

# 36" SOUTHWEST TRANSMISSION MAIN RELOCATION

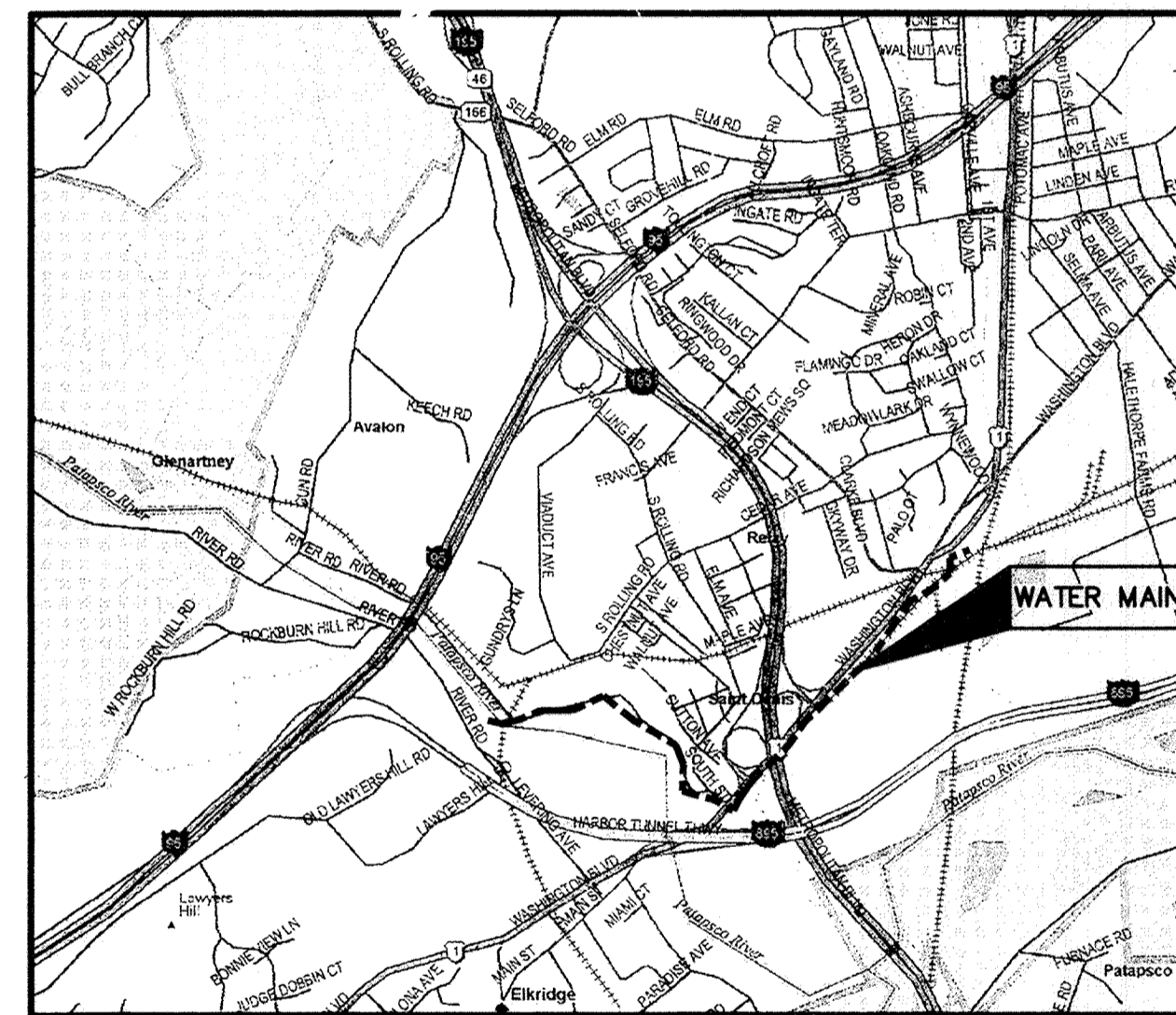
CONTRACT NO. 44-4618  
CAPITAL PROJECT NO. W-8276



## BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS

### PROJECT NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH BALTIMORE COUNTY, MARYLAND, DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION), THE CONTRACT DRAWINGS, AND THE CONTRACT SPECIFICATIONS.
- EXISTING UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, BUT THE COMPLETENESS AND ACCURACY OF SAME IS NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES IN ADVANCE OF CONSTRUCTION WITHOUT ADDITIONAL COMPENSATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ALL DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION DUE TO HIS NEGLIGENCE.
- CONTACT "MISS UTILITY" TELEPHONE 1-800-257-7777. 72 HOURS PRIOR TO CONSTRUCTION START UP.
- EXISTING TOPOGRAPHY IS BASED ON A. MORTON THOMAS, INC. SURVEY DATED DEC, 2006 AND EBA ENGINEERING, INC. SURVEY DATED OCT, 2008.
- VERTICAL DATUM IS BASED ON THE NAVD 88 DATUM. HORIZONTAL COORDINATE SYSTEM IS BASED ON THE NAD 83/91 DATUM.
- FIELD CONDITIONS MAY WARRANT THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES IN ADDITION TO THOSE SHOWN ON THESE PLANS.
- SEE SPECIFICATIONS SPECIAL PROVISIONS FOR REQUIREMENTS OF UTILITY POLE SUPPORT AND/OR RELOCATIONS.
- OPERATING HYDRAULIC GRADIENT ELEVATION = 213. (92 PSI)  
LEAKAGE TEST GRADIENT ELEVATION = 213. (92 PSI) PRESSURE TEST GRADIENT ELEVATION = 346. (150 PSI)
- THE CONTRACTOR FOR THE MAIN EXTENSION WILL NOTIFY BALTIMORE CITY, BUREAU OF WATER AND WASTE WATER, AT (410) 396-7807, 72 HOURS BEFORE STARTING WORK.
- NOTIFY BALTIMORE CITY BUREAU OF WATER AND WASTEWATER AT 410-396-7870 AT LEAST 72 HOURS IN ADVANCE OF STARTING CONSTRUCTION.
- NOTIFY PARK MANAGER AT 410-461-5005 AT LEAST 2 WEEKS IN ADVANCE OF ANY WORK WITHIN THE STATE PARK.



LOCATION MAP  
SCALE: 1" = 2,000'

### LIST OF DRAWINGS

SHEET NO.	DWG.	BALTIMORE CO. DRAWING NO.	DESCRIPTION
1	G-1	2009-3350	TITLE SHEET
2	G-2	2009-3351	GENERAL NOTES, SEQUENCE OF CONSTRUCTION, LEGEND
3	C-1	2009-3352	PLAN & PROFILE 0+00 TO 12+11.28
4	C-2	2009-3353	PLAN & PROFILE 12+11.38 TO 24+55.00
5	C-3	2009-3354	PLAN & PROFILE 24+55.00 TO 36+60.30
6	C-4	2009-3355	PLAN & PROFILE 100+00.00 TO 110+52.07
7	C-5	2009-3356	PLAN & PROFILE 110+52.07 TO 120+88.01
8	C-6	2009-3357	PLAN & PROFILE 120+88.01 TO 130+66.08
9	C-7	2009-3358	PLAN & PROFILE 130+66.08 TO 141+57.28
10	C-8	2009-3359	MAG METER VAULT - PLAN & PROFILE
11	C-9	2009-3360	MAG METER VAULT - STRUCTURAL
12	C-10	2009-3361	AIR RELEASE & MANWAY ACCESS VAULT DETAILS
13	C-11	2009-3362	DEWATERING VALVE & VAULT DETAILS
14	C-12	2009-3363	PATAPSCO VALLEY STATE PARK IMPROVEMENTS PLAN
15	C-13	2009-3364	CSX RAILROAD AND WASHINGTON BLVD. JACK & BORE DETAILS
16	C-14	2009-3365	MISCELLANEOUS CIVIL DETAILS
17	C-15	2009-3366	MISCELLANEOUS CIVIL DETAILS
18	C-16	2009-3367	DIAGEO PROPERTY IMPROVEMENTS PLAN
19	C-17	2009-3368	RESTORATION PLAN STA. 0+00 TO STA. 33+89
20	SC-1	2009-3369	EROSION & SEDIMENT CONTROL TITLE SHEET
21	SC-2	2009-3370	EROSION & SEDIMENT CONTROL LEGEND AND NOTES 1
22	SC-3	2009-3371	EROSION & SEDIMENT CONTROL NOTES 2
23	SC-4	2009-3372	EROSION & SEDIMENT CONTROL NOTES 3
24	SC-5	2009-3373	EROSION & SEDIMENT CONTROL DETAILS
25	SC-6	2009-3374	EROSION & SEDIMENT CONTROL PLAN 1 STA. 0+00 TO STA. 33+89.00
26	SC-7	2009-3375	EROSION & SEDIMENT CONTROL PLAN 2 STA. 33+89.00 TO STA. 126+89.00
27	SC-8	2009-3376	EROSION & SEDIMENT CONTROL PLAN 3 STA. 126+89.00 TO STA. 141+57.28
28	TC-1	2009-3377	TRAFFIC CONTROL GENERAL NOTES
29	TC-2	2009-3378	PATAPSCO VALLEY STATE PARK ENTRANCE ROAD TRAFFIC CONTROL
30	TC-3	2009-3379	TRAFFIC CONTROL PLAN 2 STA. 100+00 TO 128+20
31	CP-1	2009-3380	CATHODIC PROTECTION LAYOUT (STA. 0+00 TO STA. 36+60.30)
32	CP-2	2009-3381	CATHODIC PROTECTION LAYOUT (STA. 100+00 TO STA. 141+60±)
33	CP-3	2009-3382	CATHODIC PROTECTION DETAILS - 1
34	CP-4	2009-3383	CATHODIC PROTECTION DETAILS - 2
35	CP-5	2009-3384	CATHODIC PROTECTION DETAILS - 3
36	CP-6	2009-3385	CATHODIC PROTECTION DETAILS - 4

WATER MAIN TEST PRESSURE - 225 PSI

CITY OF BALTIMORE Acting Director: <i>[Signature]</i> 3/15/12 CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		REVISION - CITY OF BALTIMORE Design: <i>[Signature]</i> 3/1/12 HEAD, BUREAU OF WATER AND WASTEWATER		Director: <i>[Signature]</i> 3/22/12 DIRECTOR, DEPT. OF PUBLIC WORKS		Chief: <i>[Signature]</i> 1/27/12 CHIEF, WATER ENGINEERING SECTION		Director: <i>[Signature]</i> 1/27/12 DIRECTOR, DEPT. OF PUBLIC WORKS	
SEAL: <i>[Professional Seal]</i> 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. 37797 EXPIRATION DATE AUGUST 9, 2013		REVISION BY: <i>[Signature]</i> DATE: <i>[Date]</i> P.W.A. NO. KEY SHEET POSITION SHIT		DRAWING SCALE PLAN SCALE: _____ PROFILE SCALE: _____		DEPARTMENT OF PUBLIC WORKS APPROVED BY: <i>[Signature]</i> DATE: 1-27-12 DIRECTOR		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS Director: <i>[Signature]</i> 1/27/12 DIRECTOR, DEPT. OF PUBLIC WORKS	
ENGINEER: SYAM B. NAYER DESIGN BY: BBB BUREAU OF ENGINEERING AND CONSTRUCTION		BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER		BUR. OF ENGINEERING & CONSTRUCTION APPROVED BY: <i>[Signature]</i> DATE: 1/17/12 CHIEF		AS-BUILT PER RECORD PRINT DRAWN BY: JCD REVIEWED BY: <i>[Signature]</i> DATE: 1/23/12		SUBDIVISION: SAINT DENIS	

AS-BUILT JUNE 2016

CWO.51738

SOUTHWEST TRANSMISSION MAIN  
TITLE SHEET

ELECTION DISTRICT NO. 3

HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
G-1	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 1 OF 36	DRAWING NO.
2009-3350	FILE NO. FILE

DWG FILENAME:

GENERAL NOTES

- ALL ELEVATIONS BASED ON NAVD 88 VERTICAL DATUM.
- AVAILABLE INFORMATION AS TO THE LOCATION OF EXISTING SUBSTRUCTURES AND UTILITIES HAS BEEN COLLECTED FROM VARIOUS SOURCES. THE RESULTS OF SUCH INVESTIGATIONS, AS MAY BE SHOWN ON THE CONTRACT DRAWINGS, ARE NOT GUARANTEED AS TO ACCURACY. ALL EXISTING UTILITIES ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR SHALL DIG TEST PITS AS DIRECTED BY THE ENGINEER, WHERE SHOWN ON THE DRAWINGS AND AS REQUIRED.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION, AND SHALL COMPLY WITH ALL CURRENT MARKOUT REQUIREMENTS OF THE PRESIDING COUNTIES.  
 AT&T 1-800-252-1133  
 BGE (CONSTRUCTION SERVICES) 410-850-4620  
 BGE (EMERGENCY) 410-685-0123  
 BUREAU OF UTILITIES (HOWARD COUNTY) 410-313-4900  
 CSX 215-891-5520  
 DPW - BALTIMORE CITY 410-396-1466  
 DPW - ENG. & CONST. (BALTIMORE COUNTY) 410-887-3788  
 MCI 1-800-289-3427 #2  
 STATE HIGHWAY ADMINISTRATION 410-531-5533  
 VERIZON 1-800-743-0033 / 410-224-9210  
 CSX (EMERGENCY) 1-800-232-0144
- THE FOLLOWING IS A LISTING OF REPORTED TELEPHONE NUMBERS OF UTILITY COMPANIES AND AGENCIES HAVING FACILITIES OR JURISDICTION IN THE VICINITY OF THE PROJECT. THIS LIST SHALL NOT BE CONSIDERED AS COMPLETE.
- EXCAVATIONS OR TRENCHING WITHIN CLOSE PROXIMITY TO UNDERGROUND FACILITIES OR UTILITY POLES WILL REQUIRE PROTECTION TO PREVENT DAMAGE OR INTERRUPTION OF SERVICE TO UNDERGROUND FACILITIES. THE COST TO PROVIDE THIS PROTECTION WILL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS OF THE "HIGH VOLTAGE PROXIMITY ACT".
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT EXISTING THRUST BLOCKS WHICH ARE RESTRAINING EXISTING UTILITIES. EXISTING THRUST BLOCKS SHALL NOT BE UNDERMINED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL EXCESS EXCAVATED MATERIAL TO AN OFF-SITE LOCATION AT NO ADDITIONAL COST TO THE OWNER.
- ALL TRENCH LINES IN PAVED AREAS SHALL BE SAW CUT, OR MILLED.
- THE CONTRACTOR SHALL COMPLY WITH ALL ROAD OPENING REQUIREMENTS AND ORDINANCES OF THE MARYLAND DEPARTMENT OF TRANSPORTATION AND BALTIMORE COUNTY.
- ALL TRENCHES SHALL BE BACKFILLED WITHOUT DELAY. OPEN TRENCHES SHALL BE KEPT TO A MINIMUM. NO OPEN PIPELINE TRENCHES SHALL BE LEFT OVERNIGHT. UPON BACKFILLING THE CONTRACTOR SHALL BROOM SWEEP STREETS AND USE APPROPRIATE METHODS TO CONTROL DUST. STEEL PLATES WILL BE PERMITTED ONLY AT ACCESS PITS FOR SPECIAL CROSSINGS.
- GENERALLY, UNLESS OTHERWISE SPECIFICALLY PERMITTED, NO WORK SHALL BE DONE BETWEEN THE HOURS OF 6:00 P.M AND 6:00 A.M., PREVAILING TIME. ANY WORK DURING THESE HOURS MUST BE APPROVED BY THE ENGINEER. GOOD LIGHTING AND ALL OTHER NECESSARY FACILITIES FOR PROPER EXECUTION AND INSPECTION OF THE WORK SHALL BE PROVIDED. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL STATE AND LOCAL LAWS GOVERNING HOURS DURING WHICH CONSTRUCTION EQUIPMENT MAY BE OPERATED.
- THE CONTRACTOR SHALL INSTALL THRUST RESTRAINT AS RECOMMENDED BY PIPE SUPPLIER. AREAS WHERE RESTRAINED JOINTS WILL BE NECESSARY HAVE BEEN INDICATED ON THE CONTRACT DRAWINGS. ADDITIONAL THRUST RESTRAINT SHALL BE AS RECOMMENDED BY THE PIPE SUPPLIER.
- THE CONTRACTOR SHALL FURNISH 2" NPT NIPPLES AND GATE VALVES AT TEST PLUGS, AND 2" CORPORATIONS AS SHOWN ON THE DRAWINGS AND ON BOTH SIDES OF ALL MAIN LINE VALVES FOR BLEEDING, FLUSHING, PRESSURE TESTING, AND DISINFECTING THE WATER MAIN. THE CONTRACTOR SHALL INSTALL AS MANY CORPORATIONS AS ARE REQUIRED FOR PROPER TESTING, FLUSHING, AIR BLEEDING AND DISINFECTION AT NO ADDITIONAL COST TO THE COUNTY OTHER THAN THE PRICES BID.
- TO MAINTAIN THE HORIZONTAL AND VERTICAL ALIGNMENT SHOWN ON THE PLANS, PIPE JOINTS MUST BE DEFLECTED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S REQUIREMENTS. IF NECESSARY, EITHER TO MAINTAIN THE ALIGNMENT SHOWN OR TO ADJUST THE ALIGNMENT SHOWN OR TO ADJUST THE ALIGNMENT TO MEET ACTUAL FIELD CONDITIONS, ADDITIONAL FITTINGS SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER OTHER THAN THE PRICES BID.
- ALL STATIONING SHOWN ON PLANS IS APPROXIMATE.
- ALL CONSTRUCTION ACTIVITIES ARE TO BE CONFINED TO THE PUBLIC RIGHT-OF-WAY OR TO BALTIMORE COUNTY / HOWARD COUNTY DPW EASEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING SUFFICIENT LAND FOR TEMPORARY TRAILERS AND STORAGE. WRITTEN PERMISSION FROM PRIVATE PROPERTY OWNERS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE COUNTY.
- THE CONTRACTOR SHALL NOTIFY BALTIMORE COUNTY AND HOWARD COUNTY DPW PRIOR TO CONNECTION TO OR RELOCATION OF ANY EXISTING BALTIMORE COUNTY OR HOWARD COUNTY DPW OWNED AND MAINTAINED FACILITIES. ALL CONNECTIONS AND MODIFICATIONS TO EXISTING FACILITIES SHALL BE DONE AT THE CONVENIENCE OF THE BALTIMORE COUNTY AND HOWARD COUNTY DPW.
- CONTRACTOR SHALL TAKE STEPS NECESSARY TO PRESERVE EXISTING CURB AND MINIMIZE THE LENGTH OF CURBING THAT MUST BE REPLACED.
- THE CONTRACTOR IS CAUTIONED THAT ALL SANITARY LATERALS AND UTILITY SERVICES HAVE NOT BEEN LOCATED. WHEN THE CONTRACTOR ENCOUNTERS AN OBSTRUCTION AND CANNOT ADJUST THE ALIGNMENT USING ALLOWABLE JOINT DEFLECTION THE CONTRACTOR SHALL INSTALL FITTINGS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROMPT REPAIR OF DAMAGED UTILITIES, AND SHALL MAINTAIN ON SITE AN ADEQUATE SUPPLY OF REPAIR MATERIALS.

- THE CONTRACTOR SHALL PROTECT ALL STRUCTURES, ROADS, PIPELINES, TREES, SHRUBBERY, GRASS AREAS, ETC. DURING THE PROGRESS OF THE WORK AND SHALL REMOVE DAILY FROM THE SITE ALL DEBRIS AND UNUSED MATERIALS. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL RESTORE THE SITES AS NEATLY AS POSSIBLE TO THEIR ORIGINAL CONDITION.
- REPAIR WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE GOVERNING AGENCY.
- TRAFFIC STRIPING AND MARKINGS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN-KIND WITH THERMOPLASTIC IN ACCORDANCE WITH MDOT AND BALTIMORE COUNTY STANDARDS, AND TO THEIR ORIGINAL LAYOUT.
- CONTRACTOR SHALL NOT OPERATE EXISTING VALVES.
- ALL REQUIRED DEWATERING SHALL BE INCLUDED IN THE UNIT PRICES BID.
- ALL TREES, VEGETATION AND LANDSCAPING REPLACED AND/ OR REPLANTED SHALL BE GUARANTEED BY THE CONTRACTOR FOR 1 YEAR AFTER PLANTING.
- THE LOCATION AND FULL EXTENT OF TRAFFIC SIGNAL LOOPS, CONDUIT AND WIRING MAY NOT BE SHOWN. THE CONTRACTOR SHALL COORDINATE A MARK-OUT OF SIGNAL LOOPS AND WIRING WITH THE GOVERNING AGENCY. LOOPS AND WIRING DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE GOVERNING AGENCY AT NO ADDITIONAL COST TO BALTIMORE COUNTY OR HOWARD COUNTY.
- GUIDERAILS, FENCES, DRAINAGE PIPES, MAILBOXES, HEADWALLS AND OTHER FEATURES WHICH REQUIRE REINSTALLATION BUT ARE FOUND NOT TO BE REUSABLE, OR WHICH ARE DAMAGED DURING REMOVAL, SHALL BE REPLACED WITH NEW MATERIAL AT NO ADDITIONAL COST TO BALTIMORE COUNTY OR HOWARD COUNTY.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH BALTIMORE COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION DATED 2000 AND AMENDED.
- NOTIFY BALTIMORE CITY BUREAU OF WATER AND WASTEWATER AT 410-396-7807 3 DAYS BEFORE STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 PRIOR TO BEGINNING OF WORK.
- ONLY BALTIMORE CITY SHALL OPERATE EXISTING VALVES. CONTRACTOR SHALL NOTIFY THE BALTIMORE COUNTY INSPECTOR TO ARRANGE A SHUTDOWN WITH THE CITY AT LEAST 4 DAYS PRIOR TO PROPOSED SHUTDOWN. IF THE INSPECTOR IN THE FIELD IS UNAVAILABLE, CALL THE BALTIMORE COUNTY AREA ENGINEER AT 410-887-3531. CONTACT AUGIE SEVERN AT BALTIMORE CITY WAO 410-396-0239 FOR MAIN SHUTDOWN/VALVE OPERATIONS.
- WHEN EXCAVATING FOR UTILITIES, ALL SPOIL MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
- FULL COMPACTION IS REQUIRED FOR ALL TRENCHES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLANS (SC-1 THRU SC-8) PERMIT NO. 290-COUNTY-05.
- MAIN SHALL HAVE A MINIMUM OF 4 FEET OF COVER EXCEPT WHERE SPECIFIED.
- THE COST OF CONSTRUCTING UNDER OR OVER ANY EXISTING UTILITY OR CABLE SHOWN ON THIS PLAN AND ALL EXISTING SERVICE CONNECTIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE 36-INCH WATER MAIN. THIS SHALL INCLUDE ANY WATER SERVICE & SEWER HOUSE CONNECTIONS THAT HAVE TO BE RELOCATED DURING CONSTRUCTION OF THE PROJECT.
- WHEN CROSSING EXISTING UTILITIES THE CONTRACTOR IS TO SUPPORT BRACE AND PROTECT SUCH UTILITIES DURING CONSTRUCTION. (COST TO BE INCLUDED IN THE PRICE BID FOR THE 36-INCH WATER MAIN).
- CONTRACTOR IS TO TEST PIT EXISTING UTILITIES PRIOR TO PREPARING SHOP DRAWINGS AND PRIOR TO LAYING PIPE TO WITHIN 3-20 FOOT LENGTHS OF PIPE SO INVERTS CAN BE ADJUSTED.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES TO HIS OWN SATISFACTION PRIOR TO STARTING ANY WORK.
- HIGHLY CHLORINATED WATER TO BE DISPOSED OF IN A SANITARY SEWER AT A RATE NOT TO EXCEED 100 GAL/MIN.

SURVEY CONTROL NOTES

- THE ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION = 68.97.
- THE COORDINATES SHOWN HEREON ARE REFERRED TO THE MARYLAND STATE PLANE DATUM NAD 83/91 USING NGS MONUMENTS GIS 86 (PID AE 2450), N. 566928.28 E. 1397313.26 AND GIS 87 (PID AE2451), N. 566798.08 E. 1393675.58.
- GIS 86 AND GIS 87 ARE SURVEY DISKS SET IN TOP OF CONCRETE MONUMENTS.

SEQUENCE OF CONSTRUCTION

THIS SEQUENCE OF CONSTRUCTION DOES NOT ADDRESS ALL REQUIRED ACTIVITIES NEEDED TO COMPLETE THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SEQUENCE OF CONSTRUCTION, APPROVED IN ADVANCE OF BEGINNING WORK. THE CONTRACTOR MUST, PRIOR TO THE START OF CONSTRUCTION, OBTAIN THE APPROVAL OF BALTIMORE COUNTY AND THE APPROVAL OF THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT.

- THE CONTRACTOR SHALL NOTIFY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT (DEPRM) INSPECTION AND ENFORCEMENT DIVISION AT 410-887-3226, AT 48 HOURS PRIOR TO BEGINNING WORK.

- NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, INSPECTION AND COMPLIANCE PROGRAM AT 410-537-3510 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.
- CLEAR AND GRUB FOR ALL SEDIMENT AND EROSION CONTROL MEASURES OR DEVICES.
- INSTALL ALL SEDIMENT AND EROSION CONTROL DEVICES.
- NOTIFY BALTIMORE COUNTY DEPRM, INSPECTION AND ENFORCEMENT DIVISION, UPON COMPLETION OF SAID INSTALLATION.
- PATAPSCO VALLEY STATE PARK PIPELINE CREW NO. 1:
  - INSTALL TRAFFIC CONTROL MEASURES AT THE INTERSECTION OF SOUTH STREET AND WASHINGTON BOULEVARD.
  - ESTABLISH JACK AND BORE PITS AT SOUTH STREET AND WASHINGTON BOULEVARD INTERSECTION. INSTALL PIPELINE FROM STATION 31+09± TO STATION 36+60±. INSTALL 36-INCH WATER MAIN, FITTINGS, VALVES, AND APPURTENANCES AS SHOWN ON SHEETS C-01, C-02 AND C-03. FROM STATION 3+35± TO STATION 31+90±. THE CONTRACTOR SHALL ONLY BE PERMITTED TO OPEN THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF THE TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED ON THE DOWN SLOPE OF THE TRENCH. SILT FENCE WILL BE REQUIRED ON THE DOWN SLOPE SIDE OF THE PIPE TRENCH FROM STATION 21+50 TO STATION 27+00 UNTIL THAT PORTION OF THE WATER MAIN IS COMPLETED.
  - PROVIDE TRAFFIC CONTROL DEVICES ALONG THE PARK ENTRANCE ROAD SO THAT ONE LANE OF TRAFFIC WILL REMAIN OPEN AT ALL TIMES. DURING THOSE PERIODS WHEN ONLY ONE LANE OF TRAFFIC IS OPEN, PROVIDE FLAGMEN AS WORK PROCEEDS ALONG THE PARK ENTRANCE ROAD.
  - INSTALL 36-INCH WATER MAIN, 54-INCH STEEL CASING BETWEEN CSX RAILROAD ABUTMENTS, VALVE VAULTS, FITTINGS, VALVES, AND APPURTENANCES AS SHOWN ON SHEET C-03 FROM STATION 2+25± TO STATION 3+35±. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING ADJACENT TO BGE TOWER AND THE CSX RAILROAD BRIDGE ABUTMENTS. SILT FENCE SHALL BE REQUIRED ON THE DOWN SLOPE OF THE TRENCH FROM STATION 2+25 TO STATION 3+35.
  - INSTALL 36-INCH WATER MAIN, FITTINGS, VALVES, AND APPURTENANCES INCLUDING THE METERING VAULT AS SHOWN ON SHEET C-03 AND C-08 FROM STATION 0+10± TO STATION 2+25±. SILT FENCE SHALL BE REQUIRED ON THE DOWN SLOPE OF THE TRENCH FROM STATION 0+10 TO STATION 2+45.
- WASHINGTON BOULEVARD (ROUTE 1) PIPELINE CREW NO. 2:
  - INSTALL TRAFFIC CONTROL MEASURES ALONG WASHINGTON BOULEVARD
  - INSTALL 36-INCH WATER MAIN, FITTINGS, VALVES AND APPURTENANCES FROM STATION 100+00 TO 128+50 AS SHOWN ON SHEETS C-04, C-05 AND C-06. THE CONTRACTOR SHALL ONLY BE PERMITTED TO OPEN THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF THE TRENCH MUST REMAIN OPEN LONGER THEN ONE DAY, SILT FENCE SHALL BE PLACED ON THE DOWN SLOPE OF THE TRENCH.
  - SILT FENCE WILL BE REQUIRED ON JACK AND BORE PITS (STATION 100+00, STATION 115+50, STATION 116+50, STATION 124+50 AND STATION 127+00) UNTIL THE WORK IS COMPLETED.
  - DURING INSTALLATION OF 54-INCH STEEL CASING (UNDER RT. 195 BRIDGE ABUTMENT) MAINTAIN SILT FENCE UNTIL WORK IS COMPLETED.
  - CONSTRUCT TEMPORARY TRUCK PARKING LOT ON DIAGEO PROPERTY AS SHOWN ON SHEET C-16. AND IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION SHOWN ON SHEET C-16.
  - CONSTRUCT 36-INCH WATER MAIN, FITTINGS AND APPURTENANCES FROM STATION 129+50± TO STATION 134+50±. CONTRACTOR MUST COORDINATE WITH DIAGEO PROPERTY MANAGER AT LEAST SEVEN (7) DAYS IN ADVANCE OF STARTING THIS WORK. CONTRACTOR MUST COMPLETE THIS WORK WITHIN FIVE (5) CALENDAR DAYS.
  - CONSTRUCT 36-INCH WATER MAIN, FITTING, VALVES AND APPURTENANCES FROM STATION 134+50± TO STATION 141+50± USING CAUTION TO FOLLOW ALL REQUIREMENTS OF CSX RAILROAD.
  - TEST WATER MAIN FROM STATION 0+15± TO STATION 141+50±.
  - AFTER WATER MAIN HAS BEEN SUCCESSFULLY TESTED, REMOVE TEMPORARY PAVEMENT OVER THE TRENCH AND PROVIDE FROM PERMANENT PAVEMENT REPAIR INCLUDING MILL AND OVERLAY OF THE DIAGEO PARKING LOT AND OVERLAY OF RIVER ROAD AS SHOWN ON SHEET C-17.
  - HOWARD COUNTY TO INSTALL AFO CABLE BEFORE 36" WATER MAIN IS TESTED
  - INSTALL WATER MAIN INTERCONNECTION AT STATION 32+00
  - SHUTDOWN EXISTING 36" WATER MAIN AND MAKE CONNECTIONS AT EACH END OF THE NEW WATER MAIN.
  - PLACE NEW 36" WATER MAIN IN SERVICE. (THIS WORK TO BE COMPLETED BETWEEN OCT. 1 AND MAY 1)
  - REMOVE SEDIMENT CONTROL DEVICES.
  - TOPSOIL, SEED AND MULCH.
  - ABANDONED 36" PIPE TO BE FILLED WITH FLOWABLE FILL.

LAND ACQUISITION SYMBOLS

- EXISTING UTILITY EASEMENT
- PROPOSED DRAINAGE & UTILITY EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT

LEGEND:

EXISTING UTILITIES

- SANITARY SEWER MAIN
- SANITARY SEWER FORCE MAIN
- SANITARY SEWER MANHOLE
- SANITARY SEWER VALVE
- STORM DRAIN
- STORM DRAIN MANHOLE
- STORM DRAIN JUNCTION CHAMBER
- INLET, CURB TYPE
- INLET, GRATING TYPE
- INLET, CURB AND GRATING TYPE
- WATER MAIN
- WATER MAIN MANHOLE
- WATER METER BOX
- FIRE HYDRANT
- ELECTRIC (UNDERGROUND)
- TELEPHONE (UNDERGROUND)
- CABLE (UNDERGROUND)
- GAS MAINS
- GAS METER
- OVERHEAD ELECTRIC
- WATER MAIN VAULT
- VALVE
- JUNCTION BOX
- CONDUIT MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE

PROPOSED IMPROVEMENTS

- WATER MAIN
- PROPOSED CURB

EXISTING FEATURES

- ABANDONED UTILITY
- GUIDE RAIL
- FENCE
- FENCE, HEDGE
- POWER / TELEPHONE POLE
- RAILROAD TRACKS
- DECIDUOUS TREE
- CONIFEROUS TREE
- SPOT ELEVATION
- MINOR CONTOUR
- MAJOR CONTOUR
- BORING
- TEST PIT
- BENCHMARK
- EXISTING CURB
- WALKS (NOTE WIDTH AND TYPE)
- EDGE OF ROAD
- EXISTING RIGHT-OF-WAY LINE
- EXISTING PROPERTY LINE
- CENTERLINE OF EXISTING R/W OR ROAD
- SIGN

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS						
Chief, Water & Wastewater Eng. Div Bureau of Water and Wastewater Date: 3/25/12	Chief, Utility Engineering Date:	Chief, Water Engineering Section Date:	Director, Dept. of Public Works Date:	BY:	DATE:	P.W.A. NO.:	KEY SHEET:	POSITION SHIT:	DRAWING SCALE:	DEPARTMENT OF PUBLIC WORKS
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. 37797 EXPIRATION DATE AUGUST 9, 2013.										
ENGINEER: SYAM B. NAYER DESIGN BY: BBB DRAWN BY: JCD CHKD BY: SBN DATE:	BUREAU OF ENGINEERING AND CONSTRUCTION REVIEWED BY: RBF DATE REVIEWED: 1/23/12	BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER DATE: 1/23/12	SEWER WATER FIELD ENGINEER DATE: 1/23/12	DEPT. OF ENGINEERING & CONSTRUCTION APPROVED BY: [Signature] DATE: 1-24-12 CHIEF	SOUTHWEST TRANSMISSION MAIN GENERAL NOTES, SEQUENCE OF CONSTRUCTION, LEGEND					

AS-BUILT JUNE 2016 CWD.51738

SOUTHWEST TRANSMISSION MAIN GENERAL NOTES, SEQUENCE OF CONSTRUCTION, LEGEND

HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
 11019 McCormick Road, Suite 260  
 Hunt Valley, Maryland 21031

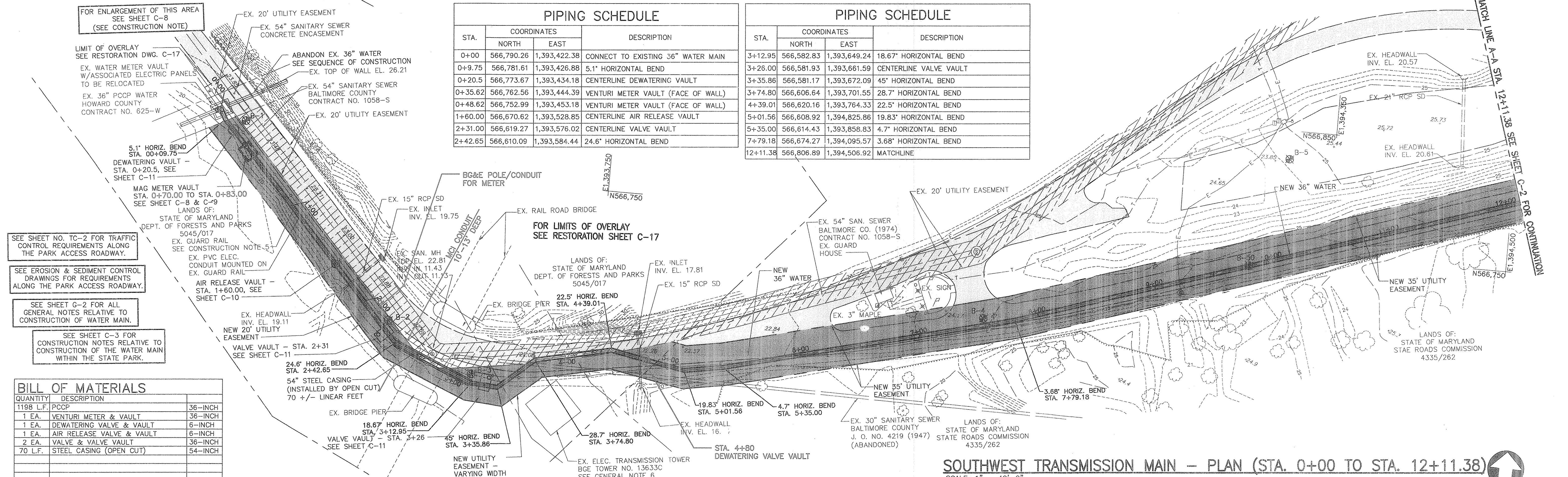
SHEET DESIGNATION	CONTRACT NO.
G-2	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 2 OF 36	DRAWING NO.
	2009-3351
	FILE NO.

SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

PIPING SCHEDULE			
STA.	COORDINATES		DESCRIPTION
	NORTH	EAST	
0+00	566,790.26	1,393,422.38	CONNECT TO EXISTING 36" WATER MAIN
0+9.75	566,781.61	1,393,426.88	5.1" HORIZONTAL BEND
0+20.5	566,773.67	1,393,434.18	CENTERLINE DEWATERING VAULT
0+35.62	566,762.56	1,393,444.39	VENTURI METER VAULT (FACE OF WALL)
0+48.62	566,752.99	1,393,453.18	VENTURI METER VAULT (FACE OF WALL)
1+60.00	566,670.62	1,393,528.85	CENTERLINE AIR RELEASE VAULT
2+31.00	566,619.27	1,393,576.02	CENTERLINE VALVE VAULT
2+42.65	566,610.09	1,393,584.44	24.6" HORIZONTAL BEND

PIPING SCHEDULE			
STA.	COORDINATES		DESCRIPTION
	NORTH	EAST	
3+12.95	566,582.83	1,393,649.24	18.67" HORIZONTAL BEND
3+26.00	566,581.93	1,393,661.59	CENTERLINE VALVE VAULT
3+35.86	566,581.17	1,393,672.09	45" HORIZONTAL BEND
3+74.80	566,606.64	1,393,701.55	28.7" HORIZONTAL BEND
4+39.01	566,620.16	1,393,764.33	22.5" HORIZONTAL BEND
5+01.56	566,608.92	1,394,825.86	19.83" HORIZONTAL BEND
5+35.00	566,614.43	1,393,858.83	4.7" HORIZONTAL BEND
7+79.18	566,674.27	1,394,095.57	3.68" HORIZONTAL BEND
12+11.38	566,806.89	1,394,506.92	MATCHLINE



FOR ENLARGEMENT OF THIS AREA SEE SHEET C-8 (SEE CONSTRUCTION NOTE)

LIMIT OF OVERLAY SEE RESTORATION DWG. C-17

EX. WATER METER VAULT W/ASSOCIATED ELECTRIC PANELS TO BE RELOCATED

EX. 36" PCCP WATER HOWARD COUNTY CONTRACT NO. 625-W

EX. 20' UTILITY EASEMENT

EX. 54" SANITARY SEWER BALTIMORE COUNTY CONTRACT NO. 1058-S

EX. 54" SANITARY SEWER CONCRETE ENCASEMENT

ABANDON EX. 36" WATER SEE SEQUENCE OF CONSTRUCTION EX. TOP OF WALL EL. 26.21

EX. 20' UTILITY EASEMENT

5.1" HORIZ. BEND STA. 0+9.75

DEWATERING VAULT - STA. 0+20.5, SEE SHEET C-11

MAG METER VAULT STA. 0+70.00 TO STA. 0+83.00 SEE SHEET C-8 & C-9

LANDS OF: STATE OF MARYLAND DEPT. OF FORESTS AND PARKS 5045/017

EX. GUARD RAIL SEE CONSTRUCTION NOTE

EX. PVC ELEC. CONDUIT MOUNTED ON EX. GUARD RAIL

AIR RELEASE VAULT - STA. 1+60.00, SEE SHEET C-10

EX. HEADWALL INV. EL. 19.11

NEW 20' UTILITY EASEMENT

VALVE VAULT - STA. 2+31

24.6" HORIZ. BEND STA. 2+42.65

54" STEEL CASING (INSTALLED BY OPEN CUT) 70 +/- LINEAR FEET

EX. BRIDGE PIER

18.67" HORIZ. BEND STA. 3+12.95

VALVE VAULT - STA. 3+26

45" HORIZ. BEND STA. 3+35.86

NEW UTILITY EASEMENT VARYING WIDTH

EX. BRIDGE PIER

22.5" HORIZ. BEND STA. 4+39.01

EX. RAIL ROAD BRIDGE

FOR LIMITS OF OVERLAY SEE RESTORATION SHEET C-17

LANDS OF: STATE OF MARYLAND DEPT. OF FORESTS AND PARKS 5045/017

EX. INLET INV. EL. 17.81

EX. 15" RCP SD

NEW 36" WATER

EX. 20' UTILITY EASEMENT

EX. 54" SAN. SEWER BALTIMORE CO. (1974) CONTRACT NO. 1058-S

EX. GUARD HOUSE

EX. 3" MAPLE

NEW 35' UTILITY EASEMENT

3.68" HORIZ. BEND STA. 7+79.18

EX. HEADWALL INV. EL. 16.7

EX. 30" SANITARY SEWER BALTIMORE COUNTY J. O. NO. 4219 (1947) (ABANDONED)

LANDS OF: STATE OF MARYLAND STATE ROADS COMMISSION 4335/262

EX. HEADWALL INV. EL. 20.57

EX. 24" RCP SD

EX. HEADWALL INV. EL. 20.61

NEW 36" WATER

NEW 35' UTILITY EASEMENT

LANDS OF: STATE OF MARYLAND STATE ROADS COMMISSION 4335/262

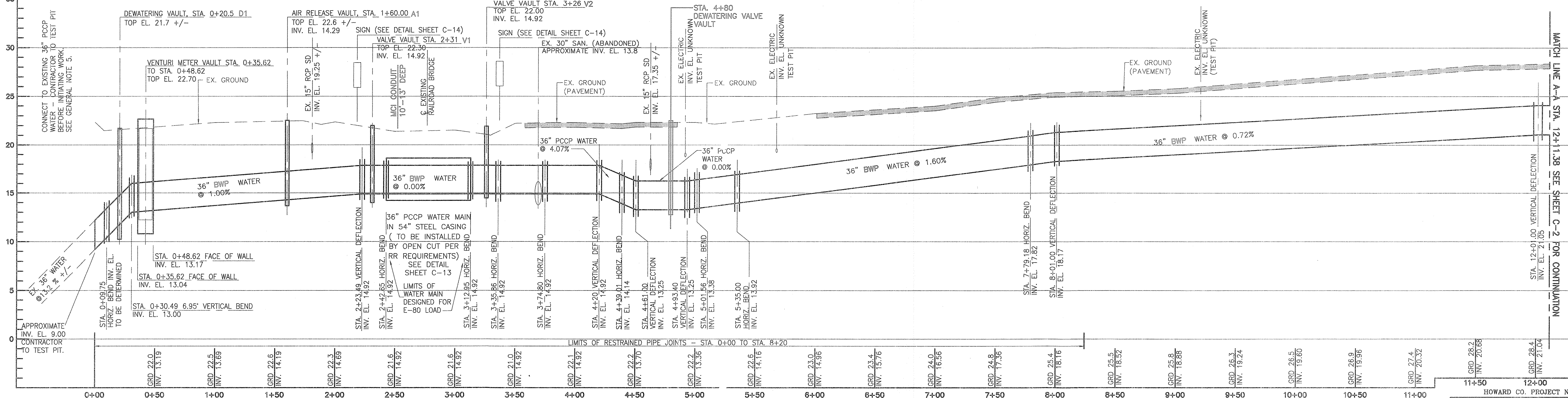
BILL OF MATERIALS	
QUANTITY	DESCRIPTION
1198 LF.	PCCP
1 EA.	VENTURI METER & VAULT
1 EA.	DEWATERING VALVE & VAULT
1 EA.	AIR RELEASE VALVE & VAULT
2 EA.	VALVE & VALVE VAULT
70 LF.	STEEL CASING (OPEN CUT)

**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 0+00 TO STA. 12+11.38)**  
SCALE: 1" = 40'-0"

STA. 2+45 TO STA. 3+10 CONTRACTOR TO LOCATE EXISTING BRIDGE PIER FOOTINGS VIA TEST PIT BEFORE BEGINNING WORK. USE EXTREME CAUTION TO PROTECT EXISTING BRIDGE PIERS DURING CONSTRUCTION. SEE CONSTRUCTION NOTES.

STA. 3+70 TO STA. 3+75 (APPROXIMATE) CONTRACTOR MAY ENCOUNTER ABANDONED 30 INCH SANITARY SEWER, REMOVE AS NECESSARY TO CONSTRUCT NEW WATER MAIN. SEE CONSTRUCTION NOTES.

STA. 3+75 TO STA. 4+25 CONTRACTOR TO LOCATE EXISTING TRANSMISSION TOWER FOOTINGS VIA TEST PIT BEFORE BEGINNING WORK. USE EXTREME CAUTION TO PROTECT EXISTING BGE TRANSMISSION TOWER DURING CONSTRUCTION. SEE CONSTRUCTION NOTES.



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 0+00 TO STA. 12+11.38)**  
HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

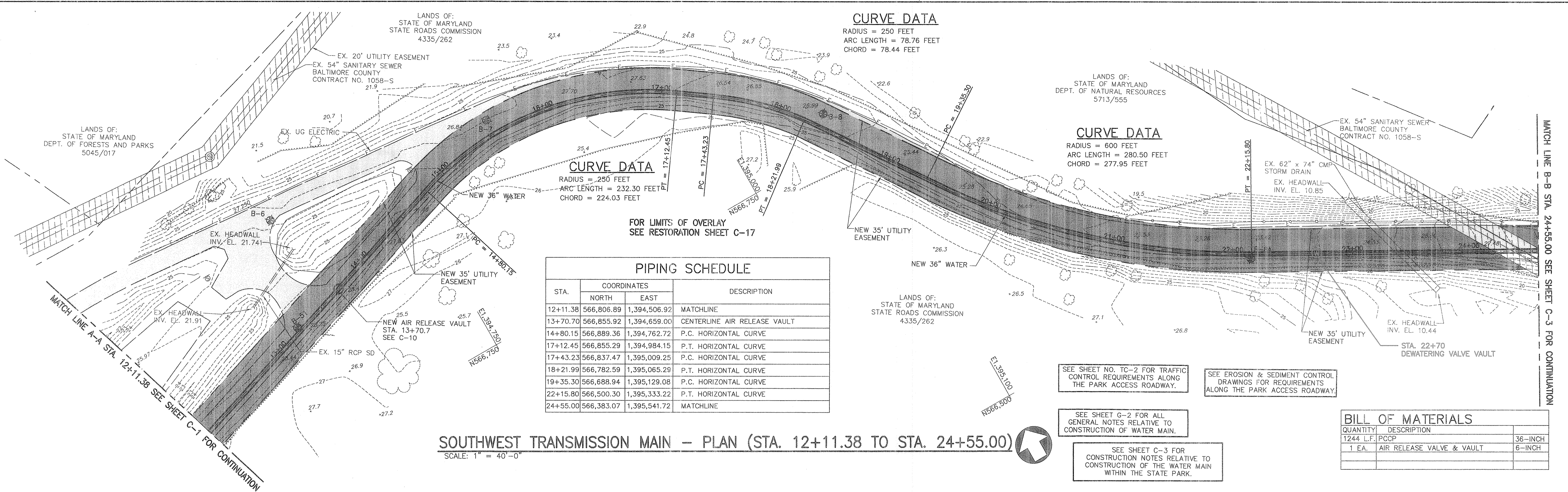
CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
Chief, Water & Wastewater Eng. Div. Bureau of Water and Wastewater <i>Ark T. Brown</i> DATE: 3/15/12	Chief, Utility Engineering Chief, Water Engineering Section DATE:	Director, Dept. of Public Works DATE:	By: <i>J. B. Nayer</i> Date: 1/23/12	P.W.A. No. Key Sheet Position Sht.	Drawing Scale Department of Public Works
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. 37797 EXPIRATION DATE AUGUST 9, 2013.					
Engineer: SYAM B. NAYER AS-BUILT PER RECORD PRINT DATE:	Design By: BBB Drawn By: JCD Checked By: SBN Date Reviewed:	Bureau of Engineering and Construction Buildings Highways Structures Storm Drains Sewer Water Field Engineer	Buildings Highways Structures Storm Drains Sewer Water Field Engineer	Approved By: <i>J. B. Nayer</i> Date: 1-24-12	Approved By: <i>J. B. Nayer</i> Date: 1-24-12

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21081

SHEET DESIGNATION: **C-1**  
CONTRACT NO.: 44-4618  
JOB ORDER NO.: 203-0067-0281  
SHEET 3 OF 36  
DRAWING NO.: 2009-3352  
FILE NO.:

**SOUTHWEST TRANSMISSION MAIN**  
PLAN AND PROFILE - STA. 0+00 TO STA. 12+11.38

SUBDIVISION: ST. DENIS  
ELECTION DISTRICT: 13



**PIPING SCHEDULE**

STA.	COORDINATES		DESCRIPTION
	NORTH	EAST	
12+11.38	566,806.89	1,394,506.92	MATCHLINE
13+70.70	566,855.92	1,394,659.00	CENTERLINE AIR RELEASE VAULT
14+80.15	566,889.36	1,394,762.72	P.C. HORIZONTAL CURVE
17+12.45	566,855.29	1,394,984.15	P.T. HORIZONTAL CURVE
17+43.23	566,837.47	1,395,009.25	P.C. HORIZONTAL CURVE
18+21.99	566,782.59	1,395,065.29	P.T. HORIZONTAL CURVE
19+35.30	566,688.94	1,395,129.08	P.C. HORIZONTAL CURVE
22+15.80	566,500.30	1,395,333.22	P.T. HORIZONTAL CURVE
24+55.00	566,383.07	1,395,541.72	MATCHLINE

**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 12+11.38 TO STA. 24+55.00)**

SCALE: 1" = 40'-0"

SEE SHEET NO. TC-2 FOR TRAFFIC CONTROL REQUIREMENTS ALONG THE PARK ACCESS ROADWAY.

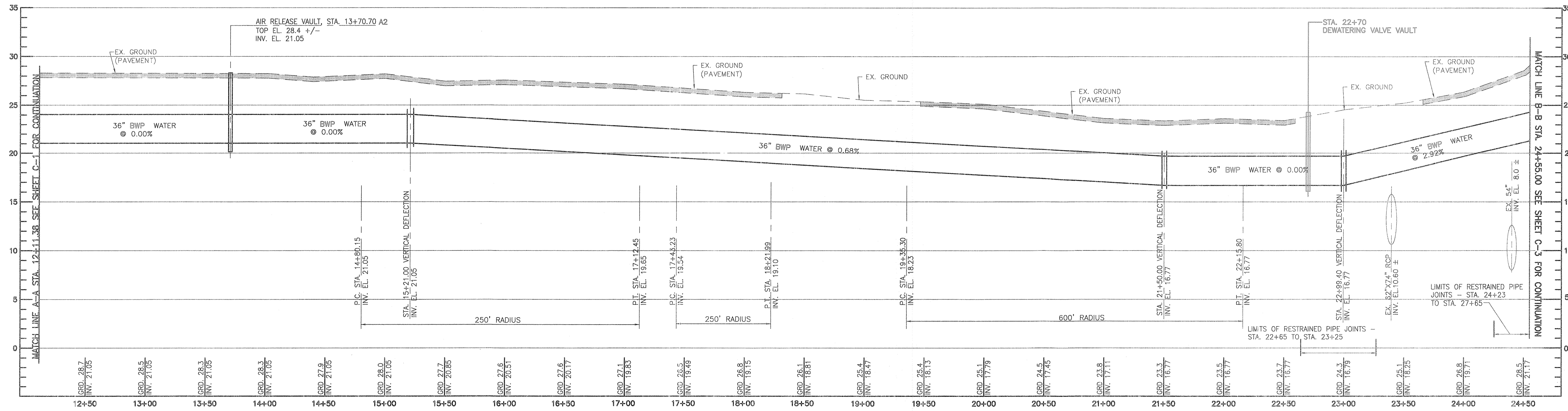
SEE EROSION & SEDIMENT CONTROL DRAWINGS FOR REQUIREMENTS ALONG THE PARK ACCESS ROADWAY.

SEE SHEET G-2 FOR ALL GENERAL NOTES RELATIVE TO CONSTRUCTION OF WATER MAIN.

SEE SHEET C-3 FOR CONSTRUCTION NOTES RELATIVE TO CONSTRUCTION OF THE WATER MAIN WITHIN THE STATE PARK.

**BILL OF MATERIALS**

QUANTITY	DESCRIPTION	
1244 L.F.	PCCP	36-INCH
1 EA.	AIR RELEASE VALVE & VAULT	6-INCH



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 12+11.38 TO STA. 24+55.00)**

HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
Chief, Water & Wastewater Eng. Div. BUREAU OF WATER AND WASTEWATER DATE: 1/23/12	Chief, Utility Engineering DATE: 1/23/12	Director, Dept. of Public Works DATE: 1/23/12			
<b>PROFESSIONAL CERTIFICATION</b> 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. 37797 EXPIRATION DATE AUGUST 9, 2013 ENGINEER: SYAM B. NAYER DESIGN BY: BBB DRAWN BY: JCD CHECKED BY: SEN DATE: 1/23/12		REVISION BY: RBF DATE: 1/23/12 P.W.A. NO. 102312 KEY SHEET 1/23/12 POSITION SHT 1/23/12			
AS-BUILT PER RECORD PRINT DATE: 1/23/12		DRAWING SCALE: AS NOTED DEPARTMENT OF PUBLIC WORKS APPROVED BY: [Signature] DATE: 1-24-12 DIRECTOR APPROVED BY: [Signature] DATE: 1/27/12 CHIEF			

**AS-BUILT JUNE 2016**  
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
PLAN AND PROFILE - STA. 12+11.38 TO STA. 24+55.00**

SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Bunt Valley, Maryland 21031

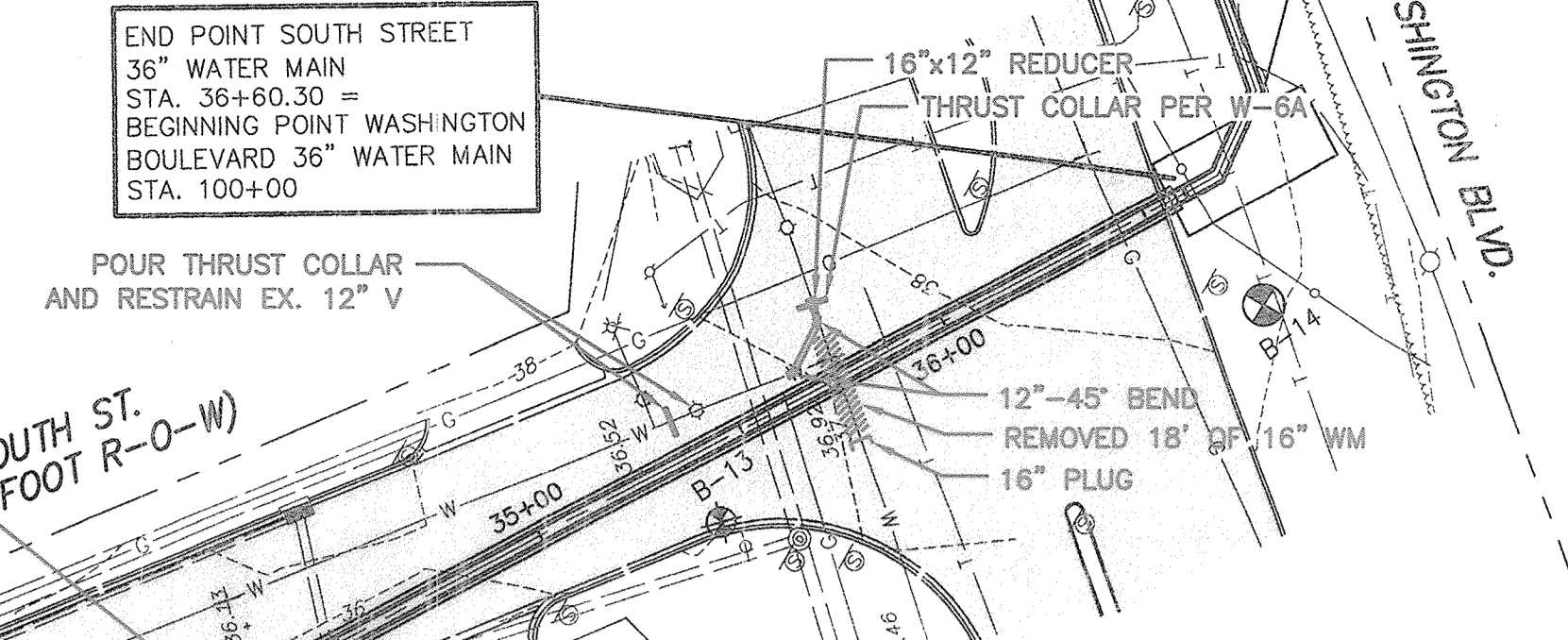
SHEET DESIGNATION <b>C-2</b>	CONTRACT NO. 44-4618
JOB ORDER NO. 203-0067-0281	SHEET 4 OF 36
DRAWING NO. <b>2009-3353</b>	FILE NO.

PIPING SCHEDULE			
STA.	COORDINATES		DESCRIPTION
	NORTH	EAST	
24+55.00	566,383.07	1,395,541.72	MATCHLINE
24+60.46	566,380.39	1,395,546.48	11.25 HORIZONTAL BEND
25+49.28	566,322.59	1,395,613.92	22.5 HORIZONTAL BEND
27+08.62	566,180.50	1,395,686.02	22.5 HORIZONTAL BEND
28+45.35	566,044.18	1,395,696.51	P. C. HORIZONTAL CURVE
30+10.09	565,886.79	1,395,741.14	P. T. HORIZONTAL CURVE
30+46.58	565,854.47	1,395,758.06	45 HORIZONTAL BEND
30+54.19	565,852.15	1,395,765.32	CENTERLINE AIR RELEASE VAULT
31+69.99	565,816.95	1,395,875.63	14.7 HORIZONTAL BEND
31+93.38	565,804.37	1,395,895.36	36" X 8" WATER TEE CONNECTION
36+60.30	565,554.15	1,396,289.57	STATION EQUALITY = STATION 100+00

BILL OF MATERIALS		
QUANTITY	DESCRIPTION	SIZE
1205 L.F.	PCCP	36-INCH
1 EA.	AIR RELEASE VALVE & VAULT	36-INCH
46 L.F.	DIP	8-INCH
1 EA.	TAPPING SLEEVE & 8" VALVE	12"X8"
455 L.F.	STEEL CASING (JACK & BORE)	60-INCH

**PATAPSCO VALLEY STATE PARK VAULT SCHEDULE:**

- STA. 00+20.05 DEWATERING VAULT, TOP EL. 21.5
- STA. 00+35.62 TO STA. 00+48.62 VENTURI METER VAULT, TOP EL. 22.70
- STA. 01+60.00 AIR RELEASE VAULT, TOP EL. 22.6
- STA. 02+31.00 VALVE VAULT, TOP EL. 22.30
- STA. 03+26.00 VALVE VAULT, TOP EL. 22.00
- STA. 13+70.70 AIR RELEASE VAULT, TOP EL. 28.4
- STA. 30+54.19 AIR RELEASE VAULT, TOP EL. 34.5



STATION 25+25 TO STATION 26+80  
REMOVE GUARD RAIL AS NECESSARY  
SEE CONSTRUCTION NOTE 5

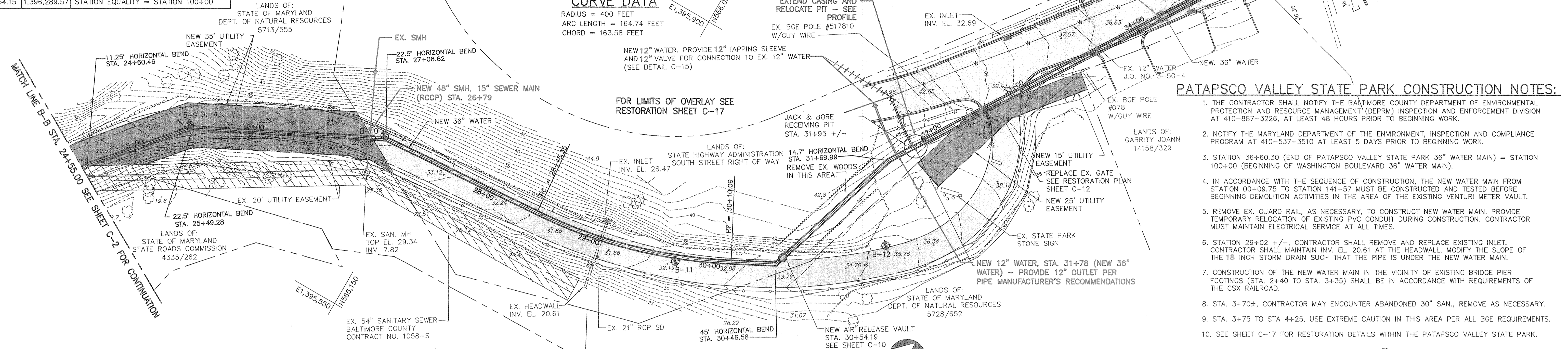
**CURVE DATA**

RADIUS = 400 FEET  
ARC LENGTH = 164.74 FEET  
CHORD = 163.58 FEET

FOR LIMITS OF OVERLAY SEE  
RESTORATION SHEET C-17

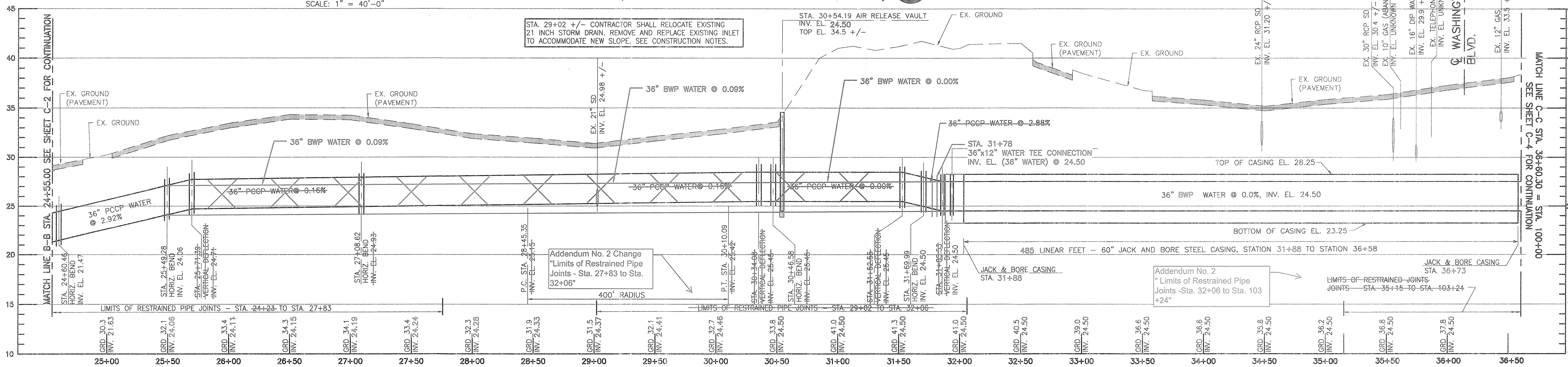
**PATAPSCO VALLEY STATE PARK CONSTRUCTION NOTES:**

- THE CONTRACTOR SHALL NOTIFY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT (DEPRM) INSPECTION AND ENFORCEMENT DIVISION AT 410-867-3226, AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
- NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, INSPECTION AND COMPLIANCE PROGRAM AT 410-537-3510 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.
- STATION 36+60.30 (END OF PATAPSCO VALLEY STATE PARK 36" WATER MAIN) = STATION 100+00 (BEGINNING OF WASHINGTON BOULEVARD 36" WATER MAIN).
- IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION, THE NEW WATER MAIN FROM STATION 00+09.75 TO STATION 141+57 MUST BE CONSTRUCTED AND TESTED BEFORE BEGINNING DEMOLITION ACTIVITIES IN THE AREA OF THE EXISTING VENTURI METER VAULT.
- REMOVE EX. GUARD RAIL, AS NECESSARY, TO CONSTRUCT NEW WATER MAIN. PROVIDE TEMPORARY RELOCATION OF EXISTING PVC CONDUIT DURING CONSTRUCTION. CONTRACTOR MUST MAINTAIN ELECTRICAL SERVICE AT ALL TIMES.
- STATION 29+02 +/-, CONTRACTOR SHALL REMOVE AND REPLACE EXISTING INLET. CONTRACTOR SHALL MAINTAIN INV. EL. 20.61 AT THE HEADWALL, MODIFY THE SLOPE OF THE 18 INCH STORM DRAIN SUCH THAT THE PIPE IS UNDER THE NEW WATER MAIN.
- CONSTRUCTION OF THE NEW WATER MAIN IN THE VICINITY OF EXISTING BRIDGE PIER FOOTINGS (STA. 2+40 TO STA. 3+35) SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE CSX RAILROAD.
- STA. 3+70±, CONTRACTOR MAY ENCOUNTER ABANDONED 30" SAN., REMOVE AS NECESSARY.
- STA. 3+75 TO STA. 4+25, USE EXTREME CAUTION IN THIS AREA PER ALL BGE REQUIREMENTS.
- SEE SHEET C-17 FOR RESTORATION DETAILS WITHIN THE PATAPSCO VALLEY STATE PARK.



**SOUTHWEST TRANSMISSION MAIN -- PLAN (STA. 24+55.00 TO STA. 36+60.30)**

SCALE: 1" = 40'-0"



**SOUTHWEST TRANSMISSION MAIN -- PROFILE (STA. 24+55.00 TO STA. 36+60.30)**

HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	CHIEF, UTILITY ENGINEERING	DIRECTOR, DEPT. OF PUBLIC WORKS
DATE: 3/15/12	DATE:	DATE:

SEAL	PROFESSIONAL CERTIFICATION	REVISION	BY	DATE	P.W.A. NO.	KEY SHEET	POSITION SHI	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
1	1 HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DUTY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 37797 EXPIRATION DATE AUGUST 9, 2013							PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED	APPROVED BY: [Signature] DIRECTOR
2	ENGINEER: SYAM B. NAYER	DESIGN BY: BBB	BUREAU OF ENGINEERING AND CONSTRUCTION	BUILDINGS	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER
3	AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	REVIEWED BY: [Signature]	DATE REVIEWED: 1/23/12	DATE: 1/23/12	DATE: 1/23/12	DATE: 1/23/12	DATE: 1/23/12	APPROVED BY: [Signature] CHIEF

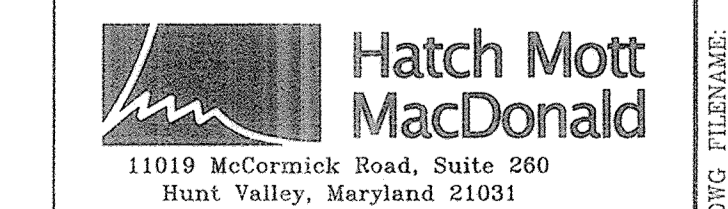
AS-BUILT JUNE 2016

**SOUTHWEST TRANSMISSION MAIN  
PLAN AND PROFILE - STA. 24+55.00 TO STA. 36+60.30**

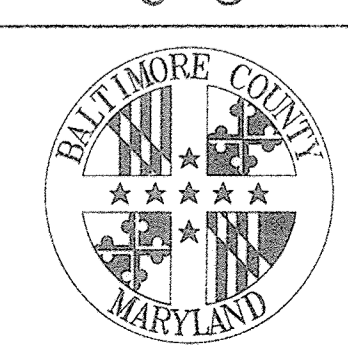
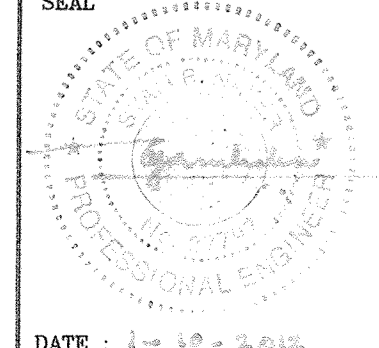
SUBDIVISION: ST. DENIS

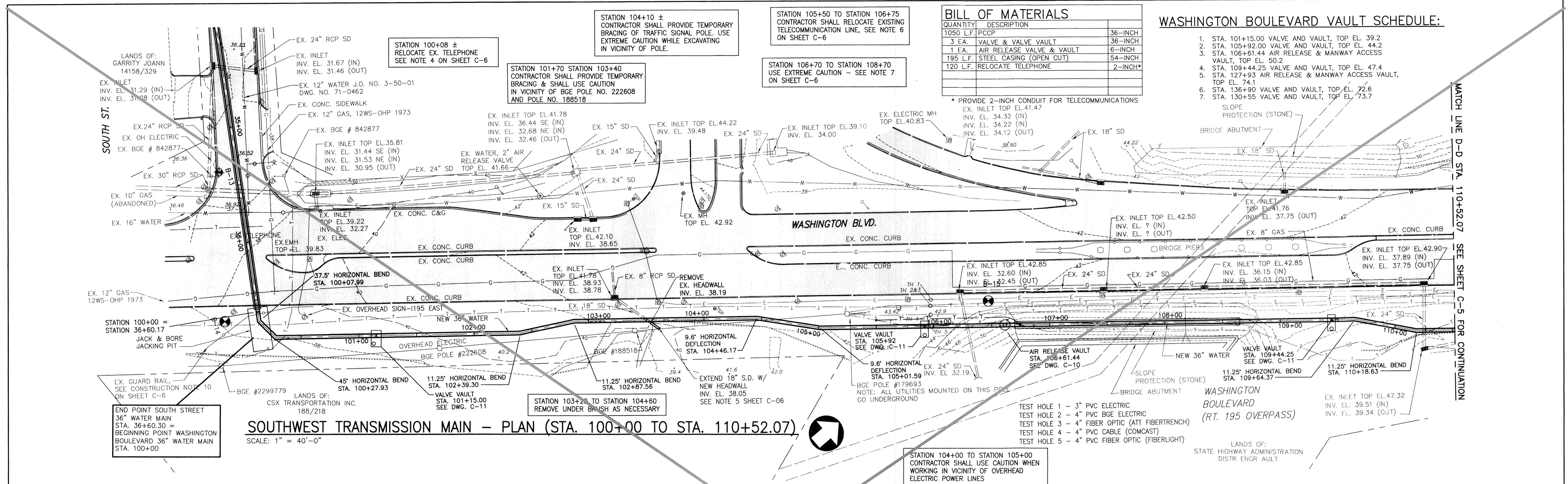
ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-9276



SHEET DESIGNATION	CONTRACT NO.
C-3	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 5 OF 36	DRAWING NO.
	2009-3354
FILE NO.	





**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 100+00 TO STA. 110+52.07)**  
SCALE: 1" = 40'-0"

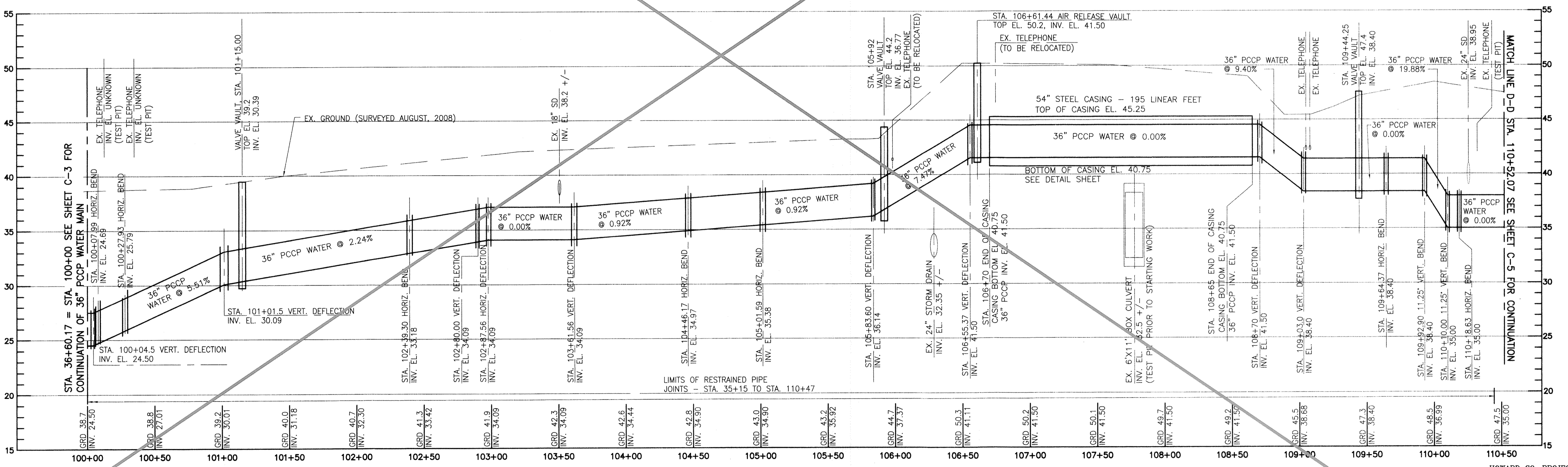
**BILL OF MATERIALS**

QUANTITY	DESCRIPTION	REMARKS
1050 L.F.	PCCP	36-INCH
3 EA.	VALVE & VALVE VAULT	36-INCH
1 EA.	AIR RELEASE VALVE & VAULT	6-INCH
195 L.F.	STEEL CASING (OPEN CUT)	54-INCH
120 L.F.	RELOCATE TELEPHONE	2-INCH*

\* PROVIDE 2-INCH CONDUIT FOR TELECOMMUNICATIONS

**WASHINGTON BOULEVARD VAULT SCHEDULE:**

1. STA. 101+15.00 VALVE AND VAULT, TOP EL. 39.2
2. STA. 105+92.00 VALVE AND VAULT, TOP EL. 44.2
3. STA. 106+61.44 AIR RELEASE & MANWAY ACCESS VAULT, TOP EL. 50.2
4. STA. 109+44.25 VALVE AND VAULT, TOP EL. 47.4
5. STA. 127+93 AIR RELEASE & MANWAY ACCESS VAULT, TOP EL. 74.1
6. STA. 136+90 VALVE AND VAULT, TOP EL. 72.6
7. STA. 130+55 VALVE AND VAULT, TOP EL. 73.7



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 100+00 TO STA. 110+52.07)**  
HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

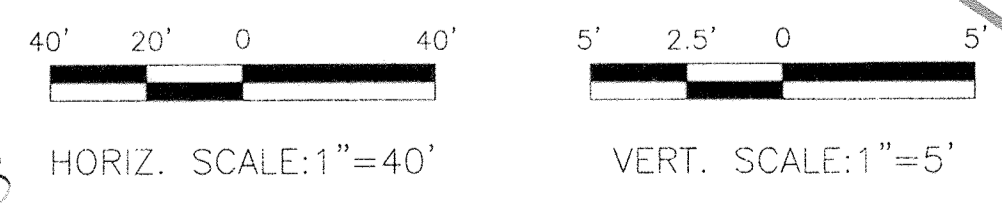
CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
[Signature] CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		[Signature] CHIEF, UTILITY ENGINEERING		[Signature] DIRECTOR, DEPT. OF PUBLIC WORKS	
PROFESSIONAL CERTIFICATION		REVISION		DRAWING SCALE	
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. 37797 EXPIRATION DATE AUGUST 9, 2013		BY DATE P.W.A. NO. KEY SHEET POSITION SHT		DEPARTMENT OF PUBLIC WORKS	
ENGINEER: STAM B. NAYER		BY DATE P.W.A. NO. KEY SHEET POSITION SHT		APPROVED BY [Signature] DIRECTOR	
DESIGN BY: BBB		BY DATE P.W.A. NO. KEY SHEET POSITION SHT		DATE: 1-24-12	
DRAWN BY: JCD		BY DATE P.W.A. NO. KEY SHEET POSITION SHT		APPROVED BY [Signature] CHIEF	
REVIEWED BY: [Signature]		BY DATE P.W.A. NO. KEY SHEET POSITION SHT		DATE: 1/23/12	
CHKD BY: SBR		BY DATE P.W.A. NO. KEY SHEET POSITION SHT		DATE: 1/23/12	

**AS-BUILT JUNE 2016** *CWO 51738*  
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
PLAN AND PROFILE - STA. 100+00 TO STA. 110+52.07**

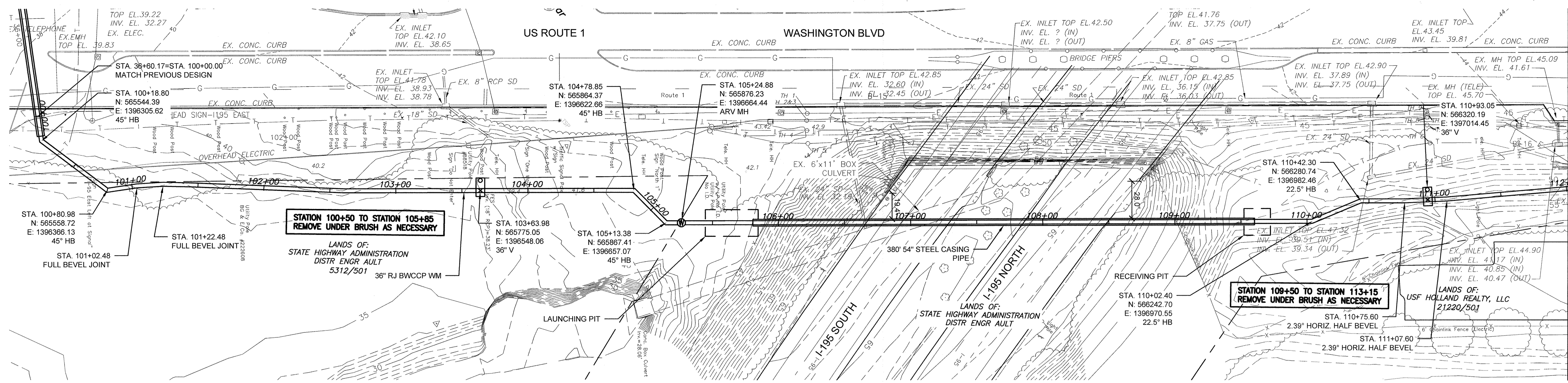
**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 280  
B Hunt Valley, Maryland 21031

SHEET DESIGNATION: **C-4**  
CONTRACT NO.: 44-4618  
JOB ORDER NO.: 203-0067-0281  
SHEET 6 OF 36  
DRAWING NO.: 2009-3355  
FILE NO.:

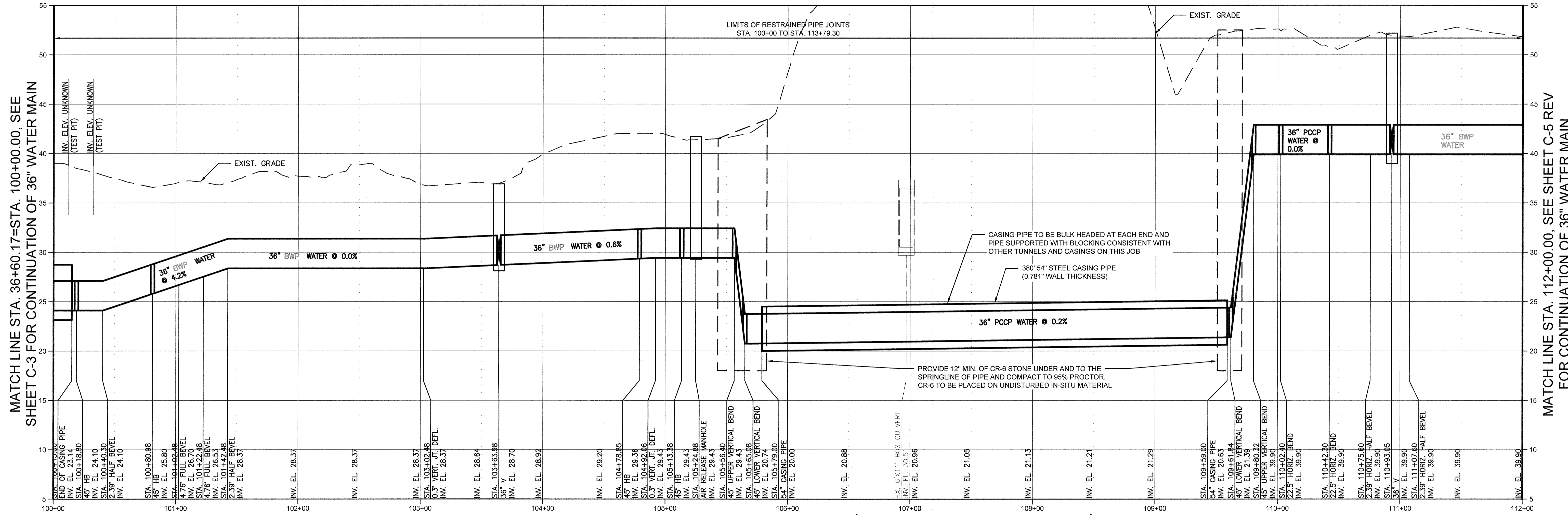


SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13



**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 100+00 TO STA. 112+00)**  
 SCALE: 1" = 40'-0"



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 100+00 TO STA. 112+00)**  
 HORIZONTAL SCALE: 1" = 40'-0"  
 VERTICAL SCALE: 1" = 5'-0"

MATCH LINE STA. 112+00, SEE SHEET C-5 REV FOR CONTINUATION OF 36" WATER MAIN

MATCH LINE STA. 36+60.17=STA. 100+00.00, SEE SHEET C-3 FOR CONTINUATION OF 36" WATER MAIN

MATCH LINE STA. 112+00.00, SEE SHEET C-5 REV FOR CONTINUATION OF 36" WATER MAIN

CITY OF BALTIMORE 		REVISION - CITY OF BALTIMORE CHIEF, UTILITY ENGINEERING DATE: 4/15/14		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS DIRECTOR, DEPT OF PUBLIC WORKS DATE: 3/2/14	
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. EXPIRES NO. 18000 EXPIRATION DATE DECEMBER 8, 2015 ENGINEER: ROBERT J. DUNLAP DESIGN BY: RJP DRAWN BY: RJP CHECK BY: RJD		REVISION BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER BUR. OF ENGINEERING & CONSTRUCTION DATE: 3/24/14		DRAWING SCALE PLAN SCALE: 1"=40' PROFILE SCALE: 1"=5' DEPARTMENT OF PUBLIC WORKS APPROVED BY: DIRECTOR DATE: 3/2/14 APPROVED BY: CHIEF	
STATE OF MARYLAND 		DATE REVIEWED: 3/24/14		DATE: 3/2/14	

AS-BUILT JUNE 2016  
 BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
 PLAN AND PROFILE STA. 100+00 TO STA. 112+00**

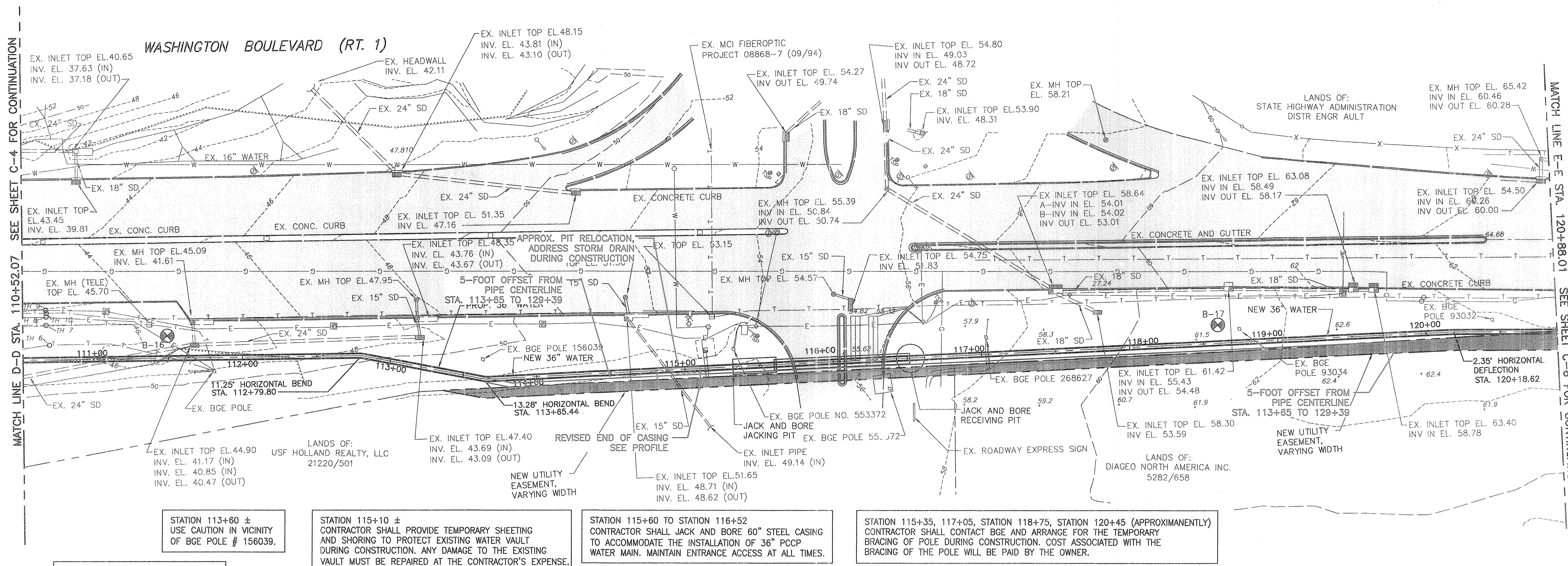
SUBDIVISION: SAINT DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. H-0874

**OPENING & CURB**  
 11800 BACKLICK ROAD,  
 SUITE 100  
 BERTHLETT VALLEY, MARYLAND 21034

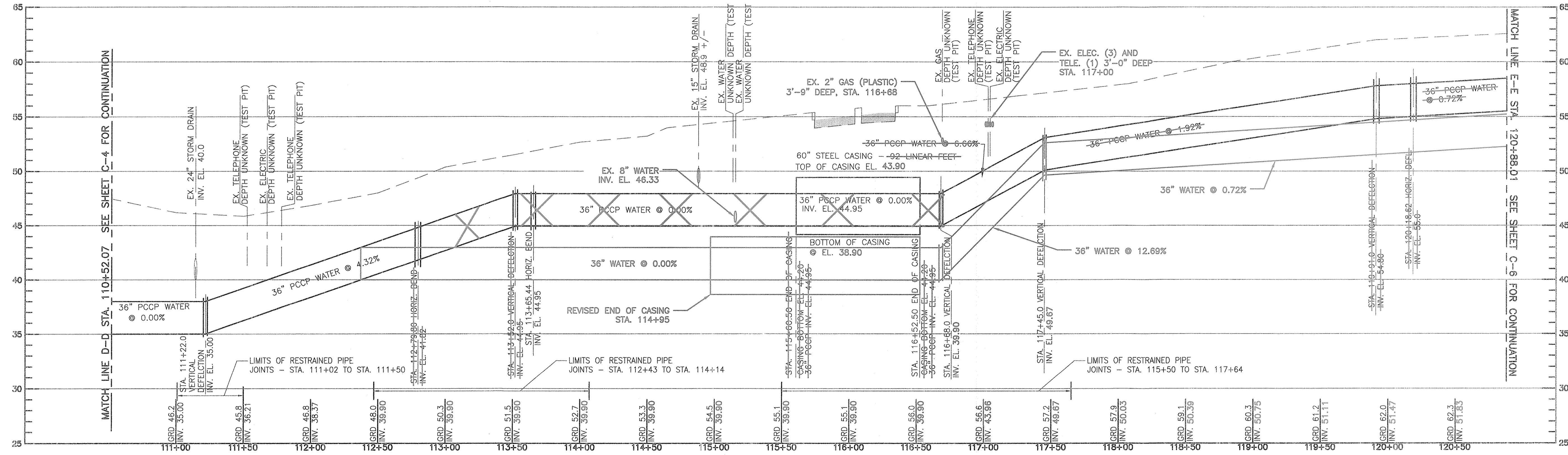
SHEET DESIGNATION	CONTRACT NO.
<b>C-4 REV</b>	44-4816
JOB ORDER NO.	2009-0087-0001
SHEET 6A OF 36	DRAWING NO.
<b>2009-3386</b>	
FILE NO.	45



PIPING SCHEDULE			
STA.	COORDINATES		DESCRIPTION
	NORTH	EAST	
100+00.00	565,530.19	1,396,298.26	BEGINNING POINT WASHINGTON BLVD.
100+28.90	565,552.37	1,396,316.79	ISOLATION VALVE VAULT
102+39.30	565,713.84	1,396,451.67	11.25° HORIZONTAL BEND
102+87.56	565,756.20	1,396,474.80	11.25° HORIZONTAL BEND
104+46.17	565,877.93	1,396,576.48	9.6° HORIZONTAL DEFLECTION
105+01.59	565,913.85	1,396,618.55	9.6° HORIZONTAL DEFLECTION
105+92	565,983.18	1,396,676.46	ISOLATION VALVE VAULT
106+61.44	566,036.67	1,396,720.85	AIR RELEASE VAULT
109+44.25	566,253.54	1,396,902.29	ISOLATION VALVE AND VAULT
109+64.37	566,269.02	1,396,915.23	11.25° HORIZONTAL BEND
110+18.63	566,303.67	1,396,957.44	11.25° HORIZONTAL BEND
112+79.80	566,503.52	1,397,124.89	11.25° HORIZONTAL BEND
113+65.44	566,557.26	1,397,191.58	13.28° HORIZONTAL BEND
120+18.62	567,072.99	1,397,592.39	2.35° HORIZONTAL DEFLECTION
123+54.79	567,328.63	1,397,810.71	3.9° HORIZONTAL DEFLECTION
124+16.34	567,372.59	1,397,853.79	4.8° HORIZONTAL DEFLECTION
127+93	567,662.89	1,398,093.82	AIR RELEASE VAULT
128+12.30	567,677.75	1,398,106.09	17.3° HORIZONTAL DEFLECTION
129+39.11	567,747.03	1,398,212.31	11.25° HORIZONTAL BEND
136+47.42	568,242.29	1,398,718.68	10.28° HORIZONTAL BEND
136+95	568,291.35	1,398,753.45	ISOLATION VALVE VAULT
137+21.80	568,302.96	1,398,761.71	11.25° HORIZONTAL BEND
139+18.19	568,482.24	1,398,841.89	45° HORIZONTAL BEND
139+55	568,495.91	1,398,887.68	ISOLATION VALVE VAULT
141+57.28	568,567.55	1,399,065.25	21.9° ± HORIZONTAL BEND

BILL OF MATERIALS		
QUANTITY	DESCRIPTION	
1036 L.F.	PCPP	36-INCH
92 L.F.	STEEL CASING (JACK & BORE)	60-INCH

**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 110+52.07 TO STA. 120+88.01)**  
 SCALE: 1" = 40'-0"



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 110+52.07 TO STA. 120+88.01)**  
 HORIZONTAL SCALE: 1" = 40'-0"  
 VERTICAL SCALE: 1" = 5'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
Ailly T. N. Balas CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER DATE: 1/17/12		DATE: 1/17/12		DATE: 1/17/12	
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. 37797 EXPIRATION DATE AUGUST 9, 2013 ENGINEER: SYAM B. NAYER DESIGN BY: BBB AS-BUILT PER RECORD PRINT DATE: 1/17/12		REVISION: 1/23/12 REVIEWED BY: KJF DATE REVIEWED: 1/23/12		DRAWING SCALE: AS NOTED DEPARTMENT OF PUBLIC WORKS BUR. OF ENGINEERING & CONSTRUCTION DATE: 1-24-12	

**AS-BUILT JUNE 2016** CWO.51738

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN**  
**PLAN AND PROFILE - STA. 110+52.07 TO STA. 120+88.01**

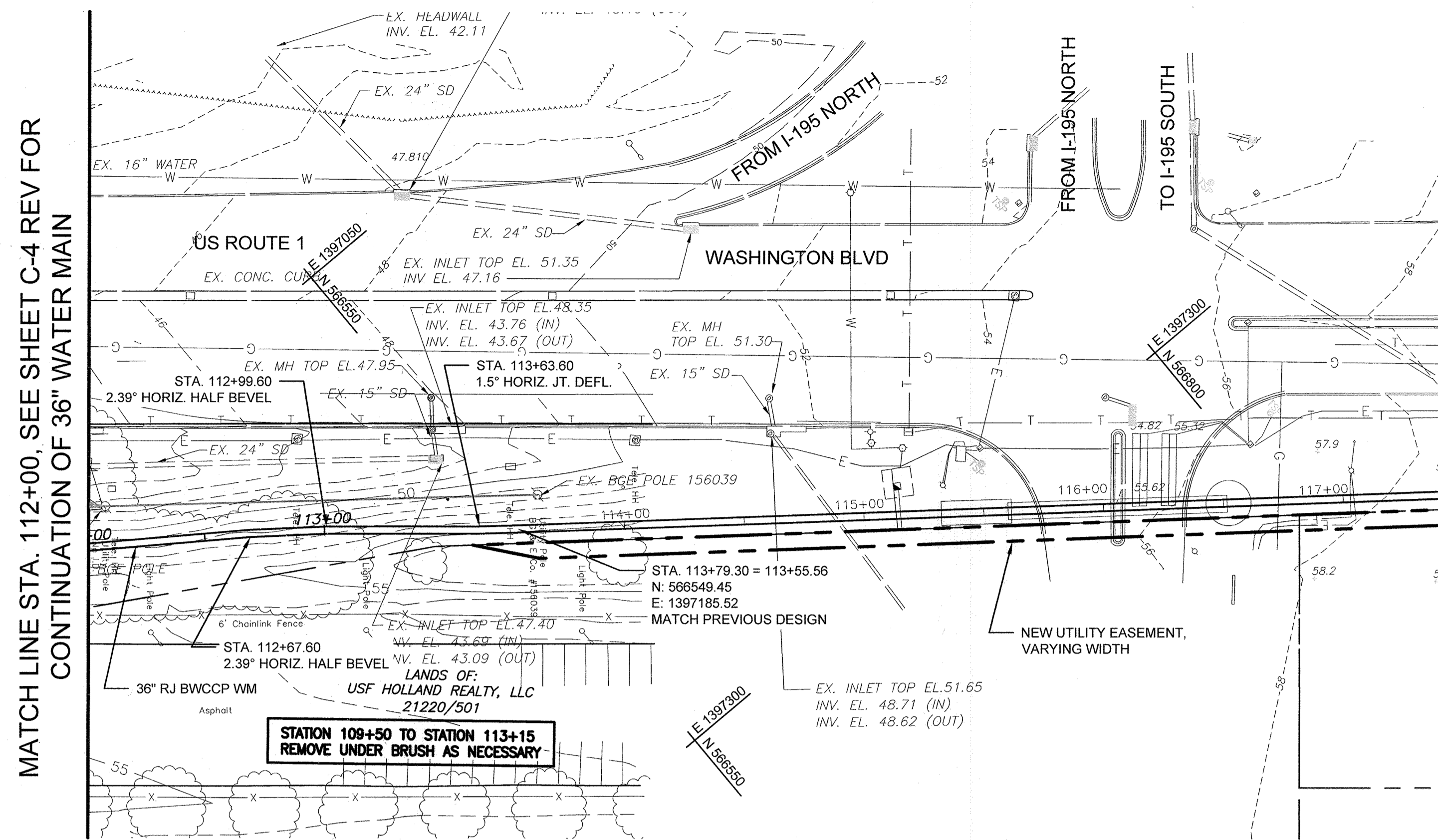
SUBDIVISION: ST. DENIS ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-9278

Hatch Mott MacDonald  
 11019 McCormick Road, Suite 280  
 Hunt Valley, Maryland 21091

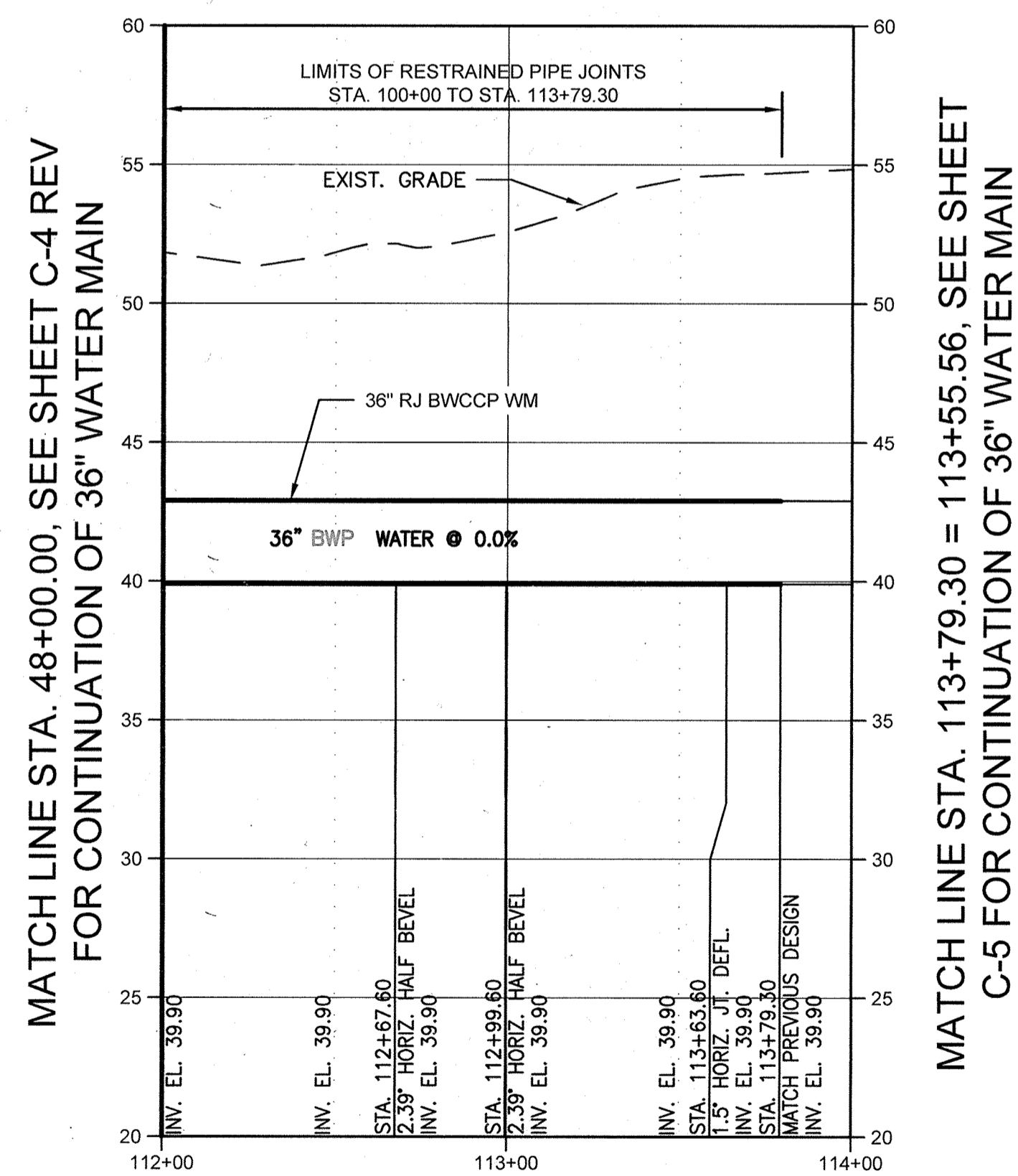
SHEET DESIGNATION	CONTRACT NO.
<b>C-5</b>	44-4818
	JOB ORDER NO.
	203-0067-0281
	SHEET 7 OF 36
	DRAWING NO.
	<b>2009-3356</b>
	FILE NO.





**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 112+00 TO STA. 113+79.30)**

SCALE: 1" = 40'-0"



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 112+00 TO STA. 113+79.30)**

HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

CITY OF BALTIMORE REVISION - CITY OF BALTIMORE CHIEF, UTILITY ENGINEERING DATE: 1/15/14		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CHIEF, WATER ENGINEERING SECTION DATE: 3/24/14	
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. 10668 EXPIRATION DATE DECEMBER 3, 2015.		REVISION BY: RJP DATE: 3/24/14	
BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER		DEPARTMENT OF PUBLIC WORKS APPROVED BY: [Signature] DIRECTOR DATE: 3/24/14	
AS-BUILT PER RECORD PRINT DATE: 3/24/14		DATE REVIEWED: 3/24/14	

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
PLAN AND PROFILE STA. 112+00 TO STA. 113+79.30**

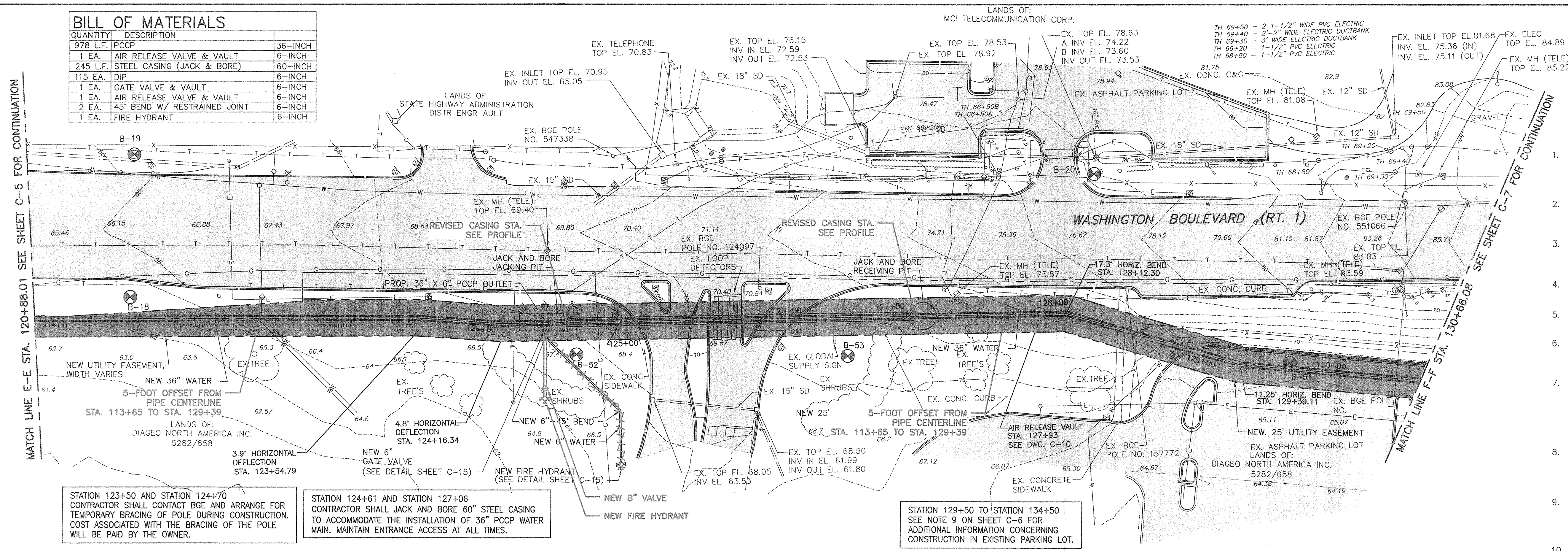
SUBDIVISION: SAINT DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-0770  
**OTBEN'S CARE**  
 11200 McCORMICK ROAD,  
 SUITE 204  
 BOWY VILLAGE, MARYLAND 21041

SHEET DESIGNATION	CONTRACT NO.
<b>C-5 REV</b>	44-0010
JOB ORDER NO.	200-0097-0001
SHEET 7A OF 36	DRAWING NO.
<b>2009-3387</b>	FILE NO.

BILL OF MATERIALS		
QUANTITY	DESCRIPTION	
978 L.F.	PCCP	36-INCH
1 EA.	AIR RELEASE VALVE & VAULT	60-INCH
245 L.F.	STEEL CASING (JACK & BORE)	60-INCH
115 EA.	DIP	6-INCH
1 EA.	GATE VALVE & VAULT	6-INCH
1 EA.	AIR RELEASE VALVE & VAULT	6-INCH
2 EA.	45° BEND W/ RESTRAINED JOINT	6-INCH
1 EA.	FIRE HYDRANT	6-INCH

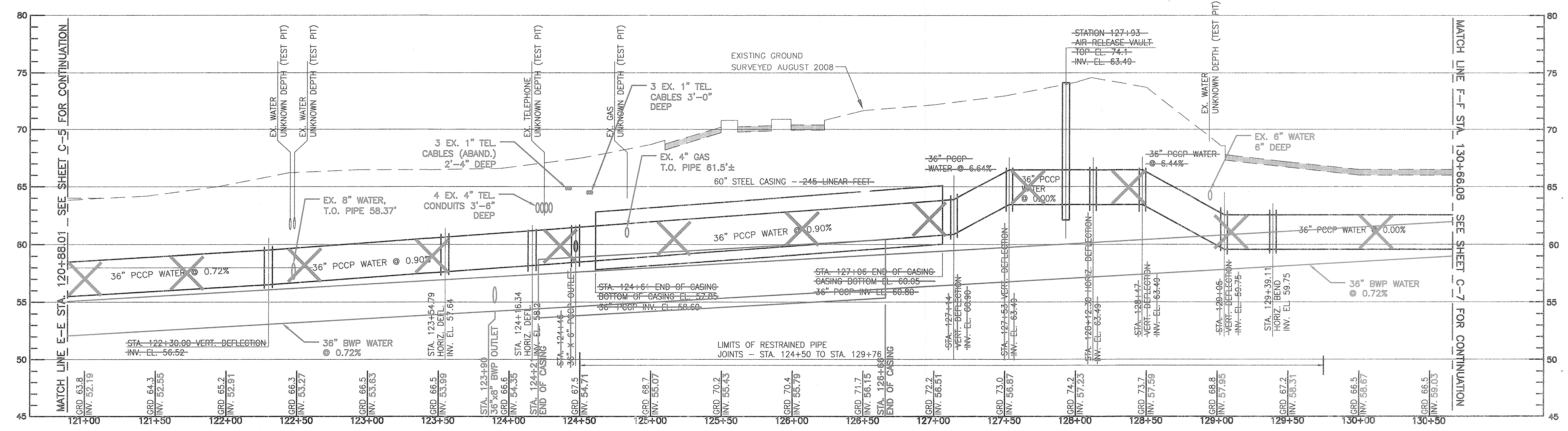


**WASHINGTON BOULEVARD (ROUTE 1) CONSTRUCTION NOTES:**

- THE CONTRACTOR SHALL NOTIFY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT (DEPRM) INSPECTION AND ENFORCEMENT DIVISION AT 410-887-3226, AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
- NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, INSPECTION AND COMPLIANCE PROGRAM AT 410-537-3510 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.
- STATION 100+00 BEGINNING OF WASHINGTON BOULEVARD 36" WATER MAIN = STATION 37+60 (END OF PATAPSCO VALLEY STATE PARK 36" WATER MAIN).
- STATION 100+08 ± RELOCATE EXISTING TELEPHONE PRIOR TO INITIATING CONSTRUCTION IN THIS AREA.
- STATION 103+50 ± EXTEND 18" STORM DRAIN 10 LINEAR FEET AND INSTALL NEW HEADWALL, SEE DETAIL SHEET C-15.
- STATION 105+50 TO STATION 106+75 - RELOCATE EXISTING TELECOMMUNICATION LINE TO FACILITATE THE CONSTRUCTION OF THE 36" MAIN.
- CONTRACTOR SHALL USE CAUTION WHEN CONSTRUCTING WATER MAIN UNDER THE ROUTE 195 OVERPASS. AT LEAST SEVEN (7) DAYS IN ADVANCE OF INITIATING WORK, NOTIFY THE STATE HIGHWAY ADMINISTRATION. THE 54" STEEL CASING AND 36" WATER MAIN SHALL BE INSTALLED BY OPEN CUT WITHOUT DISTURBING BRIDGE ABUTMENTS.
- CONTRACTOR SHALL CONTACT BALTIMORE GAS AND ELECTRIC AT 410-637-8713 TO ARRANGE FOR BGE TO PROVIDE TEMPORARY SUPPORT/BRACING OF POLES IN CLOSE PROXIMITY TO WATER MAIN CONSTRUCTION.
- CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT THERE IS AN EXISTING STORMWATER MANAGEMENT SYSTEM IN PLACE FOR THE PARKING LOT. CONTRACTOR MUST USE CAUTION SO AS NOT TO DISRUPT THE STORMWATER MANAGEMENT FACILITIES.
- REMOVE EXISTING GUARD RAIL AS NECESSARY TO CONSTRUCT THE NEW WATER MAIN AFTER ALL WORK IN THE VICINITY IS COMPLETE.
- CONTRACTOR SHALL LOCATE EXISTING WATER MAIN VIA TEST PIT. REMOVE EX. 8 INCH WATER AS NECESSARY TO INSTALL 8" X 8" TEST. PROVIDE CONCRETE BUTTRESS PER COUNTY STANDARD DETAILS.

**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 120+88.01 TO STA. 130+66.08)**

SCALE: 1" = 40'-0"



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 120+88.01 TO STA. 130+66.08)**

HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		CHIEF, UTILITY ENGINEERING		DIRECTOR, DEPT. OF PUBLIC WORKS	
DATE: 3/15/12		DATE:		DATE:	
SEAL		PROFESSIONAL CERTIFICATION		REVISION	
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. 37797 EXPIRATION DATE AUGUST 9, 2013		ENGINEER: STAM B. NAYER		DESIGN BY: BBB	
AS-BUILT PER RECORD PRINT		DRAWN BY: JCD		REVIEWED BY: RBF	
DATE: 1/23/12		CHECKED BY: SBN		DATE REVIEWED: 1/23/12	

BY	DATE	P.W.A. NO.	KEY SHEET	POSITION SH#
		R.O.W. NO.		

AS-BUILT JUNE 2016 CWO 51738  
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN PLAN AND PROFILE - STA. 120+88.01 TO 130+66.08**

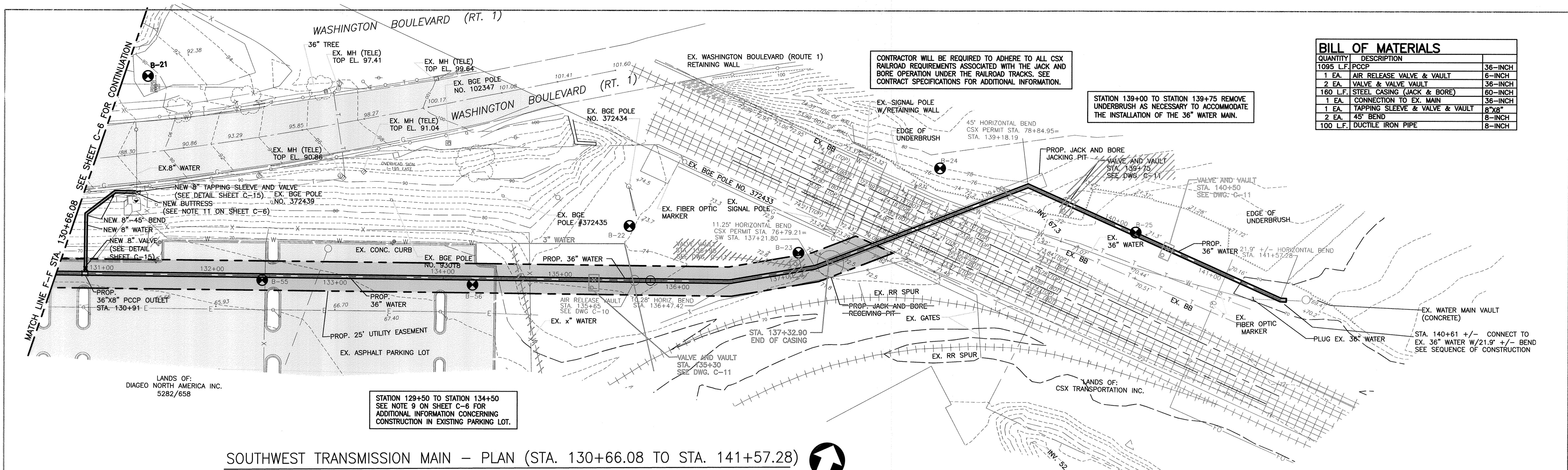
SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 200  
Hunt Valley, Maryland 21091

SHEET DESIGNATION	CONTRACT NO.
C-6	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 8 OF 36	DRAWING NO.
	2009-3357
FILE NO.	



BILL OF MATERIALS		
QUANTITY	DESCRIPTION	
1095 L.F.	PCCP	36-INCH
1 EA.	AIR RELEASE VALVE & VAULT	6-INCH
2 EA.	VALVE & VALVE VAULT	36-INCH
160 L.F.	STEEL CASING (JACK & BORE)	60-INCH
1 EA.	CONNECTION TO EX. MAIN	36-INCH
1 EA.	TAPPING SLEEVE & VALVE & VAULT	8"x8"
2 EA.	45° BEND	8-INCH
100 L.F.	DUCTILE IRON PIPE	8-INCH

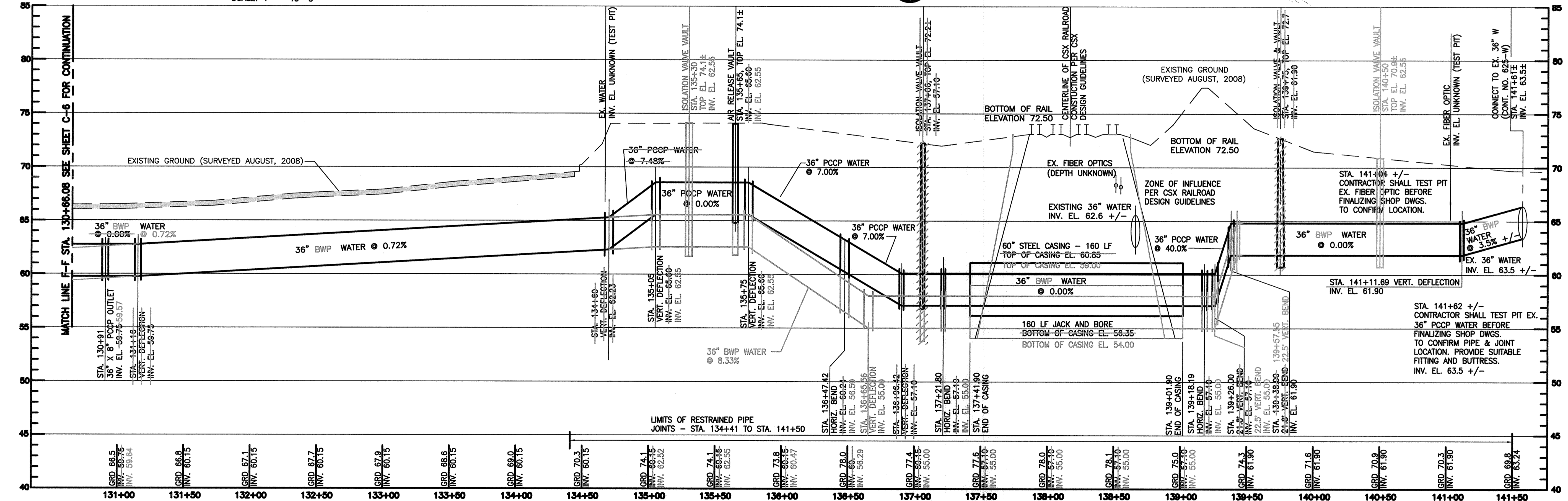
CONTRACTOR WILL BE REQUIRED TO ADHERE TO ALL CSX RAILROAD REQUIREMENTS ASSOCIATED WITH THE JACK AND BORE OPERATION UNDER THE RAILROAD TRACKS. SEE CONTRACT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

STATION 139+00 TO STATION 139+75 REMOVE UNDERBRUSH AS NECESSARY TO ACCOMMODATE THE INSTALLATION OF THE 36" WATER MAIN.

STATION 129+50 TO STATION 134+50  
SEE NOTE 9 ON SHEET C-6 FOR  
ADDITIONAL INFORMATION CONCERNING  
CONSTRUCTION IN EXISTING PARKING LOT.

**SOUTHWEST TRANSMISSION MAIN - PLAN (STA. 130+66.08 TO STA. 141+57.28)**

SCALE: 1" = 40'-0"



**SOUTHWEST TRANSMISSION MAIN - PROFILE (STA. 130+66.08 TO STA. 141+57.28)**

HORIZONTAL SCALE: 1" = 40'-0"  
VERTICAL SCALE: 1" = 5'-0"

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
ALVIN F. ... CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATERS	DATE: 4/12/12 CHIEF, UTILITY ENGINEERING	DATE: 4/12/12 DIRECTOR, DEPT. OF PUBLIC WORKS
SEAL: STATE OF MARYLAND PROFESSIONAL ENGINEER	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. 37797 EXPIRATION DATE AUGUST 9, 2013	DRAWING SCALE: PLAN SCALE: AS NOTED, PROFILE SCALE: AS NOTED
ENGINEER: STAM B. NAYER	DESIGN BY: BBB	DEPARTMENT OF PUBLIC WORKS
AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	APPROVED BY: [Signature]
DATE: 1/23/12	CHKD BY: SBN	DATE: 4/12/12

AS-BUILT JUNE 2016

C.W.O. 51738

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
PLAN AND PROFILE - STA. 130+27.03 TO 141+57.28**

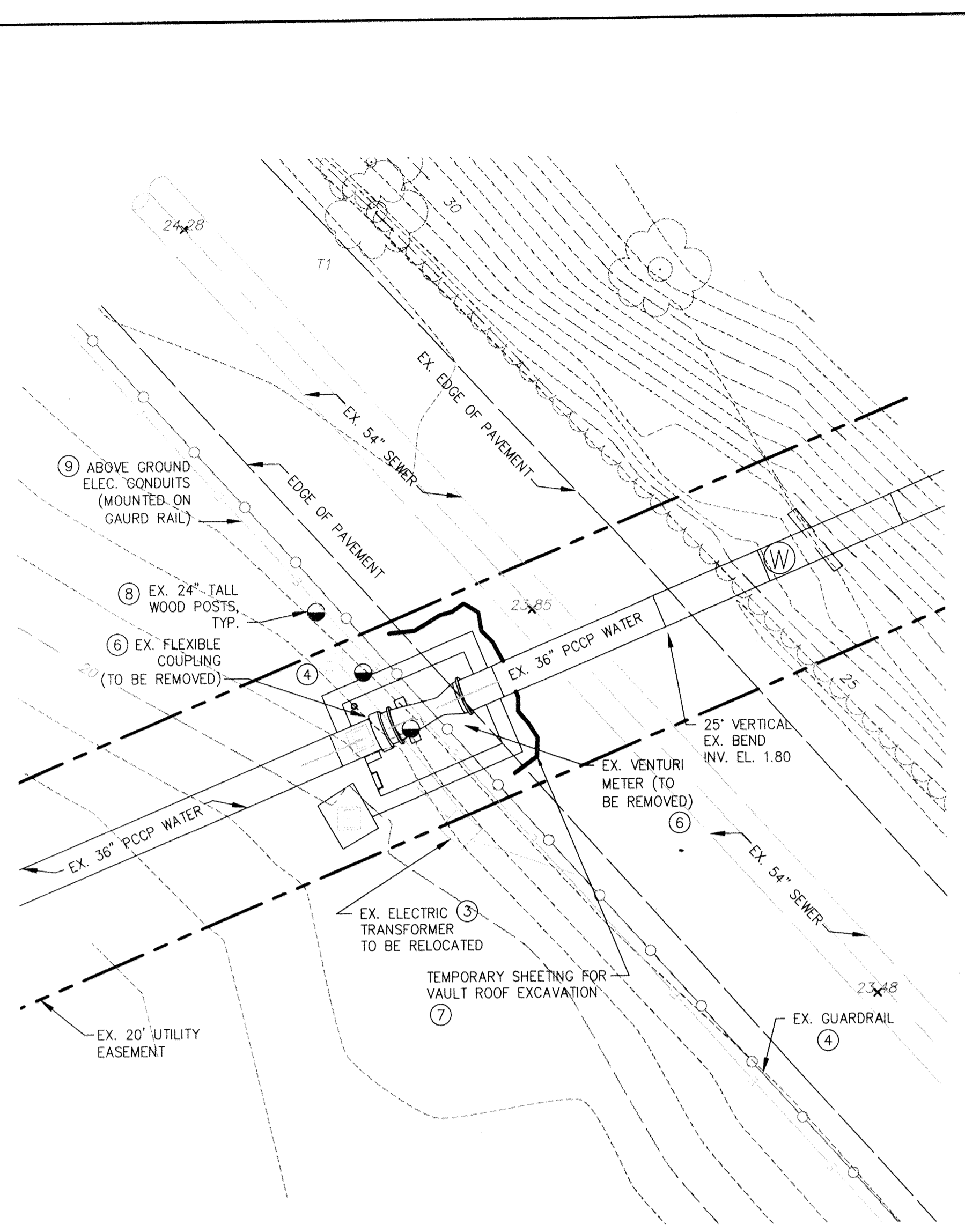
SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21031

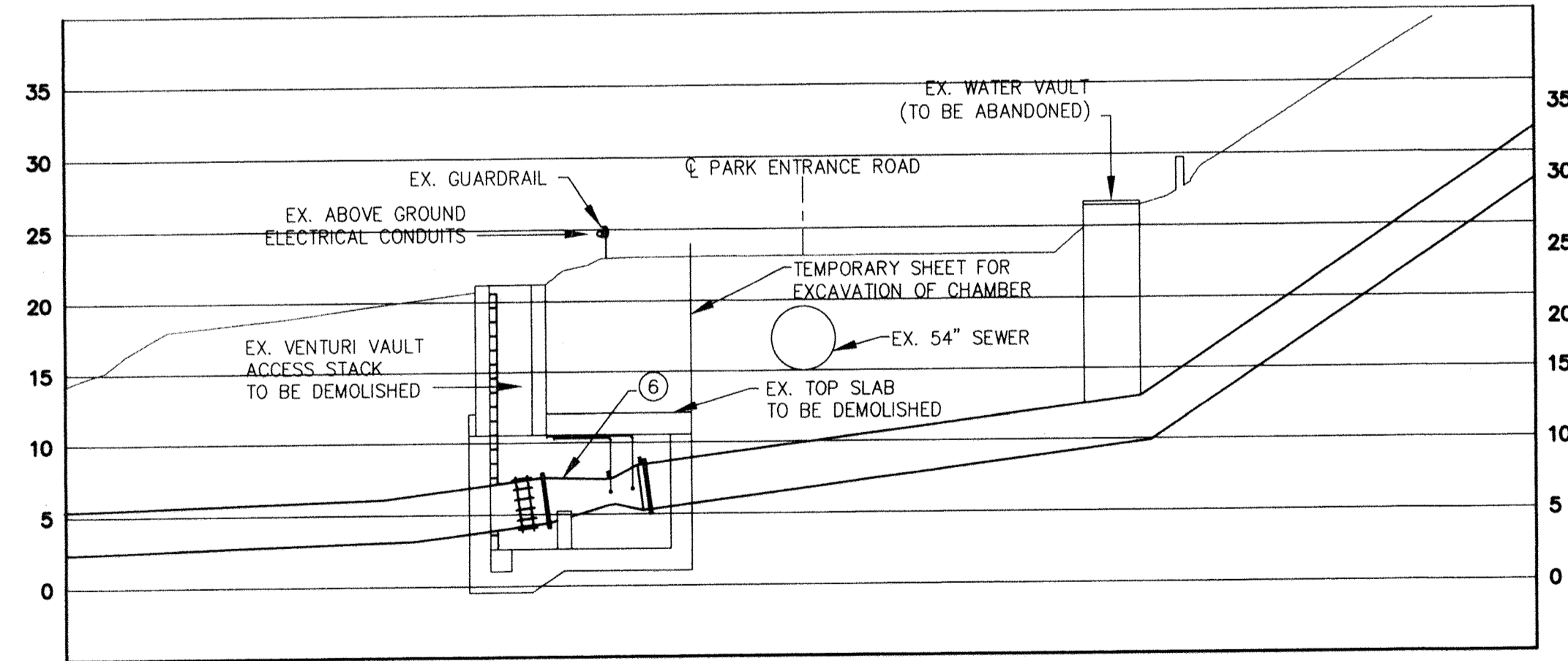
SHEET DESIGNATION	CONTRACT NO.
C-7	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 9 OF 36	DRAWING NO.
	2009-3358
	FILE NO.



**EXISTING METER VAULT AREA - DEMOLITION PLAN**

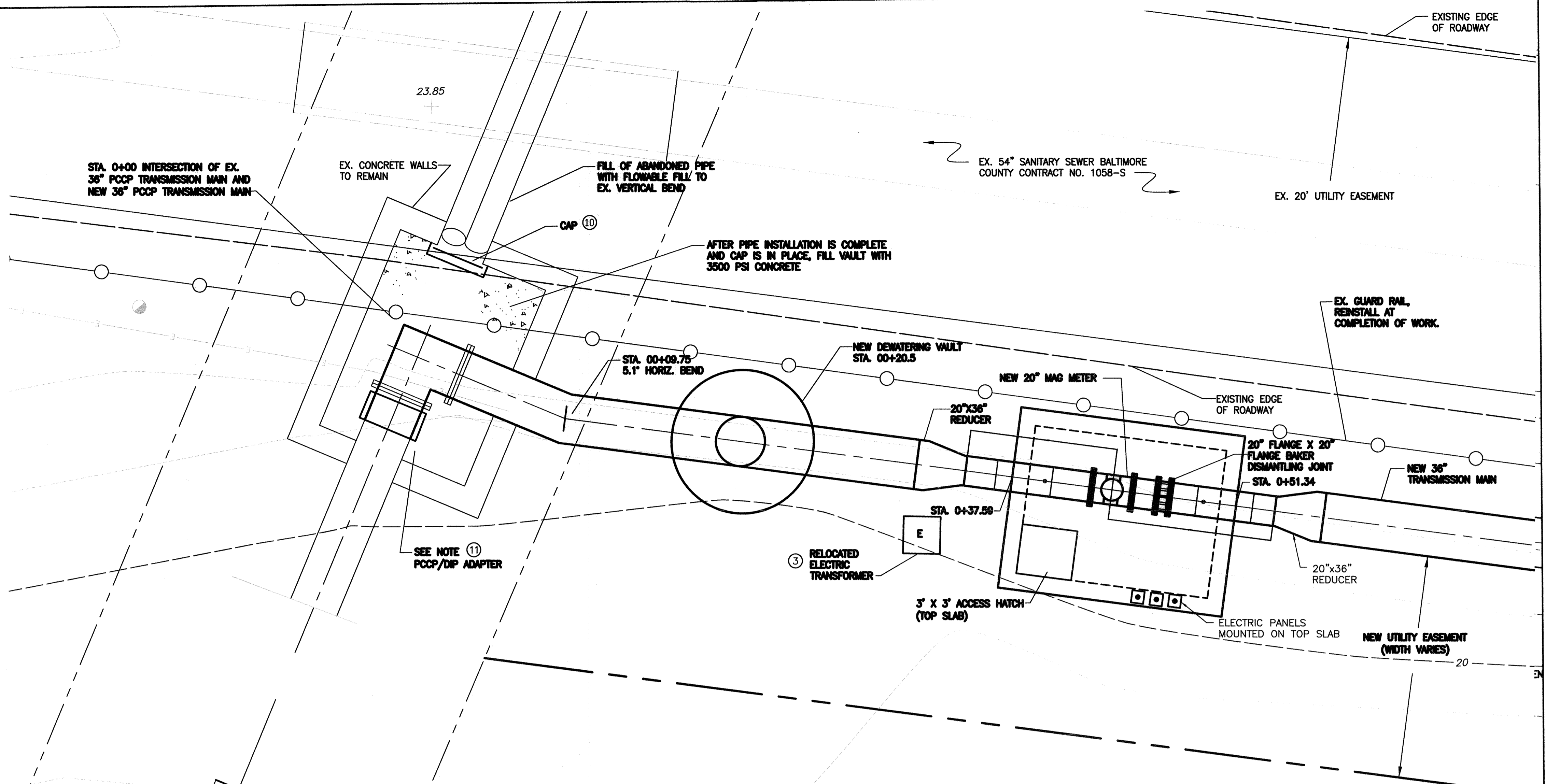
SCALE: 1" = 10'

PRIOR TO SUBMITTING SHOP DRAWINGS FOR THE PRESTRESSED CONCRETE CYLINDER PIPE, CONTRACTOR SHALL INSPECT THE PIPE INSIDE THE EXISTING VENTURI VAULT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SUITABLE ADAPTER WHICH SHALL BE USED TO CONNECT THE 36" PRESTRESSED CONCRETE CYLINDER PIPE TO THE EXISTING PCCP WATER MAIN INSIDE THE VAULT.



**EXISTING METER VAULT AREA - DEMOLITION PROFILE**

HORIZONTAL SCALE: 1" = 10'-0"  
VERTICAL SCALE: 1" = 10'-0"

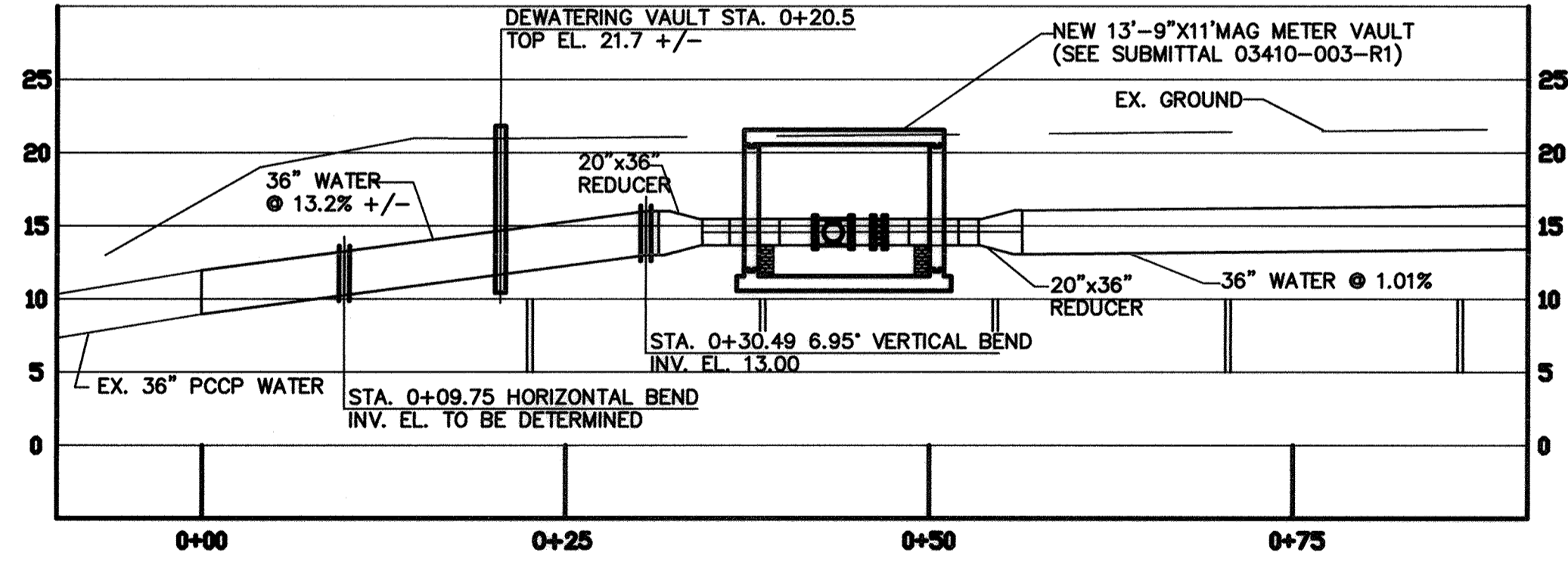


**MAG METER VAULT AREA - NEW WORK PLAN**

SCALE: 1/4" = 1'

**DEMOLITION/CONSTRUCTION NOTES:**

- ① IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION, DEMOLITION ACTIVITIES, WHICH CAUSE THE CONTRACTOR TO TAKE THE EXISTING MAIN OUT OF SERVICE, MAY NOT PROCEED UNTIL THE NEW WATER TRANSMISSION MAIN AND NEW MAG METER VAULT ARE CONSTRUCTED AND TESTED.
- ② EXISTING ELECTRIC SERVICE, ELECTRIC BOX, JUNCTION BOX, INSTRUMENTATION, AND OTHER POLE MOUNTED PANELS TO HAVE WIRING DISCONNECTED. REMOVE FROM MOUNTING SLAB AND RELOCATE, MOUNTING ON TOP OF NEW METER VAULT.
- ③ EXISTING ELECTRIC TRANSFORMER TO BE RELOCATED ADJACENT TO NEW METER VAULT. DISCONNECT FEED, EXTEND AND RECONNECT. PROVIDE CONCRETE PAD FOR RELOCATED TRANSFORMER.
- ④ REMOVE EXISTING GAUDDRAIL AS REQUIRED TO PERFORM WORK. REINSTALL AT COMPLETION OF THE WORK.
- ⑤ REMOVE EXISTING ACOUSTIC FIBER OPTIC CABLE JUNCTION BOX AND REINSTALL EXISTING CABLE UP TO JUNCTION BOX IN PUMP OUT MANHOLE. (TO BE DONE BY OTHERS)
- ⑥ REMOVE EXISTING VENTURI METER AND EXISTING FLEXIBLE COUPLING.
- ⑦ CONSTRUCT TEMPORARY SHEETING TO ALLOW FOR THE DEMOLITION OF THE EXISTING VENTURI ACCESS HATCH/VAULT ROOF.
- ⑧ DEMOLISH WOOD POSTS (TYP. OF 3).
- ⑨ MAINTAIN ABOVE GROUND ELECTRIC SERVICE DURING WORK. IF NEEDED, CONTRACTOR WILL BE REQUIRED TO PROVIDE TEMPORARY ELECTRIC LINES DURING CONSTRUCTION.
- ⑩ CAP EXISTING 36" PCCP WATER. PROVIDE CONCRETE 12" DEEP IN EXISTING 36" PCCP WATER. CONSTRUCT NEW METER VAULT. SEE SHEET C-9.
- ⑪ PROVIDE PCCP/DIP ADAPTER
- ⑫ RELOCATE EXISTING ELECTRIC SERVICE, INSTRUMENTATION AND OTHER PANELS. MOUNT USING EXISTING MOUNTING POSTS AND RACK. ANCHOR POSTS TOP WITH EXPANSION ANCHORS.



**MAG METER VAULT AREA - NEW WORK PROFILE**

HORIZONTAL SCALE: 1" = 10'-0"  
VERTICAL SCALE: 1" = 10'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
Chief Engineer DATE: 3/12/12 DATE: 1/23/12		Chief, Utility Engineering DATE: 1/23/12		Director, Dept. of Public Works DATE: 1/23/12	
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. 37797 EXPIRATION DATE AUGUST 9, 2013.		REVISION BY: DATE: P.W.A. NO. KEY SHEET POSITION SHIT		DRAWING SCALE PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED	
ENGINEER: SYAM B. NAYER DESIGN BY: BBB DRAWN BY: JCD CHECKED BY: SBN		BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER		DEPARTMENT OF PUBL. WORKS APPROVED BY: [Signature] DATE: 1-24-12 DIRECTOR	
AS-BUILT PER RECORD PRINT BY: DATE:		REVIEWED BY: R.J.F. DATE REVIEWED: 1/23/12		APPROVED BY: [Signature] DATE: 1/23/12 CHIEF	

AS-BUILT JUNE 2016

CWO 51738

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
MAG METER VAULT - PLAN & PROFILE**

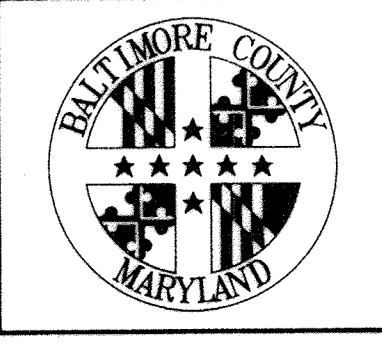
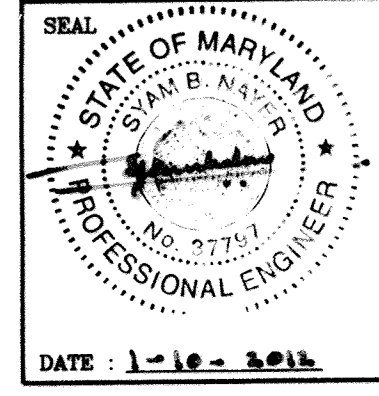
SUBDIVISION: ST. DENIS

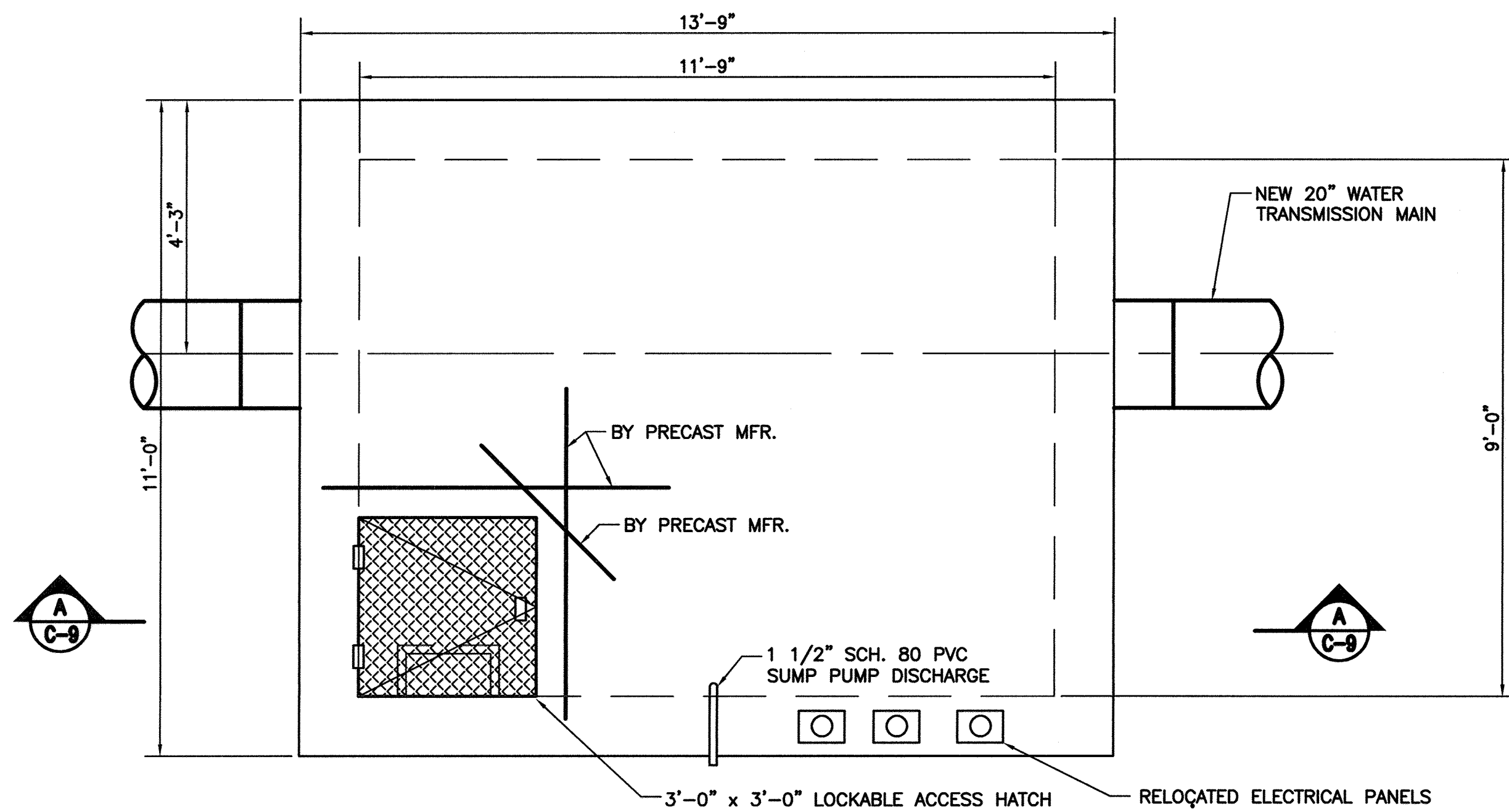
ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

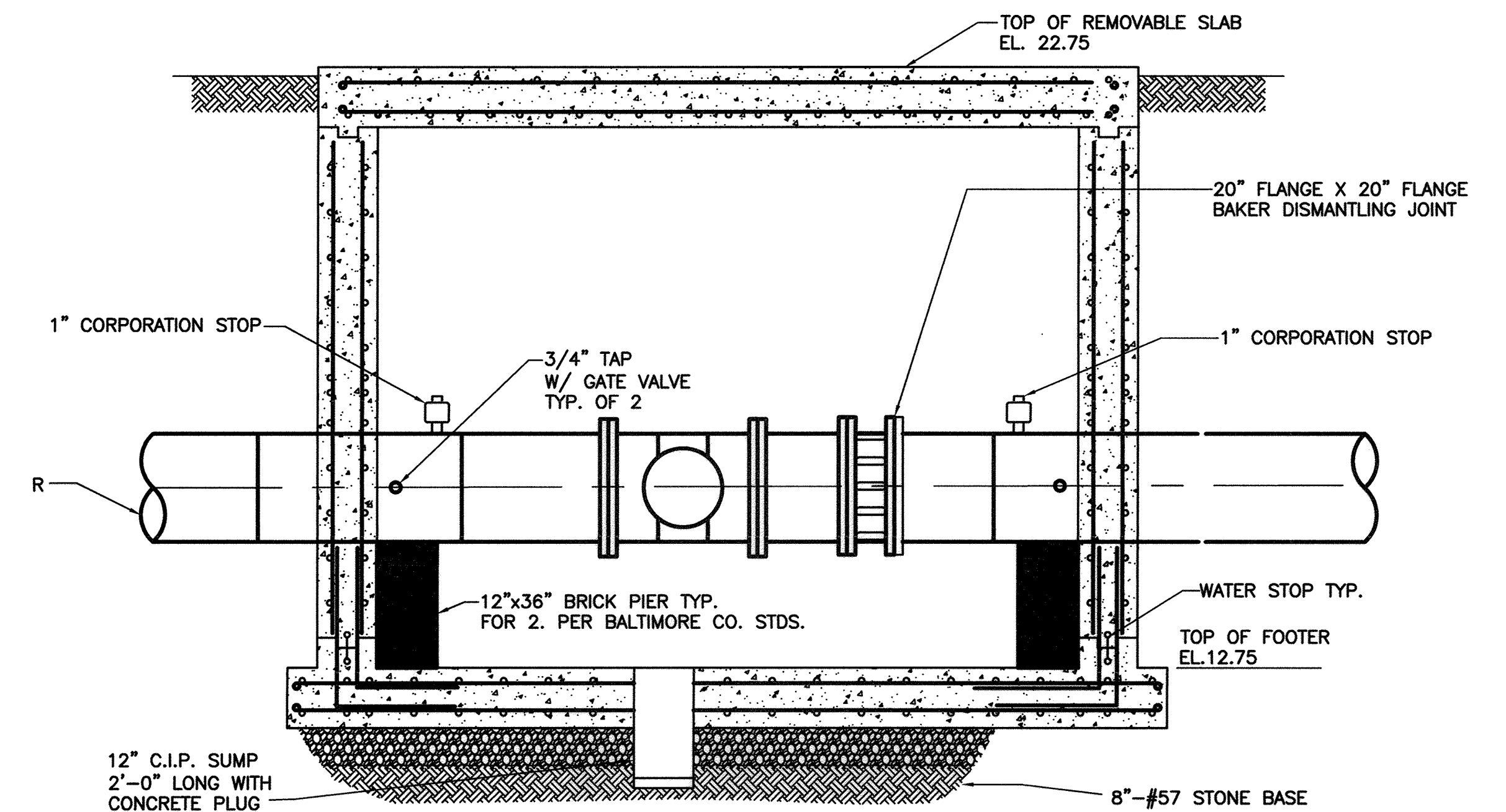


SHEET DESIGNATION <b>C-8</b>	CONTRACT NO. 44-4618
JOB ORDER NO. 203-0067-0281	SHEET 10 OF 36
DRAWING NO. <b>2009-3359</b>	FILE NO.

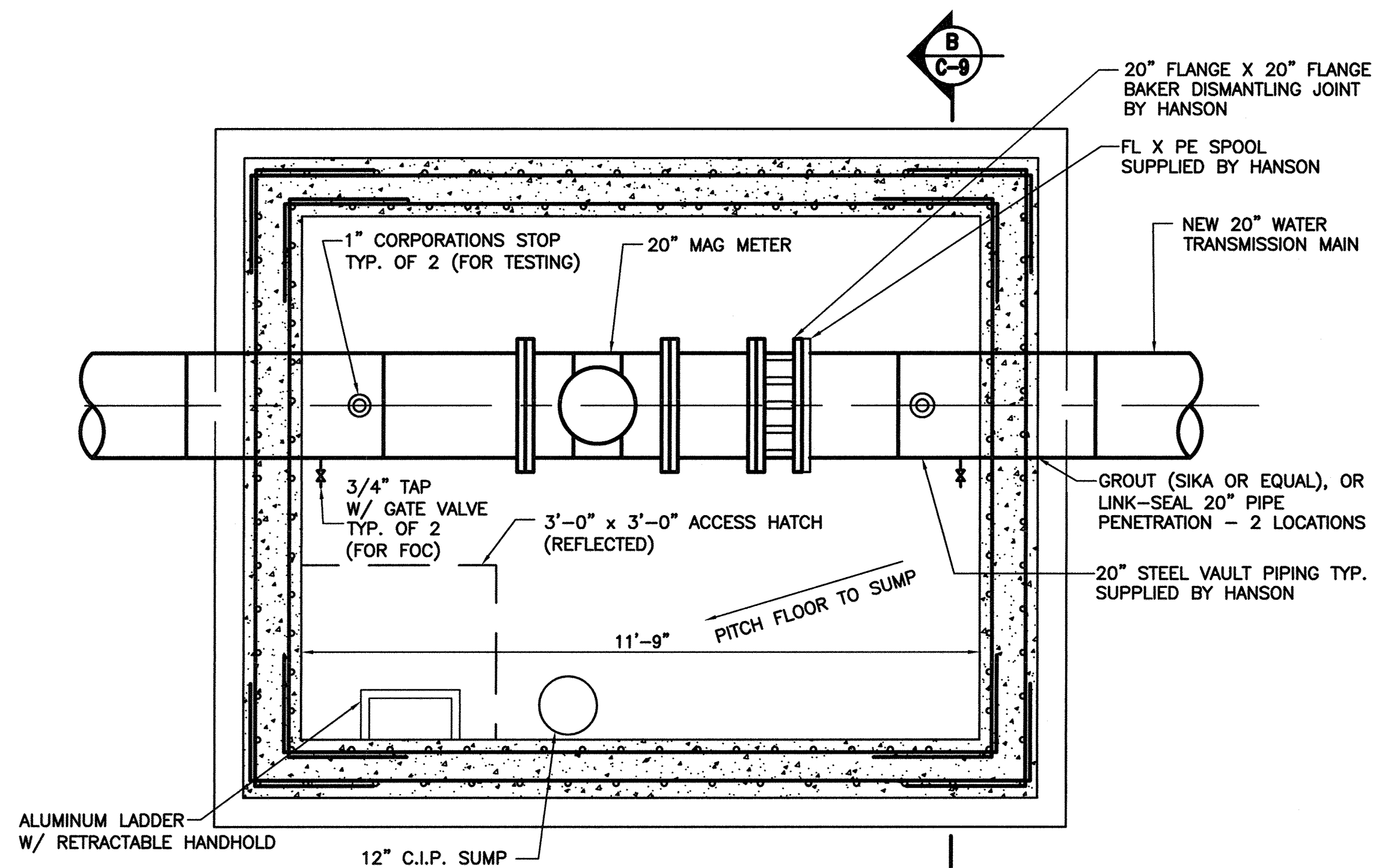




**NEW METERING VAULT @ STA. 0+37.59 - TOP SLAB PLAN**  
SCALE: 1/2" = 1'-0"



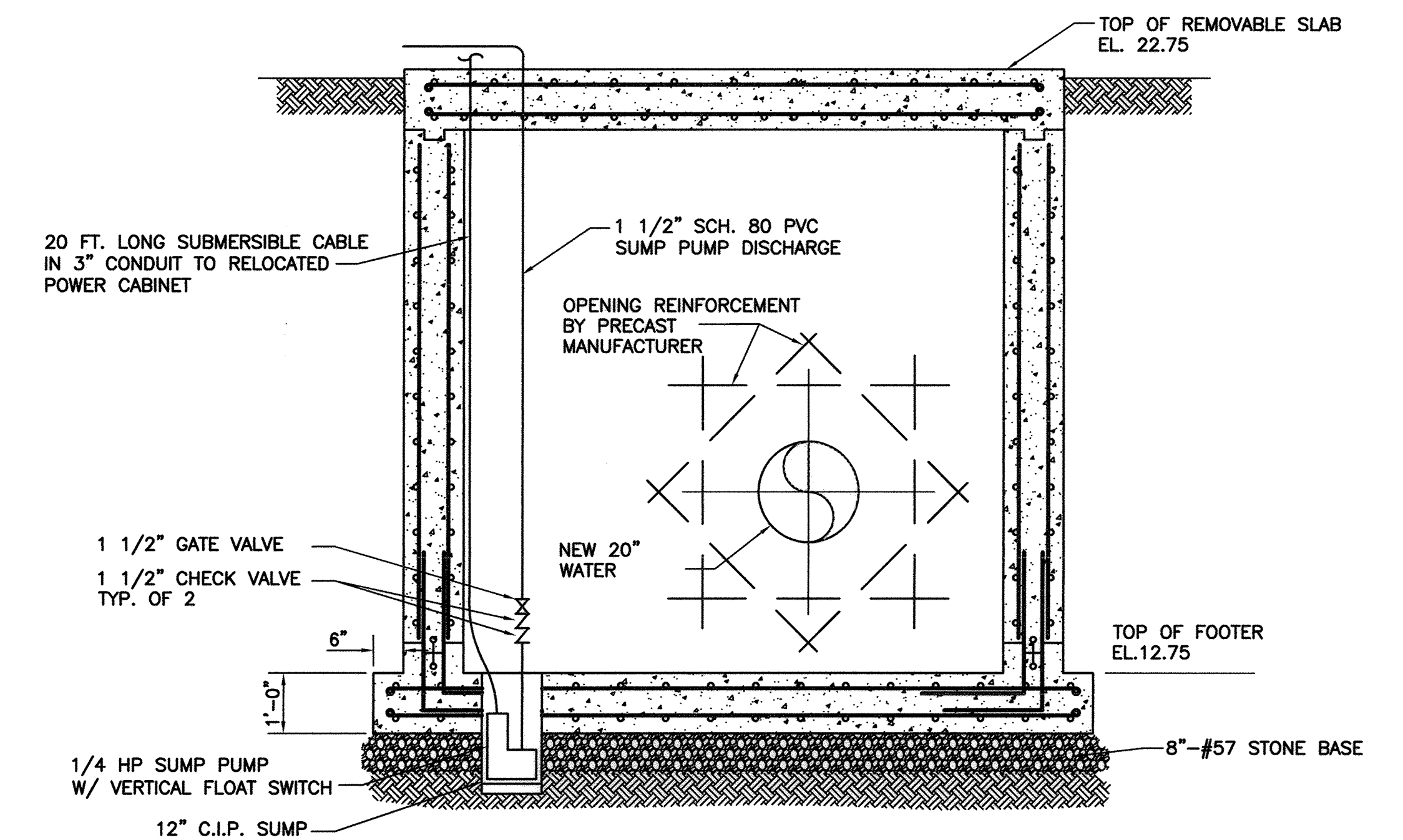
**SECTION METERING VAULT @ STA. 0+37.59 - SECTION A-A**  
SCALE: 1/2" = 1'-0"



**NEW METERING VAULT @ STA. 0+37.59 - LOWER LEVEL PLAN**  
SCALE: 1/2" = 1'-0"

**VENTURI METER VAULT GENERAL NOTES**

- CONTRACTOR SHALL HAVE THE OPTION OF PROVIDING PRE-CAST CONCRETE VAULTS OR UTILIZE CAST-IN-PLACE.
- ALL PRE-CAST CONCRETE SHALL BE 4,500 PSI.
- ALL CAST-IN-PLACE CONCRETE SHALL BE 3,500 PSI.
- ALL STEEL REBAR SHALL CONFORM TO ASTM A-615, GRADE 60
- CONTRACTOR SHALL NOT BACKFILL OR INSTALL THE PRECAST SECTIONS OF THE VAULT FOR AT LEAST 5 DAYS AFTER POURING THE CAST-IN-PLACE BASE SLAB.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF REBAR IN PRE-CAST SECTIONS OF THE VAULT. THE REBAR FOR PRE-CAST SECTIONS ARE NOT SHOWN IN THIS PLAN.
- THE CONTRACTOR SHALL PROVIDE LIFTING DEVICES FOR PRE-CAST SECTIONS OF THE VAULT (NOT SHOWN IN THIS PLAN). DESIGN AND CONSTRUCTION OF THE LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



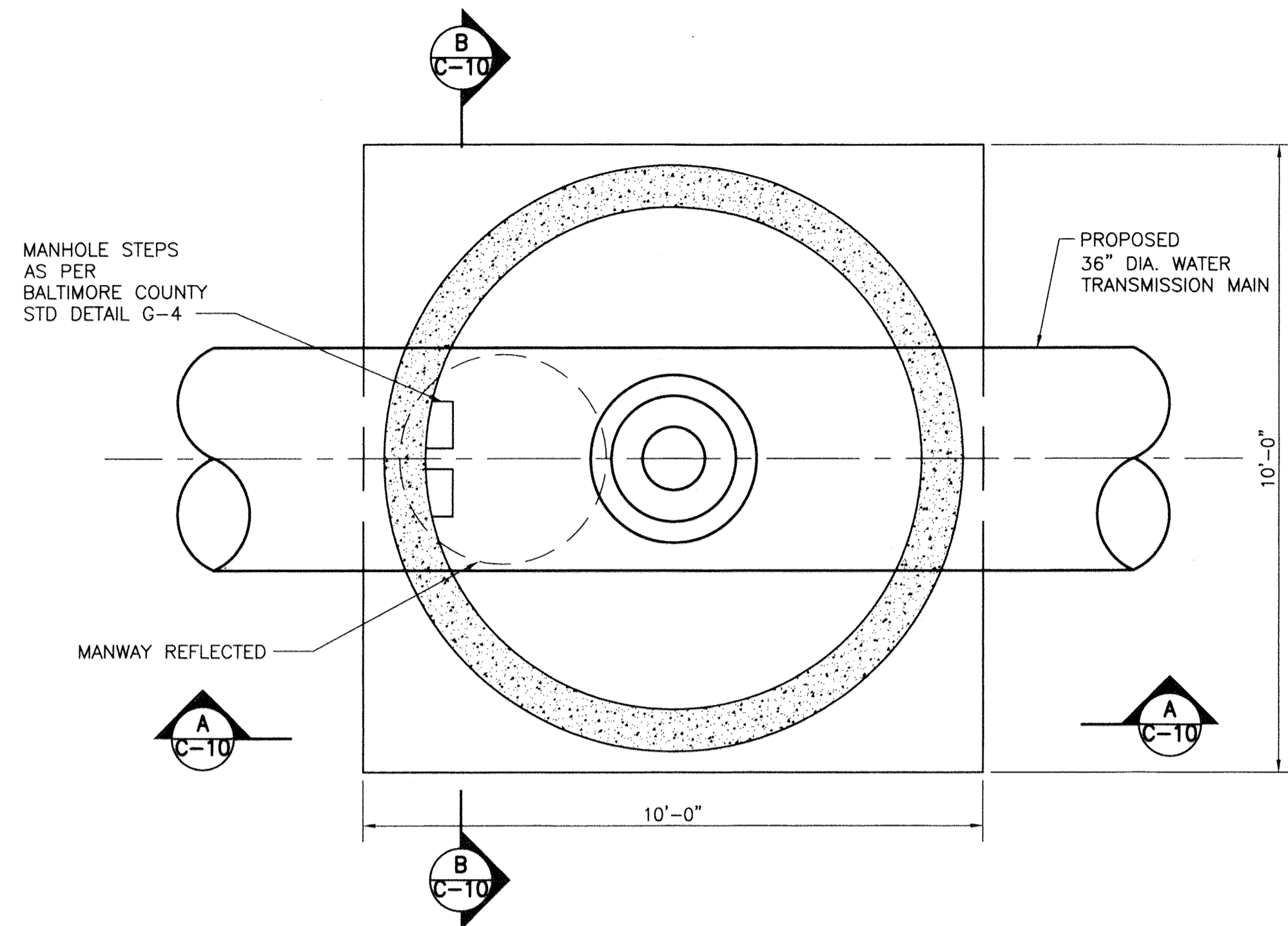
**SECTION METERING VAULT @ STA. 0+37.59 - SECTION B-B**  
SCALE: 1/2" = 1'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
Acting Eng. <i>[Signature]</i> 3/15/12	DATE	CHIEF, UTILITY ENGINEERING	DATE	<i>[Signature]</i> 1/12/12	DATE
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		CHIEF, WATER ENGINEERING SECTION		DIRECTOR, DEPT. OF PUBLIC WORKS	
PROFESSIONAL CERTIFICATION		REVISION		BY DATE P.W.A. NO. KEY SHEET POSITION SHIT	
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A JULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 37797 EXPIRATION DATE AUGUST 9, 2013				R.O.W. NO.	
ENGINEER: STAM B. NAYER	DESIGN BY: BBB	BUREAU OF ENGINEERING AND CONSTRUCTION	BUILDINGS	HIGHWAYS	STRUCTURES
AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	REVIEWED BY: RBF			
BY: DATE:	CHKD BY: SBN	DATE REVIEWED: 1/23/12			
DRAWING SCALE		DEPARTMENT OF PUBLIC WORKS		AS-BUILT JUNE 2016	
PLAN SCALE: AS NOTED	APPROVED BY: <i>[Signature]</i>	DIRECTOR		BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION	
PROFILE SCALE: AS NOTED	DATE: 1-24-12				
BUR. OF ENGINEERING & CONSTRUCTION		APPROVED BY: <i>[Signature]</i>		CHIEF	
SUBDIVISION: ST. DENIS		DATE: 1/17/12		ELECTION DISTRICT: 13	

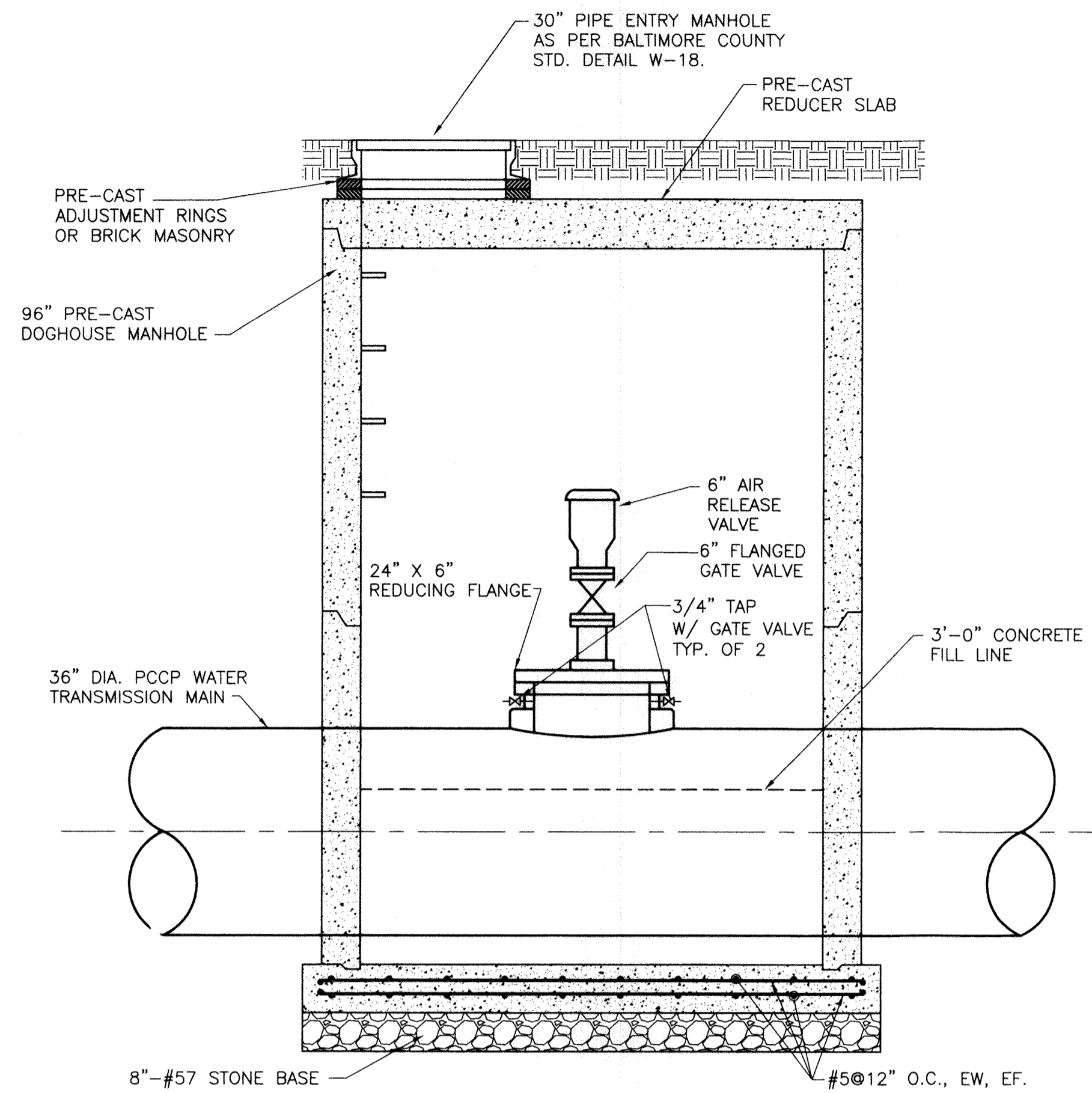
HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 200  
Hunt Valley, Maryland 21031

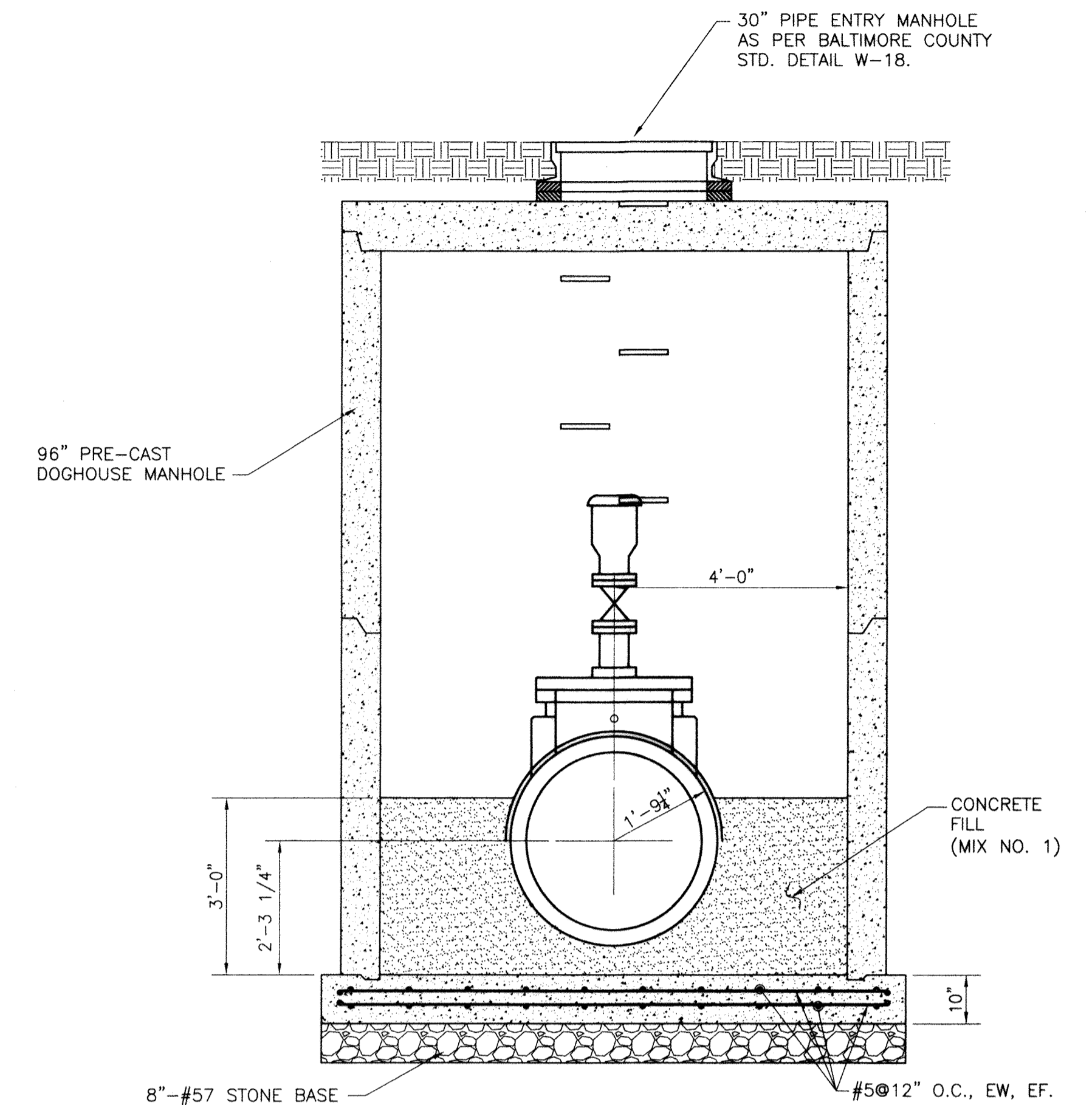
SHEET DESIGNATION	CONTRACT NO.
C-9	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 11 OF 36	DRAWING NO.
2009-3360	FILE NO.



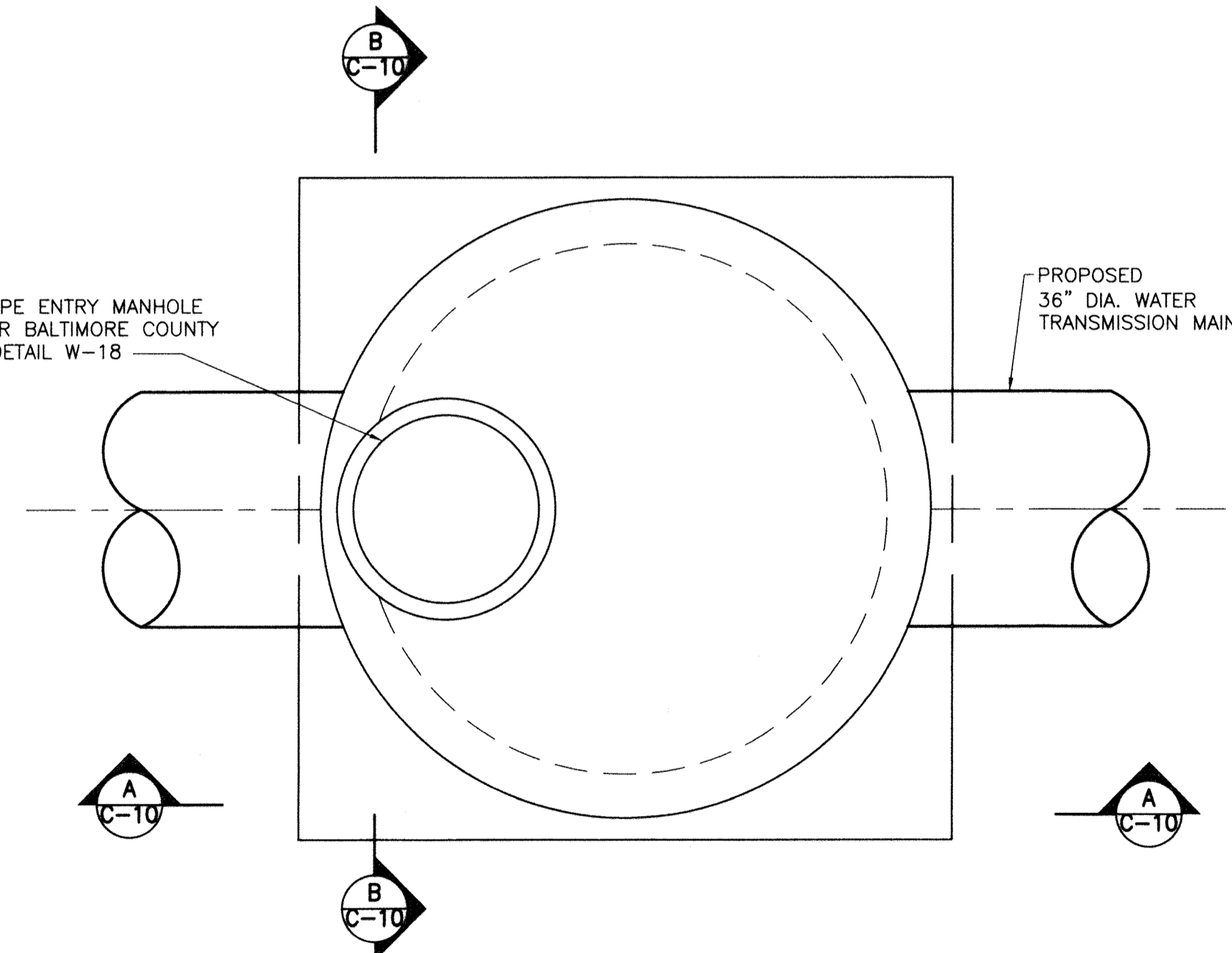
**AIR RELEASE & MANWAY ACCESS VAULT - LOWER LEVEL**  
SCALE: 1/2" = 1'-0"



**SECTION A-A**  
SCALE: 1/2" = 1'-0"



**SECTION B-B**  
SCALE: 1/2" = 1'-0"



**AIR RELEASE & MANWAY ACCESS VAULT - TOP SLAB PLAN**  
SCALE: 1/2" = 1'-0"

**AIR RELEASE AND MANWAY ACCESS VAULT GENERAL NOTES:**

1. CONTRACTOR SHALL HAVE THE OPTION OF USING CAST-IN-PLACE CONCRETE OR PROVIDING PRECAST CONCRETE VAULTS.
2. ALL PRE-CAST CONCRETE SHALL BE 4,500 PSI.
3. ALL CAST-IN-PLACE CONCRETE SHALL BE 3,500 PSI.
4. ALL STEEL REBAR SHALL CONFORM TO ASTM A-615, GRADE 60.
5. CONTRACTOR SHALL NOT BACKFILL OR INSTALL THE PRECAST SECTIONS OF THE VAULT FOR AT LEAST 5 DAYS AFTER POURING THE CAST-IN-PLACE BASE SLAB.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF REBAR IN PRE-CAST SECTIONS OF THE VAULT. THE REBAR FOR PRE-CAST SECTIONS ARE NOT SHOWN IN THIS PLAN.
7. THE CONTRACTOR SHALL PROVIDE LIFTING DEVICES FOR PRE-CAST SECTIONS OF THE VAULT (NOT SHOWN IN THIS PLAN). DESIGN AND CONSTRUCTION OF THE LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
<i>Act Imbol</i> CHIEF WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	DATE: 5/15/12 CHIEF, WATER ENGINEERING SECTION	<i>Jack K...</i> DIRECTOR, DEPT. OF PUBLIC WORKS

SEAL	PROFESSIONAL CERTIFICATION	REVISION	BY	DATE	P.W.A. NO.	KEY SHEET	POSITION SHT	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
	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. 37797 EXPIRATION DATE AUGUST 9, 2013.							AS NOTED	APPROVED BY: <i>[Signature]</i> DIRECTOR
		ENGINEER: STYM B. NAYER DESIGN BY: BBB AS-BUILT PER RECORD PRINT BY: <i>[Signature]</i> DATE: 1-18-2012	BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER BUR. OF ENGINEERING & CONSTRUCTION APPROVED BY: <i>[Signature]</i> CHIEF DATE: 1/17/12						AS NOTED

AS-BUILT JUNE 2016

SOUTHWEST TRANSMISSION MAIN  
AIR RELEASE & MANWAY ACCESS VAULT DETAIL

SUBDIVISION: ST. DENIS

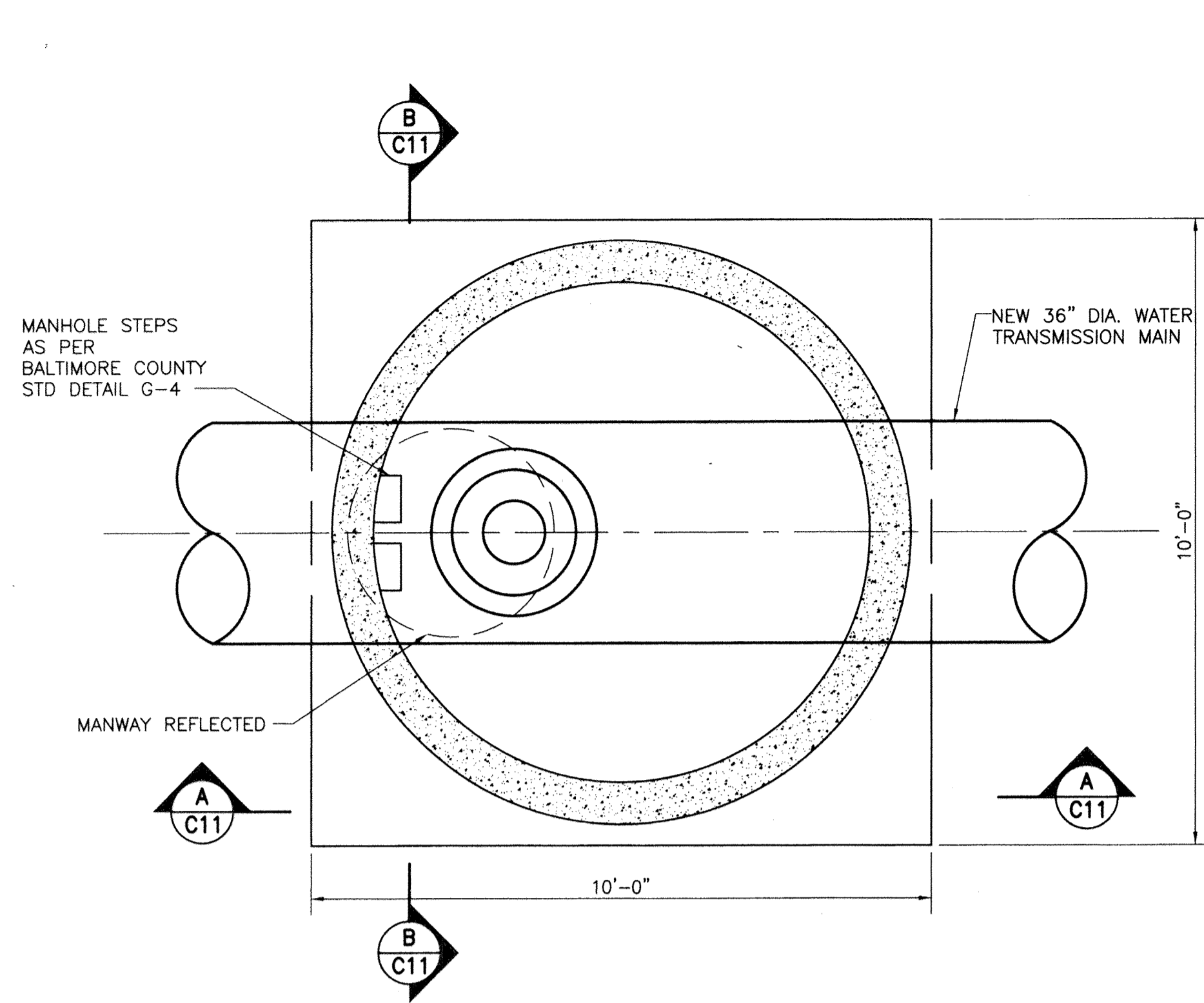
ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

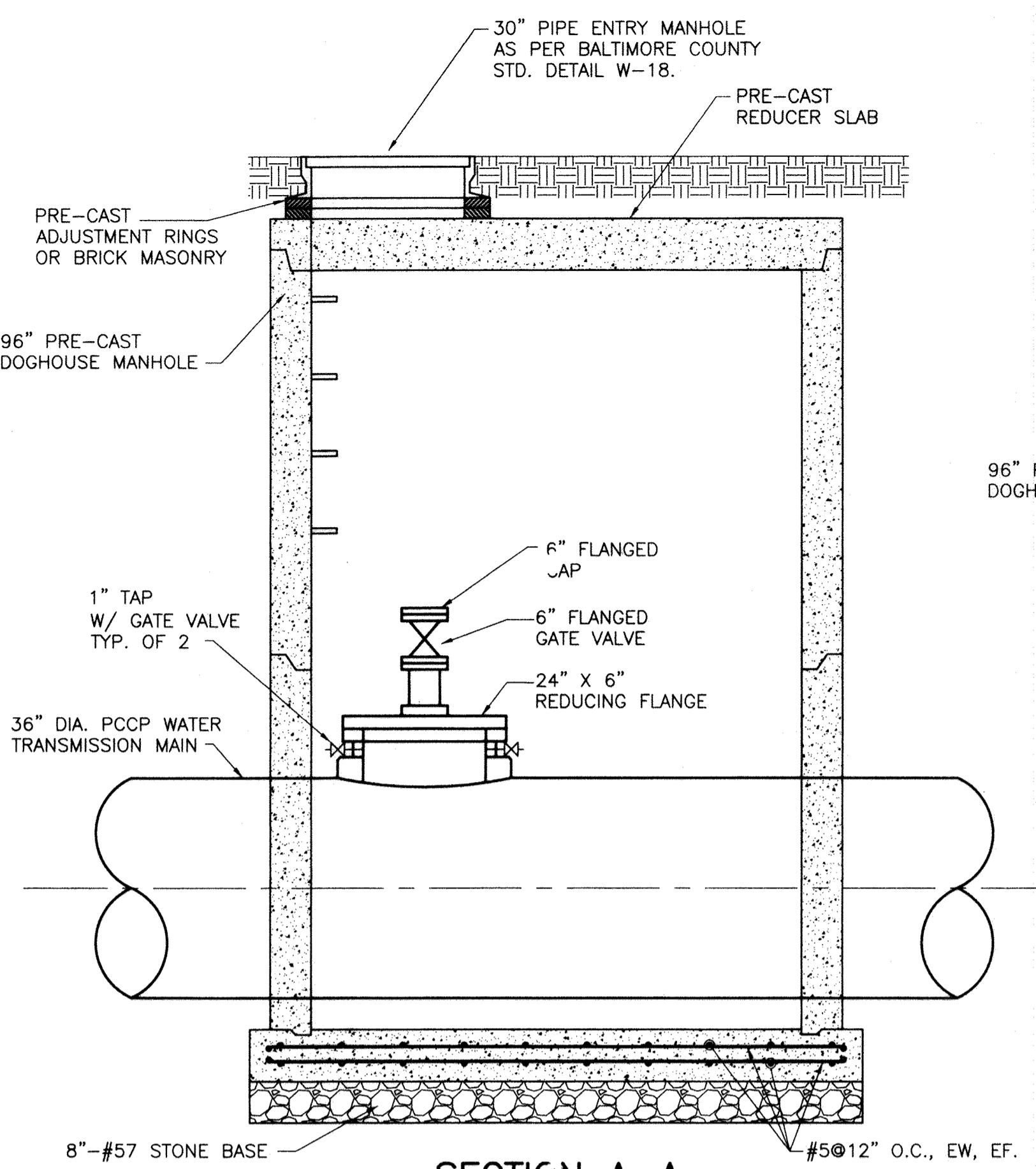
11019 McCormick Road, Suite 200  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
C-10	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 12 OF 36	DRAWING NO.
2009-3361	FILE NO.

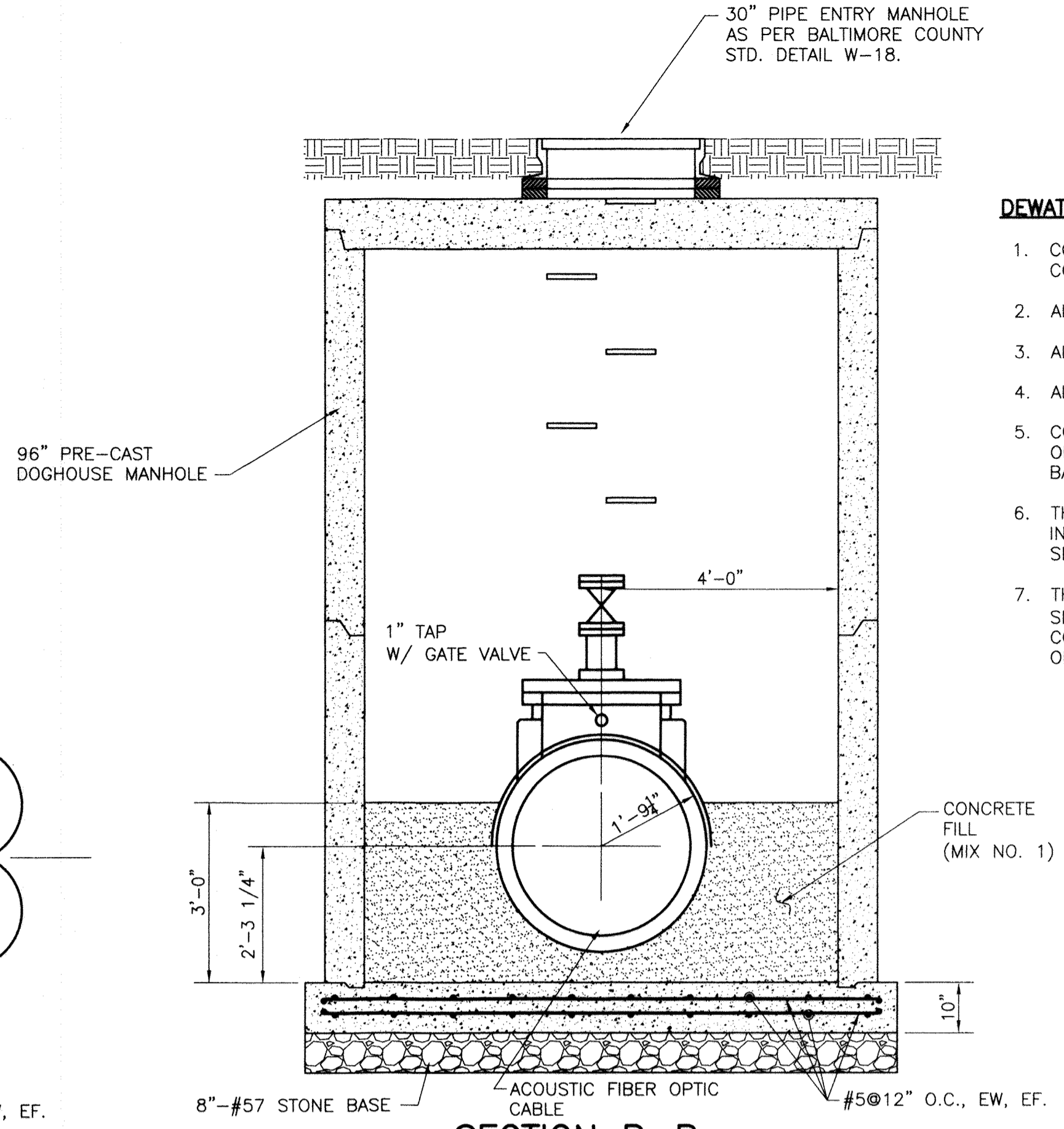
DWG FILENAME:



**DEWATERING VALVE & VAULT - LOWER LEVEL**  
SCALE: 1/2" = 1'-0"

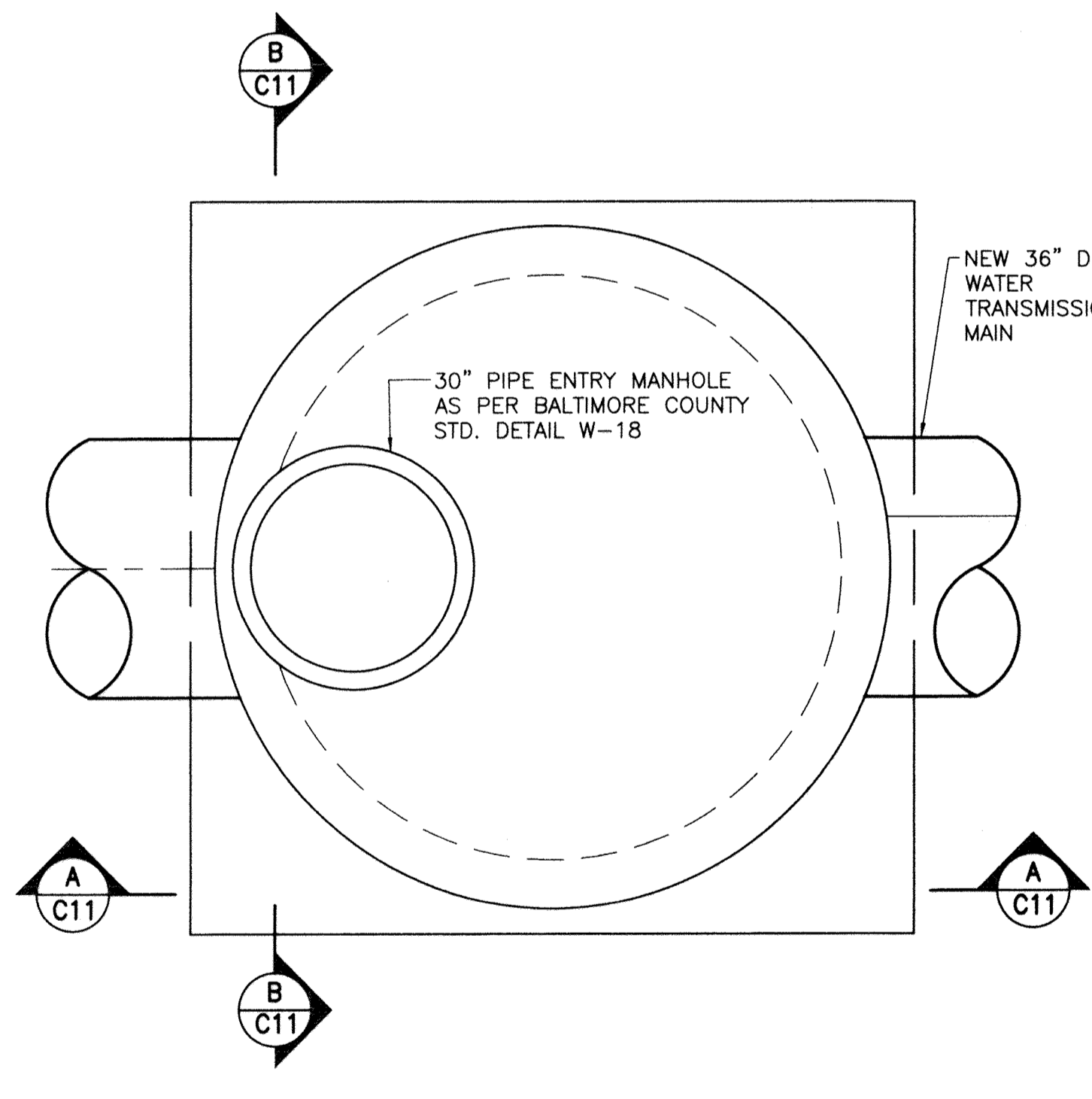


**SECTION A-A**  
SCALE: 1/2" = 1'-0"

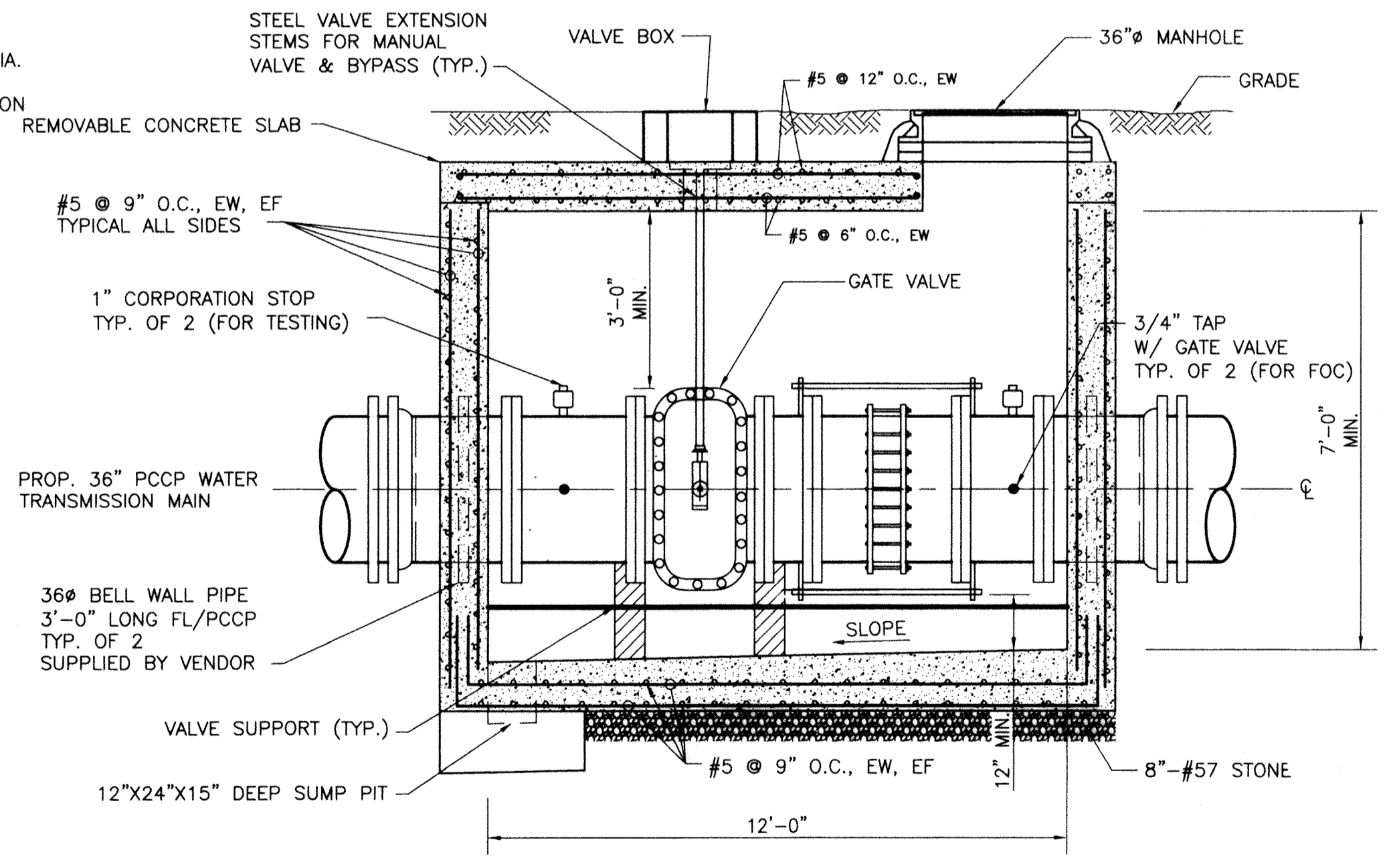


**SECTION B-B**  
SCALE: 1/2" = 1'-0"

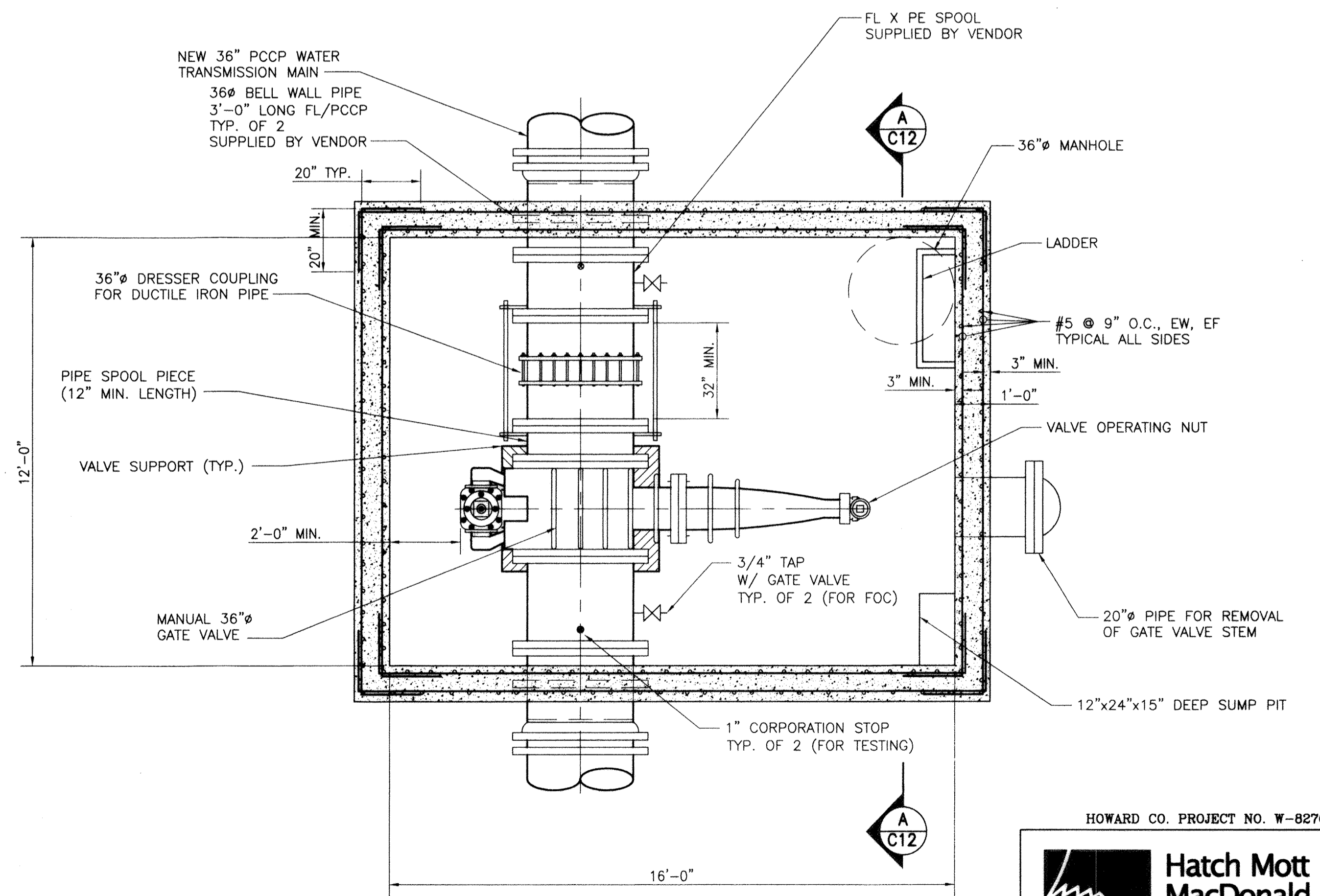
- DEWATERING VALVE AND VAULT GENERAL NOTES:**
1. CONTRACTOR SHALL HAVE THE OPTION OF FURNISHING PRE-CAST CONCRETE VAULTS OR USING CAST-IN-PLACE CONCRETE.
  2. ALL PRE-CAST CONCRETE SHALL BE 4,500 PSI.
  3. ALL CAST-IN-PLACE CONCRETE SHALL BE 3,500 PSI.
  4. ALL STEEL REBAR SHALL CONFORM TO ASTM A-615, GRADE 60.
  5. CONTRACTOR SHALL NOT BACKFILL OR INSTALL THE PRECAST SECTIONS OF THE VAULT FOR AT LEAST 5 DAYS AFTER POURING THE CAST-IN-PLACE BASE SLAB.
  6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF REBAR IN PRE-CAST SECTIONS OF THE VAULT. THE REBAR FOR PRE-CAST SECTIONS ARE NOT SHOWN IN THIS PLAN.
  7. THE CONTRACTOR SHALL PROVIDE LIFTING DEVICES FOR PRE-CAST SECTIONS OF THE VAULT (NOT SHOWN IN THIS PLAN). DESIGN AND CONSTRUCTION OF THE LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



**DEWATERING VALVE & VAULT - TOP SLAB PLAN**  
SCALE: 1/2" = 1'-0"



**IN LINE VALVE DETAIL - SECTION A-A**  
SCALE: 3/8" = 1'-0"



**IN LINE VALVE DETAIL - PLAN**  
SCALE: 3/8" = 1'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, WATER & WASTEWATER ENG. DIV.	DATE	CHIEF, UTILITY ENGINEERING	DATE	DIRECTOR, DEPT. OF PUBLIC WORKS	DATE
BY: <i>[Signature]</i>	DATE: <i>[Date]</i>	BY: <i>[Signature]</i>	DATE: <i>[Date]</i>	BY: <i>[Signature]</i>	DATE: <i>[Date]</i>
PROFESSIONAL CERTIFICATION		REVISION		DRAWING SCALE	
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. 37797 EXPIRATION DATE AUGUST 9, 2013.				DEPARTMENT OF PUBLIC WORKS	
ENGINEER: STAM B. NAYER	DESIGN BY: BBB	BUREAU OF ENGINEERING AND CONSTRUCTION	BUILDINGS	HIGHWAYS	STRUCTURES
AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	REVIEWED BY:	RJF	LHQ	GAK
BY: <i>[Signature]</i>	DATE: <i>[Date]</i>	DATE REVIEWED:	1/23/12	1/23/12	1/23/12

AS-BUILT JUNE 2016  
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN DEWATERING VALVE & VAULT DETAIL**

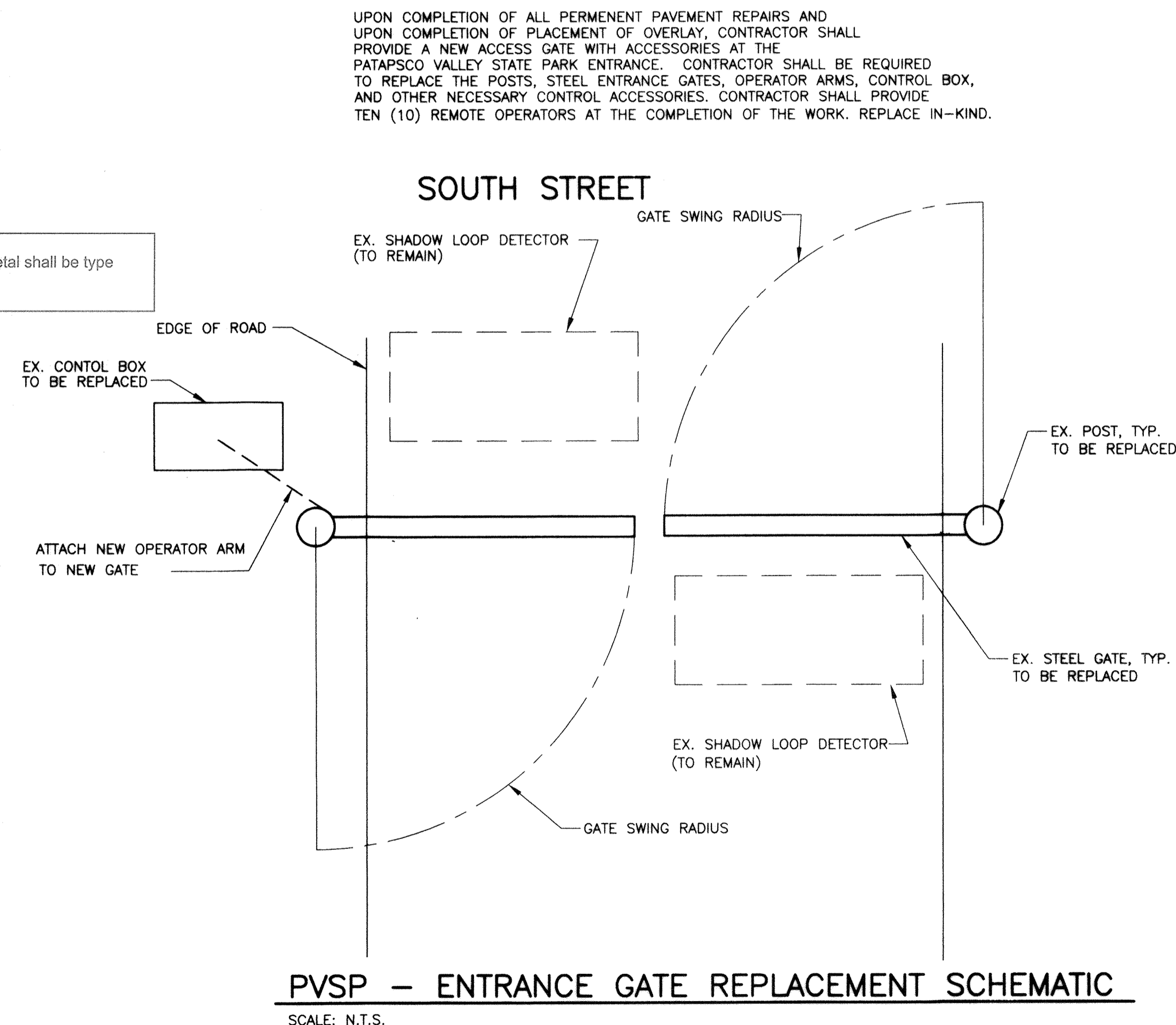
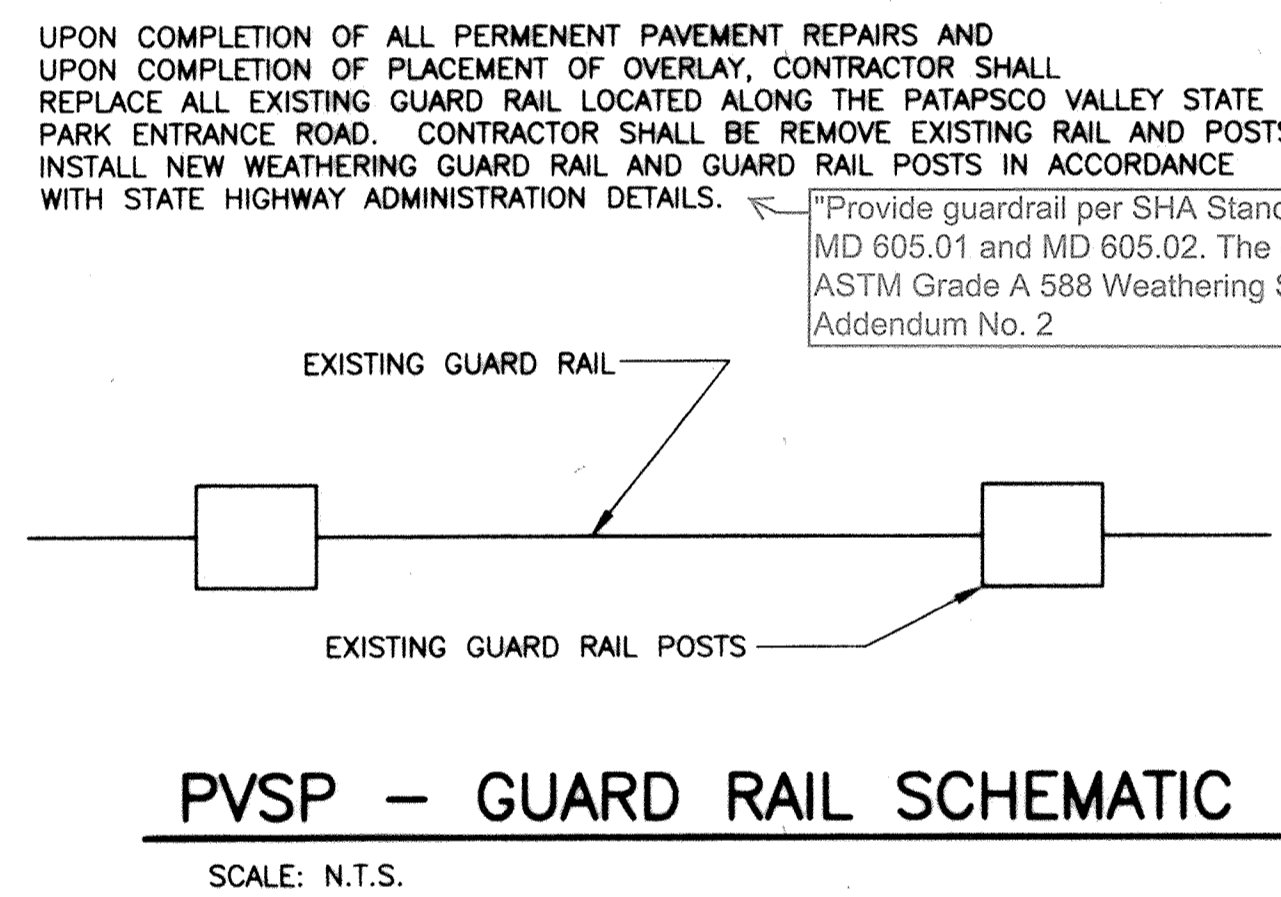
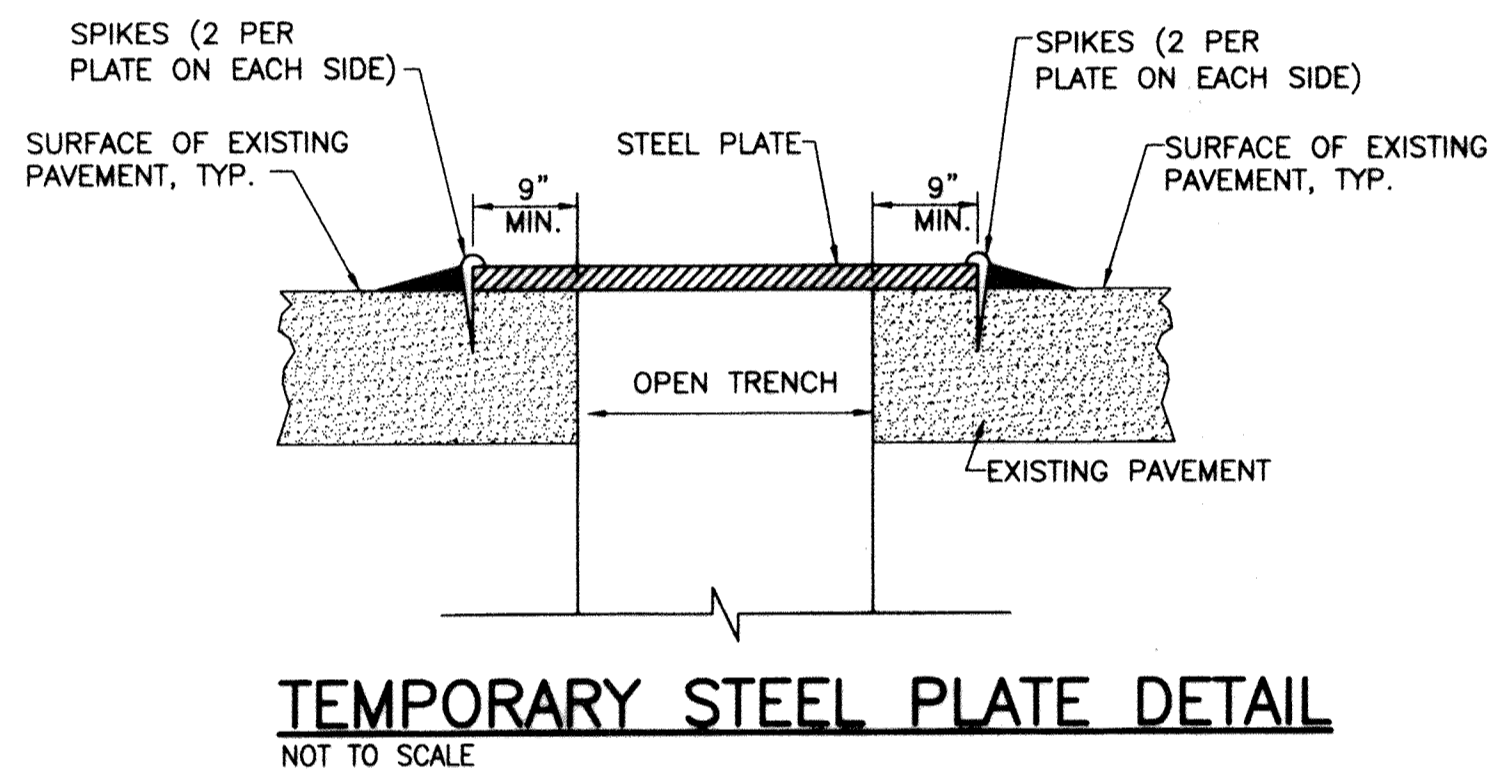
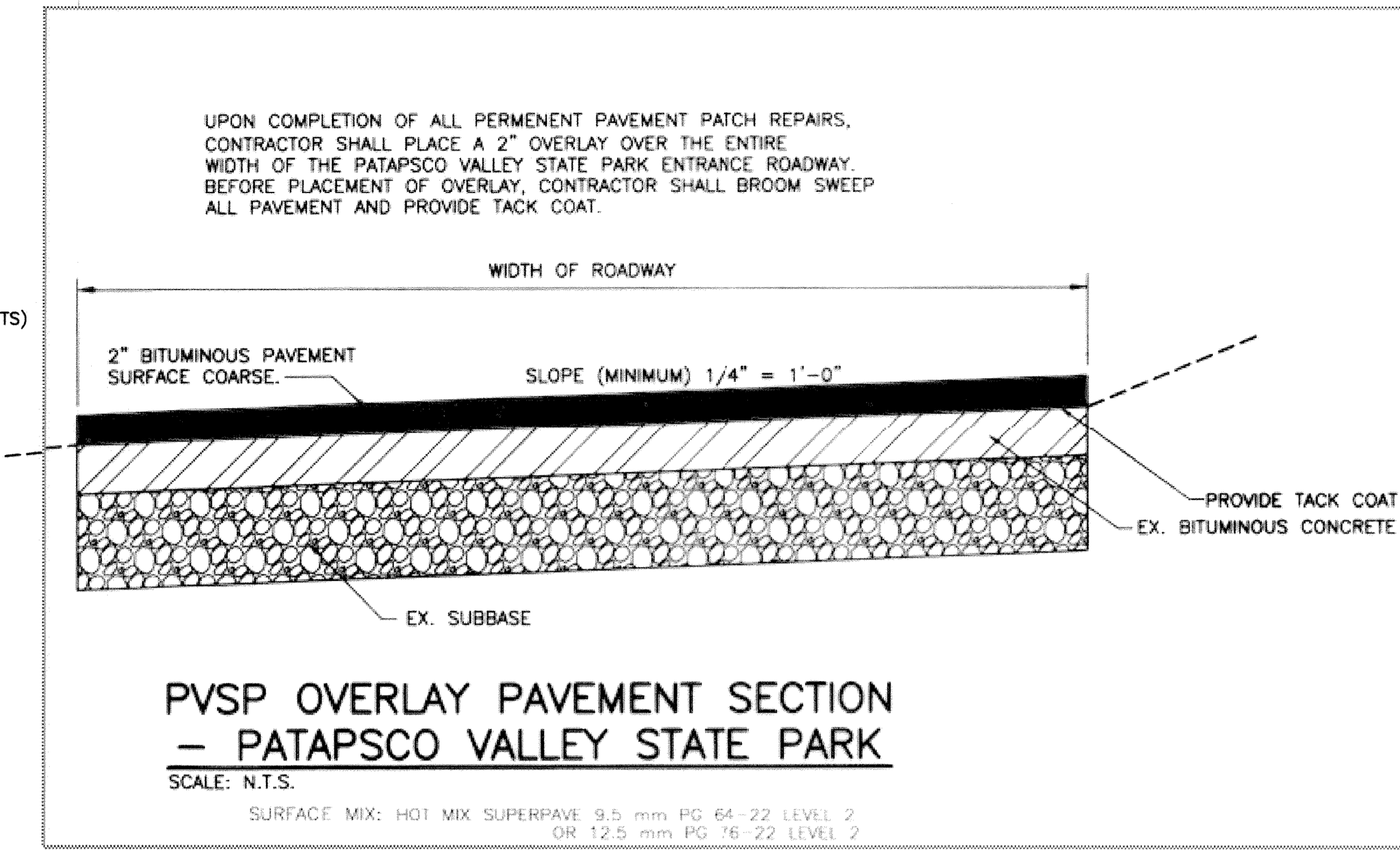
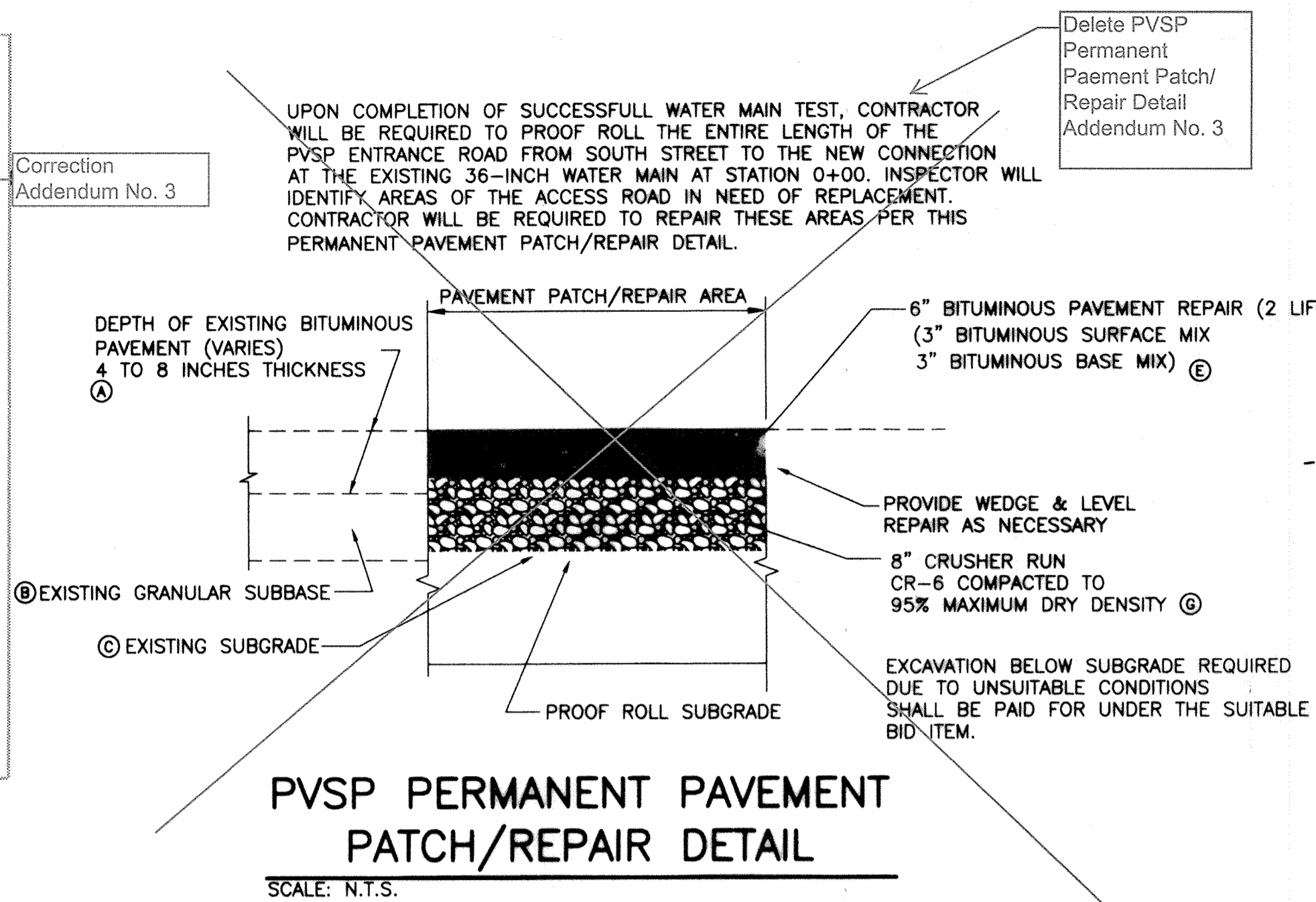
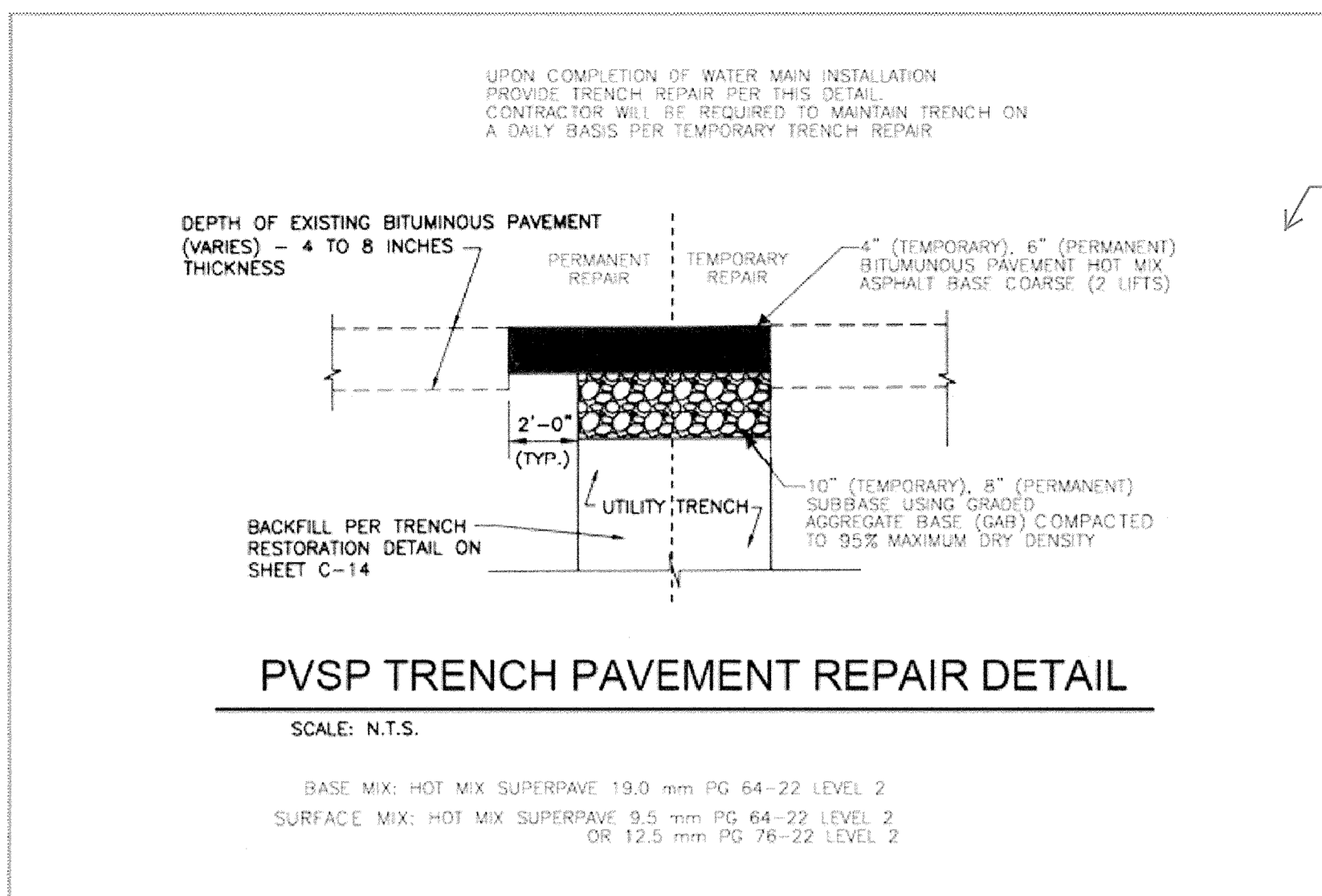
SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8278

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
C-11	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 13 OF 36	DRAWING NO.
	2009-3362
	FILE NO.



**PATAPSCO VALLEY STATE PARK PROPERTY PAVEMENT DETAIL NOTES:**

- Ⓐ EXISTING BITUMINOUS PAVEMENT, APPROXIMATE THICKNESS OF BITUMINOUS PAVEMENT IS 6 INCHES.
- Ⓑ EXISTING GRANULAR BASE COURSE APPROXIMATE THICKNESS OF 5 TO 6 INCHES.
- Ⓒ EXISTING SUBGRADE
- Ⓓ PROVIDE 4" TO 6" BITUMINOUS PAVEMENT, BASE MIX. (2 LIFTS) MATCH NEW PAVEMENT OVERLAY.
- Ⓔ PROVIDE 6" BITUMINOUS PAVEMENT (2 LIFTS), 3" BITUMINOUS SURFACE MIX AND 3" BITUMINOUS BASE MIX.
- Ⓕ 6" CRUSHER RUN CR-6 COMPACTED TO 95% MAXIMUM DRY DENSITY.
- Ⓖ 8" CRUSHER RUN CR-6 COMPACTED TO 95% MAXIMUM DRY DENSITY.
- Ⓗ PROVIDE 2" TO 3" BITUMINOUS SURFACE MIX.

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS			
3/15/12		DATE		3/15/12		DATE	
CHIEF, UTILITY ENGINEERING		CHIEF, WATER ENGINEERING SECTION		DIRECTOR, DEPT. OF PUBLIC WORKS			
3/15/12		DATE		3/15/12		DATE	
SEAL		PROFESSIONAL CERTIFICATION		REVISION		DRAWING SCALE	
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. 37797 EXPIRATION DATE AUGUST 9, 2013		DESIGN BY: BBB		BUREAU OF ENGINEERING AND CONSTRUCTION		DEPARTMENT OF PUBLIC WORKS	
ENGINEER: SYAM B. NAYER		DRAWN BY: JCD		REVIEWED BY: RZF		APPROVED BY: [Signature]	
AS-BUILT PER RECORD PRINT		CHECK BY: SEN		DATE REVIEWED: 1/23/12		DATE: 1-24-12	
DATE: 1-10-2012		DATE: 1/23/12		DATE: 1/23/12		DATE: 1/23/12	

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

SUBDIVISION: ST. DENIS

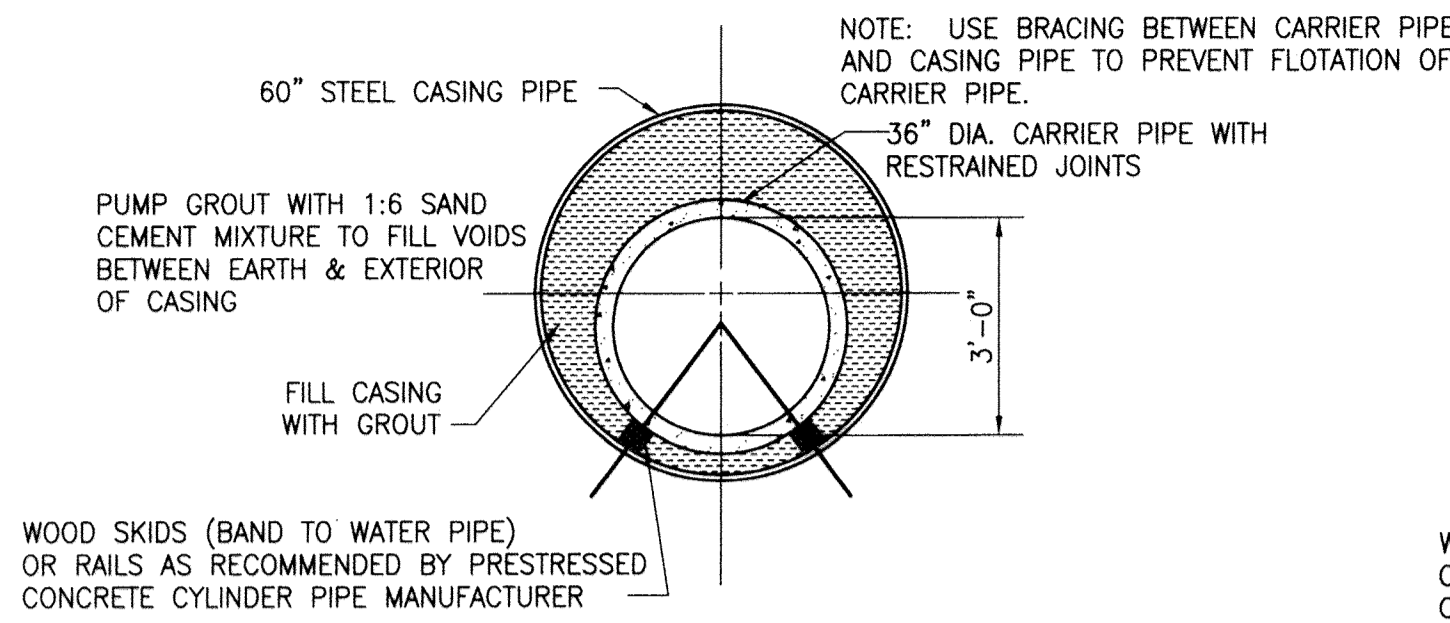
ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

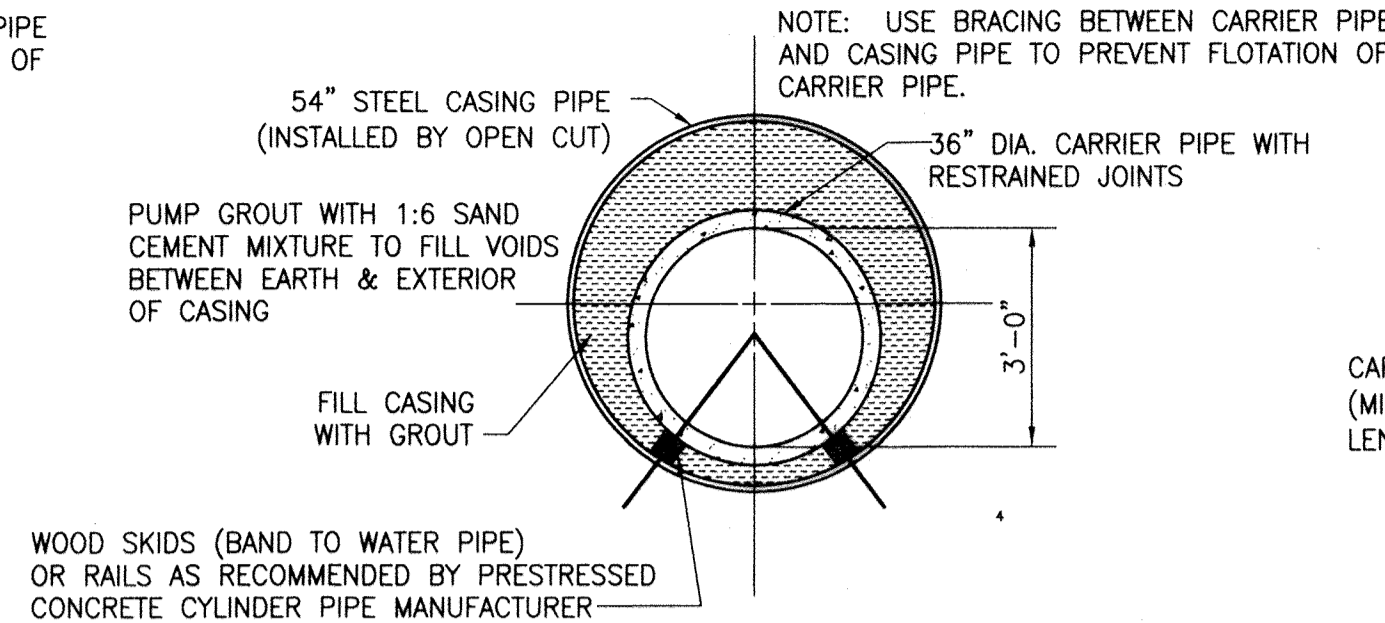
**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 200  
Hunt Valley, Maryland 21081

SHEET DESIGNATION	CONTRACT NO.
C-12	W-8276
JOB ORDER NO.	203-0087-0281
SHEET 14 OF 36	
DRAWING NO.	2009-3363
FILE NO.	

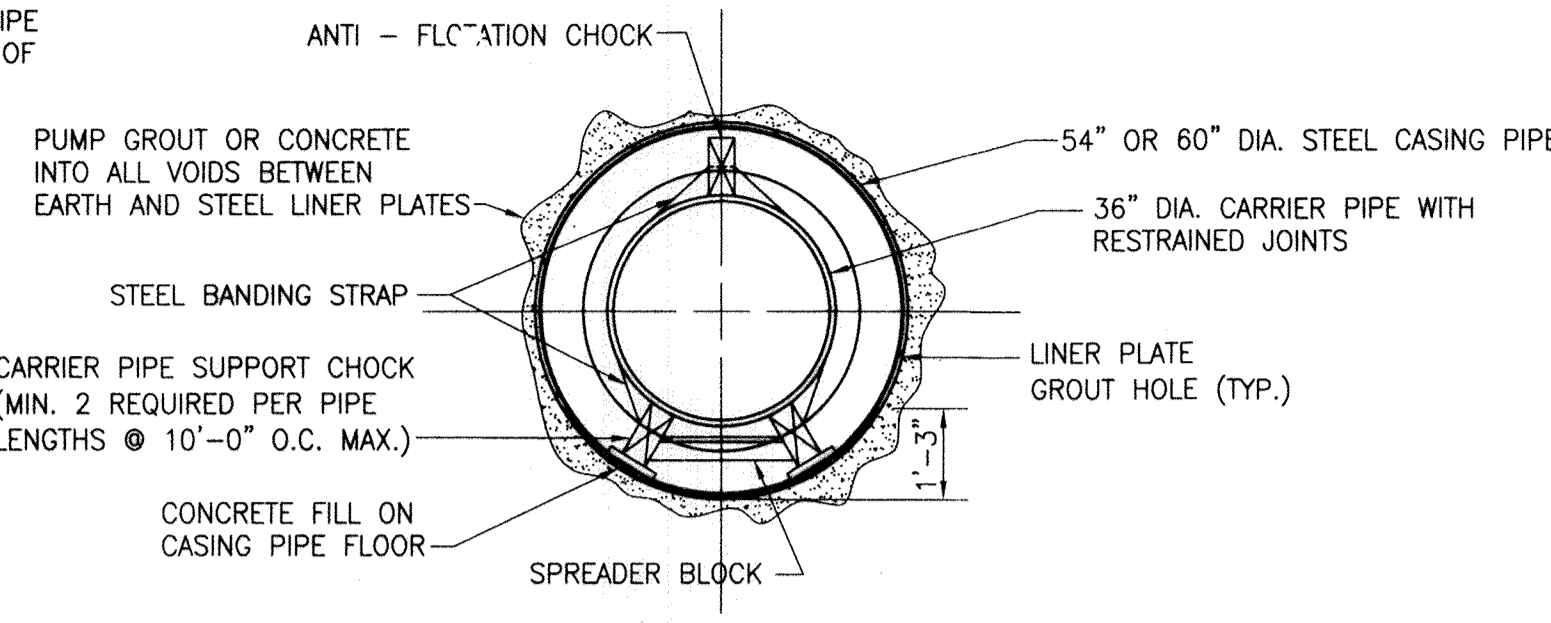




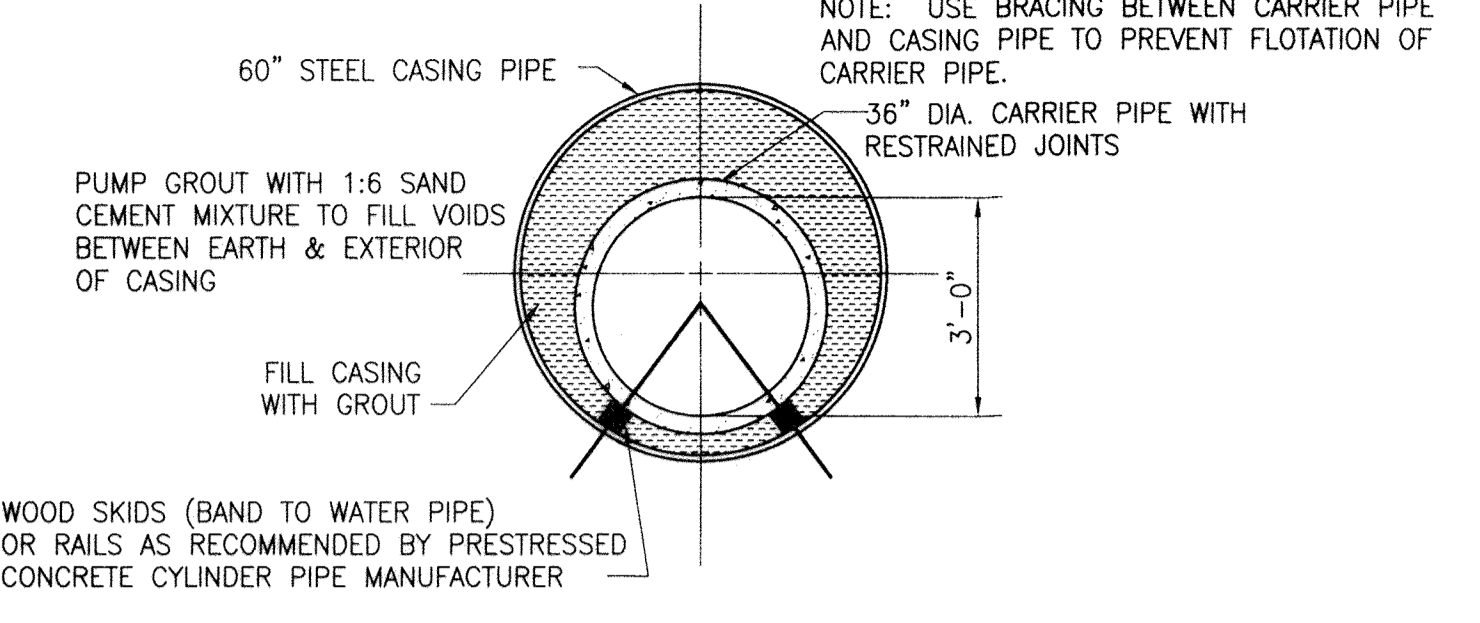
**STATION 137+50 to STATION 139+00  
CSX RAILROAD CROSSING DETAIL**  
SCALE: N.T.S.



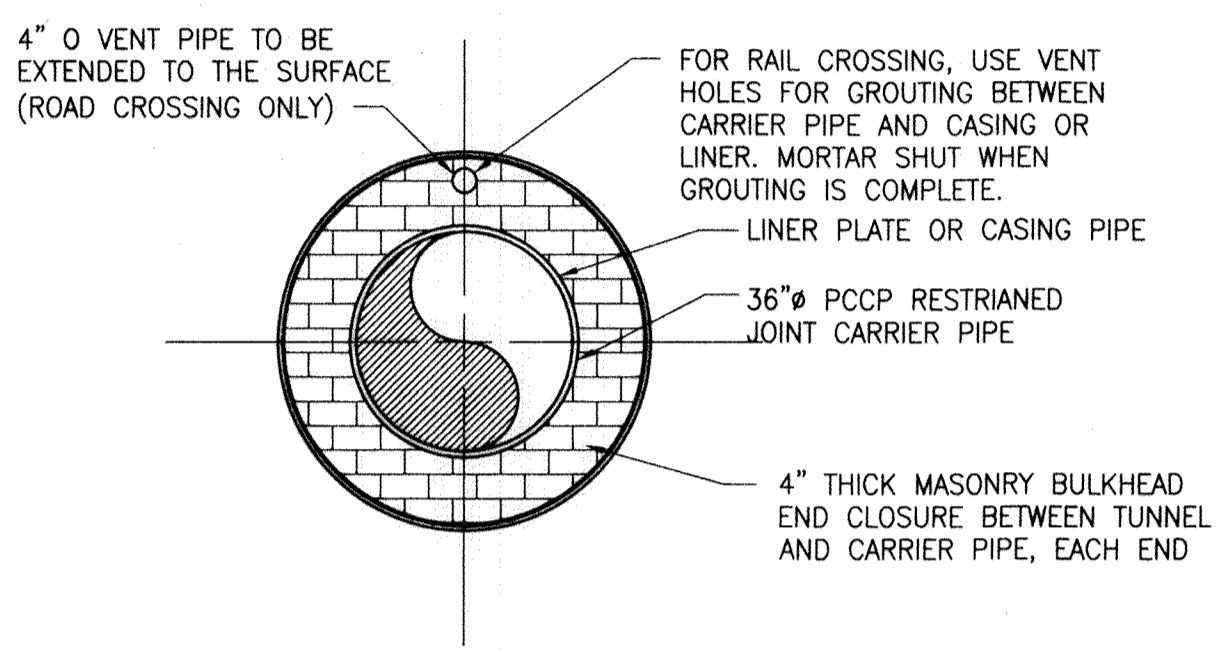
**STATION 2+42 TO STATION 3+12  
CSX BRIDGE CROSSING DETAIL**  
SCALE: N.T.S.



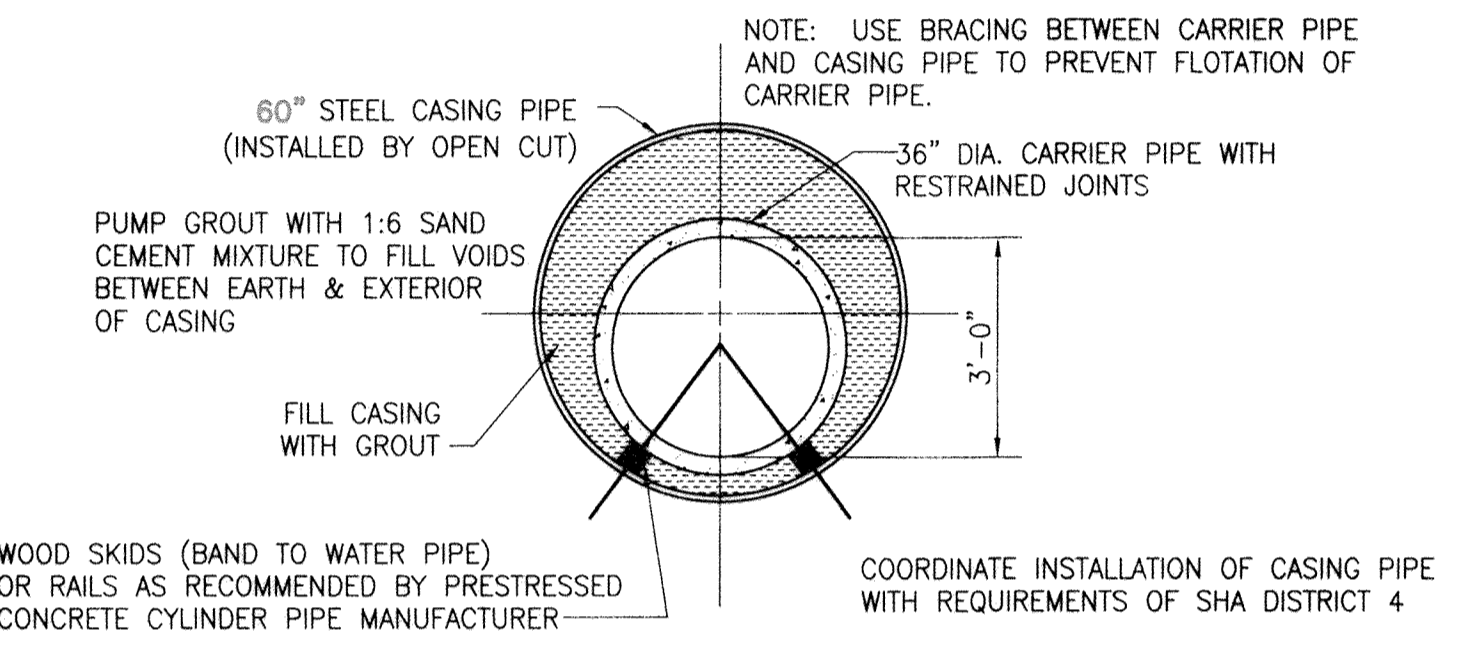
**JACK AND BORE CROSSING DETAIL**  
SCALE: N.T.S.



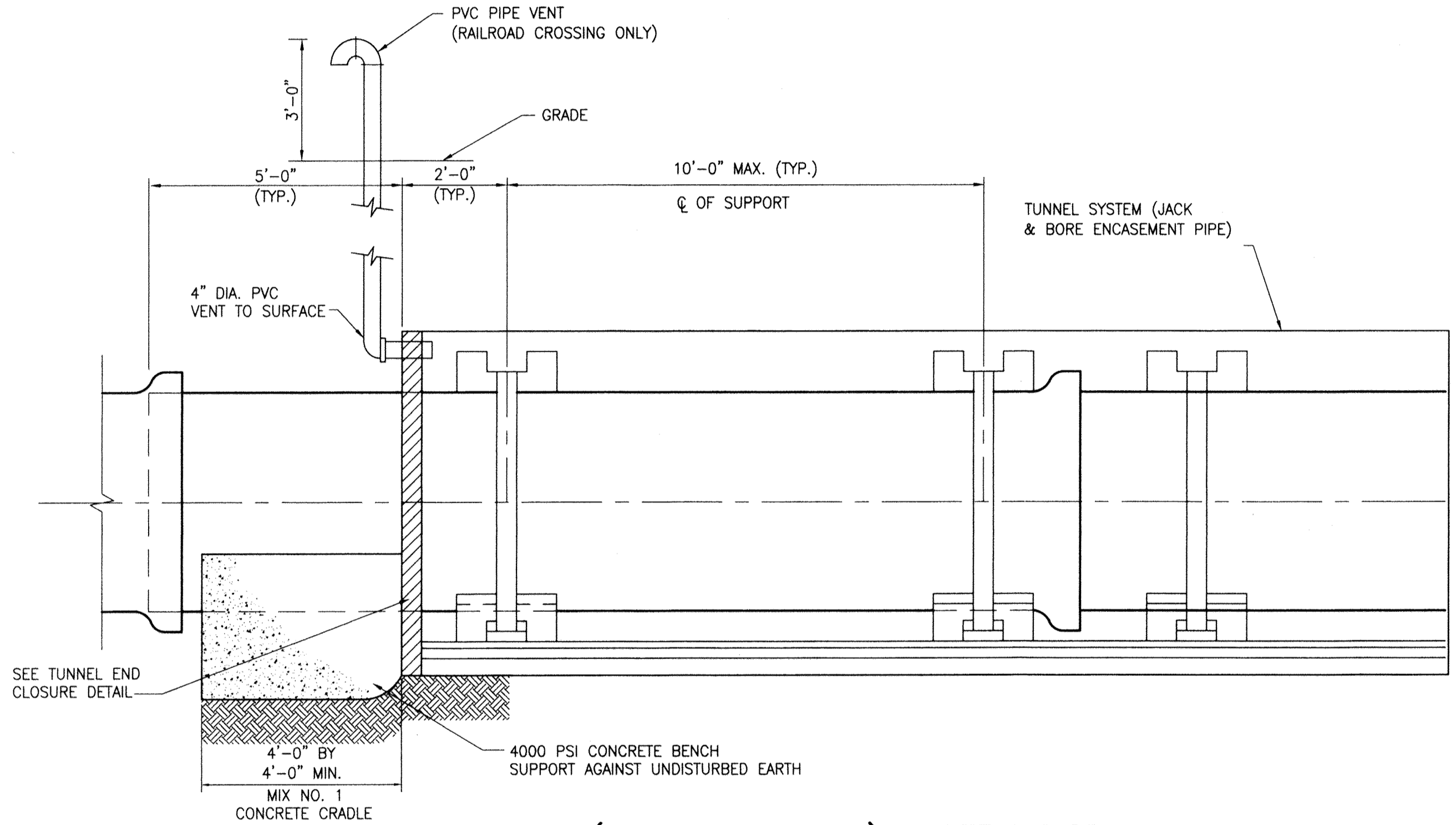
**STATION 32+00 TO STATION 36+00  
STATION 115+60 TO STATION 116+60  
STATION 124+60 TO STATION 127+10  
ROADWAY/DRIVEWAY CROSSING DETAIL**  
SCALE: N.T.S.



**TYPICAL TUNNEL END CLOSURE**  
SCALE: N.T.S.



**STATION 105+79 TO STATION 109+59  
SHA ROUTE 195 CROSSING DETAIL**  
SCALE: N.T.S.



**TUNNEL (JACK AND BORE) SYSTEM DETAIL**  
SCALE: N.T.S.

**JACK AND BORE GENERAL NOTES:**

- JACK AND BORE ENCASEMENT PIPE**
- JACK AND BORE CONSTRUCTION SHALL CONFORM TO SPECIFICATIONS.
  - THE JACK & BORE ENCASEMENT PIPE SHALL BE MADE FROM STEEL (MINIMUM AWWA C206), WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI.
  - JOINTS BETWEEN SECTIONS SHALL ALLOW FOR EASY BUTT-WELDED CONNECTIONS AND SHALL BE FULLY WELDED AROUND THE COMPLETE CIRCUMFERENCE OF THE PIPE.
  - STEEL CASING PIPE (60 INCH) SHALL HAVE A MINIMUM WALL THICKNESS OF 0.844"
  - STEEL CASING PIPE (54 INCH) SHALL HAVE A MINIMUM WALL THICKNESS OF 0.781"
  - STEEL CASING PIPE SHALL BE ROUND WITH SMOOTH EVEN INTERIOR AND EXTERIOR SURFACES.
  - CASING PIPE JOINTS - WELDED.
  - CASING PIPE TYPE OF SEAM - HELICAL.
  - ENCASEMENT PIPE INTERIOR SHALL ONLY BE LINED WITH BITUMASTIC MATERIAL.
  - A PIPE JOINT SHALL BE PROVIDED ON CARRIER PIPE 5'-0" BEYOND EACH END OF TUNNEL.
  - CONTRACTOR SHALL PROVIDE MASONRY BULKHEADS AT BOTH ENDS OF THE TUNNEL.
  - PROVIDE SKIDS OR RAILS, AS SHOWN, TO PREVENT CARRIER PIPE DAMAGE DURING INSTALLATION AND TO PREVENT CARRIER PIPE FLOTATION.
  - SEE PLAN AND PROFILES FOR LENGTH AND LOCATIONS.

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS			
[Signature] CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		[Signature] CHIEF, UTILITY ENGINEERING		[Signature] DIRECTOR, DEPT. OF PUBLIC WORKS		[Signature] DATE: 1/17/12	
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. 37797 EXPIRATION DATE AUGUST 9, 2013.		REVISION NO. DATE P.W.A. NO. KEY SHEET POSITION SHT		DRAWING SCALE PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED		DEPARTMENT OF PUBLIC WORKS APPROVED BY: [Signature] DIRECTOR DATE: 1-24-12	
ENGINEER: SYAM B. NAYER DESIGN BY: BBB AS-BUILT PER RECORD PRINT BY: [Signature] DATE: 1-18-12		BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER REVIEWED BY: RJE DATE REVIEWED: 1/23/12		BUR. OF ENGINEERING & CONSTRUCTION APPROVED BY: [Signature] CHIEF DATE: 1/17/12		AS-BUILT JUNE 2016 BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION SOUTHWEST TRANSMISSION MAIN CSX RAILROAD AND WASHINGTON BLVD. JACK & BORE DETAILS SUBDIVISION: ST. DENIS	

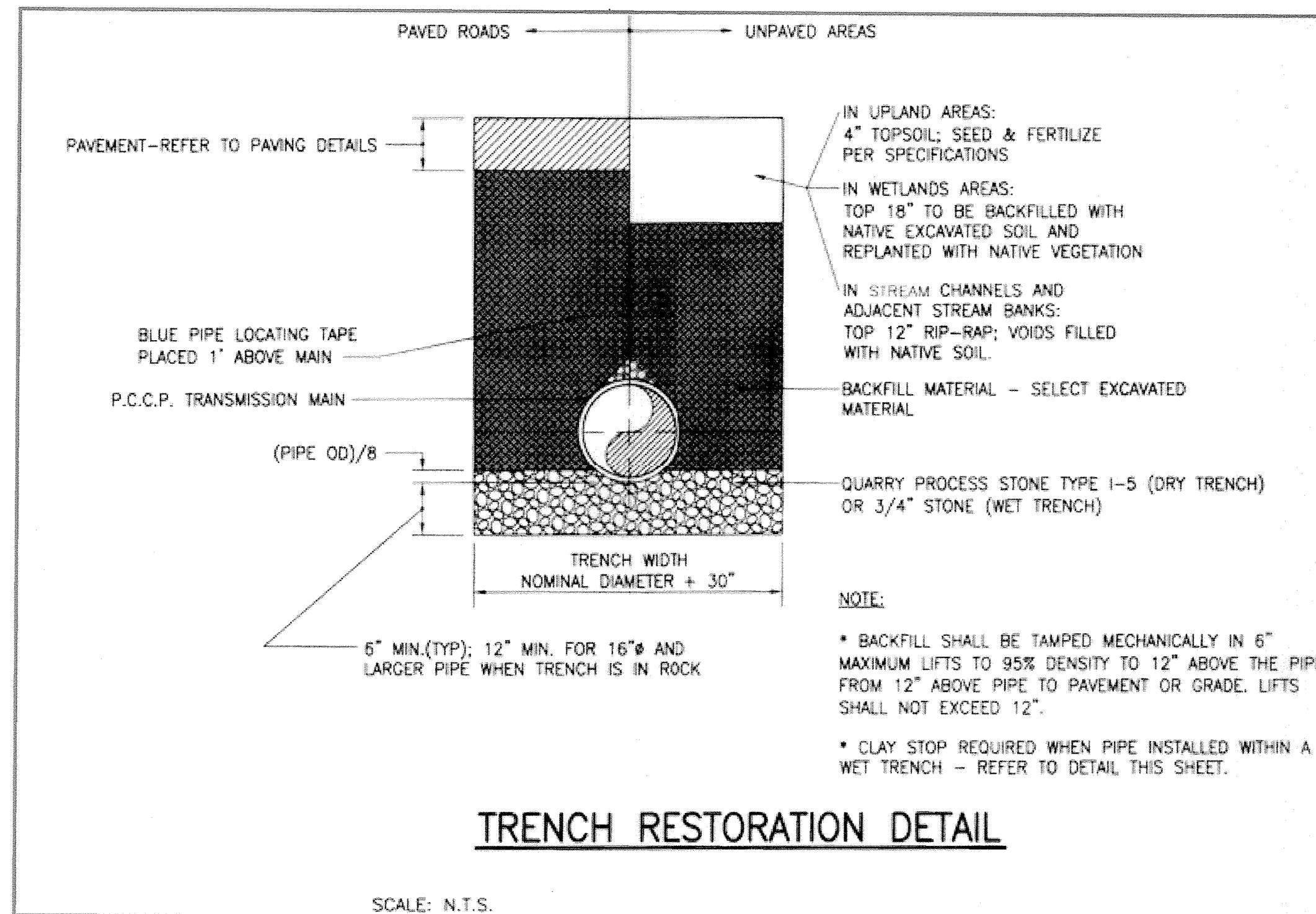
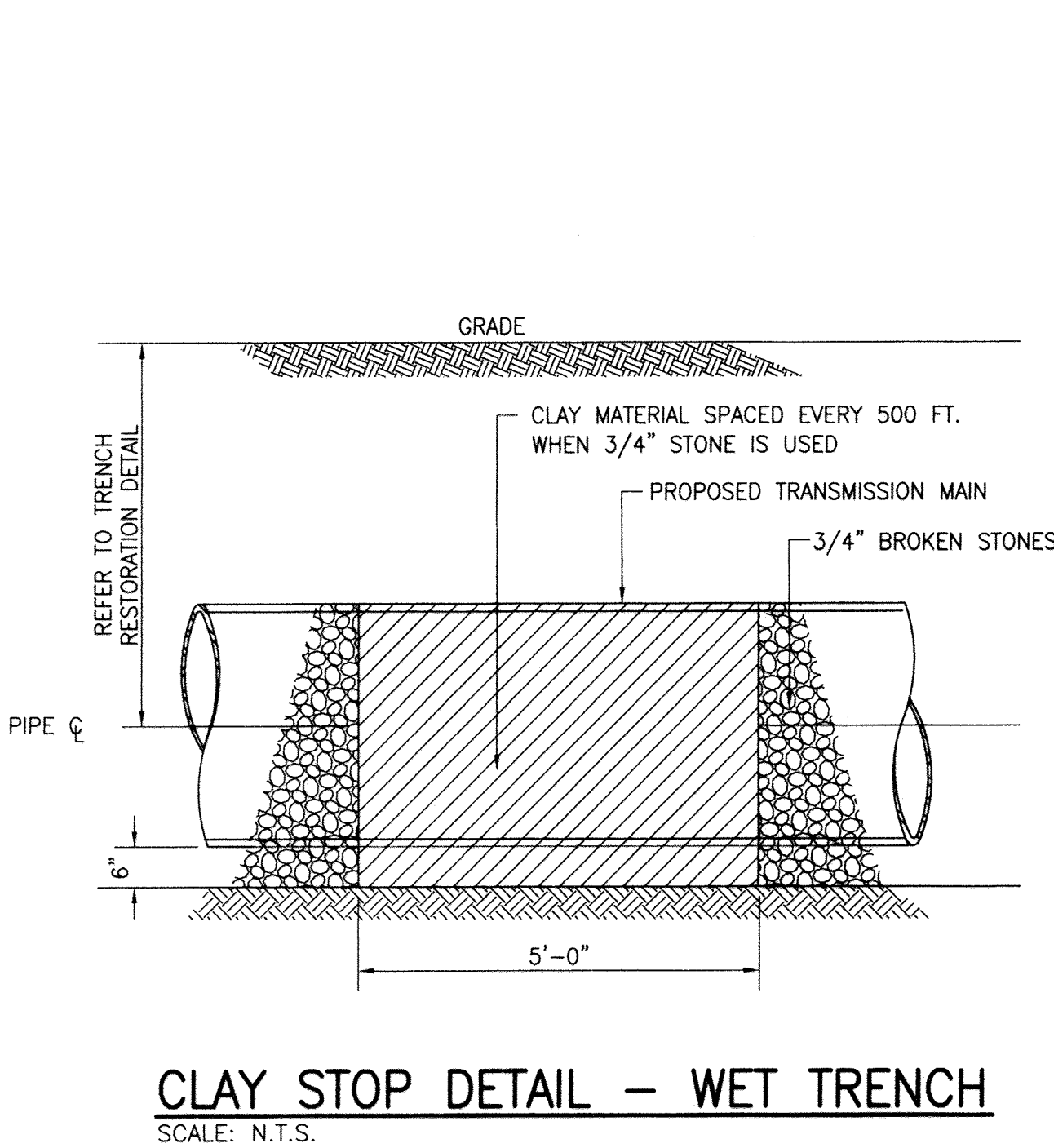
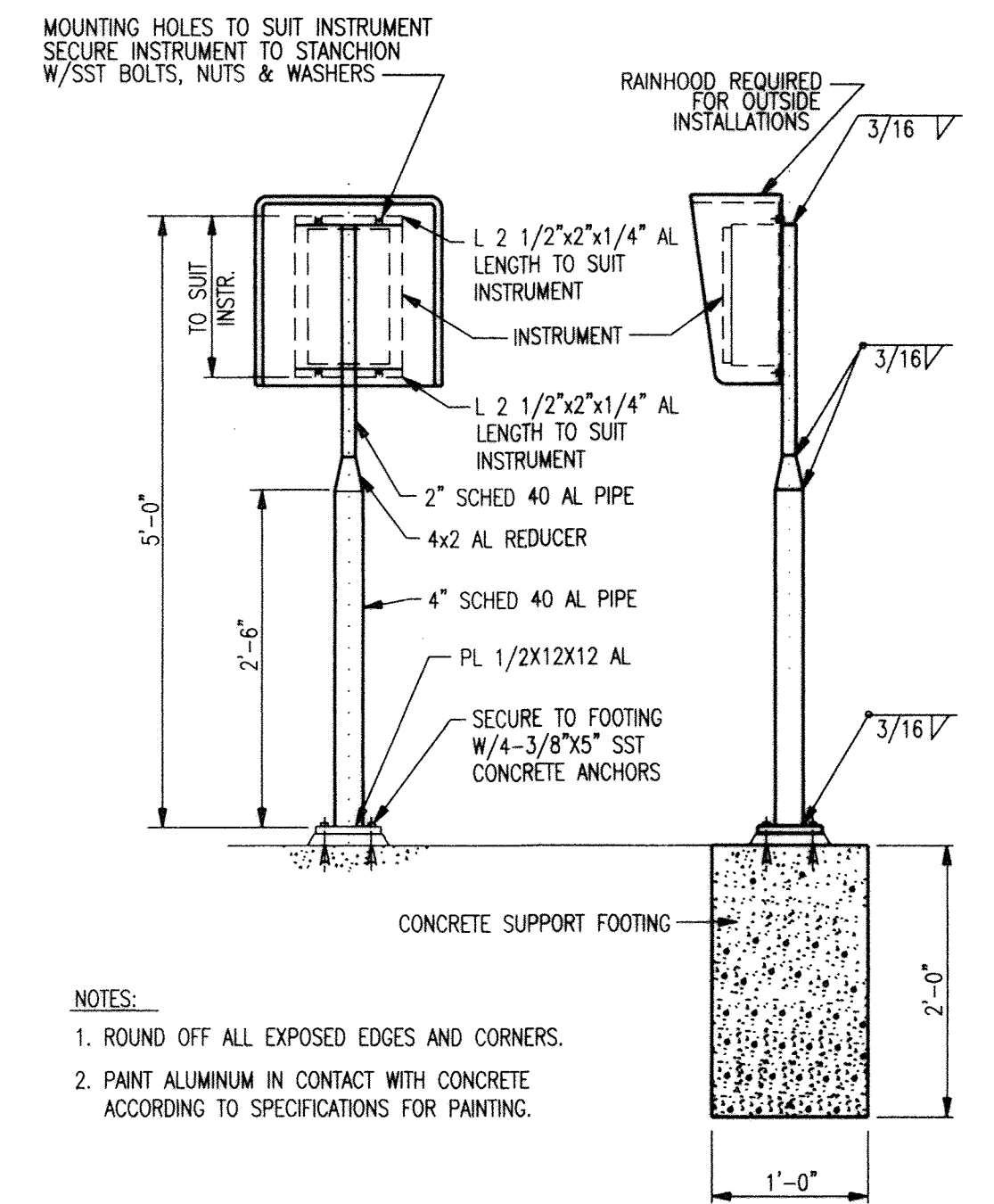
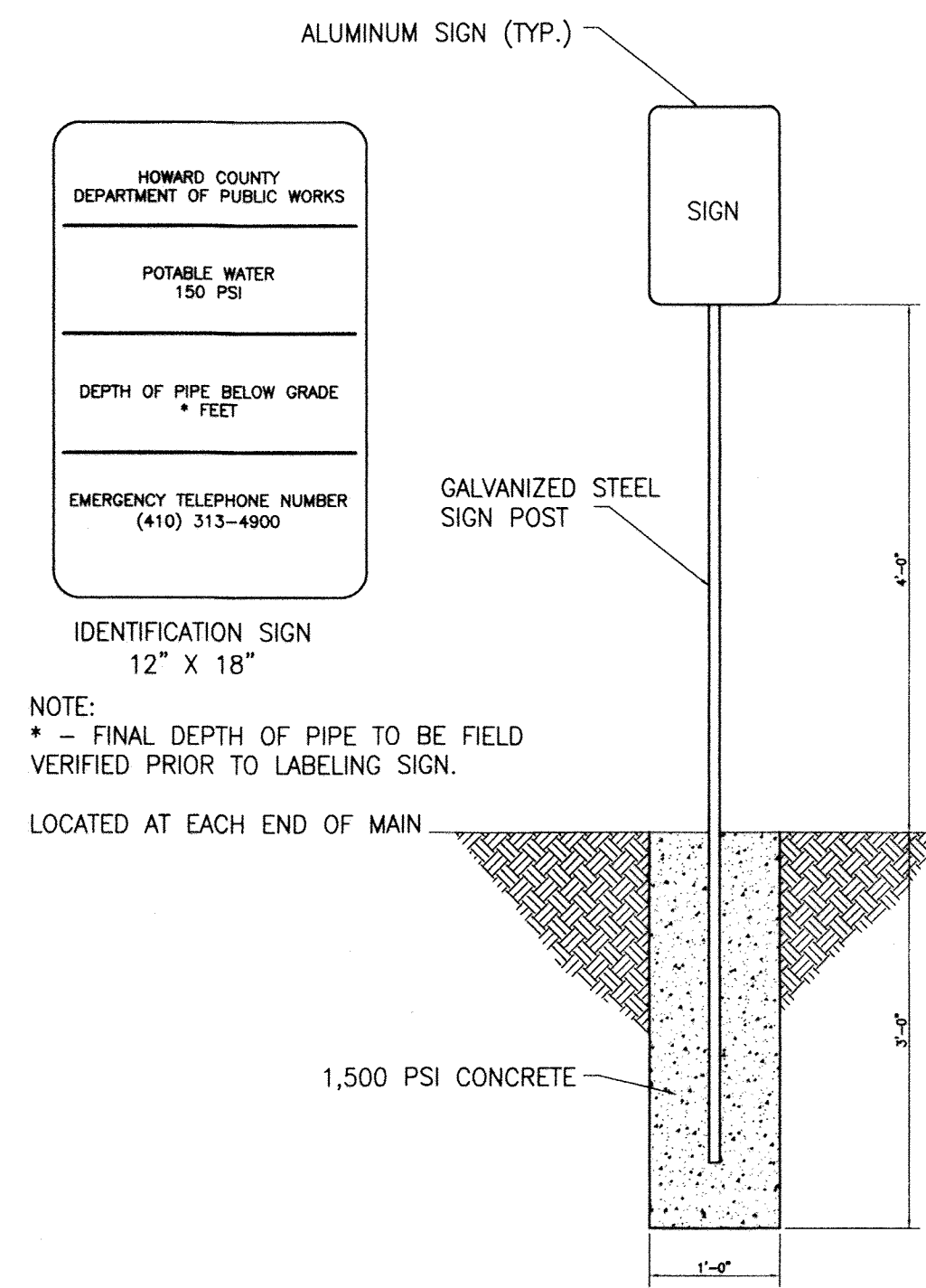
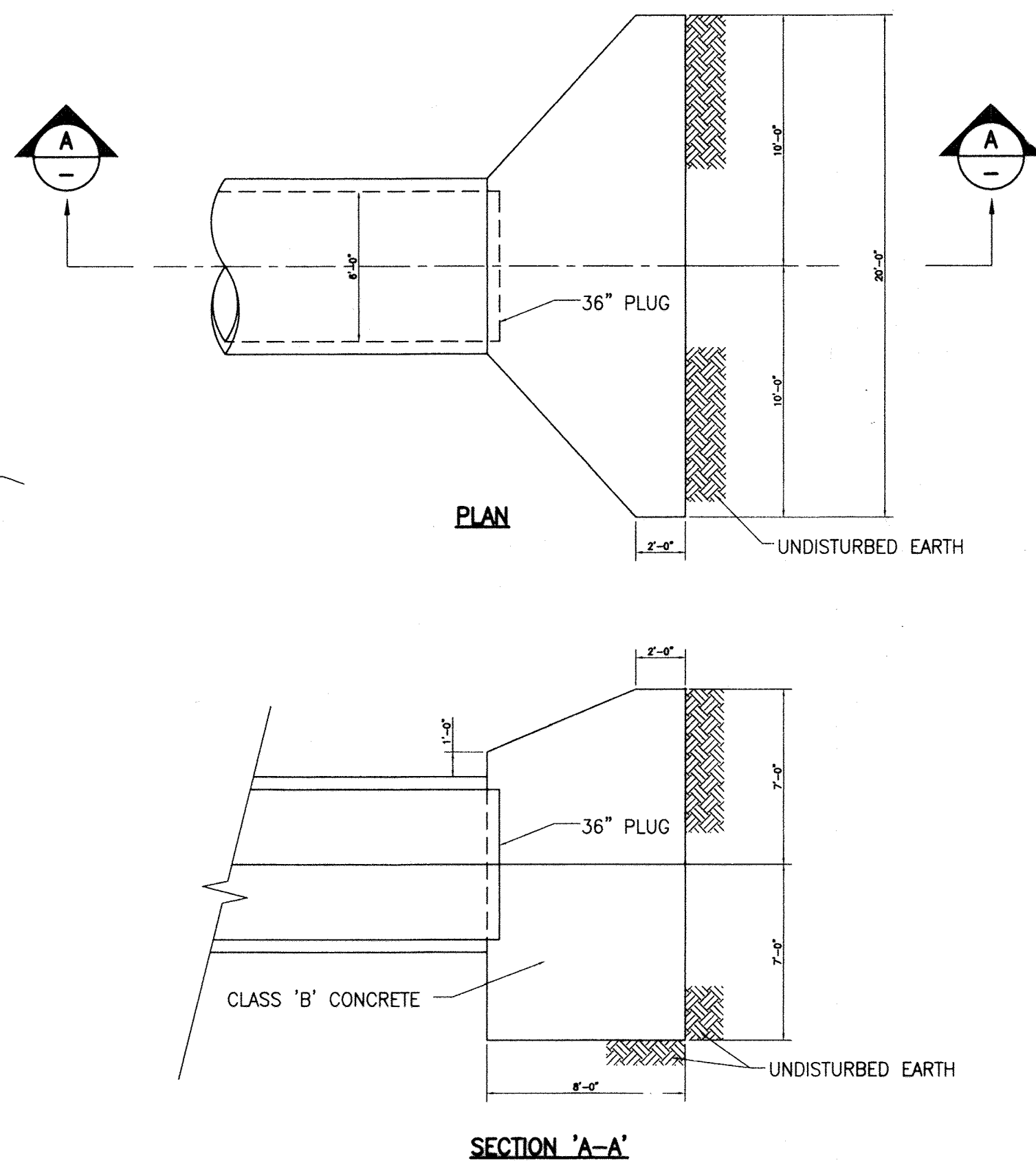
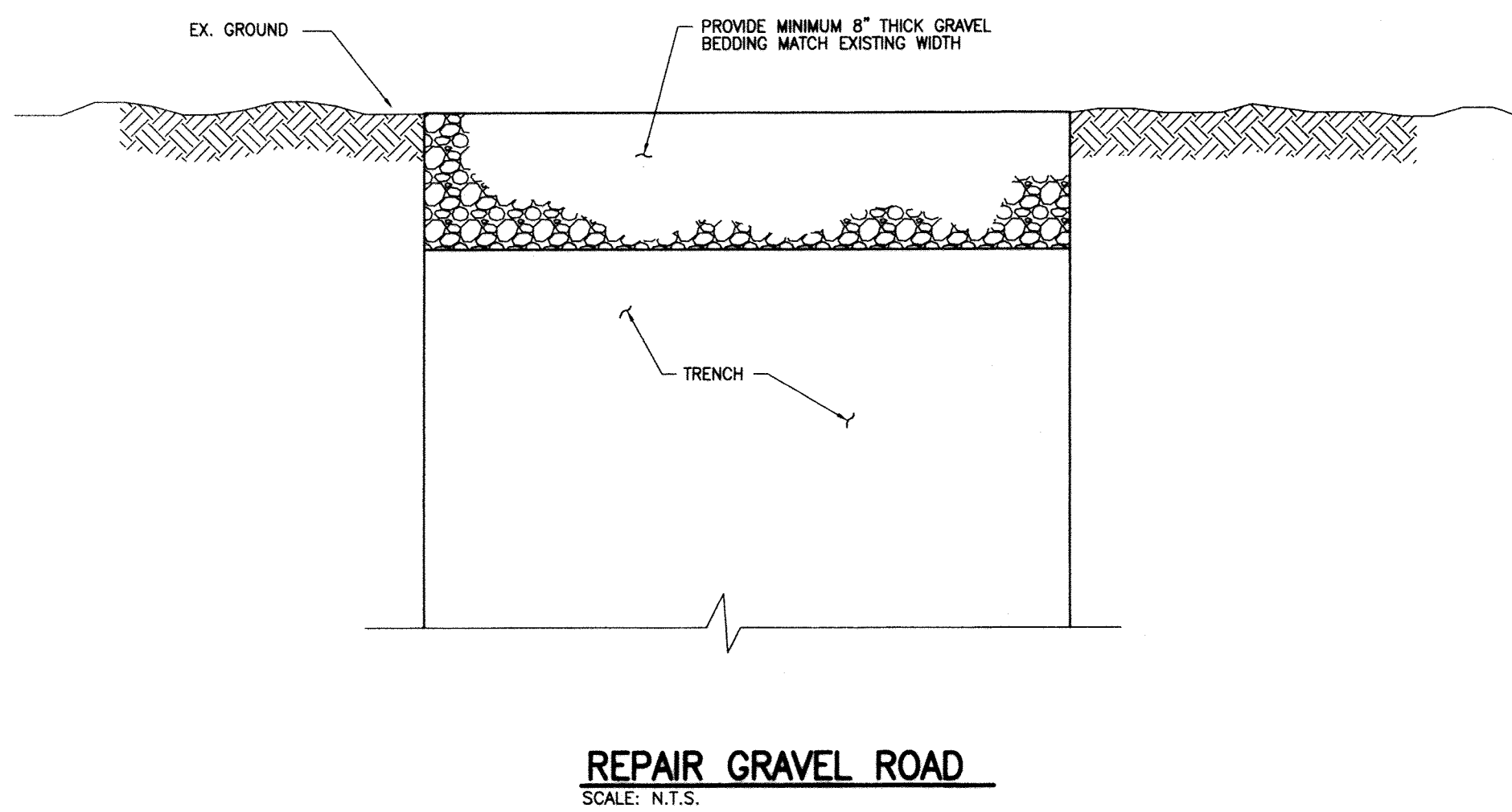
HOWARD CO. PROJECT NO. W-8278

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 280  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
C-13	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 15 OF 36	DRAWING NO.
	2009-3364
	FILE NO.

BALTIMORE COUNTY MARYLAND

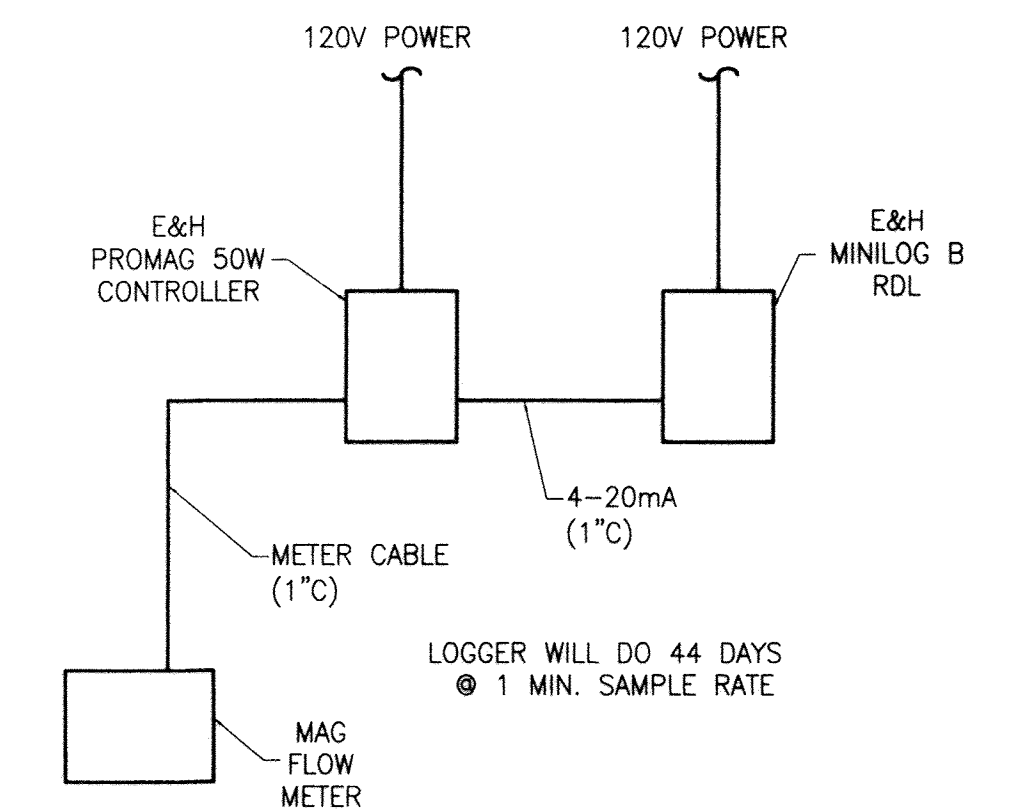
ELECTION DISTRICT: 13



FITTING	MINIMUM LENGTH OF RESTRAINED JOINTS ON EACH SIDE OF FITTINGS (225 PSI TEST PRESSURE)		
	36" P.C.C.P.		
	COVER TO TOP OF PIPE		
	3 1/2'-7'	7'-12'	> 12'
90° BEND, VALVES, CAPS, PLUGS	378'	246'	164'
TEES (BRANCH)	378'	246'	164'
75° BENDS	280'	183'	122'
60° BENDS	189'	123'	82'
45° BENDS	145'	94'	63'
30° BENDS	98'	64'	43'
22 1/2° BENDS	74'	48'	32'
15° BENDS	49'	32'	21'
11 1/4° BENDS	37'	24'	16'
5 5/8° BENDS	19'	12'	8'

**NOTE:**  
CONTRACTOR SHALL USE THE ABOVE SCHEDULE AND THE CONTRACT PLAN AND PROFILE SHEETS TO DETERMINE ACTUAL RESTRAINED LENGTHS REQUIRED. FITTINGS IN CLOSE PROXIMITY TO ONE ANOTHER MAY REQUIRE ADDITIONAL RESTRAINT. FOR EXAMPLE, TWO (2) 22 1/2° LOCATED WITHIN SEVERAL FEET OF EACH OTHER WILL HAVE THE SAME REACTION AS A 45° BEND AND, AS SUCH, WILL REQUIRE THE LENGTHS OF RESTRAINT SHOWN FOR A 45° BEND.

**RESTRAINING LENGTH SCHEDULE**  
SCALE: N.T.S.



CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	CHIEF, UTILITY ENGINEERING	DIRECTOR, DEPT. OF PUBLIC WORKS
DATE: 3/15/12	DATE: 1/23/12	DATE: 1/23/12
ENGINEER: SYAM B. NAYER	DESIGN BY: BBB	BUREAU OF ENGINEERING AND CONSTRUCTION
AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	REVIEWED BY: RJB
BY: DATE:	CHKD BY: SBN	DATE REVIEWED: 1/23/12

PROFESSIONAL CERTIFICATION	REVISION	BY	DATE	P.W.A. NO.	KEY SHEET	POSITION SHY	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
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. 37797 EXPIRATION DATE AUGUST 9, 2013							PLAN SCALE: AS NOTED	APPROVED BY: [Signature] DIRECTOR
							PROFILE SCALE: AS NOTED	DATE: 1-24-12
								APPROVED BY: [Signature] CHIEF

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
MISCELLANEOUS CIVIL DETAILS**

SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
C-14	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 16 OF 36	DRAWING NO.
	2009-3365
	FILE NO.

**CONCRETE: MIX #3**  
CORROGATED METAL PIPE, USE FOR REPAIR, REPLACEMENT ONLY. EXCEPT WITH D.P.W. APPROVAL. ADJACENT METAL PIPE TO BE INSPECTED FOR REPLACEMENT PRIOR TO HEADWALL REPLACEMENT.

**DISPOSITION OF BARS DETAIL**

BAR	SIZE & SHAPE	NO. BARS	ORIENTATION	LOCATION	AS SHOWN
1	#4 STRAIGHT	4	VERTICAL	FRONT FACE	AS SHOWN
2	#4 STRAIGHT	VAR.	VERTICAL	FRONT FACE	2'-0" MAX.
3	#4 STRAIGHT	2	HORIZONTAL	AS SHOWN	AS SHOWN
4	#4 STRAIGHT	VAR.	HORIZONTAL	BOTH SIDES	1'-0" c/c MAX.
5	#4 BENT	VAR.	HORIZONTAL	BOTH SIDES	1'-0" c/c MAX.

OPENING	AREA	QUANTITIES	REINFORCING BARS	APPLICATIONS																			
D	INCHES SQ. FT.	A	B	C	E	F	G	H	L	P	S	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	CONC. STEEL	
12	0.79	9'	6"	6"	1'-9"	1'-9"	1'-9"	6'-6"	1'-5"	4'	0.8	46	•	•	•	•	•	•	•	•	•	•	•
15	1.23	9'	6"	6"	1'-9"	9'-2"	7'-9"	1'-6"	4'	1.0	53	•	•	•	•	•	•	•	•	•	•	•	•
18	1.78	9'	6"	6"	1'-9"	9'-2"	9'-0"	1'-6"	4'	1.2	61	•	•	•	•	•	•	•	•	•	•	•	•
21	2.40	9'	6"	6"	1'-9"	9'-2"	10'-2"	1'-6"	4'	1.5	78	•	•	•	•	•	•	•	•	•	•	•	•
24	3.14	9'	14"	6"	2'-5"	9'-2"	11'-6"	2'-0"	6'	2.0	88	•	•	•	•	•	•	•	•	•	•	•	•
27	3.96	9'	14"	6"	2'-5"	9'-2"	12'-0"	2'-0"	6'	2.3	98	•	•	•	•	•	•	•	•	•	•	•	•
30	4.91	9'	14"	10"	2'-5"	9'-2"	14'-0"	2'-0"	6'	2.7	111	•	•	•	•	•	•	•	•	•	•	•	•
36	7.07	12'	16"	10"	3'-2"	12'-4"	18'-8"	2'-6"	6'	5.1	200	•	•	•	•	•	•	•	•	•	•	•	•
42	9.62	12'	16"	10"	3'-2"	12'-4"	19'-2"	2'-6"	6'	6.2	229	•	•	•	•	•	•	•	•	•	•	•	•
48	12.57	12'	16"	10"	3'-2"	12'-4"	21'-6"	2'-6"	6'	7.7	282	•	•	•	•	•	•	•	•	•	•	•	•
54	15.90	12'	20"	12"	3'-8"	12'-5"	24'-2"	3'-0"	8'	9.4	330	•	•	•	•	•	•	•	•	•	•	•	•
60	19.64	12'	20"	12"	3'-8"	12'-5"	26'-8"	3'-0"	8'	10.8	360	•	•	•	•	•	•	•	•	•	•	•	•
72	28.27	12'	20"	12"	3'-8"	12'-5"	31'-8"	3'-0"	9'	13.8	449	•	•	•	•	•	•	•	•	•	•	•	•

DEPARTMENT OF PUBLIC WORKS  
STORM DRAINAGE DETAILS  
**TYPE C ENDWALL ROUND PIPE**  
ISSUED: JANUARY, 1991  
REVISION: FEBRUARY, 2006  
REVISION: FEBRUARY, 2008  
PLATE: **D-1.06**

**NOTES:**

- FIRE HYDRANT SHALL NOT BE INSTALLED WITHIN SIDEWALK LESS THAN 5' WIDE WITHOUT PRIOR WRITTEN APPROVAL FROM THE BUREAU OF ENGINEERING & CONSTRUCTION.
- BOTTOM SLAB (SECTIONAL VAULTS): 6" THICK, 3,500 PSI CONCRETE SLAB. #4 BARS @ 12" C/C E.W. AT CENTERLINE OF SLAB. (PRECAST MANHOLE): SEE STD. DETAIL PLATES S-4 & S-5 AS APPLICABLE.
- BALTIMORE STD. FIRE HYDRANT HAS A VARIABLE BURY DEPTH. ANY VERTICAL ADJUSTMENT SHALL BE MADE USING BALTIMORE STD. FIRE HYDRANT EXTENSION PIECES.
- 1/2" STIMULANOUS ISOLATION JOINT, SET EQUIDISTANT FROM RISER, ALL SIDES.
- RESTRAINT IS FOR ALL PIPE, INCLUDING HYDRANT.
- VALVE ON FIRE HYDRANT LEAD SHALL BE TIED TO MAIN LINE TEE ON OUTLET WITH TWO 3/4" THREADED STEEL RODS AND NUTS OR USE RESTRAINED TEE.

DEPARTMENT OF PUBLIC WORKS  
STANDARD WATER DETAILS  
**STANDARD INSTALLATION OF FIRE HYDRANTS**  
ISSUED: JANUARY, 1979  
REVISION: DECEMBER, 1979  
REVISION: JUNE, 2006  
PLATE: **W-3A**

**NOTES:**

- ALL CONCRETE TO BE MIX #1.
- BUTTRESS DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. BASED UPON SOIL BEARING PRESSURE OF 3,000 P.S.F. STATIC WATER PRESSURE OF 150 P.S.F. AND EXISTING PIPE SIZES. WHERE PRESSURE EXCEEDS 150 P.S.F. OR SOIL BEARING PRESSURE IS LESS THAN 3,000 P.S.F., SPECIAL BUTTRESS DESIGN IS REQUIRED. ON ALTERNATE RESTRAINT METHODS SHALL BE USED.

DEPARTMENT OF PUBLIC WORKS  
STANDARD WATER DETAILS  
**BUTTRESSES FOR CAPS AND HORIZONTAL BENDS**  
ISSUED: AUGUST, 1991  
REVISION: MARCH, 2000  
REVISION: JUNE, 2006  
PLATE: **W-5**

**TYPE A CURB:**  
AREA = 0.12 S.Y.  
25.1 LF./C.Y.

**TYPE A-1 BARRIER:**  
AREA = 0.21 S.Y.  
15.0 LF./C.Y.

**NOTES:**

- CURB & GUTTER TO BE USED WHERE STORM WATER WILL COLLECT AT FACE OF CURB EXCEPT AS DIRECTED BY PLANS.
- MIX #2 OR MIX #6 CONCRETE AS DIRECTED ON PLANS.
- SPECIAL DESIGN AS RETAINING WALL WHERE THIS DIMENSION EXCEEDS 18 INCHES. THIS BARRIER IS FOR USE ONLY IN OFF-STREET AREAS WHERE VEHICLE SPEEDS ARE MINIMAL.
- MESH TYPE A CURB (M6202) TO BE USED WITH MESH RIGHT OF WAY.
- WHERE GRADING IS TOWARD WALL, PROVIDE UNDERDRAINAGE & STONE BENCHL. ALONG WALL FOR DETAIL D-100 WITH OUTSIDE FACE OF WALL TO BE 1/4" MIN. FROM FACE OF WALL. TENSAX TENDRUM OR EQUIVALENT MAY BE USED IN THIS APPLICATION.

DEPARTMENT OF PUBLIC WORKS  
ROAD & STREET DETAILS  
**CONCRETE CURB**  
ISSUED: JANUARY, 1991  
REVISION: MARCH, 2000  
REVISION: JUNE, 2006  
PLATE: **R-24**

**STANDARD 7" COMBINATION CURB & GUTTER:**  
AREA = 0.20 S.Y.  
15.0 LF./C.Y.

**REVERSED 7" COMBINATION CURB & GUTTER:**  
AREA = 0.21 S.Y.  
15.0 LF./C.Y.

**MOUNTABLE CURB & GUTTER (MC&G):**  
AREA = 0.19 S.Y.  
16.0 LF./C.Y.

**NOTES:**

- TRANSITION MC&G TO STANDARD 7" COMBINATION CURB & GUTTER OR TO STANDARD COMBINATION MOUNTABLE CURB PIECE THROUGH 4 LINEAR FEET. WARY INLET HEADPIPE TOP ELEVATION AS REQUIRED TO MAINTAIN FLOW LINE.
- MIX #2 CONCRETE WITH 20% OR LESS GRINDING IRON BLAST FURNACE SLAG UNLESS OTHERWISE SPECIFIED ON PLANS.
- THIS DETAIL INCORPORATES 108MM DETAILS R-21 AND R-21A.
- MC&G SHALL NOT BE USED WHERE SIDEWALK IS TO BE PLACED ADJACENT TO CURB.

DEPARTMENT OF PUBLIC WORKS  
ROAD & STREET DETAILS  
**CONCRETE COMBINATION CURB AND GUTTER**  
ISSUED: OCTOBER, 1977  
REVISION: MAY, 1991  
REVISION: JUNE, 2006  
PLATE: **R-21**

**NOTES:**

- SEE BALTIMORE CO. STD. DETAIL PLATE G-4 FOR MANHOLE SHEEP SPECIFICATIONS, PLACEMENT AND SPACING. LOCATE STEPS AS SHOWN (PRECAST SHALLOW MANHOLE ONLY).
- MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS INDICATED ON STD. DETAIL PLATES S-4, S-5, S-10 AND S-15 (PRECAST SHALLOW MANHOLE ONLY).
- IF PRECAST "TOODERST" MANHOLE RISER IS USED, PROVIDE AND MAINTAIN A 2" GAP BETWEEN PIPE AND RISER. SEE STD. DETAIL PLATE S-15 FOR DOORHOUSE RISER REQUIREMENTS.
- BOTTOM SLAB - SECTIONAL VAULTS - 6" THICK 3500 PSI CONCRETE SLAB. #4 BARS @ 12" C/C E.W. AT 6" SP. SLAB. PRECAST MANHOLE - SEE STD. DETAIL PLATES S-4, S-5 AS APPLICABLE.
- SECTIONAL VAULT - 12" MINIMUM, 18" MAXIMUM. PRECAST MANHOLE - SEE STD. DETAIL PLATE S-4.
- TAPPING VALVE FUNCTIONING AS A SERVICE VALVE TO A LARGE WATER (3" OR GREATER) PIPE BETWEEN TAPPING VALVE & METER SHALL BE OK ONLY.

DEPARTMENT OF PUBLIC WORKS  
STANDARD WATER DETAILS  
**TAPPING SLEEVE & VALVE**  
ISSUED: AUGUST, 1991  
REVISION: MARCH, 2000  
REVISION: JUNE, 2006  
PLATE: **W-9**

**NOTES:**

- ALL CONCRETE TO BE MIX #1. (2,500 P.S.F.)
- BUTTRESS DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. BASED UPON SOIL BEARING PRESSURE OF 3,000 P.S.F. STATIC WATER PRESSURE OF 150 P.S.F. AND EXISTING PIPE SIZES. WHERE PRESSURE EXCEEDS 150 P.S.F. OR SOIL BEARING PRESSURE IS LESS THAN 3,000 P.S.F., SPECIAL BUTTRESS DESIGN IS REQUIRED.

DEPARTMENT OF PUBLIC WORKS  
STANDARD WATER DETAILS  
**BUTTRESS FOR TEES**  
ISSUED: AUGUST, 1991  
REVISION: MARCH, 2000  
REVISION: JUNE, 2006  
PLATE: **W-4**

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	CHIEF, UTILITY ENGINEERING	DIRECTOR, DEPT. OF PUBLIC WORKS
DATE: 3/15/14	DATE: 1/20/12	DATE: 1/20/12
PROFESSIONAL CERTIFICATION	REVISION	BY DATE P.W.A. NO. KEY SHEET POSITION SHT
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. 37797 EXPIRATION DATE AUGUST 9, 2013		R.O.W. NO.
ENGINEER: SYAM B. NAYER	DESIGN BY: BBB	BUREAU OF ENGINEERING AND CONSTRUCTION
AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	REVIEWED BY: RBF
BY: DATE:	CHKD BY: SBN	DATE REVIEWED: 1/23/12
		1/23/12 1/20/12 1/20/12 1/20/12 1/20/12
		REVISION: 1/23/12

**AS-BUILT JUNE 2016**

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SUBDIVISION: ST. DENIS**

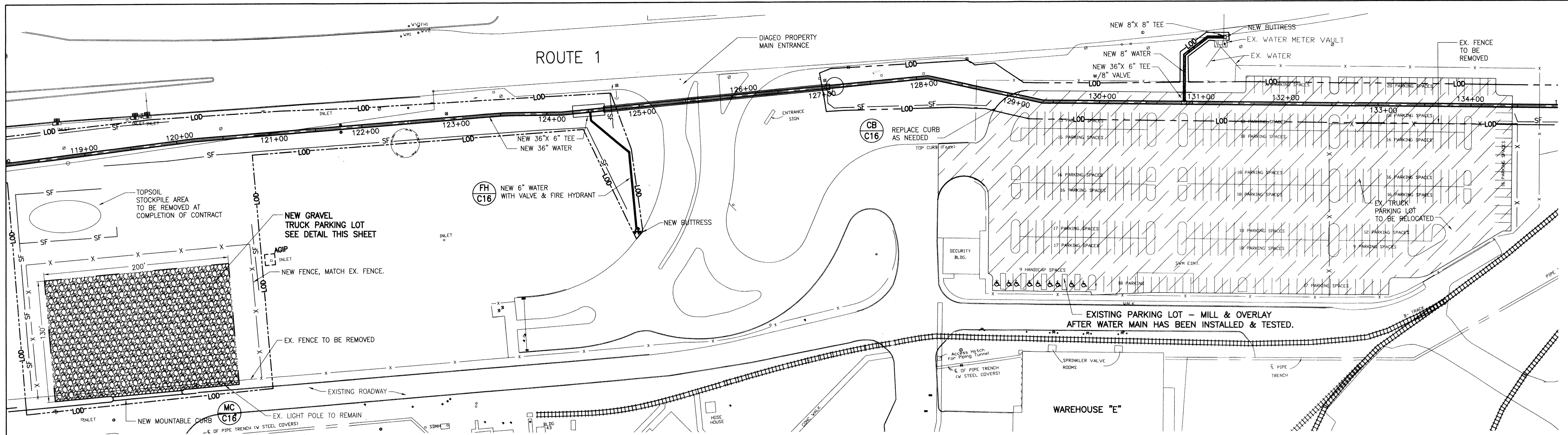
**SOUTHWEST TRANSMISSION MAIN MISCELLANEOUS CIVIL DETAILS**

ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

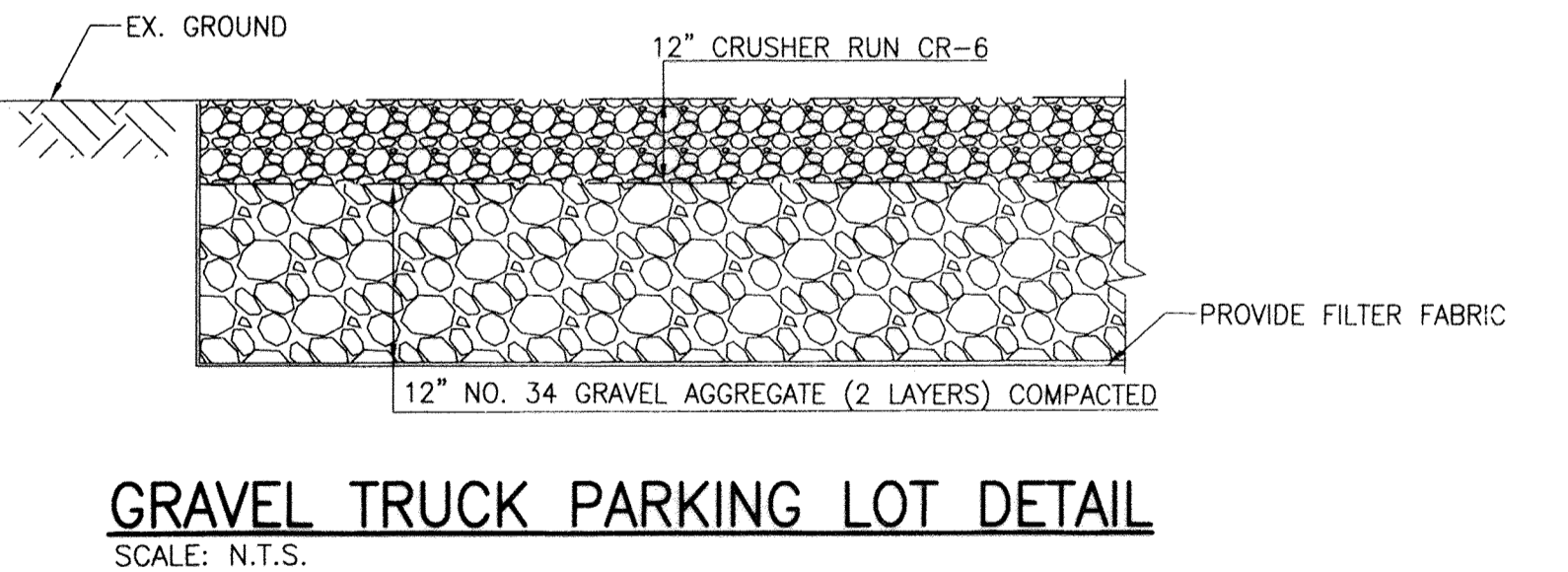
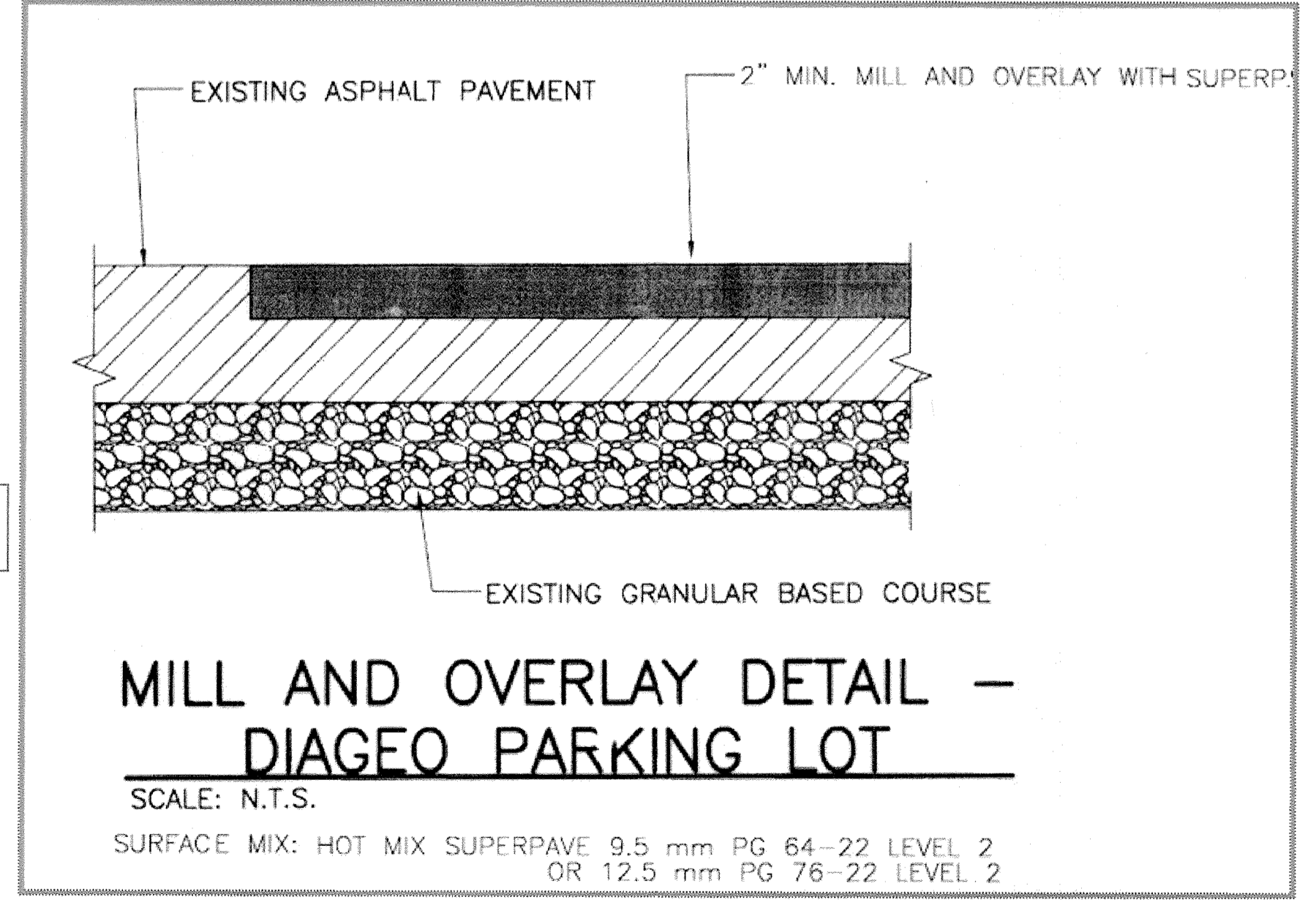
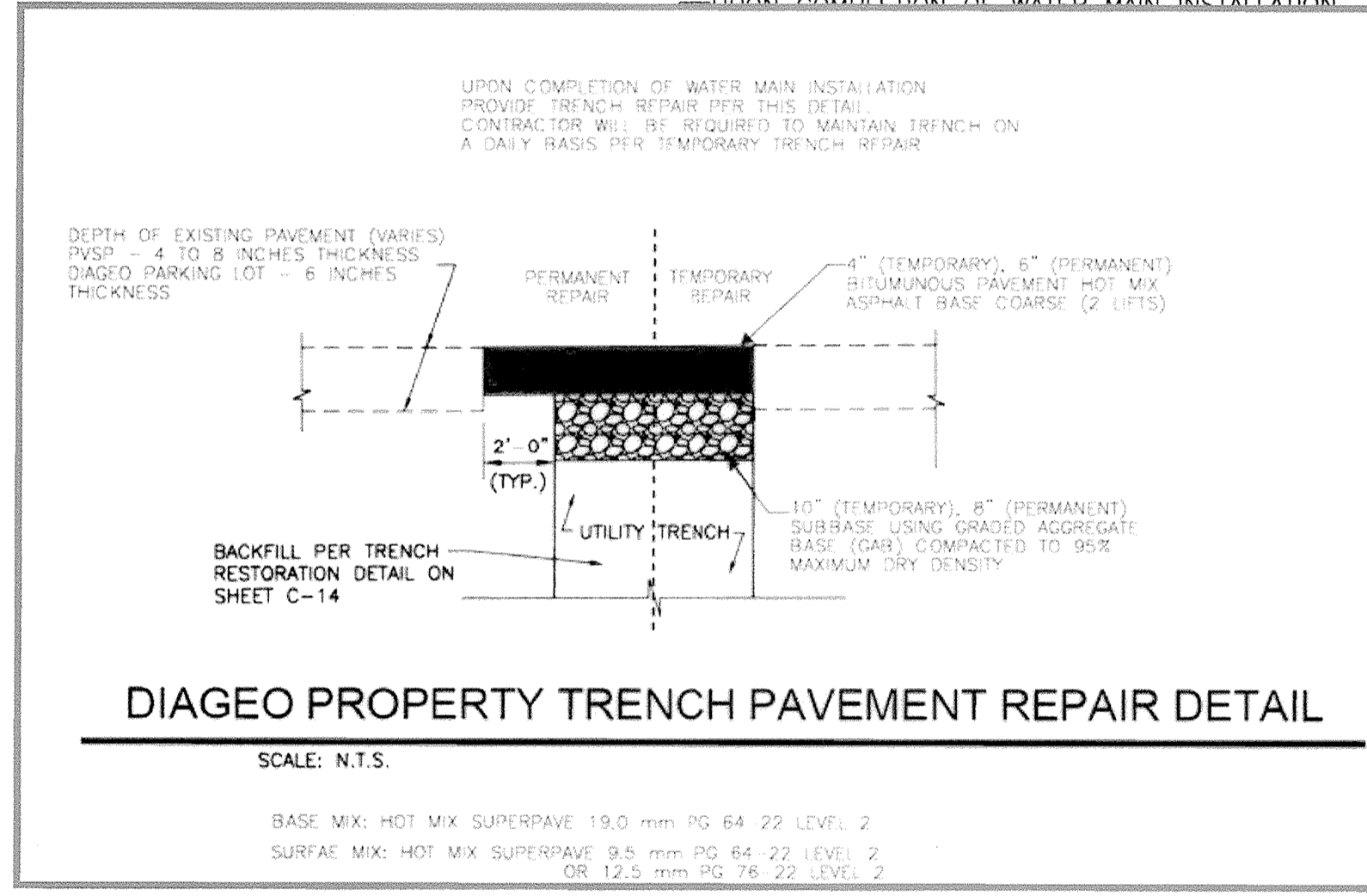
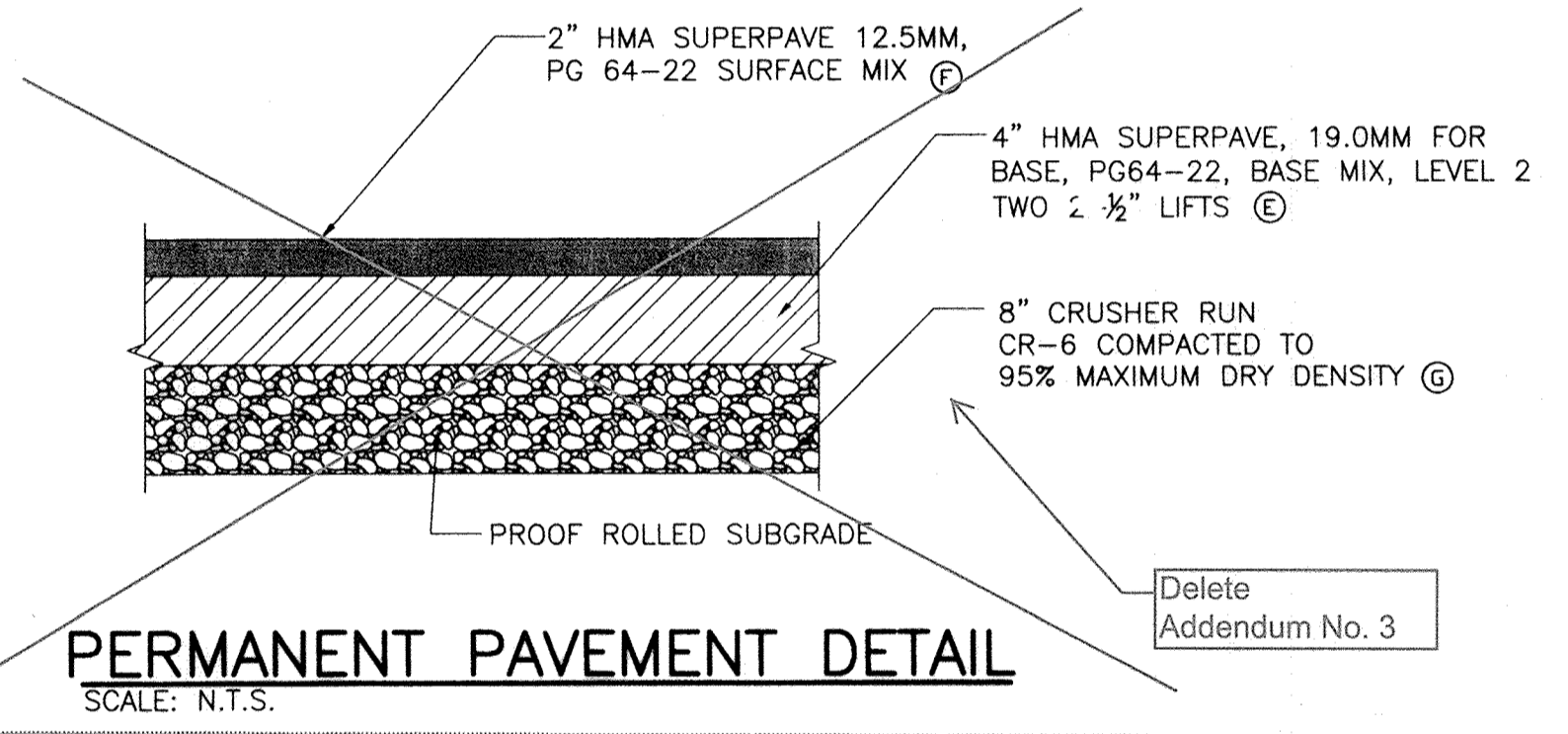
**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
<b>C-15</b>	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 17 OF 36	DRAWING NO.
	<b>2009-3366</b>
FILE NO.	



**DIAGEO PROPERTY SEQUENCE OF CONSTRUCTION**

1. CONTRACTOR MUST CONTACT DIAGEO PROPERTY PLANT MANAGER AT 410-247-6009 BEFORE INITIATING ANY WORK ON THE PROPERTY. AT NOT TIME WILL THE CONTRACTOR BE PERMITTED TO DISRUPT THE FLOW OF TRAFFIC AT THE MAIN ENTRANCE.
2. INSTALL PROPOSED WATER MAIN FROM STATION 121+00 +/- TO STATION 129+00 +/-.
3. INSTALL 6" WATER MAIN AND FIRE HYDRANT AS SHOWN AND INSTALL 8" WATER MAIN INTER CONNECTION TO DIAGEO METER VAULT AS SHOWN.
4. CONSTRUCT GRAVEL TRUCK PARKING LOT IN ACCORDANCE WITH THE FOLLOWING:
  - A. BEFORE BEGINNING CONSTRUCTION ON PROPOSED WATER MAIN FROM STATION 129+00 TO STATION 134+50, CONTRACTOR MUST CONSTRUCT PROPOSED GRAVEL PARKING LOT AS SHOWN.
  - B. INSTALL SILT FENCE AT TEMPORARY PARKING LOT LOCATION.
  - C. INSTALL 200 FEET X 130 FEET GRAVEL TRUCK PARKING LOT PER DETAIL THIS SHEET.
  - D. PROVIDE MOUNTABLE CURB ACROSS ENTRANCE.
  - E. INSTALL APPROXIMATELY 530 LINEAR FEET OF SECURITY FENCE AROUND NEW GRAVEL PARKING LOT. CONTRACTOR SHALL MATCH EXISTING FENCE AND HAVE THE OPTION TO REUSE EXISTING FENCE IN COMBINATION WITH NEW FENCING OR PROVIDE ALL NEW FENCING.
  - F. TOPSOIL, SEED, AND MULCH DISTURBED AREAS.
  - G. REMOVE SILT FENCE.
5. EXISTING TRUCK PARKING LOT - RELOCATE IN ACCORDANCE WITH THE FOLLOWING:
  - A. REMOVE EXISTING FENCE FROM THE PARKING LOT.
  - B. ALLOW TWO (2) WEEKS FOR OWNER TO RELOCATE EXISTING TRAILORS.
  - C. RELOCATION OF EXISTING TRUCK PARKING LOT CANNOT OCCUR UNTIL PROPOSED TEMPORARY GRAVEL TRUCK PARKING LOT IS READY FOR OCCUPANCY.
6. CONSTRUCT NEW WATER LINE BETWEEN STATION 128+50 AND STATION 134+50. PROVIDE TEMPORARY PAVEMENT REPAIR IN ACCORDANCE WITH THE DETAIL ON SHEET C-14.
7. REPAIR DAMAGED AREAS WITHIN PARKING LOT. (AN ALLOWANCE OF \$10,000 SHOULD BE INCLUDED IN CONTRACTOR'S BID FOR REPAIRS TO THE EXISTING LOT).
8. AFTER WATER MAIN HAS BEEN TESTED, REMOVE TEMPORARY PAVEMENT AND PROVIDE PERMANENT PAVEMENT REPAIR.
9. MILL AND OVERLAY ENTIRE PARKING LOT TO THE LIMITS SHOWN. PROVIDE STRIPPING.
10. PLACE PARKING LOT BACK IN SERVICE.



Delete Addendum No. 2

"detail this sheet." Correction Addendum No. 3

"After water main has been tested, remove temporary trench pavement and provide permanent trench pavement repair. See details this sheet." Correction Addendum No. 3

Updated Addendum No. 3

Updated Addendum No. 3

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
<i>Ad T. N. Kahl</i> CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	DATE: 3/15/12 CHIEF, UTILITY ENGINEERING	DATE: 1/23/12 DIRECTOR, DEPT. OF PUBLIC WORKS

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. 37797 EXPIRATION DATE AUGUST 9, 2013 ENGINEER: SYAM B. NAYAR DESIGN BY: BBB AS-BUILT PER RECORD PRINT BY: JCD DATE: 1/23/12	REVISION BY: RBF DATE: 1/23/12	P.W.A. NO. R.O.W. NO.	KEY SHEET POSITION SHT	DRAWING SCALE PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED	DEPARTMENT OF PUBLIC WORKS APPROVED BY: <i>[Signature]</i> DATE: 1-24-12 DIRECTOR APPROVED BY: <i>[Signature]</i> DATE: 1/17/12 CHIEF
--	--------------------------------------	--------------------------	---------------------------	--	---

AS-BUILT JUNE 2016

**SOUTHWEST TRANSMISSION MAIN  
DIAGEO PROPERTY IMPROVEMENTS PLAN**

SUBDIVISION: ST. DENIS

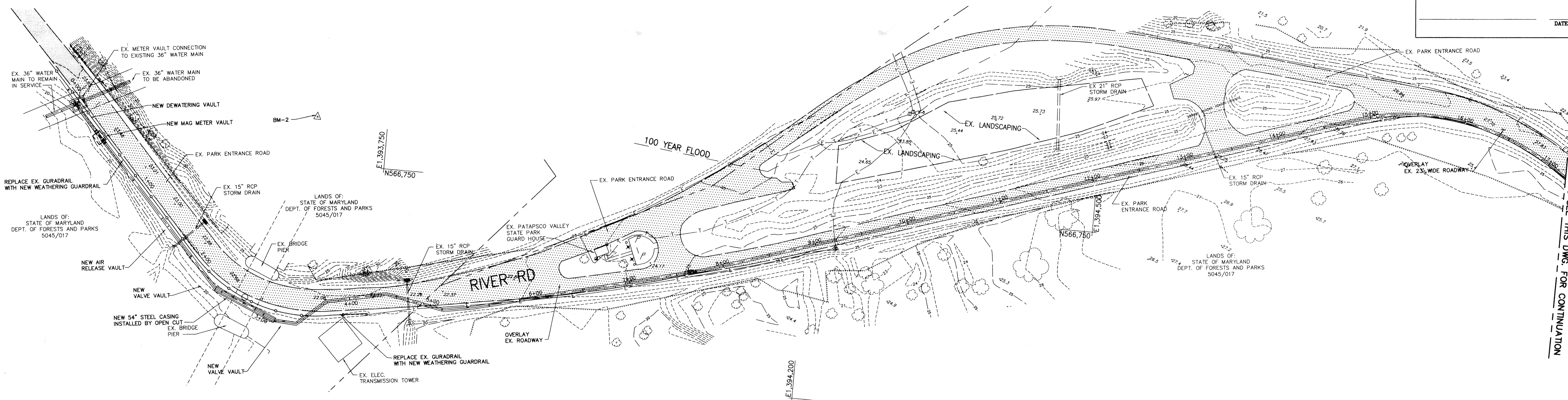
ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

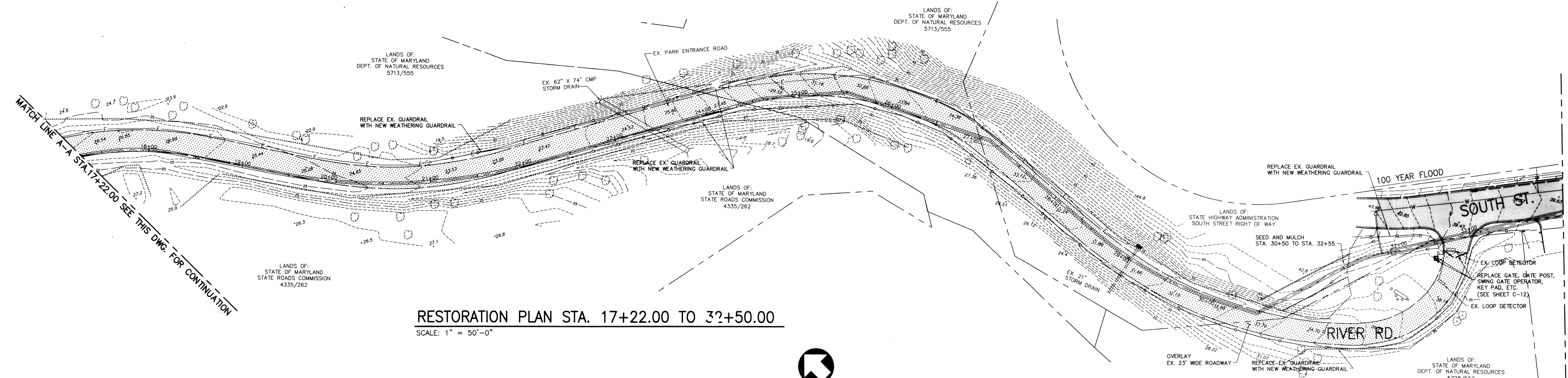
**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
C-16	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 18 OF 36	DRAWING NO.
	2009-3367
	FILE NO.

DWG FILENAME:



**RESTORATION PLAN STA. 0+00 TO 17+22.00**  
 SCALE: 1" = 50'-0"



**RESTORATION PLAN STA. 17+22.00 TO 32+50.00**  
 SCALE: 1" = 50'-0"

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
[Signature] 2/15/12 CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		CHIEF, UTILITY ENGINEERING DATE		[Signature] 1/16/12 DIRECTOR, DEPT. OF PUBLIC WORKS DATE	
PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 37787 EXPIRATION DATE AUGUST 9, 2013.		REVISION NO. DATE P.W.A. NO. KEY SHEET POSITION SHT		DRAWING SCALE PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED AS NOTED	
ENGINEER: SYAM B. NAYAR DESIGN BY: BBB AS-BUILT PER RECORD PRINT DRAWN BY: JCD BY: [Signature] DATE:		BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER REVIEWED BY: [Signature] DATE REVIEWED: 1/23/12		DEPARTMENT OF PUBLIC WORKS APPROVED BY: [Signature] DIRECTOR DATE: 1-24-12 APPROVED BY: [Signature] CHIEF DATE: 1/17/12	

DESIGN AND DRAWINGS BASED ON MARYLAND COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

AREA OF DISTURBANCE PATAPSCO VALLEY STATE PARK - 2.90 ACRES ( 126,239 SQUARE FEET)  
 AREA OF DISTURBANCE ALONG ROUTE 1 CORRIDOR - 7.57 ACRES ( 329,562 SQUARE FEET)  
 TOTAL AREA OF DISTURBANCE - 10.46 ACRES ( 455,801 SQUARE FEET)

**AS-BUILT JUNE 2016**  
 BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
 RESTORATION PLAN STA. 0+00 TO STA 33+89.00**

SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

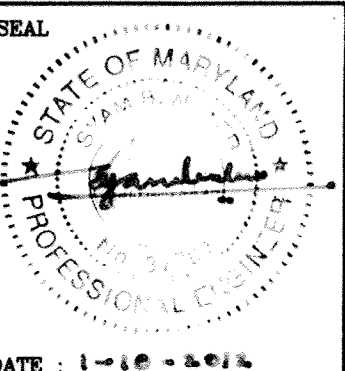
HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
 11019 McCormick Road, Suite 260  
 Hunt Valley, Maryland 21081

SHEET DESIGNATION	CONTRACT NO.
C-17	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 19 OF 36	DRAWING NO.
2009-3368	FILE NO.

MATCH LINE A-A STA. 17+22.00 SEE THIS DWG. FOR CONTINUATION

MATCH LINE A-A STA. 17+22.00 SEE THIS DWG. FOR CONTINUATION



# EROSION & SEDIMENT CONTROL

## SOUTHWEST TRANSMISSION MAIN


### CONTRACT NO. W-8276

### JOB ORDER NO. 203-0067-0281

**SEDIMENT CONTROL**


**OWNER'S/DEVELOPER'S CERTIFICATION**

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ALSO CERTIFY THAT THE SITE WILL BE INSPECTED AT THE END OF EACH WORKING DAY, AND THAT ANY NEEDED MAINTENANCE WILL BE COMPLETED SO AS TO INSURE THAT ALL SEDIMENT CONTROL PRACTICES ARE LEFT IN OPERATIONAL CONDITION. I/WE AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT BOARD OF SUPERVISORS OR THEIR AUTHORIZED AGENTS.


D. Adams 7-27-10  
 SIGNATURE OWNER/DEVELOPER TITLE DATE  
 LEONARD C. ADAMS, JR.  
 PRINT NAME


**CONSULTANT'S CERTIFICATION:**

I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT AND THE CURRENT STATE OF MARYLAND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.


7/21/10  
 SIGNATURE DATE  
 JAMES E. HAVY  
 PRINT NAME  
 26035  
 MD LICENSE NO.


**OWNER'S GRADING CERTIFICATION:**

I/WE CERTIFY THAT ALL GRADING ON THIS SITE WILL BE DONE IN ACCORDANCE WITH THE CURRENT GRADING REQUIREMENTS AS SET FORTH BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND WITH THE REQUIREMENTS SPECIFIED IN ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE.


7-27-10  
 SIGNATURE OWNER/DEVELOPER TITLE DATE  
 LEONARD C. ADAMS, JR.  
 PRINT NAME

**OWNER'S CERTIFICATION-AIR QUALITY:**

I ACKNOWLEDGE THAT I AM RESPONSIBLE UNDER THE CODE OF MARYLAND REGULATIONS (26.11.06.03) TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE DUE TO GRADING, LAND CLEARING, EXCAVATING, CONSTRUCTION OR OTHER RELATED ACTIVITIES. I HAVE RECEIVED A COPY OF "GUIDELINES TO THE AIR POLLUTION REGULATIONS FOR CONTROLLING EXCESSIVE ABP (DUST) ON ACTIVITY SITES" WHICH INCLUDES A COPY OF COMAR 26.11.06.03. I WILL CONTACT THE ENVIRONMENTAL HEALTH SECTION AT (410- 887-4065) AT LEAST THREE DAYS PRIOR TO BEGINNING WORK.


7-27-10  
 SIGNATURE OWNER/DEVELOPER TITLE DATE  
 LEONARD C. ADAMS, JR.  
 PRINT NAME

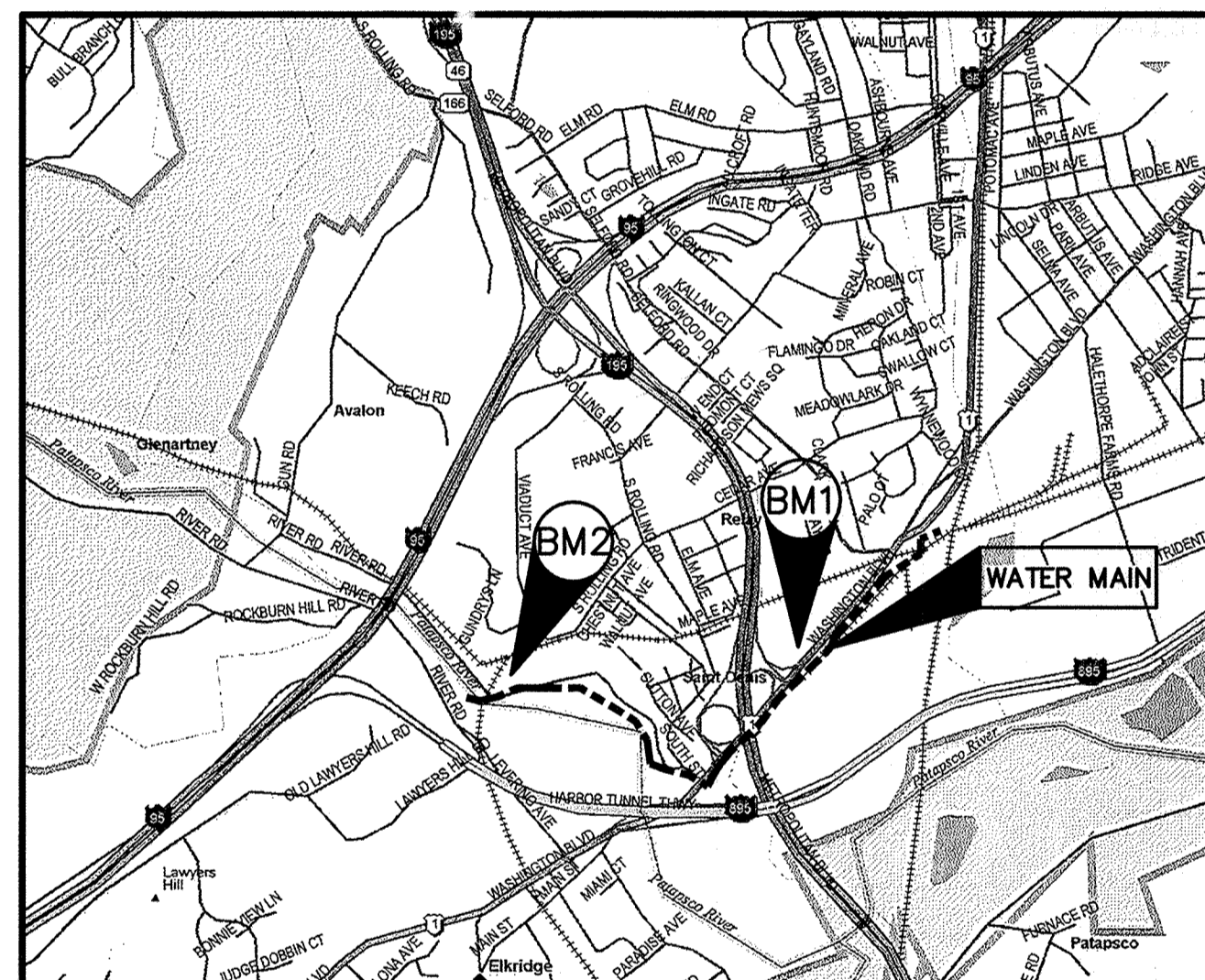
THE PROPOSED GRADING SHOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND COMPLIES WITH ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE. HOWEVER, DUE TO BUILDING TYPES AND LAYOUT, SOME FIELD ADJUSTMENTS MAY BE REQUIRED. ALL CHANGES MUST COMPLY WITH THE ABOVE MENTIONED REQUIREMENTS.

LIST OF DRAWINGS

Sheet No.	Dwg.	DESCRIPTION
20	SC-1	EROSION & SEDIMENT CONTROL TITLE SHEET
21	SC-2	EROSION & SEDIMENT CONTROL NOTES 1
22	SC-3	EROSION & SEDIMENT CONTROL NOTES 2
23	SC-4	EROSION & SEDIMENT CONTROL NOTES 3
24	SC-5	EROSION & SEDIMENT CONTROL DETAILS
25	SC-6	EROSION & SEDIMENT CONTROL PLAN STA 0+00 TO STA 34+58.00
26	SC-7	EROSION & SEDIMENT CONTROL PLAN STA 34+58.00 TO STA 126+89.00
27	SC-8	EROSION & SEDIMENT CONTROL PLAN STA 126+89.00 TO STA 141+57.28

NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH BALTIMORE COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION DATED 2000 AND AMENDED.
- NOTIFY BALTIMORE CITY BUREAU OF WATER AND WASTEWATER AT 410-396-7870 72 HOURS BEFORE STARTING CONSTRUCTION.
- NOTIFY BALTIMORE CITY WATER & WASTEWATER MAINTENANCE DIVISION AT 410-396-7807 AT LEAST 3 DAYS PRIOR TO STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 4 DAYS PRIOR TO BEGINNING OF WORK.
- ONLY BALTIMORE CITY SHALL OPERATE EXISTING VALVES. CONTRACTOR SHALL NOTIFY THE BALTIMORE COUNTY INSPECTOR TO ARRANGE A SHUTDOWN WITH THE CITY AT LEAST 4 DAYS PRIOR TO PROPOSED SHUTDOWN. IF THE INSPECTOR IN THE FIELD IS UNAVAILABLE, CALL THE BALTIMORE COUNTY AREA ENGINEER AT 410-887-3531.
- ONLY THAT SECTION OF THE TRENCH SHALL BE OPENED WHICH CAN BE BACKFILLED AND STABILIZED IN ONE DAY. THE END OF THE PIPE SHALL BE PLATED OVER AT THE END OF EACH WORK DAY.
- WHEN EXCAVATING FOR UTILITIES, ALL SPOIL MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
- FULL COMPACTION IS REQUIRED FOR ALL TRENCHES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE BALTIMORE COUNTY SOIL CONSERVATION PERMIT NO. 290-COUNTY-05.
- MAIN SHALL HAVE A MINIMUM OF FOUR FEET OF COVER EXCEPT WHERE SPECIFIED.
- THE COST OF CONSTRUCTING UNDER OR OVER ANY EXISTING UTILITY OR CABLE SHOWN ON THIS PLAN AND ALL EXISTING SERVICE CONNECTIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE 36-INCH WATER MAIN.
- WHEN CROSSING EXISTING UTILITIES THE CONTRACTOR IS TO SUPPORT BRACE AND PROTECT SUCH UTILITIES DURING CONSTRUCTION. (COST TO BE INCLUDED IN THE PRICE BID FOR THE 36-INCH WATER MAIN).
- CONTRACTOR IS TO TEST PIT EXISTING UTILITIES PRIOR TO LAYING PIPE TO WITHIN 3-LENGTHS OF PIPE SO INVERTS CAN BE ADJUSTED. WHERE SPECIFIED ON THESE DRAWINGS, CONTRACTOR IS REQUIRED TO TEST PIT PRIOR TO FABRICATING PIPE SEGMENTS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES TO HIS OWN SATISFACTION PRIOR TO STARTING ANY WORK.
- HIGHLY CHLORINATED WATER TO BE DISPOSED OF IN A SANITARY SEWER AT A RATE NOT TO EXCEED 100 GAL/MIN.



**LOCATION MAP**  
SCALE: 1" = 2,000'

SURVEY CONTROL NOTES

- THE ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID-AE2451), ELEVATION = 68.97.
- THE COORDINATES SHOWN HEREON ARE REFERRED TO THE MARYLAND STATE PLANE DATUM NAD 83/91 USING NGS MONUMENTS BM-1 GIS 86 (PID AE 2450), N. 566928.28 E. 1397313.26 AND BM-2 GIS 87 (PID AE2451), N. 566798.08 E. 1393675.58.
- GIS 86 AND GIS 87 ARE SURVEY DUMPS SET IN TOP OF CONCRETE MONUMENTS.

DESIGN AND DRAWINGS BASED ON MARYLAND COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

**APPROVAL**

STORMWATER MANAGEMENT PERMIT NOT REQUIRED

9-17-10  
 BALTIMORE COUNTY  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 & RESOURCE MANAGEMENT  
 APPROVED FOR GRADING 9-17-10  
 DATE

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT  
 APPROVED FOR SEDIMENT CONTROL 9-1-10  
 DATE  
 J. West 312-41111-10  
 DISTRICT OFFICIAL PLAN NO.

TECHNICAL REVIEW FOR THE DISTRICT BY:  
 S. E. Campbell  
 IF A GRADING PERMIT HAS NOT BEEN OBTAINED WITHIN TWO YEARS OF THIS APPROVAL, THIS PLAN SHALL BE RE-SUBMITTED TO THE DISTRICT

R-1 2-19-13 Recertification  
 R-2, 1-28-14, Revised L&D and SF near station 30+00  
 R-3, 7-17-14, Changes made between station 33+99 and 34+00 to 18" 48" Sheets 7A+7B added. J.E.W.

  
 11019 McCormick Road, Suite 280  
 Hunt Valley, Maryland 21081

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
SIGNATURES SEE DWG. NO 2009-3350	SIGNATURES SEE DWG. NO 2009-3350	SIGNATURES SEE DWG. NO 2009-3350

AS-BUILT PER RECORD PRINT	REVISION	DATE	BY	P. W. A. NO.	KEY SHEETS	POSITION SHEETS	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
DRAFTSMAN							PLAN : PROFILE :	SIGNATURES SEE DWG. NO 2009-3350
ENGINEER: JAMES E. HAVY	DSGN BY: BBB							SIGNATURES SEE DWG. NO 2009-3350
DATE: 7-10 LIC. NO.: 26035	DWN BY: JCD							
	CHKD BY: BBB							

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN**  
**EROSION & SEDIMENT CONTROL TITLE SHEET**

SUBDIVISION: LANSDOWNE

SHEET DESIGNATION	CONTRACT NO.
SC-1	W-8276
	JOB ORDER NO. 203-0067-0281
	SHEET 20 OF 36
	DRAWING NO. 2009-3369
	FILE NO.



GENERAL NOTES

- 1. REFER TO "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN.
2. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN AND WILL BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT. CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT.
3. AT THE END OF EACH WORKING DAY, ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITION.
4. FOLLOWING INITIAL SOIL DISTURBANCE OR RESTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1), AND
B. SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
5. ANY CHANGE TO THE GRADING PROPOSED ON THIS PLAN REQUIRES RE-SUBMISSION TO BALTIMORE COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL.
6. DUST CONTROL WILL BE PROVIDED FOR ALL DISTURBED AREAS. REFER TO "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", PG. H-30-1, FOR ACCEPTABLE METHODS AND SPECIFICATIONS FOR DUST CONTROL.
7. ANY VARIATIONS FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT PRIOR TO THE INITIATION OF THE CHANGE.
8. EXCESS CUT OR BORROW MATERIAL SHALL GO TO, OR COME FROM, RESPECTIVELY, A SITE WITH AN OPEN GRADING PERMIT.
9. PUMPING SEDIMENT LADEN WATER INTO WATERS OF THE STATE IS STRICTLY PROHIBITED. ANY PORTABLE Dewatering DEVICE MUST BE LOCATED WITHIN THE LIMIT OF DISTURBANCE.
10. OVERLAY OF RIVER ROAD IN PATAPSCO VALLEY STATE PARK SHALL OCCUR AFTER THE 36" WATER MAIN HAS BEEN CONSTRUCTED AND SUCCESSFULLY TESTED.
11. TOPSOIL STOCKPILED FROM THE BORE PIT LOCATIONS SHALL HAVE SILT FENCE PLACED ON THE DOWNSLOPE SIDE AND SHALL BE SPREAD EVENLY OVER THE AREA OF DISTURBANCE UPON COMPLETION. ALL NON-PAVED AREAS SHALL RECEIVE 4-INCHES OF TOPSOIL PRIOR TO FINAL STABILIZATION.
12. PERMANENT SEEDING SHALL BE PLACED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL DRAWINGS, AND ANY ADDITIONAL REQUIREMENTS AS PER MARYLAND AVIATION ADMINISTRATION STANDARD SPECIFICATIONS.
13. UPON STABILIZATION OF SITE WITH ESTABLISHED VEGETATION AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS.

INLET PROTECTION NOTE

THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:

- 1. ANY INLET OUTFALLING DIRECTLY INTO A SEDIMENT TRAP.\*
2. INLETS ON PRIVATE OR PUBLIC PAVED ROADWAYS OPEN TO THE PUBLIC.

ALL INLET PROTECTION SHALL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PAGE E-15-1 (OR AS MAY BE AMENDED). THE REMOVAL OF ANY INLET PROTECTION DEVICE WILL REQUIRE APPROVAL FROM THE INSPECTOR.

\* STORM DRAINS TO BE FLUSHED PRIOR TO TRAPPING DEVICE REMOVAL.

15.0 STANDARDS AND SPECIFICATIONS FOR SILT FENCE

DEFINITION

TEMPORARY BARRIERS OF WOVEN GEOTEXTILE FABRIC USED TO INTERCEPT, REDUCE VELOCITY AND FILTER SURFACE RUNOFF FROM DISTURBED AREAS.

PURPOSE

SILT FENCES FILTER SEDIMENT FROM RUNOFF SO THAT DEPOSITION OF TRANSPORTED SEDIMENT CAN OCCUR. SILT FENCES CAN BE USED TO INTERCEPT SHEET FLOW ONLY. THEY CANNOT BE USED AS VELOCITY CHECKS IN DITCHES OR SWALES, OR PLACED WHERE THEY WILL INTERCEPT CONCENTRATED FLOW.

CONDITIONS WHERE PRACTICE APPLIES

SILT FENCE IS LIMITED TO INTERCEPTING SHEET FLOW RUNOFF FROM LIMITED DISTANCES ACCORDING TO SLOPE. SILT FENCE PROVIDES FILTERING AND VELOCITY DISSIPATION TO PROMOTE GRAVITY SETTLING OF SEDIMENTS.

DESIGN CRITERIA

- 1. SILT FENCE SHOULD BE USED WITH CAUTION IN AREAS OF ROCKY SOILS THAT MAY PREVENT TRENCHING.
2. SILT FENCE SHOULD BE PLACED ON OR PARALLEL TO CONTOURS.
3. THE LENGTH OF SILT FENCES MUST CONFORM TO THE FOLLOWING:

TABLE 17 SILT FENCE DESIGN CONSTRAINTS (MAXIMUM)

Table with 3 columns: SLOPE STEEPNESS, SILT FENCE LENGTH (MAX.), SLOPE LENGTH (MAX.). Rows include slope categories like FLATTER THAN 50:1 (2%), 50:1 TO 10:1 (2-10%), etc.

- 4. IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.
5. DOWNSLOPE FROM THE SILT FENCE SHOULD BE UNDISTURBED GROUND.

16.0 STANDARDS AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

DEFINITION

A FILTER CONSTRUCTED AROUND A STORM DRAIN INLET.

PURPOSE

STORM DRAIN INLET PROTECTION IS USED TO FILTER SEDIMENT LADEN RUNOFF BEFORE IT ENTERS THE STORM DRAIN SYSTEM.

CONDITIONS WHERE PRACTICE APPLIES

STORM DRAIN INLET PROTECTION IS A SECONDARY SEDIMENT CONTROL DEVICE AND IS NOT TO BE USED IN PLACE OF A SEDIMENT TRAPPING DEVICE UNLESS APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY.

DESIGN CRITERIA

STORM DRAIN INLET PROTECTION SHALL BE USED WHEN THE DRAINAGE AREA TO AN INLET IS DISTURBED AND THE FOLLOWING CONDITIONS PREVAIL:

- 1. IT IS NOT POSSIBLE TO TEMPORARILY DIVERT THE STROM DRAIN OUTFALL INTO A SEDIMENT-TRAPPING DEVICE;
2. WATERTIGHT BLOCKING OF INLETS IS NOT ADVISABLE; AND
3. DRAINAGE AREA IS LESS THAN 1/4 ACRE FOR CURB OR STANDARD INLET PROTECTIONS AND 1/2 ACRE FOR ELEVATED OR YARD INLETS. FOR YARD INLETS, THE TOTAL FOR INLETS IN SERIES MUST BE 1 ACRE OR LESS AND THE CONTRIBUTING DRAINAGE AREA MUST HAVE SLOPES FLATTER THAN 5%.

MAINTENANCE

MAINTENANCE REQUIREMENTS FOR STORM DRAIN INLET PROTECTION ARE INTENSE, DUE TO THE SUSCEPTIBILITY TO CLOGGING, WHEN THE STRUCTURE DOES NOT DRAIN COMPLETELY WITHIN 48 HOURS AFTER A STORM EVENT, IT IS CLOGGED, WHEN THIS OCCURS, ACCUMULATED SEDIMENT MUST BE REMOVED AND THE GEOTEXTILE FABRIC AND STONE MUST BE CLEANED OR REPLACED.

GRADING NOTES

1. THE PROPOSED GRADING SHOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND COMPLIES WITH ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE. HOWEVER, DUE TO BUILDING TYPES AND LAYOUT, SOME FIELD ADJUSTMENTS MAY BE REQUIRED. ALL CHANGES MUST COMPLY WITH THE ABOVE MENTIONED REQUIREMENTS.

2. ALL SWALES HAVE BEEN DESIGNED BY THE ENGINEER TO CONVEY RUNOFF ACCORDING TO BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS.

3. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST BUFFER EASEMENT OR OTHER FOREST RETENTION AREAS, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT.

SEDIMENT CONTROL TRAFFIC NOTE

ANY TRAVEL LANE CLOSED BEFORE 9:00 A.M. OR AFTER 3:30 P.M. MUST BE APPROVED BY BALTIMORE COUNTY DIVISION OF TRAFFIC ENGINEERING AT (410) 887-3554 AND THE PATAPSCO VALLEY STATE PARK MANAGER AT (410) 461-5005.

17.0 STANDARDS AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ENTRANCE

DEFINITION

A STABILIZED LAYER OF AGGREGATE THAT IS UNDERLAIN WITH GEOTEXTILE CLASS C. STABILIZED ENTRANCES ARE LOCATED AT ANY POINT WHERE TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE.

PURPOSE

STABILIZED CONSTRUCTION ENTRANCES REDUCE TRACKING OF SEDIMENT ONTO STREETS OR PUBLIC RIGHTS-OF-WAY AND PROVIDE A STABLE AREA FOR ENTRANCE OR EXIT FROM THE CONSTRUCTION SITE.

CONDITIONS WHERE PRACTICE APPLIES

- 1. STABILIZED CONSTRUCTION ENTRANCES SHALL BE LOCATED AT POINTS OF CONSTRUCTION INGRESS AND EGRESS.
2. FOR SINGLE FAMILY RESIDENCES, THE ENTRANCE SHOULD BE LOCATED AT THE PERMANENT DRIVEWAY.
3. STABILIZED CONSTRUCTION ENTRANCES SHOULD NOT BE USED ON EXISTING PAVEMENT.

MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL MINIMIZE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE ADDING STONE OR OTHER REPAIRS AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY VACUUM SWEEPING, SCRAPING, OR SWEEPING. WHEN NECESSARY, WHEELS SHALL BE CLEANED OR WASHED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. DAILY INSPECTION AND MAINTENANCE IS REQUIRED.

REMOVE

AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, THE STABILIZED CONSTRUCTION ENTRANCE WILL BE REMOVED AND THE AREA STABILIZED UNLESS IT WILL BE USED AS AN UNDERLAYMENT FOR A DRIVEWAY.

26.0 STANDARDS AND SPECIFICATIONS FOR SUPER SILT FENCE

DEFINITION

A TEMPORARY BARRIER OF GEOTEXTILE CLASS F OVER CHAIN LINK FENCE USED TO INTERCEPT SEDIMENT LADEN RUNOFF FROM SMALL DRAINAGE AREAS.

PURPOSE

TO REDUCE RUNOFF VELOCITY AND ALLOW THE DEPOSITION OF TRANSPORTED SEDIMENT TO OCCUR. LIMITS IMPOSED BY ULTRAVIOLET LIGHT STABILITY OF THE FABRIC WILL DICTATE THE MAXIMUM PERIOD THAT THE SILT FENCE MAY BE USED.

- 1. SUPER SILT FENCE PROVIDES A BARRIER THAT CAN COLLECT AND HOLD DEBRIS AND SOIL, PREVENTING THE MATERIAL FROM ENTERING CRITICAL AREAS, STREAMS, STREETS, ETC.
2. SUPER SILT FENCE CAN BE USED WHERE THE INSTALLATION OF A DIKE WOULD DESTROY SENSITIVE AREAS, WOODS, WETLANDS, ETC.
3. SUPER SILT FENCE SHOULD BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE. NO SECTION OF SILT FENCE SHOULD EXCEED A GRADE OF 5% FOR A DISTANCE OF MORE THAN 50 FEET.

TABLE 30 DESIGN CRITERIA

Table with 4 columns: SLOPE, SLOPE STEEPNES, SLOPE LENGTH (MAXIMUM), SILT FENCE LENGTH (MAXIMUM). Rows include slope categories like 0-10%, 10-20%, etc.

WHERE ENDS OF THE GEOTEXTILE FABRIC COME TOGETHER, THE ENDS SHALL BE OVERLAPPED, FOLDED, AND STAPLED TO PREVENT SEDIMENT BYPASS.

UTILITY NOTES

- 1. CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) THE TRENCH.
2. PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
3. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

STORMWATER NOTES

STORMWATER MANAGEMENT VARIANCE GRANTED BY DEPRM LETTER DATED AUGUST 7, 2009.

AREA OF DISTURBANCE PATAPSCO VALLEY STATE PARK - 2.72 ACRES ( 118,472 SQUARE FEET)
AREA OF DISTURBANCE ALONG ROUTE 1 CORRIDOR - 4.93 ACRES ( 214,740 SQUARE FEET)
TOTAL AREA OF DISTURBANCE - 7.65 ACRES ( 333,212 SQUARE FEET)

DESIGN AND DRAWINGS BASED ON MARYLAND COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

EXISTING UTILITIES

- SANITARY SEWER MAIN
SANITARY SEWER FORCE MAIN
SANITARY SEWER MANHOLE
SANITARY SEWER VALVE
STORM DRAIN
STORM DRAIN MANHOLE
STORM DRAIN JUNCTION CHAMBER
INLET, CURB TYPE
INLET, GRATING TYPE
INLET, CURB AND GRATING TYPE
WATER MAIN
WATER MAIN MANHOLE
WATER METER BOX
FIRE HYDRANT
ELECTRIC (UNDERGROUND)
TELEPHONE (UNDERGROUND)
CABLE (UNDERGROUND)
GAS MAINS
GAS METER
OVERHEAD ELECTRIC
WATER MAIN VAULT
VALVE
JUNCTION BOX
CONDUIT MANHOLE
ELECTRIC MANHOLE
TELEPHONE MANHOLF

EXISTING FEATURES

- ABANDONED UTILITY
GUIDE RAIL
FENCE
EDGE OF WOODS
POWER / TELEPHONE POLE
RAILROAD TRACKS
DECIDUOUS TREE
CONIFEROUS TREE
SPOT ELEVATION
MINOR CONTOUR
MAJOR CONTOUR
BORING
TEST PIT
BENCHMARK
EXISTING CURB
WALKS (NOTE WIDTH AND TYPE)
EDGE OF ROAD
EXISTING RIGHT-OF-WAY LINE
EXISTING PROPERTY LINE
CENTERLINE OF EXISTING R/W OR ROAD
SIGN

PROPOSED IMPROVEMENTS

- WATER MAIN
PROPOSED CURB
SILT FENCE
INLET PROTECTION
LIMITS OF DISTURBANCE
TREE LINE
TELEPHONE
STABILIZED CONSTRUCTION ENTRANCE

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT
APPROVED FOR SEDIMENT CONTROL

Jeffrey P. West DATE 9-1-10
R-1 2-19-13
R-2 1-28-14
R-3 7-17-14

APPROVAL

Hatch Mott MacDonald logo and address: 11019 McCormick Road, Suite 260, Hunt Valley, Maryland 21031

CITY OF BALTIMORE SIGNATURES SEE DWG. NO 2009-3350

REVISION - CITY OF BALTIMORE SIGNATURES SEE DWG. NO 2009-3350

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SIGNATURES SEE DWG. NO 2009-3350

DESIGN AND DRAWINGS BASED ON MARYLAND COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

Project information table including AS-BUILT PER RECORD PRINT, REVISION, DATE, BY, P. W. A. NO., KEY SHEETS, POSITION SHEETS, DRAWING SCALE, DEPARTMENT OF PUBLIC WORKS, and various engineering signatures and dates.

AS-BUILT JUNE 2016, BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION, SOUTHWEST TRANSMISSION MAIN EROSION & SEDIMENT CONTROL LEGEND AND NOTES 1, SUBDIVISION: LANSDOWNE

Table with SHEET DESIGNATION (SC-2), CONTRACT NO. (W-8276), JOB ORDER NO. (230-0067-0281), SHEET 21 OF 36, DRAWING NO. (2009-3370), and FILE NO.

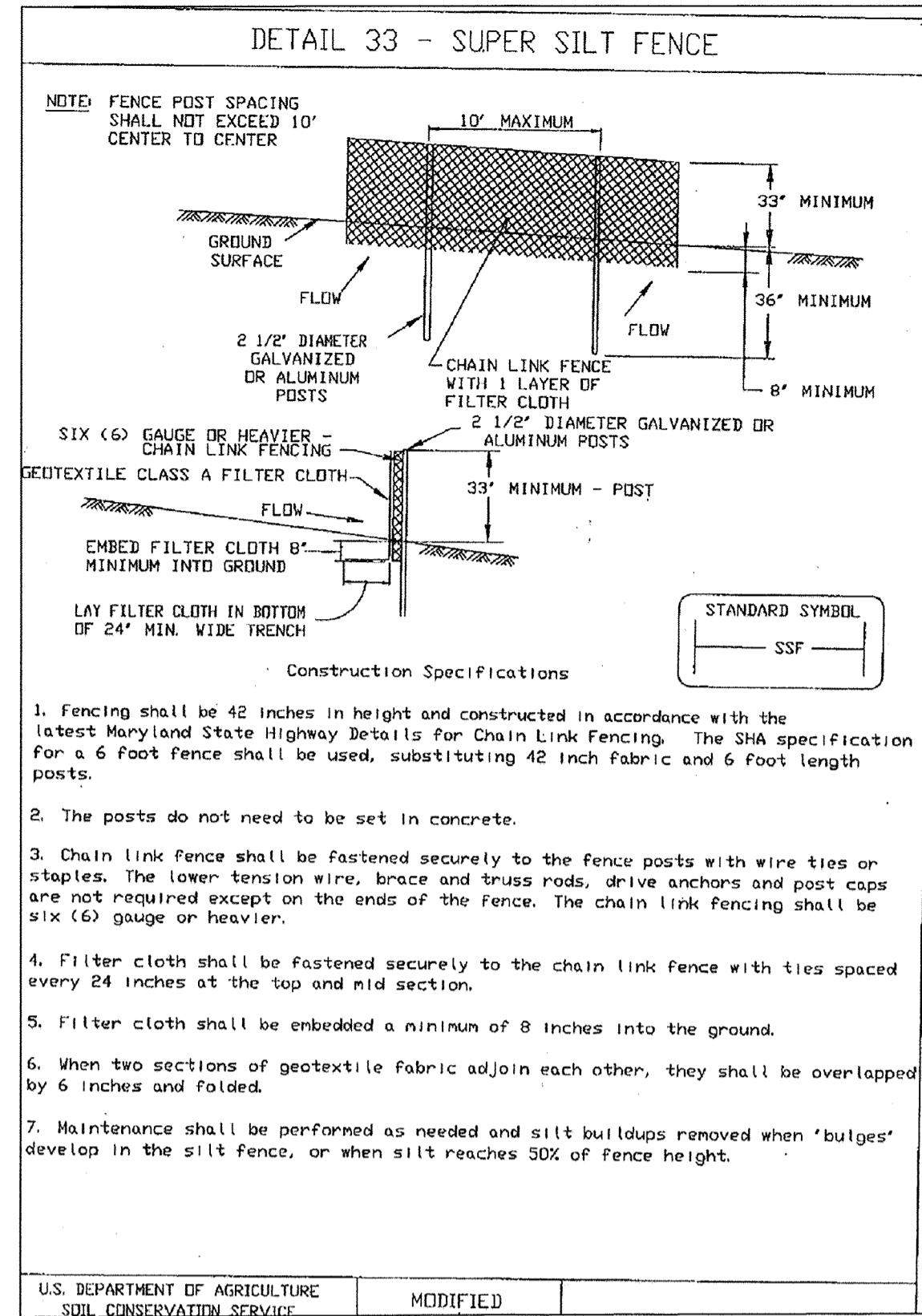
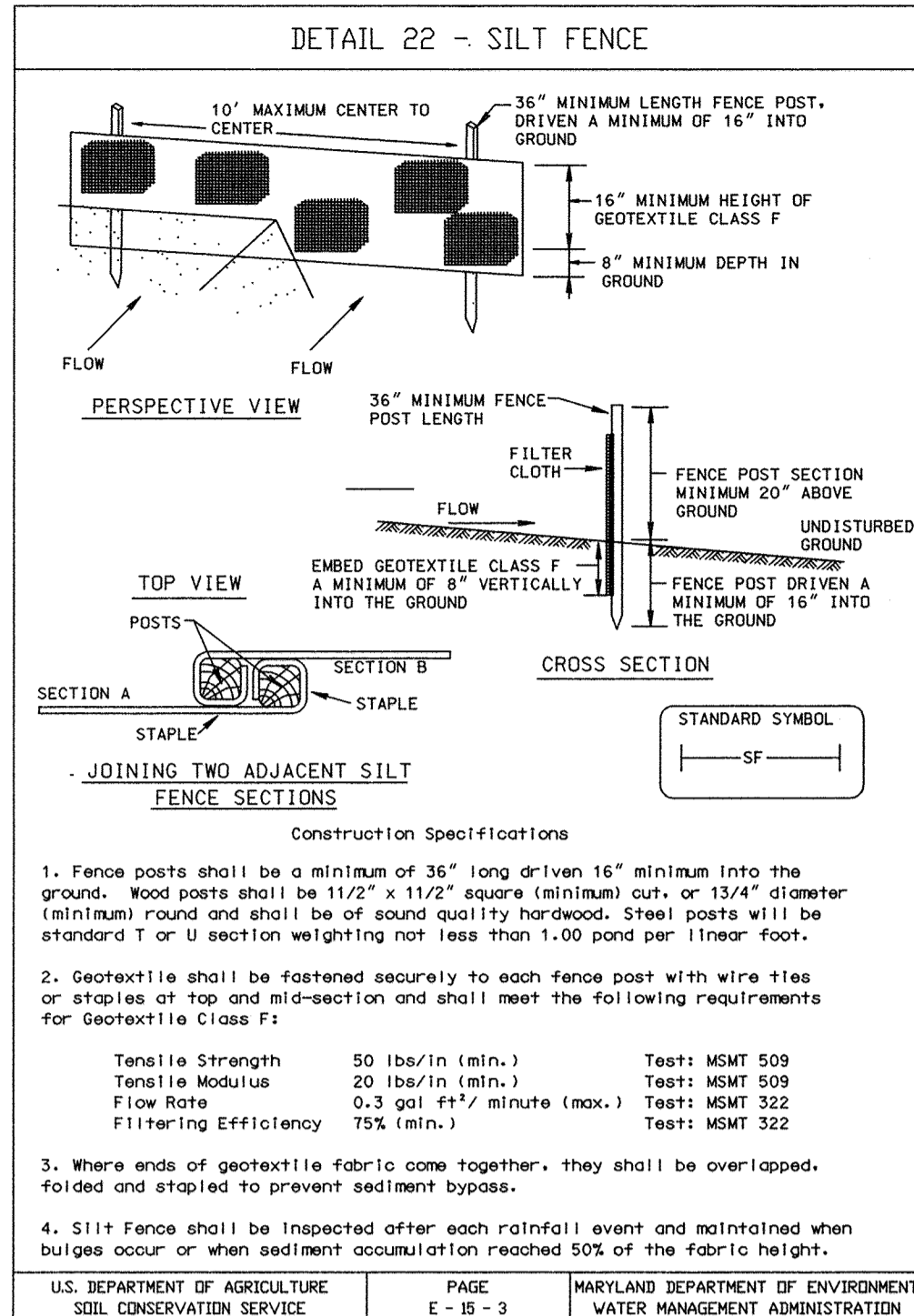






*Jeffrey P. West* 9-1-10  
DATE

R-1 2-19-13  
R-2 1-28-14  
R-3 7-17-14



### 24.0 MATERIALS SPECIFICATIONS

Table 27 Geotextile Fabrics

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI. MIN.
A	0.30**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40 - 0.80*	90	190

\*US Std Sieve CW-02215 \*\*0.50 mm. max. for Super Silt Fence

The properties shall be determined in accordance with the following procedures:

- Apparent opening size MSMT 333
- Grab tensile strength ASTM D 1682: 4x8" specimen, 1x2" clamps, 12"/min. strain rate in both principal directions of geotextile fabric.
- Burst strength ASTM D 3786

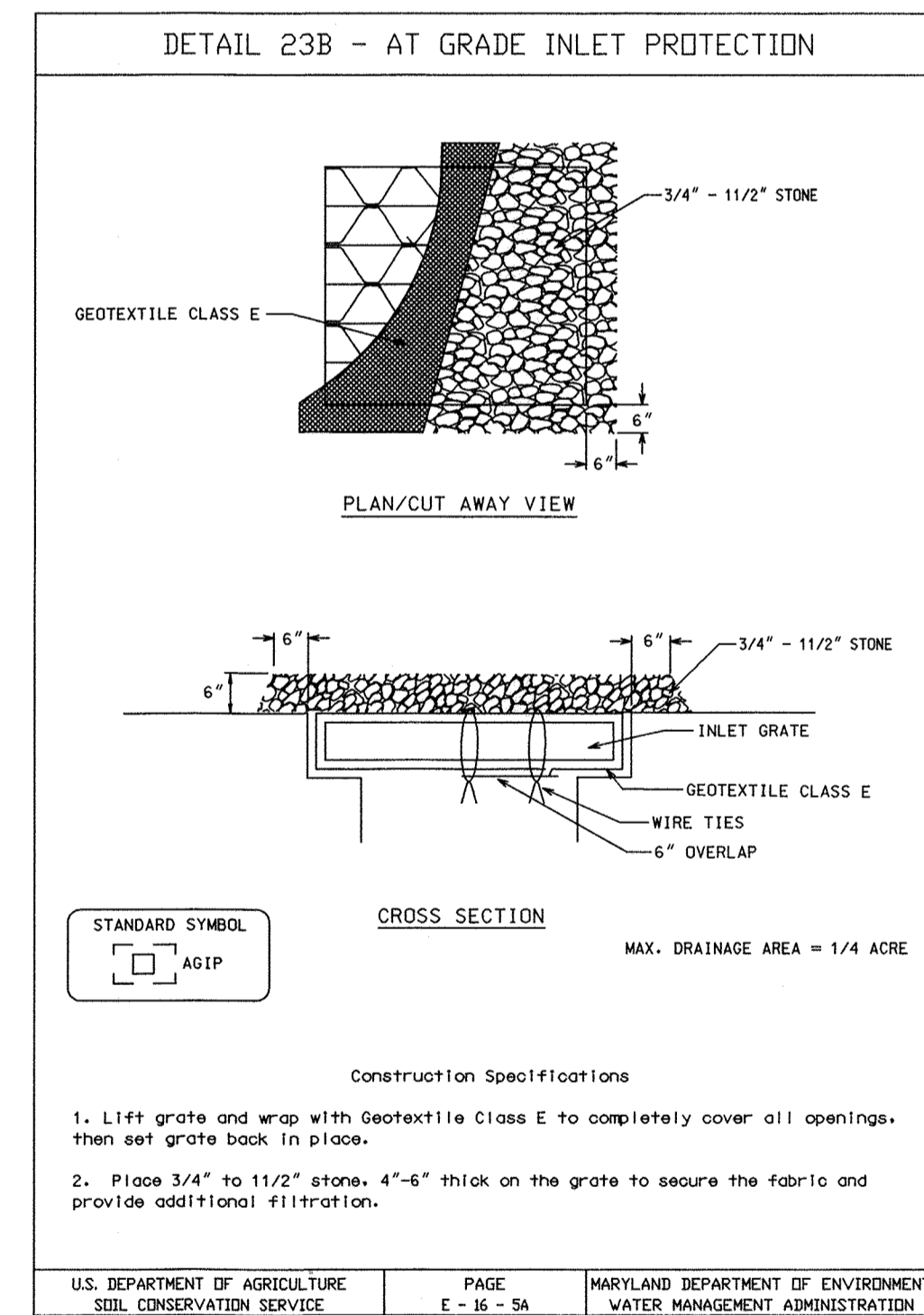
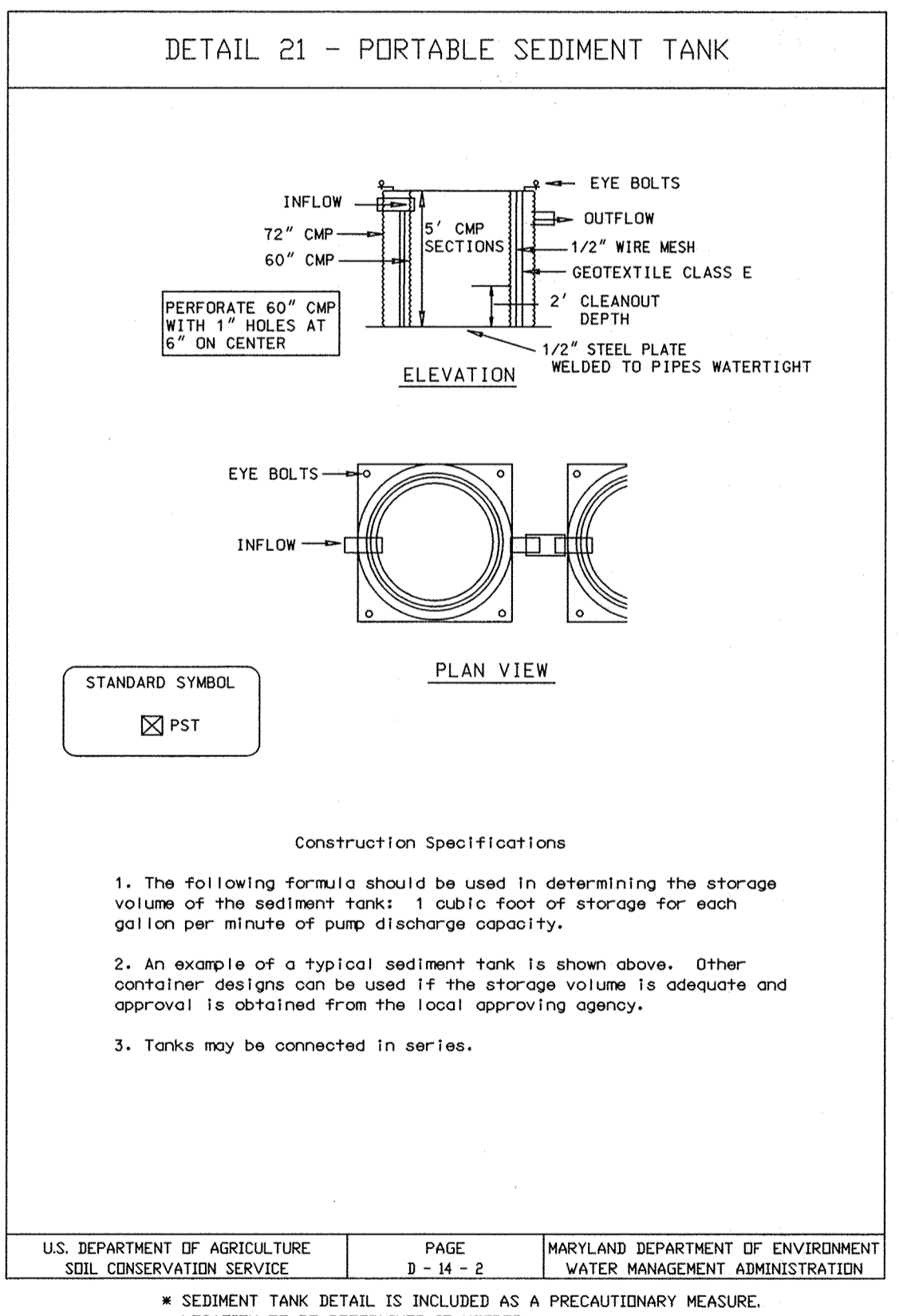
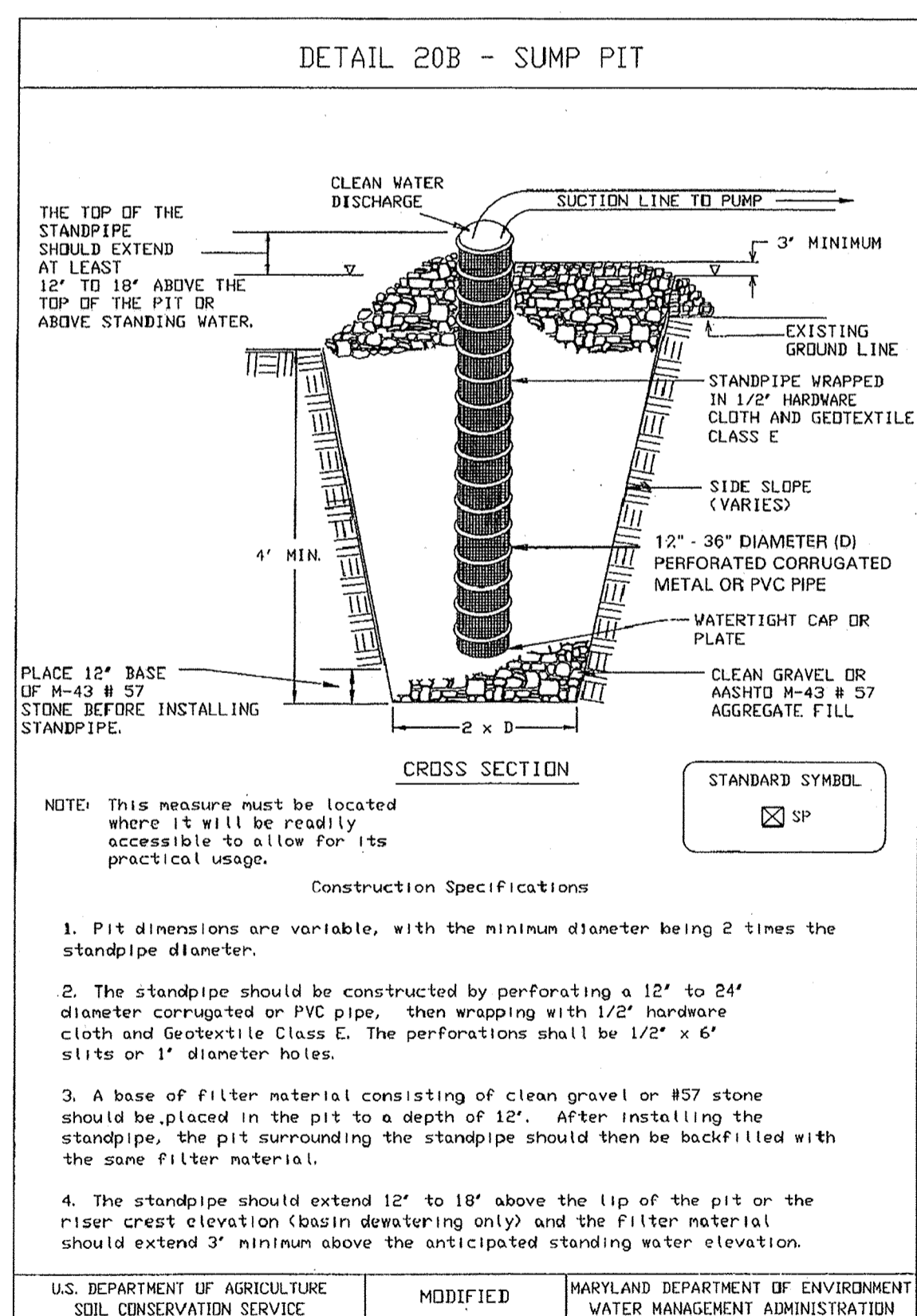
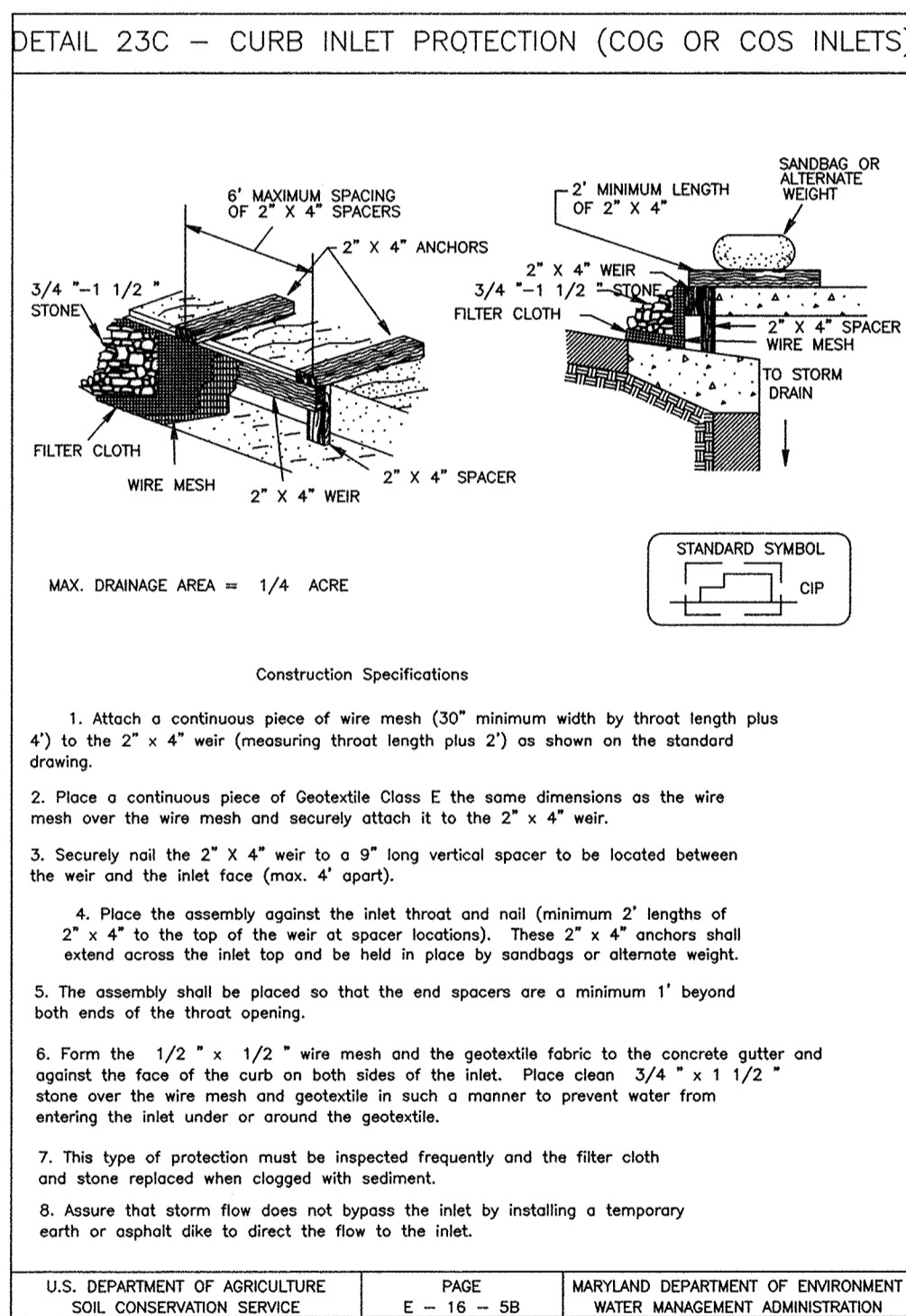
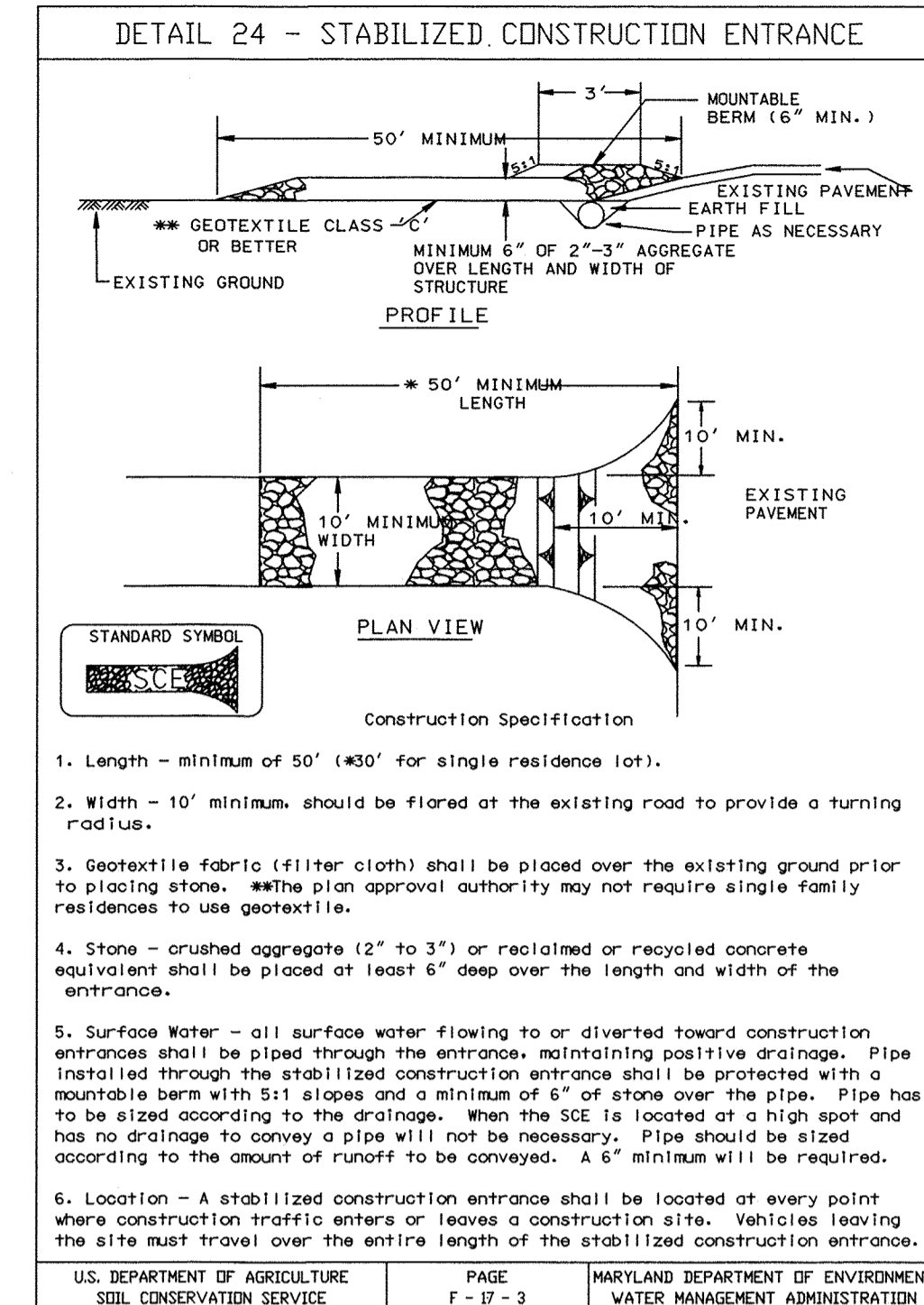
The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polyolefins, polyesters, or polyamides. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, Classes A through E shall have a 0.01 cm./sec. minimum permeability when tested in accordance with MSMT 507, and an apparent minimum elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements listed above.

**Silt Fence**  
Class F geotextile fabrics for silt fence shall have a 50 lb./in. minimum tensile strength and a 20 lb./in. minimum tensile modulus when tested in accordance with MSMT 509. The material shall also have a 0.3 gal./ft./min. flow rate and seventy-five percent (75%) minimum filtering efficiency when tested in accordance with MSMT 332.

Geotextile fabrics used in the construction of silt fence shall resist deterioration from ultraviolet exposure. The fabric shall contain sufficient amounts of ultraviolet ray inhibitors and stabilizers to provide a minimum of 13 months of expected useful construction life at a temperature range of 0 to 120 degrees F.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE MODIFIED APPENDIX 10



APPROVAL

11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21081

CITY OF BALTIMORE

SIGNATURES SEE DWG. NO 2009-3350

REVISION - CITY OF BALTIMORE

SIGNATURES SEE DWG. NO 2009-3350

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

SIGNATURES SEE DWG. NO 2009-3350

AS-BUILT PER RECORD PRINT	REVISION	DATE	BY	P. W. A. NO.	KEY SHEETS	POSITION SHEETS	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
DRAFTSMAN								
ENGINEER: JAMES E. HAYEY	DESIGNED BY: BBB							
DATE: 7-10 LIC. NO.: 28035	DWN BY: JCD							
SEAL	CHKD BY: BBB							

FOR REVIEW AND APPROVAL ORIGINAL SIGNATURES AND DATES, SEE DWG. NO 2009-3350

SIGNATURES SEE DWG. NO 2009-3350

SIGNATURES SEE DWG. NO 2009-3350

SUBDIVISION: LANSDOWNE

AS-BUILT JUNE 2016

**SOUTHWEST TRANSMISSION MAIN  
EROSION & SEDIMENT CONTROL DETAILS**

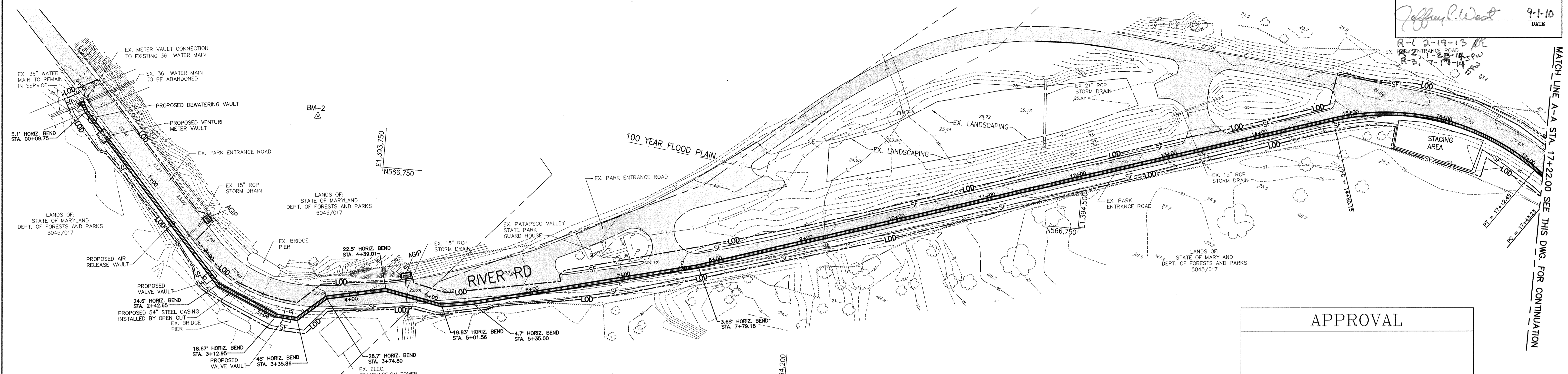
SHEET DESIGNATION	CONTRACT NO.
SC-5	W-8276
	JOB ORDER NO. 203-0067-0281
SHEET 24 OF 36	DRAWING NO. 2009-3373
	FILE NO.



DWG FILENAME:

*Jeffrey West* 9-1-10  
DATE

R-1 2-19-13  
R-2 1-28-14  
R-3 7-18-14

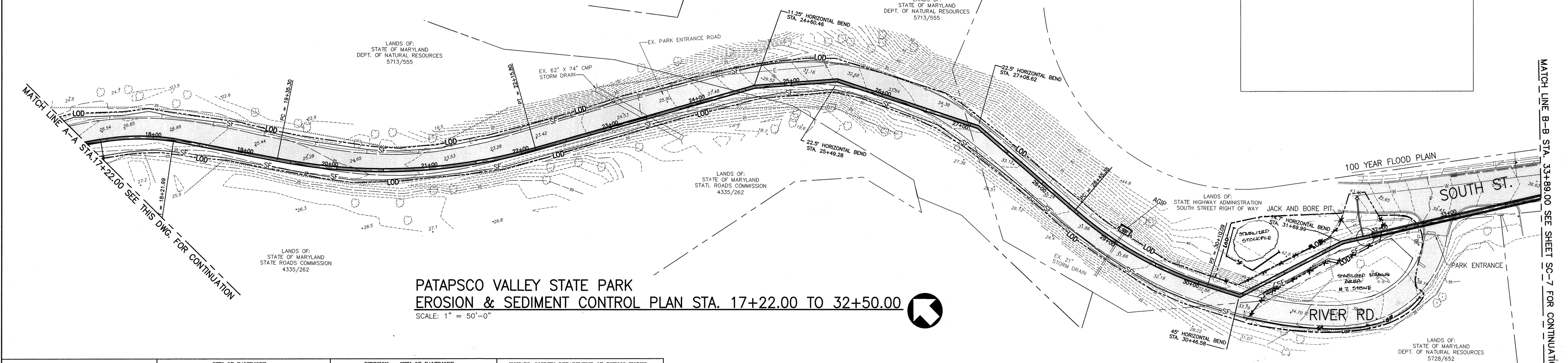
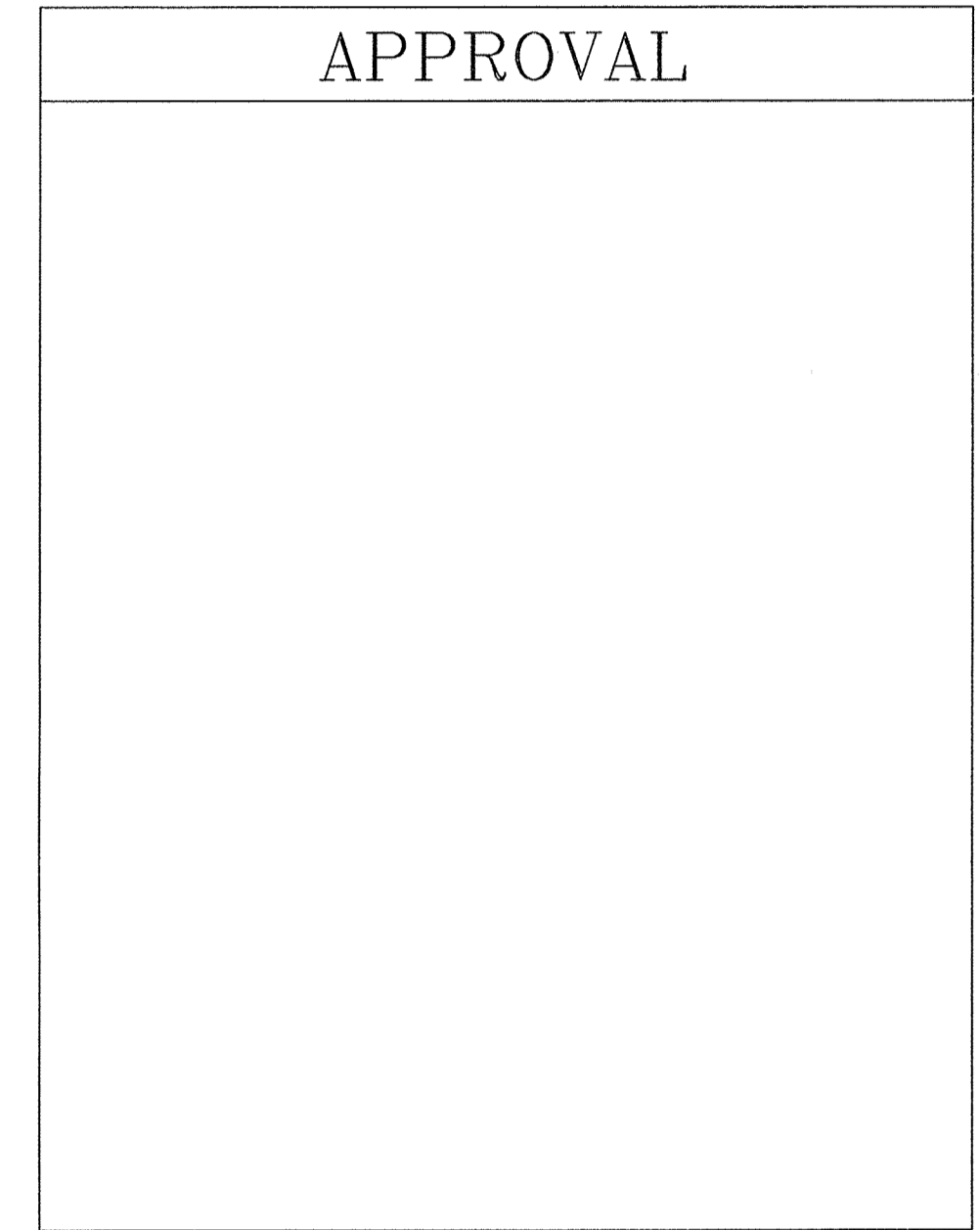


**PATAPSCO VALLEY STATE PARK  
EROSION & SEDIMENT CONTROL PLAN STA. 0+00 TO 17+22.00**  
SCALE: 1" = 50'-0"

**CONSULTANT'S CERTIFICATION:**

I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site, and this plan was prepared in accordance with the requirements of the Baltimore County Soil Conservation District and the current State of Maryland Specifications for Soil Erosion and Sediment Control. I have reviewed this erosion and sediment control plan with the owner/developer.

Signature: *Jeffrey Scott Peuso* Date: 4/24/14  
Print Name: Jeffrey Scott Peuso MD License Number: 34684



**PATAPSCO VALLEY STATE PARK  
EROSION & SEDIMENT CONTROL PLAN STA. 17+22.00 TO 32+50.00**  
SCALE: 1" = 50'-0"

	CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
SIGNATURES SEE DWG. NO 2009-3350	SIGNATURES SEE DWG. NO 2009-3350	SIGNATURES SEE DWG. NO 2009-3350	

AS-BUILT PER RECORD PRINT	REVISION	DATE	BY	P. W. A. NO.	KEY SHEETS	POSITION SHEETS	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
DRAFTSMAN	Revised Jacking Pit Area	1/24/14	JCP				PLAN : PROFILE :	SIGNATURES SEE DWG. NO 2009-3350
ENGINEER: JAMES E. HAYEY	DESIGN BY: BBB				BUILDINGS	HIGHWAYS	STRUCTURES	STORM DRAINS
DATE: 7-10 LIC. NO.: 28035	DOWN BY: JCD				SEWER	WATER	FIELD ENGINEER	BUR. OF ENGINEERING & CONSTRUCTION
	CHECKED BY: BBB							FOR REVIEW AND APPROVAL ORIGINAL SIGNATURES AND DATES, SEE DWG. NO 2009-3350
								SIGNATURES SEE DWG. NO 2009-3350

DESIGN AND DRAWINGS BASED ON MARYLAND COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

**AS-BUILT JUNE 2016**

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
EROSION & SEDIMENT CONTROL PLAN STA. 0+00 TO STA 33+89.00**

SUBDIVISION: LANSDOWNE

AREA OF DISTURBANCE PATAPSCO VALLEY STATE PARK - 2.72 ACRES ( 118,471.81 SQUARE FEET)  
AREA OF DISTURBANCE ALONG ROUTE 1 CORRIDOR - 4.93 ACRES ( 214,739.70 SQUARE FEET)  
TOTAL AREA OF DISTURBANCE - 7.65 ACRES ( 333,211.51 SQUARE FEET)

SHEET DESIGNATION <b>SC-6</b>	CONTRACT NO. W-8276
	JOB ORDER NO. 203-0067-0281
	SHEET 25 OF 36
	DRAWING NO. <b>2009-3374</b>
	FILE NO.



MATCH LINE A-A STA. 17+22.00 SEE THIS DWG. FOR CONTINUATION

MATCH LINE B-B STA. 33+89.00 SEE SHEET SC-7 FOR CONTINUATION

DWG. FILENAME:

MATCH LINE B-B STA. 33+89.00 SEE DWG. SC-6 FOR CONTINUATION

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT  
APPROVED FOR SEDIMENT CONTROL

*Jeffrey P. West* 9-1-10  
DATE

R-1 2-19-13  
R-2 1-23-14  
R-3 7-17-14

SEE SHEET SC-7A FOR REVISED  
PLAN VIEW (STA. 33+89 TO STA. 113+45)

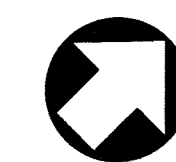
MATCH LINE C-C STA. 113+45.00 SEE THIS DWG. FOR CONTINUATION

MATCH LINE C-C STA. 113+45.00 SEE THIS DWG. FOR CONTINUATION

MATCH LINE D-D STA. 126+89.00 SEE DWG. SC-9 FOR CONTINUATION

**EROSION & SEDIMENT CONTROL PLAN STA. 100+00.00 TO 113+45.00**

SCALE: 1" = 50'-0"

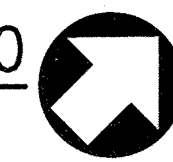


APPROVAL

**EROSION & SEDIMENT CONTROL PLAN STA. 113+45.00 TO 126+89.00**

**EROSION & SEDIMENT CONTROL PLAN STA. 113+45.00 TO 126+89.00**

SCALE: 1" = 50'-0"



**SEQUENCE OF CONSTRUCTION -  
TEMPORARY GRAVEL PARKING LOT**

1. INSTALL SILT FENCE WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR
2. REMOVE TOP SOIL AND STORE AT TOPSOIL STOCKPILE AREA. INSTALL FILTER FABRIC AND STONE TO TEMPORARY PARKING AREA PER CIVIL DRAWINGS. CONTRACTOR SHALL PERFORM ALL WORK PER DAILY STABILIZATION. STABILIZATION SHALL BE AS FOLLOWS: FOR PARKING AREA THE APPLICATION OF STONE; FOR ALL OTHER AREAS THE APPLICATION OF PERMANENT SEED AND MULCH.
3. INSTALL TEMPORARY SECURITY FENCE
4. COORDINATE RELOCATION OF TRACTOR TRAILERS FROM EXISTING PARKING AREA
5. COMPLETE ALL WORK BETWEEN STATIONS 129+00 AND 134+50
6. REMOVE STONE, FENCE AND REPLACE TOP SOIL, GRADE AND STABILIZE WITH PERMANENT SEED AND MULCH.
7. UPON STABILIZATION OF THE AREA WITH ESTABLISHED VEGETATION AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE THE SILT FENCE AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS.

DESIGN AND DRAWINGS BASED ON MARYLAND COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION = 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

AREA OF DISTURBANCE PATAPSCO VALLEY STATE PARK - 2.72 ACRES ( 118,471.81 SQUARE FEET)  
AREA OF DISTURBANCE ALONG ROUTE 1 CORRIDOR - 4.93 ACRES ( 214,739.70 SQUARE FEET)  
TOTAL AREA OF DISTURBANCE - 7.65 ACRES ( 333,211.51 SQUARE FEET)

*AS-BUILT JUNE 2016*

 11019 McCormick Road, Suite 260 Hunt Valley, Maryland 21031		CITY OF BALTIMORE SIGNATURES SEE DWG. NO 2009-3350		REVISION - CITY OF BALTIMORE SIGNATURES SEE DWG. NO 2009-3350		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SIGNATURES SEE DWG. NO 2009-3350	
AS-BUILT PER RECORD PRINT	REVISION	DATE	BY	P. W. A. NO.	KEY SHEETS	POSITION SHEETS	DRAWING SCALE
DRAFTSMAN							DEPARTMENT OF PUBLIC WORKS
ENGINEER: JAMES E. HAVY	DGN BY: BBB	REVIEWED	DATE	RIGHT OF WAY	BUILDINGS	HIGHWAYS	STRUCTURES
DATE: 7-10 LIC. NO.: 26035	DWN BY: JCD	FOR REVIEW AND APPROVAL ORIGINAL SIGNATURES AND DATES, SEE DWG. NO 2009-3350			STORM DRAINS	SEWER	WATER
	CHKD BY: BBB				FIELD ENGINEER		BUR. OF ENGINEERING & CONSTRUCTION

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN**  
**EROSION & SEDIMENT CONTROL PLAN STA 33+89.00 TO STA 126+89.00**

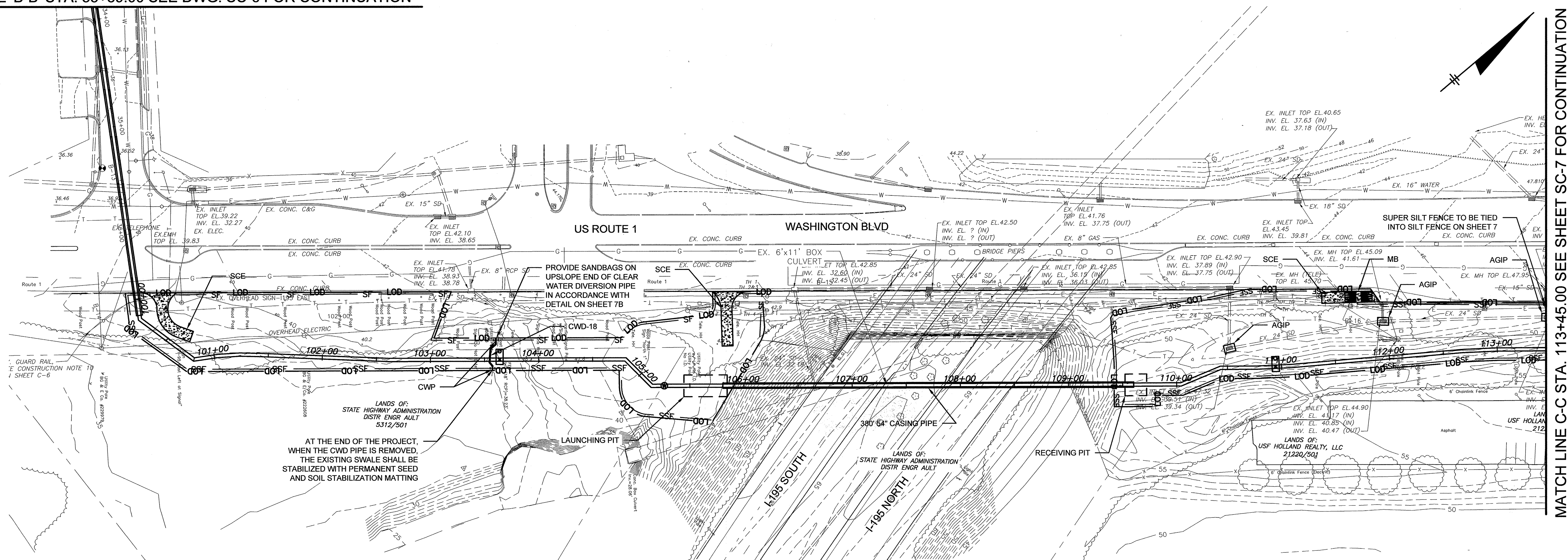
SUBDIVISION: LANSDOWNE

SHEET DESIGNATION	CONTRACT NO.
SC-7	W-8276
JOB ORDER NO.	203-0067-0281
SHEET 26 OF 36	DRAWING NO.
	2009-3375
	FILE NO.



DWG FILENAME:

MATCH LINE 'B-B' STA. 33+89.00 SEE DWG. SC-6 FOR CONTINUATION



MATCH LINE C-C STA. 113+45.00 SEE SHEET SC-7 FOR CONTINUATION

**LEGEND**

- LOD LIMIT OF DISTURBANCE
- SF SILT FENCE
- SSF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- AGIP AT GRADE INLET PROTECTION
- MB MOUNTABLE BERM
- CWP CLEAR WATER PIPE THROUGH SILT FENCE OR SUPER SILT FENCE
- CWD-18 CLEAR WATER DIVERSION PIPE

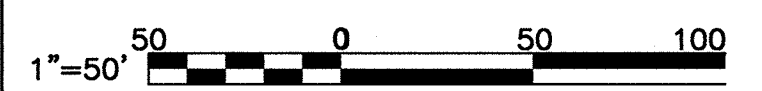
**CONSULTANT'S CERTIFICATION:**  
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT AND THE CURRENT STATE OF MARYLAND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

*Robert J. Dudley* 6/18/14  
 SIGNATURE DATE  
 Robert J. Dudley 18523  
 PRINT NAME MD LICENSE NUMBER

APPROVED FOR SEDIMENT CONTROL  
 6/30/14  
 DATE  
 AS-BUILT JUNE 2016

HOWARD CO. PROJECT NO. W-8276  
**O'BRIEN & GERE**  
 11850 McCORMICK ROAD,  
 SUITE 304  
 HUNT VALLEY, MARYLAND 21081

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	DATE	CHIEF, UTILITY ENGINEERING	DATE	CHIEF, WATER ENGINEERING SECTION	DATE
PROFESSIONAL CERTIFICATION		REVISION		BY/ DATE P.W.A. NO. KEY SHEET POSITION SHEET	
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. 18523 EXPIRATION DATE DECEMBER 8, 2015				R.O.W. NO. CNY 285N17	
ENGINEER: ROBERT J. DUDLEY	DESIGN BY: RPW	BUREAU OF ENGINEERING AND CONSTRUCTION	BUILDINGS	HIGHWAYS	STRUCTURES
AS-BUILT FOR RECORD PRINT	DRAWN BY: RPW	REVIEWED BY: RJS			
BY: DATE	CHEK BY: RAD	DATE REVIEWED: 6/27/14			



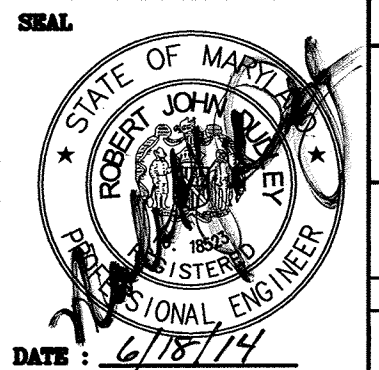
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN  
 SEDIMENT AND EROSION CONTROL PLAN**

SUBDIVISION: SAINT DENIS

ELECTION DISTRICT: 13C1

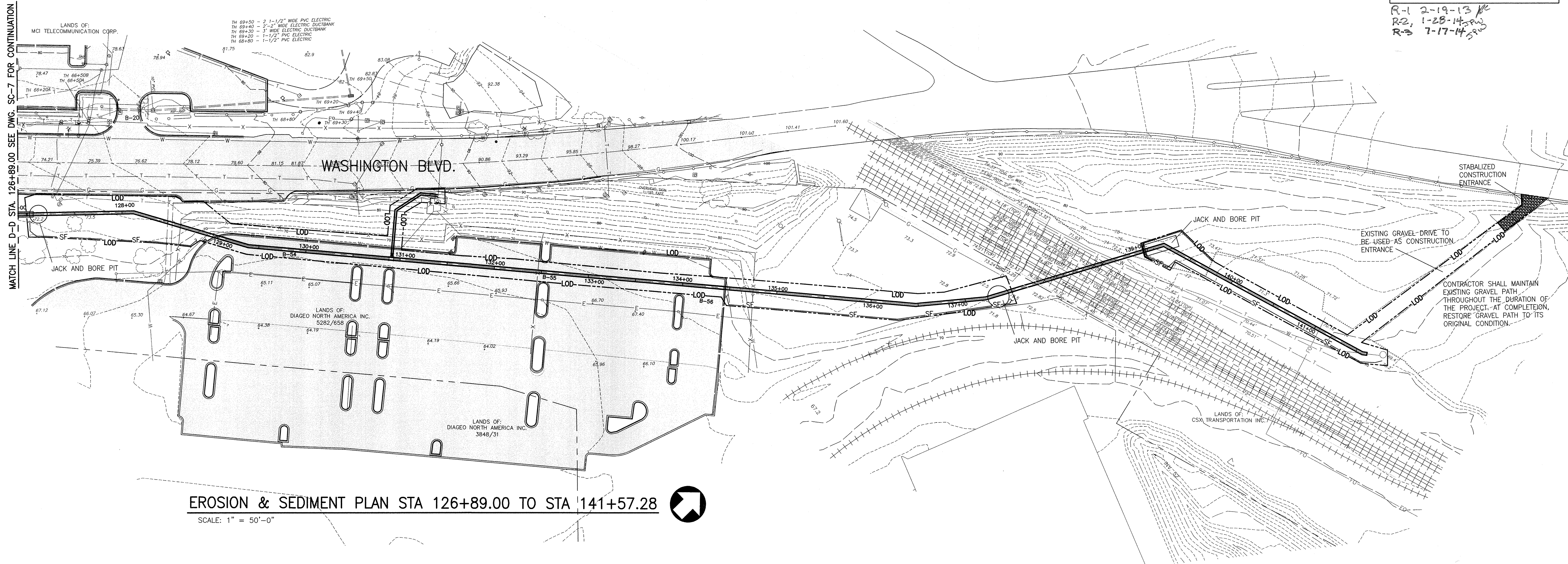
SHEET DESIGNATION	CONTRACT NO.
SC-7A	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 26A OF 36	
DRAWING NO.	2009-3388
FILE NO.	





*Jeffrey P. West* 9-1-10  
 DATE

R-1 2-19-13  
 R-2 1-28-14  
 R-3 7-17-14



**EROSION & SEDIMENT PLAN STA 126+89.00 TO STA 141+57.28**  
 SCALE: 1" = 50'-0"

DESIGN AND DRAWINGS BASED ON MARYLAND  
 COORDINATE SYSTEM HORIZONTAL - NAD 83/91 AND  
 ELEVATIONS SHOWN HEREON ARE REFERRED TO NAVD 88 DATUM  
 USING NGS MONUMENTS GIS 86 (PID AE2450), ELEVATION =  
 57.13 AND GIS 87 (PID AE2451), ELEVATION 68.97.

AREA OF DISTURBANCE PATAPSCO VALLEY STATE PARK - 2.72 ACRES ( 118,471.81 SQUARE FEET)  
 AREA OF DISTURBANCE ALONG ROUTE 1 CORRIDOR - 4.93 ACRES ( 214,739.70 SQUARE FEET)  
 TOTAL AREA OF DISTURBANCE - 7.65 ACRES ( 333,211.51 SQUARE FEET)

*AS-BUILT JUNE 2016*

APPROVAL



CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
SIGNATURES SEE DWG. NO 2009-3350	SIGNATURES SEE DWG. NO 2009-3350	SIGNATURES SEE DWG. NO 2009-3350

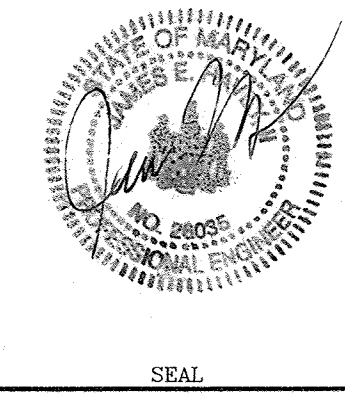
AS-BUILT PER RECORD PRINT	REVISION	DATE	BY	P. W. A. NO.	KEY SHEETS	POSITION SHEETS	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
DRAFTSMAN							PLAN : PROFILE :	SIGNATURES SEE DWG. NO 2009-3350
ENGINEER: JAMES E. HAYEY	DESIGN BY: BBB	REVIEWED						SIGNATURES SEE DWG. NO 2009-3350
DATE: 7-10 LIC. NO.: 26035	DWN BY: JCD	DATE						
	CHKD BY: BBB							

FOR REVIEW AND APPROVAL ORIGINAL SIGNATURES AND DATES, SEE DWG. NO 2009-3350

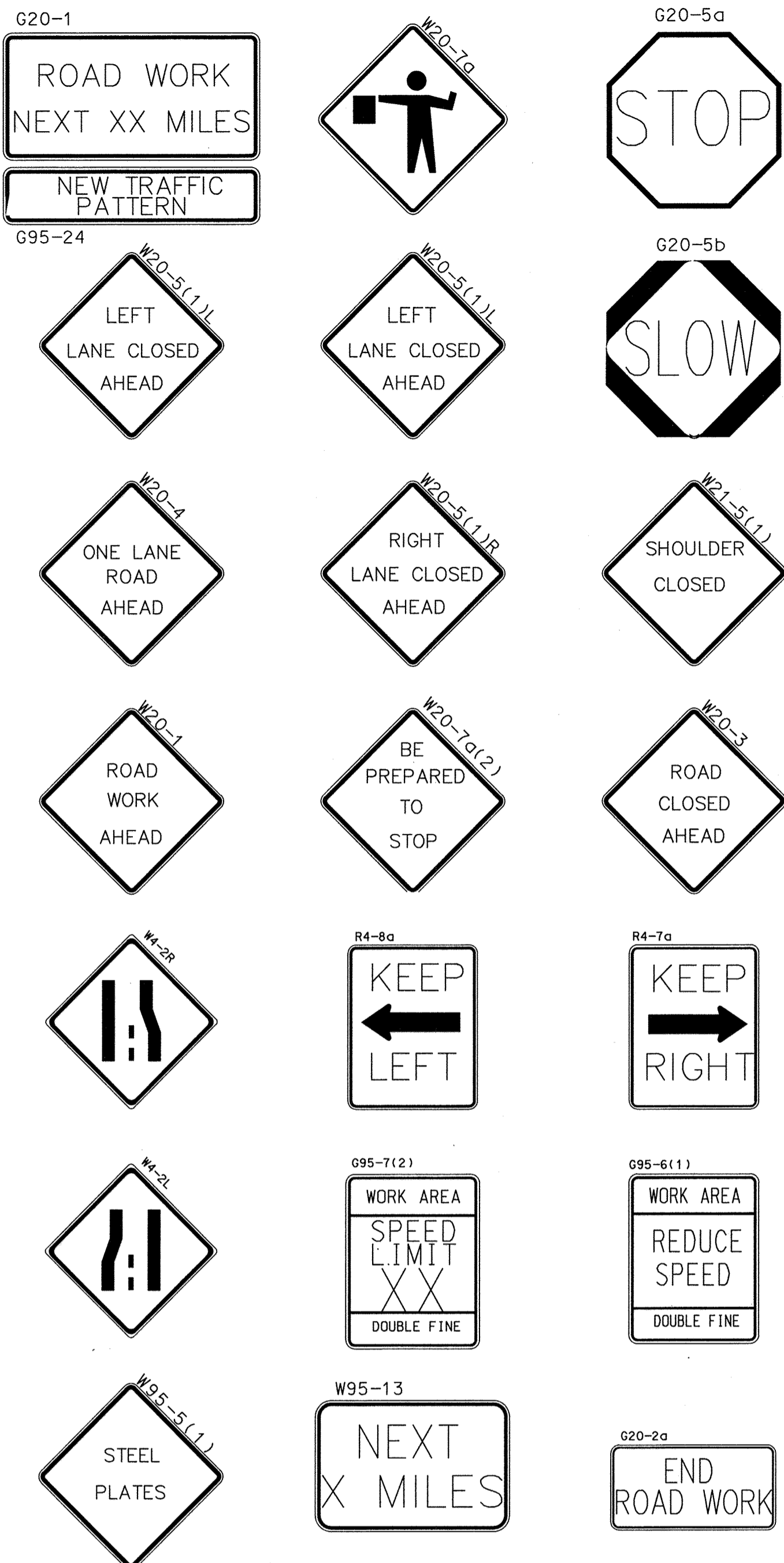
**SOUTHWEST TRANSMISSION MAIN  
 EROSION & SEDIMENT CONTROL PLAN STA 126+89.00 TO STA 141+57.28**

SUBDIVISION: LANSDOWNE

SHEET DESIGNATION	CONTRACT NO.
SC-8	W-8276
	JOB ORDER NO.
	203-0067-0281
	SHEET 27 OF 36
	DRAWING NO.
	2009-3376
	FILE NO.



DWG FILENAME:



NOTE: ALL REGULATORY, WARNING AND SPECIAL SIGNS ARE TO BE USED IN ACCORDANCE WITH MARYLAND STATE LAWS.

### MAINTENANCE OF TRAFFIC WASHINGTON BLVD. (ROUTE 1)

PHASE 1 - STATION 100+35 TO STATION 106+50 (APPROXIMATELY) PHASE 4 - STATION 128+20 TO STATION 134+50 (APPROXIMATELY)

- PHASE 1 TRAFFIC CONTROL WILL PROVIDE FOR THE INSTALLATION OF WATER MAIN FROM STATION 100+35 TO STATION 106+50 (APPROXIMATELY) INCLUDING VALVE VAULTS AND AIR RELEASE VAULTS.
- PLACE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, TEMPORARY LANE CLOSURE, AND END ROAD WORK) ALONG THE RIGHT LANE OF WASHINGTON BOULEVARD TO FACILITATE ACCESS TO THE WORK AREA.
- INSTALL SEDIMENT CONTROL DEVICES AS REQUIRED.
- CONSTRUCT 36-INCH WATER MAIN AND APPURTENANCES ALONG THIS PORTION OF WASHINGTON BOULEVARD.
- LIMIT LANE CLOSURES TO TIMES SPECIFIED UNDER THE GENERAL NOTES. AT THE END OF EACH WORKDAY, RESTORE TWO LANES OF TRAFFIC.

PHASE 2 - STATION 106+50 TO STATION 108+50 (APPROXIMATELY)

- PHASE 2 TRAFFIC CONTROL WILL PROVIDE FOR THE INSTALLATION OF WATER MAIN FROM STATION 106+50 TO STATION 108+50 WHICH INCLUDES THE INSTALLATION OF THE 54" STEEL CASING UNDER THE ROUTE 195 OVERPASS.
- PROVIDE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, TEMPORARY LANE CLOSURE, AND END ROAD WORK) ALONG THE RIGHT LANE OF WASHINGTON BOULEVARD TO FACILITATE ACCESS TO THE WORK AREA.
- INSTALL SEDIMENT CONTROL DEVICES AS REQUIRED.
- CONSTRUCT 36-INCH WATER MAIN AND APPURTENANCES.
- LIMIT LANE CLOSURES TO TIMES SPECIFIED UNDER THE GENERAL NOTES. AT THE END OF EACH WORKDAY, RESTORE TWO LANES OF TRAFFIC.

PHASE 3 - STATION 108+50 TO STATION 128+20 (APPROXIMATELY)

- PHASE 3 TRAFFIC CONTROL WILL PROVIDE FOR THE INSTALLATION OF WATER MAIN FROM STATION 108+50 TO STATION 128+20 INCLUDING JACK AND BORE OPERATIONS UNDER ROADWAY EXPRESS ENTRANCE AND DIAGEO PROPERTY ENTRANCE.
- PROVIDE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, TEMPORARY LANE CLOSURE, AND END ROAD WORK) ALONG THE RIGHT LANE OF WASHINGTON BOULEVARD TO FACILITATE ACCESS TO THE WORK AREA.
- INSTALL SEDIMENT CONTROL DEVICES AS REQUIRED.
- CONSTRUCT 36-INCH WATER MAIN AND APPURTENANCES.
- LIMIT LANE CLOSURES TO TIMES SPECIFIED UNDER THE GENERAL NOTES. AT THE END OF EACH WORKDAY, RESTORE TWO LANES OF TRAFFIC.

### WASHINGTON BOULEVARD (ROUTE 1) TRAFFIC CONTROL GENERAL NOTES

- THE CONTRACTOR MUST CONTACT THE SHA DISTRICT 4 ENGINEER AT (410) 229-2300 TWO (2) WEEKS BEFORE CONSTRUCTION BEGINS AND ONE (1) WEEK PRIOR TO ANY CHANGES TO THE MAINTENANCE OF TRAFFIC (MOT) PLAN.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY, INSTALL AND MAINTAIN ALL TRAFFIC CONTROL EQUIPMENT FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL HAVE ALL CONSTRUCTION SIGNS IN PLACE PRIOR TO ANY WORK BEGINNING.
- ALL TRAFFIC CONTROL MUST BE IN ACCORDANCE WITH THE CURRENT EDITION AND REVISIONS OF THE FEDERAL HIGHWAY M.U.T.C.D., AND THE REQUIREMENTS OF BALTIMORE COUNTY.
- AT LEAST ONE LANE MUST BE MAINTAINED AT ALL TIMES. LANE CLOSURES WILL NOT BE PERMITTED BETWEEN THE HOURS OF 7:00 AM AND 9:00 AM AND 3:30 PM AND 6:00 PM MONDAY THRU FRIDAY.
- THE LOCATION OF THE CONSTRUCTION SIGNS AS SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE SIGN INSTALLATION WITH THE INSPECTOR AND THE STATE HIGHWAY ADMINISTRATION.
- IMMEDIATELY UPON COMPLETION OF RELATED WORK, REMOVE THE TRAFFIC CONTROL DEVICES.
- COVER OR REMOVE ALL PERMANENT AND TEMPORARY SIGNS NOT IN USE.
- AT THE END OF EACH WORK DAY, REMOVE TRAFFIC CHANNELING DEVICES. COVER OR REMOVE TEMPORARY SIGNS AND INSTALL STEEL PLATE COVERS OVER ALL OPEN EXCAVATIONS AND OPEN ROAD TO TRAFFIC.
- STEEL PLATES FOR COVERING TRENCH EXCAVATIONS SHALL HAVE 1-INCH MINIMUM THICKNESS AND EXTEND 1-FOOT TO THE OUTSIDE OF THE EXCAVATION. THE PLACEMENT OF THE PLATES SHALL CONFORM TO TEMPORARY STEEL PLATE DETAIL SHOWN ON CIVIL DETAIL SHEETS. "STEEL PLATE AHEAD" WARNING SIGNAGE MUST BE DISPLAYED IN ADVANCE OF THE PLATE(S).
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL TEMPORARY REGULATORY SIGNS NECESSARY TO COMPLETE THIS PROJECT.
- NO WORK ALONG PVSP ENTRANCE ROAD WILL BE PERMITTED BETWEEN THE HOURS OF 10AM AND 5PM (JUNE 01 THROUGH SEPT 15). ANY WORK DURING THESE SUMMER HOURS MUST BE ACCOMPLISHED DURING TRAFFIC HOURS.

### MAINTENANCE OF TRAFFIC PATAPSCO VALLEY STATE PARK

PHASE 1 - STATION 0+25 TO STATION 6+00 (APPROXIMATELY)

- PHASE 1 TRAFFIC CONTROL WILL PROVIDE FOR THE INSTALLATION OF WATER MAIN FROM STATION 0+25 (DO NOT MAKE THE CONNECTION) TO STATION 6+00, INCLUDING DEWATERING VAULT, VENTURI METER VAULT, AIR RELEASE VAULT, VALVE VAULTS, AND THE STEEL CASING UNDER THE CSX VIADUCT.
- PLACE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, ONE LANE ROAD AHEAD, FLAGMAN, AND END ROAD WORK) ALONG THE PARK ACCESS ROAD APPROACHING THE WORK AREA FROM EACH DIRECTION.
- REMOVE GUARD RAIL ALONG THIS AREA AND SET UP TRAFFIC BARRELS TO ESTABLISH ONE LANE OF TRAFFIC.
- PROVIDE FLAGMEN DURING ONE LANE OPERATION.
- AT THE END OF EACH WORK DAY, PROVIDE STEEL PLATES AND REMOVE TRAFFIC BARRELS. RE-ESTABLISH TWO LANES OF TRAFFIC.
- FROM APPROXIMATELY STATION 3+75 TO STATION 4+60, PROVIDE TEMPORARY PAVEMENT ALONG NORTH EDGE OF ROADWAY TO MAINTAIN A MINIMUM ONE LANE OF TRAFFIC. COST OF ADDITIONAL PAVEMENT SHALL BE INCLUDED IN THE TRAFFIC CONTROL BID ITEM.

PHASE 2 - STATION 6+00 TO STATION 7+60 (APPROXIMATELY)

- PHASE 2 TRAFFIC CONTROL WILL PROVIDE FOR THE INSTALLATION OF WATER MAIN FROM STATION 6+00 TO STATION 7+60.
- PROVIDE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, ONE LANE ROAD AHEAD, FLAGMAN, AND END ROAD WORK) ALONG THE PARK ACCESS ROAD APPROACHING THE WORK AREA FROM EACH DIRECTION.
- SET UP TRAFFIC BARRELS TO DIRECT TRAFFIC AROUND THE WORK AREA.
- PROVIDE FLAGMEN DURING ONE LANE OPERATION.
- AT THE END OF EACH WORK DAY, PROVIDE STEEL PLATES AND REMOVE TRAFFIC BARRELS. RE-ESTABLISH TWO LANES OF TRAFFIC.

PHASE 3 - STATION 7+60 TO STATION 15+50 (APPROXIMATELY)

- PHASE 3 TRAFFIC CONTROL WILL PROVIDE FOR THE INSTALLATION OF WATER MAIN FROM STATION 7+60 TO STATION 15+50 AND THE RE-CONSTRUCTION OF THE ACCESS ROAD IN THIS AREA.
- PROVIDE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, ONE LANE ROAD AHEAD, FLAGMAN, AND END ROAD WORK) ALONG THE PARK ACCESS ROAD APPROACHING THE WORK AREA FROM EACH DIRECTION.
- SET UP TRAFFIC BARRELS (AT STATION 7+50± AND STATION 14+00±).
- PLACE SIGNS STATING TWO WAY TRAFFIC.
- PROVIDE TEMPORARY PAVEMENT ALONG NORTH SIDE OF ROADWAY, IF NECESSARY, TO MAINTAIN SUFFICIENT WIDTH FOR TWO WAY TRAFFIC. THE COST OF THE ADDITIONAL PAVEMENT SHALL BE INCLUDED IN THE TRAFFIC CONTROL BID ITEM.

### PATAPSCO VALLEY STATE PARK TRAFFIC CONTROL GENERAL NOTES

- THE CONTRACTOR MUST CONTACT THE PARK MANAGER (ROBIN MELTON) AT (410) 461-5005 TWO (2) WEEKS BEFORE CONSTRUCTION BEGINS AND ONE (1) WEEK PRIOR TO ANY CHANGES TO THE MAINTENANCE OF TRAFFIC (MOT) PLAN.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY, INSTALL AND MAINTAIN ALL TRAFFIC CONTROL EQUIPMENT FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL HAVE ALL CONSTRUCTION SIGNS IN PLACE PRIOR TO ANY WORK BEGINNING.
- ALL TRAFFIC CONTROL MUST BE IN ACCORDANCE WITH THE CURRENT EDITION AND REVISIONS OF THE FEDERAL HIGHWAY M.U.T.C.D., ADDITIONAL REQUIREMENTS OF BALTIMORE COUNTY, AND ADDITIONAL REQUIREMENTS OF THE PARK MANAGER.
- AT NO TIME WILL THE CONTRACTOR BE PERMITTED TO DISRUPT TWO WAY TRAFFIC UNLESS FLAGMEN ARE PRESENT. WHEN FLAGMEN ARE PRESENT, ONE (1) 10' LANE MUST BE MAINTAINED.
- THE LOCATION OF THE CONSTRUCTION SIGNS AS SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE SIGN INSTALLATION WITH THE PARK MANAGER.
- IMMEDIATELY UPON COMPLETION OF THE RELATED WORK, REMOVE THE TRAFFIC CONTROL DEVICES.
- COVER OR REMOVE ALL PERMANENT AND TEMPORARY SIGNS NOT IN USE.
- AT THE END OF EACH WORK DAY, REMOVE TRAFFIC CHANNELING DEVICES. COVER OR REMOVE TEMPORARY SIGNS AND INSTALL STEEL PLATE COVERS OVER ALL OPEN EXCAVATIONS AND OPEN ROAD TO TRAFFIC.
- STEEL PLATES FOR COVERING TRENCH EXCAVATIONS SHALL HAVE 1-INCH MINIMUM THICKNESS AND EXTEND 1-FOOT TO THE OUTSIDE OF THE EXCAVATION. THE PLACEMENT OF THE PLATES SHALL CONFORM TO TEMPORARY STEEL PLATE DETAIL SHOWN ON CIVIL DETAIL SHEETS. "STEEL PLATE AHEAD" WARNING SIGNAGE MUST BE DISPLAYED IN ADVANCE OF THE PLATE(S).
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL TEMPORARY REGULATORY SIGNS NECESSARY TO COMPLETE THIS PROJECT.
- NO WORK ALONG PARK ENTRANCE ROAD WILL BE PERMITTED BETWEEN THE HOURS OF 9AM AND 5PM (MARCH 15 THROUGH JUNE 01 AND SEPT. 01 THRU OCT. 30). ANY WORK DURING THESE TIME PERIODS MUST BE ACCOMPLISHED DURING LOW TRAFFIC HOURS AFTER THE PARK IS CLOSED.
- AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE FOR THE RE-PAVEMENT OF ACCESS ROAD AS SHOWN ELSEWHERE ON THESE DRAWINGS. MAINTAIN ONE (1) LANE OF TRAFFIC AT ALL TIMES (WITH FLAGMEN) DURING PAVING OPERATIONS.
- SEE DETAILS SHOWING TEMPORARY/PERMANENT PAVEMENT REPAIR REQUIRED ALONG THE PARK ACCESS ROADWAY.

PHASE 4 - STATION 15+50 TO STATION 27+25 (APPROXIMATELY)

- PHASE 4 TRAFFIC CONTROL WILL PROVIDE FOR INSTALLATION OF WATER MAINS FROM STATION 15+50 TO STATION 27+25 AND THE INSTALLATION OF AIR RELEASE VAULT.
- PROVIDE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, ONE LANE ROAD AHEAD, FLAGMAN, AND END ROAD WORK) ALONG THE PARK ACCESS ROAD APPROACHING THE WORK AREA FROM EACH DIRECTION.
- SET UP TRAFFIC BARRELS TO MAINTAIN ONE LANE OF TRAFFIC THROUGH THE WORK AREA.
- AT THE END OF EACH WORK DAY, PROVIDE STEEL PLATES AND REMOVE TRAFFIC BARRELS. RE-ESTABLISH TWO LANES OF TRAFFIC.
- REMOVE GUARD RAIL AS NECESSARY FROM STATION 23+00 TO STATION 24+00. DURING INSTALLATION OF WATER MAIN.
- PROVIDE FLAGMEN DURING ONE LANE OF OPERATION.
- INSTALL NEW WEATHERPROOF GUARD RAIL IMMEDIATELY AFTER WATER MAIN CONSTRUCTION IS COMPLETE IN THIS AREA.

PHASE 5 - STATION 27+25 TO STATION 30+75 (APPROXIMATELY)

- PHASE 5 TRAFFIC CONTROL WILL PROVIDE FOR INSTALLATION OF WATER MAINS FROM STATION 27+25 TO STATION 30+75.
- PROVIDE TRAFFIC CONTROL SIGNS (ROAD WORK AHEAD, ONE LANE ROAD AHEAD, FLAGMAN, AND END ROAD WORK) ALONG THE PARK ACCESS ROAD APPROACHING THE WORK AREA FROM EACH DIRECTION.
- SET UP TRAFFIC BARRELS TO MAINTAIN ONE LANE OF TRAFFIC THROUGH THE WORK AREA.
- AT THE END OF EACH WORK DAY, PROVIDE STEEL PLATES AND REMOVE TRAFFIC BARRELS. RE-ESTABLISH TWO LANES OF TRAFFIC.
- PROVIDE FLAGMEN DURING ONE LANE OF OPERATION.

PHASE 6 - STATION 31+90 (APPROXIMATELY)

- PHASE 6 TRAFFIC CONTROL WILL PROVIDE FOR THE CONNECTION OF THE NEW WATER MAIN TO THE EXISTING 12-INCH MAIN.

BETWEEN MARCH 15 AND OCTOBER 15, THE CONTRACTOR SHALL HAVE THE OPTION TO ACCOMPLISH ALL CONSTRUCTION DURING OVERNIGHT HOURS BETWEEN 9 PM AND 8 AM WITHOUT THE USE OF FLAGMEN. IF THIS OPTION IS CHOSEN BY THE CONTRACTOR, HE MUST COORDINATE WITH THE LOCAL RESIDENTS THAT ARE REQUIRED TO USE THE ACCESS ROAD TO REACH THEIR HOMES.

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
 CHIEF, UTILITY ENGINEERING DATE: 3/15/12		 CHIEF, WATER ENGINEERING SECTION DATE: 3/15/12		 DIRECTOR, DEPT OF PUBLIC WORKS DATE: 1/23/12	
<b>PROFESSIONAL CERTIFICATION</b> 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. 37797 EXPIRATION DATE AUGUST 9, 2013		REVISION BY: _____ DATE: _____		DRAWING SCALE PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED	
ENGINEER: SYAM B. NAYER DESIGN BY: BBB DRAWN BY: JCD CHECK BY: SEN		BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER		DEPARTMENT OF PUBLIC WORKS DIRECTOR DATE: 1-24-12	
AS-BUILT PER RECORD PRINT DATE: 1-18-2012		REVIEWED BY: R8F DATE REVIEWED: 1/23/12		APPROVED BY: [Signature] DATE: 1/23/12	

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

**SOUTHWEST TRANSMISSION MAIN TRAFFIC CONTROL GENERAL NOTES**

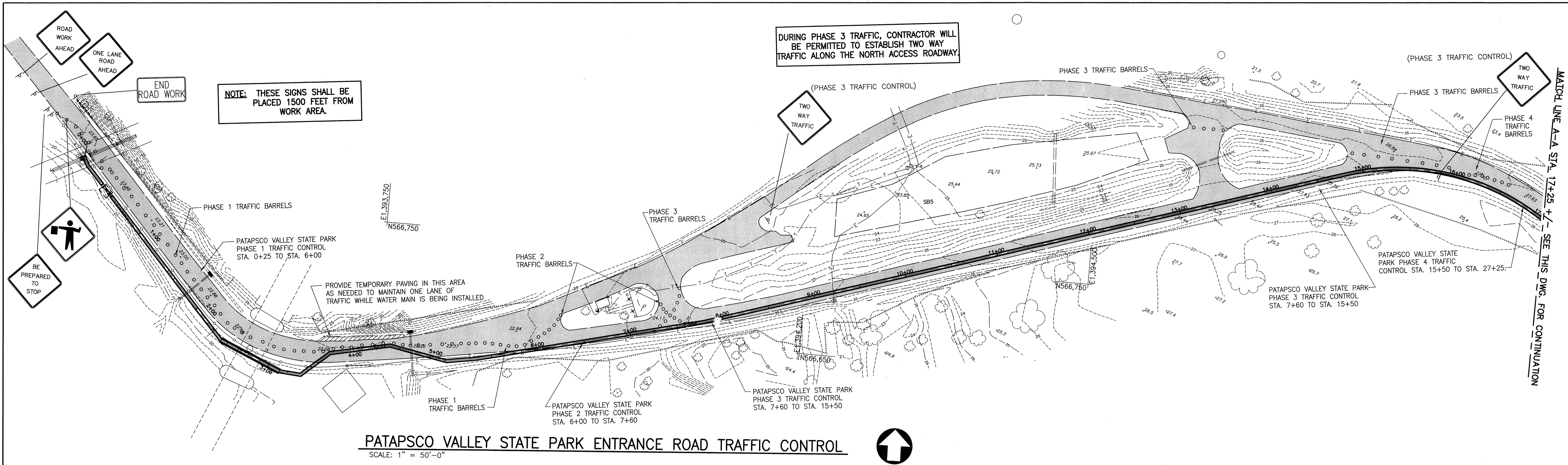
SUBDIVISION: ST. DENIS ELECTION DISTRICT: 13

HOWARD CO. PROJECT NO. W-8276

11019 McCormick Road, Suite 260  
 Hunt Valley, Maryland 21031

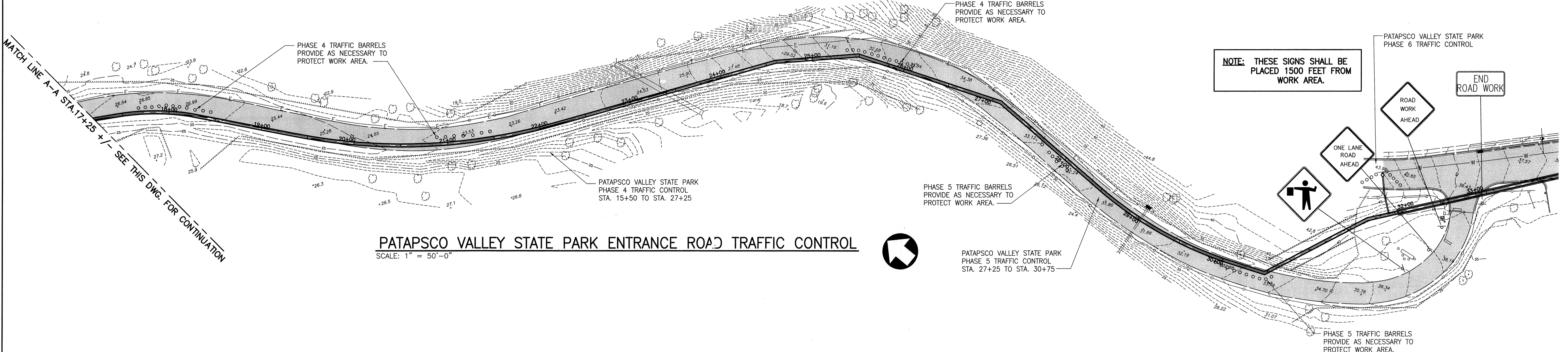
SHEET DESIGNATION	CONTRACT NO.
TC-1	44-4618
JOB ORDER NO.	
203-0067-0281	
SHEET 28 OF 36	
DRAWING NO.	
2009-3377	
FILE NO.	





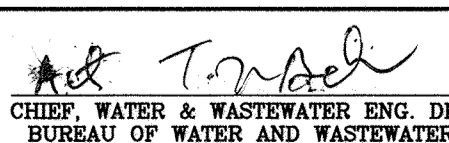

**PATAPSCO VALLEY STATE PARK ENTRANCE ROAD TRAFFIC CONTROL**

SCALE: 1" = 50'-0"




**PATAPSCO VALLEY STATE PARK ENTRANCE ROAD TRAFFIC CONTROL**

SCALE: 1" = 50'-0"

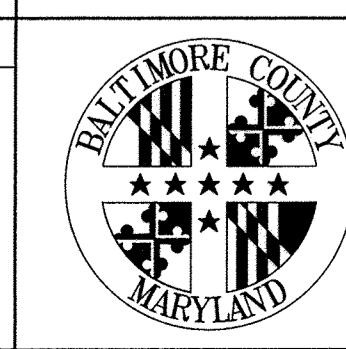
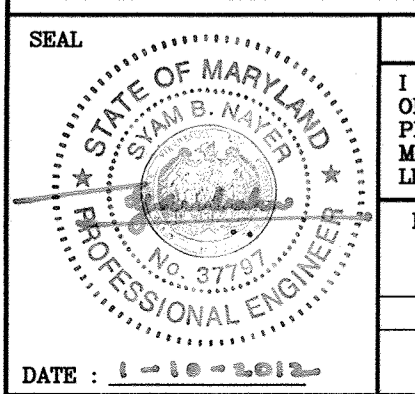
CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
 CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		CHIEF, UTILITY ENGINEERING DATE: 3/15/12		 DIRECTOR, DEPT. OF PUBLIC WORKS DATE: 1/12/12	
SEAL: STATE OF MARYLAND PROFESSIONAL ENGINEER I HEREBY 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. 37797 EXPIRATION DATE AUGUST 9, 2013.		REVISION: BY DATE P.W.A. NO. KEY SHEET POSITION SHT		DRAWING SCALE: PLAN SCALE: AS NOTED PROFILE SCALE: AS NOTED	
ENGINEER: SYAM B. NAYER DESIGN BY: BBB DRAWN BY: JCD CHECKED BY: SBN		BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER		DEPARTMENT OF PUBLIC WORKS BUR. OF ENGINEERING & CONSTRUCTION APPROVED BY: [Signature] DATE: 1-24-12	
AS-BUILT PER RECORD PRINT DATE: 1-24-12		DATE REVIEWED: 1/23/12 1/23/12 1/20/12 1/20/12 1/20/12 1/20/12		AS-BUILT JUNE 2016 BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION SOUTHWEST TRANSMISSION MAIN PATAPSCO VALLEY STATE PARK ENTRANCE ROAD TRAFFIC CONTROL SUBDIVISION: ST. DENIS ELECTION DISTRICT: 13	

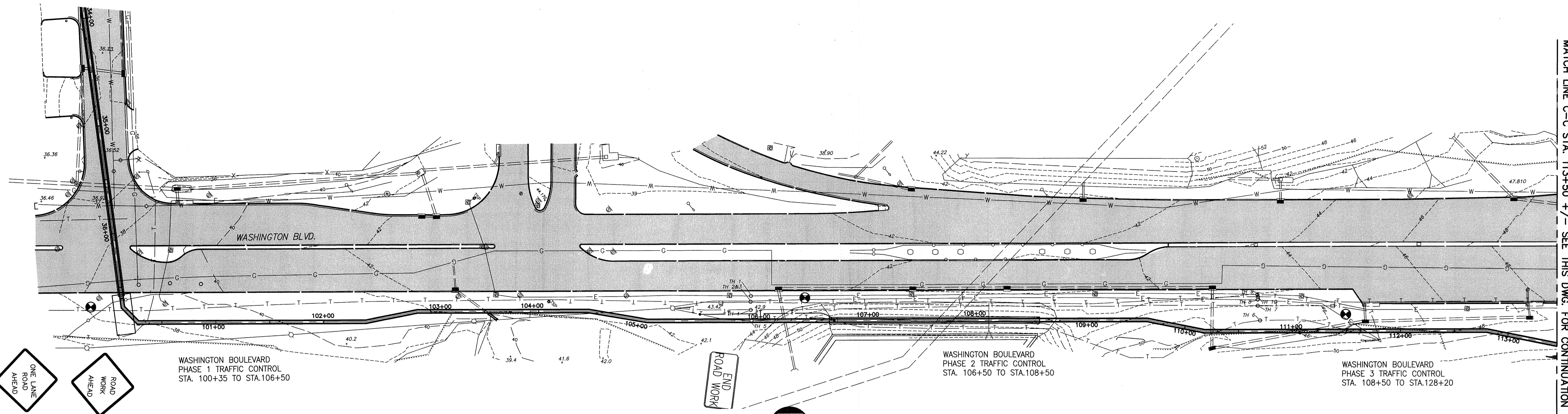
HOWARD CO. PROJECT NO. W-8276



Hatch Mott MacDonald  
 11019 McCormick Road, Suite 280  
 Hunt Valley, Maryland 21031

SHEET DESIGNATION	CONTRACT NO.
TC-2	44-4618
JOB ORDER NO.	203-067-0281
SHEET 29 OF 36	DRAWING NO.
	2009-3378
	FILE NO.





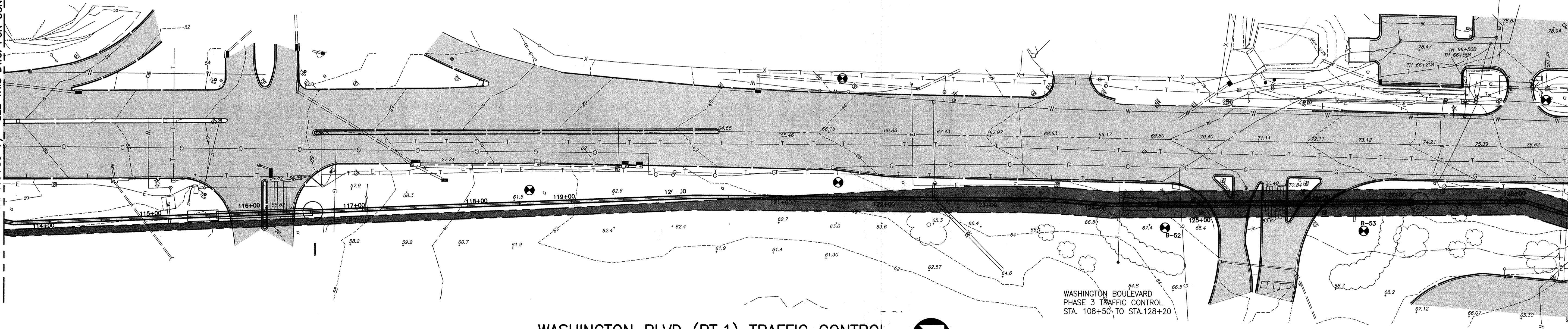
WASHINGTON BLVD (RT.1) TRAFFIC CONTROL

SCALE: 1" = 50'-0"



MATCH LINE C-C STA. 113+50 +/- SEE THIS DWG. FOR CONTINUATION

MATCH LINE C-C STA. 113+50 +/- SEE THIS DWG. FOR CONTINUATION



WASHINGTON BLVD (RT.1) TRAFFIC CONTROL

SCALE: 1" = 50'-0"

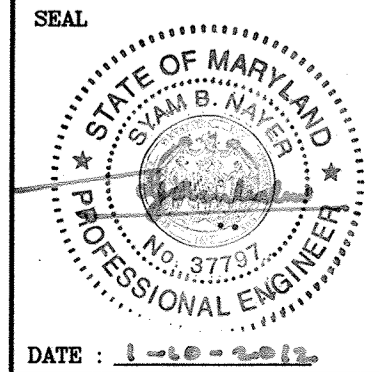


WASHINGTON BOULEVARD  
PHASE 3 TRAFFIC CONTROL  
STA. 108+50 TO STA. 128+20

HOWARD CO. PROJECT NO. W-8276

**Hatch Mott MacDonald**  
11019 McCormick Road, Suite 260  
Hunt Valley, Maryland 21081

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS				
AS-BUILT PER RECORD PRINT DATE: 1/24/12		CHIEF, UTILITY ENGINEERING DATE: 3/15/12		DIRECTOR, DEPT. OF PUBLIC WORKS DATE: 1/24/12				
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. 37797 EXPIRATION DATE AUGUST 9, 2013		REVISION BY: <i>BBB</i> DATE: <i>3/15/12</i>		BY: <i>RJF</i>	DATE: <i>1/23/12</i>	P.W.A. NO.	KEY SHEET	POSITION SH#
ENGINEER: SYAM B. NAYER	DESIGN BY: BBB	BUREAU OF ENGINEERING AND CONSTRUCTION	BUILDINGS	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER
AS-BUILT PER RECORD PRINT	DRAWN BY: JCD	REVIEWED BY: <i>RJF</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>
BY: <i>SEN</i>	CHKD BY: <i>SEN</i>	DATE REVIEWED: <i>1/23/12</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>



AS-BUILT JUNE 2016

SOUTHWEST TRANSMISSION MAIN  
TRAFFIC CONTROL PLAN 2 - STA. 100+00.00 TO 128+20

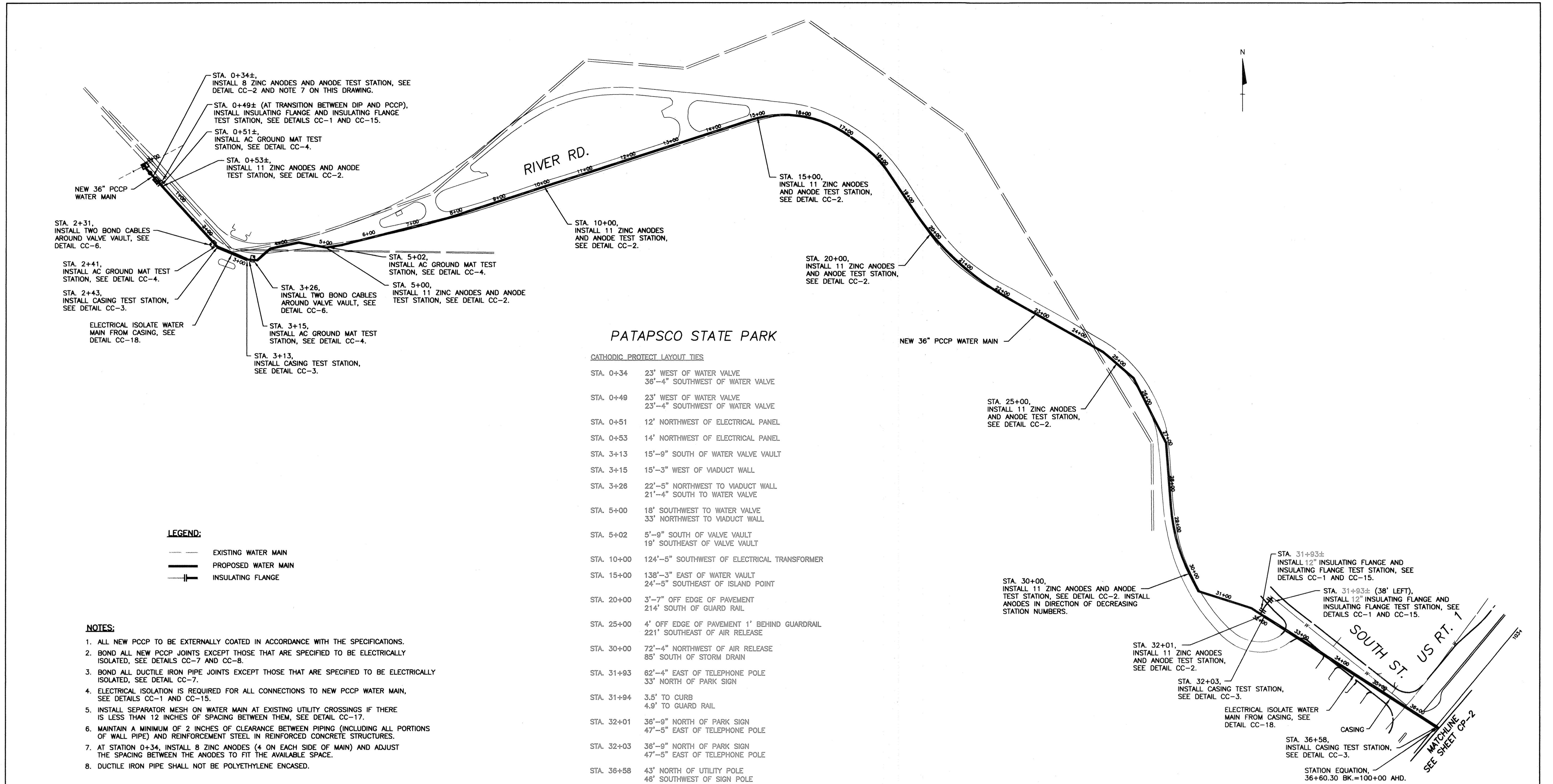
SUBDIVISION: ST. DENIS

ELECTION DISTRICT: 13

SHEET DESIGNATION	CONTRACT NO.
TC-3	44-4618
JOB ORDER NO.	203-0067-0281
SHEET 30 OF 36	
DRAWING NO.	2009-3379
FILE NO.	



DWG FILENAME:



**PATAPSCO STATE PARK**

**CATHODIC PROTECT LAYOUT TIES**

STA. 0+34	23' WEST OF WATER VALVE 36'-4" SOUTHWEST OF WATER VALVE
STA. 0+49	23' WEST OF WATER VALVE 23'-4" SOUTHWEST OF WATER VALVE
STA. 0+51	12' NORTHWEST OF ELECTRICAL PANEL
STA. 0+53	14' NORTHWEST OF ELECTRICAL PANEL
STA. 3+13	15'-9" SOUTH OF WATER VALVE VAULT
STA. 3+15	15'-3" WEST OF VIADUCT WALL
STA. 3+26	22'-5" NORTHWEST TO VIADUCT WALL 21'-4" SOUTH TO WATER VALVE
STA. 5+00	18' SOUTHWEST TO WATER VALVE 33' NORTHWEST TO VIADUCT WALL
STA. 5+02	5'-9" SOUTH OF VALVE VAULT 19' SOUTHEAST OF VALVE VAULT
STA. 10+00	124'-5" SOUTHWEST OF ELECTRICAL TRANSFORMER
STA. 15+00	138'-3" EAST OF WATER VAULT 24'-5" SOUTHEAST OF ISLAND POINT
STA. 20+00	3'-7" OFF EDGE OF PAVEMENT 214' SOUTH OF GUARD RAIL
STA. 25+00	4' OFF EDGE OF PAVEMENT 1' BEHIND GUARDRAIL 221' SOUTHEAST OF AIR RELEASE
STA. 30+00	72'-4" NORTHWEST OF AIR RELEASE 85' SOUTH OF STORM DRAIN
STA. 31+93	62'-4" EAST OF TELEPHONE POLE 33' NORTH OF PARK SIGN
STA. 31+94	3.5' TO CURB 4.9' TO GUARD RAIL
STA. 32+01	36'-9" NORTH OF PARK SIGN 47'-5" EAST OF TELEPHONE POLE
STA. 32+03	36'-9" NORTH OF PARK SIGN 47'-5" EAST OF TELEPHONE POLE
STA. 36+58	43' NORTH OF UTILITY POLE 46' SOUTHWEST OF SIGN POLE

**CORROSION CONTROL LAYOUT**

Scale: 1" = 100'

- NOTES:**
- ALL NEW PCCP TO BE EXTERNALLY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
  - BOND ALL NEW PCCP JOINTS EXCEPT THOSE THAT ARE SPECIFIED TO BE ELECTRICALLY ISOLATED. SEE DETAILS CC-7 AND CC-8.
  - BOND ALL DUCTILE IRON PIPE JOINTS EXCEPT THOSE THAT ARE SPECIFIED TO BE ELECTRICALLY ISOLATED. SEE DETAIL CC-7.
  - ELECTRICAL ISOLATION IS REQUIRED FOR ALL CONNECTIONS TO NEW PCCP WATER MAIN, SEE DETAILS CC-1 AND CC-15.
  - INSTALL SEPARATOR MESH ON WATER MAIN AT EXISTING UTILITY CROSSINGS IF THERE IS LESS THAN 12 INCHES OF SPACING BETWEEN THEM, SEE DETAIL CC-17.
  - MAINTAIN A MINIMUM OF 2 INCHES OF CLEARANCE BETWEEN PIPING (INCLUDING ALL PORTIONS OF WALL PIPE) AND REINFORCEMENT STEEL IN REINFORCED CONCRETE STRUCTURES.
  - AT STATION 0+34, INSTALL 8 ZINC ANODES (4 ON EACH SIDE OF MAIN) AND ADJUST THE SPACING BETWEEN THE ANODES TO FIT THE AVAILABLE SPACE.
  - DUCTILE IRON PIPE SHALL NOT BE POLYETHYLENE ENCASED.

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIATIONS IN SOIL CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE DUPLICATED 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.

CITY OF BALTIMORE		REVISION - CITY OF BALTIMORE		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
[Signature] 3/15/12 CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER		[Signature] _____ CHIEF, WATER ENGINEERING SECTION		[Signature] _____ DIRECTOR, DEPT. OF PUBLIC WORKS	
<b>PROFESSIONAL CERTIFICATION</b> 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. 17083 EXPIRATION DATE 9/27/2012		<b>REVISION</b> DESIGN BY: MIS DRAWN BY: DJD CHD BY: MIS		<b>BY DATE P.W.A. NO. KEY SHEET POSITION SHIT</b> R.J.F. 1/23/12 L.L.C. 1/23/12 G.M. 1/20/12	
ENGINEER: MICHAEL J. SZELIGA RUSSELL CORROSION CONSULTANTS, INC. AS-BUILT PER RECORD PRINT DATE: 1/19/2012		BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER		DEPARTMENT OF PUBLIC WORKS APPROVED BY: [Signature] DIRECTOR DATE: 1-24-12 BUR. OF ENGINEERING & CONSTRUCTION APPROVED BY: [Signature] DATE: 1/23/12	

AS-BUILT JUNE 2016

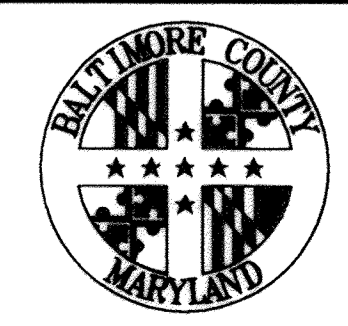
**SOUTHWEST TRANSMISSION MAIN  
CATHODIC PROTECTION LAYOUT (STA. 0+00 TO STA. 36+60.30)**

SUBDIVISION: ST. DENIS

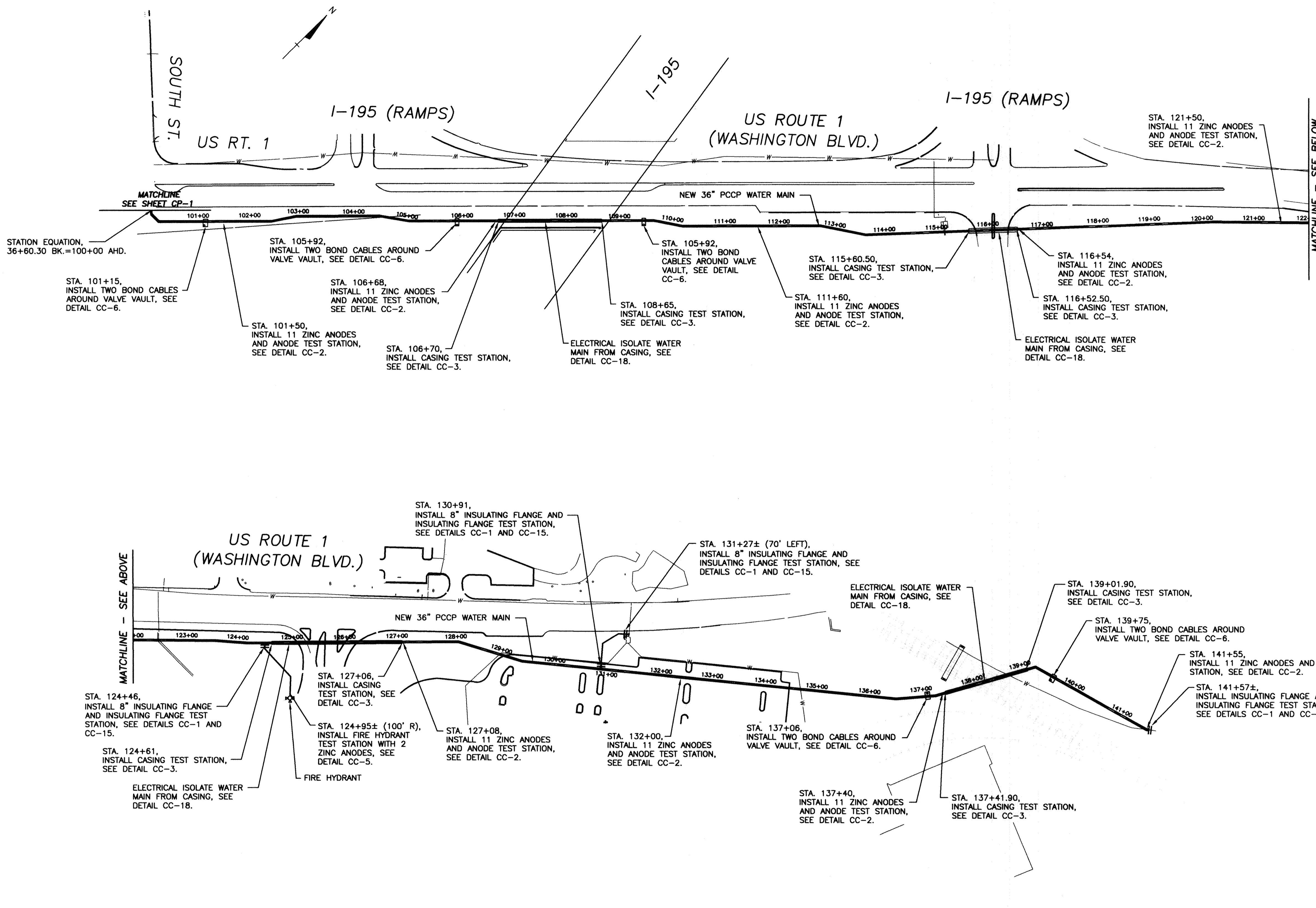
ELECTION DIST. NO.: 13



SHEET DESIGNATION	CONTRACT NUMBER
CP-1	44-4618
JOB ORDER NUMBER	203-0067-0281
SHEET 31 OF 36	DRAWING NUMBER
2009-3380	FILE NO.:



DWG. FILENAME:



**LEGEND:**

- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- INSULATING FLANGE

- NOTES:**
- ALL NEW PCCP TO BE EXTERNALLY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
  - BOND ALL NEW PCCP JOINTS EXCEPT THOSE THAT ARE SPECIFIED TO BE ELECTRICALLY ISOLATED, SEE DETAILS CC-7 AND CC-8.
  - BOND ALL DUCTILE IRON PIPE JOINTS EXCEPT THOSE THAT ARE SPECIFIED TO BE ELECTRICALLY ISOLATED, SEE DETAIL CC-7.
  - ELECTRICAL ISOLATION IS REQUIRED FOR ALL CONNECTIONS TO NEW PCCP WATER MAIN, SEE DETAILS CC-1 AND CC-15.
  - INSTALL SEPARATOR MESH ON WATER MAIN AT EXISTING UTILITY CROSSINGS IF THERE IS LESS THAN 12 INCHES OF SPACING BETWEEN THEM, SEE DETAIL CC-17.
  - MAINTAIN A MINIMUM OF 2 INCHES OF CLEARANCE BETWEEN PIPING (INCLUDING ALL PORTIONS OF WALL PIPE) AND REINFORCEMENT STEEL IN REINFORCED CONCRETE STRUCTURES.
  - DUCTILE IRON PIPE SHALL NOT BE POLYETHYLENE ENCASED.

**CATHODIC PROTECT LAYOUT TIES**

STA. 101+15	38' SOUTHWEST OF UTILITY POLE 86' EAST OF SIGN POLE
STA. 105+70	52'-4" NORTHEAST OF VALVE 78' SOUTHWEST OF UTILITY POLE
STA. 105+92	37'-5" NORTHEAST OF VALVE 82'-5" WEST OF UTILITY POLE
STA. 106+70	75' SOUTHWEST OF SHA CONDUIT
STA. 111+60	138'-4" NORTHEAST OF VALVE 24'-5" EAST OF UTILITY POLE
STA. 115+60	41' SOUTH OF HYDRANT
STA. 116+52	59'-5" SOUTHWEST OF UTILITY POLE
STA. 116+54	53' SOUTHWEST OF SIGNAL POLE
STA. 121+50	89'-6" TO POLE #93032 89' TO POLE #157769
STA. 124+46 (HYDRANT)	3' TO HYDRANT 93' TO POLE
STA. 124+46 (6" VALVE)	4'-5" TO VALVE 46' TO POLE
STA. 124+51	75' TO POLE 48'-5" TO POLE
STA. 127+06	68'-5" TO POLE 10' TO SIGN
STA. 127+08	68' TO POLE 11' TO SIGN
STA. 130+91	6'-9" TO VALVE 19' TO ISLAND
STA. 132+00	47' TO ISLAND LEFT 44'-4" TO ISLAND RIGHT
STA. 137+40	43' TO RAIL LIGHT POLE 5'-4" TO FENCE
STA. 137+41	33'-7" TO RAIL LIGHT POLE 37' TO FENCE
STA. 139+01	28'-6" TO TRACK 150' TO VALVE VAULT
STA. 141+55	97' TO VALVE VAULT 32' TO VAULT
STA. 141+57	114' TO VAULT 17' TO VAULT

**CORROSION CONTROL LAYOUT**  
Scale: 1" = 100'

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

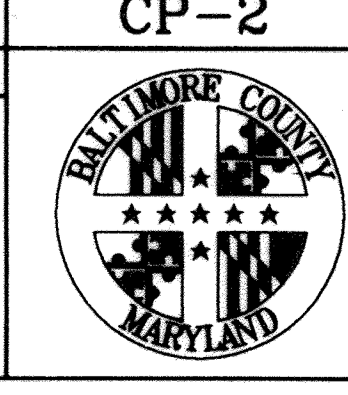
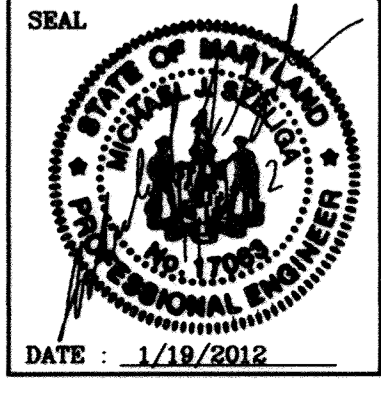
CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
AS-BUILT PER RECORD PRINT	DATE: 1/18/2012	DATE: 1/23/12
ENGINEER: MICHAEL J. SZELIGA RUSSELL CORROSION CONSULTANTS, INC.	DESIGN BY: MJS	BUREAU OF ENGINEERING AND CONSTRUCTION
BY: DATE:	CHKD BY: MJS	DATE REVIEWED: 1/23/12

BY	DATE	P.W.A. NO.	KEY SHEET	POSITION SHI	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
					PLAN SCALE: AS NOTED	APPROVED: [Signature]
					PROFILE SCALE: AS NOTED	DATE: 1-24-12
						DIRECTOR

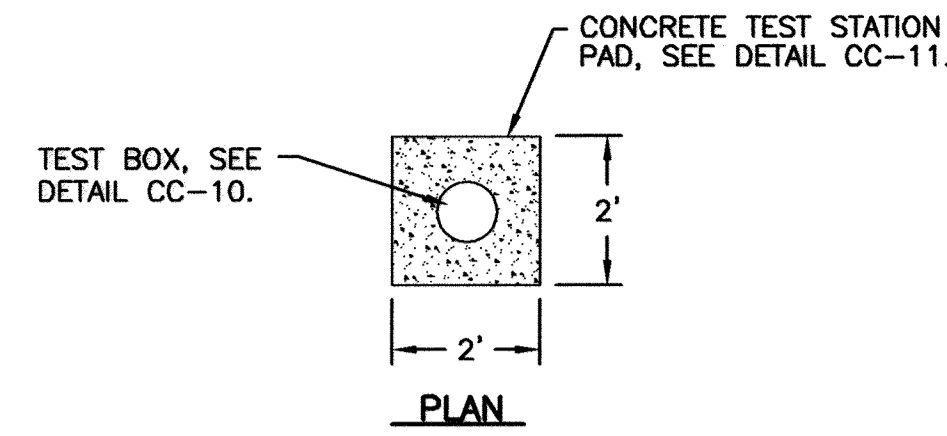
<b>AS-BUILT JUNE 2016</b>	
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION	
<b>SOUTHWEST TRANSMISSION MAIN</b>	
<b>CATHODIC PROTECTION LAYOUT (STA. 100+00 TO STA. 141+60±)</b>	
SUBDIVISION: ST. DENIS	ELECTION DIST. NO.: 13

**RUSSELL CORROSION CONSULTANTS, INC.**  
Columbia, Maryland

SHEET DESIGNATION	CONTRACT NUMBER
CP-2	44-4618
JOB ORDER NUMBER	203-0087-0281
SHEET 32 OF 36	DRAWING NUMBER
2009-3381	FILE NO.:

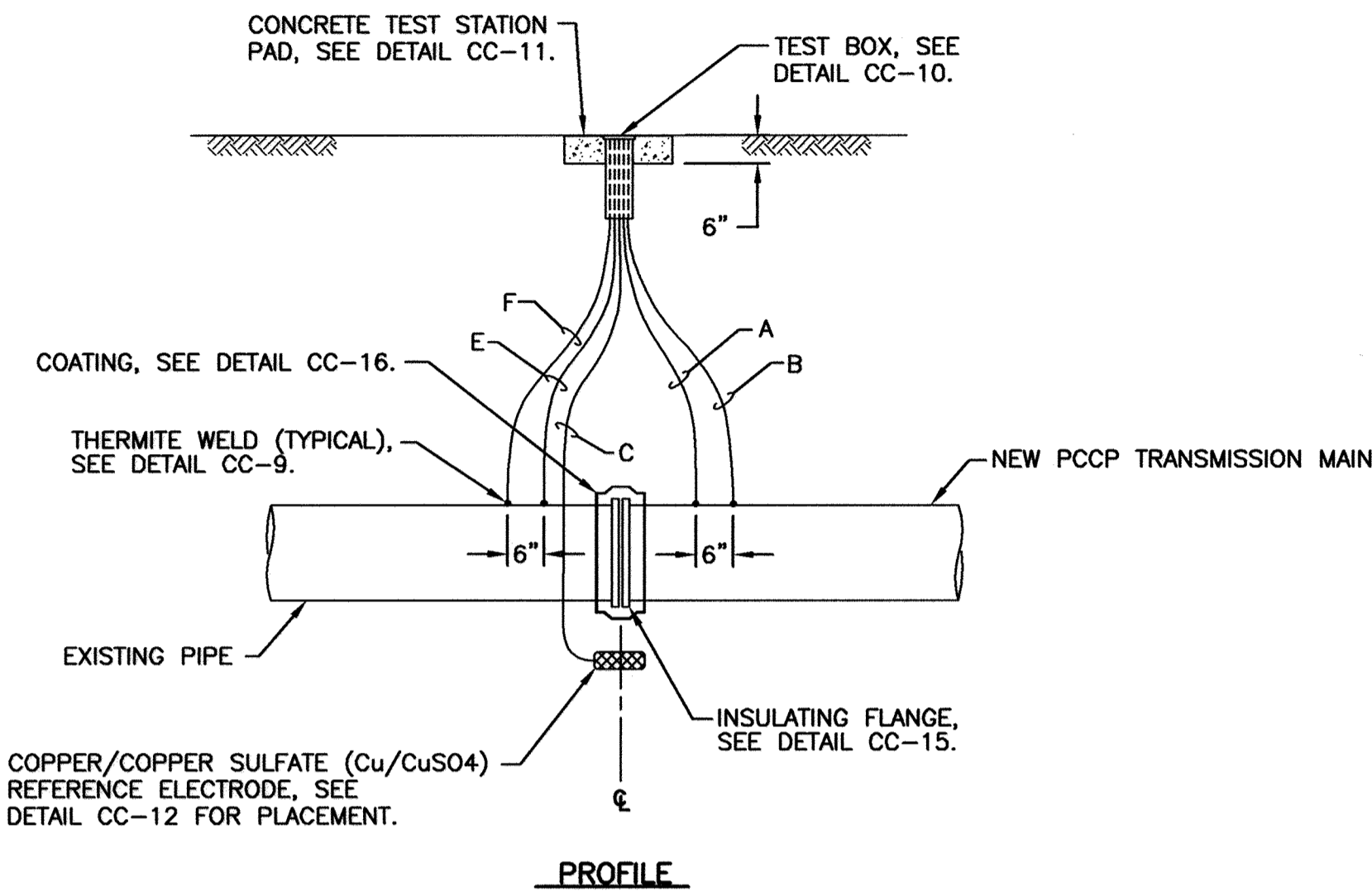


DWG. FILENAME:

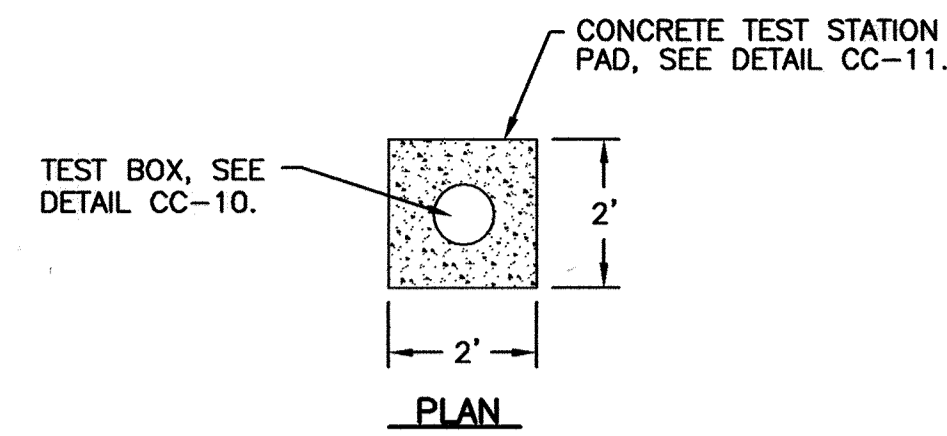


WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE OF INSULATION	COLOR OF INSULATION
NEW TRANSMISSION MAIN	A B	1 3	#8 #10	THWN THWN	BLUE BLUE
PERMANENT REFERENCE ELECTRODE	C	6	#14	HMWPE	BLACK
EXISTING PIPE	E F	2 5	#8 #10	THWN THWN	WHITE WHITE

- NOTES:**
- DO NOT SET TEST STATION IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES IN PVC CONDUIT TO FINAL TEST BOX LOCATION IF TEST BOX IS NOT LOCATED DIRECTLY ABOVE THE MAIN IN A NON-PAVED AREA.
  - MAINTAIN SUFFICIENT SLACK IN THE TEST WIRES SO THAT THE WIRES CAN EXTEND A MINIMUM OF 18" FROM THE TEST BOX.
  - ALL THERMITE WELDS TO PCCP TO BE PERFORMED AT STEEL BONDING PLATES, SEE DETAILS CC-8 AND CC-9.

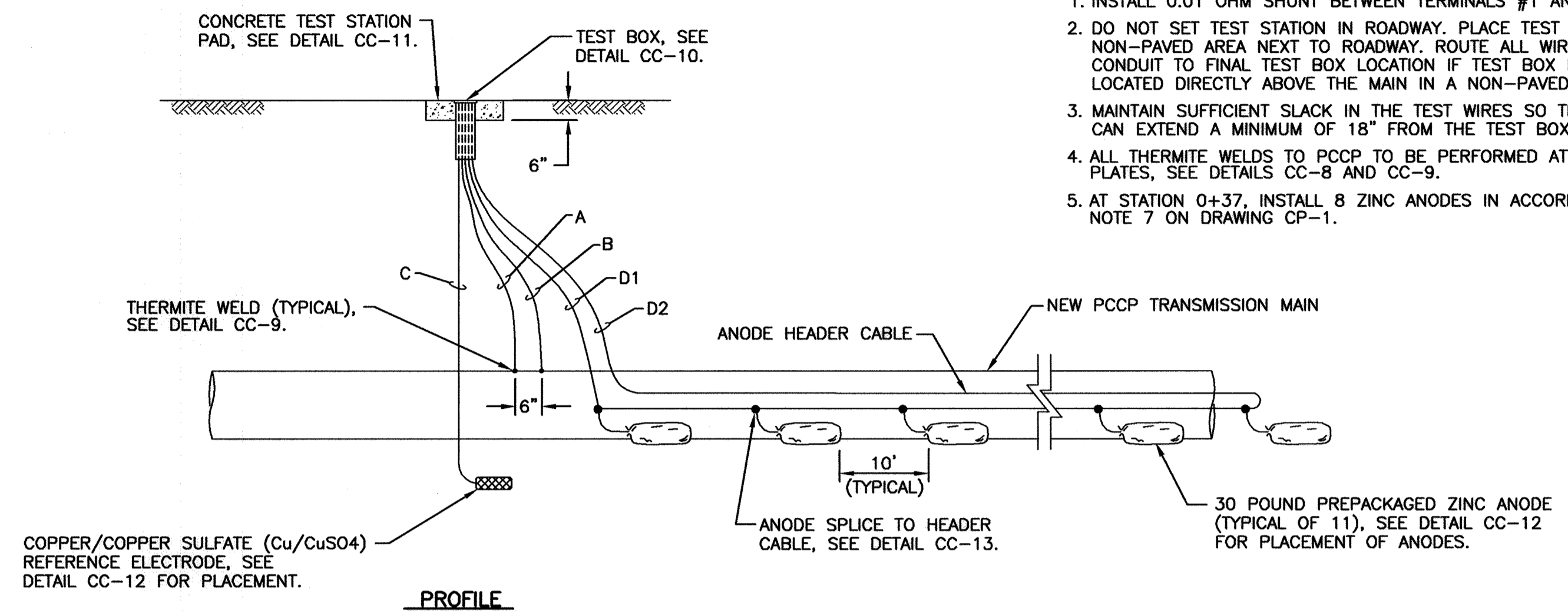


**CC-1: INSULATING FLANGE TEST STATION**

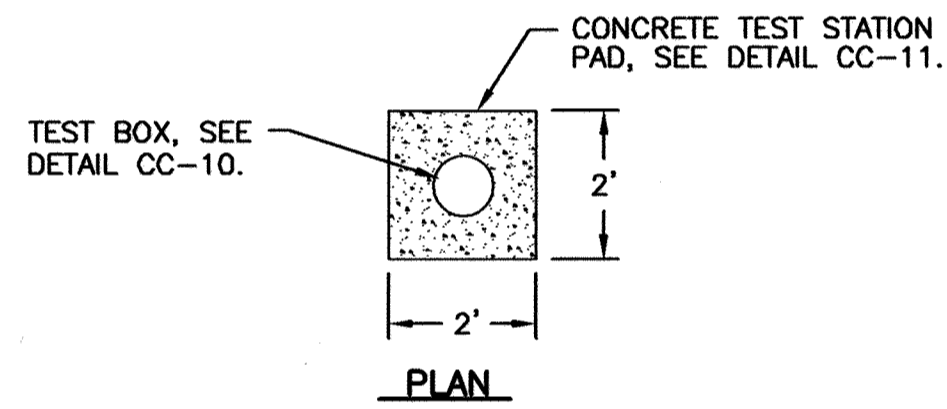


WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE INSULATION	COLOR INSULATION
NEW TRANSMISSION MAIN	A B	1 3	#8 #10	THWN THWN	BLUE BLUE
PERMANENT REFERENCE ELECTRODE	C	6	#14	HMWPE	BLACK
ANODE HEADER CABLE	D1 D2	4 7	#8 #8	HMWPE HMWPE	BLACK BLACK

- NOTES:**
- INSTALL 0.01 OHM SHUNT BETWEEN TERMINALS #1 AND #4.
  - DO NOT SET TEST STATION IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES IN PVC CONDUIT TO FINAL TEST BOX LOCATION IF TEST BOX IS NOT LOCATED DIRECTLY ABOVE THE MAIN IN A NON-PAVED AREA.
  - MAINTAIN SUFFICIENT SLACK IN THE TEST WIRES SO THAT THE WIRES CAN EXTEND A MINIMUM OF 18" FROM THE TEST BOX.
  - ALL THERMITE WELDS TO PCCP TO BE PERFORMED AT STEEL BONDING PLATES, SEE DETAILS CC-8 AND CC-9.
  - AT STATION 0+37, INSTALL 8 ZINC ANODES IN ACCORDANCE WITH NOTE 7 ON DRAWING CP-1.

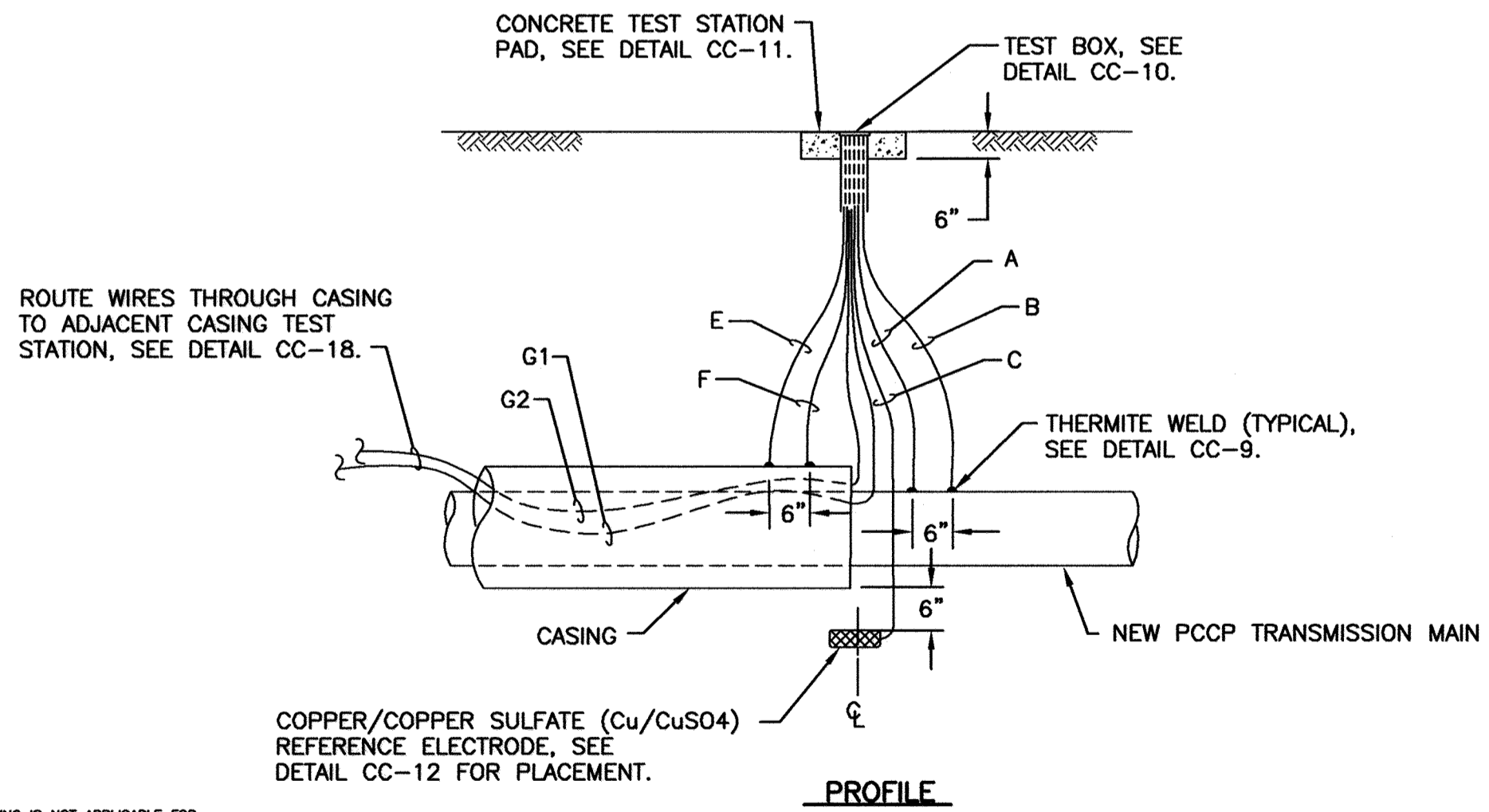


**CC-2: ANODE TEST STATION**



WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE OF INSULATION	COLOR OF INSULATION
NEW TRANSMISSION MAIN	A B	1 3	#8 #10	THWN THWN	BLUE BLUE
PERMANENT REFERENCE ELECTRODE	C	6	#14	HMWPE	BLACK
CASING PIPE	E F	2 5	#8 #10	THWN THWN	WHITE WHITE
ADJACENT CASING TEST STATION	G1 G2	7 7	#8 #10	THWN THWN	RED RED

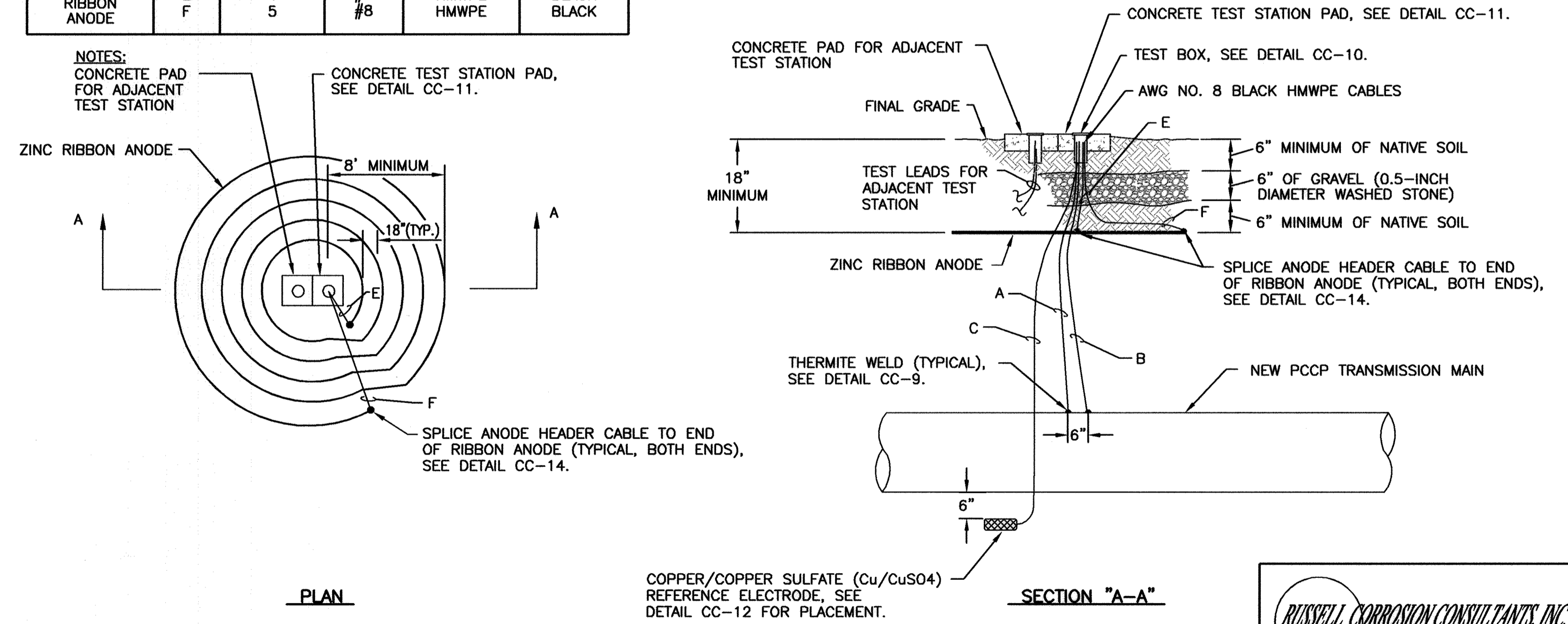
- NOTES:**
- DO NOT SET TEST STATION IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES IN PVC CONDUIT TO FINAL TEST BOX LOCATION IF TEST BOX IS NOT LOCATED DIRECTLY ABOVE THE MAIN IN A NON-PAVED AREA.
  - MAINTAIN SUFFICIENT SLACK IN THE TEST WIRES SO THAT THE WIRES CAN EXTEND A MINIMUM OF 18" FROM THE TEST BOX.
  - ALL THERMITE WELDS TO PCCP TO BE PERFORMED AT STEEL BONDING PLATES, SEE DETAILS CC-8 AND CC-9.



**CC-3: CASING TEST STATION**

WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE OF INSULATION	COLOR OF INSULATION
NEW TRANSMISSION MAIN	A B	1 3	#8 #10	THWN THWN	BLUE BLUE
PERMANENT REFERENCE ELECTRODE	C	6	#14	HMWPE	BLACK
ZINC RIBBON ANODE	E F	4 5	#8 #8	HMWPE HMWPE	BLACK BLACK

- NOTES:**
- INSTALL 0.01 OHM SHUNT BETWEEN TERMINALS #1 AND #4.
  - DO NOT SET TEST STATION IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES IN PVC CONDUIT TO FINAL TEST BOX LOCATION IF TEST BOX IS NOT LOCATED DIRECTLY ABOVE THE MAIN IN A NON-PAVED AREA.
  - MAINTAIN SUFFICIENT SLACK IN THE TEST WIRES SO THAT THE WIRES CAN EXTEND A MINIMUM OF 18" FROM THE TEST BOX.
  - ALL THERMITE WELDS TO PCCP TO BE PERFORMED AT STEEL BONDING PLATES, SEE DETAILS CC-8 AND CC-9.



**CC-4: AC GROUND MAT TEST STATION**

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIOUS CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE DUPLICATED 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.

DATE: 3/15/12

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
AP Tinkler	3/15/12	DATE
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	CHIEF, UTILITY ENGINEERING	DATE
DATE	CHIEF, WATER ENGINEERING SECTION	DATE
DATE	DIRECTOR, DEPT. OF PUBLIC WORKS	DATE
SEAL	PROFESSIONAL CERTIFICATION	REVISION
	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. 17063 EXPIRATION DATE 9/27/2012.	
	ENGINEER: MICHAEL J. SZELOGA RUSSELL CORROSION CONSULTANTS, INC. AS-BUILT PER RECORD PRINT BY: MS DATE: 1/19/2012	DESIGN BY: MS DRAWN BY: DID CHD BY: MS
DATE: 1/19/2012	DATE REVIEWED: 1/23/12	DATE: 1/23/12

AS-BUILT JUNE 2016

**SOUTHWEST TRANSMISSION MAIN  
CATHODIC PROTECTION DETAILS - 1**

SUBDIVISION: ST. DENIS

ELECTION DIST. NO.: 13

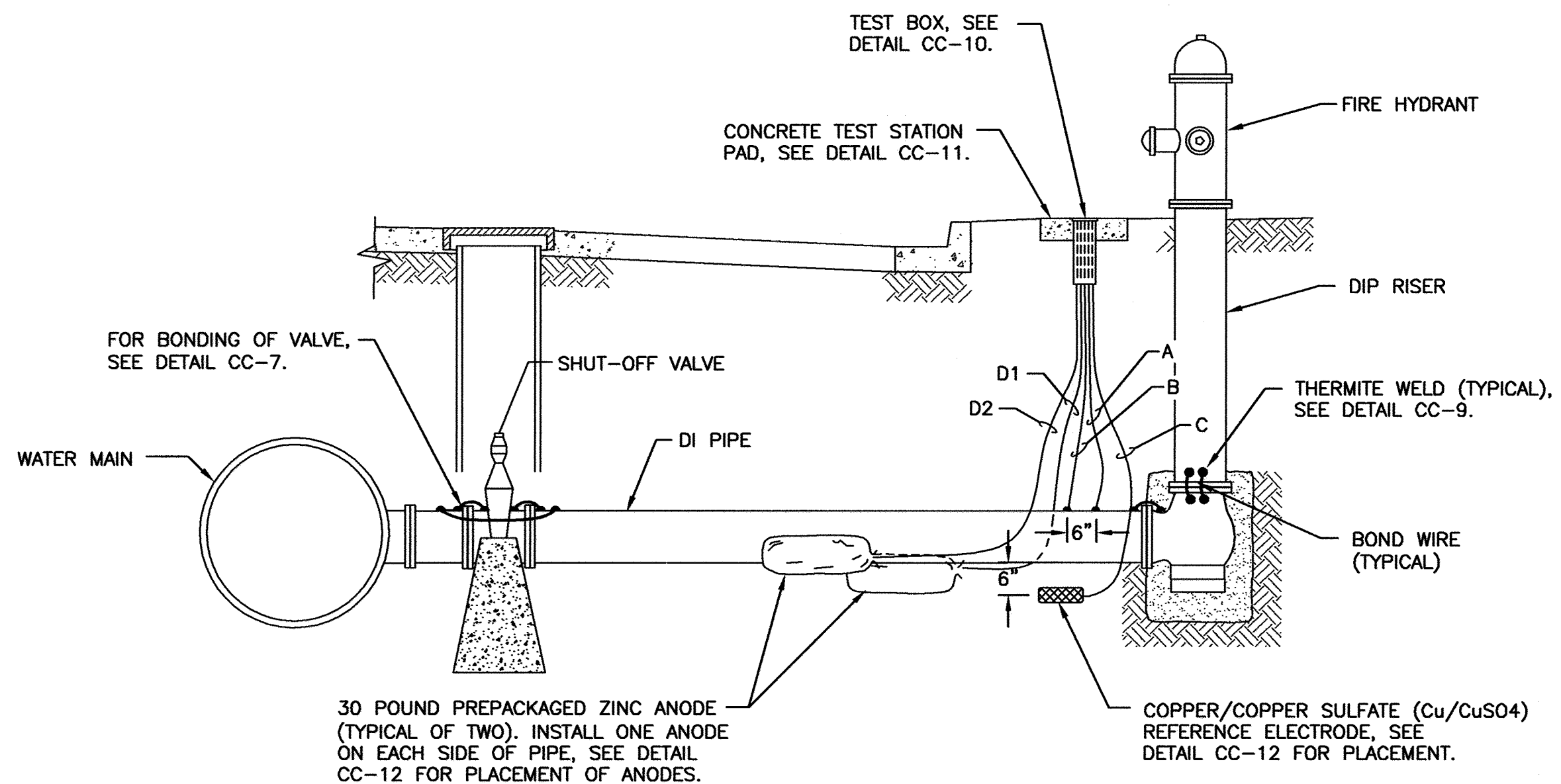
<p>Columbia, Maryland</p>	
SHEET DESIGNATION	CONTRACT NUMBER
CP-3	44-4618
JOB ORDER NUMBER	
203-0067-0281	
SHEET 33 OF 36	
DRAWING NUMBER	
2009-3382	
FILE NO.:	

DWG. FILENAME:

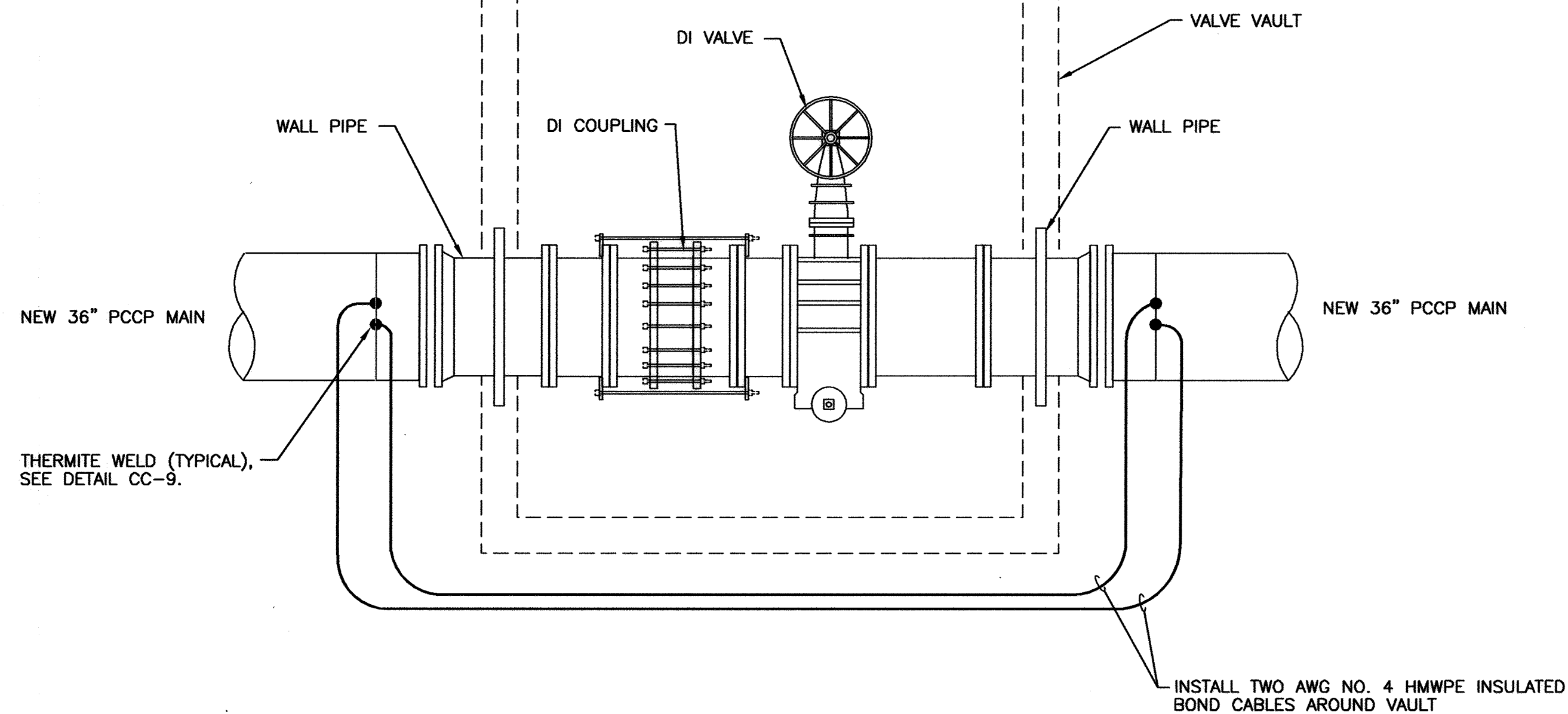
WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE INSULATION	COLOR INSULATION
NEW TRANSMISSION MAIN	A B	1 3	#8 #10	THWN THWN	BLUE BLUE
PERMANENT REFERENCE ELECTRODE	C	6	#14	HMWPE	BLACK
PREPACKAGED ZINC ANODE	D1 D2	4 4	#12 #12	TW TW	BLACK BLACK

**NOTES:**

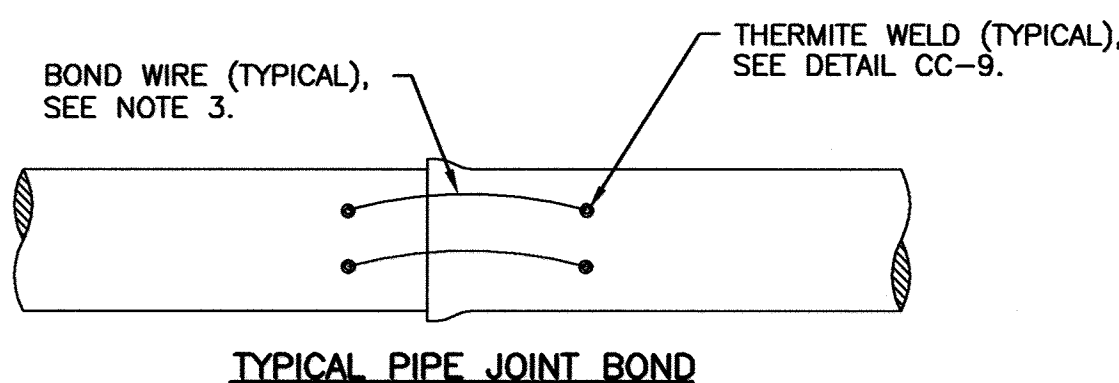
1. INSTALL 0.01 OHM SHUNT BETWEEN TERMINALS #1 AND #4.
2. MAINTAIN SUFFICIENT SLACK IN THE TEST WIRES SO THAT THE WIRES CAN EXTEND A MINIMUM OF 18 INCHES FROM THE TEST BOX.
3. BOND ALL DUCTILE IRON COMPONENTS TOGETHER WITH AWG NO. 6 HMWPE WIRES.
4. INSTALL BOND WIRES ON TOP OF PIPE OR FITTING WHERE POSSIBLE.
5. INSTALL A MINIMUM OF TWO BOND CABLES ACROSS EACH PIPE JOINT.
6. SEE DETAIL CC-7 FOR BONDING OF VALVE.
7. BOND ALL HYDRANT PIPING ASSOCIATED WITH THE WATER MAIN.
8. INSTALL BOND CABLES ON HYDRANT RISER PIPE AND RISER ELBOW BEFORE INSTALLING RISER PIPE IN EXCAVATION.



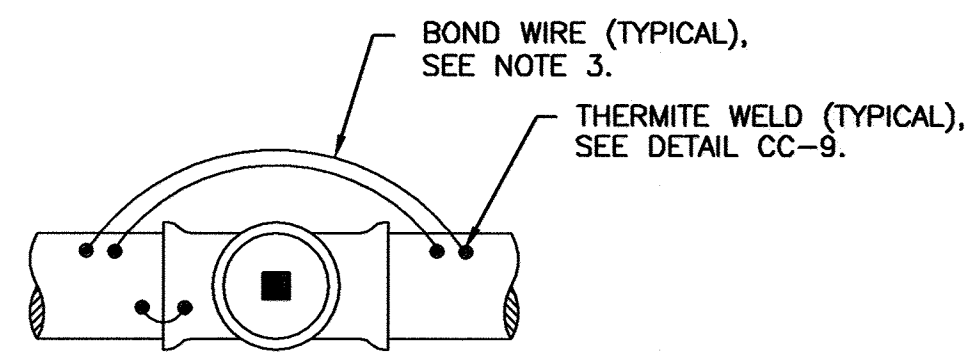
CC-5: FIRE HYDRANT TEST STATION WITH ANODES



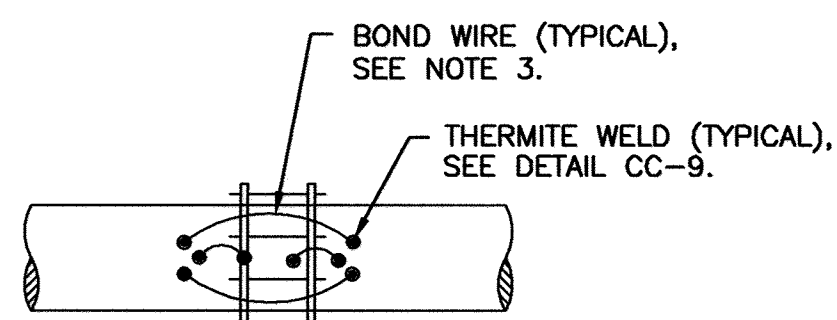
CC-6: BONDING AROUND VALVE VAULT



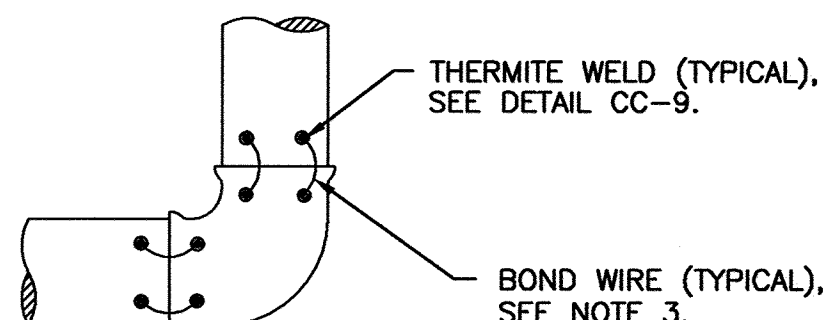
TYPICAL PIPE JOINT BOND



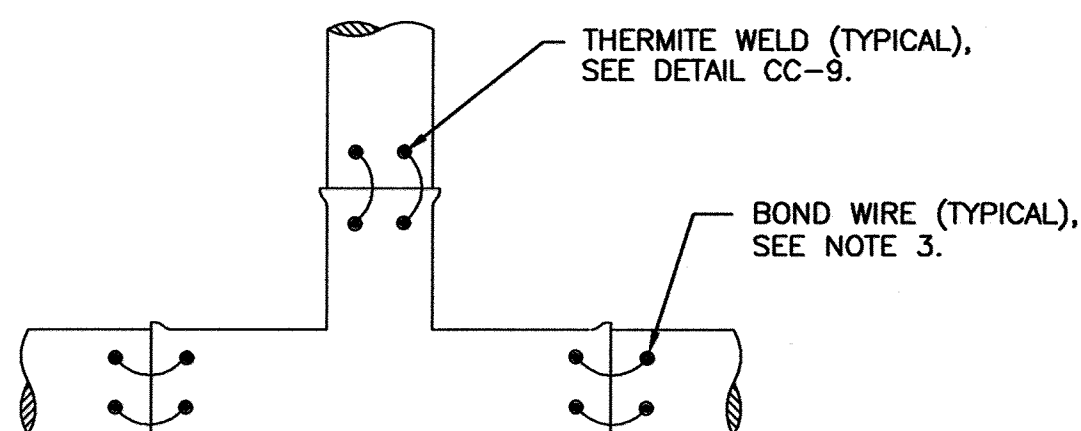
TYPICAL VALVE JOINT BOND



TYPICAL MECHANICAL COUPLING JOINT BOND



TYPICAL BEND, REDUCER, SOLID SLEEVE JOINT BOND



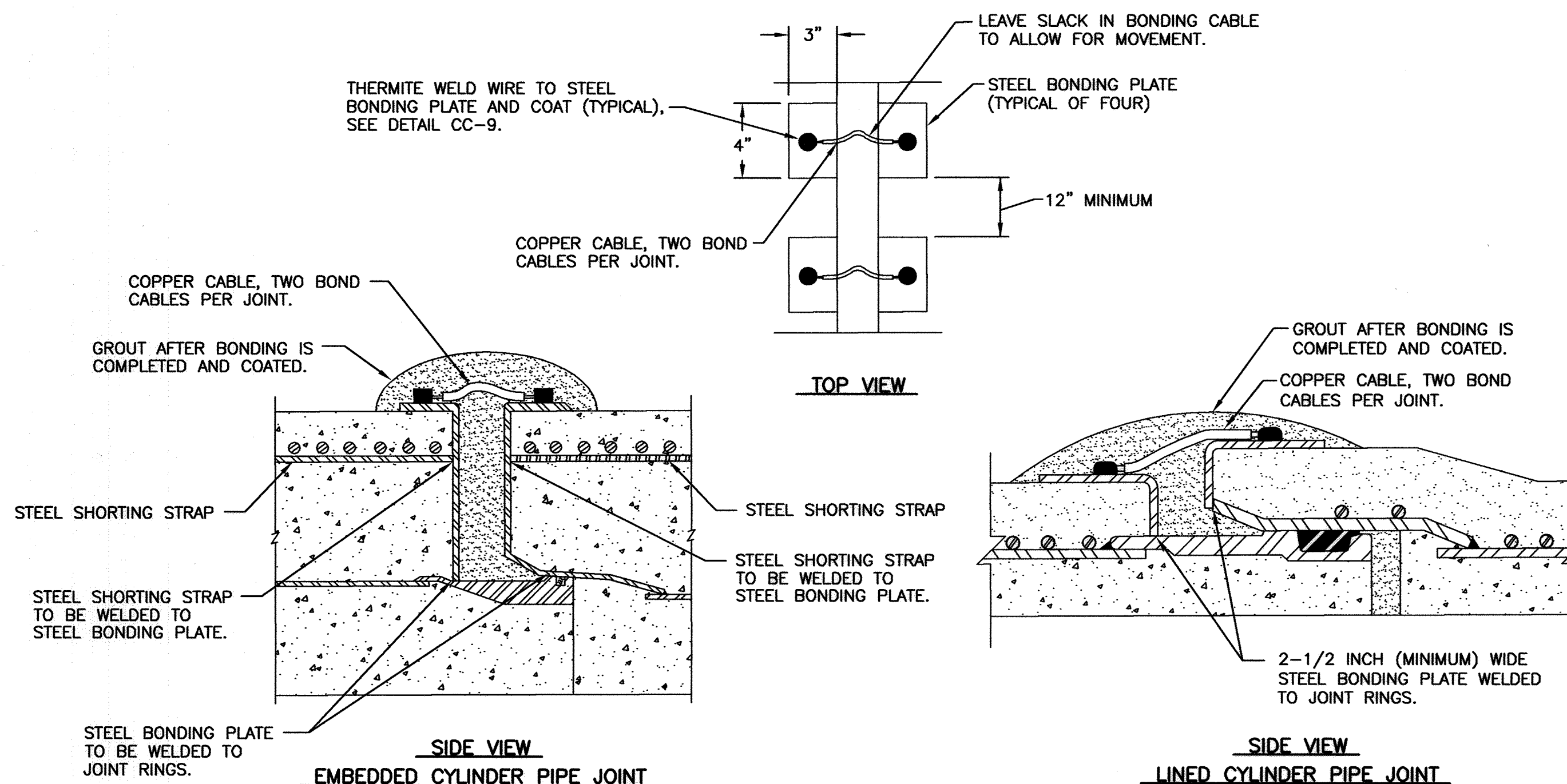
TYPICAL TEE JOINT BOND

**NOTES:**

1. ALL DUCTILE IRON AND PRESTRESSED CONCRETE PIPE JOINTS THAT ARE NOT SPECIFIED WITH INSULATING FLANGES SHALL BE BONDED.
2. THERMITE WELD BONDING WIRES TO TOP OF PIPE OR FITTINGS.
3. WIRE SIZE FOR BONDING JOINTS SHALL BE AS FOLLOWS:  

PIPE SIZE	WIRE SIZE
LARGER THAN 36"	AWG NO. 2 HMWPE
16" TO 36"	AWG NO. 4 HMWPE
SMALLER THAN 16"	AWG NO. 6 HMWPE
4. ALL THERMITE WELDS TO PCCP TO BE PERFORMED AT STEEL BONDING PLATES, SEE DETAILS CC-8 AND CC-9.

CC-7: JOINT BONDING



**NOTES:**

1. TWO STEEL SHORTING STRAPS REQUIRED PER PIPE SECTION FOR EMBEDDED CYLINDER PIPE. NO SHORTING STRAPS REQUIRED FOR LINED CYLINDER PIPE.
2. STEEL BONDING PLATES AND STEEL SHORTING STRAPS (IF REQUIRED) TO BE INSTALLED BY PIPE MANUFACTURER DURING PIPE FABRICATION.
3. BOND ALL PIPE JOINTS, INCLUDING THOSE ON PIPE, FITTINGS, VALVES, ETC., EXCEPT THOSE SPECIFIED TO BE INSULATED.
4. WIRE SIZE FOR BONDING JOINTS SHALL BE AS FOLLOWS:

PIPE SIZE	WIRE SIZE
LARGER THAN 36"	AWG NO. 2 HMWPE
16" TO 36"	AWG NO. 4 HMWPE
SMALLER THAN 16"	AWG NO. 6 HMWPE

CC-8: PCCP JOINT BONDING

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIATIONS IN SOIL CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE REPRODUCED 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.

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 1/19/2012	DATE: 9/27/2012	DATE: 1/23/12

	PROFESSIONAL CERTIFICATION	REVISION	BY	DATE	P.W.A. NO.	KEY SHEET	POSITION	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS	
	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. 17083 EXPIRATION DATE 9/27/2012 ENGINEER: MICHAEL J. SZEJIGA RUSSELL CORROSION CONSULTANTS, INC. AS-BUILT PER RECORD PRINT BY: DATE: 1/19/2012	DESIGN BY: MIS DRAWN BY: DJD CHD BY: MIS	BUREAU OF ENGINEERING AND CONSTRUCTION BUILDINGS HIGHWAYS STRUCTURES STORM DRAINS SEWER WATER FIELD ENGINEER	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.	RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC. RUSSELL CORROSION CONSULTANTS, INC.

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

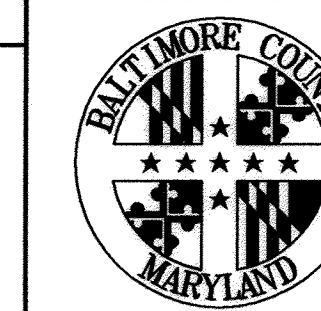
SOUTHWEST TRANSMISSION MAIN  
CATHODIC PROTECTION DETAILS - 2

SUBDIVISION: ST. DENIS

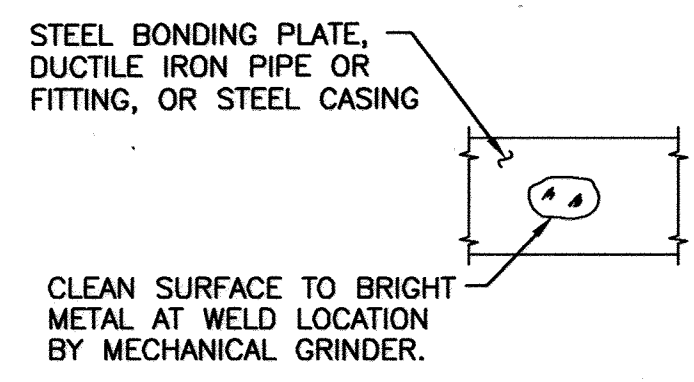
ELECTION DIST. NO.: 13

RUSSELL CORROSION CONSULTANTS, INC.  
Columbia, Maryland

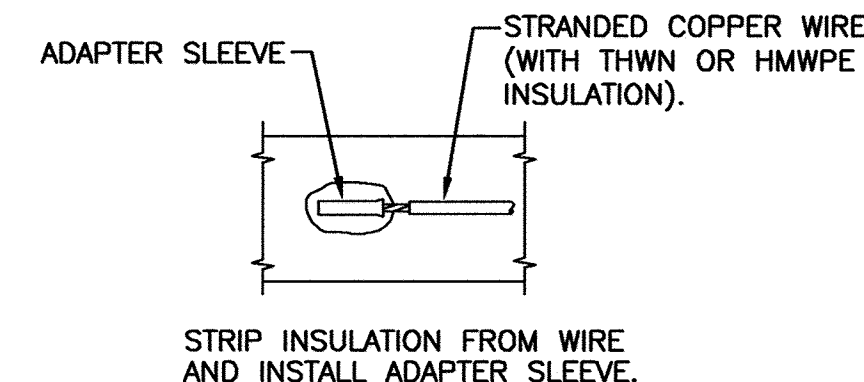
SHEET DESIGNATION	CONTRACT NUMBER
CP-4	44-4618
JOB ORDER NUMBER	203-0067-0281
SHEET 34 OF 36	DRAWING NUMBER
2009-3383	FILE NO.:



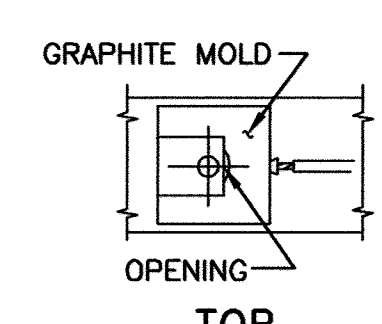
DWG. FILENAME:



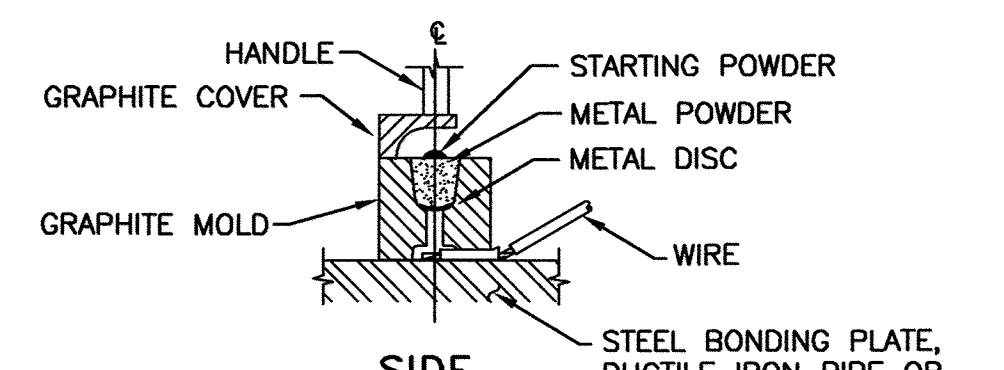
STEP 1



STEP 2



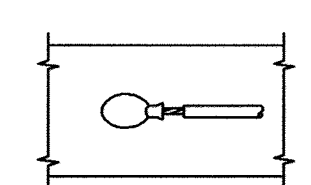
TOP



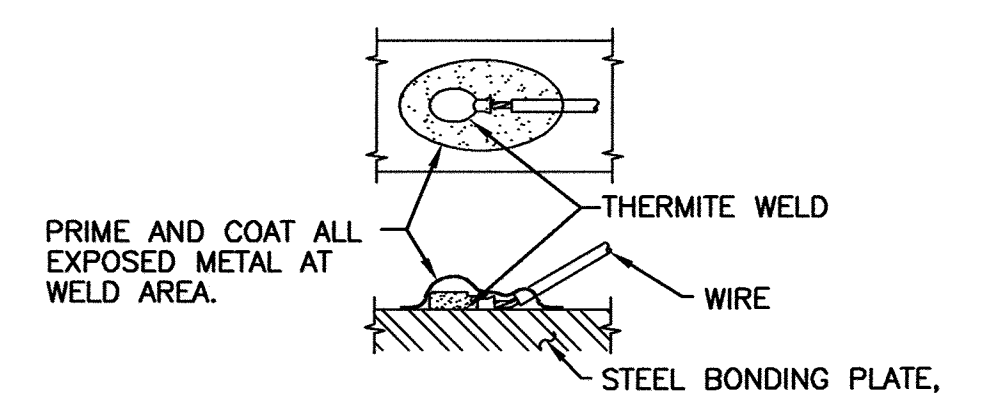
SIDE

HOLD GRAPHITE MOLD FIRMLY OVER ADAPTER SLEEVE WITH OPENING AWAY FROM OPERATOR - IGNITE STARTING POWDER.

STEP 3



STEP 4

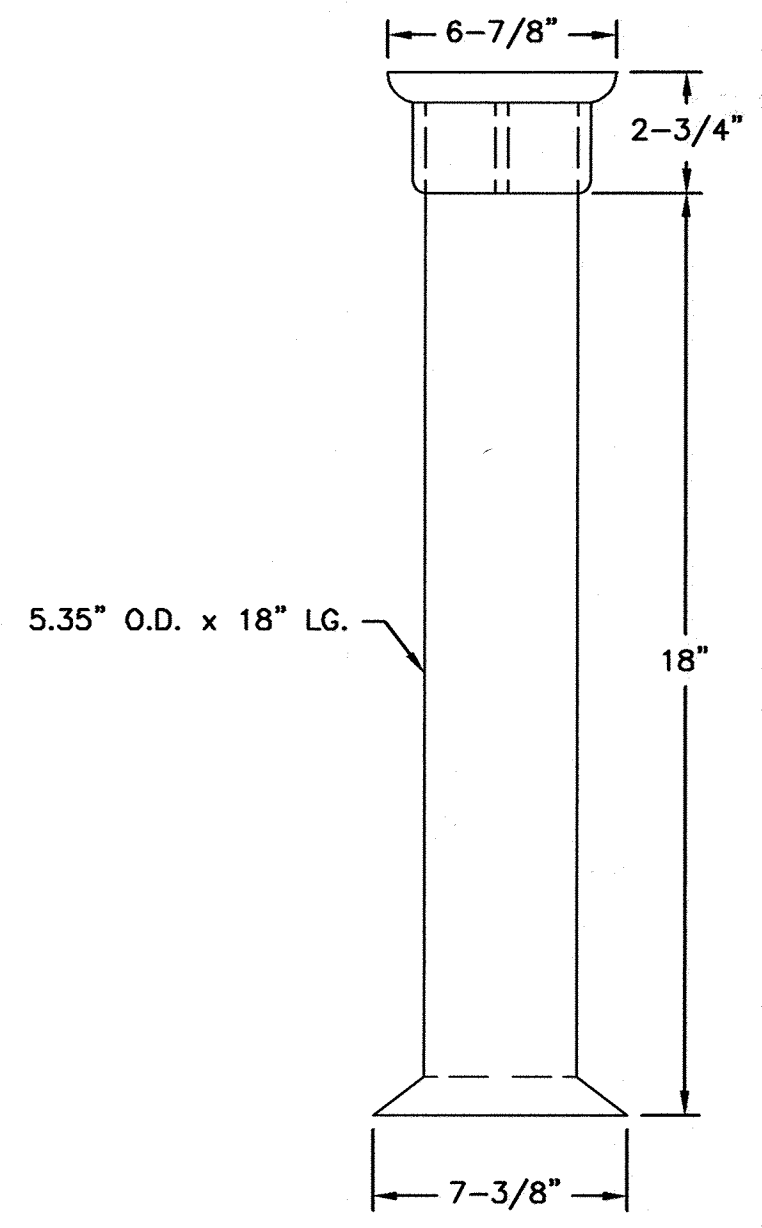


STEP 5

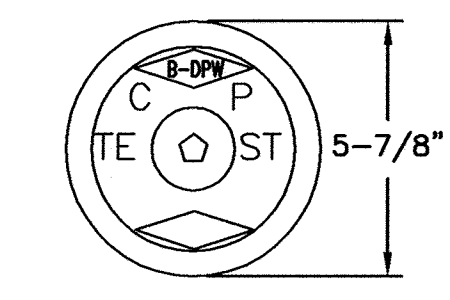
NOTES:

1. THERMITE WELDS MADE TO THE STEEL BONDING PLATES OF PCCP PIPING SHALL BE COATED WITH BRUSH APPLIED R28 MASTIC (10 MILS MINIMUM THICKNESS) OR APPROVED EQUAL. MASTIC SHALL BE DRY BEFORE THERMITE WELDS ARE COVERED OVER WITH GROUT.
2. ALL THERMITE WELDS TO PCCP TO BE PERFORMED AT STEEL BONDING PLATES, SEE DETAIL CC-8.
3. THERMITE WELDS TO DUCTILE IRON PIPE AND STEEL CASINGS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.

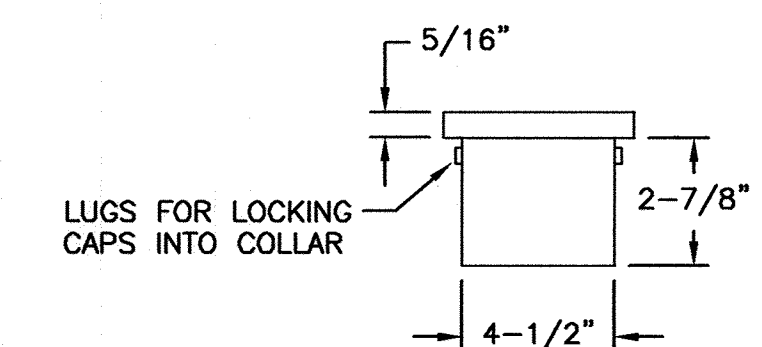
CC-9: THERMITE WELD



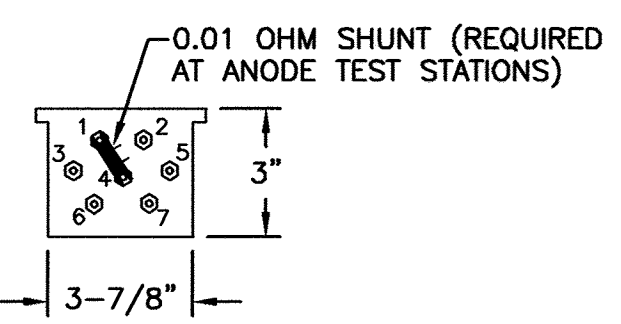
SIDE VIEW  
TEST BOX BODY



TOP VIEW

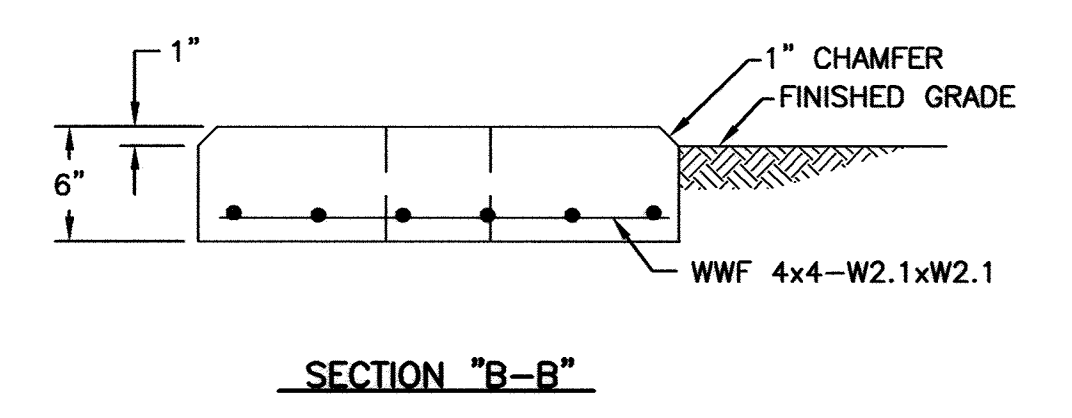


SIDE VIEW

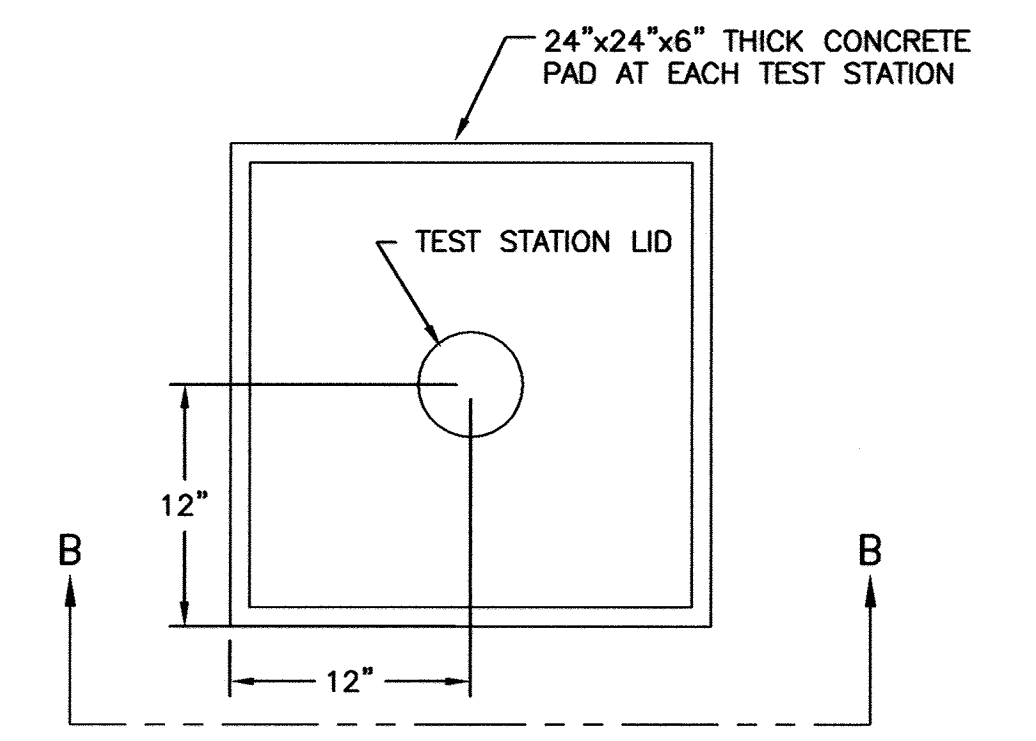


TEST BOX LID  
AND TERMINAL BOARD

CC-10: TEST BOX

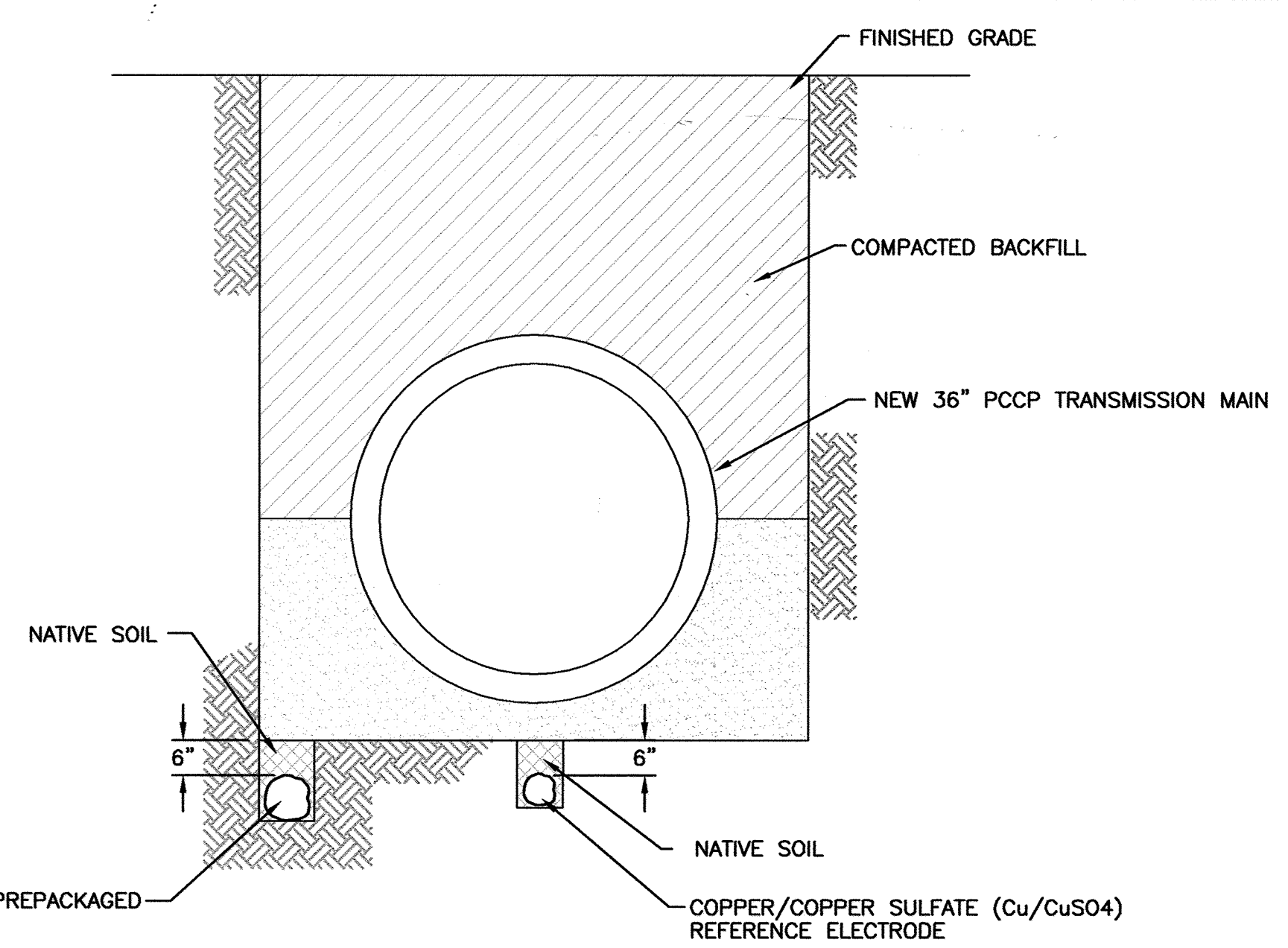


SECTION "B-B"



PLAN

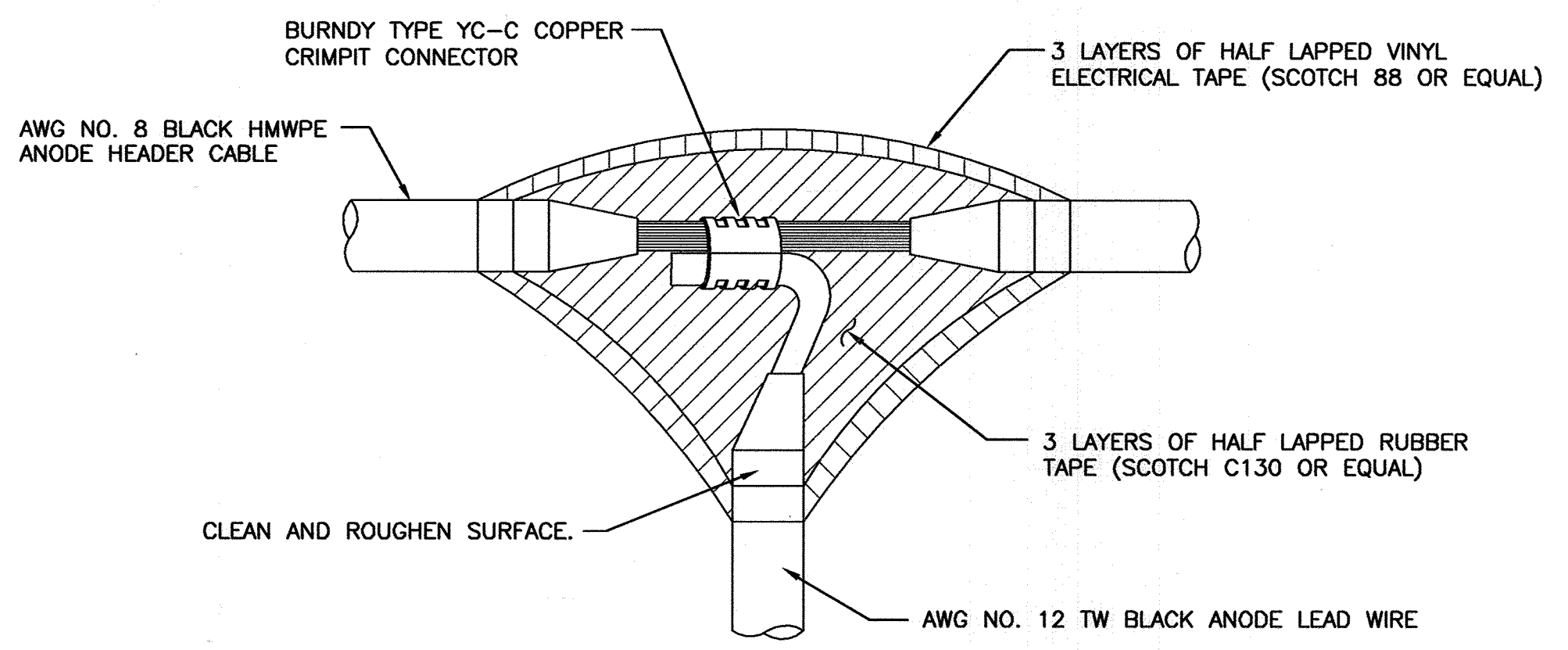
CC-11: TEST STATION PAD



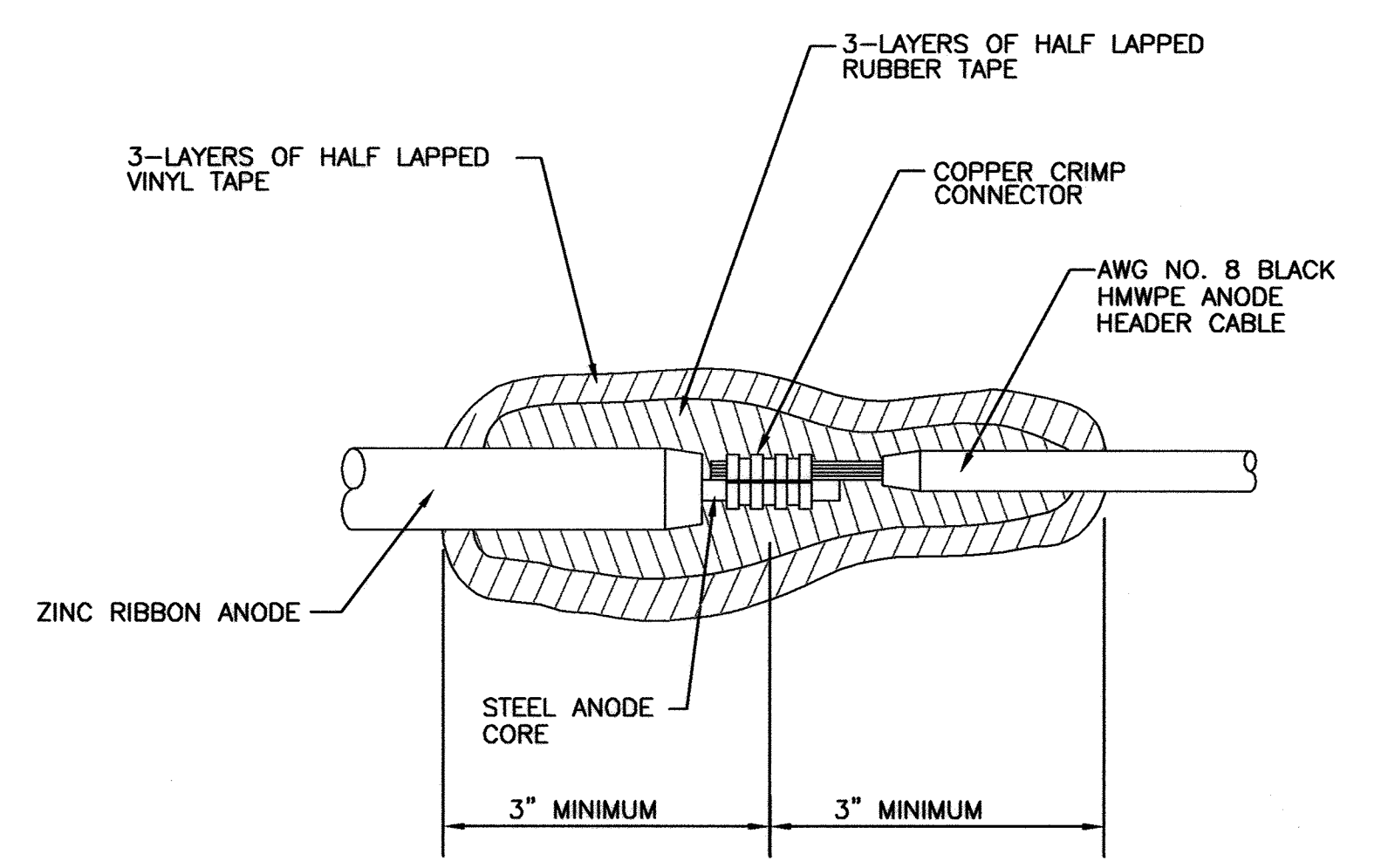
NOTES:

1. BACKFILL ANODES WITH NATIVE SOIL FOR A MINIMUM OF 6" ON ALL SIDES. DO NOT BACKFILL ANODES WITH STONE OR SAND BACKFILL.
2. MAINTAIN A MINIMUM 12" CLEARANCE WHEN ROUTING ANODES AROUND VAULTS AND APPURTANCES.
3. AT STATION 0+37, AND AT FIRE HYDRANT, INSTALL ZINC ANODES ON BOTH SIDES OF THE MAIN IN A MANNER SIMILAR TO WHAT IS SHOWN.

CC-12: ANODE AND REFERENCE ELECTRODE PLACEMENT



CC-13: ANODE HEADER CABLE SPLICE



CC-14: RIBBON ANODE END TO LEAD WIRE SPLICE

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.

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, UTILITY ENGINEERING	DATE	DATE
CHIEF, WATER ENGINEERING SECTION	DATE	DIRECTOR, DEPT. OF PUBLIC WORKS

PROFESSIONAL CERTIFICATION	REVISION	BY	DATE	P.W.A. NO.	KEY SHEET	POSITION SH	DRAWING SCALE	DEPARTMENT OF PUBLIC WORKS
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.							PLAN SCALE: AS NOTED	APPROVED BY: [Signature]
LICENSE NO. 17083	EXPIRATION DATE 9/27/2012			R.O.W. NO.			PROFILE SCALE: AS NOTED	DATE: 1-24-12
ENGINEER: MICHAEL J. SZELEGA	DESIGN BY: MS	BUREAU OF ENGINEERING AND CONSTRUCTION	BUILDINGS	HIGHWAYS	STRUCTURES	STORM DRAINS	SEWER	WATER
RUSSELL CORROSION CONSULTANTS, INC.	DRAWN BY: DID	REVIEWED BY: R/JF						
AS-BUILT PER RECORD PRINT	CHKD BY: MS	DATE REVIEWED: 1/23/12						

AS-BUILT JUNE 2016

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION

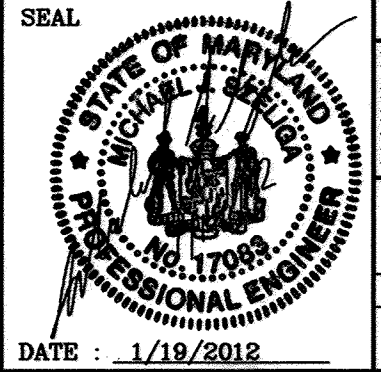
SOUTHWEST TRANSMISSION MAIN CATHODIC PROTECTION DETAILS - 3

SUBDIVISION: ST. DENIS

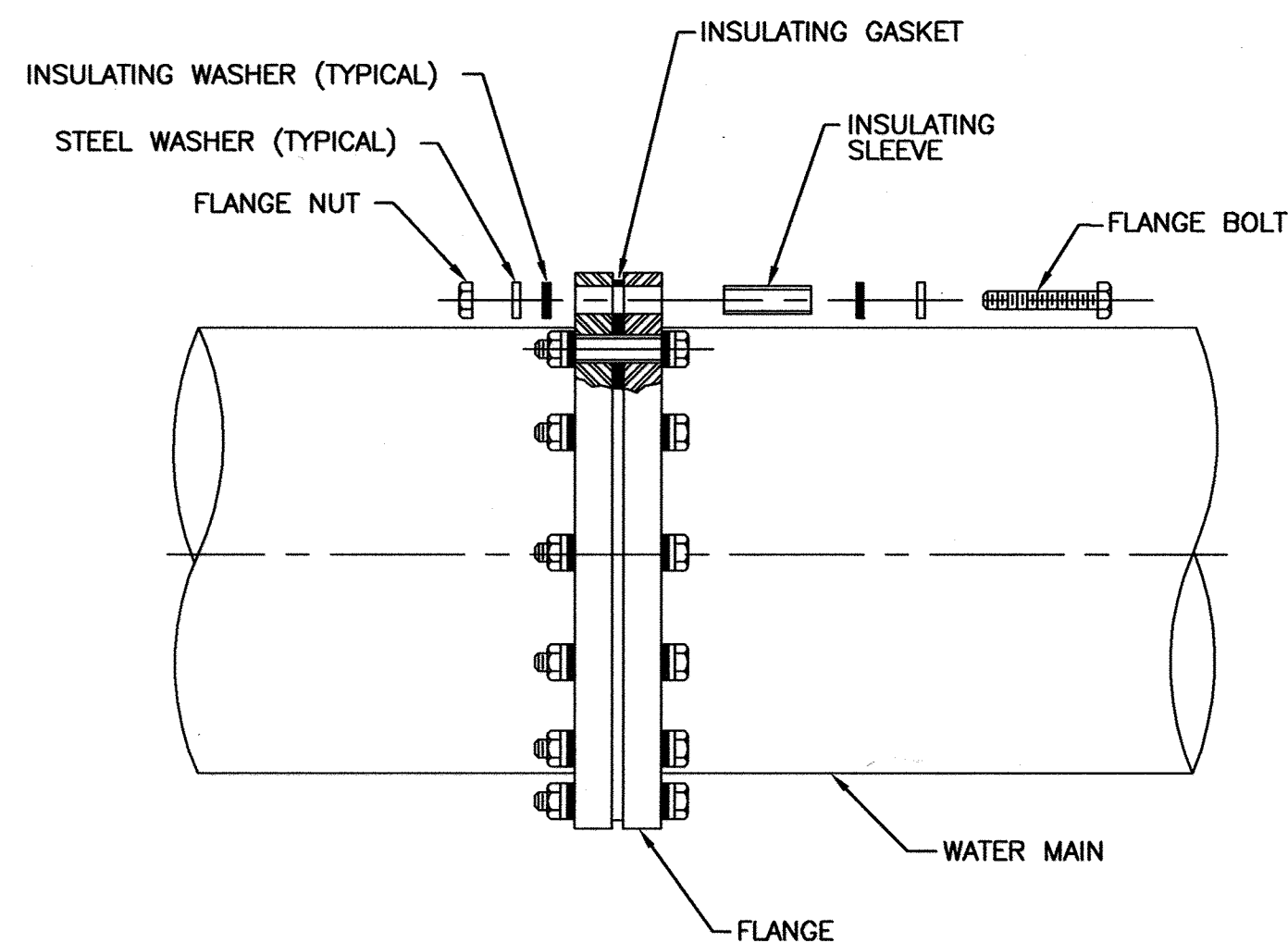
ELECTION DIST. NO.: 13

RUSSELL CORROSION CONSULTANTS, INC.  
Columbia, Maryland

SHEET DESIGNATION	CONTRACT NUMBER
CP-5	44-4618
JOB ORDER NUMBER	
203-0067-0281	
SHEET 35 OF 36	
DRAWING NUMBER	
2009-3384	
FILE NO.:	



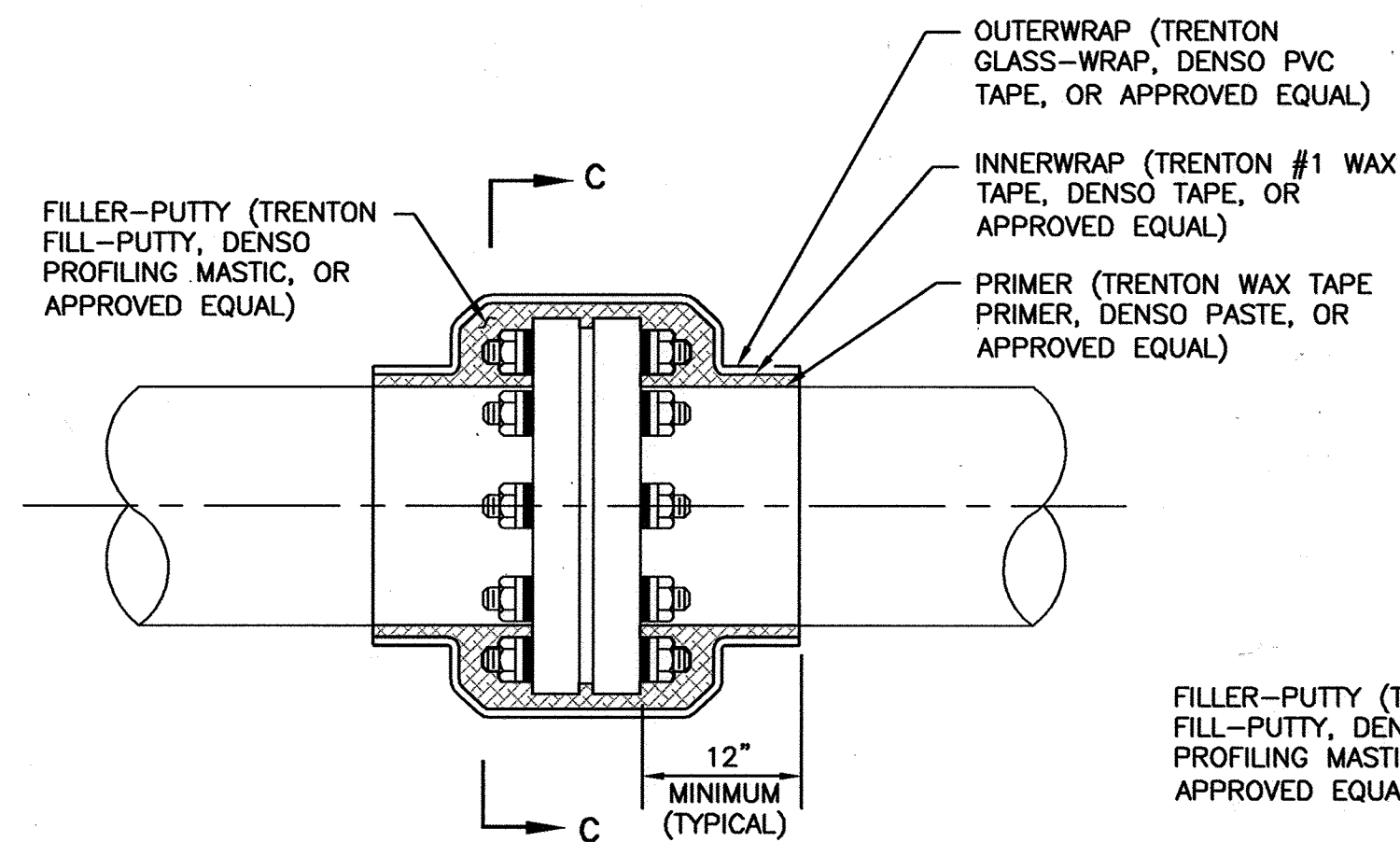
DWG. FILENAME:



**NOTES:**

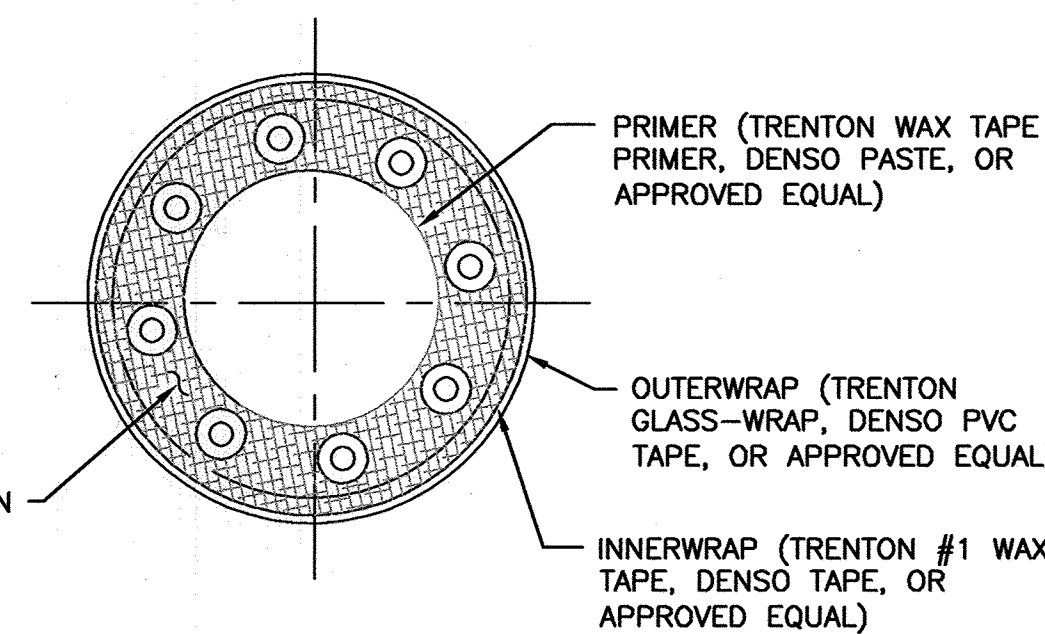
1. AFTER ASSEMBLY, TEST TO VERIFY THAT ISOLATION IS EFFECTIVE. IF ISOLATION IS NOT EFFECTIVE, REPAIR AS NECESSARY AND RETEST. THIS PROCESS SHALL CONTINUE UNTIL ISOLATION IS VERIFIED AS EFFECTIVE.
2. AFTER VERIFYING EFFECTIVE ISOLATION, COAT THE ENTIRE FLANGE AND ALL EXPOSED METAL INCLUDING BOLTS, NUTS, AND WASHERS WITH FOUR COMPONENTS OF DENSO OR TRENTON WAX TAPE COATING SYSTEM. COATING SYSTEM SHALL EXTEND A MINIMUM OF 12 INCHES ON EITHER SIDE OF FLANGE.
3. ALL INSULATING FLANGES TO BE PROVIDED WITH TEST STATION, SEE DETAIL CC-1.

**CC-15: INSULATING FLANGE**

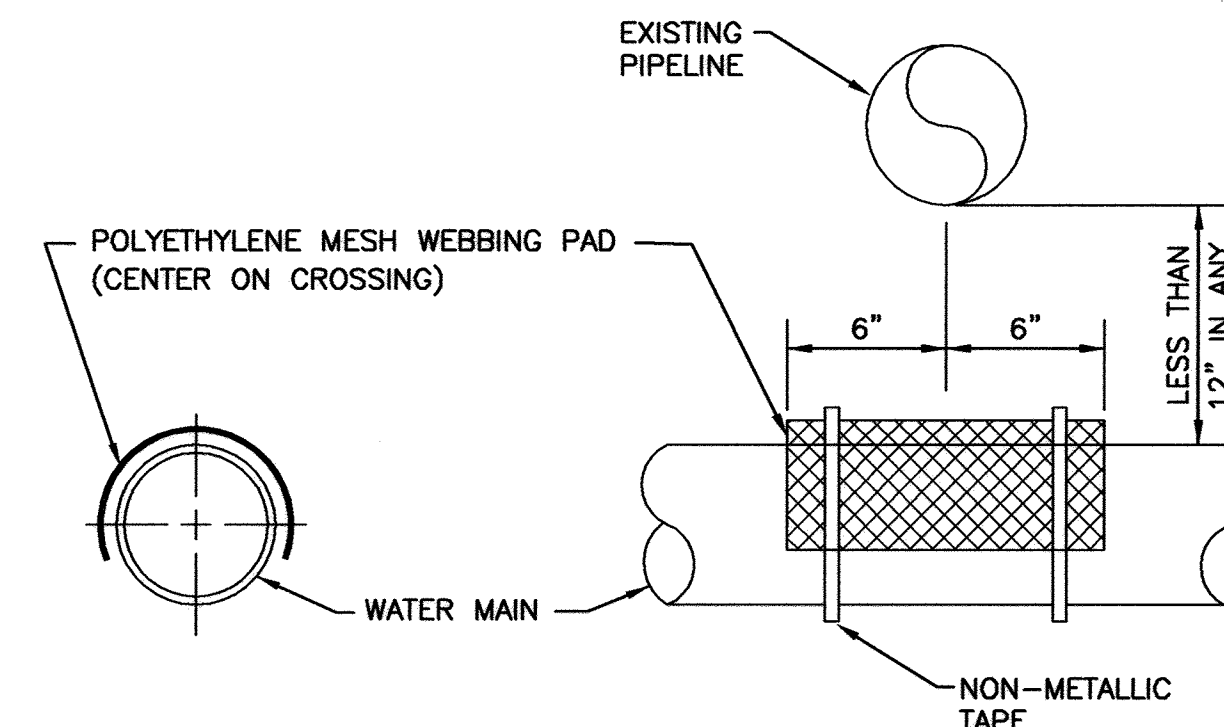


**SIDE VIEW**

**CC-16: COATING OF INSULATING FLANGE**



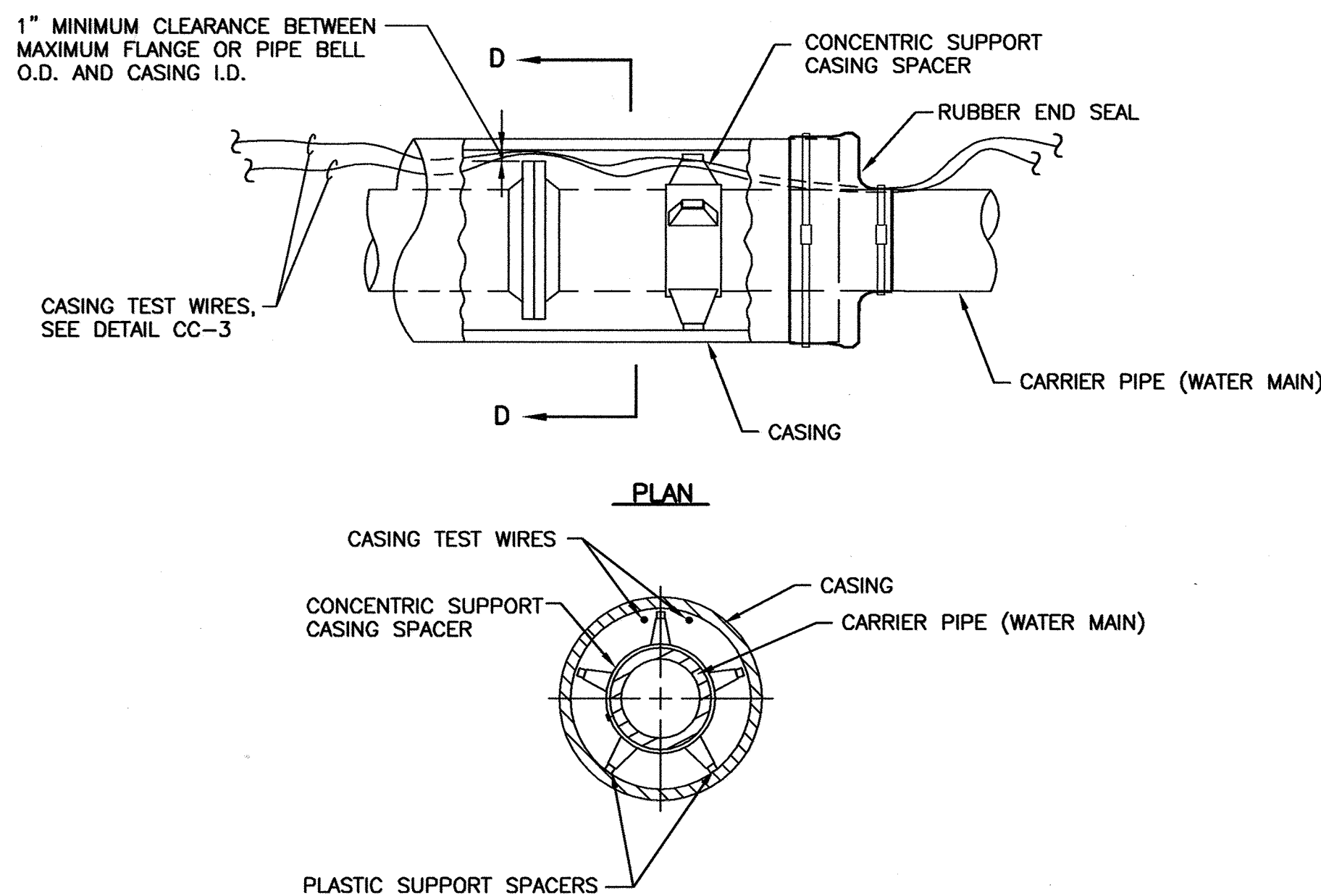
**SECTION "A-A"**



**NOTE:**

USE ONLY WHEN PIPES ARE LESS THAN 12" APART IN ANY DIRECTION.

**CC-17: SEPARATOR TO AVOID ELECTRICAL CONTACT**



**PLAN**

**SECTION "D-D"**

**NOTES:**

1. EACH LENGTH OF PIPE WITHIN THE CASING SHALL BE SUPPORTED AND ELECTRICALLY ISOLATED FROM THE CASING BY THE USE OF INSULATING CASING SPACERS. THE NUMBER OF CASING SPACERS AND THE SPACING BETWEEN THEM SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE CASING SPACERS, HOWEVER A MINIMUM OF THREE CASING SPACERS SHALL BE REQUIRED FOR EACH PIPE LENGTH. THE INSULATING SPACERS SHALL BE SIZED TO BE CAPABLE OF SUPPORTING THE WEIGHT OF THE CARRIER PIPE FILLED WITH WATER.
2. PRIOR TO BACKFILL, TEST TO VERIFY THAT ISOLATION BETWEEN PIPING AND CASING IS EFFECTIVE. IF ISOLATION IS NOT EFFECTIVE, REPAIR AS NECESSARY AND RETEST. THIS PROCESS SHALL CONTINUE UNTIL ISOLATION IS VERIFIED AS EFFECTIVE.
3. INSTALL RUBBER END SEALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

**DETAIL CC-18: CASING ISOLATION**

**36-INCH SOUTHWEST WATER TRANSMISSION MAIN**

STATION NUMBER	TEST STATION TYPE	DETAIL NUMBER	NUMBER OF ZINC ANODES	Cu/CuSO4 REFERENCE ELECTRODE
0+34±	ANODE	CC-2	8	YES
0+49±	INSULATING FLANGE	CC-1	0	YES
0+51±	AC GROUND MAT	CC-4	0	YES
0+53±	ANODE	CC-2	11	YES
2+41	AC GROUND MAT	CC-4	0	YES
2+43	CASING	CC-3	0	YES
3+13	CASING	CC-3	0	YES
3+15	AC GROUND MAT	CC-4	0	YES
5+00	ANODE	CC-2	11	YES
5+02	AC GROUND MAT	CC-4	0	YES
10+00	ANODE	CC-2	11	YES
15+00	ANODE	CC-2	11	YES
20+00	ANODE	CC-2	11	YES
25+00	ANODE	CC-2	11	YES
30+00	ANODE	CC-2	11	YES
31+93.38	8" INSULATING FLANGE AT 36" MAIN	CC-1	0	YES
31+94 (38' L)	8" INSULATING FLANGE AT 12" EX. MAIN	CC-1	0	YES
32+01	ANODE	CC-2	11	YES
32+03	CASING	CC-3	0	YES
36+58	CASING	CC-3	0	YES

STATION NUMBER	TEST STATION TYPE	DETAIL NUMBER	NUMBER OF ZINC ANODES	Cu/CuSO4 REFERENCE ELECTRODE
101+50	ANODE	CC-2	11	YES
106+68	ANODE	CC-2	11	YES
106+70	CASING	CC-3	0	YES
108+65	CASING	CC-3	0	YES
111+60	ANODE	CC-2	11	YES
115+60.50	CASING	CC-3	0	YES
116+52.50	CASING	CC-3	0	YES
116+54	ANODE	CC-2	11	YES
121+50	ANODE	CC-2	11	YES
124+46	INSULATING FLANGE	CC-1	0	YES
124+61	CASING	CC-3	0	YES
124+95± (100' R)	FIRE HYDRANT	CC-5	2	YES
127+06	CASING	CC-3	0	YES
127+08	ANODE	CC-2	11	YES
130+91	8" INSULATING FLANGE AT 36" MAIN	CC-1	0	YES
131+27± (70' L)	8" INSULATING FLANGE AT 8" MAIN	CC-1	0	YES
132+00	ANODE	CC-2	11	YES
137+40	ANODE	CC-2	11	YES
137+41.90	CASING	CC-3	0	YES
139+10.90	CASING	CC-3	0	YES
141+55	ANODE	CC-2	11	YES
141+57±	INSULATING FLANGE	CC-1	0	YES

**CC-19: TEST STATION SCHEDULE**

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIOUS CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE DUPLICATED 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.

CITY OF BALTIMORE	REVISION - CITY OF BALTIMORE	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
	CHIEF, UTILITY ENGINEERING DATE: 3/15/16	DIRECTOR, DEPT. OF PUBLIC WORKS DATE:
CHIEF, WATER & WASTEWATER ENG. DIV. BUREAU OF WATER AND WASTEWATER	CHIEF, WATER ENGINEERING SECTION DATE:	DATE:
<b>PROFESSIONAL CERTIFICATION</b> 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. 17063 EXPIRATION DATE 9/27/2012	<b>REVISION</b> BY: MIS DATE: 1/23/12	<b>DEPARTMENT OF PUBLIC WORKS</b> APPROVED BY: DATE: 1-24-12
DESIGN BY: MIS DRAWN BY: DDD CHECK BY: MIS	REVIEWED BY: RJE DATE REVIEWED: 1/23/12	DRAWING SCALE: AS NOTED PROFILE SCALE: AS NOTED DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING & CONSTRUCTION SUBDIVISION: ST. DENIS

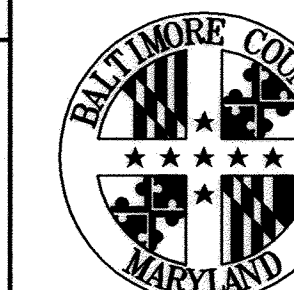
AS-BUILT JUNE 2016

**SOUTHWEST TRANSMISSION MAIN  
CATHODIC PROTECTION DETAILS - 4**

ELECTION DIST. NO.: 13

**RUSSELL CORROSION CONSULTANTS, INC.**  
Columbia, Maryland

SHEET DESIGNATION	CONTRACT NUMBER
CP-6	44-4618
JOB ORDER NUMBER	203-0067-0281
SHEET 36 OF 36	DRAWING NUMBER
2009-3385	FILE NO.



DWG. FILENAME: