

RAMP FROM WBL MD RTE 175 TO NBL US RTE 29 30-INCH DIAMETER WATER TRANSMISSION MAIN RELOCATION HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. W-8212
CONTRACT No. 44-3844

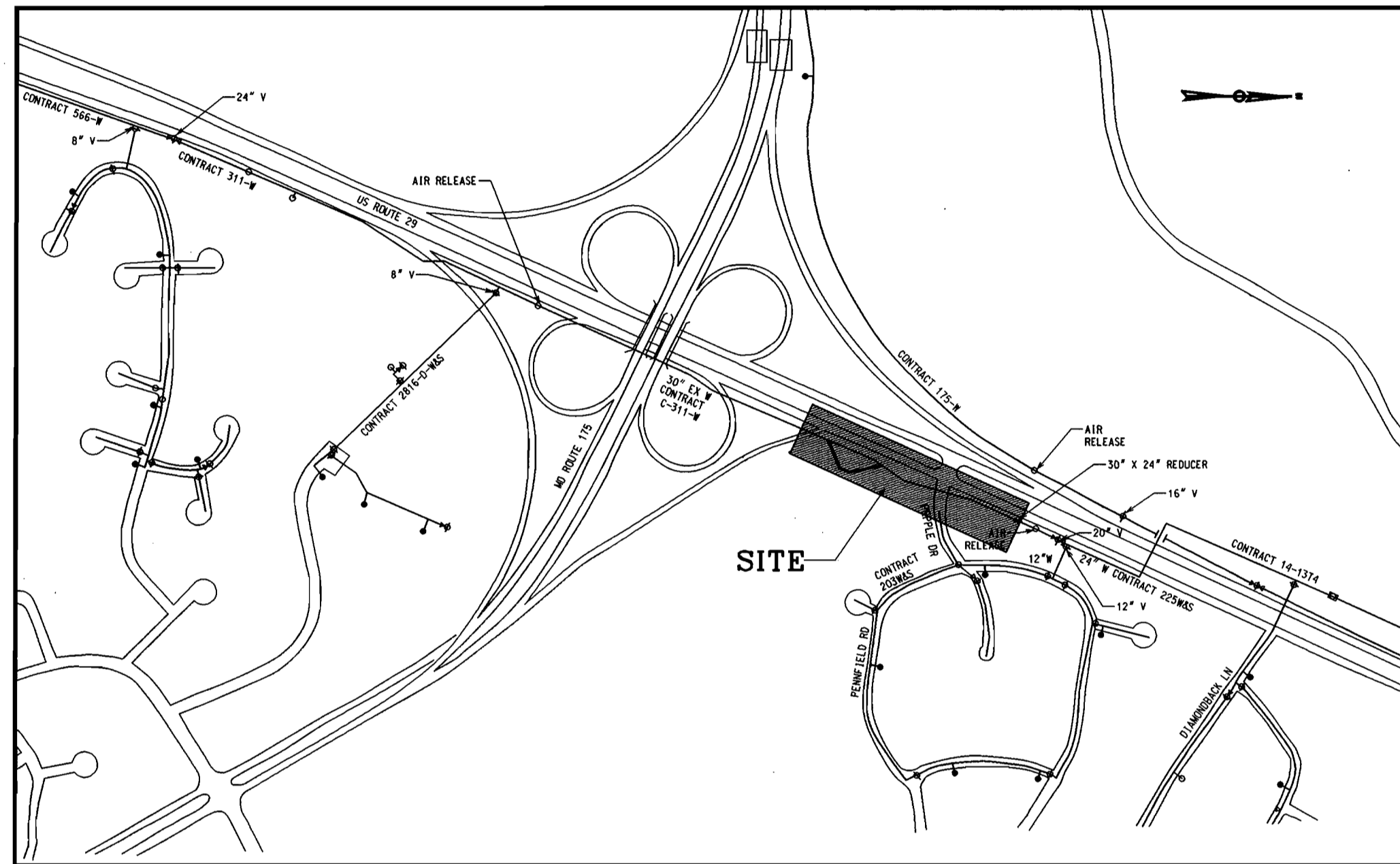
TEST PIT INFORMATION				
TEST PIT NUMBER	TYPE OF UTILITY	COVER (FEET)	EXISTING GROUND ELEVATION	UTILITY TOP ELEVATION
TH #1	30" WATER	3.88	361.09	357.21
TH #2	24" WATER	6.36	365.58	359.22
TH #3	30" WATER	4.73	363.81	359.08
TH #4	30" WATER	5.53	358.55	353.02
TH #5	TELE DUCT	5.98/7.36	354.14	348.16/346.78
TH #6	3" GAS	3.48	353.81	350.33
TH #7	30" WATER	4.45	354.61	350.16
TH #8	30" WATER	6.76	365.71	358.95
TH #9	30" WATER	8.10	348.32	340.22
TH #10	30" WATER	9.45	329.20	319.75

SEQUENCE OF CONSTRUCTION

- CLEAR PROPOSED RELOCATED 30" WATER MAIN ALIGNMENT AND PREPARE FOR TRENCH EXCAVATION STA. 0+26± TO STA. 2+70±.
- EXCAVATE, INSTALL, BACKFILL, TEST AND DISINFECT PROPOSED RELOCATED 30" WATER MAIN, STA. 0+26± TO STA. 2+70± INCLUDING CASING SLEEVE.
- AFTER ACCEPTANCE OF RELOCATED 30" WATER MAIN BY HOWARD COUNTY DPW IMPLEMENT CONNECTIONS TO EXISTING 30-INCH WATER MAIN (2 LOCATIONS):
 - CONSTRUCT PREPOURED BUTTRESSES PHASE I AT STA. 0+08 AND STA. 2+70 AND STA. 2+70±.
 - INSTALL LINE STOP FITTINGS ON EXISTING 30-INCH PCCP WATER MAINS.
 - POUR CONCRETE LINE STOP FITTING SUPPORTS AND ANCHORAGES (DESIGNED BY CONTRACTOR).
 - INSTALL TRAFFIC CONTROL DEVICES FOR BYPASS LINE. INSTALL TEMPORARY 24-INCH BYPASS PIPE EXCEPT FOR CONNECTIONS TO LINE STOPPERS MACHINERY.
 - INSTALL TEMPORARY TAPPING VALVES AND HOT TAPPING/LINE STOPPING MACHINERY.
 - NOTIFY HOWARD COUNTY DPW AND MSHA ENGINEER OF SCHEDULE 10 WORKING DAYS PRIOR TO EXECUTING CONNECTION.
 - HOT-TAP EXISTING WATER MAINS, MAKE CONNECTIONS TO TEMPORARY BYPASS SYSTEM AND ACTIVATE BYPASS.
 - INSTALL TEMPORARY LINE STOPPERS.
 - CONSTRUCT CONNECTIONS (2) TO EXISTING WATER MAINS AND INSERT TEMPORARY JACKS/SUPPORTS AT PREPOURED BUTTRESSES (PHASE II).
 - WITHDRAW THE LINE STOPPERS TO ACTIVATE RELOCATED 30" WATER MAIN.
 - INSTALL COMPLETION PLUGS IN LINE STOP FITTINGS.
 - REMOVE TAPPING/LINE STOPPING MACHINERY, TEMPORARY BYPASS PIPE, AND INSTALL PERMANENT BLIND FLANGES ON LINE STOP FITTINGS.
 - CONCRETE ENCASE LINE STOP FITTINGS AND JACKS/SUPPORTS AT PREPOURED BUTTRESSES (PHASE III).
 - BACKFILL EXCAVATIONS AND PROVIDE TEMPORARY SURFACE STABILIZATION OF DISTURBED AREAS.
- REMOVE EX 30" PCCP WATER MAIN AS SHOWN ON THE DRAWINGS.
- REMOVE TRAFFIC CONTROL DEVICES.

NOTE:

SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOLUME 4, ARTICLE 15 OF HOWARD COUNTY DESIGN MANUAL AND THESE PLANS.



VICINITY MAP

SCALE: 1" = 600'

TYPE OF BUILDING: NA

NUMBER OF LOTS: NA

NUMBER OF WATER HOUSE CONNECTIONS: NA

HOWARD COUNTY WATER CODE: G05 ELEVATION 550

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.C.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE WORKSITE.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T.....	410- 865-3803
BC&E (CONTRACTOR SERVICES).....	410- 850-4620
BC&E - UNDERGROUND DAMAGE CONTROL.....	410- 787-9068
BUREAU OF UTILITIES (DPW).....	410- 313-4900
CHESAPEAKE & POTOMAC TELEPHONE CO.	410- 597-8585
COLONIAL PIPELINE CO.	410- 795-1390
MSS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	410- 531-5533
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE 30-INCH WATER MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(d) OF THE HOWARD COUNTY CODE.
- ALL WATER MAINS SHALL BE RESTRAINED JOINT D.I.P. CLASS 52, FITTINGS PRESSURE RATED 250 PSI UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE SPECIAL DETAILS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- PRIOR TO LAYING ANY WATER MAINS UNDER THIS CONTRACT, THE CONTRACTOR SHALL TEST PIT AT CRITICAL CROSSINGS AND WATER MAIN CONNECTIONS, AND SHALL DETERMINE ELEVATIONS AND HORIZONTAL LOCATIONS OF MAINS ALONG WITH EXISTING PIPE DIMENSIONS. CONTRACTOR SHALL CONFIRM LAYOUT BEFORE ORDERING ANY MATERIALS.

STAKEOUT TABLE 30" WATER MAIN			
STA.	NORTHING	EASTING	ELEVATION
TRAV. # 9	568,277.9490	1,356,364.5533	325.08
TRAV. # 8	568,555.8683	1,356,348.9734	333.78
TRAV. # 11	569,067.7440	1,356,582.0990	350.79
45" HB 0+08	568,742.82	1,356,568.93	
11 1/4" HB 0+55	568,702.11	1,356,579.99	
45" HB 1+62	568,593.54	1,356,586.70	
45" HB 1+99	568,565.77	1,356,561.61	
30" W P I # 1	568,560.32	1,356,486.72	

QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
30" WATER	L.F.	287'	287'	PRESSURE CLASS 52 D.I.P.
30" LINE STOP	EACH	2	-0-	RATED TO 150 psi
60" CASING	L.F.	46'	46'	ASTM C-76 GLASS V
24" WATER BYPASS	L.F.	326'	283.3'	TEMPORARY RESTRAINED JOINT PIPE

NAME OF UTILITY CONTRACTOR: CHERRY HILL CONSTRUCTION, INC.

CHECKBOX

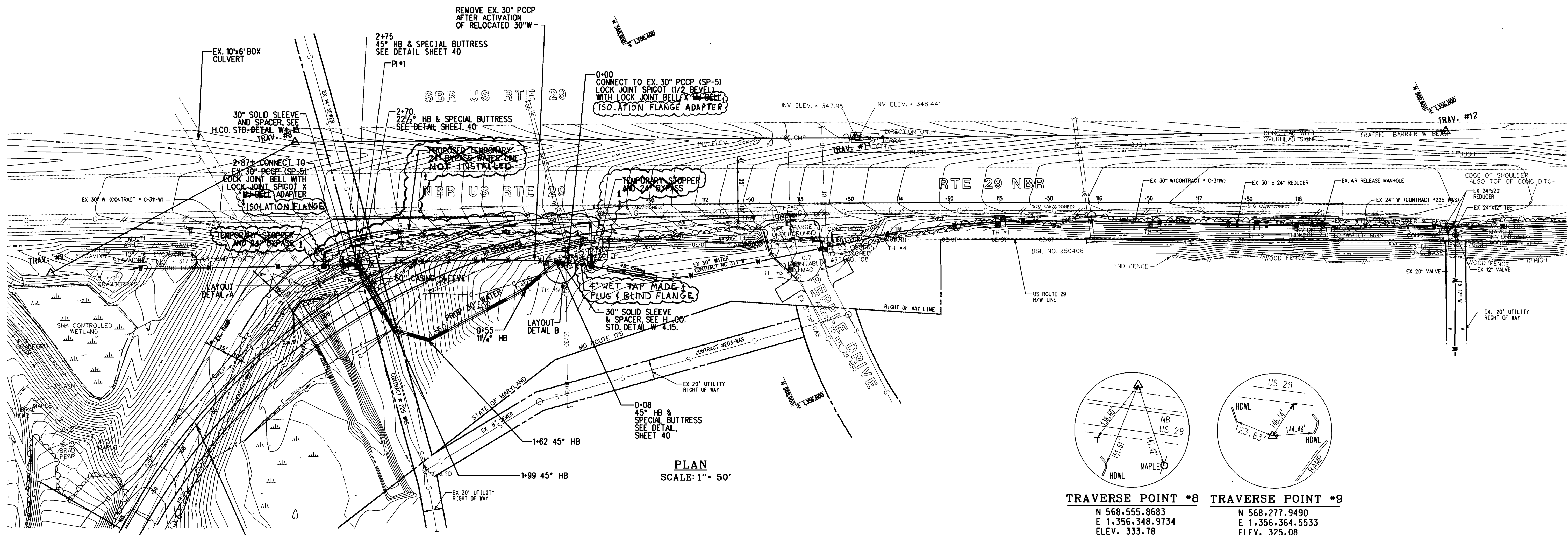
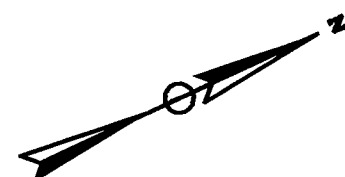
AS-BUILT DATE: 11-28-00

SURVEY AND DRAFTING DIVISION

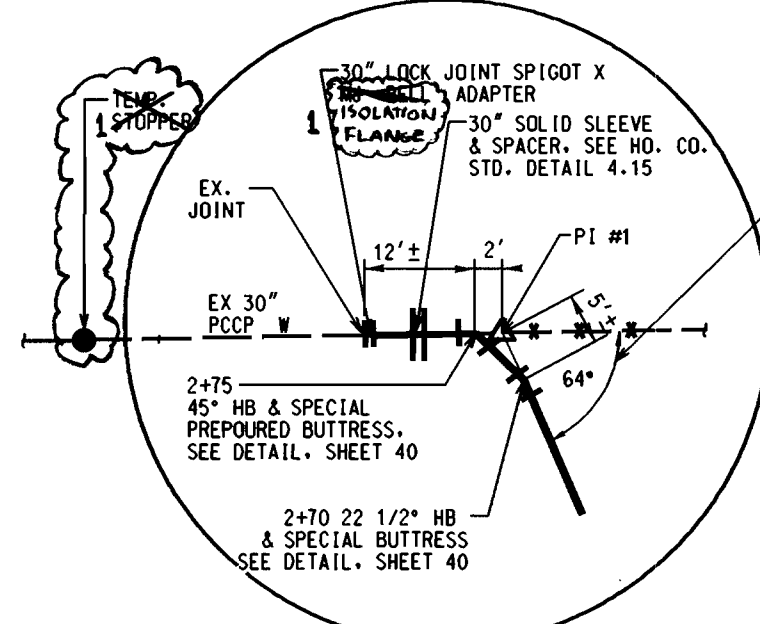
INDEX OF SHEETS	
SHEET No.	DESCRIPTION
37	TITLE SHEET, GENERAL NOTES, INDEX & CERTIFICATION
38	PLAN
39	PROFILES & DETAILS
40	SPECIAL BUTTRESS DETAILS

THIS PROJECT IS CONSTRUCTED UNDER
MSHA CONTRACT H07955176,
RELOCATION OF RAMP FROM MD 175 TO
NORTHBOUND US 29

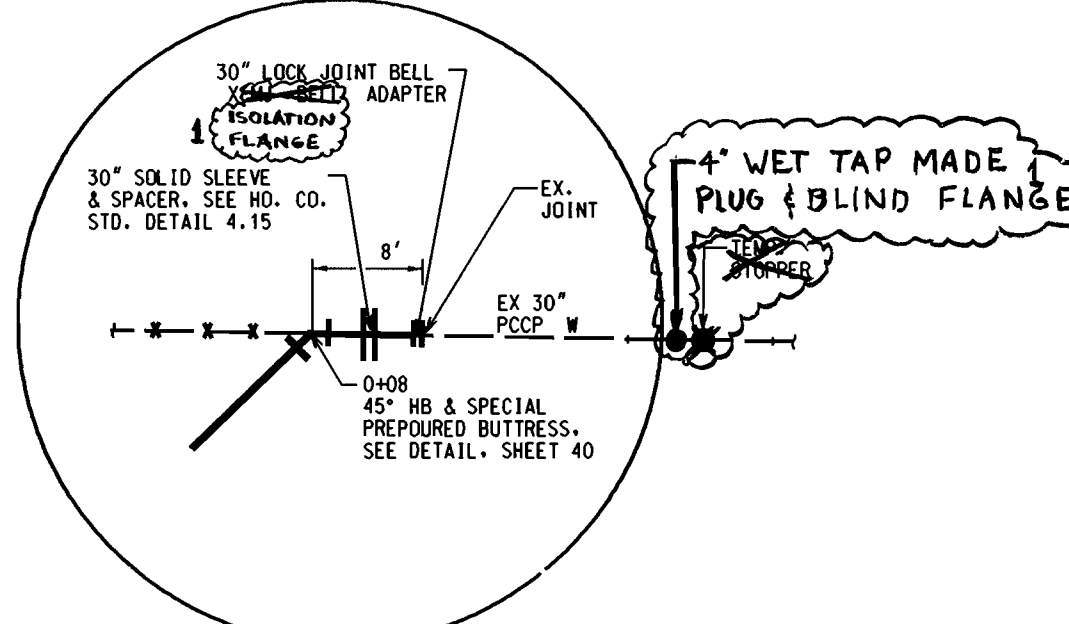
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/15/00 DATE: 3-9-00 DATE: 3-6-00		ENGINEERS AND PLANNERS 10 NORTH PARK DRIVE HUNT VALLEY, MD. 21030-1888 (410) 316-7800 		DES: YPK DRN: CK CHK: EAS DATE: 02/28/00	TITLE SHEET, GENERAL NOTES, INDEX AND CERTIFICATION	RAMP FROM WBL MD RTE 175 TO NBL US RTE 29 30-INCH DIAMETER WATER TRANSMISSION MAIN RELOCATION CAPITAL PROJECT No. W-8212 CONTRACT No. 44-3844 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 1 OF 6 37 OF -
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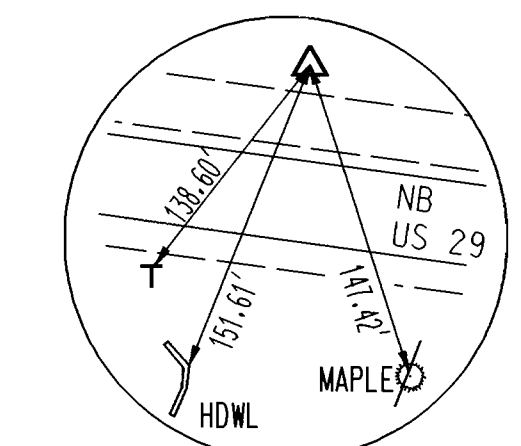
PLAN
SCALE: 1" = 50'



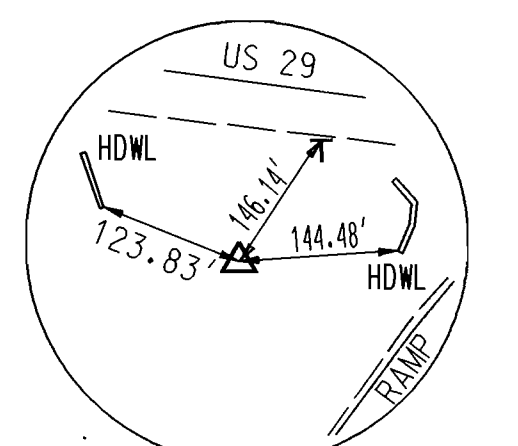
LAYOUT DETAIL A
NOT TO SCALE



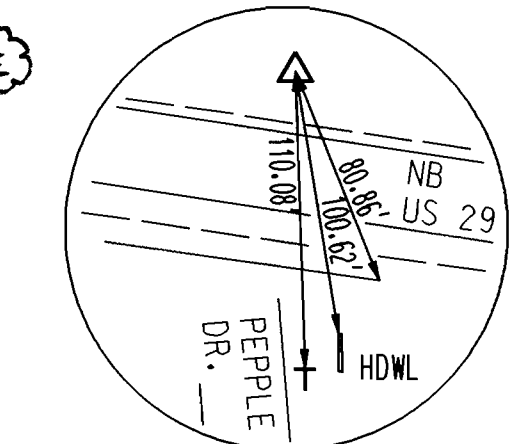
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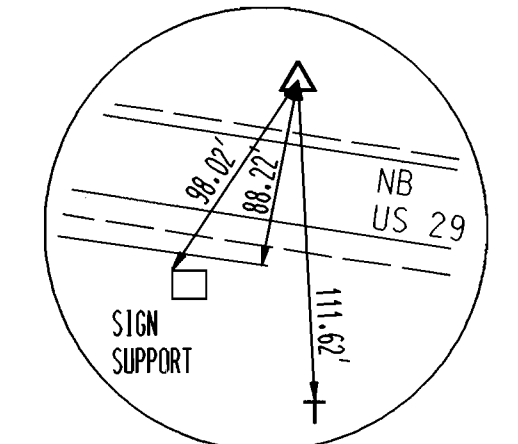
TRAVERSE POINT #8
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E 1,356,348.9734
ELEV. 333.78



TRAVERSE POINT #9
N 568,277.9490
E 1,356,364.5533
ELEV. 325.08



TRAVERSE POINT #11
N 569,067.7440
E 1,356,582.0990
ELEV. 350.79



TRAVERSE POINT #12
N 569,606.7580
E 1,356,827.2720
ELEV. 358.86

THIS PROJECT IS CONSTRUCTED UNDER
MSHA CONTRACT H07956176,
RELOCATION OF RAMP FROM MD 175 TO
NORTHBOUND US 29

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert Deegan 3/16/00
DIRECTOR OF PUBLIC WORKS
CHIEF, BUREAU OF UTILITIES

Robert Deegan 3/16/00
CHIEF, BUREAU OF ENGINEERING
CHIEF, UTILITY DESIGN DIVISION

ENGINEERS AND PLANNERS
10 NORTH PARK DRIVE
HUNT VALLEY, MD. 21030-1888
(410) 316-7800

KCI
TECHNOLOGIES



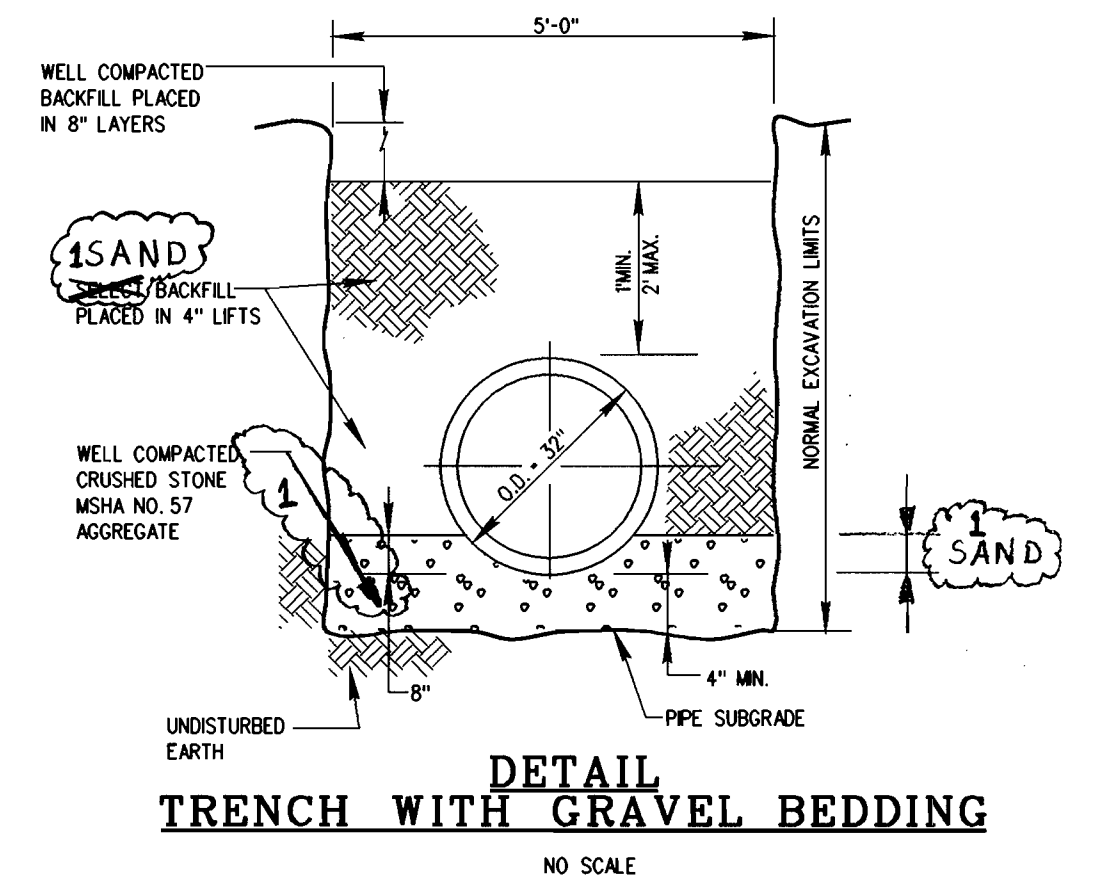
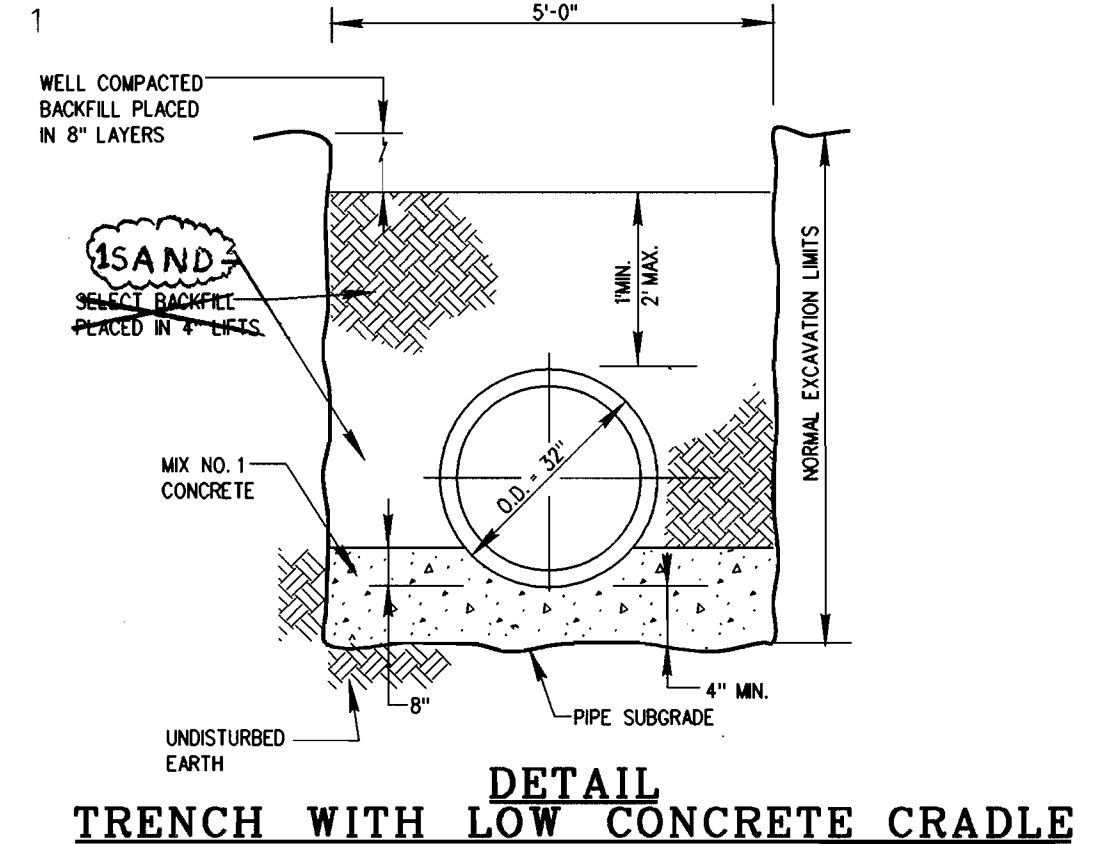
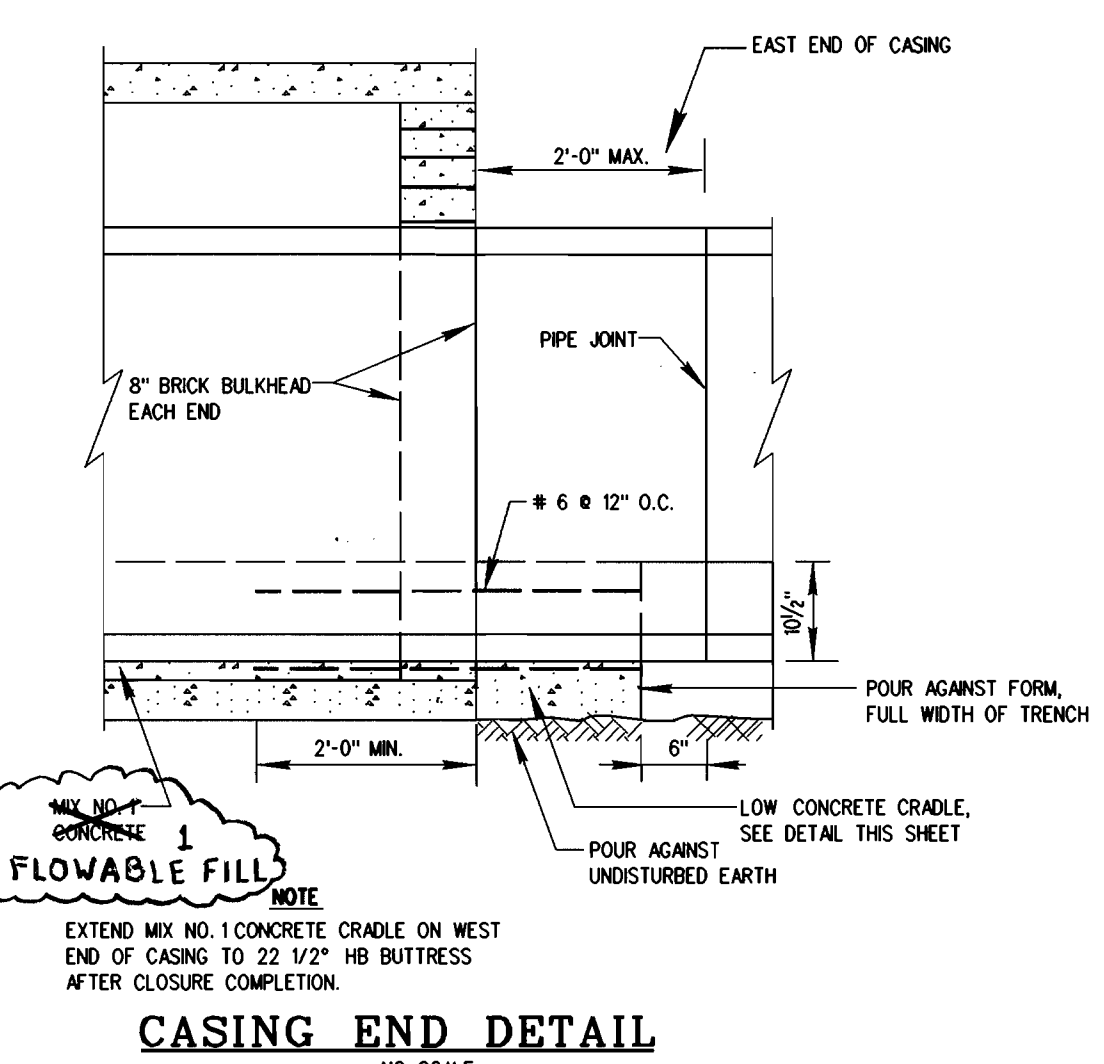
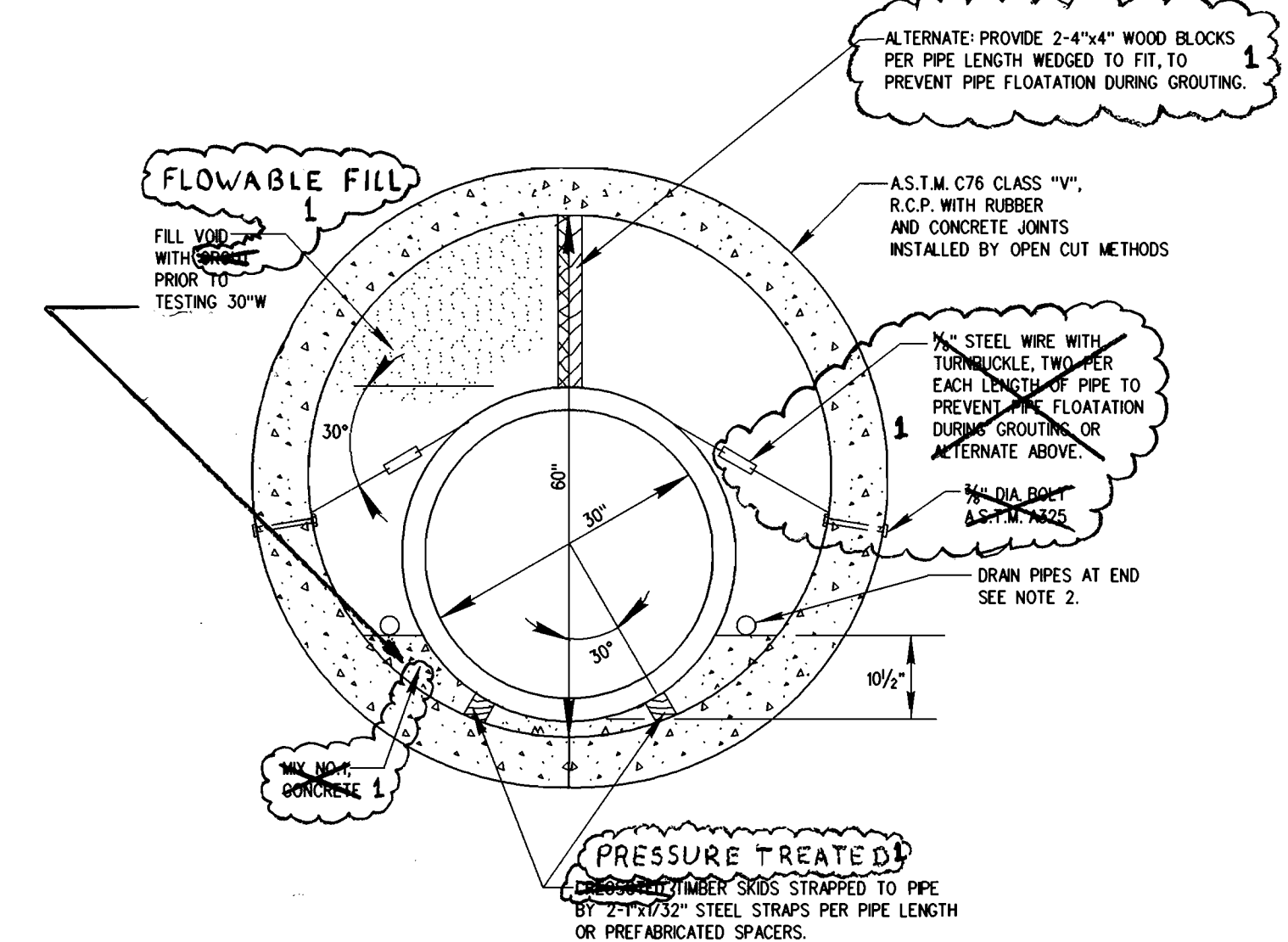
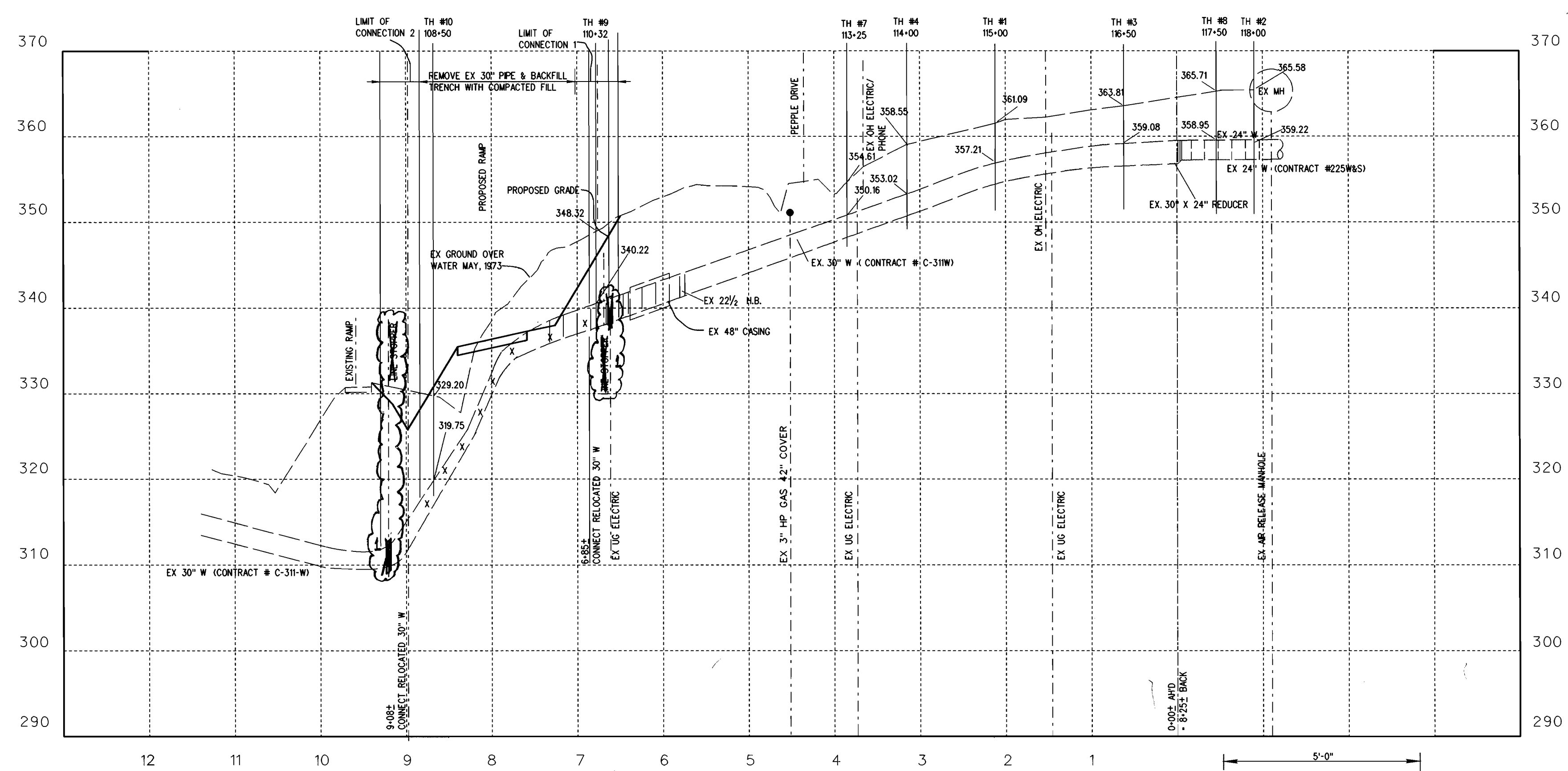
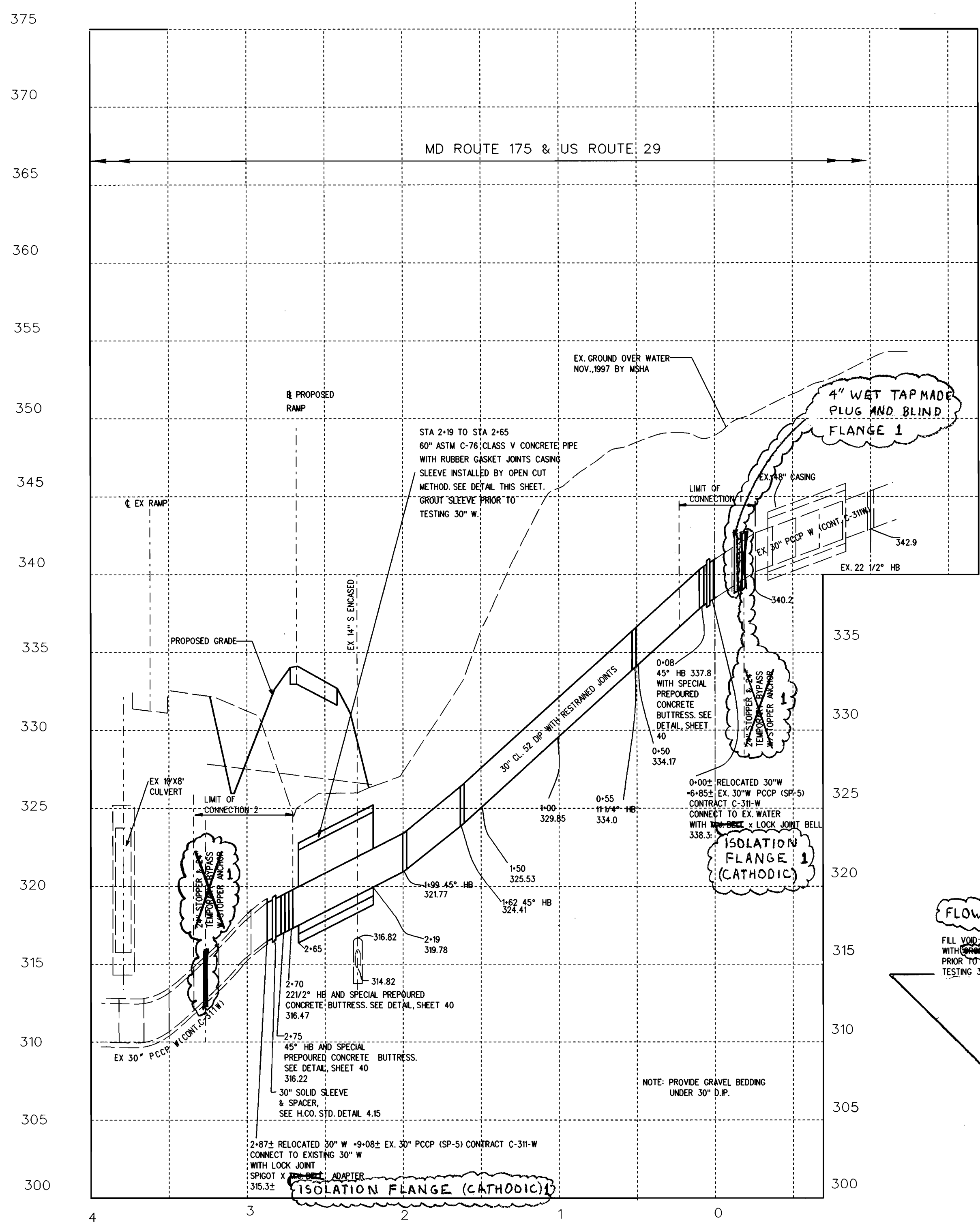
DES: YPK				
DRN: CK				
CHK: EAS				
DATE: 02/28/00	KEJ	1	AS BUILT CONDITIONS	12/27/00
	BY	NO.	REVISION	DATE

PLAN

600' SCALE TAX MAP NO. _____ GRID NO. _____

RAMP FROM WBL MD RTE 175 TO NBL US RTE 29
30-INCH DIAMETER WATER TRANSMISSION
MAIN RELOCATION
CAPITAL PROJECT No. W-8212
CONTRACT No. 44-3844
ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 6
13 OF 1



THIS PROJECT IS CONSTRUCTED UNDER
MSHA CONTRACT H0795176,
RELOCATION OF RAMP FROM MD 175 TO
NORTHBOUND US 29

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/16/00
DATE: 3-9-00

ENGINEERS AND PLANNERS
10 NORTH PARK DRIVE
HUNT VALLEY, MD. 21030-1888
(410) 316-7800

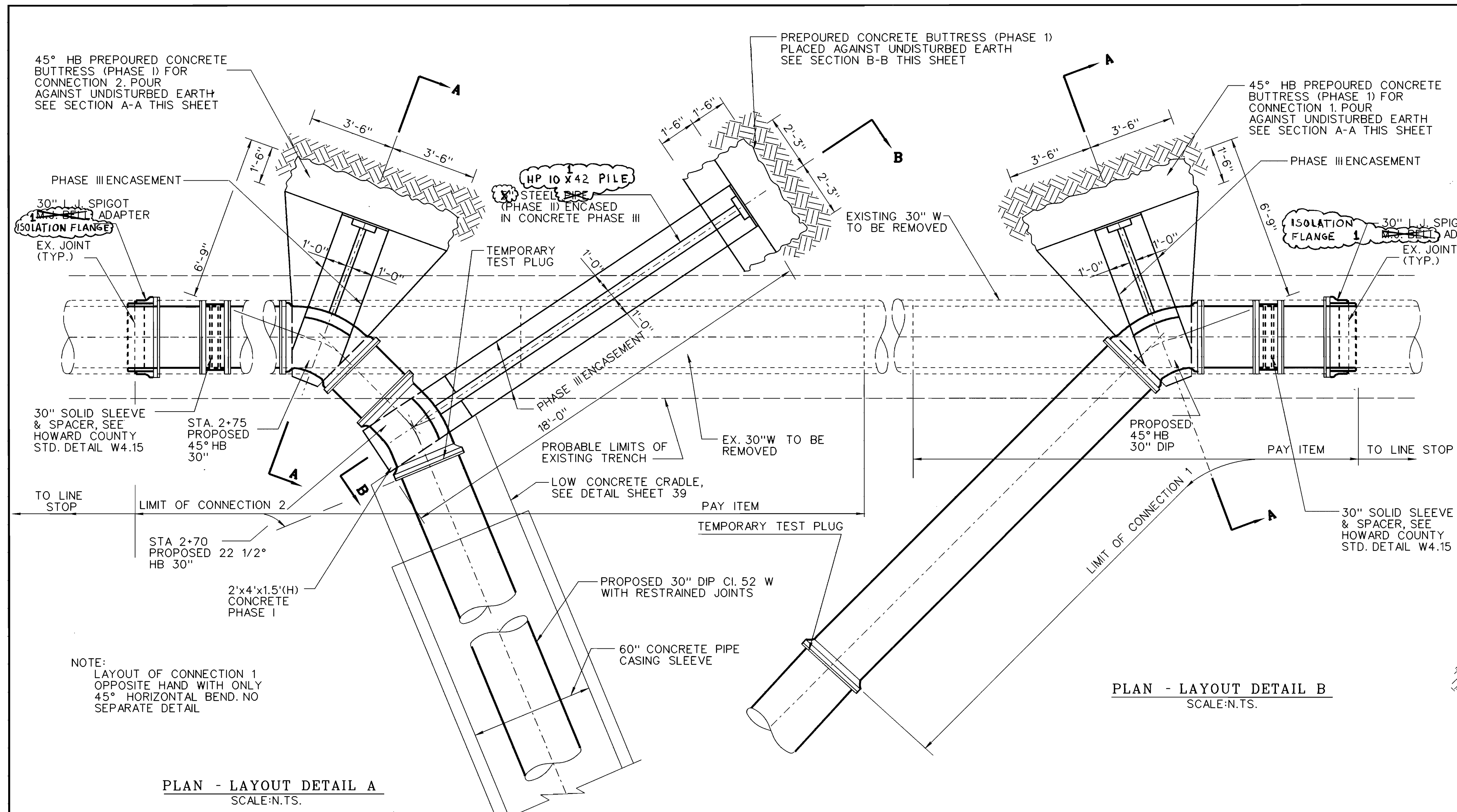


DES:	YPK			
DRN:	CK			
CHK:	EAS			
DATE:	02/28/00			
BY:	KFJ	1	AS BUILT CONDITIONS	12/2/00
NO.			REVISION	DATE

PROFILES & DETAILS
60' SCALE MAP NO. 30
GRID NO. 15

RAMP FROM WBL MD RTE 175 TO NBL US RTE 29
30- INCH DIAMETER WATER TRANSMISSION
MAIN RELOCATION
CAPITAL PROJECT NO. W-8212
CONTRACT NO. 44-3844
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

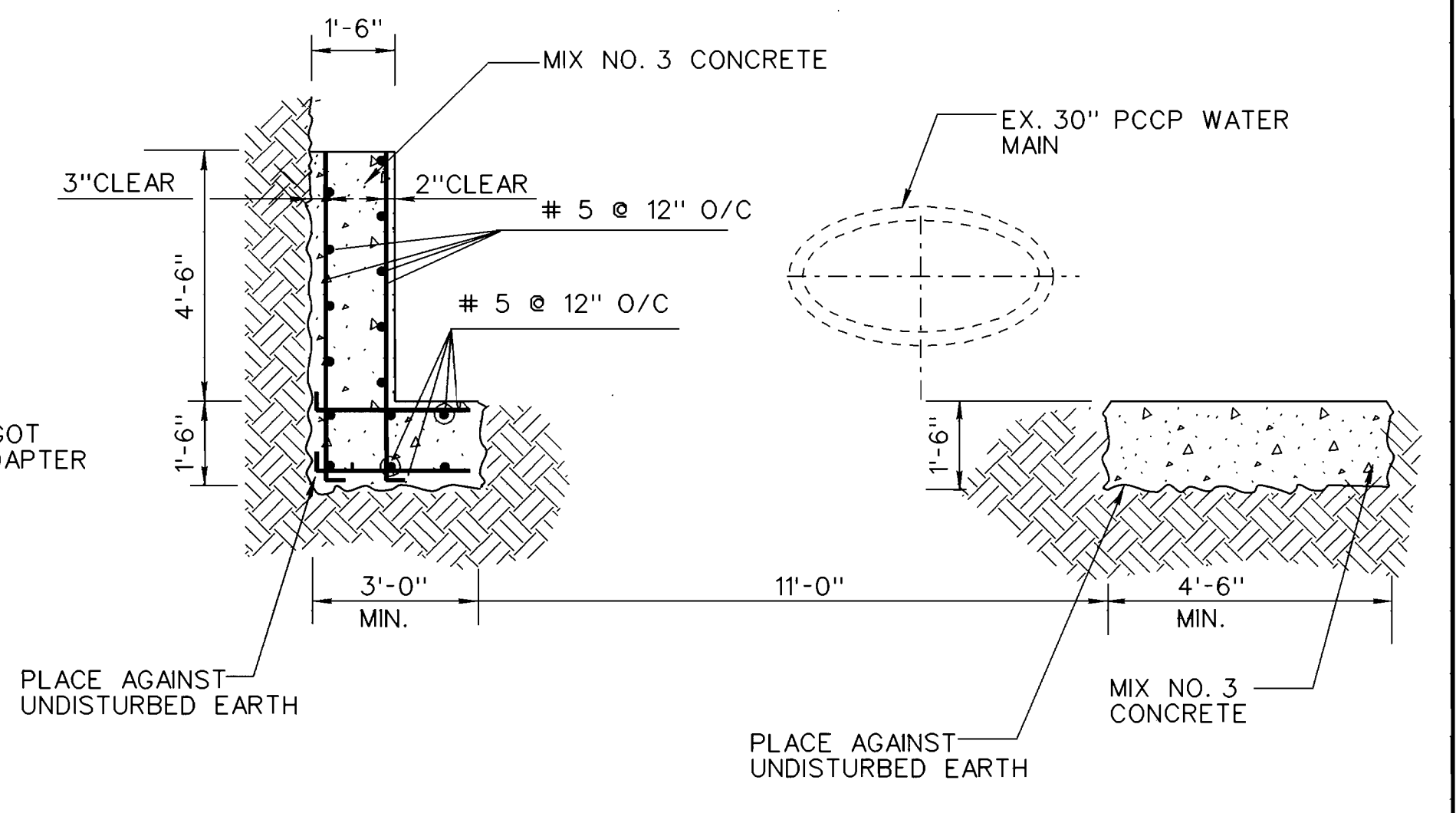
SCALE AS SHOWN
SHEET 39 OF 66
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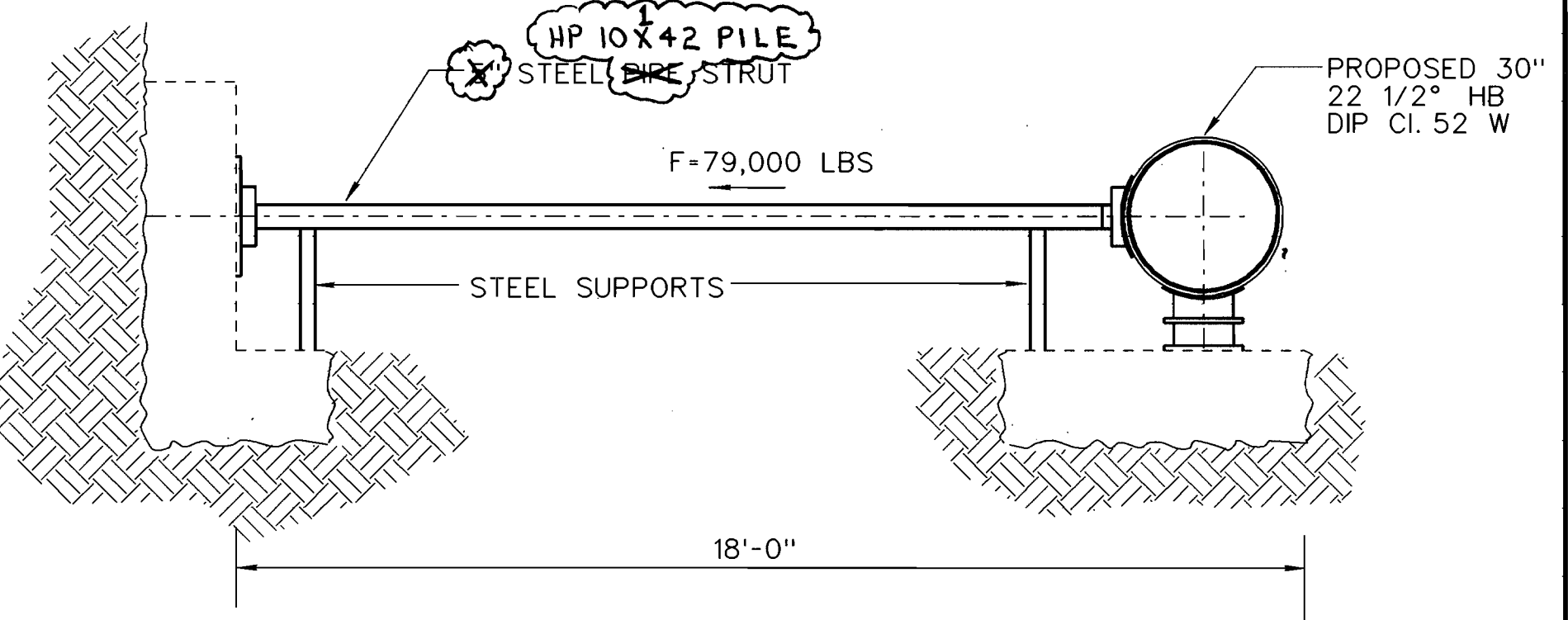
PLAN - LAYOUT DETAIL A
SCALE: N.T.S.

PLAN - LAYOUT DETAIL B
SCALE: N.T.S.

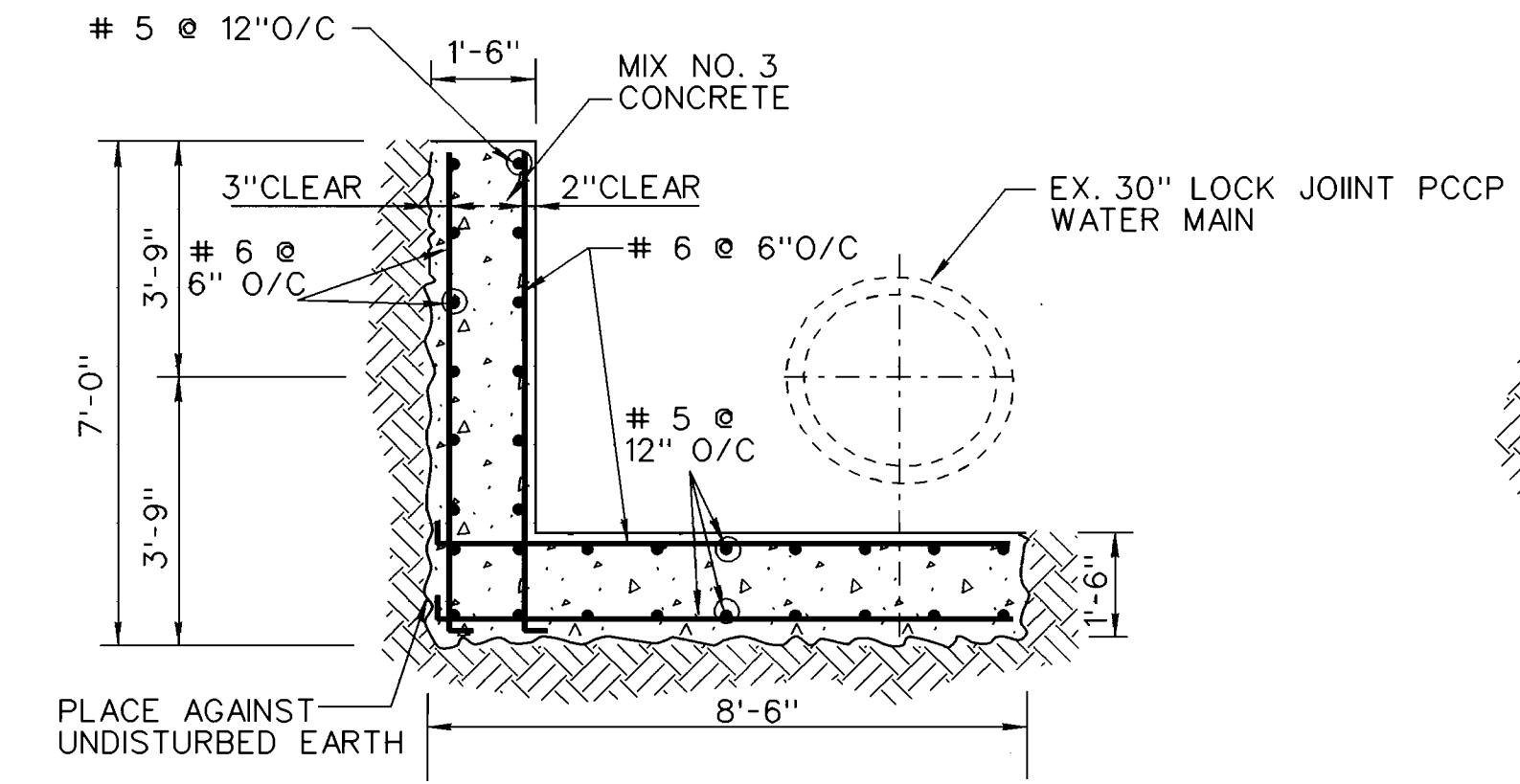
NOTE:
LAYOUT OF CONNECTION 1
OPPOSITE HAND WITH ONLY
45° HORIZONTAL BEND. NO
SEPARATE DETAIL



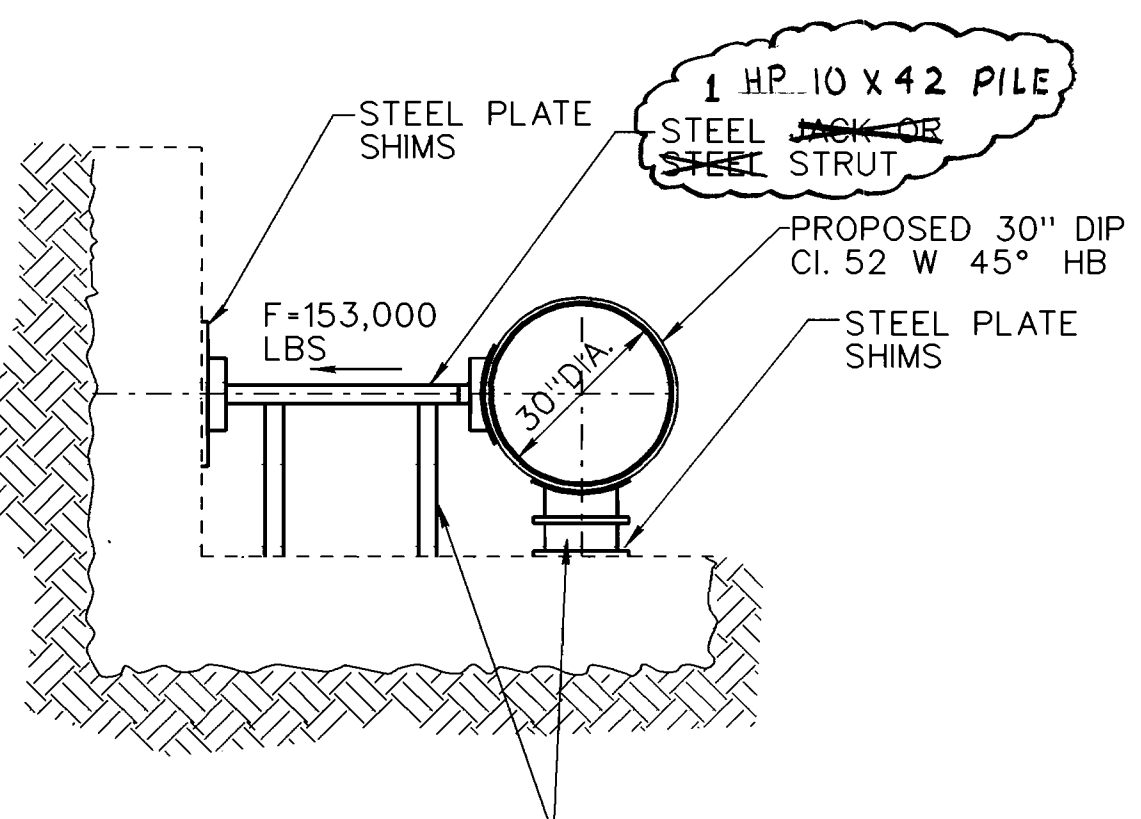
PHASE I
3/8" = 1'-0"



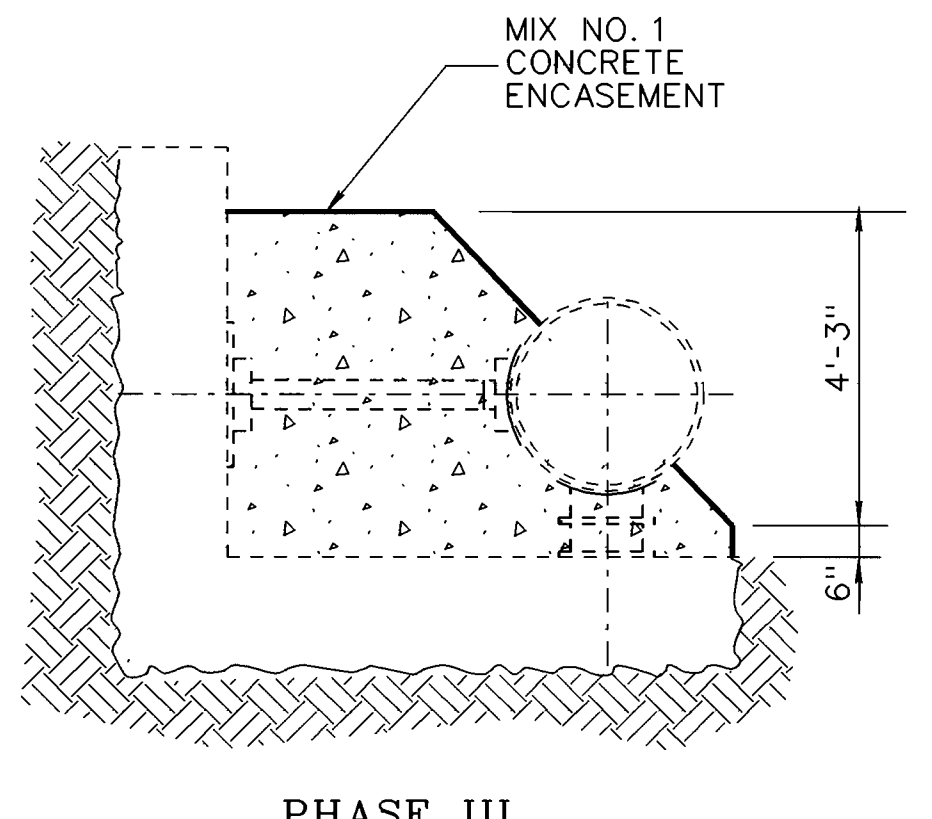
PHASE II
3/8" = 1'-0"



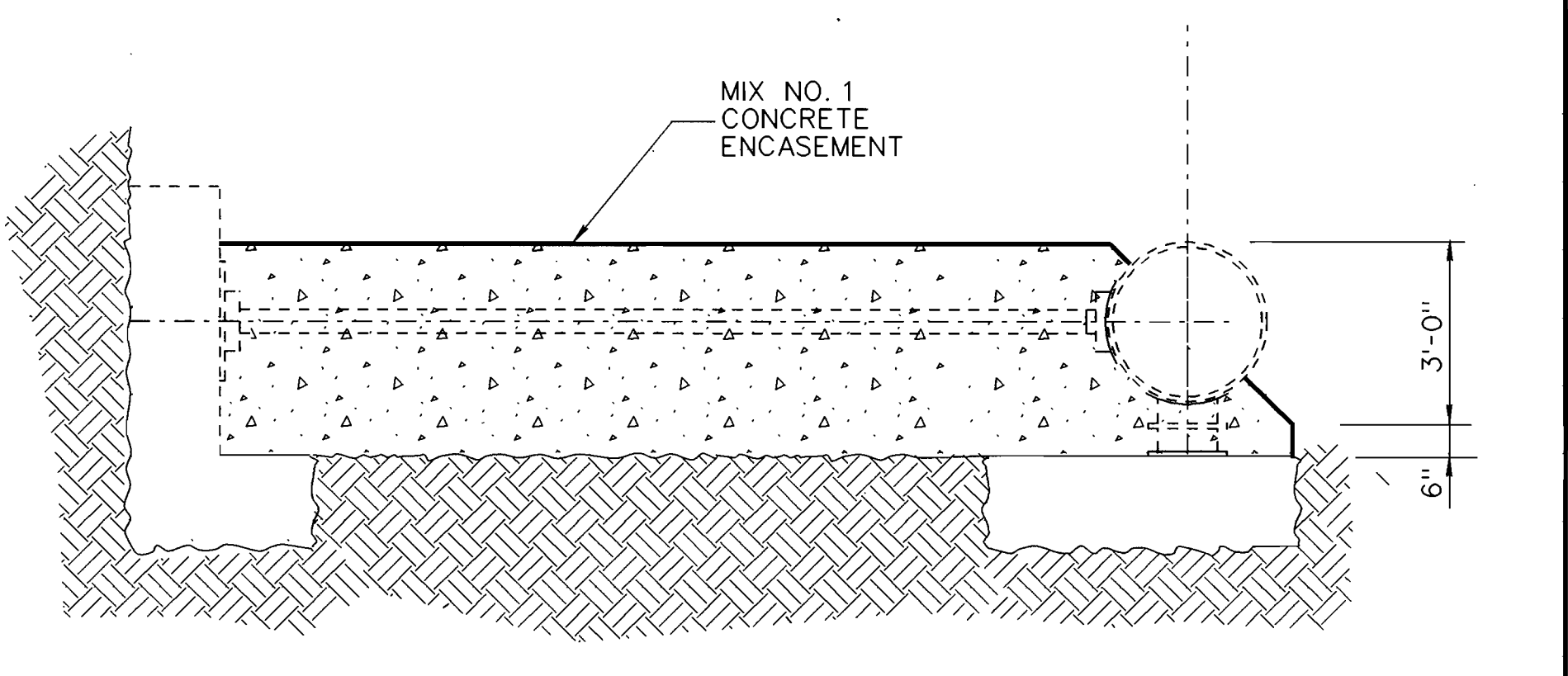
PHASE I
3/8" = 1'-0"



PHASE II
3/8" = 1'-0"



PHASE III
3/8" = 1'-0"



PHASE III
3/8" = 1'-0"

SECTION A-A

SECTION B-B

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MSHA CONTRACT H07955176,
RELOCATION OF RAMP FROM MD 175 TO
NORTHBOUND US 29

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/16/00
3-9-00

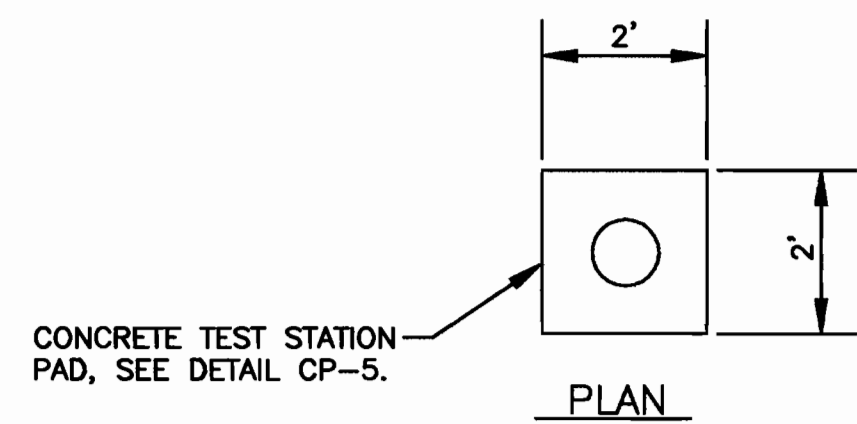
ENGINEERS AND PLANNERS
10 NORTH PARK DRIVE
HUNT VALLEY, MD, 21030-1888
(410) 316-7800



DES: YPK			
DRN: CK			
CHK: EAS			
DATE: 02/20/00	KFJ	1	AS BUILT CONDITIONS
	BY	NO.	REVISION

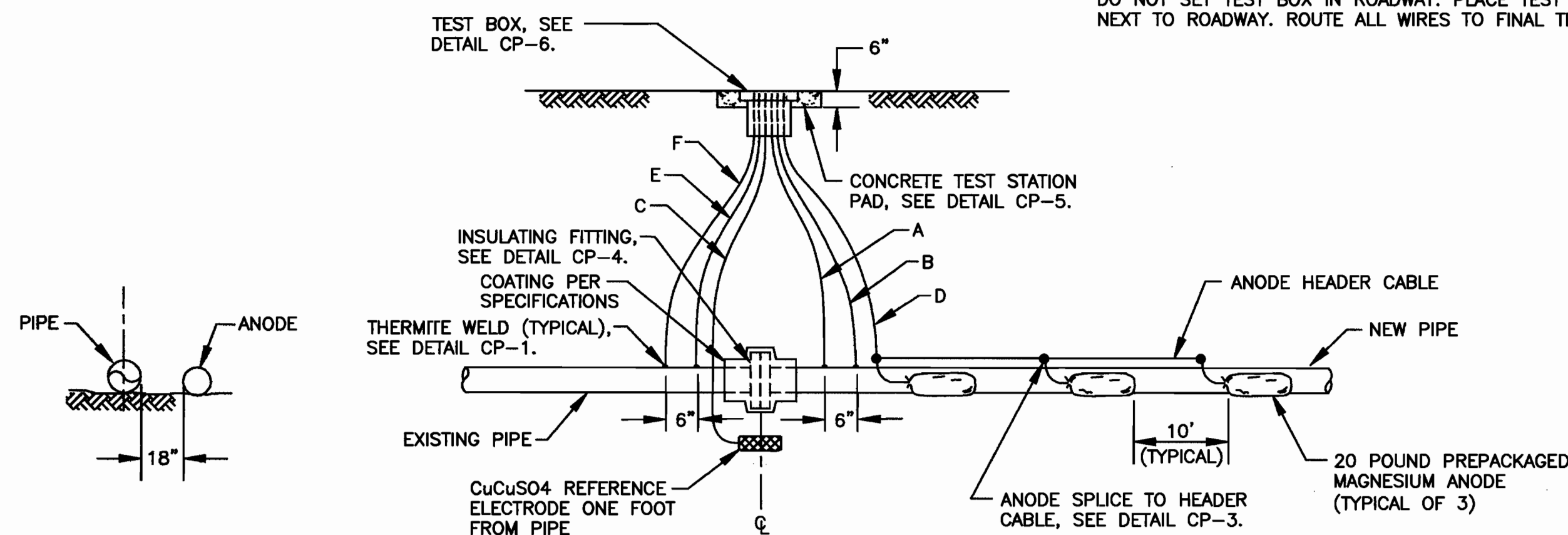
SPECIAL
BUTTRESS DETAILS
600' SCALE TAX MAP NO. W30 GRID NO. 15

RAMP FROM WBL MD RTE 175 TO NBL US RTE 29
30-INCH DIAMETER WATER TRANSMISSION
MAIN RELOCATION
CAPITAL PROJECT No. W-8212
CONTRACT No. 44-3844
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 4 OF 6
400' - 1



WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE INSULATION	COLOR INSULATION
NEW PIPE	A B	1 3	#10 #10	THWN THWN	BLUE BLUE
PERMANENT REFERENCE ELECTRODE	C	6	#14	HMWPE	BLACK
MAGNESIUM ANODE HEADER CABLE	D	4	#8	HMWPE	BLACK
EXISTING PIPE	E F	2 5	#10 #10	THWN THWN	WHITE WHITE

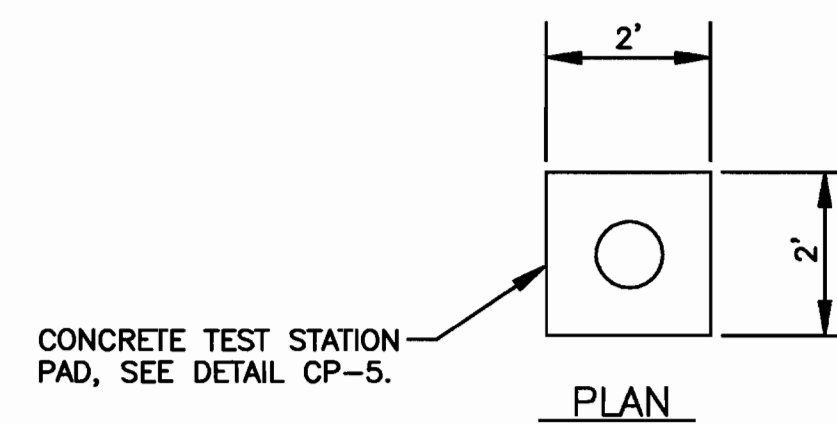
NOTE:
DO NOT SET TEST BOX IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES TO FINAL TEST BOX LOCATION.



SECTION

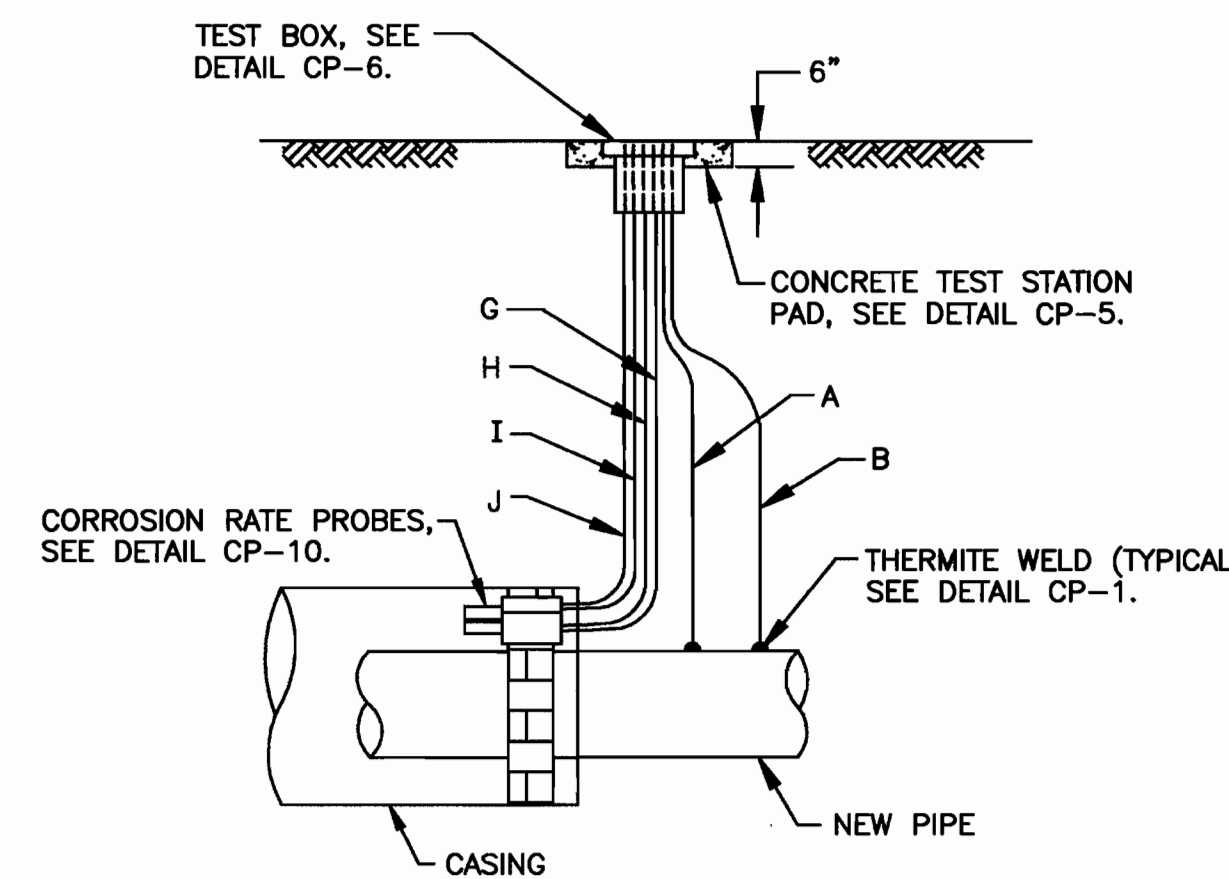
PROFILE

CP-7: INSULATING JOINT TEST STATION

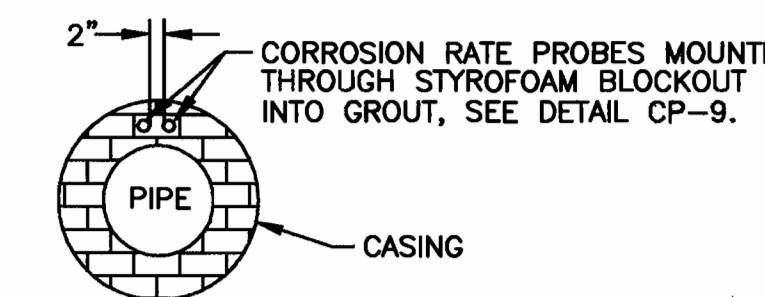


WIRING SCHEDULE					
DESCRIPTION	WIRE	TEST STATION TERMINAL	AWG WIRE SIZE	TYPE INSULATION	COLOR INSULATION
NEW PIPE	A B	1 3	#10 #10	THWN THWN	WHITE WHITE
LEFT PROBE	G H	4 5	#14 #14	THWN THWN	BLACK BLACK
RIGHT PROBE	I J	6 7	#14 #14	THWN THWN	BLACK BLACK

NOTES:
1. DO NOT SET TEST BOX IN ROADWAY. PLACE TEST BOX IN NON-PAVED AREA NEXT TO ROADWAY. ROUTE ALL WIRES TO FINAL TEST BOX LOCATION.
2. USE GROUT WITH A pH OF 12 OR GREATER TO FILL CASING.
3. INSTALL PROBES AT BOTH ENDS OF CASING.

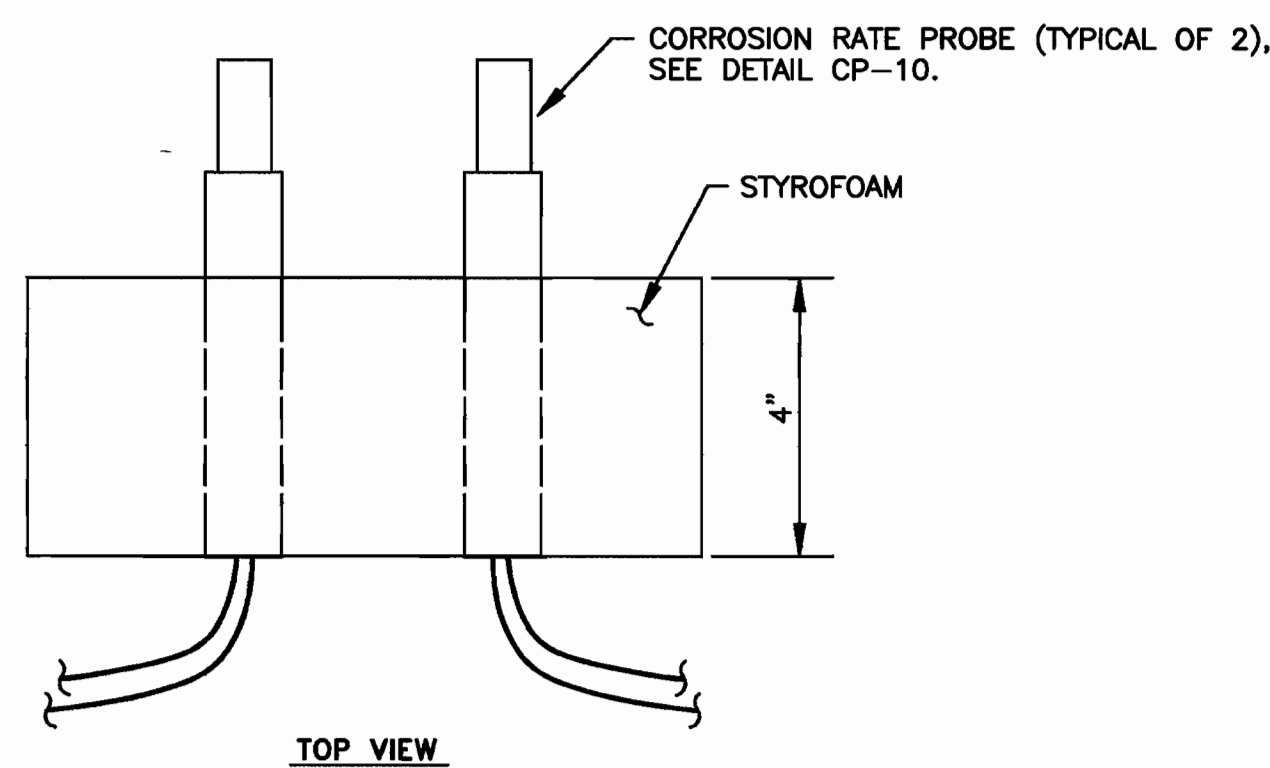


PROFILE

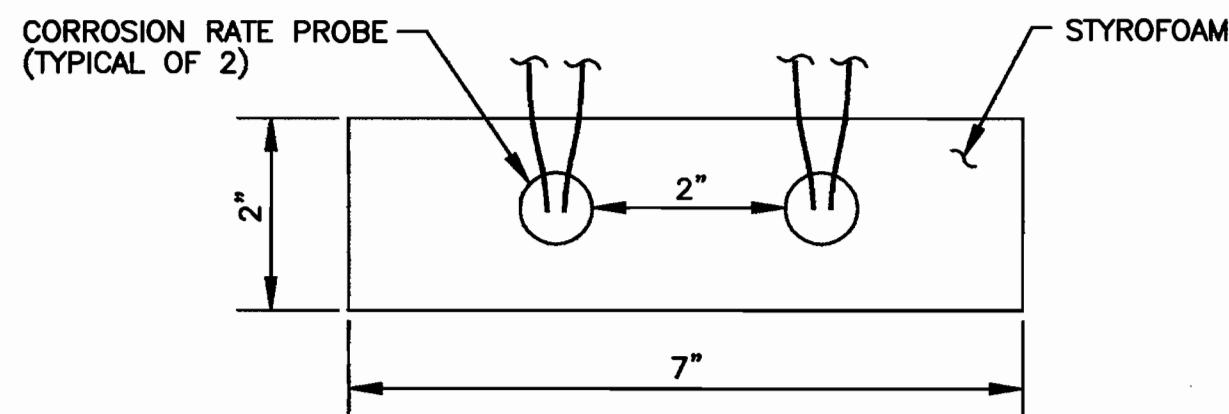


SECTION

CP-8: CASING TEST STATION

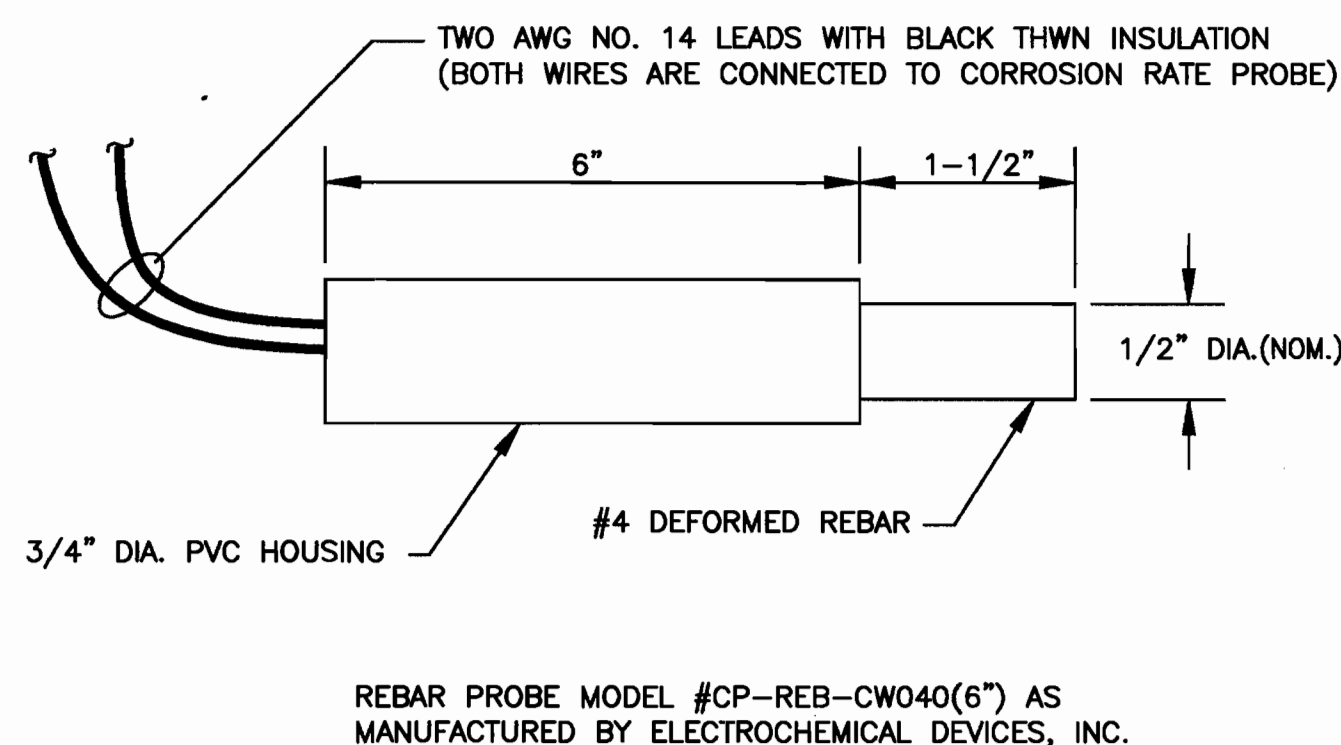


TOP VIEW



END VIEW

CP-9: CORROSION RATE PROBE BLOCKOUT



CP-10: CORROSION RATE PROBE

CATHODIC PROTECTION TEST STATION SCHEDULE MD ROUTE 175 & ROUTE 29 30" WATER MAIN RELOCATION		
STATION NUMBER	TEST STATION TYPE	DETAIL NO.
0+00	INSULATING JOINT	CP-7
2+30	CASING	CP-8
2+80	CASING	CP-8
3+00	INSULATING JOINT	CP-7

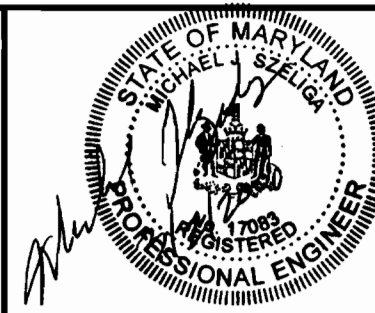
CP-11: TEST STATION SCHEDULE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 3/16/00
 Chief, Bureau of Engineering: *[Signature]* 3/16/00
 Chief, Bureau of Utilities: *[Signature]* 3-9-00
 Chief, Water & Sewer Division: *[Signature]* 3-6-00



5405 TWIN KNOLLS RD., SUITE 3
COLUMBIA, MD 21045



DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	3/00	KFJ	1	AS BUILT CONDITIONS	12/2/00
		BY	NO.	REVISION	NO.

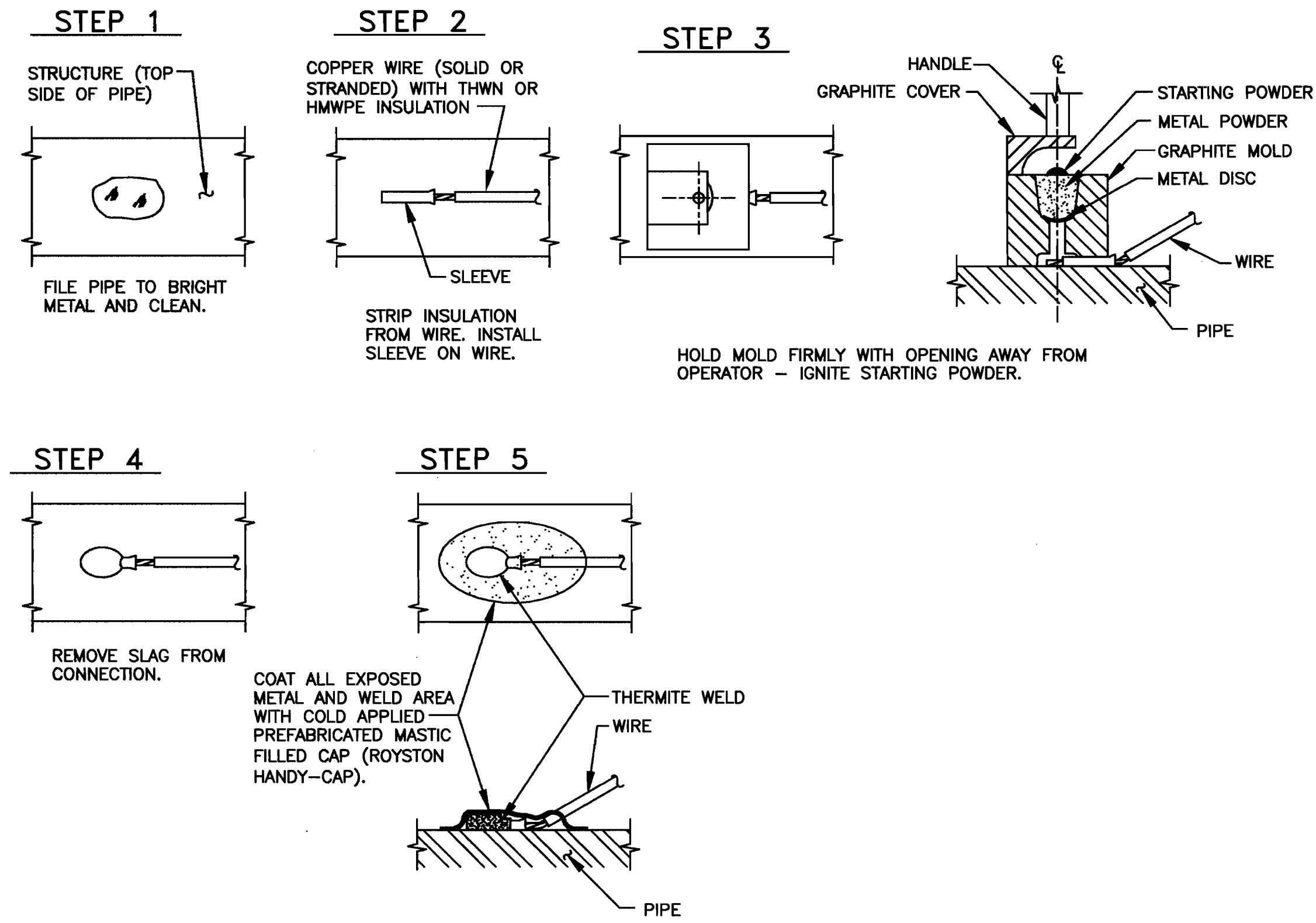
CATHODIC PROTECTION DETAILS

600' SCALE MAP NO. _____ BLOCK NO. _____

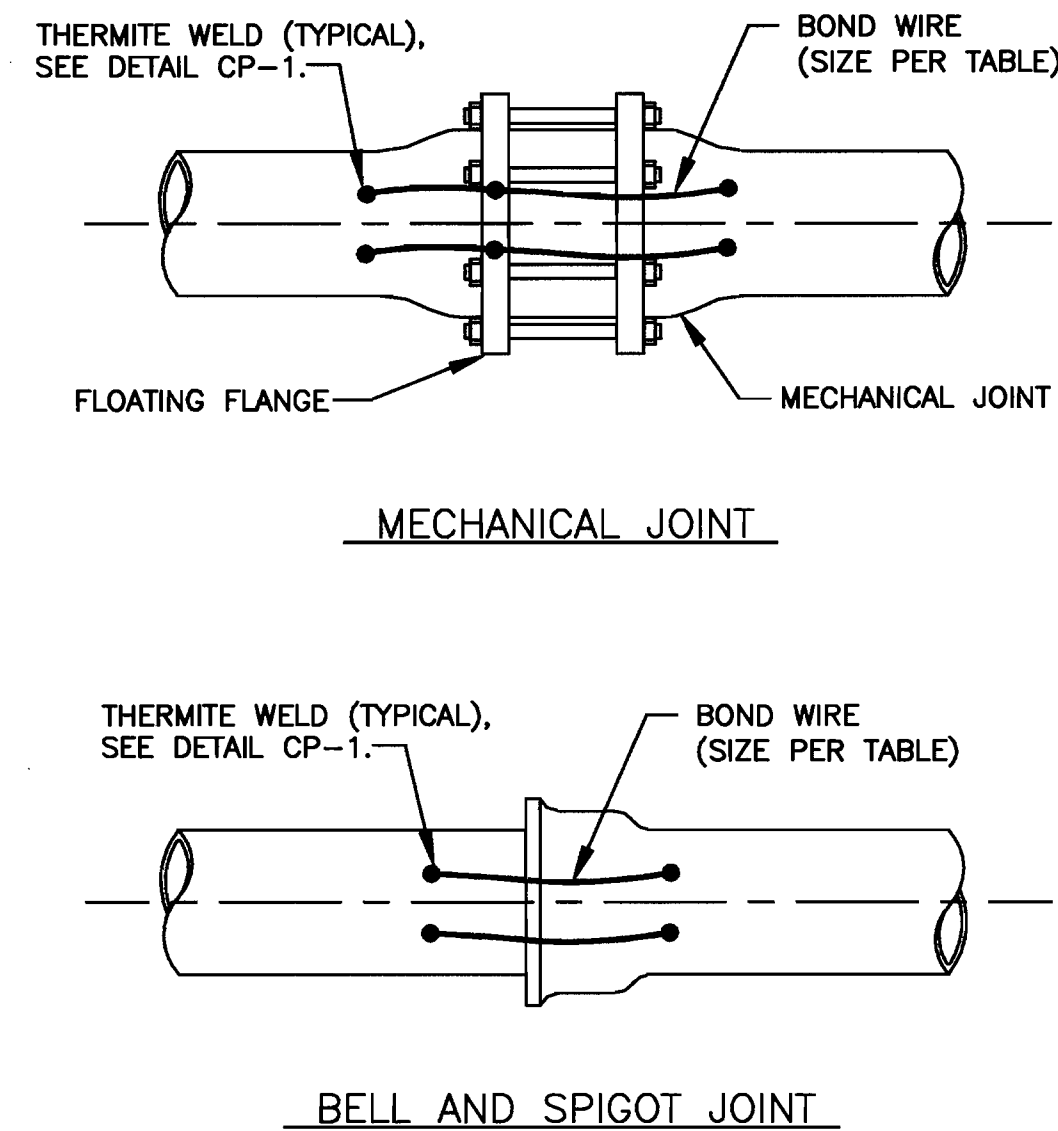
RAMP FROM WBL MD RTE 175 TO NBL US RTE 29
30-INCH DIAMETER WATER TRANSMISSION
MAIN RELOCATION
CAPITAL PROJECT No. W-8212
S.H.A. CONTRACT No. H0795B21
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE:
NONE

SHEET
5 OF 6

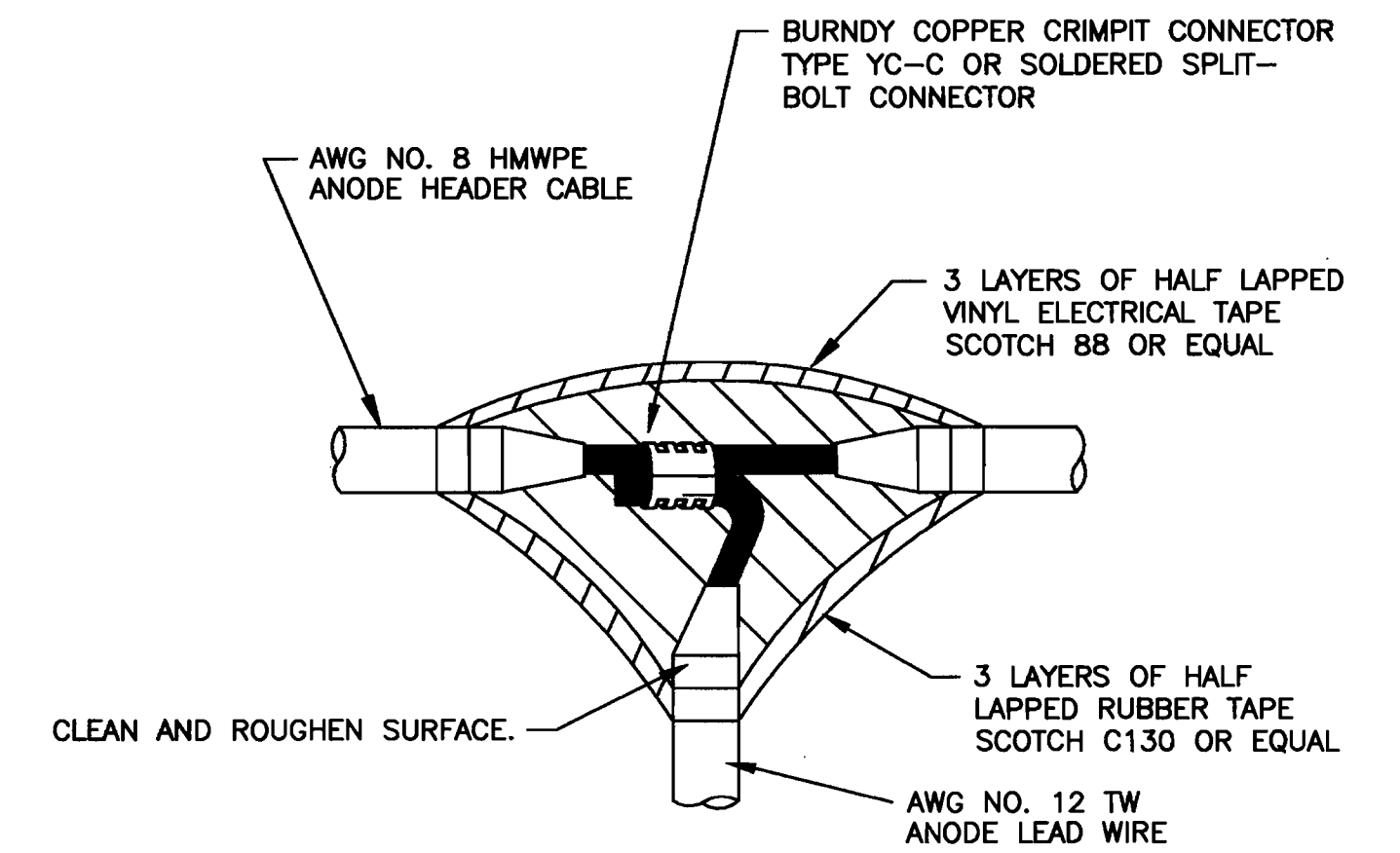


CP-1: TYPICAL THERMITE WELD

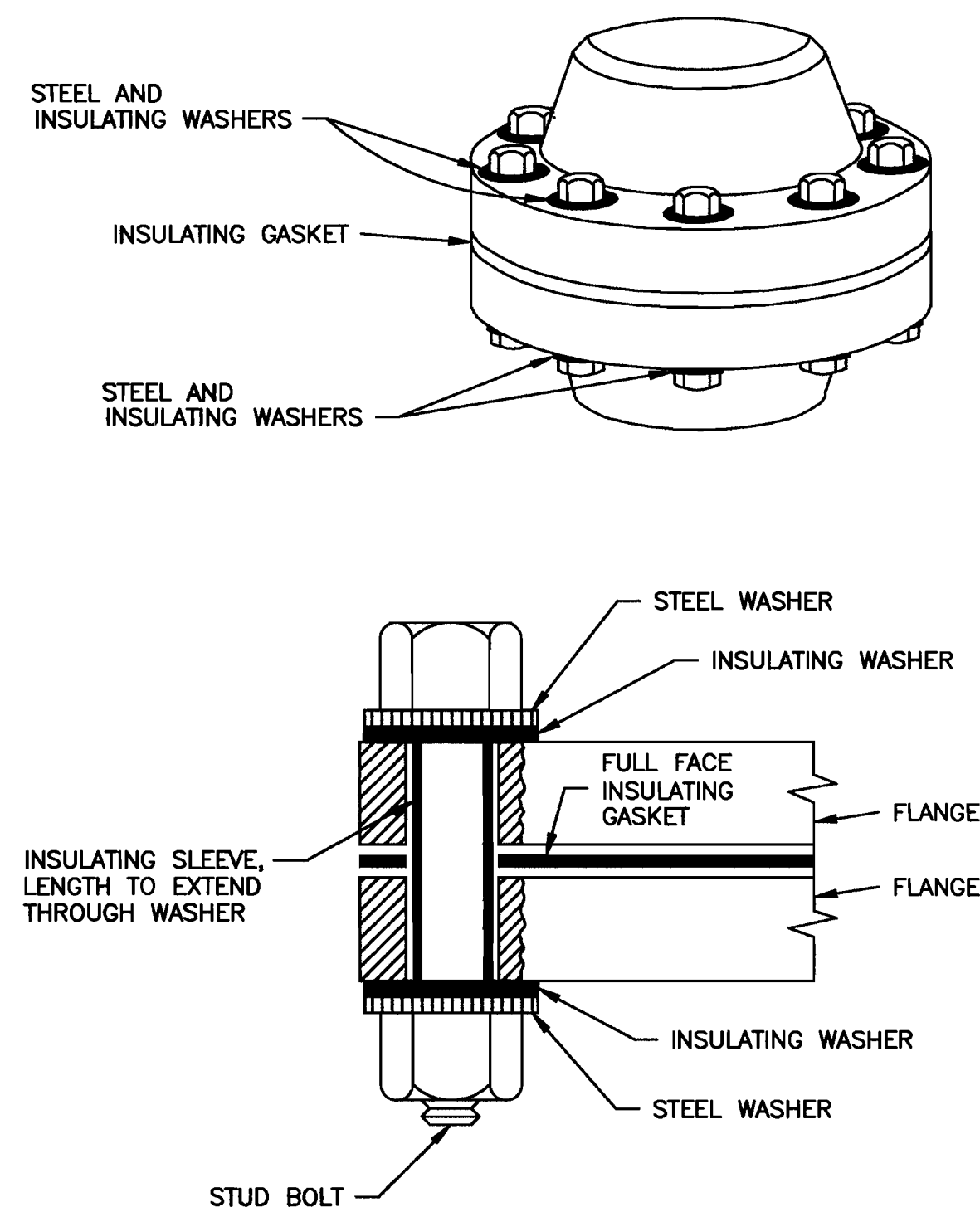


BOND WIRE SIZE	
PIPE SIZE	WIRE SIZE
48" & SMALLER	#2 AWG
32" & SMALLER	#4 AWG
12" & SMALLER	#6 AWG

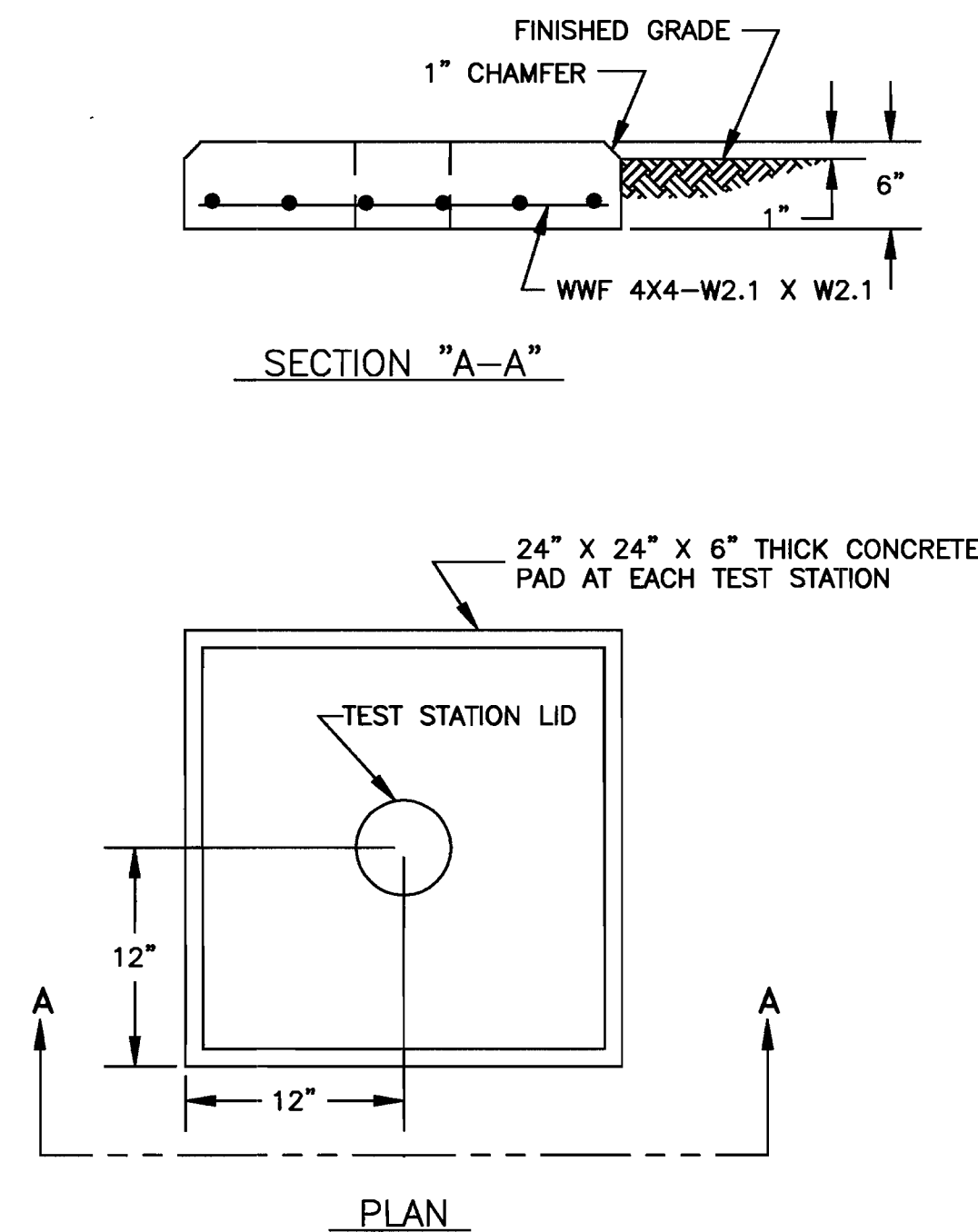
CP-2: TYPICAL PIPE JOINT BOND



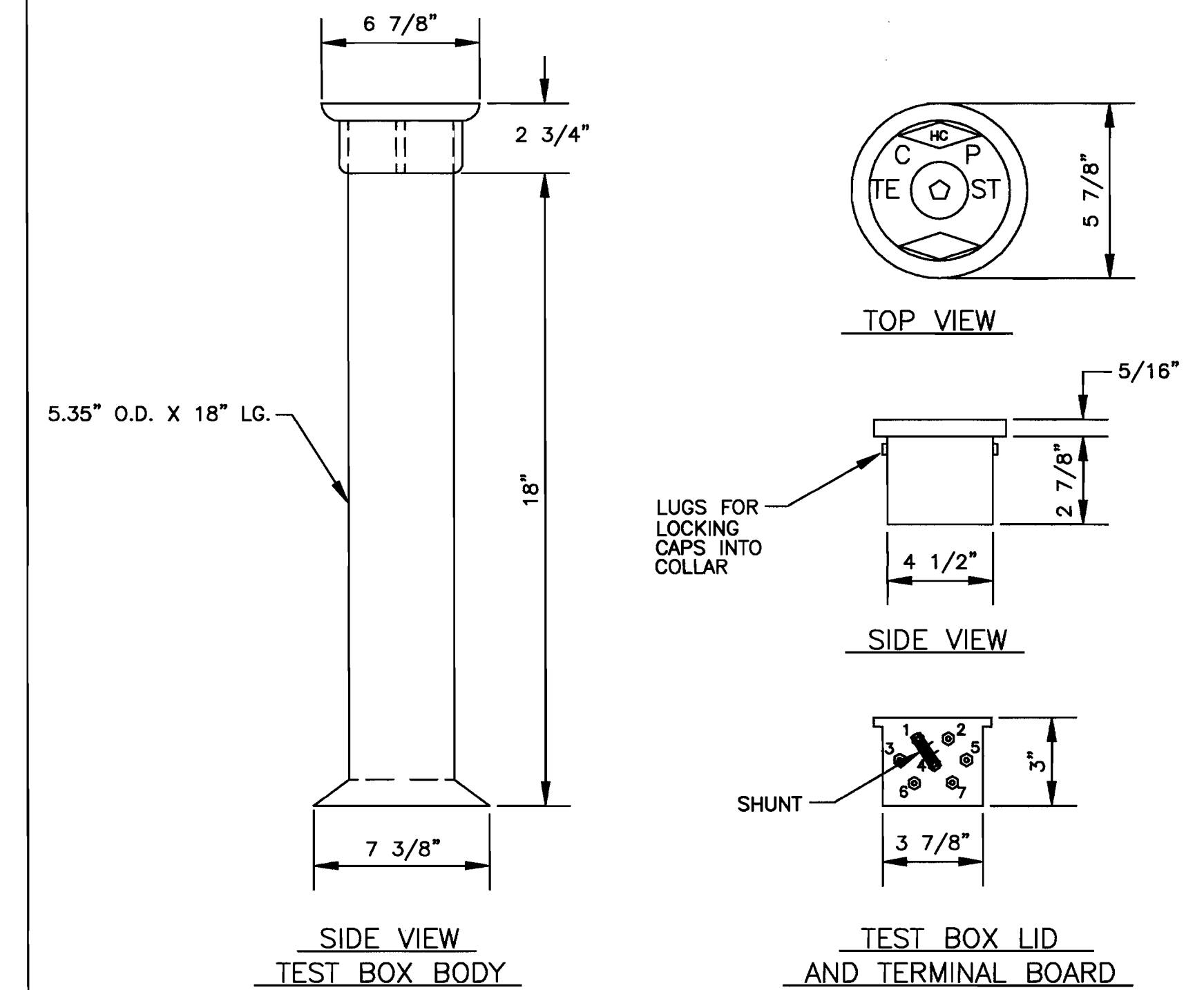
CP-3: ANODE SPLICE



CP-4: INSULATING JOINT



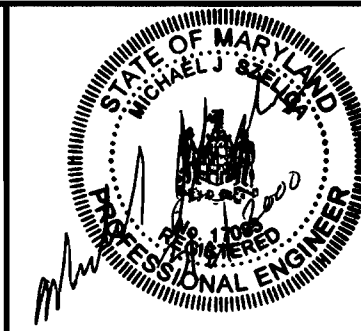
CP-5: TEST STATION PAD



CP-6: TEST BOX

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/6/00
3-9-00
3-6-00

RUSSELL CORROSION CONSULTANTS, INC.
5405 TWIN KNOLLS RD., SUITE 3
COLUMBIA, MD 21045



DES: MJS
DRN: DJD
CHK: MJS
DATE: 3/00
BY: K.F.J.
NO. 1
AS BUILT CONDITIONS
REVISION
NO. 12/29/00

CATHODIC PROTECTION DETAILS

600' SCALE MAP NO. _____ BLOCK NO. _____

RAMP FROM WBL MD RTE 175 TO NBL US RTE 29
30-INCH DIAMETER WATER TRANSMISSION
MAIN RELOCATION
CAPITAL PROJECT No. W-8212
S.H.A. CONTRACT No. H0795B21
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE:
NONE
SHEET
6 OF 6