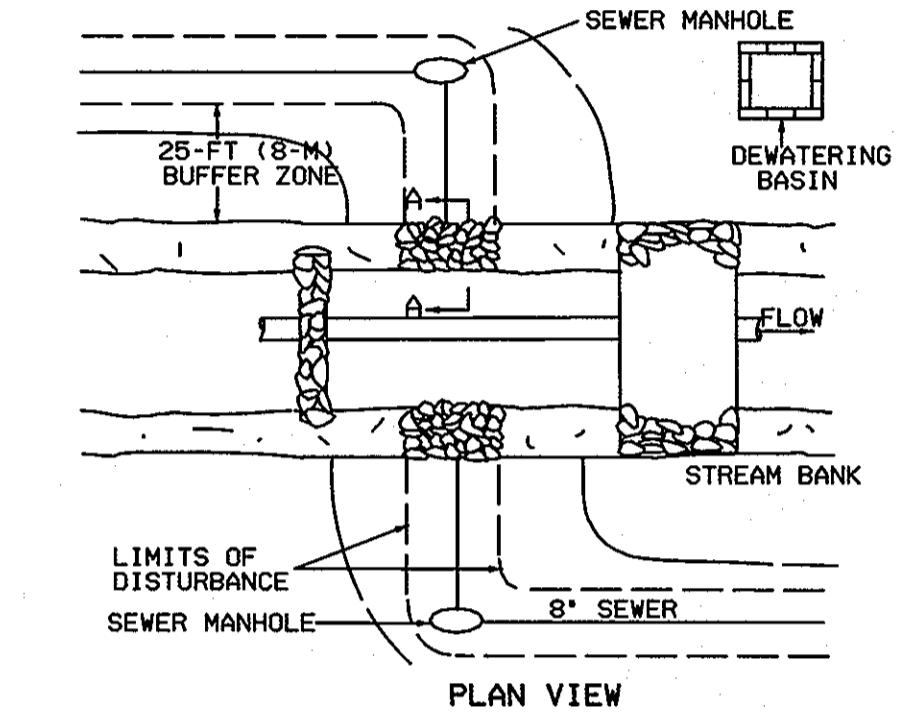


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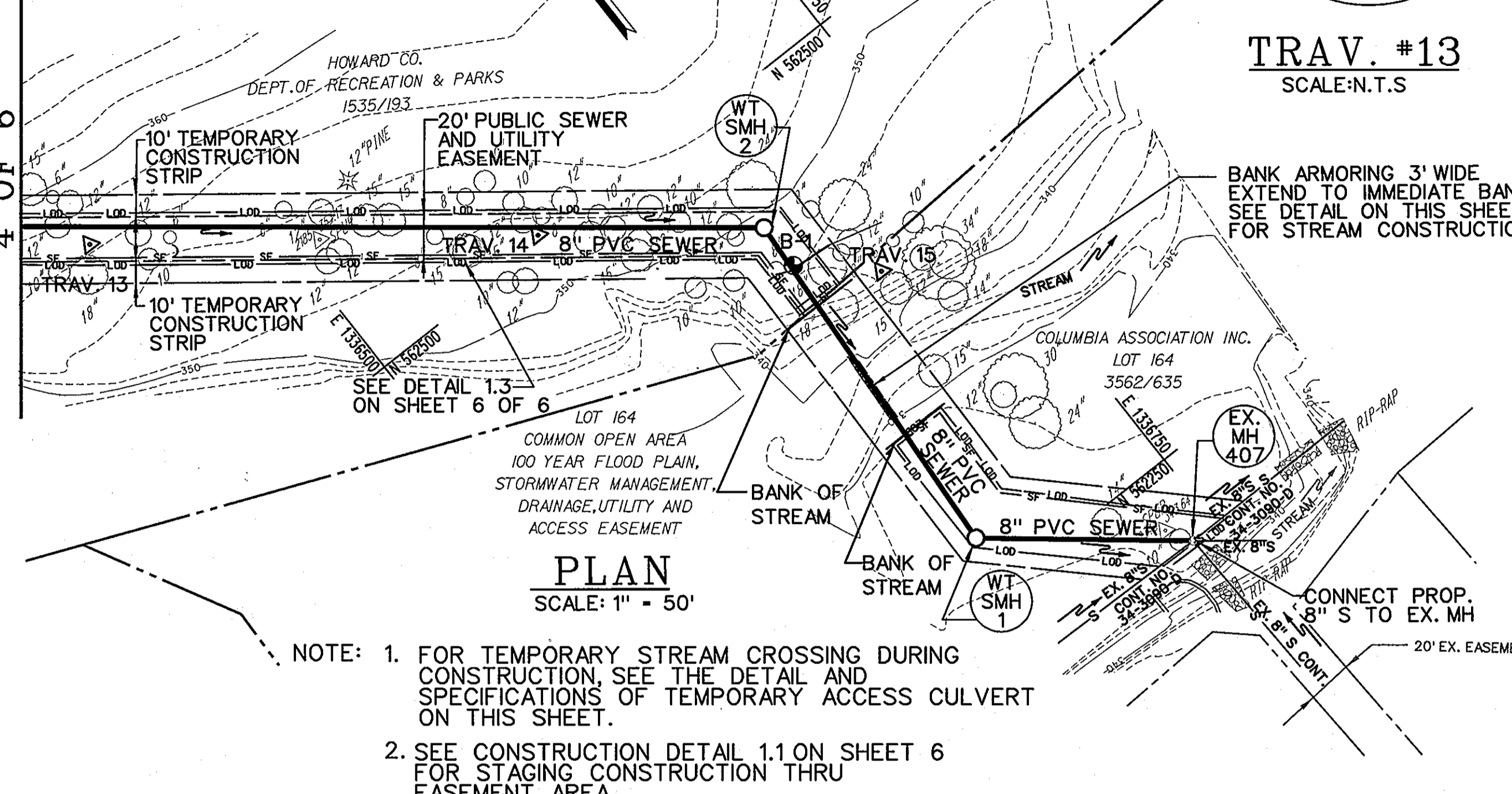


TRAV. #15  
SCALE:N.T.S

SANITARY SEWER STAKEOUT COORDINATES SCHEDULE		
NAME	NORTHING	EASTING
SMH 1	562274.54	1336661.60
SMH 2	562443.55	1336673.36



MATCHLINE SHEET  
4 OF 6

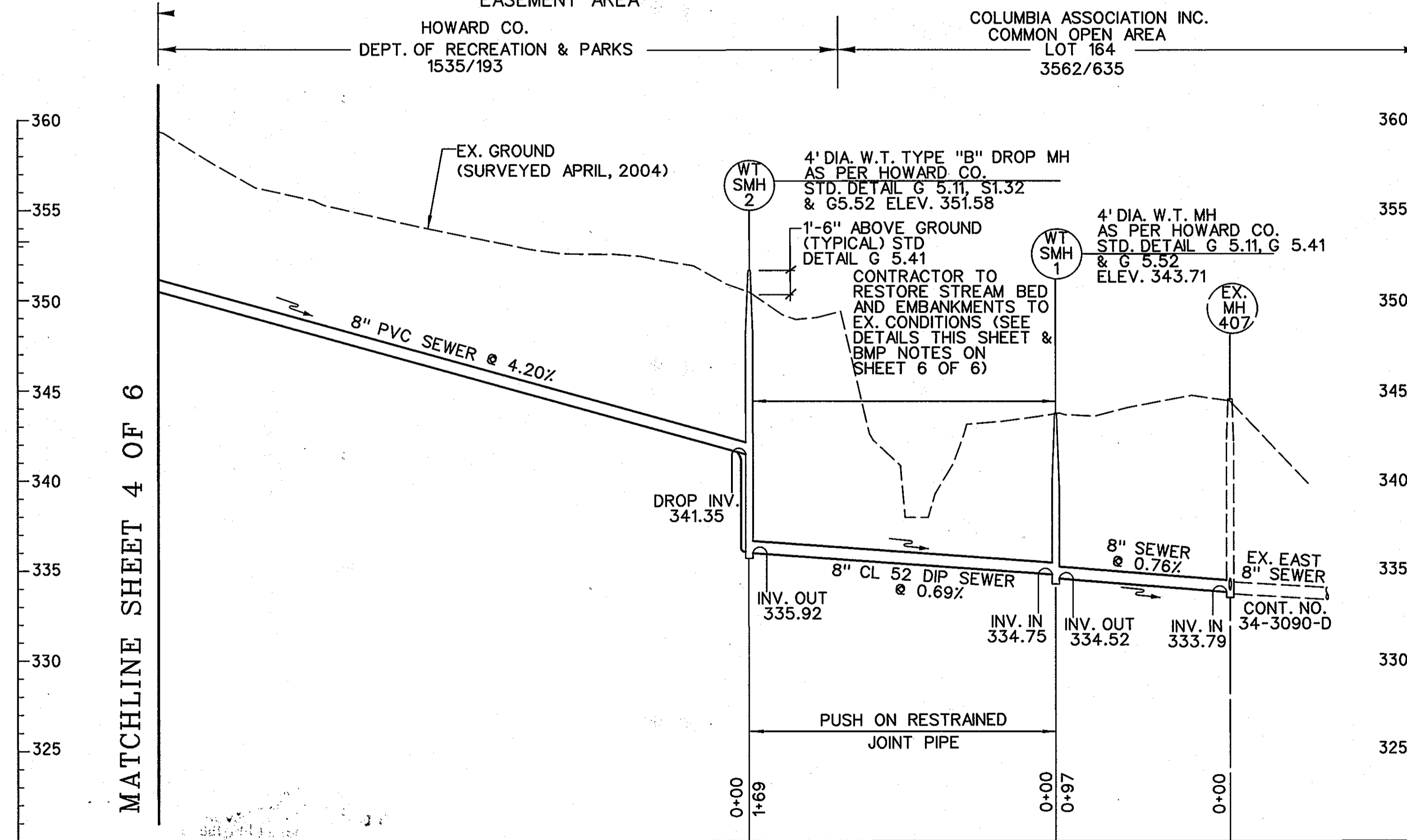


NOTE: 1. FOR TEMPORARY STREAM CROSSING DURING CONSTRUCTION, SEE THE DETAIL AND SPECIFICATIONS OF TEMPORARY ACCESS CULVERT ON THIS SHEET.  
2. SEE CONSTRUCTION DETAIL 1.1 ON SHEET 6 FOR STAGING CONSTRUCTION THRU EASEMENT AREA

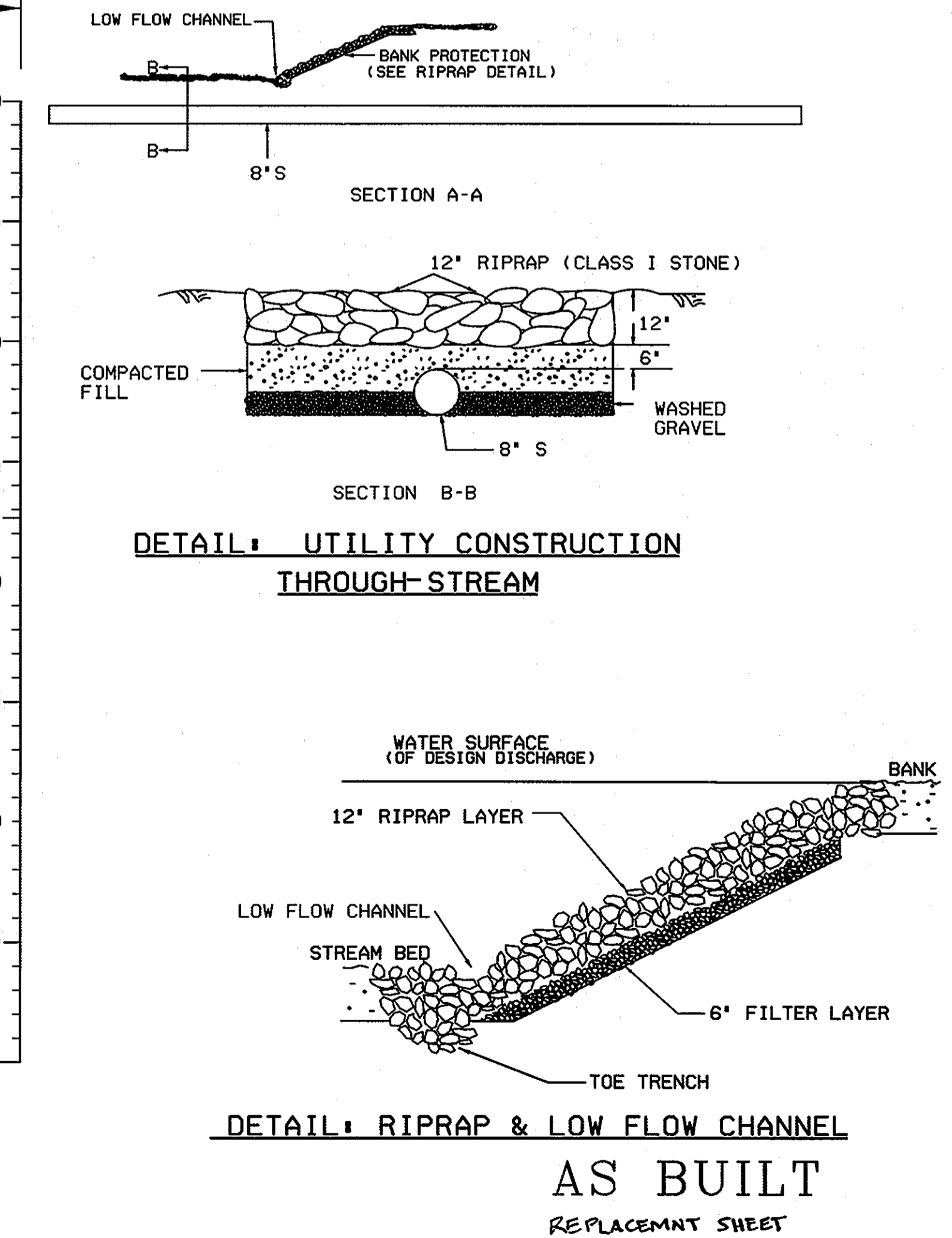
Diagram 11.1 - Temporary Access Culvert Specifications

Construction Specifications

1. Restrictions - No construction or removal of a temporary access culvert will be permitted between October 1 through April 30 for Class III and Class IV Trout waters or between March 1 through June 15 for non-trout waterways.
2. Culvert Strength - All culverts shall be strong enough to support their cross sectional area under maximum expected loads.
3. Culvert Size - The size of the culvert pipe shall be the largest pipe diameter that will fit into the existing channel without major excavation of the waterway channel or without major approach fills. If a channel width exceeds 3 feet, additional pipes may be used until the cross sectional area of the pipes is greater than 60 percent of the cross sectional area of the existing channel. The minimum size culvert that may be used is a 12" diameter pipe. In all cases, the pipe(s) shall be large enough to convey normal stream flows.
4. Culvert Length - The culvert(s) shall extend a minimum of one foot beyond the upstream and downstream toe to the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.
5. Filter Cloth - Filter cloth shall be placed on the streambed and streambanks prior to placement of the pipe culvert(s) and aggregate. The filter cloth shall cover the streambed and extend a minimum six inches and a maximum one foot beyond the end of the culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.
6. Culvert Placement - The invert elevation of the culvert shall be installed on the natural streambed grade to minimize interference with fish migration (free passage of fish).
7. Culvert Protection - The culvert(s) shall be covered with a minimum of one foot of aggregate. If multiple culverts are used they shall be separated by at least 12" of compacted aggregate fill. At a minimum, the bedding and fill material used in the construction of the temporary access culvert crossings shall conform with the aggregate requirements cited in Section 1.1.1. above.
8. Stabilization - All areas disturbed during culvert installation shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for "Critical Area Stabilization with Permanent Seeding."



PROFILE  
SCALE: HORIZONTAL 1" = 50'  
VERTICAL 1" = 5'



DETAIL: RIPRAP & LOW FLOW CHANNEL  
AS BUILT  
REPLACEMENT SHEET

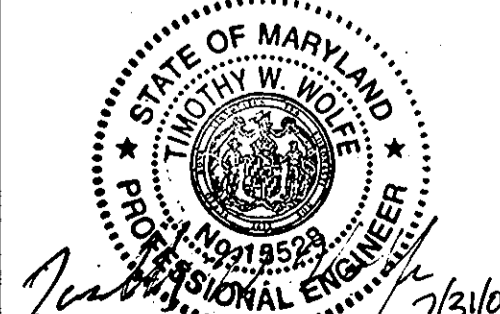
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TROTTER ROAD WATER AND SEWER EXTENSION  
 BY: [Signature] DATE: 8/10/09  
 FILE: MA-2007-010105-CR-Vermont-CAS-BUILD-SC-04.dwg

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

[Signature] DATE: 8/10/09  
 [Signature] DATE: 7/15/09  
 CHIEF, BUREAU OF UTILITIES  
 CHIEF, UTILITY DESIGN DIVISION

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
**KCI**  
 TECHNOLOGIES  
 10 NORTH PARK DRIVE  
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 FAX: (410) 316-7817  
 WWW.KCI.COM



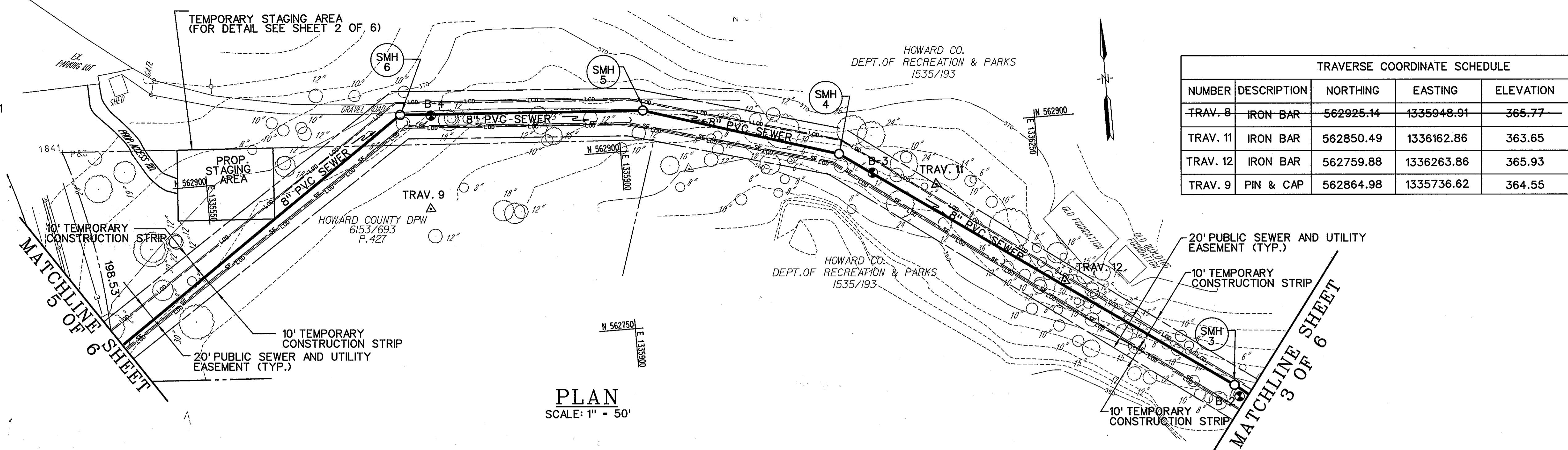
DES: GW			
DRN: CK			
CHK: TW			
DATE: AUG. 06			
BY: NO.	REVISION	DATE	SCALE MAP NO.

8" SANITARY SEWER  
 PLAN AND PROFILE  
 SCALE MAP NO. 35 BLOCK NO. 2

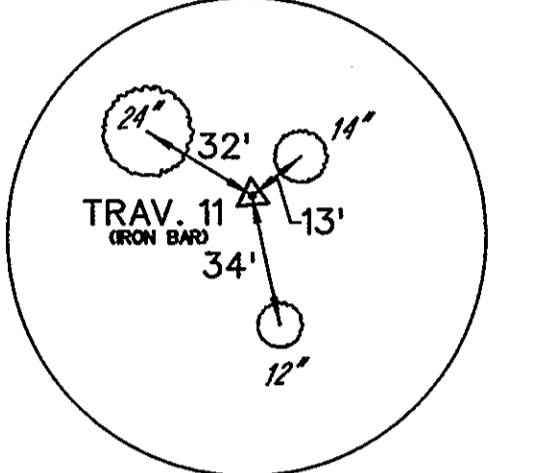
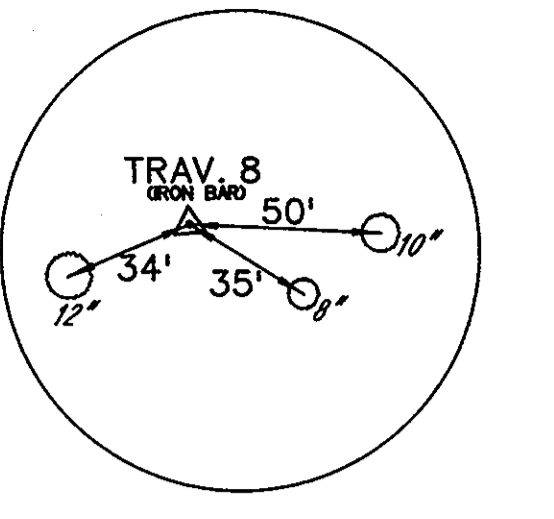
TROTTER ROAD WATER AND  
 SEWER EXTENSION  
 CAPITAL PROJECT NO. S-6239  
 CONTRACT NO. 34-4345  
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
 AS SHOWN  
 SHEET  
 3 OF 6

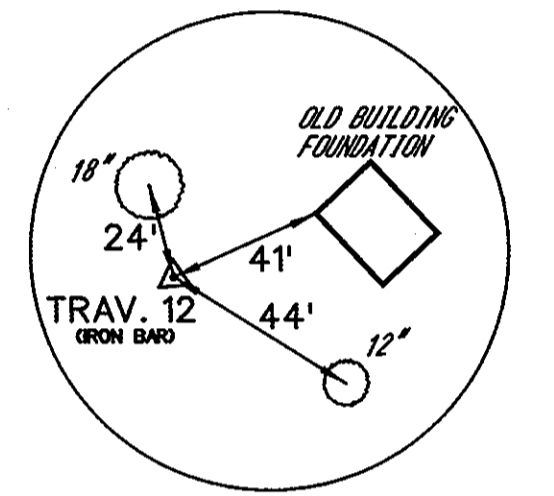
- NOTE:
- MH 5 & 6 TO BE LOCATED OUT OF GRAVEL ROAD FIELD ADJUSTMENT TO BE MADE TO ACCOMPLISH THIS.
  - SEE CONSTRUCTION DETAIL 1.1 ON SHEET 6 FOR STAGING CONSTRUCTION TRHU EASEMENT AREA.



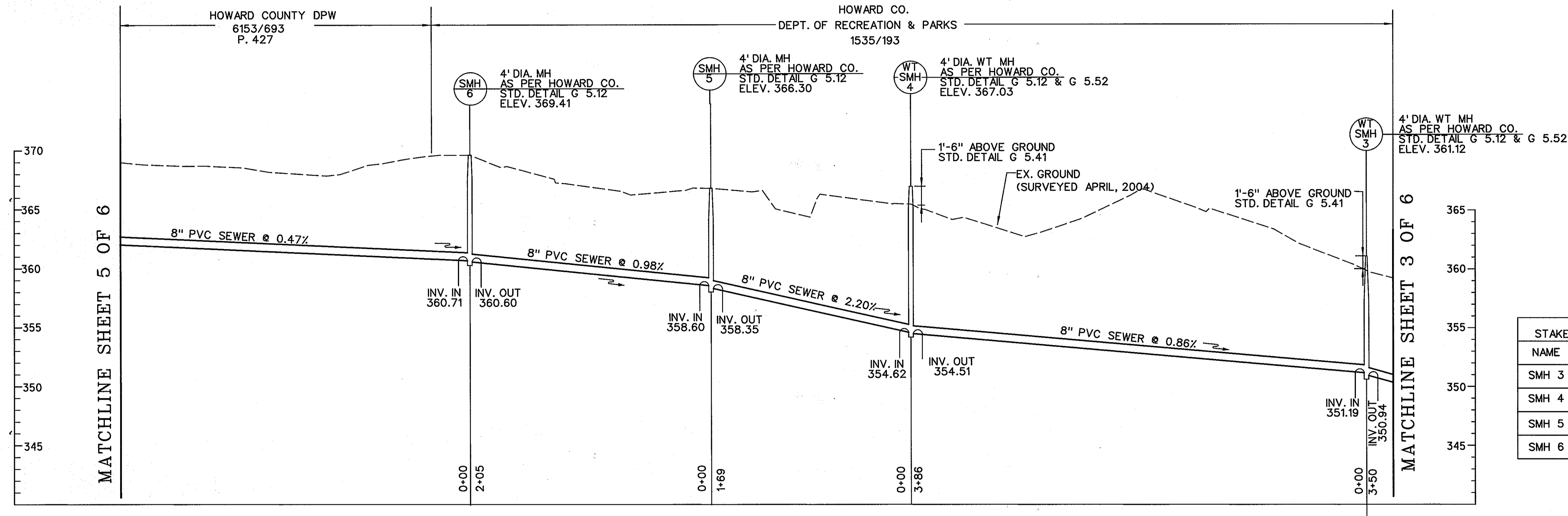
TRAVERSE COORDINATE SCHEDULE				
NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
TRAV. 8	IRON BAR	562925.14	1335948.91	365.77
TRAV. 11	IRON BAR	562850.49	1336162.86	363.65
TRAV. 12	IRON BAR	562759.88	1336263.86	365.93
TRAV. 9	PIN & CAP	562864.98	1335736.62	364.55



TRAV. #11  
SCALE: N.T.S.



TRAV. #12  
SCALE: N.T.S.



SANITARY SEWER STAKEOUT COORDINATES SCHEDULE		
NAME	NORTHING	EASTING
SMH 3	562660.37	1336399.01
SMH 4	562882.80	1336083.37
SMH 5	562933.08	1335921.56
SMH 6	562946.28	1335717.41

"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. 15522, EXPIRATION DATE: 9/12/2011."

AS BUILT  
REPLACEMENT SHEET

PART 1010 BY: E. Friday, July 31, 2009  
PVC: G. Wang, Division: DPW, Environmental Engineering  
FILE: MA-2009-010103-05, V:\projects\ssabul\SSC-03.dgn

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]*  
DIRECTOR OF PUBLIC WORKS DATE: 5/10/09

*[Signature]*  
CHIEF, BUREAU OF ENGINEERING DATE: 7/15/09

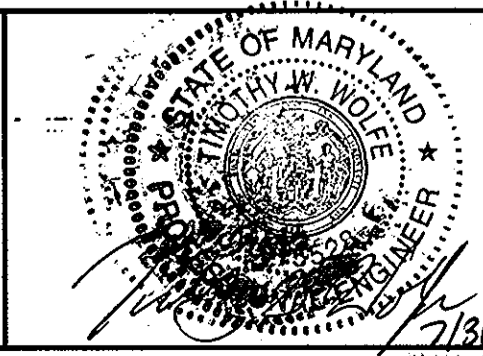
*[Signature]*  
CHIEF, BUREAU OF UTILITIES DATE: [blank]

*[Signature]*  
CHIEF, UTILITY DESIGN DIVISION DATE: [blank]

**KCI** TECHNOLOGIES

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

10 NORTH PARK DRIVE  
HURT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com



DES: GW					
DRN: CK					
CHK: TW					
DATE: AUG. 06					
BY: NO.		REVISION		DATE	SCALE

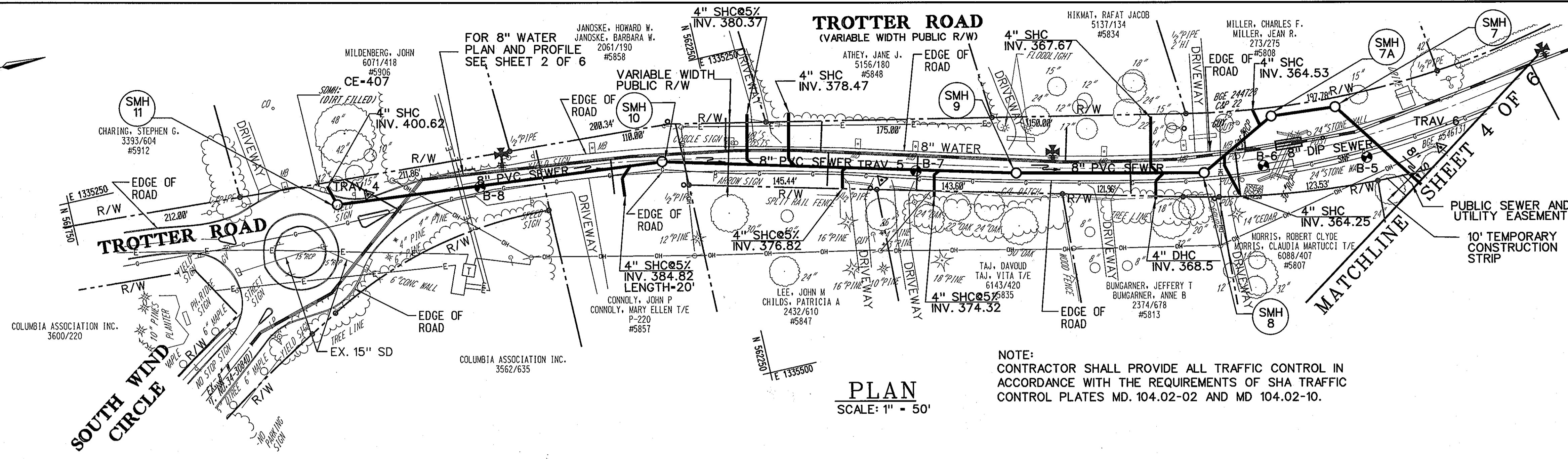
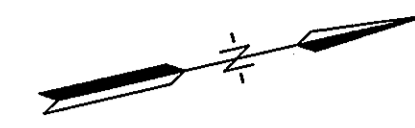
8" SANITARY SEWER  
PLAN AND PROFILE

SCALE MAP NO. 35 BLOCK NO. 2

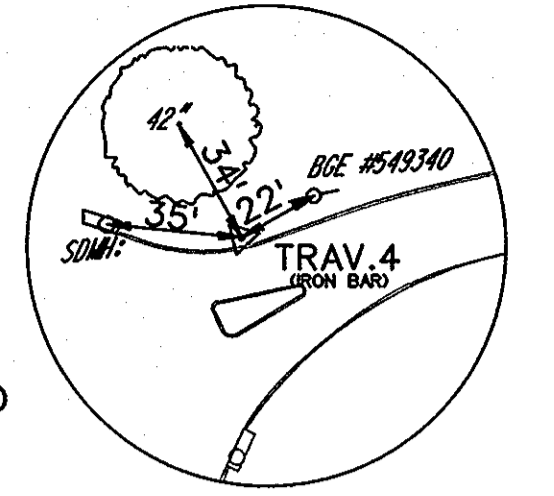
TROTTER ROAD WATER AND  
SEWER EXTENSION  
CAPITAL PROJECT No. S-6239  
CONTRACT No. 34-4345

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

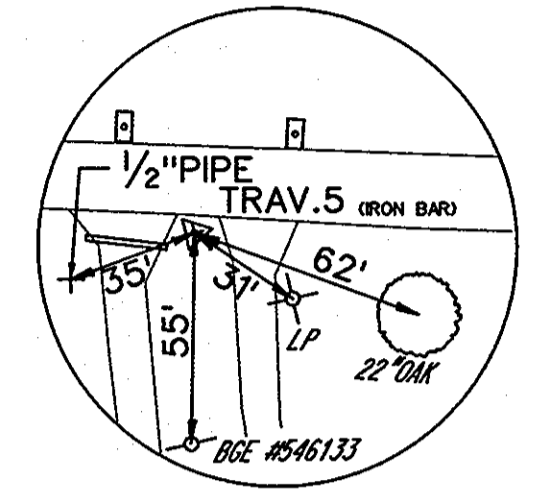
SCALE AS SHOWN  
SHEET 4 OF 6



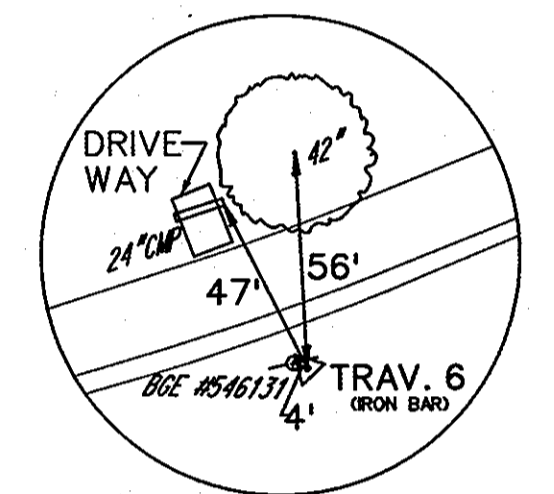
**PLAN**  
SCALE: 1" = 50'



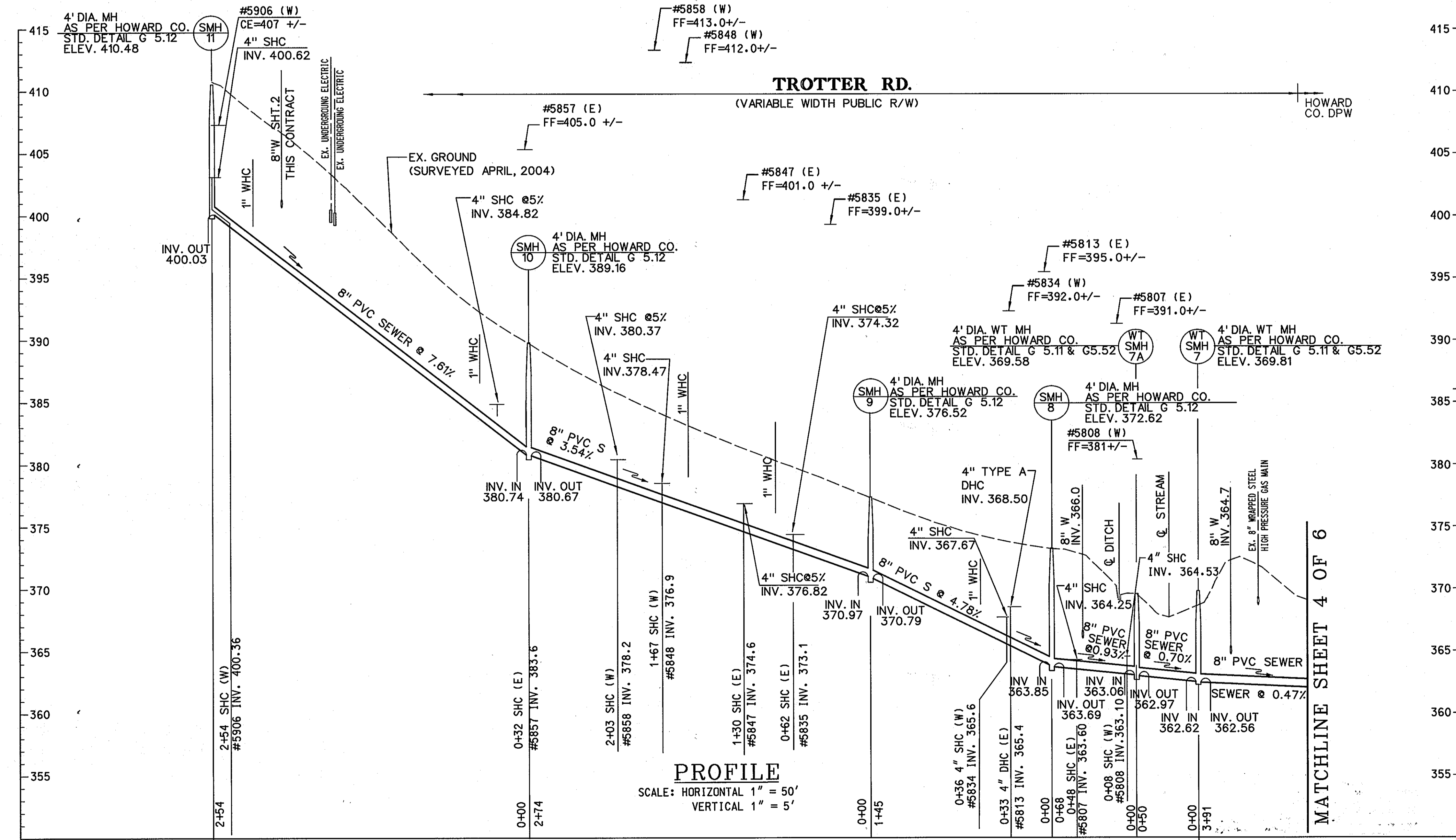
**TRAV. #4**  
SCALE: N.T.S.



**TRAV. #5**  
SCALE: N.T.S.



**TRAV. #6**  
SCALE: N.T.S.



**PROFILE**  
SCALE: HORIZONTAL 1" = 50'  
VERTICAL 1" = 5'

TRAVERSE COORDINATE SCHEDULE				
NUMBER	DISCRPTION	NORTHING	EASTING	ELEVATION
TRAV. 4	IRON BAR	561977.46	1335295.13	<del>409.79</del> 409.08
TRAV. 5	IRON BAR	562367.39	1335373.40	<del>380.99</del> 380.28
TRAV. 6	IRON BAR	562794.28	1335445.76	<del>374.28</del> 370.57

SANITARY SEWER STAKEOUT COORDINATES SCHEDULE		
NAME	NORTHING	EASTING
SMH 7	562721.77	1335396.76
SMH 7A	562672.05	1335392.78
SMH 8	562611.74	1335423.77
SMH 9	562470.08	1335391.42
SMH 10	562204.98	1335321.47
SMH 11	561952.57	1335297.72

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15528. EXPIRATION DATE: 9/12/2011"

**AS BUILT**  
REPLACEMENT SHEET

PARTED: 10/12/12 BY: on Friday, July 31, 2009  
 PLO: C:\Users\perry\Documents\10402505.dwg  
 FILE: M:\2009\10402505.dwg

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John H. Stetson* 5/10/09  
DIRECTOR OF PUBLIC WORKS DATE

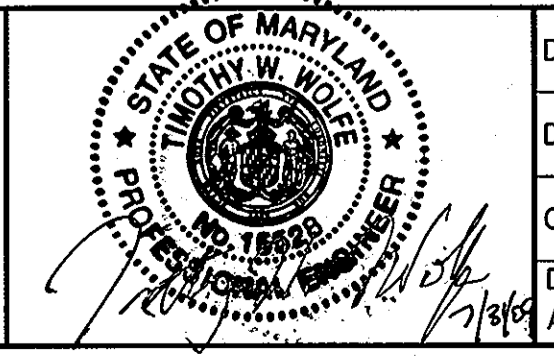
*Richard J. ...* 7/5/09  
CHIEF, BUREAU OF ENGINEERING DATE

*...* 7/5/09  
CHIEF, UTILITY DESIGN DIVISION DATE

**KCI** TECHNOLOGIES

ENGINEERS  
PLANNERS  
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CONSTRUCTION MANAGERS

10 North Park Drive  
Hunt Valley, MD 21030  
Phone: (410) 316-7800  
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www.kci.com



DES: GW			
DRN: CK			
CHK: TW			
DATE:	CK		
BY NO.	REVISION	DATE	SCALE MAP NO.

**8" SANITARY SEWER  
PLAN AND PROFILE**

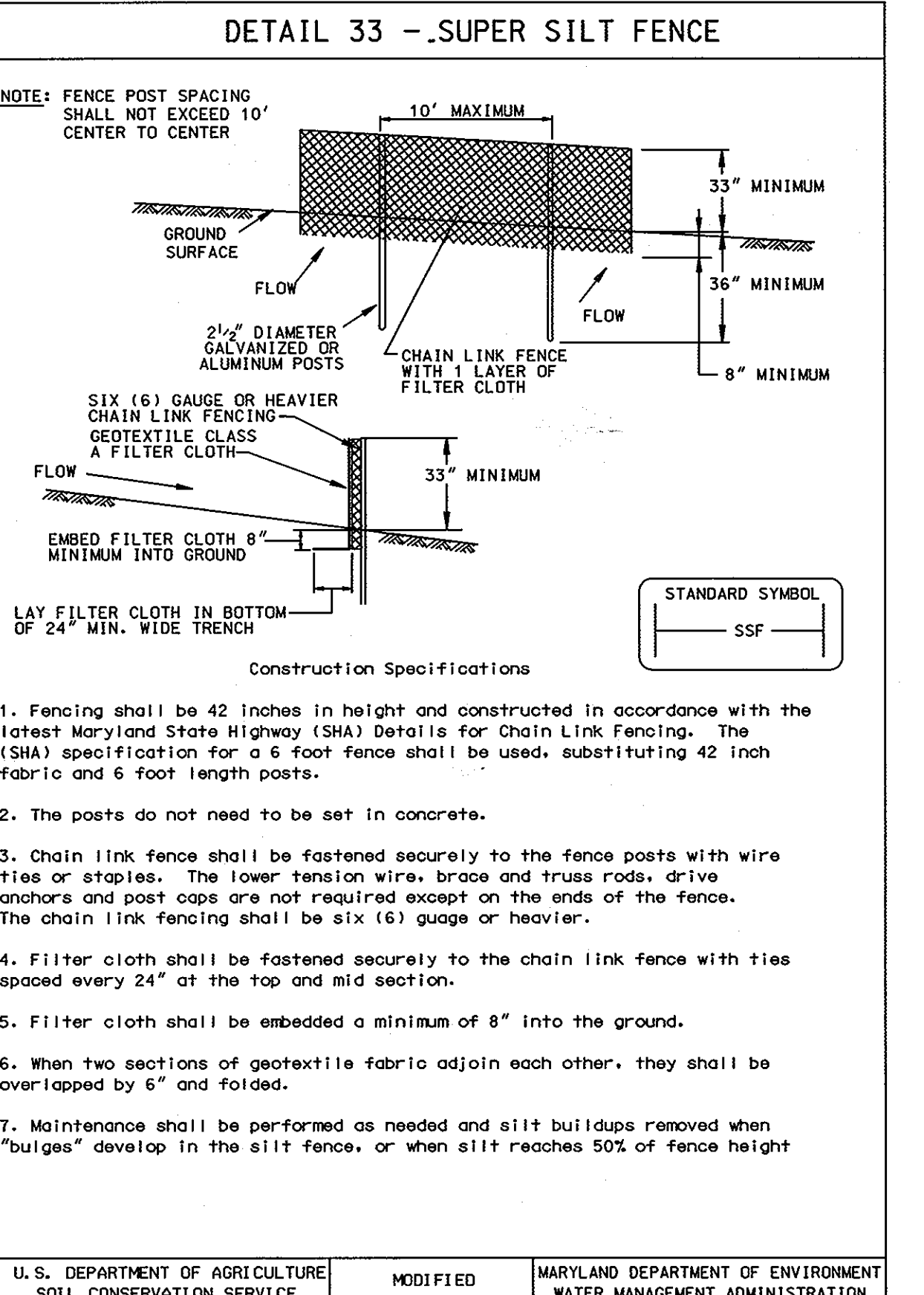
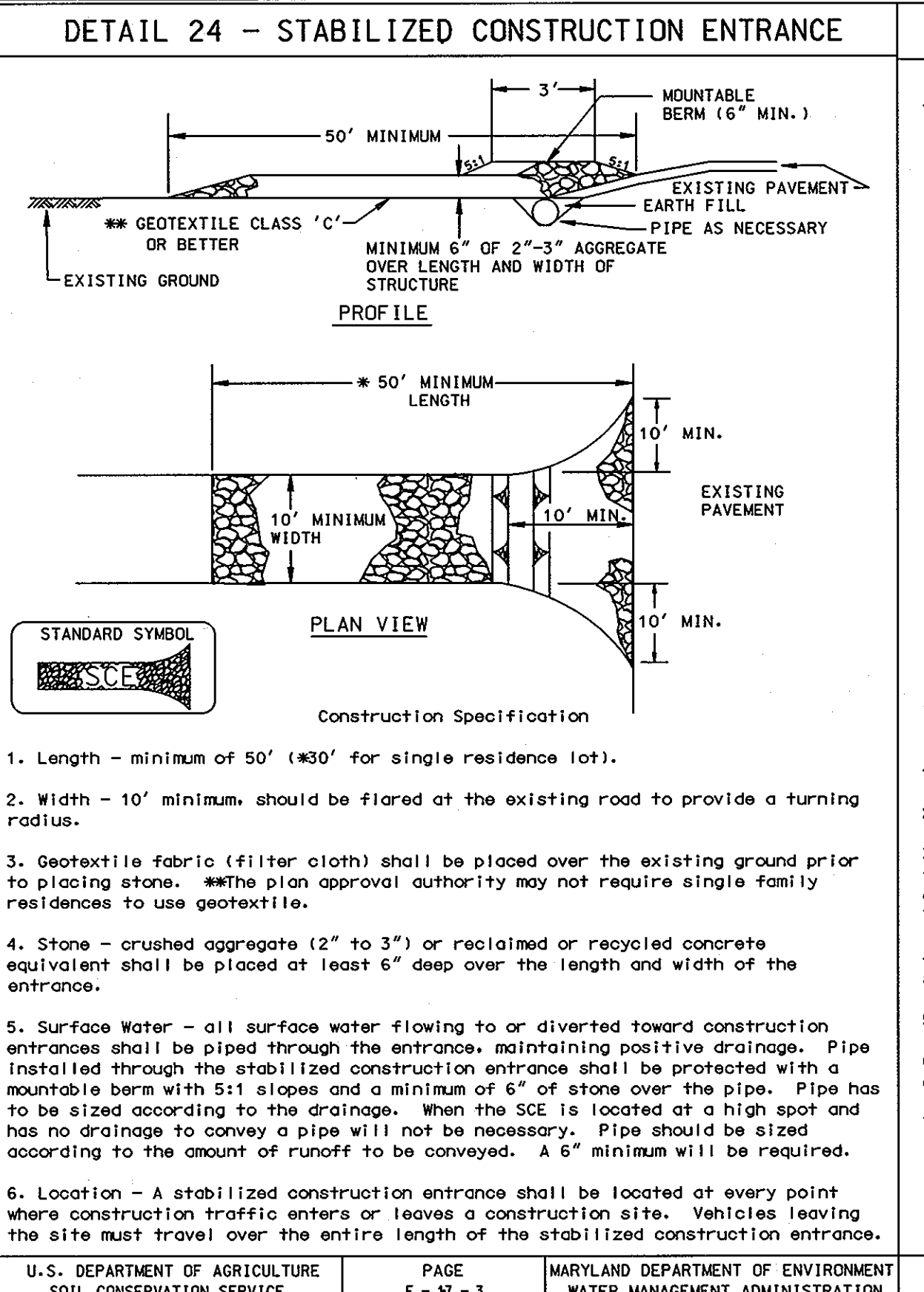
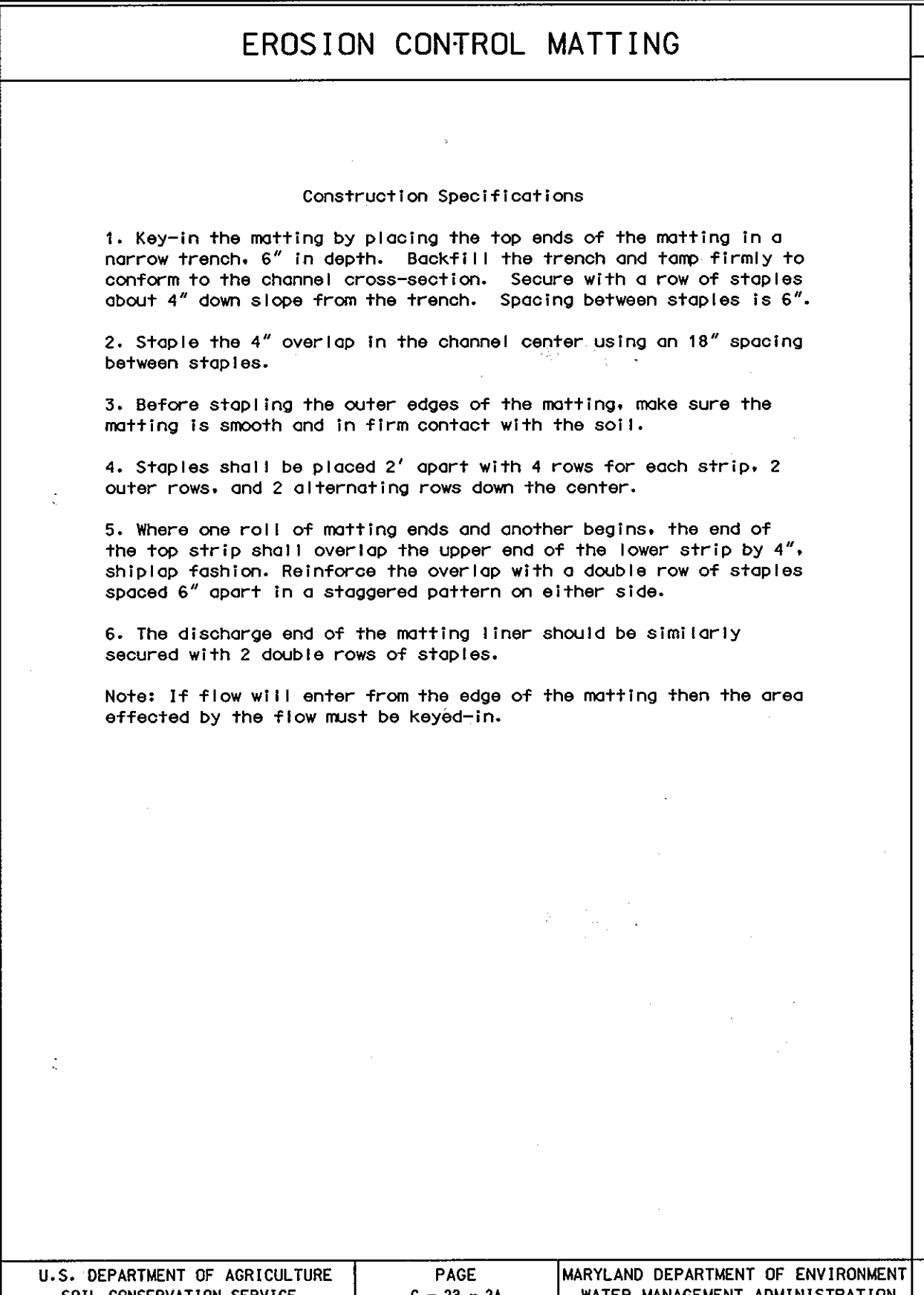
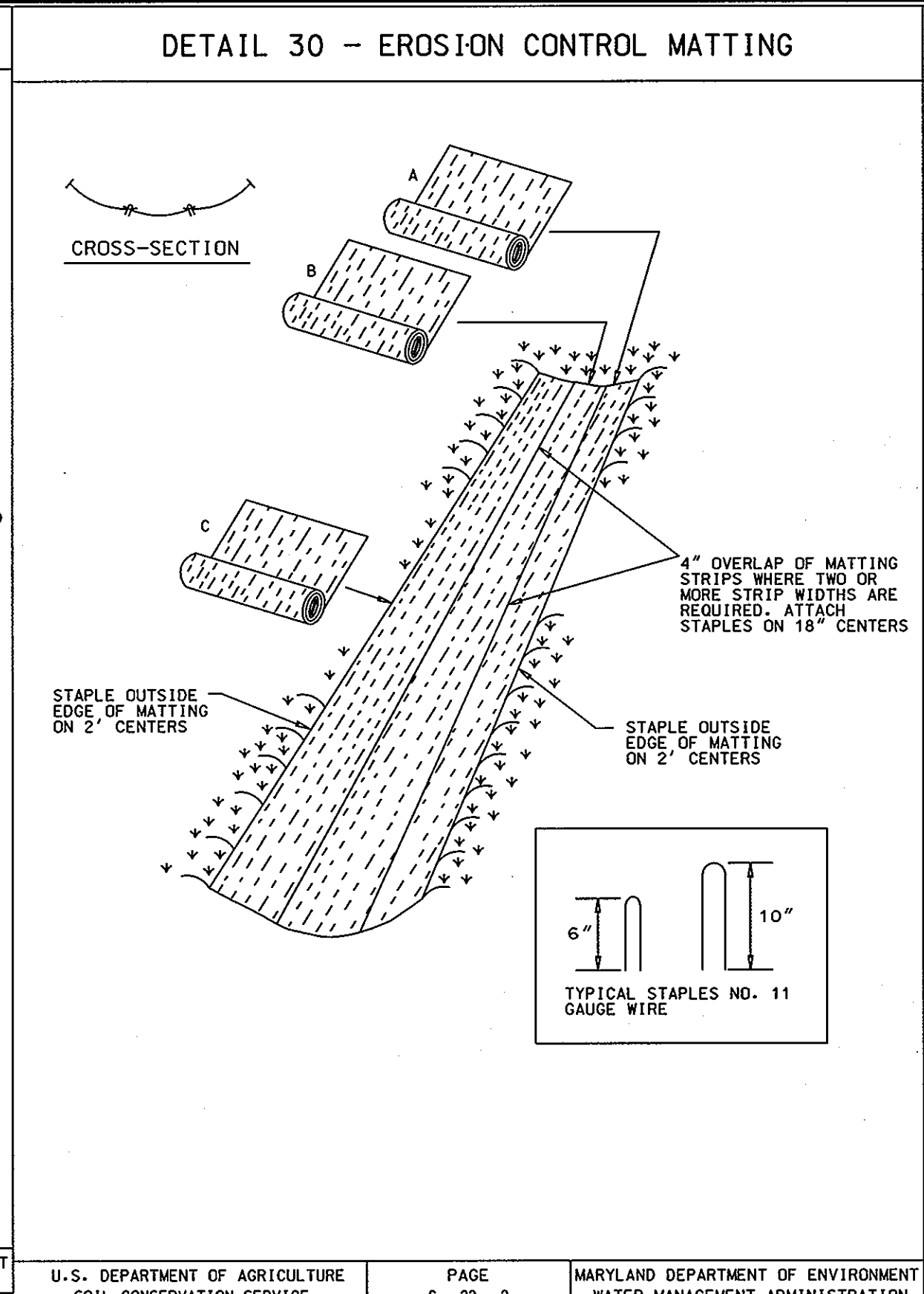
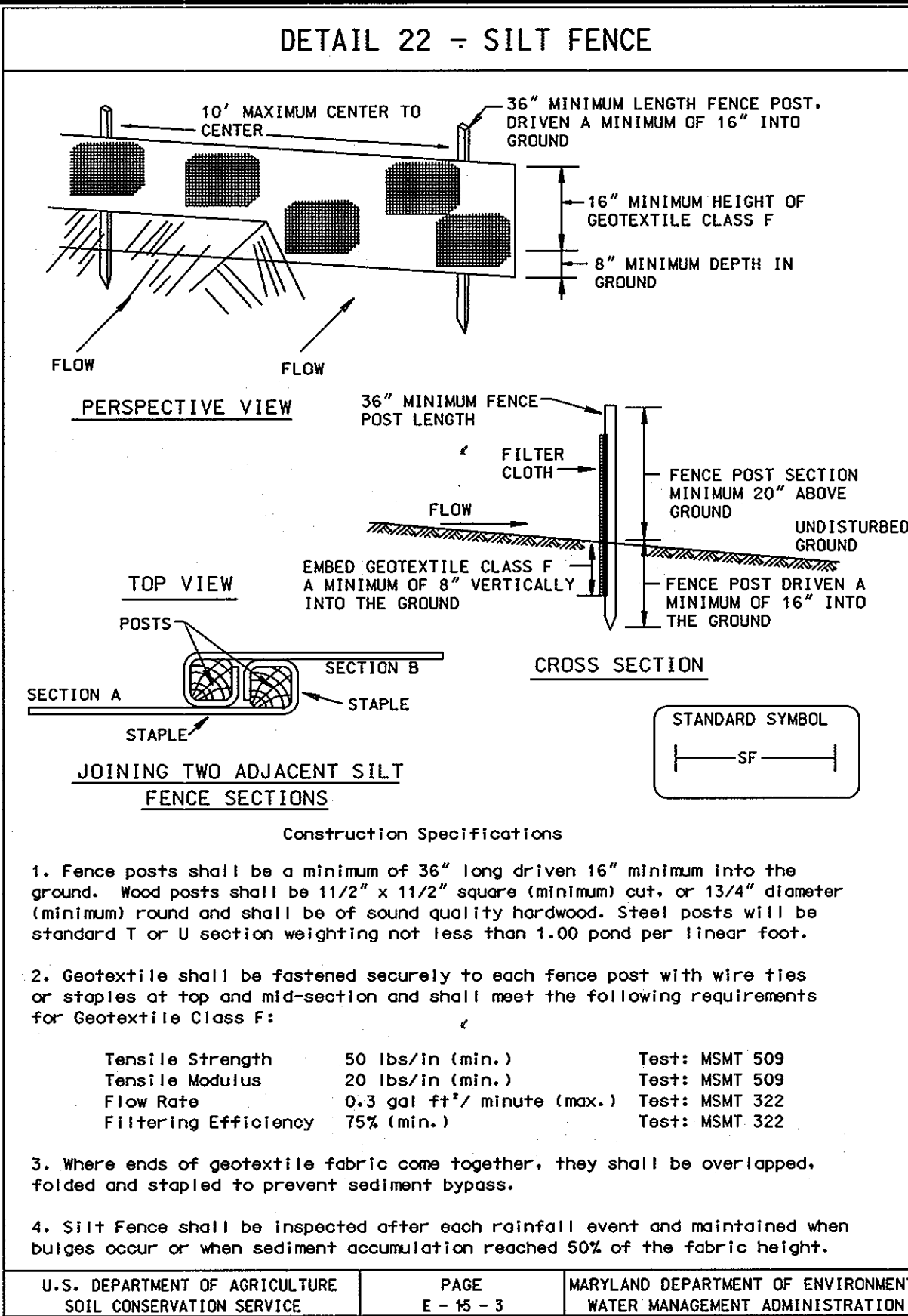
SCALE MAP NO. 35 BLOCK NO. 2

**TROTTER ROAD WATER AND  
SEWER EXTENSION**

CAPITAL PROJECT No. S-6239  
CONTRACT No. 34-4345

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 5 OF 6



### SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- LAYOUT ALIGNMENT AT SITE. (2 DAYS)
- INSTALL SEDIMENT CONTROL DEVICES AS SHOWN ON PLAN.
- EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE. INSTALL SEWER MAIN AND BACK FILL TRENCH AND STABILIZE IN KIND (45 DAYS) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO 25' OF PIPE LENGTH OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CLEAN UP CONSTRUCTION SITE. (1 DAY)
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR. (1 DAY)

### PERMANENT SEEDING NOTES

**LIME**  
SOIL AMENDMENTS

- GROUND AGRICULTURAL LIMESTONE (100 POUNDS OF GROUND LIMESTONE IS EQUIVALENT TO 75 POUNDS OF HYDRATED LIME OR 50 POUNDS OF BURNED LIME). THE CONTRACTOR WILL SPECIFY WHAT MATERIAL HE IS USING. LIME SHALL CONTAIN NOT LESS THAN 85% OF TOTAL CARBONATES, 50% PASS 100 MESH, 90% PASS 20 MESH.
- LIME SHALL BE APPLIED SEPARATELY AND PRIOR TO THE APPLICATION OF ANY FERTILIZER OR SEED AND ONLY ON SEEDBEDS THAT HAVE PREVIOUSLY BEEN PREPARED AS PER THE SPECIFICATIONS. LIME SHALL BE INCORPORATED WITHIN 24 HRS FOLLOWING ITS APPLICATION. LIME SHALL BE WORKED INTO A DEPTH OF SIX (6) INCHES AFTER WHICH THE SEEDBED SHALL AGAIN BE PROPERLY GRADED AND DRESSED TO A SMOOTH FINISH.

**LIMING PROCEDURES**

- LIME SHALL BE SPREAD AT A RATE OF 1.5 TONS PER ACRE AND INCORPORATED IN A MANNER THAT ACHIEVES UNIFORM DISTRIBUTION.

**FERTILIZATION**

MUST USE A BLENDED FERTILIZER WITH A N-P-K RATIO ON THE ORDER OF 1-3-2 SUCH AS 5-25-10 BLEND. A MINIMUM OF 50% OF THE NITROGEN MUST BE A SLOW RELEASE SOURCE OF NITROGEN.

**SEED SELECTION & RATES**

SEED MIXTURE FOR SPRING OR FALL SEEDING SHALL BE AS FOLLOWS:

%	BOANICAL NAME	COMMON NAME	TYPE	IND.
10%	AGROSTIS ALBA	REDFOP	N/A	FACW
10%	ANDROPOGON GERARDII	BIG BLUESTEM	WARM SEASON FAC	FACW
10%	ELYMUS RIPARIUS	RIVERBANK WILD RYE	COOL SEASON FACW	FACW
10%	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	COOL SEASON FACW	FACW
45%	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	N/A	NI
10%	PANICUM VIRGATUM	SWITCHGRASS	WARM SEASON FAC	FACW
5%	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	LEGUME	

COMPLETE SEED MIX APPLIED AT A RATE OF 50 LBS/AC

SEED MIX FOR SUMMER SEEDING SHALL BE AS FOLLOWS:

%	BOANICAL NAME	COMMON NAME	TYPE	IND.
50%	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS		
50%	SETARIA ITALICA	FOXTAIL MILLET		

SEEDING AT 4.0 LBS. PER 1,000 SQ. FT.

**SCHEDULE**

SEED SHALL BE SOWED BETWEEN MARCH 15 TO MAY 15 OR AUGUST 15 TO OCTOBER 30.

### TEMPORARY SEEDING NOTES

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

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

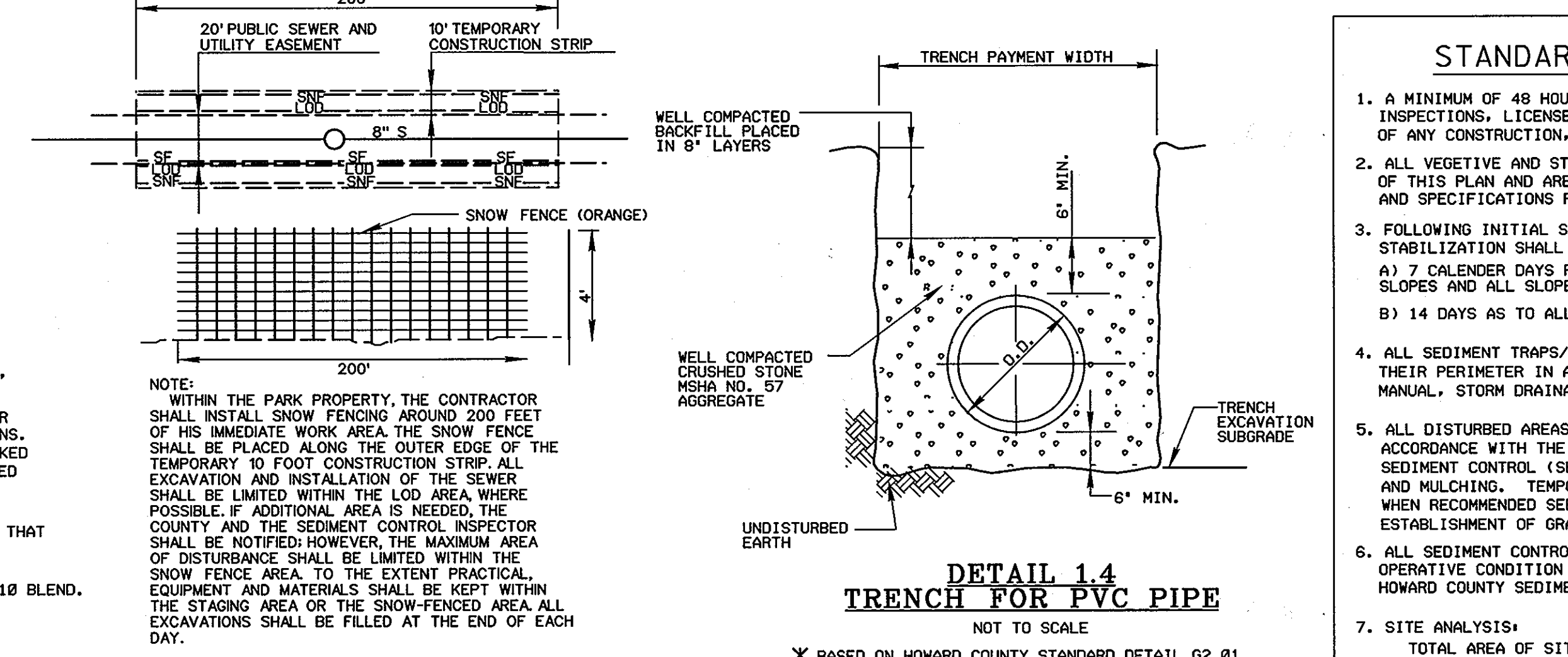
**SOIL AMENDMENTS:** - APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT.).

**SEEDING:** - FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT.) FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 29, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

**MULCHING:** - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 210 GAL PER ACRE (15 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 340 GAL PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

### DETAIL 1.3 CONSTRUCTION AREA



### DEVELOPER'S CERTIFICATION

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

*John R. Blanton* 1/23/07 DATE  
BUREAU OF ENGINEERING  
DEPARTMENT OF PUBLIC WORKS

### ENGINEER'S CERTIFICATION

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

*Timothy J. Wolfe* 1/15/07 DATE  
10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21038

### STANDARD SEDIMENT CONTROL NOTES

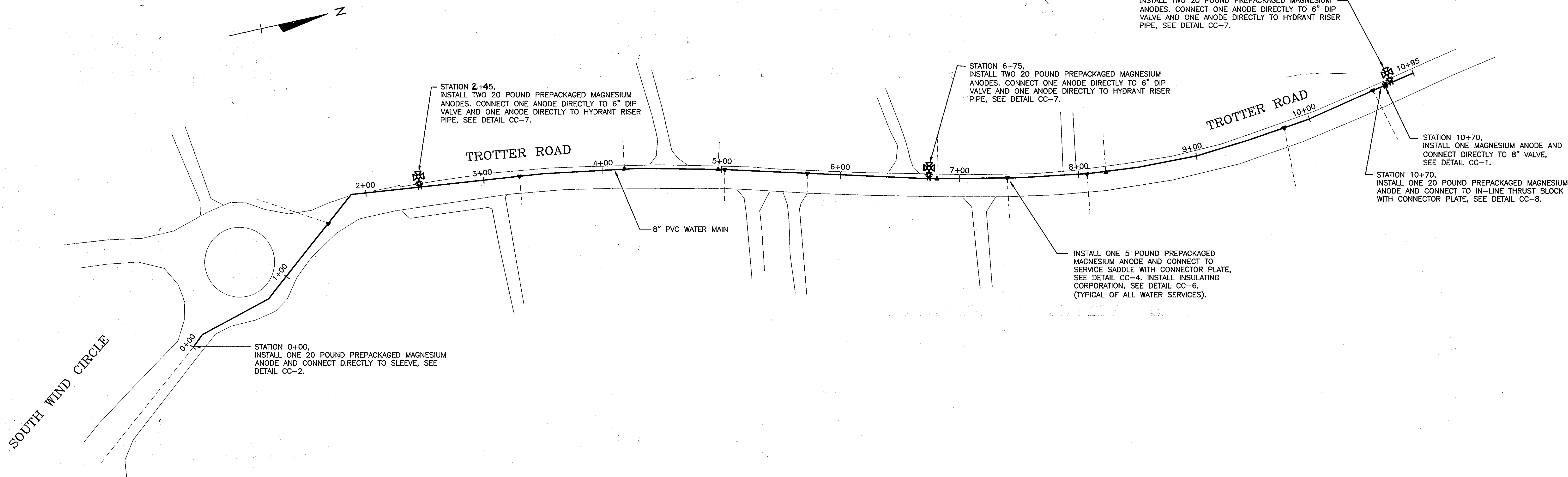
- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1695).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
  - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 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 (SEC. G20.0) FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING AND MULCHING. TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	N/A	ACRES
AREA DISTURBED	0.34	ACRES
AREA TO BE ROOFED OR PAVED	N/A	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.16	ACRES
TOTAL CUT	N/A	CU. YDS.
TOTAL FILL	N/A	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF THE DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE ON DOWNHILL SIDE OF TRENCH.

### BEST MANAGEMENT PRACTICE (BMP) NOTES

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL 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 NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
  - DO NOT USE THE 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 NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
  - REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT MODIFICATION OF THE 100 YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
  - RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100 YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
  - ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), GRASS (LINDOLA SP.) AND/OR BIRD (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE 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 NONTIDAL WETLANDS AND WATERWAYS DIVISION, KENTUCKY 31 RESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS, THE AREA SHOULD BE SEEDING 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 THE CLASSIFICATION OF THE STREAM.  
USE 1 WATERS. IN STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD 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 WATERWAYS.
  - CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.
- POLYETHYLENE INSULATOR AND CAPS TO THE CASING PIPES AS MANUFACTURED BY ADVANCE PRODUCTS AND SYSTEMS, INC., CASCADE WATERWORKS MANUFACTURING CO. OR AN ALTERNATE APPROVED BY HOWARD COUNTY DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES.
- INSULATORS TO BE EQUALLY SPACED AT 1/3 POINTS ALONG LENGTH OF PIPE AND EACH SIDE OF JOINT.
- CONTRACTOR TO PROVIDE END CAPS TO THE CASING PIPES.
- DETAIL 1.5 CASING PIPE**  
AS BUILT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Jay De...</i> 1/18/07 DATE DIRECTOR OF PUBLIC WORKS <i>John R. Blanton</i> 1-18-07 DATE CHIEF, BUREAU OF UTILITIES		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS <b>KCI</b> TECHNOLOGIES 10 NORTH PARK DRIVE HUNT VALLEY, MD 21030 PHONE: (410) 316-7800 FAX: (410) 316-7817 WWW.KCI.COM		DES: GW DRN: CK CHK: TW DATE: AUG. 06		<b>EROSION AND SEDIMENT CONTROL NOTES AND DETAILS</b>		SCALE AS SHOWN SHEET 6 OF 6	
DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION <i>John R. Blanton</i> 1/17/07 DATE CHIEF, BUREAU OF ENGINEERING		U.S. NATURAL RESOURCES CONSERVATION SERVICE <i>Timothy J. Wolfe</i> 1/15/07 DATE		DESIGNED BY: NO. DRAWN BY: NO. CHECKED BY: NO. DATE:		SCALE MAP NO. 35 BLOCK NO. 2		TROTTER ROAD WATER AND SEWER EXTENSION CAPITAL PROJECT No. S-6239 CONTRACT No. 34-4345 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND	



STATION 10+75,  
INSTALL TWO 20 POUND PREPACKAGED MAGNESIUM ANODES. CONNECT ONE ANODE DIRECTLY TO 6" DIP VALVE AND ONE ANODE DIRECTLY TO HYDRANT RISER PIPE, SEE DETAIL CC-7.

STATION 6+75,  
INSTALL TWO 20 POUND PREPACKAGED MAGNESIUM ANODES. CONNECT ONE ANODE DIRECTLY TO 6" DIP VALVE AND ONE ANODE DIRECTLY TO HYDRANT RISER PIPE, SEE DETAIL CC-7.

STATION 2+45,  
INSTALL TWO 20 POUND PREPACKAGED MAGNESIUM ANODES. CONNECT ONE ANODE DIRECTLY TO 6" DIP VALVE AND ONE ANODE DIRECTLY TO HYDRANT RISER PIPE, SEE DETAIL CC-7.

STATION 10+70,  
INSTALL ONE MAGNESIUM ANODE AND CONNECT DIRECTLY TO 8" VALVE, SEE DETAIL CC-1.

STATION 10+70,  
INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE AND CONNECT TO IN-LINE THRUST BLOCK WITH CONNECTOR PLATE, SEE DETAIL CC-8.

INSTALL ONE 5 POUND PREPACKAGED MAGNESIUM ANODE AND CONNECT TO SERVICE SADDLE WITH CONNECTOR PLATE, SEE DETAIL CC-4. INSTALL INSULATING CORPORATION, SEE DETAIL CC-6, (TYPICAL OF ALL WATER SERVICES).

STATION 0+00,  
INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE AND CONNECT DIRECTLY TO SLEEVE, SEE DETAIL CC-2.

**NOTES:**

1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON ELBOWS ALONG THE PVC WATER MAIN ARE TO BE PROVIDED WITH CORROSION PROTECTION (DUCTILE IRON TEES AND ELBOWS NOT SHOWN ON THIS DRAWING), SEE DETAIL CC-2.
2. ALL PVC PIPE DESIGNATED AS BEING "RESTRAINED JOINT" SHALL HAVE ONE 5 POUND PREPACKAGED MAGNESIUM ANODE CONNECTED TO EACH METALLIC RESTRAINING HARNESS, SEE DETAIL CC-3. ALL RESTRAINED JOINT PIPE MAY NOT BE SHOWN ON THIS DRAWING.
3. ALL WATER SERVICE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES SHALL HAVE ONE 5 POUND PREPACKAGED MAGNESIUM ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-4), AND AN INSULATING CORPORATION INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE FROM THE SERVICE SADDLE (SEE DETAIL CC-6). ALL WATER SERVICES MAY NOT BE SHOWN ON THIS DRAWING.
4. DO NOT THERMITE WELD TO PVC PIPE.

**LEGEND:**

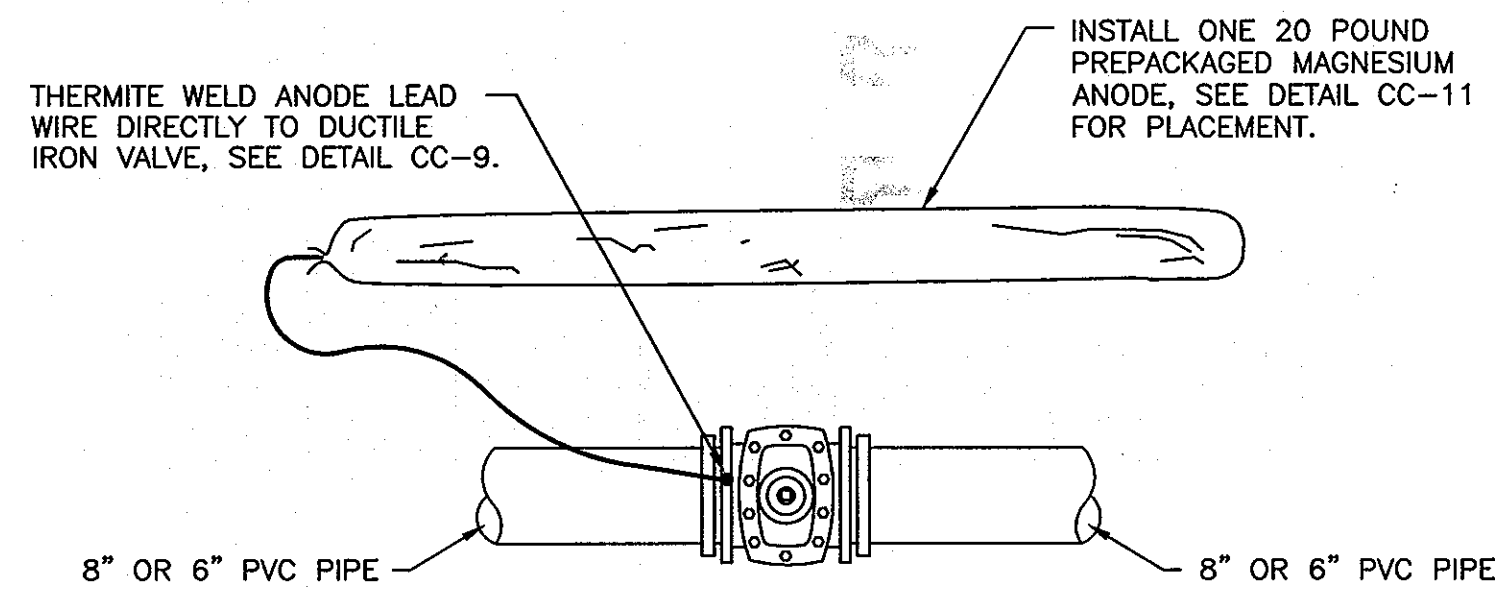
- NEW WATER MAIN
- - - EXISTING CIP MAIN
- ⊠ FIRE HYDRANT
- ▲ SERVICE SADDLE

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIABLE CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE REPLICATED IN ANY WAY FOR OTHER PROJECTS OR MODIFIED IN ANY WAY FOR THIS OR OTHER PROJECTS, EXCEPT BY WRITTEN AGREEMENT WITH RUSSELL CORROSION CONSULTANTS, INC.



AS BUILT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>Jan 7-07</i> 8/22/07 Chief, Bureau of Utilities: <i>8/24/07</i>		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS <b>KCI TECHNOLOGIES</b> 10 NORTH BARK DRIVE HUNT VALLEY, MD 21030 PHONE: (410) 316-7800 FAX: (410) 316-7817 www.kci.com		RUSSELL CORROSION CONSULTANTS, INC. Columbia, Maryland		DES: MJS DRN: DJD CHK: MJS DATE: AUG. 07		<table border="1"> <tr> <th>BY</th> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>MJS</td> <td>1</td> <td>ADD CATHODIC PROTECTION CHANGE ORDER</td> <td>8/07</td> </tr> </table>		BY	NO.	REVISION	DATE	MJS	1	ADD CATHODIC PROTECTION CHANGE ORDER	8/07	<b>8" WATER MAIN CORROSION CONTROL LAYOUT</b>		<b>TROTTER ROAD WATER AND SEWER EXTENSION</b> CAPITAL PROJECT No. S-6239 CONTRACT No. 34-4345		SCALE: NONE SHEET: 6A OF 6
BY	NO.	REVISION	DATE																			
MJS	1	ADD CATHODIC PROTECTION CHANGE ORDER	8/07																			
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND						600' SCALE MAP NO. 35 BLOCK NO. 2		6A OF 6														

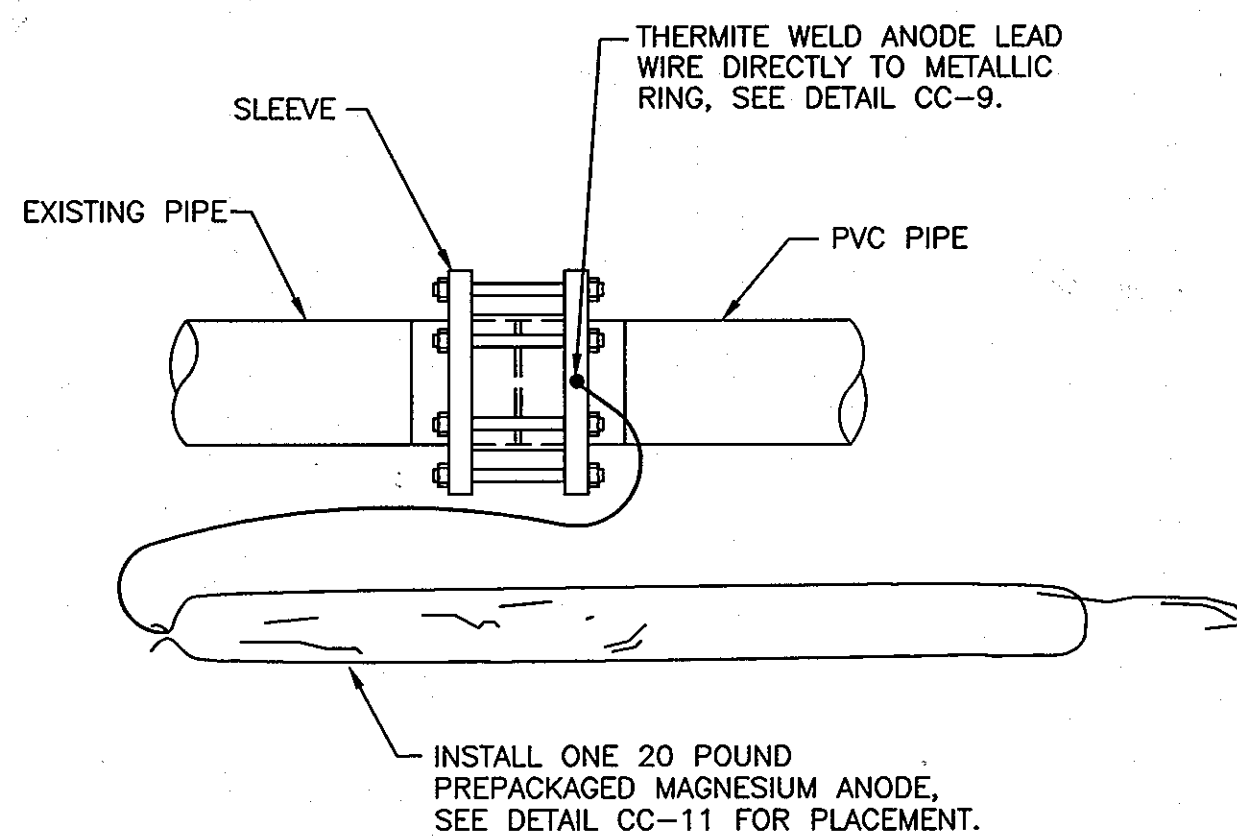


**NOTES:**

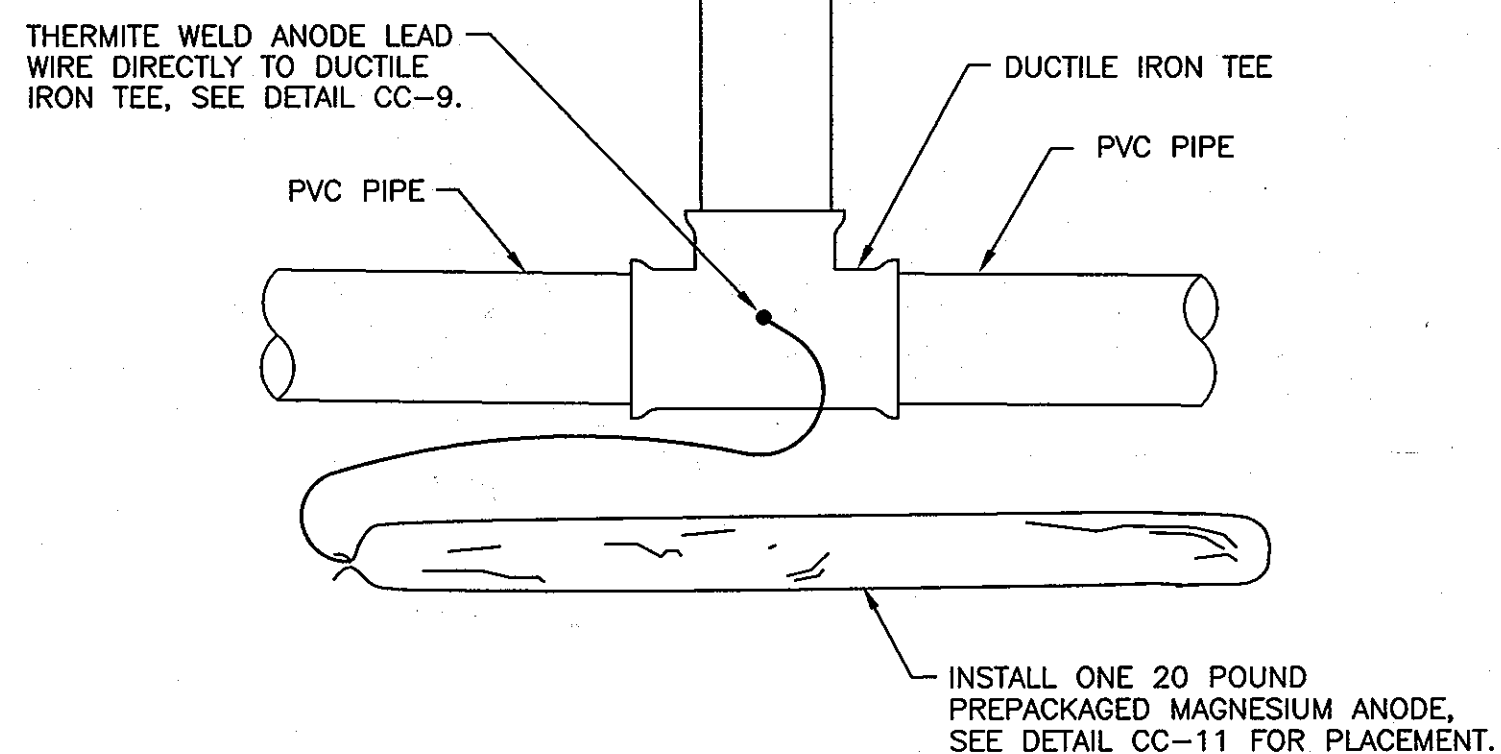
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
2. DO NOT THERMITE WELD TO PVC PIPE.

**CC-1: CORROSION PROTECTION OF DUCTILE IRON VALVE (8" AND 6")**

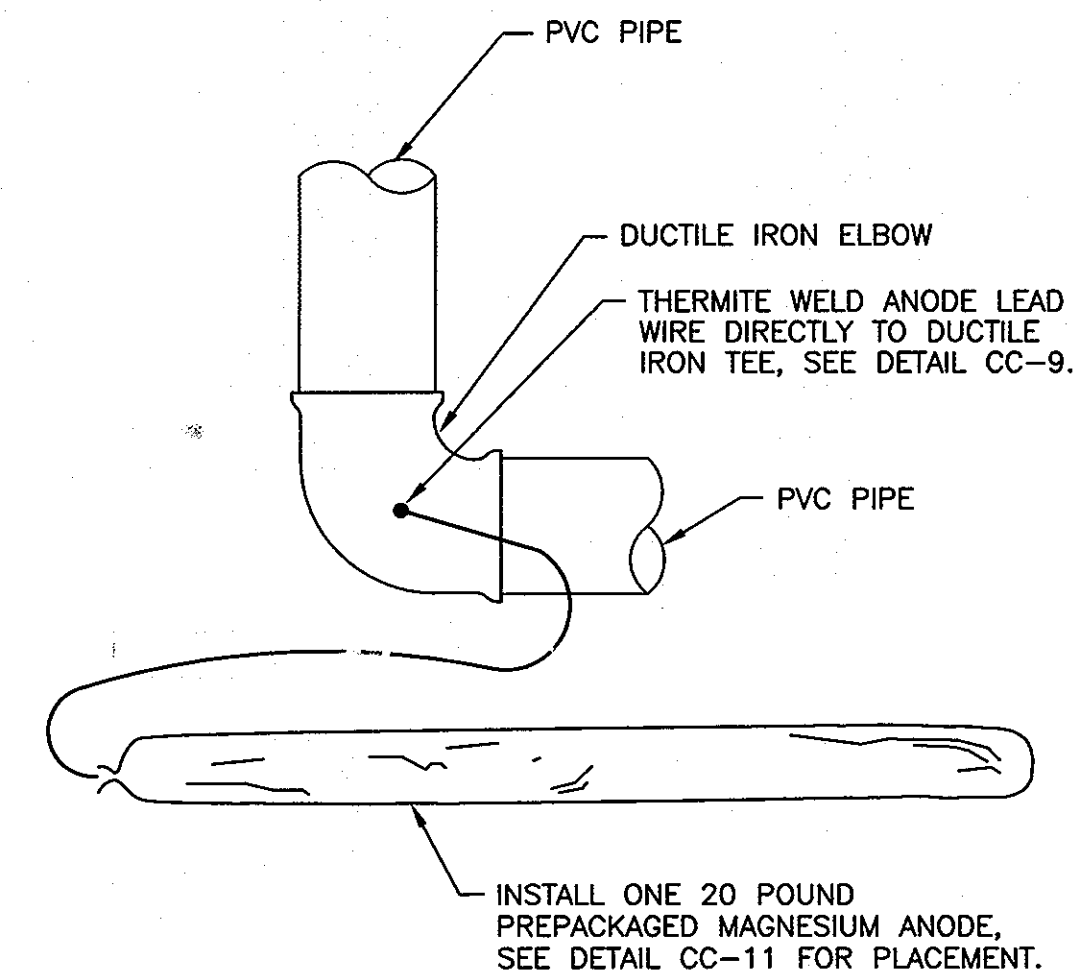
SCALE: NONE



**SLEEVE**



**TEE**



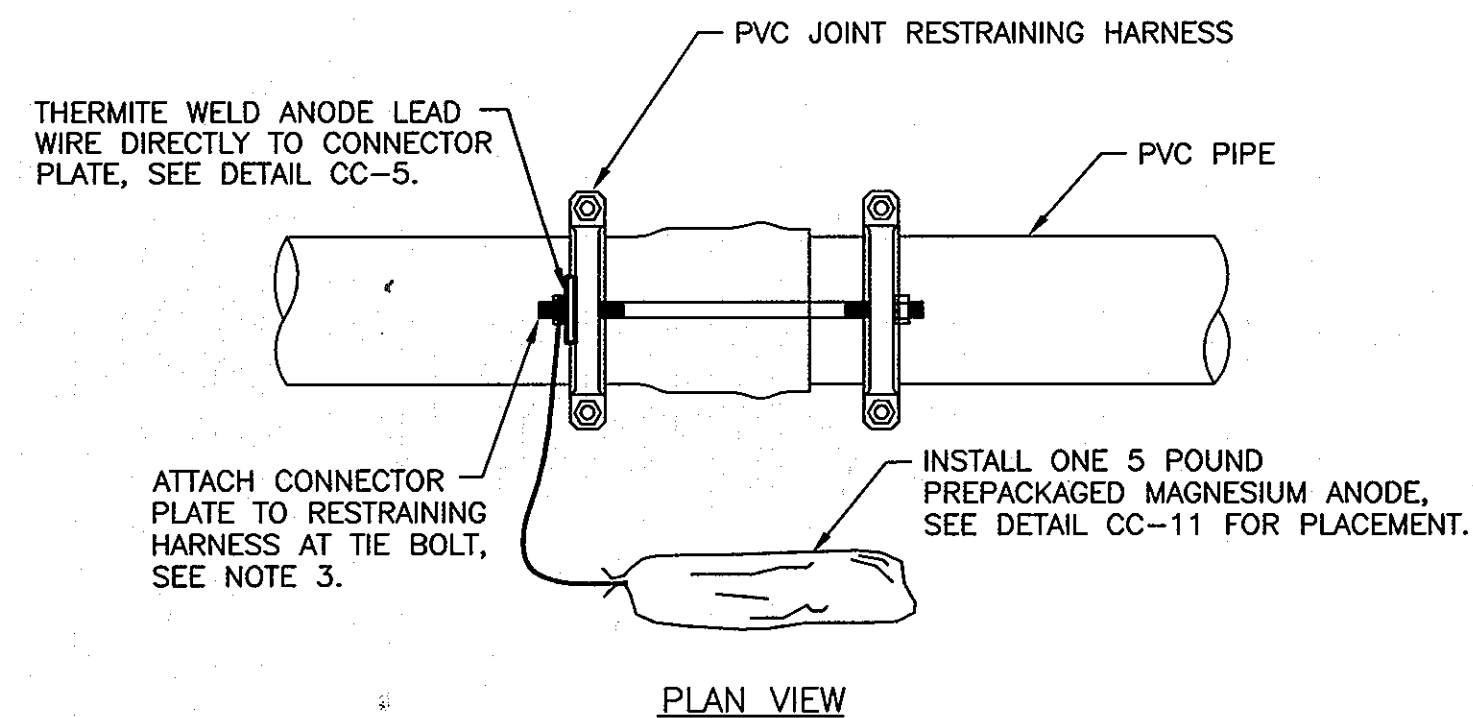
**ELBOW**

**NOTES:**

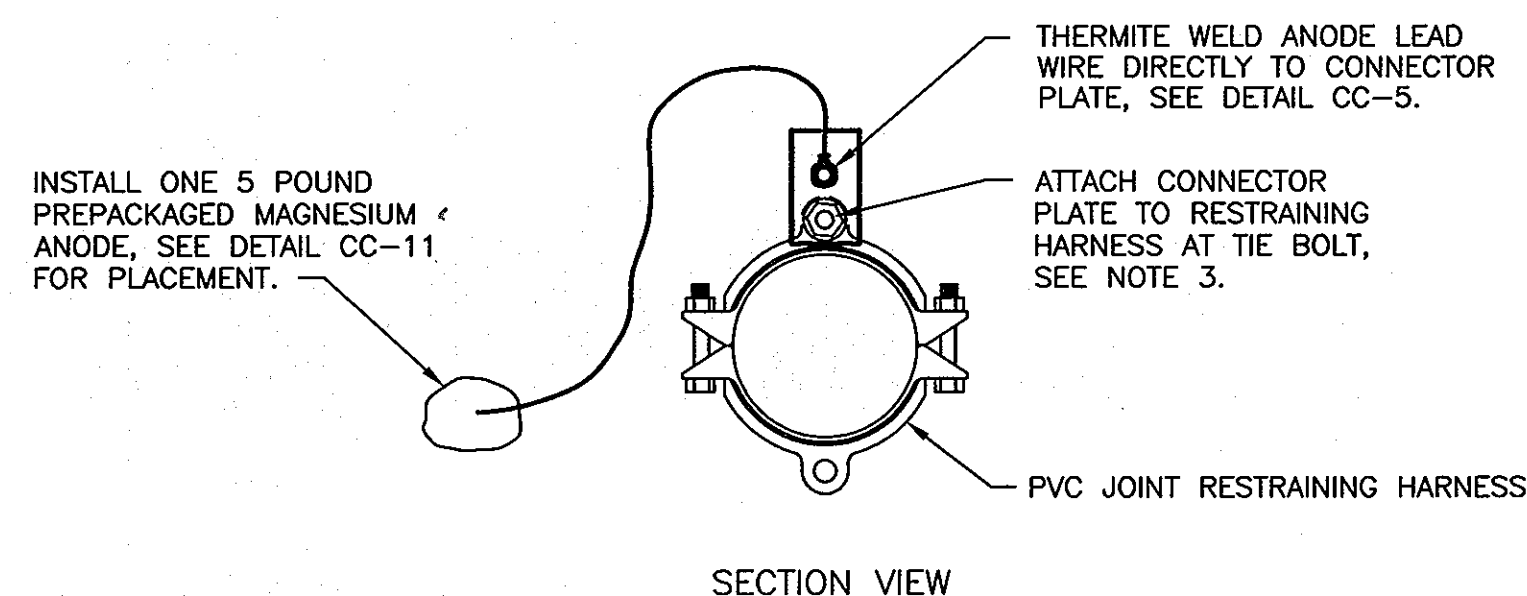
1. ANODES REQUIRED ONLY IF TEE, OR ELBOW IS DUCTILE IRON.
2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
3. DO NOT THERMITE WELD TO PVC PIPE.

**CC-2: CORROSION PROTECTION OF DUCTILE IRON FITTINGS**

SCALE: NONE



**PLAN VIEW**



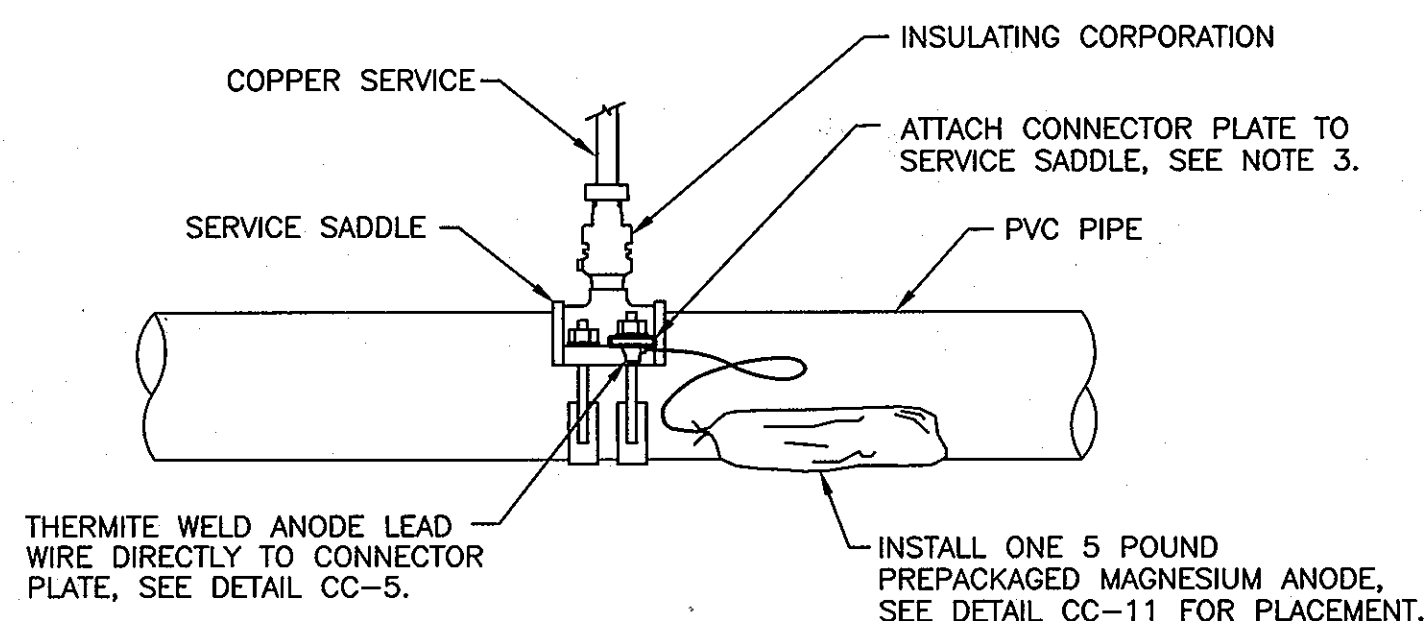
**SECTION VIEW**

**NOTES:**

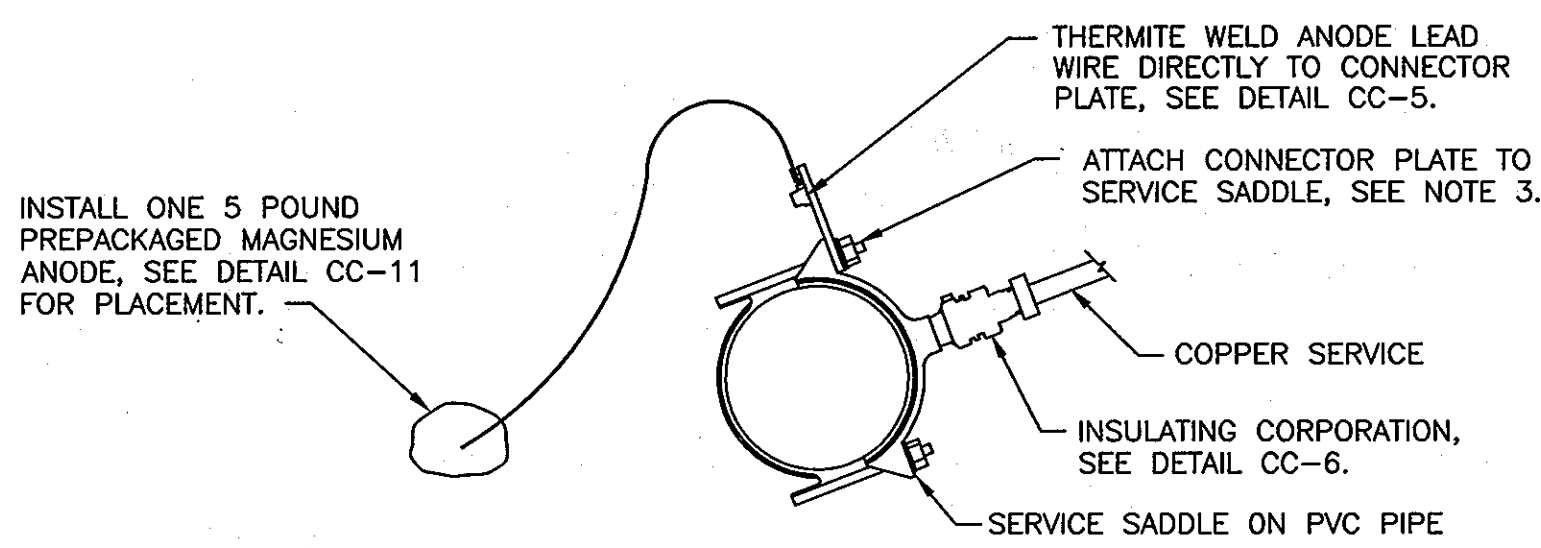
1. CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS.
2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
3. REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
4. DO NOT THERMITE WELD TO PVC PIPE.

**CC-3: CORROSION PROTECTION OF RESTRAINING HARNESS**

SCALE: NONE



**PLAN VIEW**



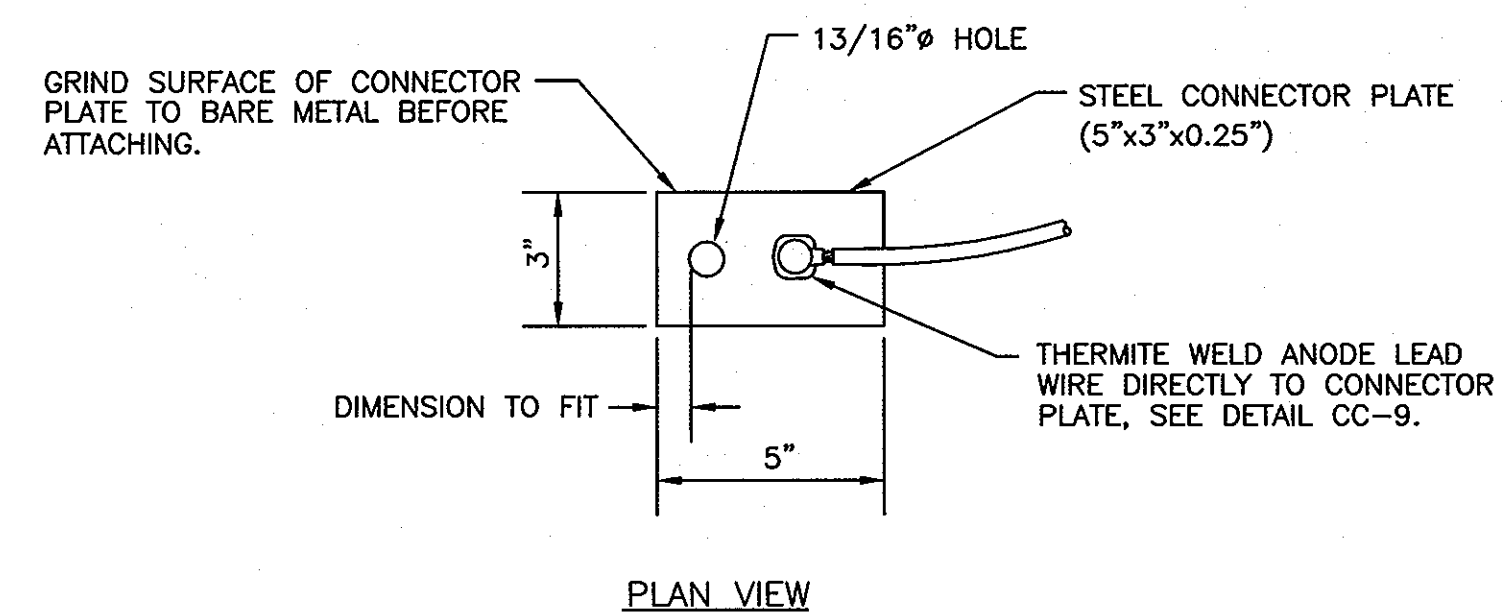
**SECTION VIEW**

**NOTES:**

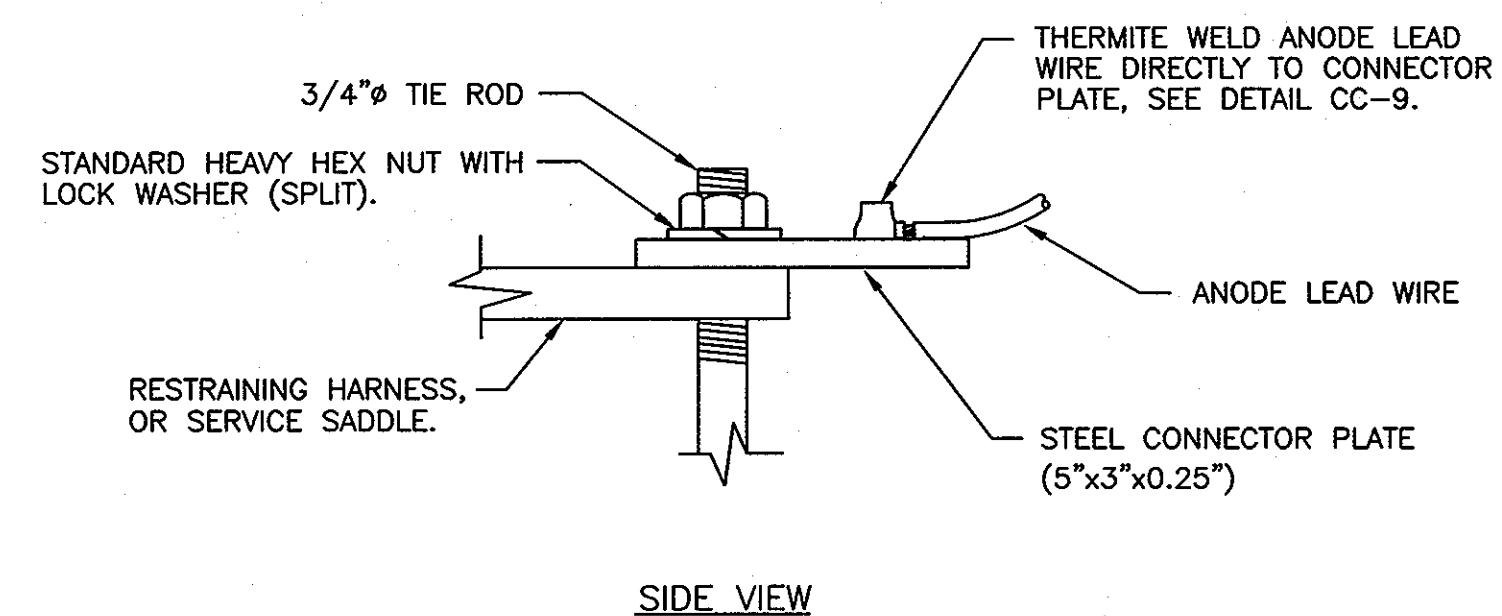
1. CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO SERVICE SADDLE.
2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
3. REMOVE COATING FROM SERVICE SADDLE WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
4. DO NOT THERMITE WELD TO PVC PIPE.

**CC-4: CORROSION PROTECTION OF SERVICE SADDLE**

SCALE: NONE



**PLAN VIEW**



**SIDE VIEW**

**NOTES:**

1. CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS, OR SERVICE SADDLE.
2. THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.

**CC-5: CONNECTION PLATE DETAIL**

SCALE: NONE

AS BUILT

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works  
Date: 8/24/07

Chief, Bureau of Engineering  
Date: 8-17-07

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS  
**KCI TECHNOLOGIES**  
10 Norton Park Drive  
Hunt Valley, MD 21036  
Phone: (410) 316-7800  
Fax: (410) 316-7817  
www.kci.com

RUSSELL CORROSION CONSULTANTS, INC.  
Columbia, Maryland

DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	MJS	1	ADD CATHODIC PROTECTION CHANGE ORDER	8/07	
	BY	NO.	REVISION	DATE	

CORROSION CONTROL  
DETAILS 1

600' SCALE MAP NO. 35 BLOCK NO. 2

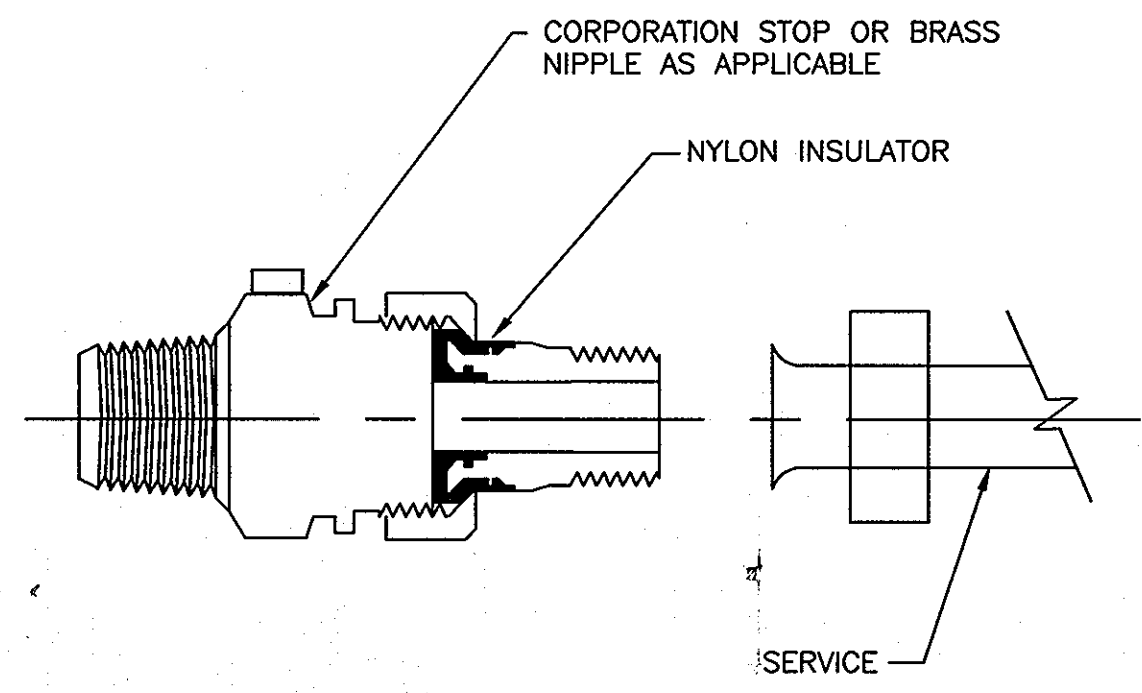
TROTTER ROAD WATER AND  
SEWER EXTENSION  
CAPITAL PROJECT No. S-6239  
CONTRACT No. 34-4345

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
NONE  
SHEET  
6B OF 6





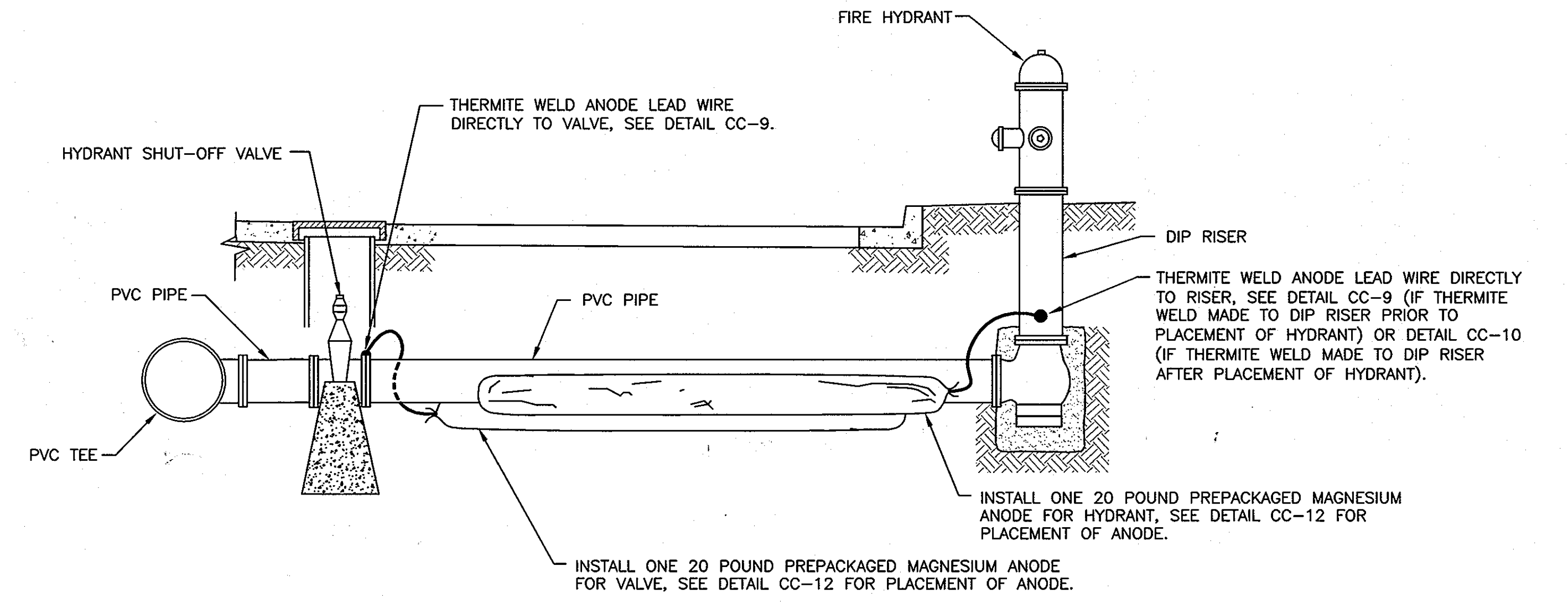


**NOTES:**

1. INSTALL ELECTRICAL ISOLATION ON ALL SMALL DIAMETER (2" AND LESS) WATER SERVICE CONNECTIONS TO MAIN.
2. COAT CORPORATION STOP, AND SERVICE PIPING FOR A DISTANCE OF 12 INCHES WITH MASTIC COATING (ROYSTON ROSKOTE R28). MASTIC COATING TO BE MINIMUM OF 20 MILS IN THICKNESS.

**CC-6: INSULATING CORPORATION**

SCALE: NONE

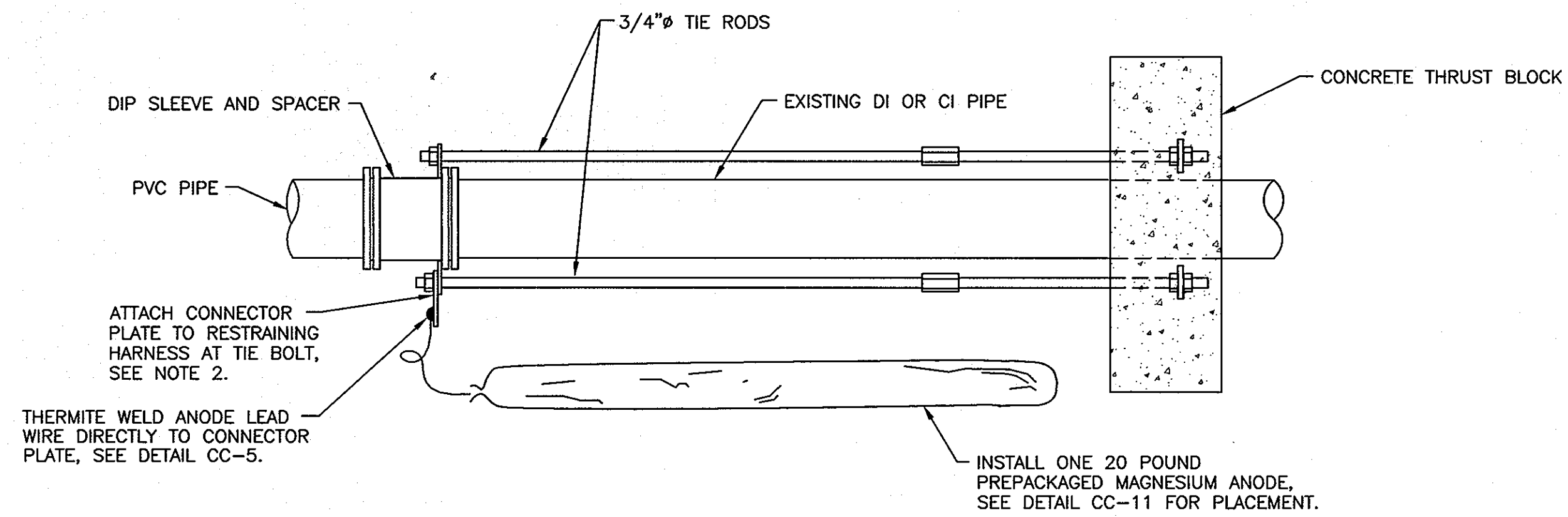


**NOTES:**

1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-12.
2. DO NOT THERMITE WELD TO PVC PIPE.

**CC-7: CORROSION PROTECTION AT FIRE HYDRANT**

SCALE: NONE

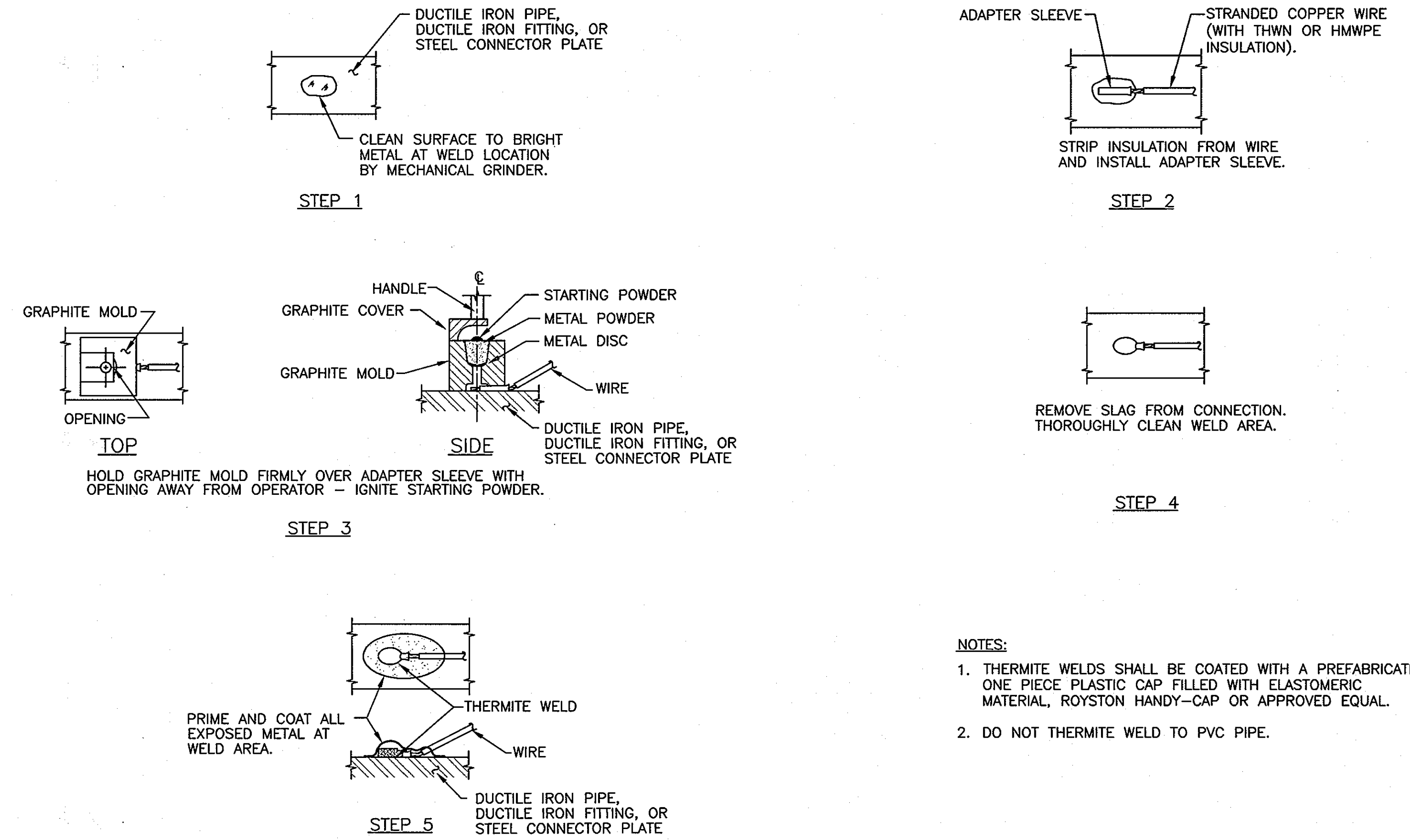


**NOTES:**

1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
2. REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
3. DO NOT THERMITE WELD TO PVC PIPE.

**CC-8: CORROSION PROTECTION AT IN-LINE THRUST BLOCK**

SCALE: NONE



**NOTES:**

1. THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.
2. DO NOT THERMITE WELD TO PVC PIPE.

**CC-9: TYPICAL THERMITE WELD**

SCALE: NONE

AS BUILT

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jan 7. d* 8/26/07  
DIRECTOR OF PUBLIC WORKS DATE  
*John K. Wells* 8/24/07  
CHIEF, BUREAU OF UTILITIES DATE

*Robert J. Segan* 8/22/07  
CHIEF, BUREAU OF ENGINEERING DATE  
*Ray D. Lee* 8-17-07  
CHIEF, UTILITY DESIGN DIVISION DATE

**KCI** TECHNOLOGIES  
ENGINEERS  
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CONSTRUCTION MANAGERS  
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**RUSSELL CORROSION CONSULTANTS, INC.**  
Columbia, Maryland

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AUG. 07	BY	NO.	REVISION	DATE

CORROSION CONTROL  
DETAILS 2

600' SCALE MAP NO. 35 BLOCK NO. 2

TROTTER ROAD WATER AND  
SEWER EXTENSION  
CAPITAL PROJECT No. S-6239  
CONTRACT No. 34-4345

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
NONE  
SHEET  
6C OF 6

