

**SHEET INDEX MAP**  
SCALE: 1"=200'

— SHEET LIMITS  
- - - PHASING LIMITS

**SEQUENCE OF CONSTRUCTION**

1. THE CONTRACTOR SHALL SUBMIT COMPLETE WORKING SCHEDULE TO THE ENGINEER FOR APPROVAL.
2. THE TOPOGRAPHIC INFORMATION AND THE LOCATION OF THE EXISTING WATER MAIN WERE GENERATED BASED ON THE EXISTING CONTRACT AS-BUILTS. THE CONTRACTOR SHALL CONTACT HOWARD COUNTY UTILITIES FOR FIELD LOCATING EXISTING WATER MAINS.
3. THE WATER MAINS WITHIN THE LIMITS OF PHASES I - III ARE FOR SAME TRENCH REPLACEMENT AND SHALL BE INSTALLED AND IN SERVICE BETWEEN MARCH 15 TO OCTOBER 15 BY PROVIDING TEMPORARY WATER SERVICES.
4. PROVIDE TRAFFIC CONTROL DURING THE CONSTRUCTION.
5. IF THE EXISTING VALVES ARE NOT STRAPPED TO TEE. STRAP THE EXISTING VALVES TO TEE BEFORE CLOSING THE VALVES.
6. DURING THE CONSTRUCTION ON DUCKETTS LANE, THE CONTRACTOR SHALL MAINTAIN EXISTING FIRE HYDRANT SERVICES BEFORE NEW FIRE HYDRANTS ARE ACTIVE
7. PHASES I, II AND III MUST EACH BE INDIVIDUALLY COMPLETE(100%) PRIOR TO THE START OF ANOTHER PHASE
8. PHASE I CONSTRUCTION:
  - (1). PROVIDE TEMPORARY WATER IN ACCORDANCE WITH SHEETS 19 & 20 AND TEMPORARY WATER CONNECTION DETAILS.
  - (2). CLOSE EX. VALVE "A".
  - (3). THE EXISTING WATER MAIN AND APPURTENANCES SHALL BE REPLACED AND DISPOSED OF. INSTALL 8" PVC WATER MAIN WITHIN PHASE I LIMITS, ENCLOSED BY EX. VALVE "A" AND VALVE "1".
  - (4). PERFORM PRESSURE TESTING AND DISINFECT THE 8" WATER MAIN.
  - (5). REPLACE AND RECONNECT EXISTING WHCS.
  - (6). OPEN EX. VALVE "A" AND VALVE "12". VALVE "1" REMAINS CLOSED. THE SERVICES WITHIN PHASE I LIMITS ARE SERVED BY THE NEWLY INSTALLED 8" WATER MAIN.
  - (7). REMOVE TEMPORARY WATER.
9. PHASE II CONSTRUCTION:
  - (1). PROVIDE TEMPORARY WATER IN ACCORDANCE WITH SHEET 20 AND TEMPORARY WATER CONNECTION DETAILS.
  - (2). CLOSE EX. VALVE "B".
  - (3). THE EXISTING WATER MAIN AND APPURTENANCES SHALL BE REPLACED AND DISPOSED OF. INSTALL 8" PVC WATER MAIN WITHIN PHASE II LIMITS, ENCLOSED BY EX. VALVE "B", VALVE "1", AND VALVE "2".
  - (4). PERFORM PRESSURE TESTING AND DISINFECT 8" WATER MAIN.
  - (5). REPLACE AND RECONNECT EXISTING WHCS.
  - (6). OPEN EX. VALVE "B", VALVE "10", AND VALVE "1". VALVE "2" REMAINS CLOSED. THE SERVICES WITHIN PHASE II LIMITS ARE SERVED BY THE NEWLY INSTALLED 8" WATER MAIN.
  - (7). REMOVE TEMPORARY WATER.
10. PHASE III CONSTRUCTION:
  - (1). PROVIDE TEMPORARY WATER IN ACCORDANCE WITH SHEET 20 AND TEMPORARY WATER CONNECTION DETAILS.
  - (2). CLOSE EX. VALVE "C" AND EX. VALVE "D".
  - (3). THE EXISTING WATER MAIN AND APPURTENANCES SHALL BE REPLACED AND DISPOSED OF. INSTALL 8" PVC WATER MAIN WITHIN PHASE III LIMITS, ENCLOSED BY EX. VALVE "C", EX. VALVE "D", AND VALVE "2".
  - (4). PERFORM PRESSURE TESTING AND DISINFECT 8" WATER MAIN.
  - (5). REPLACE AND RECONNECT EXISTING WHCS.
  - (6). OPEN EX. VALVE "C", EX. VALVE "D", VALVE "4", VALVE "6" AND VALVE "2". THE SERVICES WITHIN PHASE III LIMITS ARE SERVED BY THE NEWLY INSTALLED 8" WATER MAIN.
  - (7). REMOVE TEMPORARY WATER.
11. PHASE IV CONSTRUCTION:
  - (1). INSTALL 12" TAPPING SLEEVE AND VALVE AT STA. 0+00. INSTALL 12" WATER MAIN TO VALVE "3".
  - (2). PERFORM PRESSURE TESTING AND DISINFECT 12" WATER MAIN. CLOSE VALVE "3".
  - (3). CONNECT TO 12" TAPPING VALVE AND OPEN TAPPING VALVE.
  - (4). REPLACE AND RECONNECT WATER HOUSE SERVICES.
  - (5). CLOSE EX. VALVE "D" AND VALVE "4". MAKE CONNECTION TO 8" WATER MAIN. PROVIDE 2" TAP FOR CONNECTION AS SHOWN IN DETAIL D.
  - (6). OPEN VALVE "3" AND VALVE "4". VALVE "5" REMAINS CLOSED.
  - (7). INSTALL 12" WATER MAIN TO VALVE "7". RECONNECT WATER HOUSE SERVICES.
  - (8). PERFORM PRESSURE TESTING AND DISINFECT 12" WATER MAIN. CLOSE VALVE "7".
  - (9). MAKE CONNECTIONS TO 8" WATER MAIN AFTER CLOSING VALVE "6" AND EX. VALVE "C".
  - (10). OPEN VALVE "6" AND VALVE "7". VALVE "8" REMAINS CLOSED.
  - (11). INSTALL 12" WATER MAIN TO VALVE "9". PERFORM PRESSURE TESTING AND DISINFECT 12" WATER MAIN. CLOSE VALVE "9".
  - (12). REPLACE AND RECONNECT WATER HOUSE SERVICES.
  - (13). MAKE CONNECTIONS TO 8" WATER MAIN AFTER CLOSING VALVE "10" AND EX. VALVE "B".
  - (14). OPEN VALVE "9" AND VALVE "10". VALVE "11" REMAINS CLOSED.
  - (15). INSTALL 12" WATER MAIN TO VALVE "12" AND INSTALL 8" WATER MAIN ALONG KYLE LEAF. PERFORM PRESSURE TESTING AND DISINFECT THE WATER MAIN.
  - (16). REPLACE AND RECONNECT WATER HOUSE SERVICES.
  - (17). CLOSE EX. VALVE "F" BEFORE MAKING CONNECTIONS TO THE EXISTING 6" WATER MAIN ALONG LORI LANE. PROVIDE 2" TAP WHEN MAKING CONNECTIONS.
  - (18). OPEN EX. VALVE "F", VALVE "13", VALVE "14", AND VALVE "15". CLOSE EX. VALVE "E". VALVE "12" REMAINS CLOSED.
  - (19). INSTALL 12" WATER MAIN TO VALVE "16". PERFORM PRESSURE TESTING AND DISINFECT THE WATER MAIN.
  - (20). REPLACE AND RECONNECT WATER HOUSE SERVICES.
  - (21). CLOSE EX. VALVE "G" AND EX. VALVE "H" WHEN MAKING CONNECTIONS TO THE EXISTING 6" WATER MAIN ON KARA'S WALK. PROVIDE 2" TAP WHEN MAKING CONNECTIONS.
  - (22). OPEN EX. VALVE "G", EX. VALVE "H", AND VALVE "16".

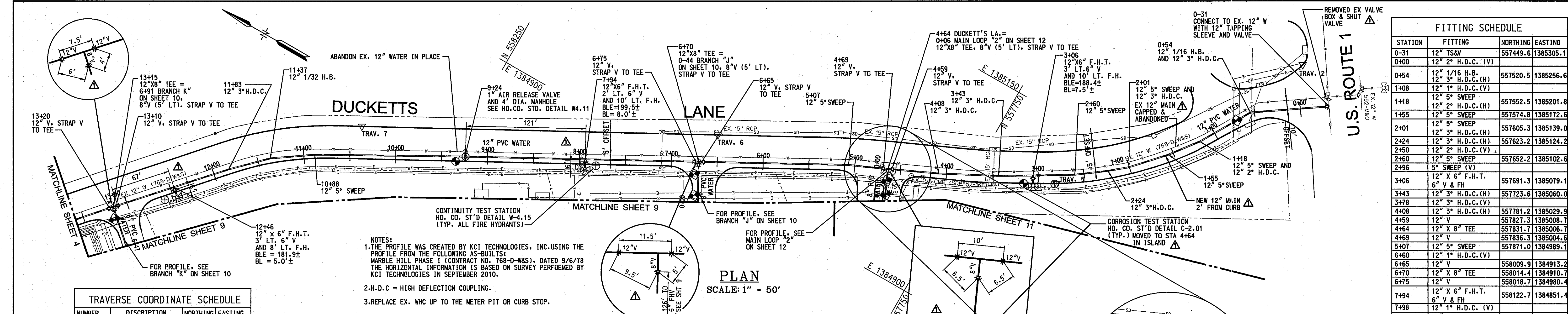
QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
MOBILIZATION/M.O.T.	EA.	1	1	
REMOVE EX. WATER MAIN	L.F.	8625	5484	
12" WATER (PVC)	L.F.	2928	2970.5	JM EAGLE/BRIS
8" WATER (PVC)	L.F.	8519	8483.5	JM EAGLE/BRIS
4" WATER (PVC)	L.F.	75	10	JM EAGLE/BRIS
12" X 12" TSAV	EA.	1	1	ROMAC IND/BRIS
CORROSION PROTECTION SYSTEM	L.S.	1	1	PIPING & CORROSION SPECIALTIES
REMOVE EX. FIRE HYD. & V	EA.	23	23	
FIRE HYDRANT & 6" V (RSGV)	EA.	23	23	MUELLER CO/BRIS
REMOVE EX. 12" V	EA.	1	1	
REMOVE EX. 6" V	EA.	21	-	
12" V (RSGV)	EA.	11	11	MUELLER CO/BRIS
8" V (RSGV)	EA.	22	32	MUELLER CO/BRIS
4" V (RSGV)	EA.	1	2	MUELLER CO/BRIS
REMOVE 1" AIR RELEASE VALVE	EA.	2	2	
REMOVE AIR RELEASE VALVE M.H.	EA.	2	2	
1" AIR RELEASE VALVE	EA.	2	2	CRISPIN/BRIS
4' DIA. PRECAST M.H.	EA.	2	2	
REMOVE EX. WHC	L.F.	6765	3695.31	
1" WATER HOUSE CONNECTION	L.F.	6242	3725.66	
2" WATER HOUSE CONNECTION	L.F.	523	265	
TEMPORARY WATER SYSTEM	L.F.	10725	10947	
1-1/2" WHC	L.F.		4467.65	
NAME OF UTILITY CONTRACTOR:				
AS-BUILT DATE: 7/23/2013				

**AS-BUILT**  
DATE 7/23/2013

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. 31363 EXPIRATION DATE: 1/16/2014

PLOTTED: 08/22/13, 10:52 AM on Wednesday, November 13, 2013  
 BY: jason\_besaco, File Path: P:\042 - Water - WWS - EMB -  
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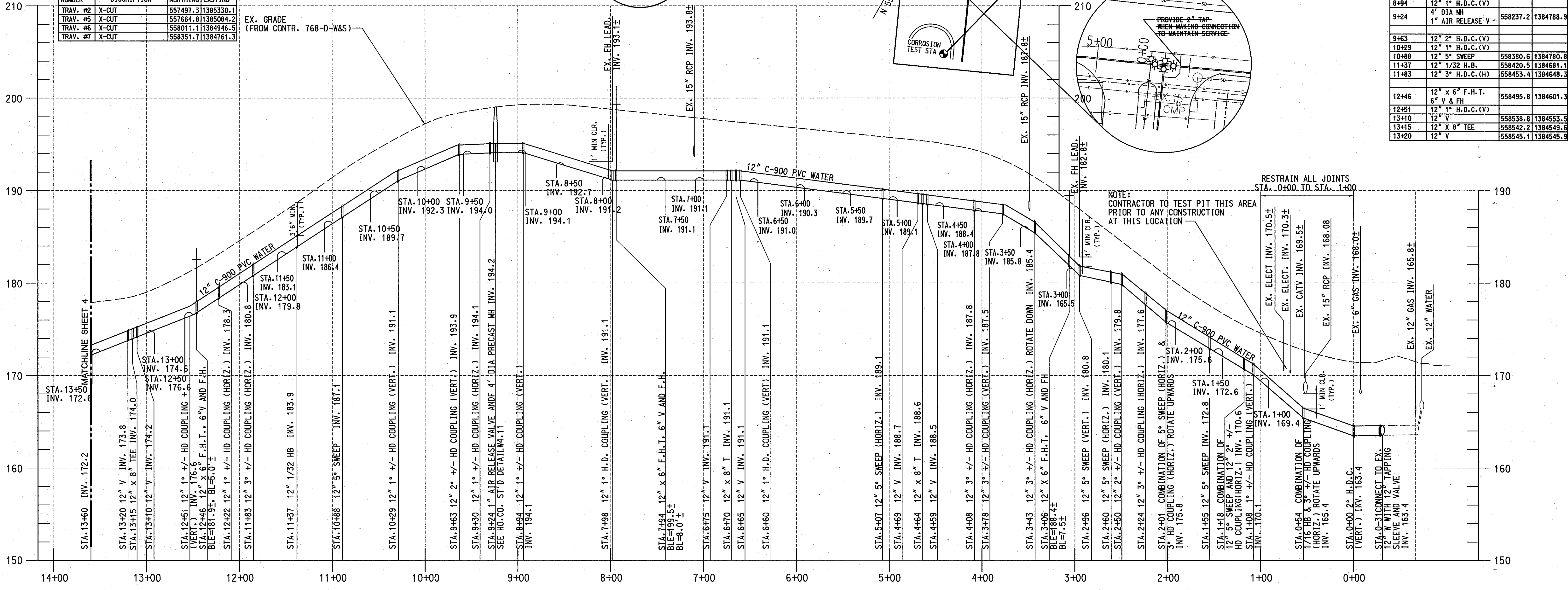
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  DIRECTOR OF PUBLIC WORKS DATE 11/25/13		 CHIEF, BUREAU OF ENGINEERING DATE 11/25/13		 CHIEF, UTILITY DESIGN DIVISION DATE 11/25/13		 ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 936 RIDGEBROOK ROAD SHARPS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM		 STATE OF MARYLAND PROFESSIONAL ENGINEER LICENSE NO. 31363 EXPIRATION DATE: 1/16/2014		DES: MRD DRN: KFJ CHK: GW/TWW DATE: JAN. 2011 BY: NO.		AS-BUILT REPLACEMENT SHEET REVISION DATE: 7/23/13		PHASING PLAN SCALE AS SHOWN SHEET 2 OF 29	
DUCKETTS LANE WATER MAIN REPLACEMENT CAPITAL PROJECT No. W-8286 CONTRACT No. 44-4677										ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 2 OF 29			



FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
0-31	12" TSV	557449.6	1385305.1
0-400	12" 2" H.D.C. (V)		
0+54	12" 1/16 H.B.	557520.5	1385256.6
1+08	12" 1" H.D.C. (V)		
1+18	12" 5" SWEEP	557552.5	1385201.8
1+55	12" 2" H.D.C. (H)	557574.8	1385172.6
2+01	12" 5" SWEEP	557605.3	1385139.0
2+24	12" 3" H.D.C. (H)	557623.2	1385124.2
2+50	12" 2" H.D.C. (V)		
2+60	12" 5" SWEEP	557652.2	1385102.6
2+96	5" SWEEP (V)		
3+06	12" X 6" F.H.T.	557691.3	1385079.1
3+43	12" 3" H.D.C. (H)	557723.6	1385060.0
3+78	12" 3" H.D.C. (V)		
4+08	12" 3" H.D.C. (H)	557781.2	1385029.9
4+59	12" V	557827.3	1385008.7
4+64	12" X 8" TEE	557831.7	1385006.7
4+67	12" V	557836.3	1385004.6
5+07	12" 5" SWEEP	557871.0	1384989.1
6+60	12" 1" H.D.C. (V)		
6+65	12" V	558009.9	1384913.2
6-70	12" X 8" TEE	558014.4	1384910.7
6+75	12" V	558018.7	1384980.4
7+94	12" X 6" F.H.T.	558122.7	1384851.4
7+98	12" 1" H.D.C. (V)		
8+94	12" 1" H.D.C. (V)		
9+24	4" DIA MH	558237.2	1384788.9
9+63	12" 2" H.D.C. (V)		
10+29	12" 1" H.D.C. (V)		
10+88	12" 5" SWEEP	558380.6	1384780.8
11+37	12" 1/32 H.B.	558420.5	1384681.1
11+83	12" 3" H.D.C. (H)	558453.4	1384648.3
12+46	12" X 6" F.H.T.	558495.8	1384601.3
12+51	12" 1" H.D.C. (V)		
13+10	12" V	558538.8	1384553.5
13+15	12" X 8" TEE	558542.2	1384549.6
13+20	12" V	558545.1	1384545.9

TRAVERSE COORDINATE SCHEDULE			
NUMBER	DISCRPTION	NORTHING	EASTING
TRAV. #2	X-CUT	557497.3	1385330.1
TRAV. #5	X-CUT	557664.8	1385084.2
TRAV. #6	X-CUT	558011.1	1384946.5
TRAV. #7	X-CUT	558351.7	1384761.3

NOTES:  
 1. THE PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE I (CONTRACT NO. 768-D-W&S), DATED 9/6/78 THE HORIZONTAL INFORMATION IS BASED ON SURVEY PERFORMED BY KCI TECHNOLOGIES IN SEPTEMBER 2010.  
 2. H.D.C. = HIGH DEFLECTION COUPLING.  
 3. REPLACE EX. WHC UP TO THE METER PIT OR CURB STOP.



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

**AS-BUILT**  
 DATE 7/23/2013

PLOTTED: 08:22 AM on Wednesday, November 13, 2013  
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DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*[Signature]*  
 DIRECTOR OF PUBLIC WORKS  
 DATE 11/25/13

*[Signature]*  
 CHIEF, BUREAU OF UTILITIES  
 DATE 11/25/13

*[Signature]*  
 CHIEF, UTILITY DESIGN DIVISION  
 DATE 11/25/13

ENGINEERS  
 PLANNERS  
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STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 NO. 31285  
 EXPIRATION DATE: 1/16/2014

DES:	MRD
DRN:	KFJ
CHK:	GW/TWW
DATE:	JAN. 2011
BY:	NO.
REVISION:	
DATE:	7/23/13
REVISION:	

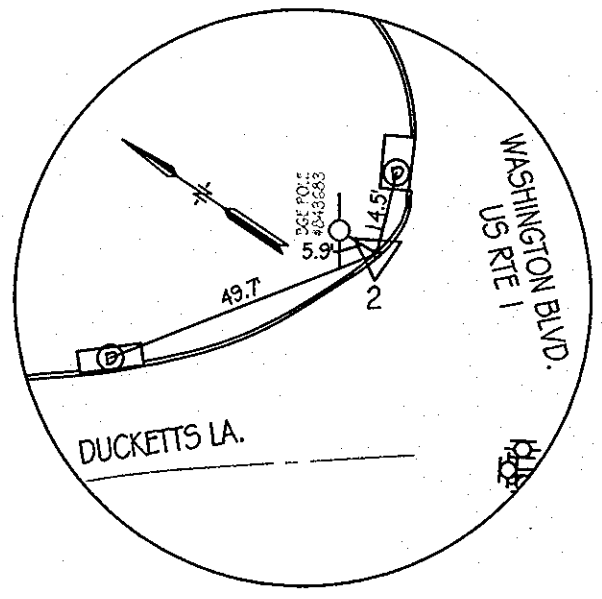
**PLAN AND PROFILE**  
**DUCKETTS LANE**  
 (STA. 0+00 TO STA. 13+60)

600' SCALE MAP NO. 37 BLOCK NO. 18

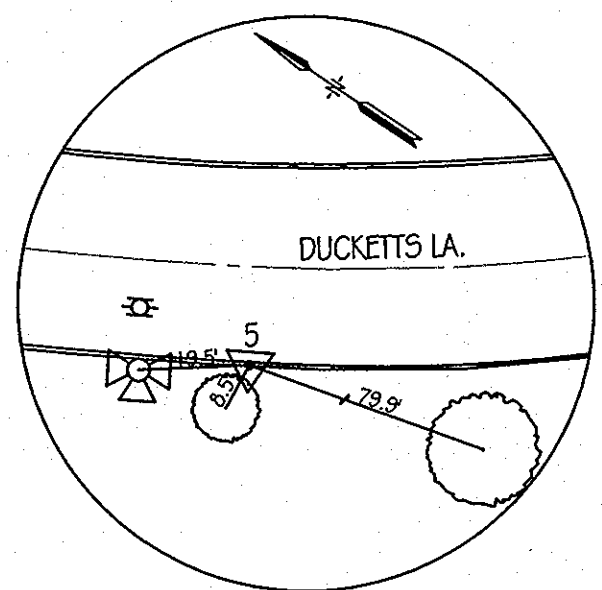
**DUCKETTS LANE**  
**WATER MAIN REPLACEMENT**  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

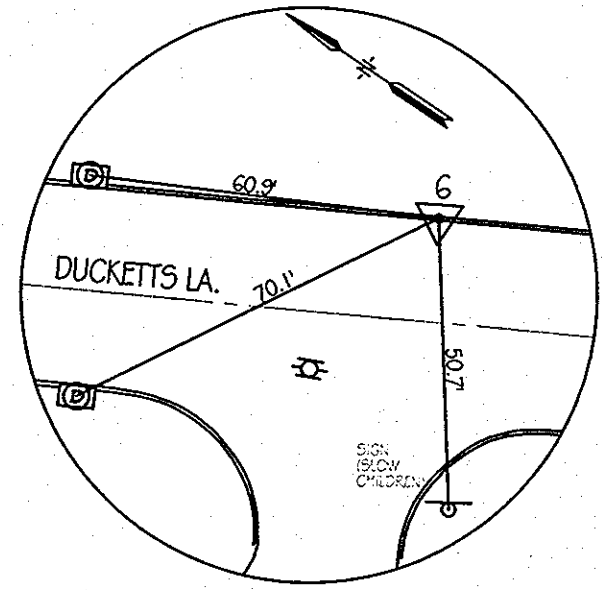
SCALE AS SHOWN SHEET 3 OF 29



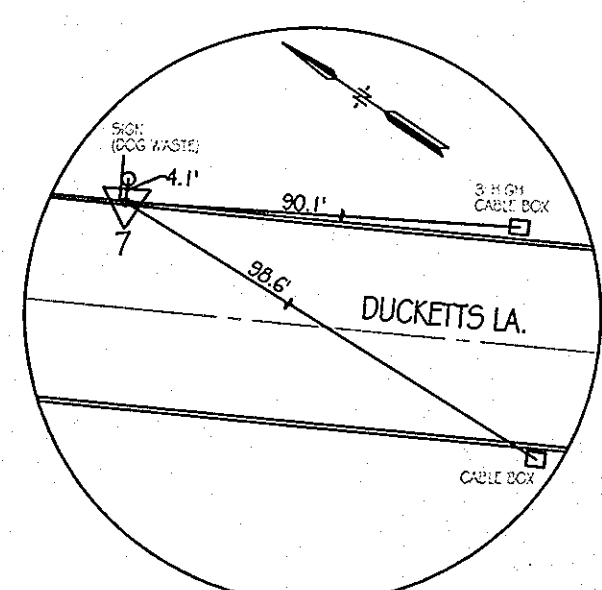
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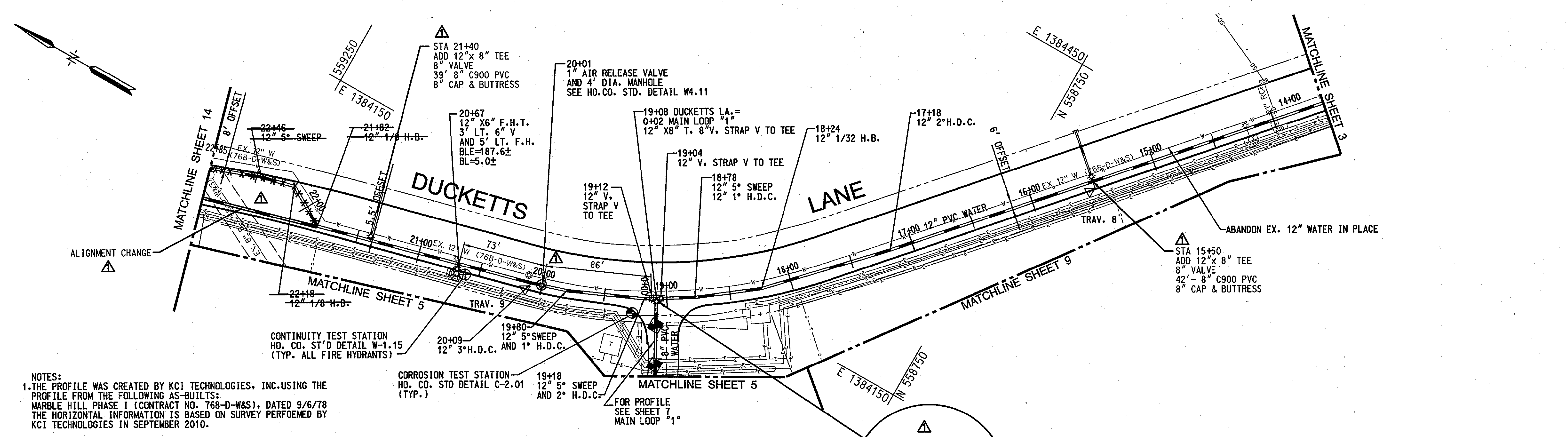
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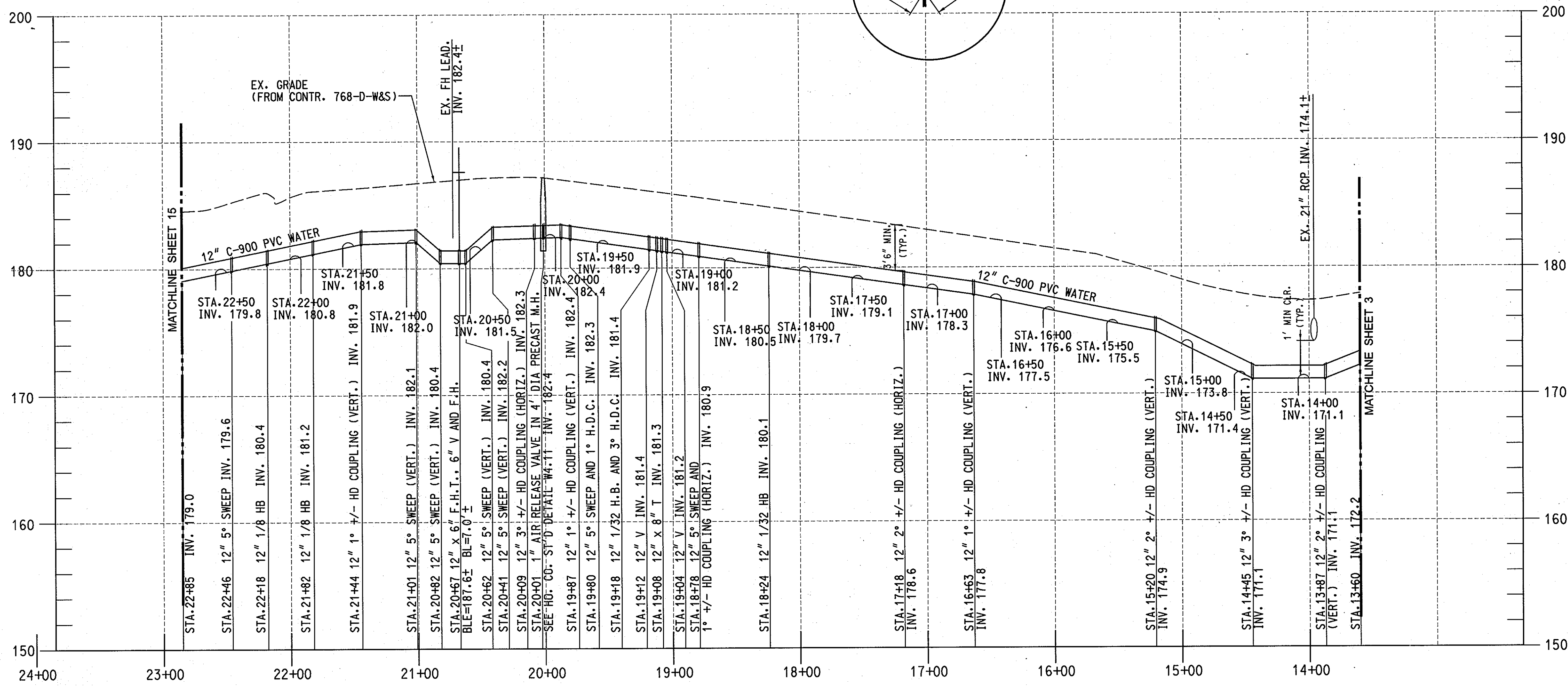
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TRAV. #7  
SCALE: N.T.S.



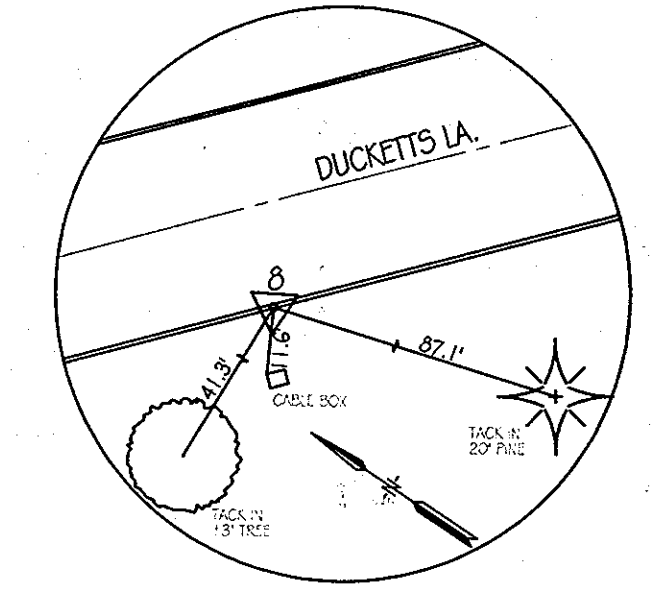
PLAN  
SCALE: 1" = 50'



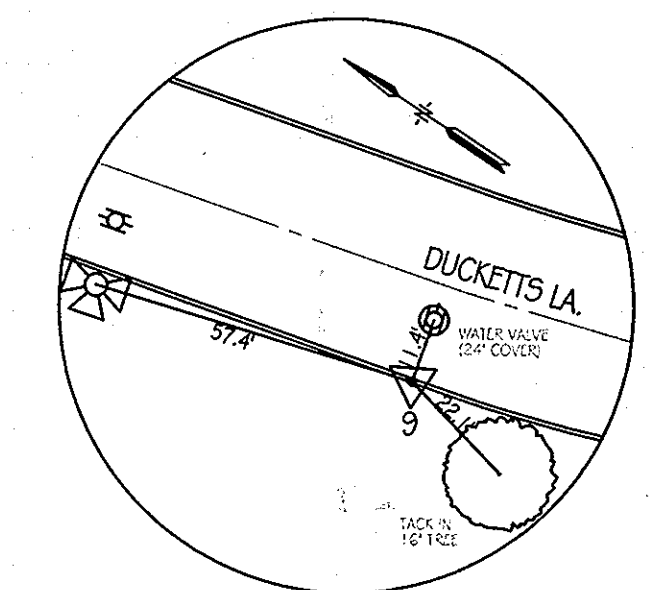
PROFILE  
SCALE: HORIZONTAL 1" = 50'  
VERTICAL 1" = 5'

FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
13+87	12" 2" H.D.C. (V)		
14+45	12" 3" H.D.C. (V)		
15+20	12" 2" H.D.C. (V)		
16+63	12" 1" H.D.C. (V)		
17+18	12" 2" H.D.C. (H)	558808.6	1384248.3
18+24	12" 1/32 H.B.	558881.4	1384171.8
18+78	12" 5" SWEEP AND 1" H.D.C. (H)	558923.4	1384139.8
19+04	12" V	558946.2	1384125.9
19+08	12" X 8" TEE	558949.5	1384124.0
19+12	12" V	558952.5	1384121.9
19+18	12" 5" SWEEP	558957.5	1384119.1
19+80	12" 5" SWEEP	559013.5	1384094.5
19+87	12" 1" H.D.C. (V)		
20+01	4" DIA. MH	559033.0	1384088.4
20+09	12" 3" H.D.C. (H)	559040.4	1384086.0
20+41	12" 5" SWEEP (V)		
20+62	12" 5" SWEEP (V)		
20+67	12" X 6" F.H.T. 6" V & FH	559097.6	1384070.8
20+82	12" 5" SWEEP (V)		
21+01	12" 5" SWEEP (V)		
21+44	12" 1" H.D.C. (V)		
21+82	12" 1/8 H.B.	559208.8	1384041.4
22+18	12" 1/8 H.B.	559240.0	1384059.9
22+46	12" 5" SWEEP	559266.4	1384053.1

TRAVERSE COORDINATE SCHEDULE			
NUMBER	DISCRPTION	NORTHING	EASTING
TRAV. #8	X-CUT	558695.6	1384365.9
TRAV. #9	X-CUT	559042.7	1384079.3



TRAV. #8  
SCALE: N.T.S.



TRAV. #9  
SCALE: N.T.S.

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. 31363, EXPIRATION DATE: 1/16/2014

PLOTTED: 09:22 AM on Wednesday, November 13, 2013  
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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

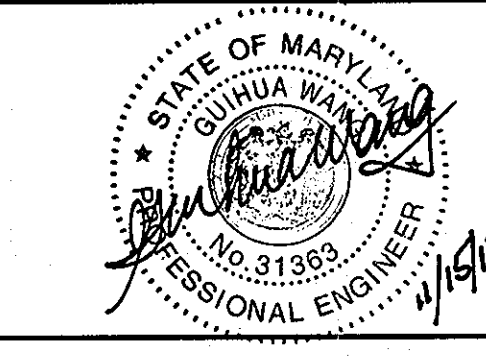
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DIRECTOR OF PUBLIC WORKS  
DATE: 11/23/13

*[Signature]*  
CHIEF, BUREAU OF UTILITIES  
DATE: 11/23/13

ENGINEERS  
PLANNERS  
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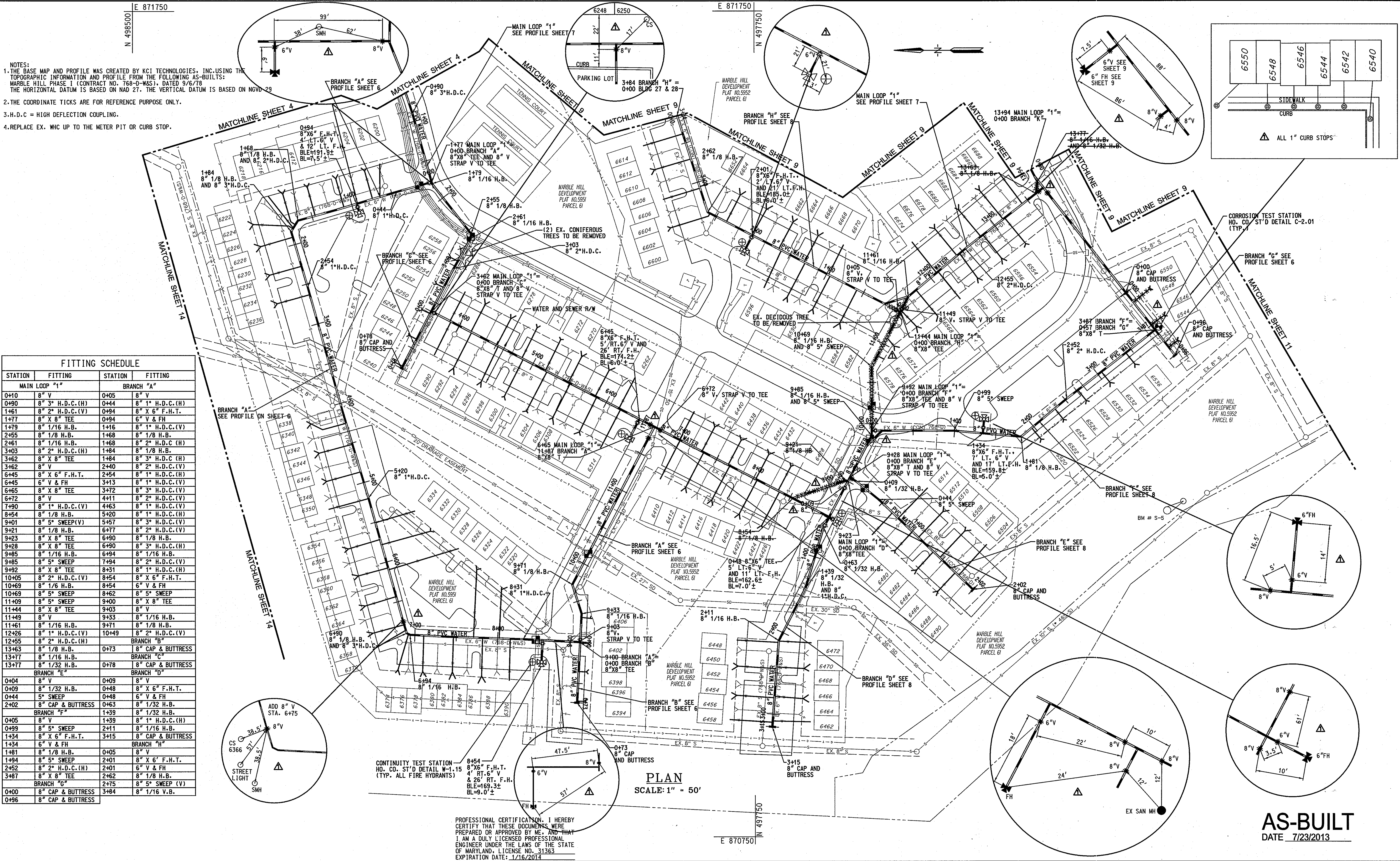


DES: MRD	
DRN: KFJ	
CHK: GW/TWW	
DATE: JAN. 2011	
BY: [Signature]	
NO.:	
REVISION:	
DATE: 7/23/13	

PLAN AND PROFILE  
DUCKETTS LANE  
(STA. 13+60 TO STA. 22+85)  
REPLACEMENT PLAN

DUCKETTS LANE  
WATER MAIN REPLACEMENT  
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
SHEET: 4 OF 29

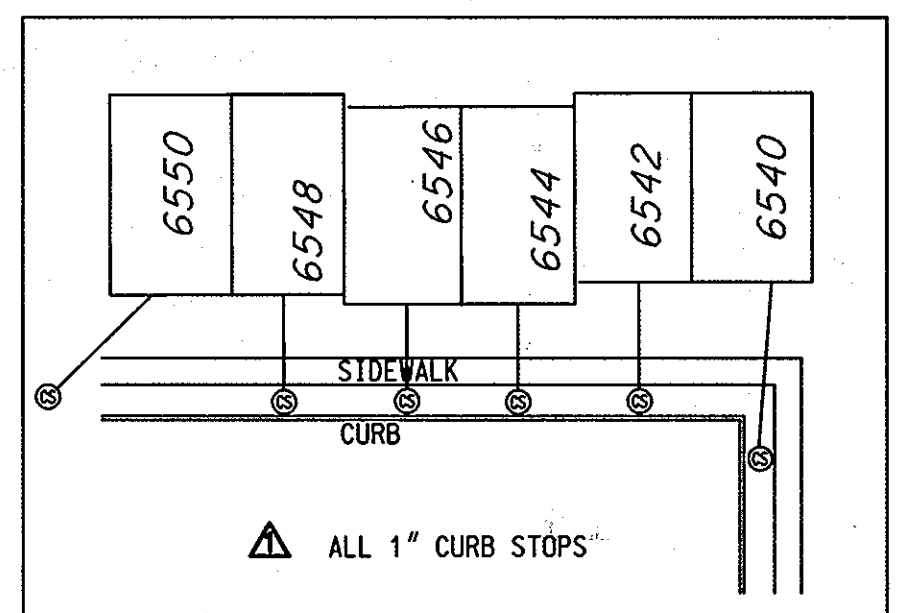


- NOTES:
1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE I (CONTRACT NO. 768-D-WAS), DATED 9/6/78. THE HORIZONTAL DATUM IS BASED ON NAD 27. THE VERTICAL DATUM IS BASED ON NGVD 29.
  2. THE COORDINATE TICKS ARE FOR REFERENCE PURPOSE ONLY.
  3. H.D.C. = HIGH DEFLECTION COUPLING.
  4. REPLACE EX. WHC UP TO THE METER PIT OR CURB STOP.

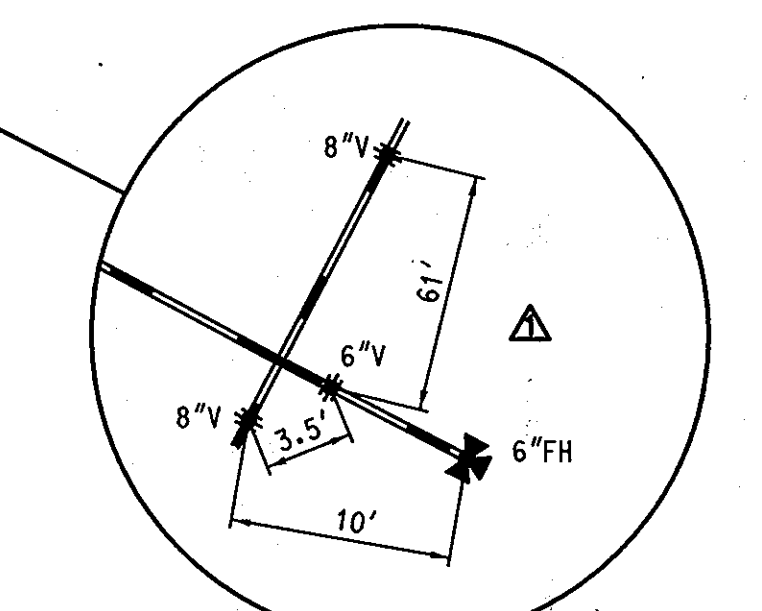
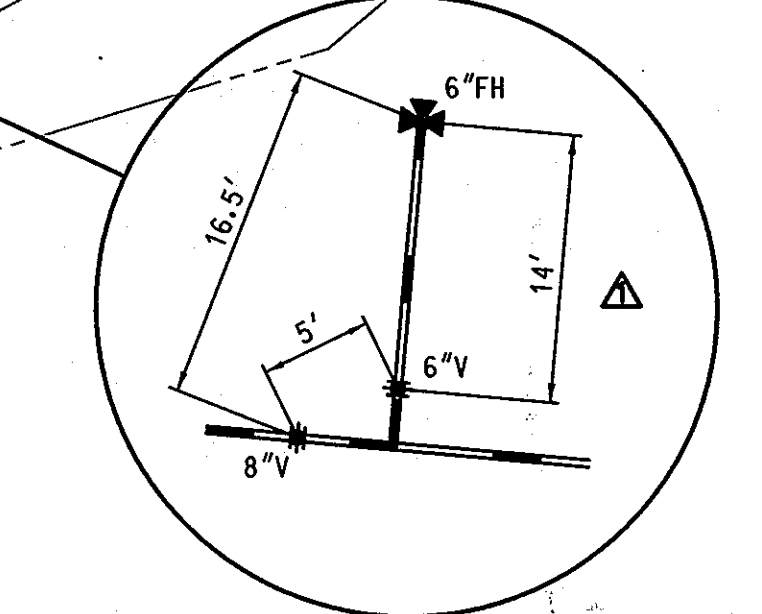
FITTING SCHEDULE			
STATION	FITTING	STATION	FITTING
MAIN LOOP "1"		BRANCH "A"	
0+10	8" V	0+05	8" V
0+90	8" 3" H.D.C.(H)	0+44	8" 1" H.D.C.(H)
1+61	8" 2" H.D.C.(V)	0+94	8" X 6" F.H.T.
1+77	8" X 8" TEE	0+94	6" V & FH
1+79	8" 1/16 H.B.	1+16	8" 1" H.D.C.(V)
2+55	8" 1/8 H.B.	1+68	8" 1/8 H.B.
2+61	8" 1/16 H.B.	1+68	8" 2" H.D.C.(H)
3+03	8" 2" H.D.C.(H)	1+84	8" 1/8 H.B.
3+62	8" X 8" TEE	1+84	8" 3" H.D.C.(H)
3+62	8" V	2+40	8" 2" H.D.C.(V)
6+45	8" X 6" F.H.T.	2+54	8" 1" H.D.C.(H)
6+45	6" V & FH	3+13	8" 1" H.D.C.(V)
6+65	8" X 8" TEE	3+72	8" 3" H.D.C.(V)
6+72	8" V	4+11	8" 2" H.D.C.(V)
7+90	8" 1" H.D.C.(V)	4+63	8" 1" H.D.C.(H)
8+54	8" 1/8 H.B.	5+20	8" 1" H.D.C.(H)
9+01	8" 5" SWEEP(V)	5+57	8" 3" H.D.C.(V)
9+21	8" 1/8 H.B.	6+77	8" 2" H.D.C.(V)
9+23	8" X 8" TEE	6+90	8" 1/8 H.B.
9+28	8" X 8" TEE	6+90	8" 3" H.D.C.(H)
9+85	8" 1/16 H.B.	6+94	8" 1/16 H.B.
9+85	8" 5" SWEEP	7+94	8" 2" H.D.C.(V)
9+92	8" X 8" TEE	8+31	8" 1/8 H.B.
10+05	8" 2" H.D.C.(V)	8+54	8" X 6" F.H.T.
10+69	8" 1/16 H.B.	8+54	6" V & FH
10+69	8" 5" SWEEP	8+62	8" 5" SWEEP
11+09	8" 5" SWEEP	9+00	8" X 8" TEE
11+44	8" X 8" TEE	9+03	8" V
11+49	8" V	9+33	8" 1/16 H.B.
11+61	8" 1/16 H.B.	9+71	8" 1/8 H.B.
12+26	8" 1" H.D.C.(V)	10+49	8" 2" H.D.C.(V)
12+55	8" 2" H.D.C.(H)	BRANCH "B"	
13+63	8" 1/8 H.B.	8" CAP & BUTTRISS	
13+77	8" 1/16 H.B.	BRANCH "C"	
13+77	8" 1/32 H.B.	8" CAP & BUTTRISS	
BRANCH "E"		BRANCH "D"	
0+04	8" V	0+09	8" V
0+09	8" 1/32 H.B.	0+48	8" X 6" F.H.T.
0+44	5" SWEEP	0+48	6" V & FH
2+02	8" CAP & BUTTRISS	0+63	8" 1/32 H.B.
BRANCH "F"		BRANCH "H"	
0+05	8" V	1+39	8" 1" H.D.C.(H)
0+99	8" 5" SWEEP	2+11	8" 1/16 H.B.
1+34	8" X 6" F.H.T.	3+15	8" CAP & BUTTRISS
1+34	6" V & FH	BRANCH "I"	
1+61	8" 1/8 H.B.	0+05	8" V
1+61	8" 5" SWEEP	2+01	8" X 6" F.H.T.
2+52	8" 2" H.D.C.(H)	2+01	6" V & FH
3+87	8" X 8" TEE	2+62	8" 1/8 H.B.
BRANCH "G"		2+75	8" 5" SWEEP (V)
0+00	8" CAP & BUTTRISS	3+84	8" 1/16 V.B.
0+96	8" CAP & BUTTRISS		

PLAN SCALE: 1" = 50'

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. 31363, EXPIRATION DATE: 1/16/2014.



ALL 1" CURB STOPS



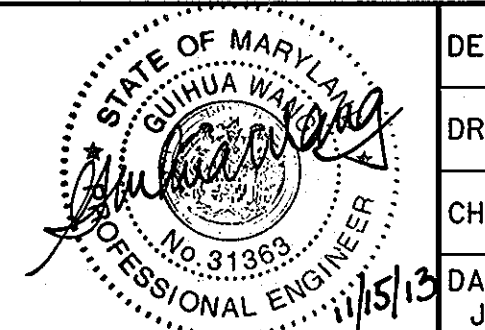
AS-BUILT DATE 7/23/2013

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

**KCI TECHNOLOGIES**

936 RINGBROOK ROAD  
SPARKS, MARYLAND 21152  
TELEPHONE: (410) 316-7800  
FAX: (410) 316-7818  
WWW.KCI.COM



DES: MRD	DRN: KFJ	CHK: GW/TWW	DATE: JAN. 2011
BY: NO.	NO.	NO.	NO.
AS-BUILT REPLACEMENT SHEET	REVISION	DATE	600' SCALE MAP NO. 37

PLAN MARBLE HILL I

DUCKETTS LANE  
WATER MAIN REPLACEMENT  
CAPITAL PROJECT NO. W-8286  
CONTRACT NO. 44-4677

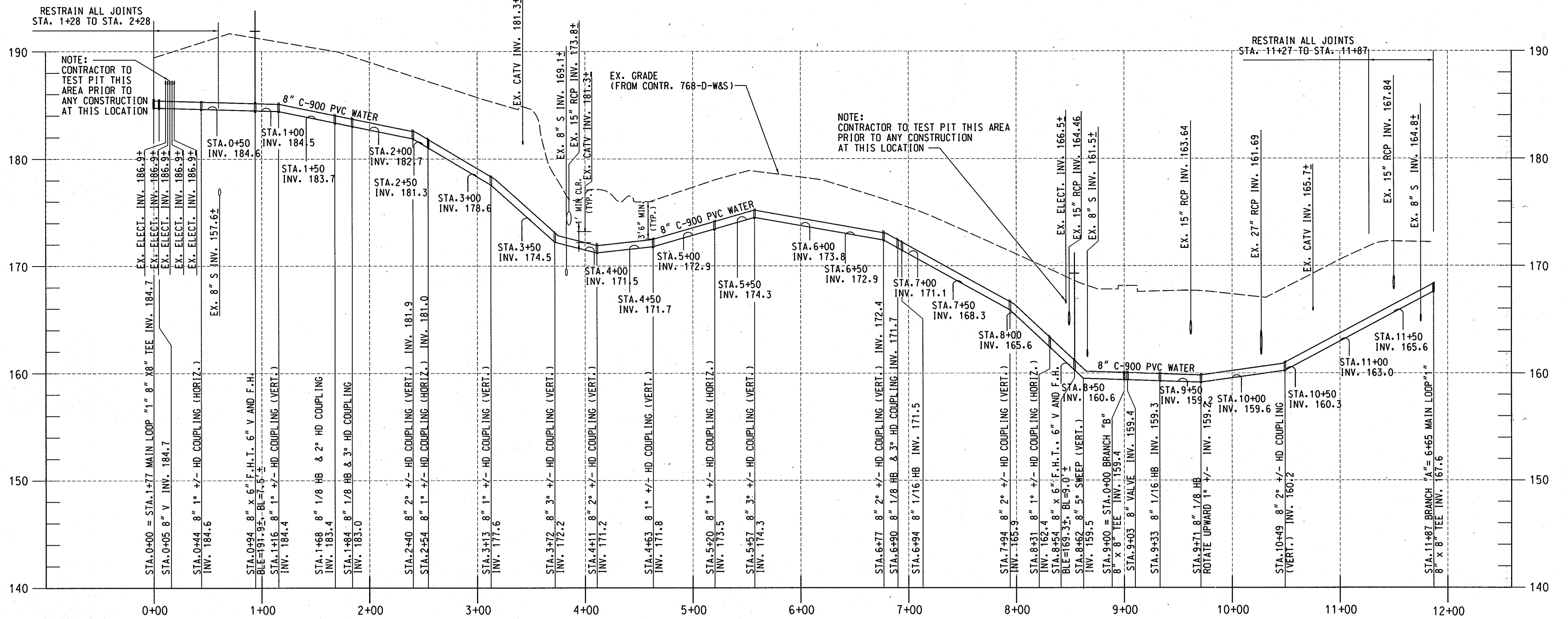
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 5 OF 29

PLOTTED: 10/22/13 AM on Wednesday, November 13, 2013  
FILE: M:\2007\007152\05\_Visuals\01715205-C-05-W.dgn

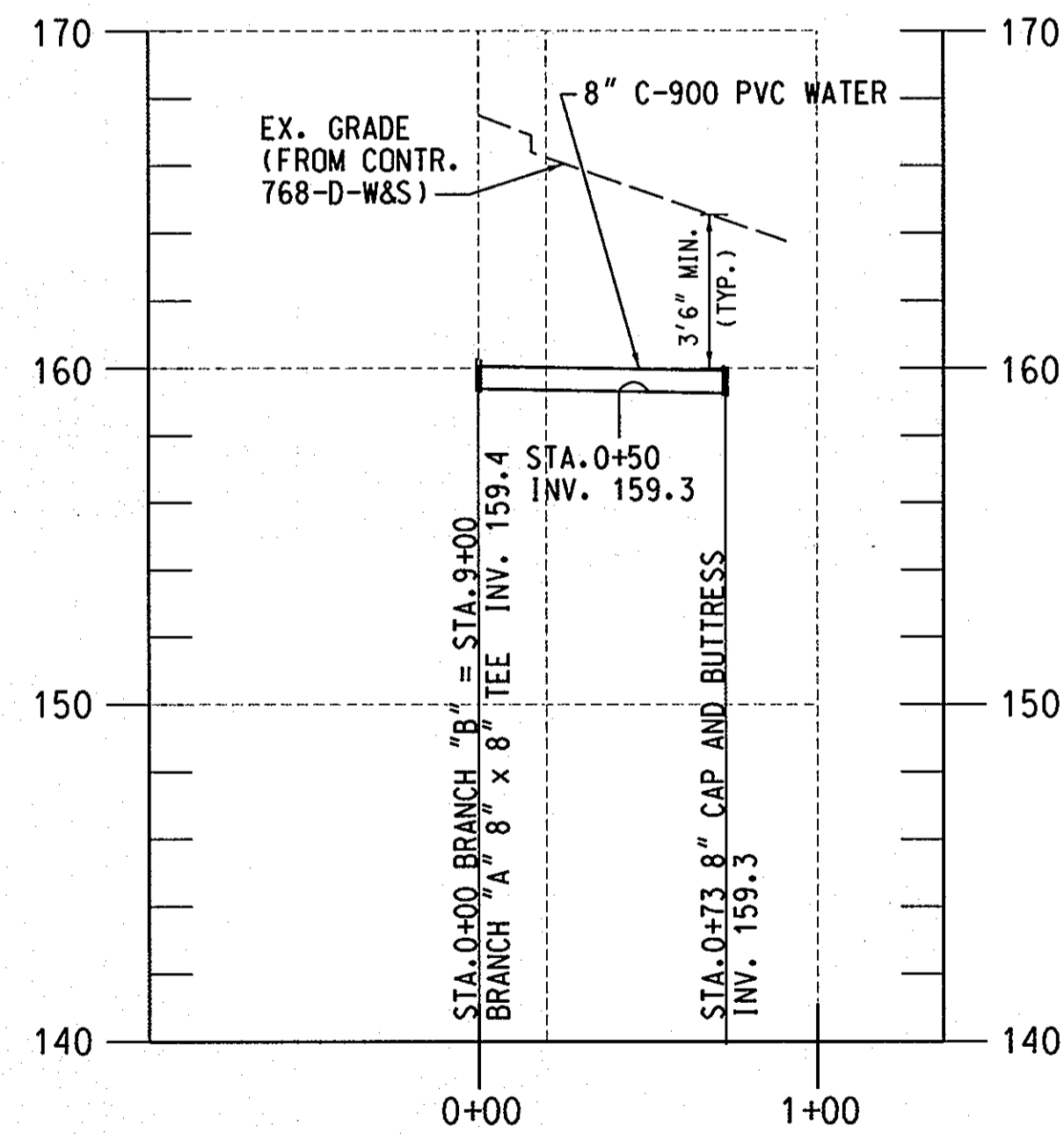
NOTES:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS:  
 MARBLE HILL PHASE I (CONTRACT NO. 768-D-W&S), DATED 9/6/78

2. H.D.C. = HIGH DEFLECTION COUPLING.

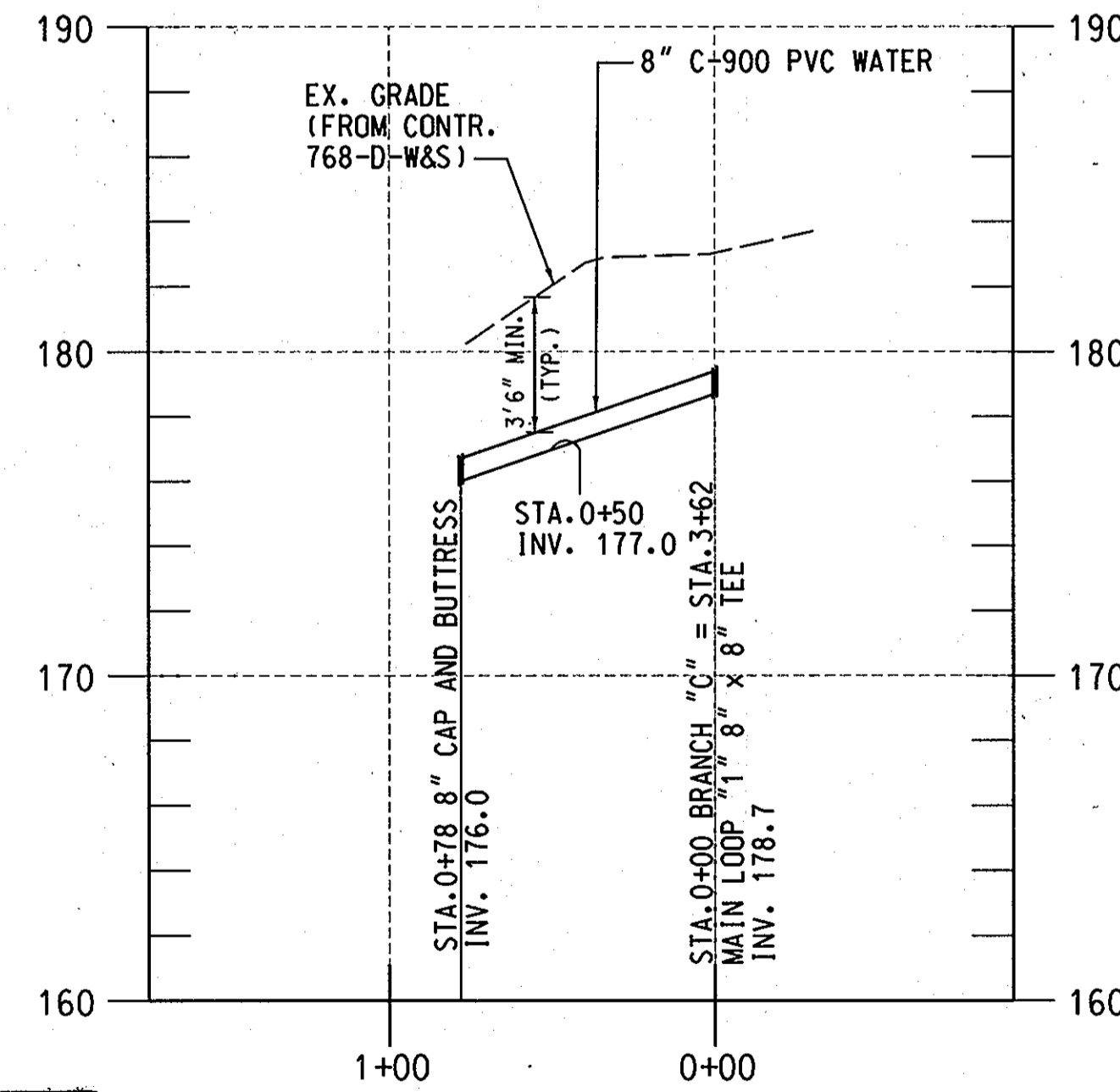


**PROFILE-BRANCH "A"**

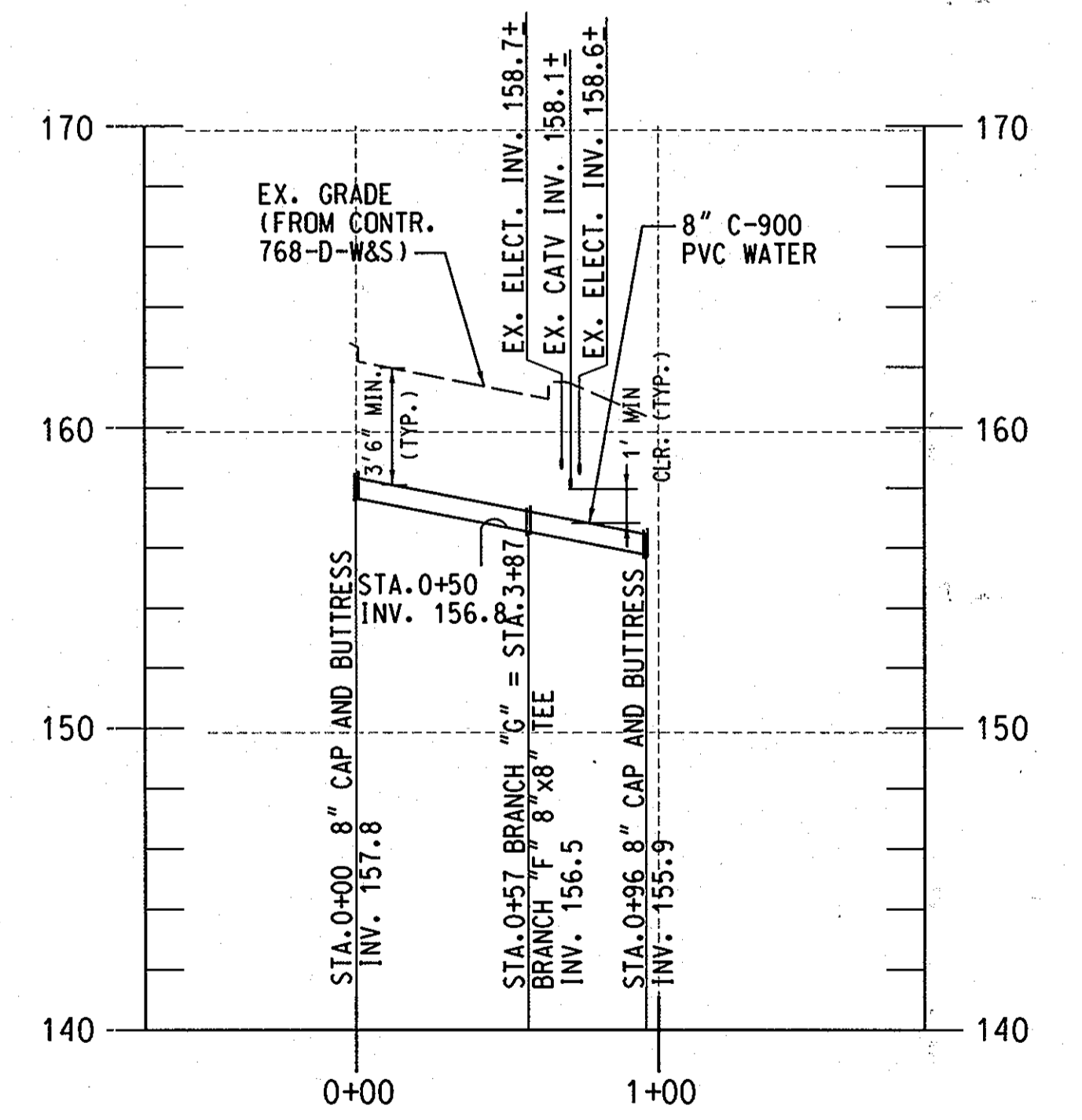
SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)



**PROFILE-BRANCH "B"**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)



**PROFILE-BRANCH "C"**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)



**PROFILE-BRANCH "G"**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)

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. 31363 EXPIRATION DATE: 1/16/2012

**AS-BUILT**  
 DATE 7/23/2013

PLOTTED: 10/14/13, 11:41 AM, Thursday, January 26, 2011  
 BY: K. Kavin, Jackson Division P042, W:\WWW\Sales\Waste QMA Emg  
 FILE: MA 2007\01071378.05.dwg, drawings\0107137805-C-06-W.dgn

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

1/25/11  
 1/25/11  
 1/25/11

1/25/11  
 1/25/11  
 1/25/11

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

**KCI**  
 TECHNOLOGIES

936 RIDGEBROOK ROAD  
 SPARKS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7818  
 WWW.KCI.COM

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 31363  
 1/16/2012

DES: MRD	
DRN: KFJ	
CHK: GW/TWW	
DATE: JAN. 2011	7/23/13
BY: GS	AS-BUILT
NO.	
REVISION	

**PROFILES**  
**MARBLE HILL I**

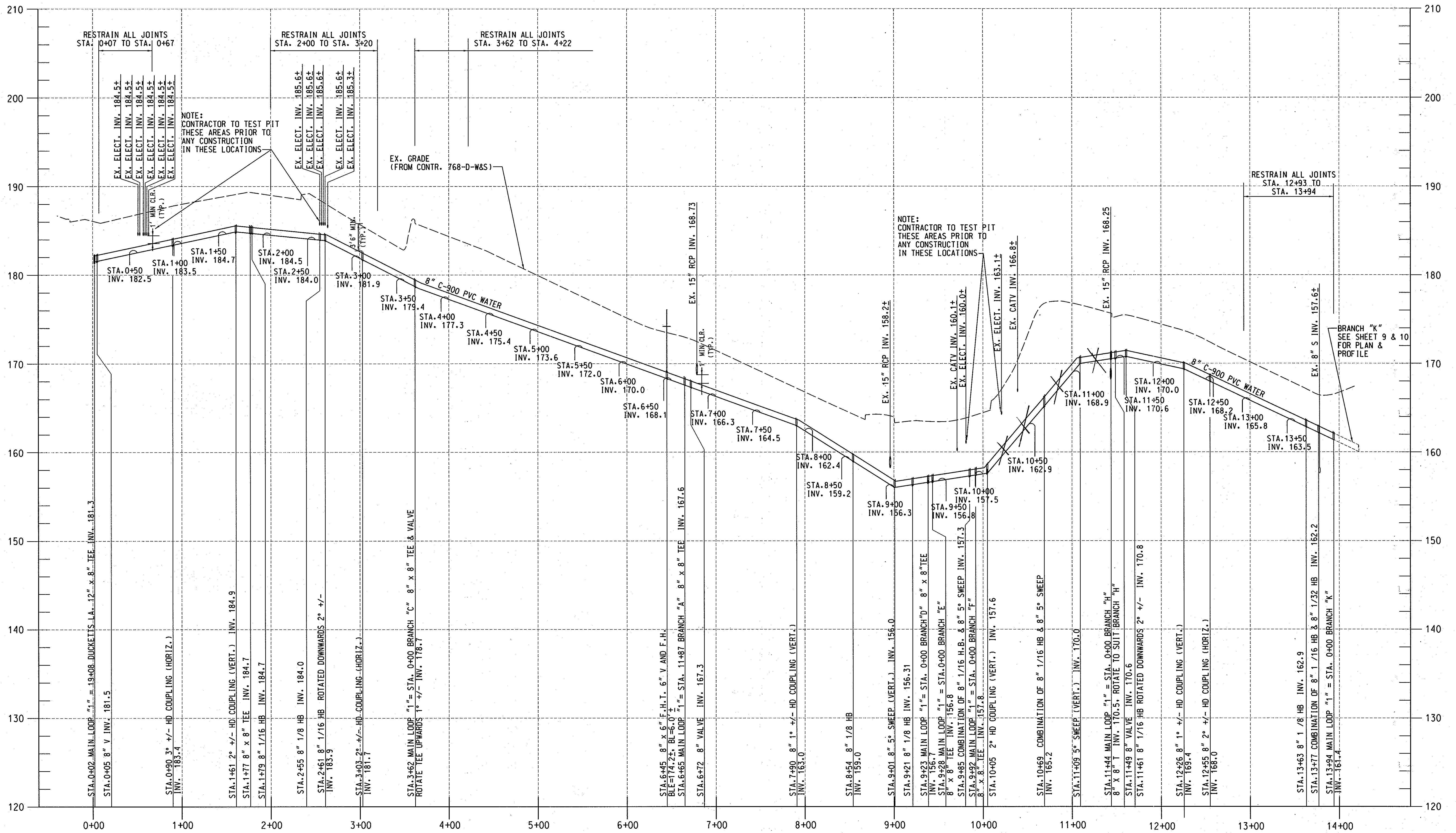
600' SCALE MAP NO. 37 BLOCK NO. 18

**DUCKETTS LANE**  
**WATER MAIN REPLACEMENT**

CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 6 OF 29



NOTES:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE I (CONTRACT NO. 768-D-W&S), DATED 9/6/78  
 2. H.D.C. = HIGH DEFLECTION COUPLING.

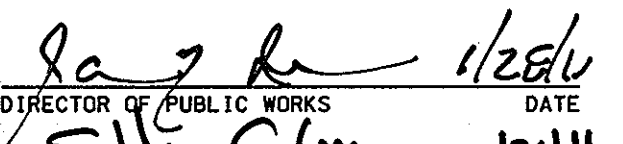

**PROFILE-MAIN LOOP "1"**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)

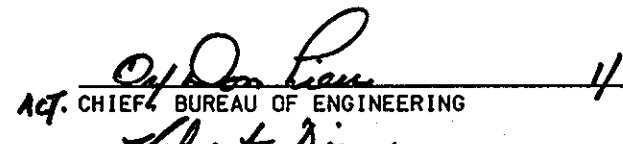

**AS-BUILT**  
 DATE 7/23/2013

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. 31363 EXPIRATION DATE: 1/16/2012


PLOTTED: 09/16/13 11:45 AM by Tracey January, 08/20/13  
 BY: Kevin Jackson, Division F0427, W:\WWW\Solid Waste  
 FILE: MA\_2007\_01071378\_05.dwg, 137805-C-07-W.dgn

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

 1/25/11  
 DIRECTOR OF PUBLIC WORKS DATE  
 1/25/11  
 CHIEF, BUREAU OF UTILITIES DATE

 1/25/11  
 CHIEF, BUREAU OF ENGINEERING DATE  
 1/25/11  
 CHIEF, UTILITY DESIGN DIVISION PSD DATE

  
 ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
 936 RIDGECROFT ROAD  
 SINKS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7818  
 WWW.KCI.COM

  
 KEVIN JACKSON  
 LICENSE NO. 31363  
 EXPIRATION DATE: 1/16/2012

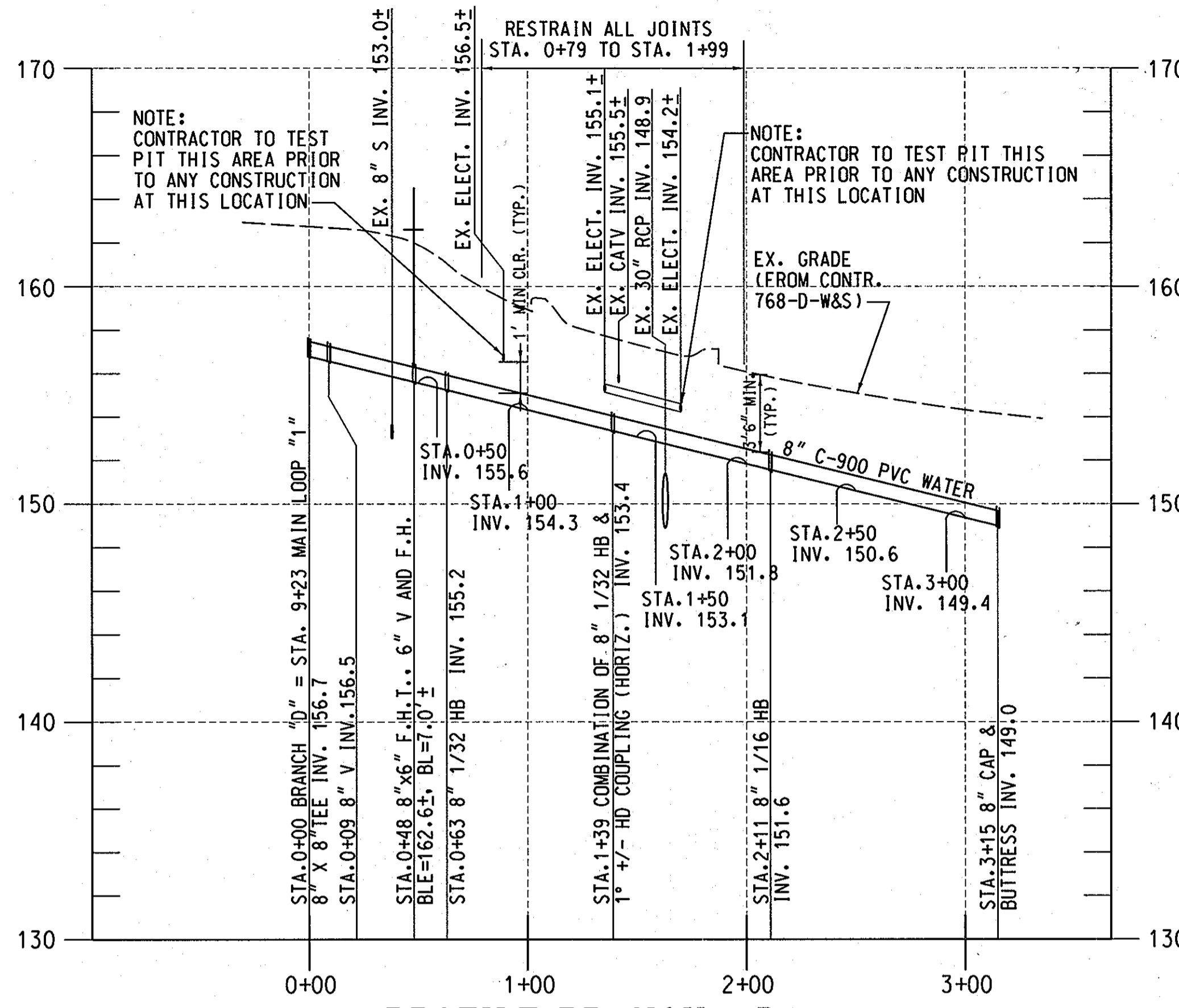
DES:	MRD		
DRN:	KFJ		
CHK:	GW/TWW		
DATE:	7/23/13		
JAN.	2011	BY	NO.
		AS-BUILT	
		REVISION	

**PROFILE**  
**MARBLE HILL I**  
 600' SCALE MAP NO. 37 BLOCK NO. 18

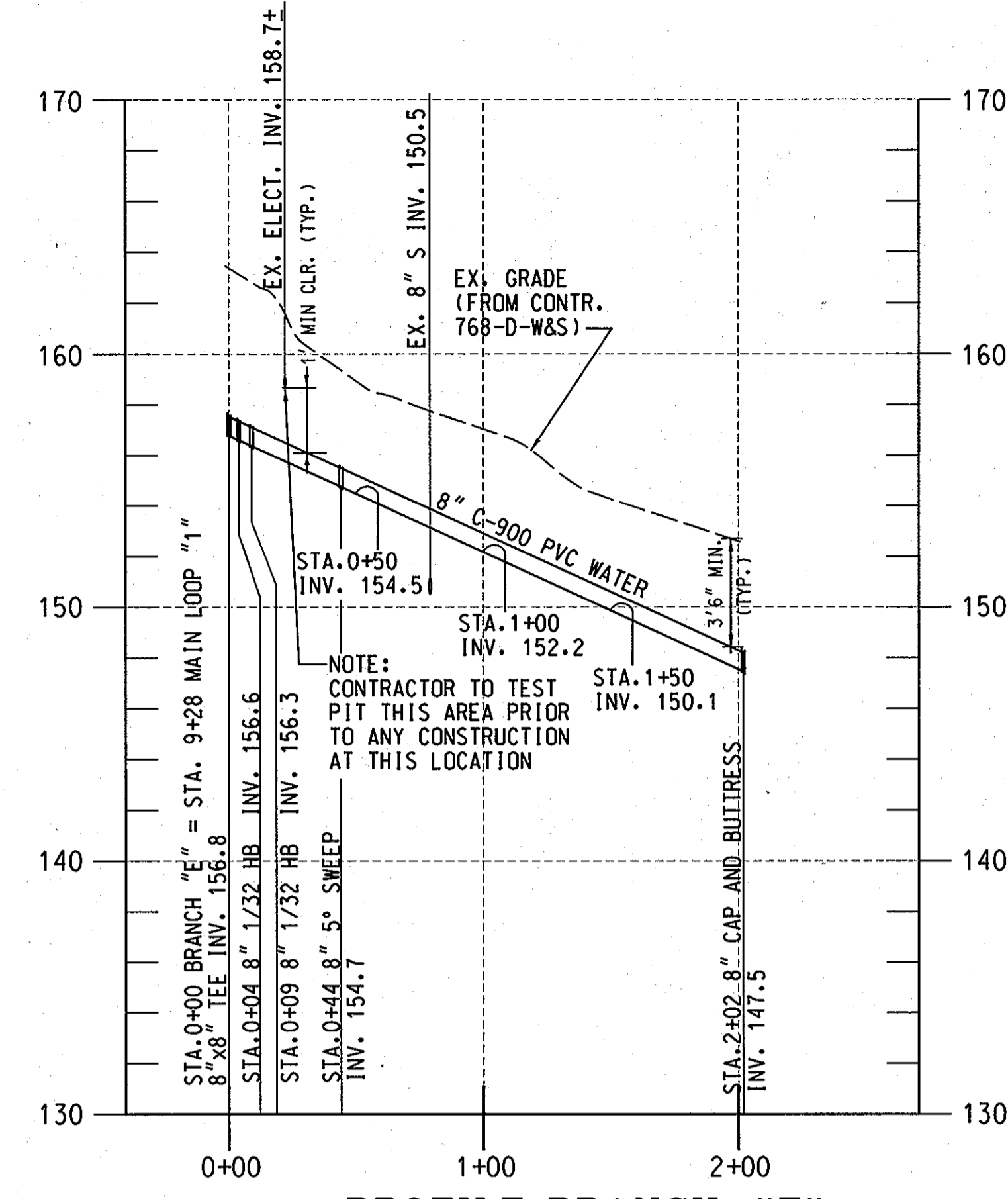
DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE  
 AS SHOWN  
 SHEET  
 7 OF 29

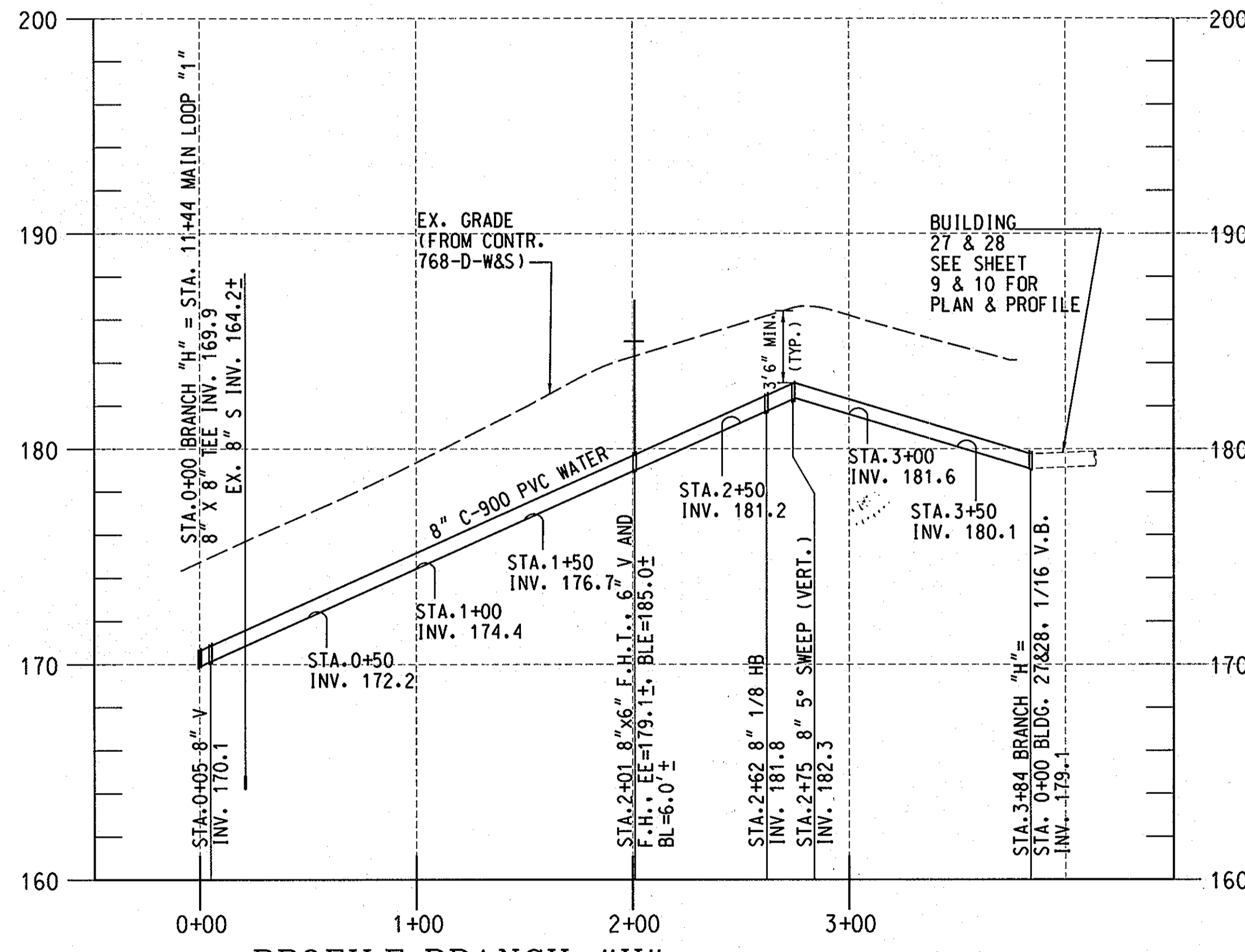
NOTES:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE I (CONTRACT NO. 768-D-W&S), DATED 9/6/78  
 2. H.D.C = HIGH DEFLECTION COUPLING.



PROFILE-BRANCH "D"  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)

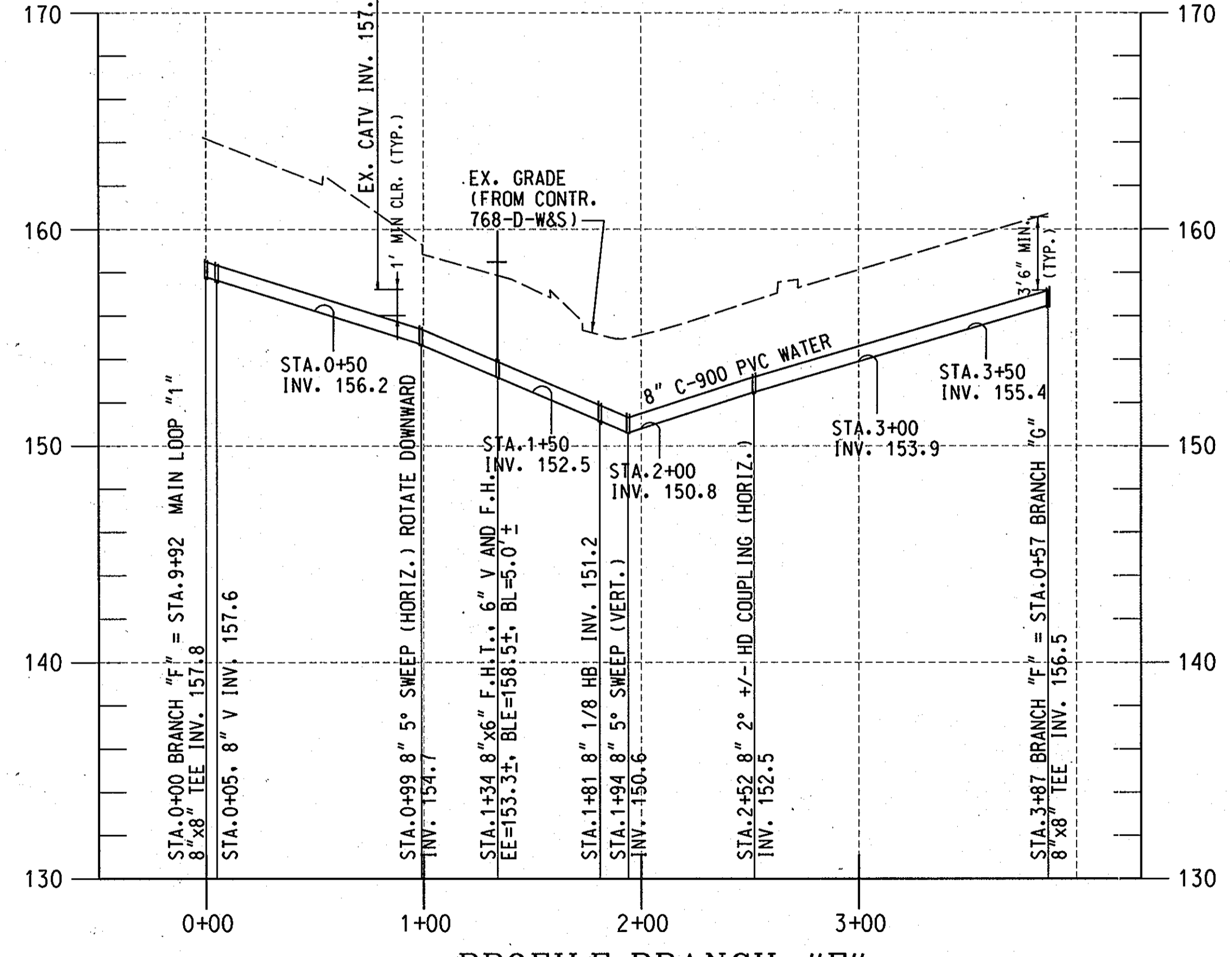


PROFILE-BRANCH "E"  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)



PROFILE-BRANCH "H"  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)

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. 31363 EXPIRATION DATE: 1/16/2012



PROFILE-BRANCH "F"  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 5)

**AS-BUILT**  
 DATE 7/23/13

PLOTTED: 09:46 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division P042, W:\MSD\Solid Waste GMA, Edm  
 FILE: M:\2007\0107\378.05\Drawings\0107197805-C-08-W.dgn

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 1/25/11  
 Chief, Bureau of Utilities: *[Signature]* 1/25/11

ACT. CHIEF, BUREAU OF ENGINEERING: *[Signature]* 1/25/11  
 ACT. CHIEF, UTILITY DESIGN DIVISION: *[Signature]* PSD

**KCI TECHNOLOGIES**  
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 936 RIDGEBROOK ROAD  
 SINKS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7818  
 WWW.KCI.COM

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 License No. 31363  
 EXPIRATION DATE: 1/16/2012

DES: MRD	
DRN: KFJ	
CHK: GW/TWW	
DATE: JAN. 2011	BY: GS
	NO. AS-BUILT
	REVISION
	DATE: 7/23/13

**PROFILES MARBLE HILL I**

600' SCALE MAP NO. 37 BLOCK NO. 18

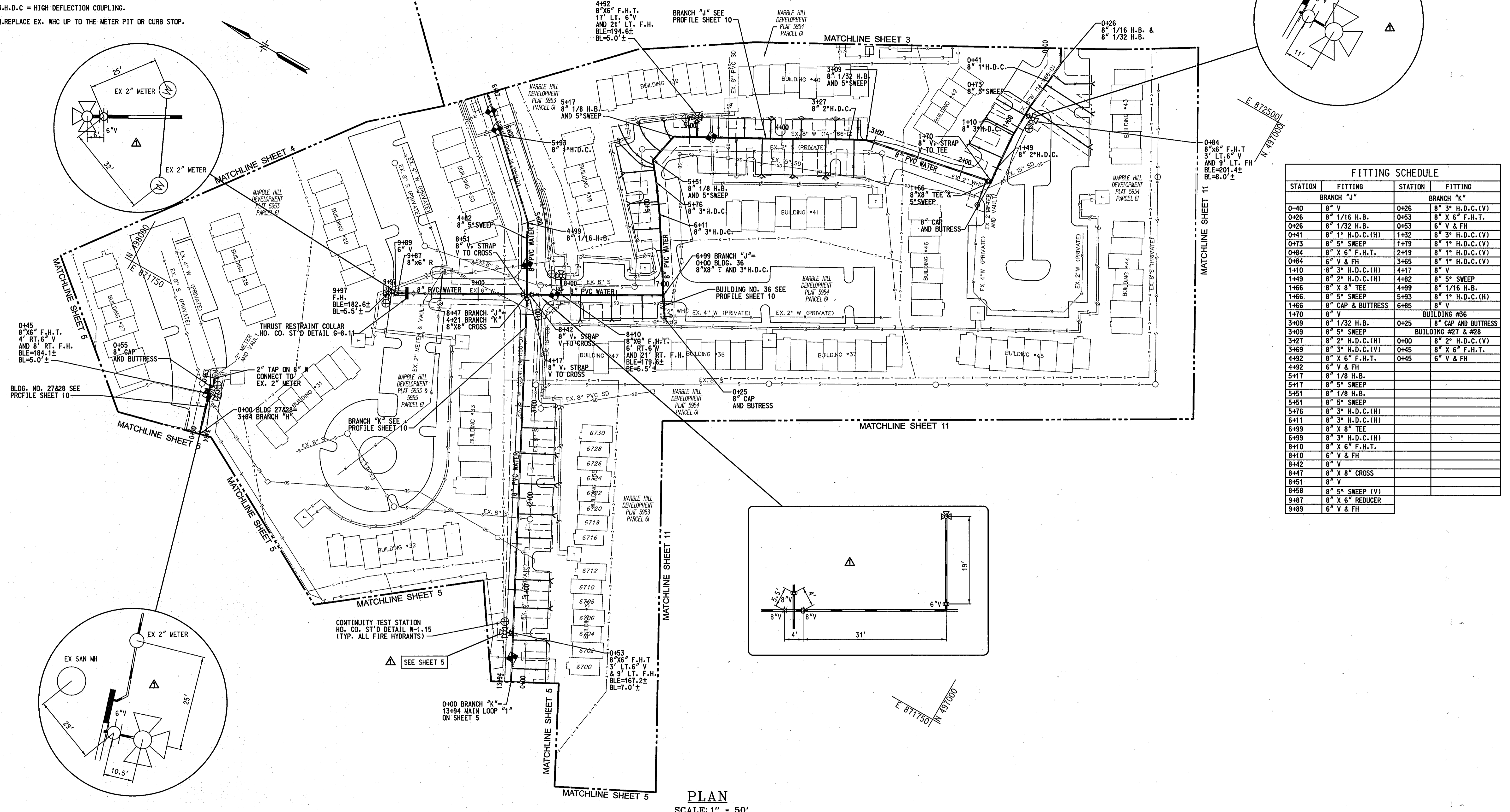
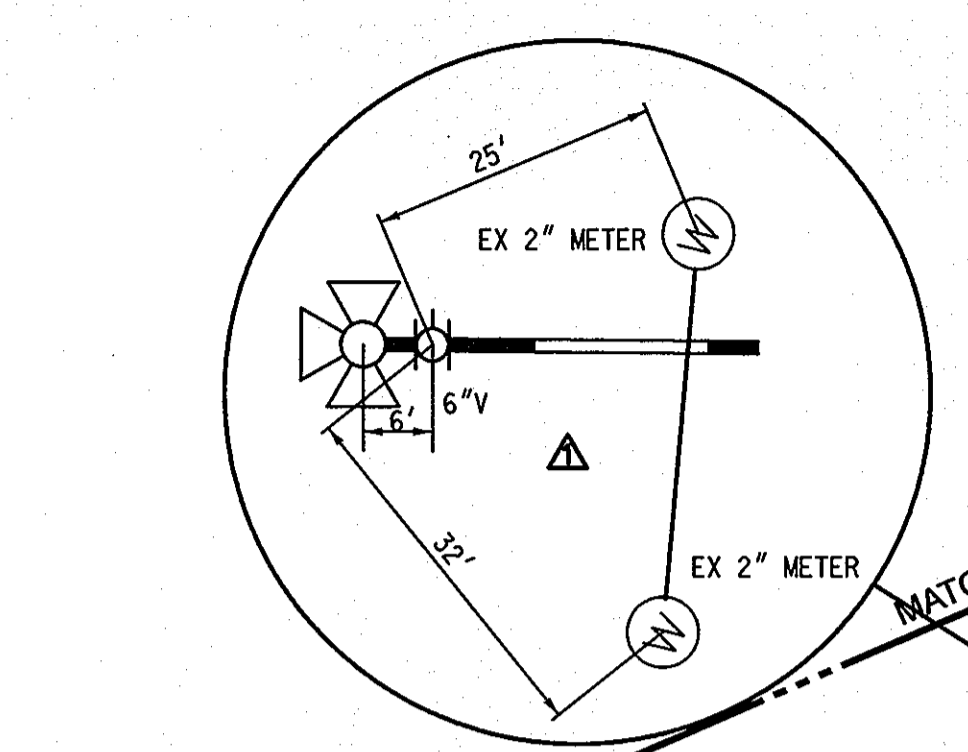
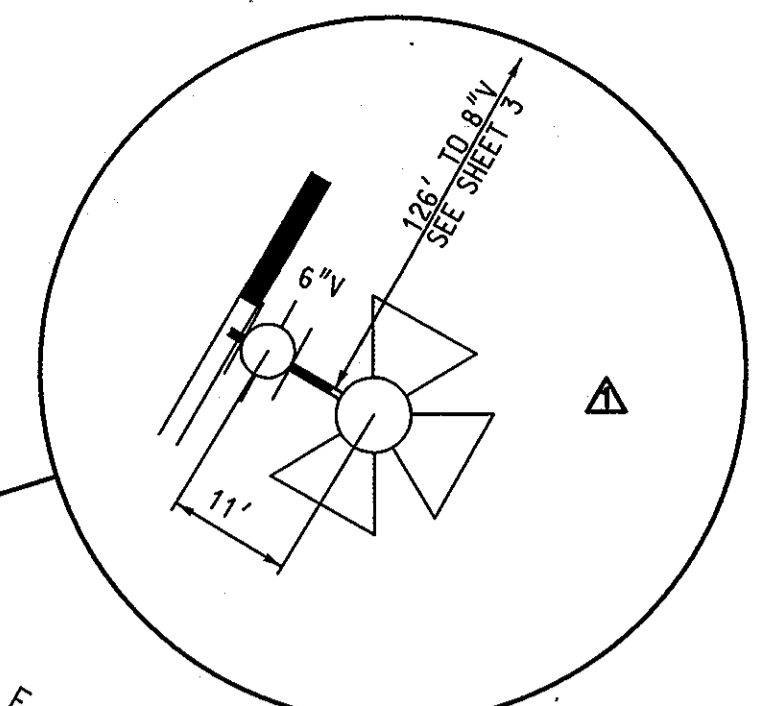
**DUCKETTS LANE WATER MAIN REPLACEMENT**  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET
8 OF 29



- NOTES:
1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE I (CONTRACT NO. 14-1166-D), DATED 11/17/83 & 12/15/84. THE HORIZONTAL DATUM IS BASED ON NAD 27. THE VERTICAL DATUM IS BASED ON NGVD 29.
  2. THE COORDINATE TICKS ARE FOR REFERENCE PURPOSE ONLY.
  3. H.D.C. = HIGH DEFLECTION COUPLING.
  4. REPLACE EX. WHC UP TO THE METER PIT OR CURB STOP.



FITTING SCHEDULE			
STATION	FITTING	STATION	FITTING
0-40	8" V	0426	8" 3" H.D.C. (V)
0426	8" 1/16 H.B.	0453	8" X 6" F.H.T.
0426	8" 1/32 H.B.	0453	6" V & FH
0441	8" 1" H.D.C. (H)	1432	8" 3" H.D.C. (V)
0473	8" 5" SWEEP	1479	8" 1" H.D.C. (V)
0484	8" X 6" F.H.T.	2419	8" 1" H.D.C. (V)
0484	6" V & FH	3465	8" 1" H.D.C. (V)
1410	8" 3" H.D.C. (H)	4417	8" V
1449	8" 2" H.D.C. (H)	4462	8" 5" SWEEP
1466	8" X 8" TEE	4499	8" 1/16 H.B.
1466	8" 5" SWEEP	5493	8" 1" H.D.C. (H)
1466	8" CAP & BUTTRESS	6485	8" V
1470	8" V		BUILDING #36
3409	8" 1/32 H.B.	0425	8" CAP AND BUTTRESS
3409	8" 5" SWEEP		BUILDING #27 & #28
3427	8" 2" H.D.C. (H)	0400	8" 2" H.D.C. (V)
3469	8" 3" H.D.C. (V)	0445	8" X 6" F.H.T.
4492	8" X 6" F.H.T.	0445	6" V & FH
4492	6" V & FH		
5417	8" 1/8 H.B.		
5417	8" 5" SWEEP		
5451	8" 1/8 H.B.		
5451	8" 5" SWEEP		
5476	8" 3" H.D.C. (H)		
6411	8" 3" H.D.C. (H)		
6499	8" X 8" TEE		
6499	8" 3" H.D.C. (H)		
8410	8" X 6" F.H.T.		
8410	6" V & FH		
8442	8" V		
8447	8" X 8" CROSS		
8451	8" V		
8458	8" 5" SWEEP (V)		
9487	8" X 6" REDUCER		
9489	6" V & FH		

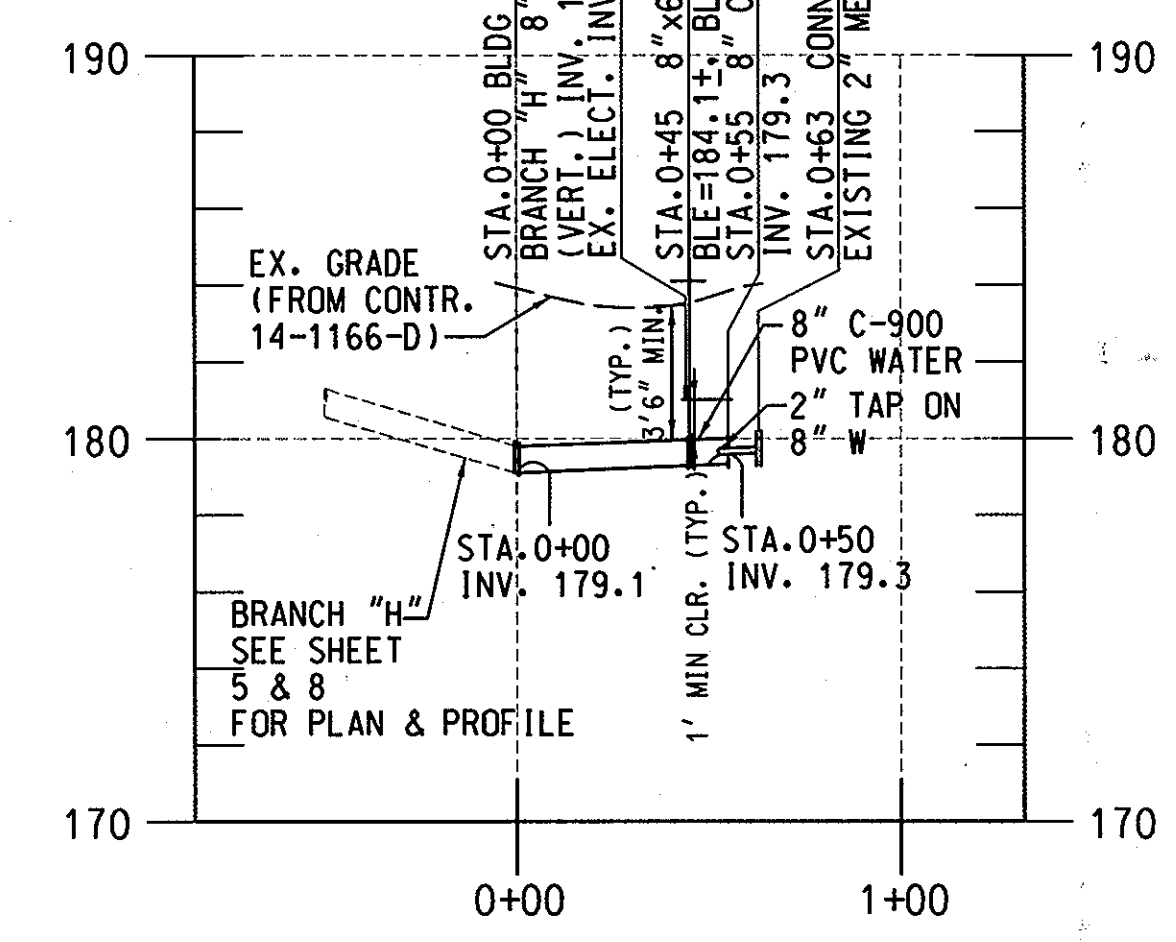
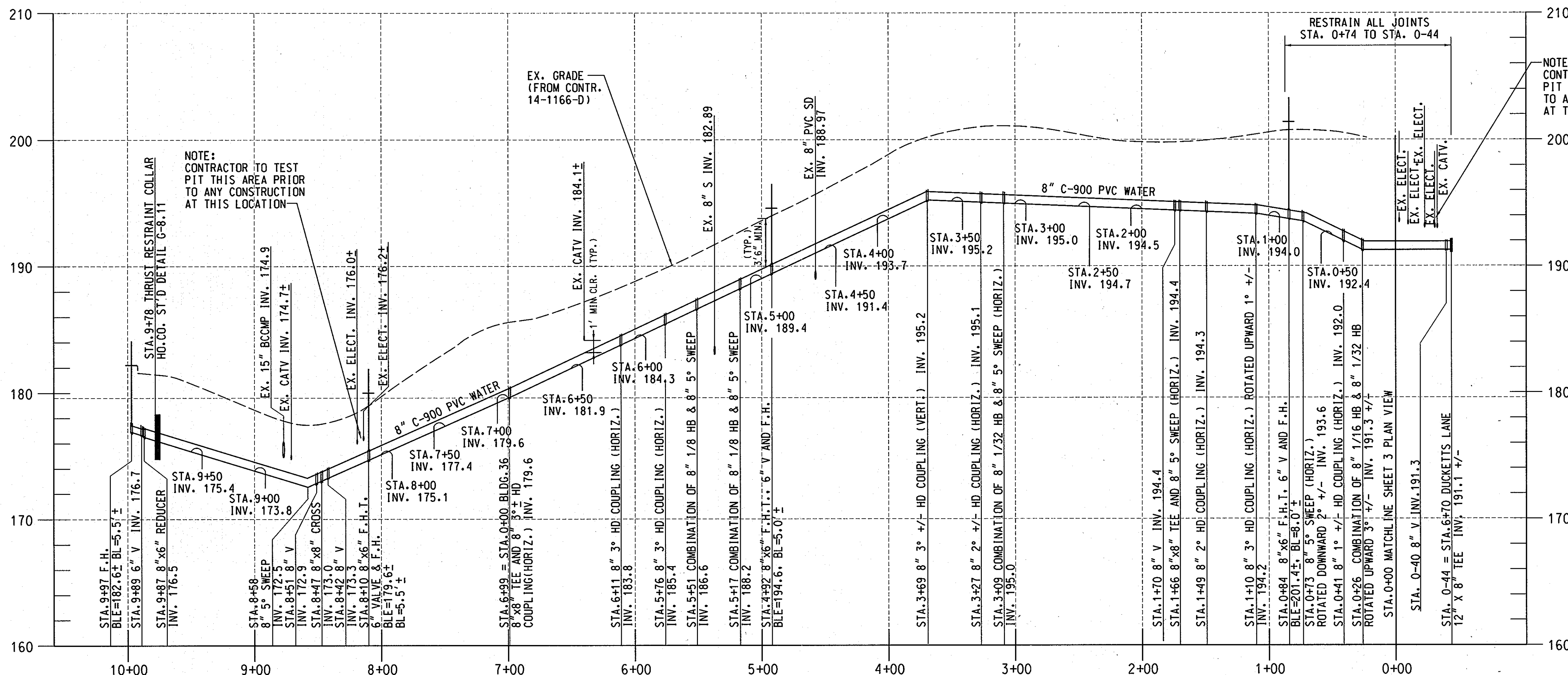
PLAN  
SCALE: 1" = 50'

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. 31363 EXPIRATION DATE: 1/16/2014

AS-BUILT  
DATE 7/23/2013

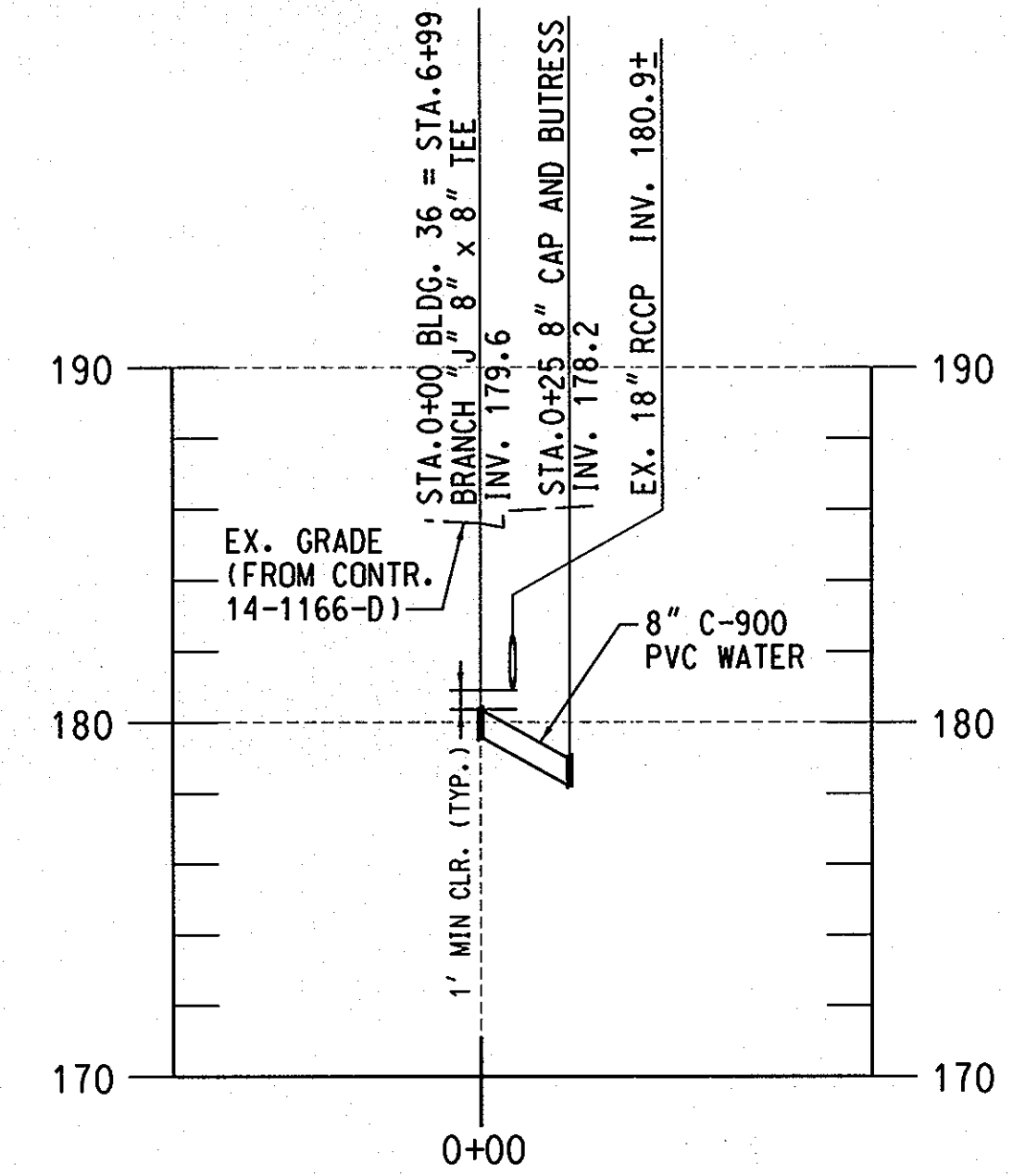
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> 11/25/13 Chief, Bureau of Utilities: <i>[Signature]</i> 11/25/13		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS <b>KCI TECHNOLOGIES</b> 936 RINGBROOK ROAD SHARPS, MARYLAND 21152 TELEPHONE (410) 316-7800 FAX (410) 316-7818 WWW.KCI.COM		DES: MRD DRN: KFJ CHK: GW/TWW DATE: JAN. 2011		PLAN MARBLE HILL II REPLACEMENT PLAN 600' SCALE MAP NO. 37 BLOCK NO. 18		DUCKETTS LANE WATER MAIN REPLACEMENT CAPITAL PROJECT No. W-8286 CONTRACT No. 44-4677 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 9 OF 29
---	--	--	--	--	--	--	--	--	--	---------------------------------------

PLOTTED: 10:22 AM on Wednesday, November 13, 2013  
 FILE: \\P071071378\05\_V\Drawings\0107137805-C-09-W.dwg

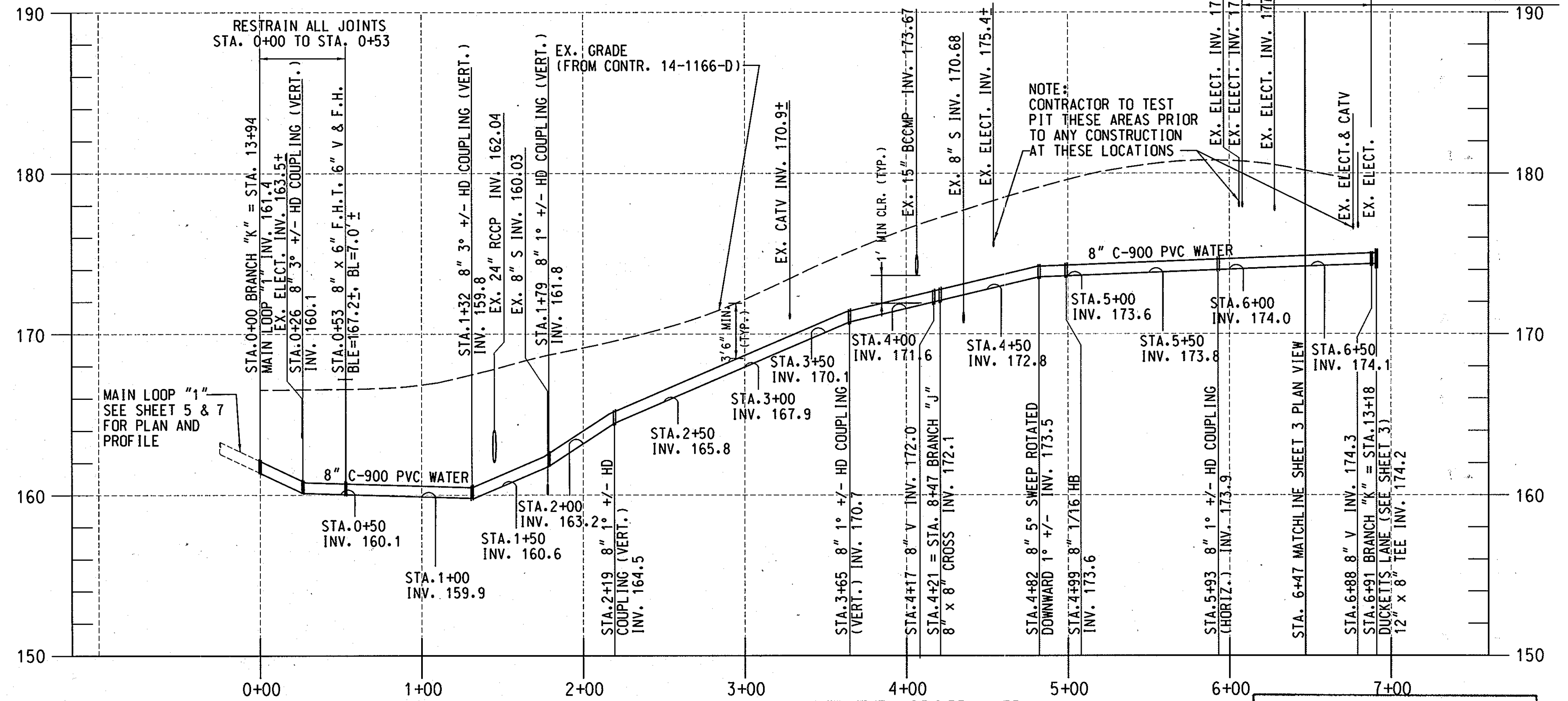


NOTE:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE 1 (CONTRACT NO. 14-1166-D), DATED 11/17/83, REVISED 2/15/84.  
 2. H.D.C = HIGH DEFLECTION COUPLING.

**PROFILE-BRANCH "J"**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 9)



**PROFILE-BUILDING NO. 36**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 9)



**AS-BUILT**  
 DATE: 7/23/2013

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. 31363 EXPIRATION DATE: 1/16/2012

PLOTTED: 10/16/13 AM 10:25 Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division F042, W-WWW-Solid Waste GMA Emp  
 FILE: MA\_2007\_01071378.05.dwg (137805-C-10-W.dwg)

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 1/25/11  
 Chief, Bureau of Engineering: *[Signature]* 1/25/11  
 Chief, Bureau of Utilities: *[Signature]* 1/25/11  
 Acct. Chief, Utility Design Division: *[Signature]* PCD

**KCI TECHNOLOGIES**  
 ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS  
 936 RIDGEBROOK ROAD  
 SINKS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7818  
 WWW.KCI.COM

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 31363  
 EXPIRES 1/16/2012

DES: MRD	DRN: KFJ	CHK: GW/TWW	DATE: JAN. 2011	BY: GS	NO.:	REVISION:	DATE: 7/23/13
				AS-BUILT			

PROFILES  
 MARBLE HILL II

600' SCALE MAP NO. 37 BLOCK NO. 18

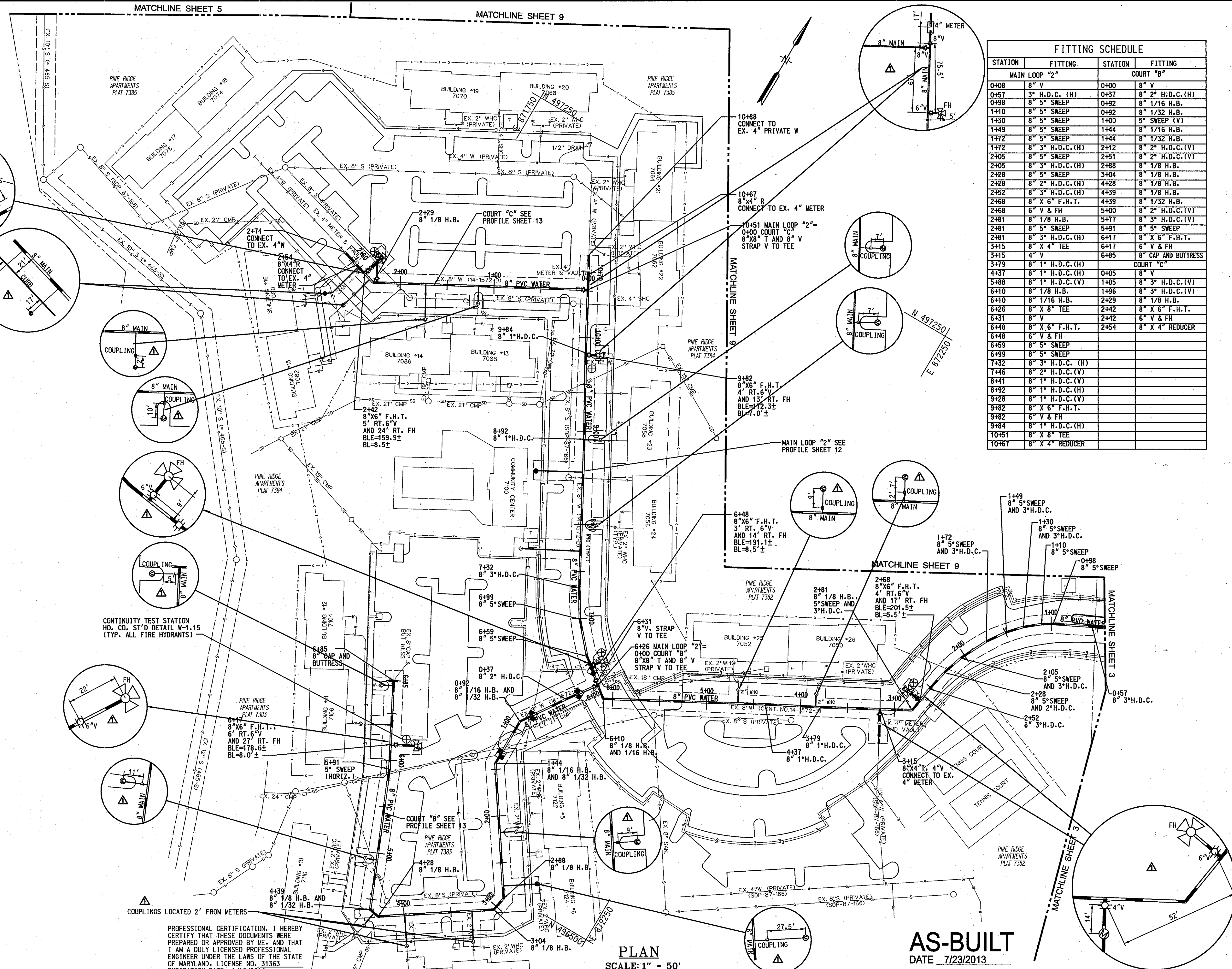
DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No: 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 10 OF 29

- NOTES:
- THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: MARBLE HILL PHASE 1 (CONTRACT NO. 768-D-WAS), DATED 9/6/78. THE HORIZONTAL DATUM IS BASED ON NAD 27. THE VERTICAL DATUM IS BASED ON NGVD 29.
  - THE COORDINATE TICKS ARE FOR REFERENCE PURPOSE ONLY.
  - H.D.C. = HIGH DEFLECTION COUPLING.
  - REPLACE EX. WHC UP TO THE METER PIT OR CURB STOP.

FITTING SCHEDULE			
STATION	FITTING	STATION	FITTING
MAIN LOOP "2"		COURT "B"	
0+08	8" V	0+00	8" V
0+57	3" H.D.C. (H)	0+37	8" 2" H.D.C. (H)
0+98	8" 5" SWEEP	0+92	8" 1/16 H.B.
1+10	8" 5" SWEEP	0+92	8" 1/32 H.B.
1+30	8" 5" SWEEP	1+00	5" SWEEP (V)
1+49	8" 5" SWEEP	1+44	8" 1/16 H.B.
1+72	8" 5" SWEEP	1+44	8" 1/32 H.B.
1+72	8" 3" H.D.C. (H)	2+12	8" 2" H.D.C. (V)
2+05	8" 5" SWEEP	2+51	8" 2" H.D.C. (V)
2+28	8" 3" H.D.C. (H)	2+88	8" 1/8 H.B.
2+28	8" 5" SWEEP	3+04	8" 1/8 H.B.
2+28	8" 2" H.D.C. (H)	4+28	8" 1/8 H.B.
2+52	8" 3" H.D.C. (H)	4+39	8" 1/8 H.B.
2+68	8" X 6" F.H.T.	4+39	8" 1/32 H.B.
2+68	6" V & FH	5+00	8" 2" H.D.C. (V)
2+81	8" 1/8 H.B.	5+77	8" 3" H.D.C. (V)
2+81	8" 5" SWEEP	5+91	8" 5" SWEEP
2+81	8" 3" H.D.C. (H)	6+17	8" X 6" F.H.T.
3+15	8" X 4" TEE	6+17	6" V & FH
3+15	4" V	6+85	8" CAP AND BUTTRISS
3+79	8" 1" H.D.C. (H)	COURT "C"	
4+37	8" 1" H.D.C. (H)	0+05	8" V
5+88	8" 1" H.D.C. (V)	1+05	8" 3" H.D.C. (V)
6+10	8" 1/8 H.B.	1+96	8" 3" H.D.C. (V)
6+10	8" 1/16 H.B.	2+29	8" 1/8 H.B.
6+26	8" X 8" TEE	2+42	8" X 6" F.H.T.
6+31	8" V	2+42	6" V & FH
6+48	8" X 6" F.H.T.	2+54	8" X 4" REDUCER
6+48	6" V & FH		
6+59	8" 5" SWEEP		
6+59	8" 5" SWEEP		
7+32	8" 3" H.D.C. (H)		
7+46	8" 2" H.D.C. (V)		
8+41	8" 1" H.D.C. (V)		
8+92	8" 1" H.D.C. (H)		
9+28	8" 1" H.D.C. (V)		
9+82	8" X 6" F.H.T.		
9+82	6" V & FH		
9+84	8" 1" H.D.C. (H)		
10+51	8" X 8" TEE		
10+67	8" X 4" REDUCER		



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. 31363 EXPIRATION DATE: 1/16/2014

PLAN SCALE: 1" = 50'

AS-BUILT DATE 7/23/2013

PLAN PINE RIDGE

DUCKETTS LANE WATER MAIN REPLACEMENT CAPITAL PROJECT No. W-8286 CONTRACT No. 44-4677

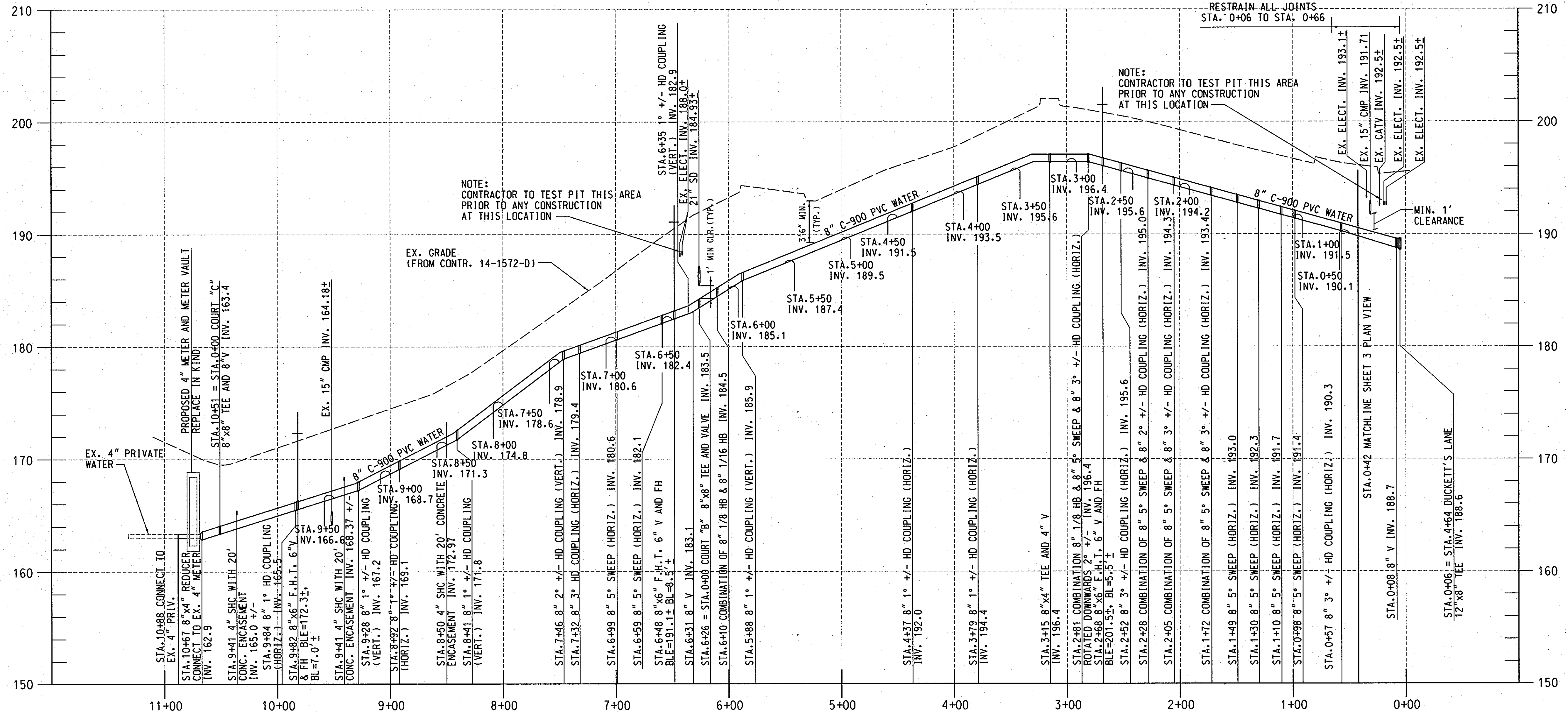
SCALE AS SHOWN SHEET 11 OF 29

PLOTTED: 09/22 AM on Wednesday, November 13, 2013  
 BY: Kevin Jackson, Division: P042, Water-WW Emp.  
 FILE: \\MAV007\01071578.OS\Drawings\0107157805-C-11-W.dgn

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>John G. ...</i> 11/25/13 DIRECTOR OF PUBLIC WORKS <i>Steve ...</i> 11/25/13 CHIEF, BUREAU OF UTILITIES</p>	<p><i>Thomas ...</i> 11/25/13 CHIEF, BUREAU OF ENGINEERING</p> <p><i>...</i> 11/25/13 CHIEF, UTILITY DESIGN DIVISION</p>	<p><b>KCI TECHNOLOGIES</b></p> <p>ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS</p> <p>936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 www.kci.com</p>	<p>DES: MRD DRN: KFJ CHK: GW/TWW</p> <p>DATE: JAN. 2011</p>	<p>STATE OF MARYLAND PROFESSIONAL ENGINEER</p> <p>31363</p>	<p>DATE: 7/23/13</p>	<p>6S AS-BUILT REPLACEMENT SHEET</p>	<p>600' SCALE MAP NO. 37</p>	<p>BLOCK NO. 18</p>	<p>ELECTION DISTRICT NO. 3</p>	<p>HOWARD COUNTY, MARYLAND</p>
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NOTE:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILT PINE RIDGE (CONTRACT NO. 14-1572-D), DATED 3/19/87, REVISED 9/28/89.

2. H.D.C = HIGH DEFLECTION COUPLING.



**PROFILE-MAIN LOOP "2"**  
 SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 11)

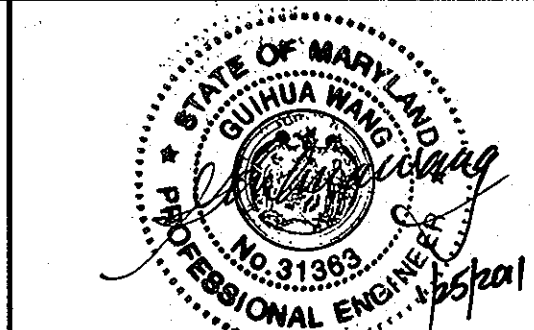
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31363, EXPIRATION DATE: 1/16/2012

**AS-BUILT**  
 DATE 7/23/13

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division: P042, W-WW-Solid Waste  
 FILE: M:\2007\01071378\05\Drawings\1017137805-C-12-W-15.dwg

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
Director of Public Works <i>[Signature]</i> DATE 1/25/11	Chief, Bureau of Engineering <i>[Signature]</i> DATE 1/25/11
Chief, Bureau of Utilities <i>[Signature]</i> DATE 1/25/11	Chief, Utility Design Division <i>[Signature]</i> DATE 1/25/11

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
**KCI**  
 TECHNOLOGIES  
 936 RIDGEBROOK ROAD  
 SPARKS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7818  
 WWW.KCI.COM

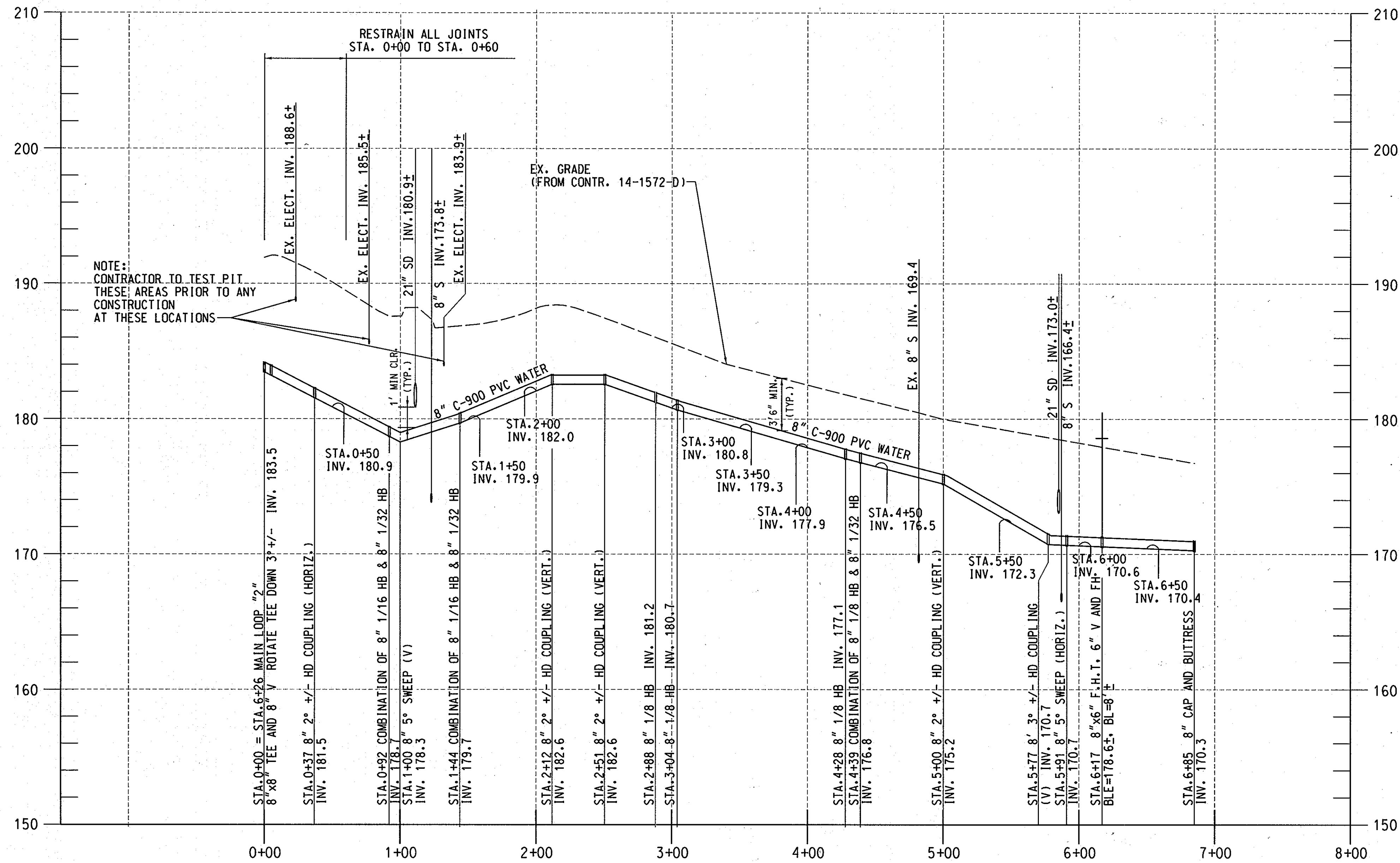


DES:	MRD
DRN:	KFJ
CHK:	GW/TWW
DATE:	7/23/13
JAN. 2011	BY NO.
AS-BUILT	REVISION

<b>PROFILE          PINE RIDGE</b>	
600' SCALE MAP NO. 37	BLOCK NO. 18

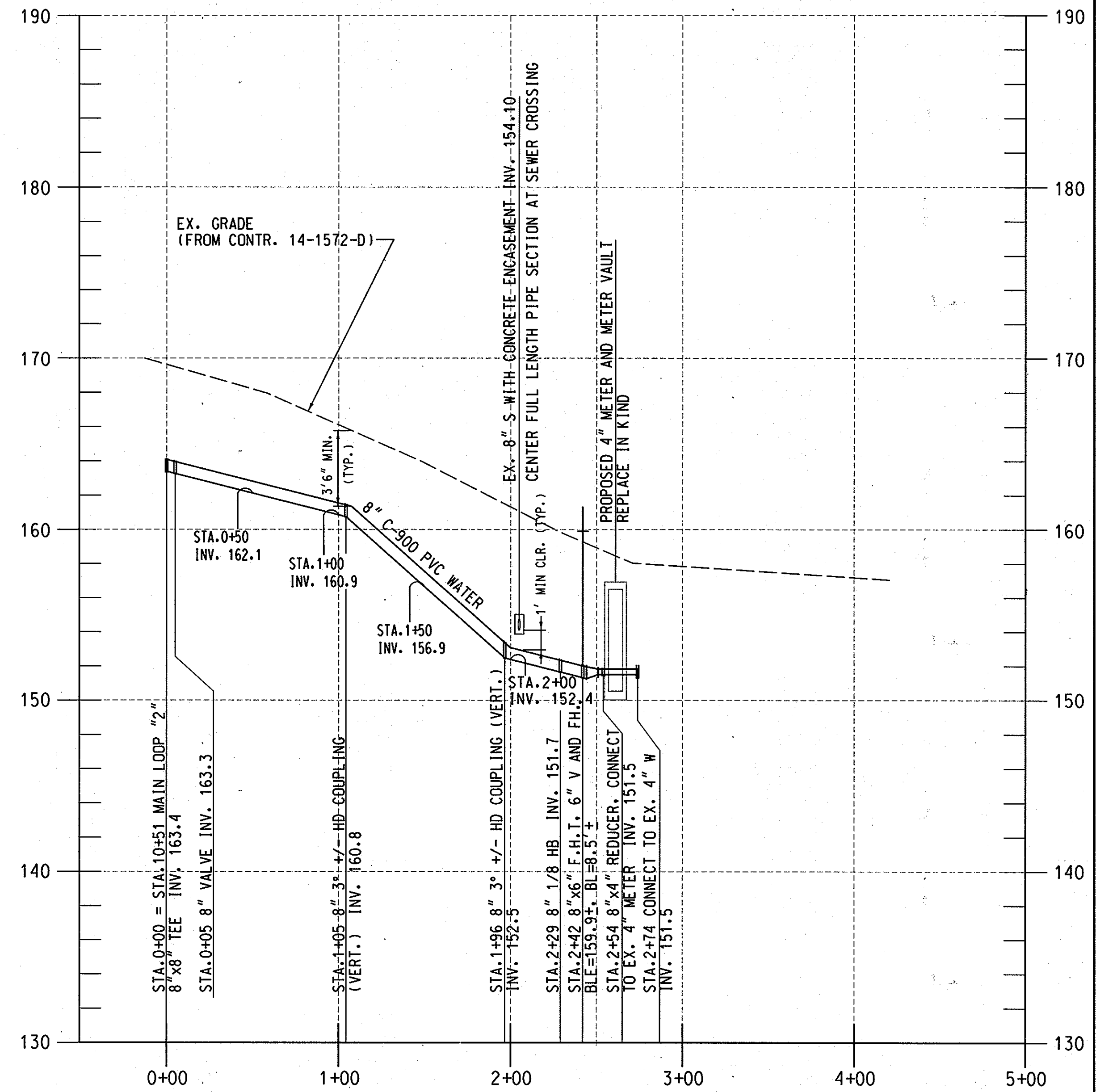
**DUCKETTS LANE  
 WATER MAIN REPLACEMENT**  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4877  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 12 OF 29



**PROFILE-COURT "B"**

SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 11)



**PROFILE-COURT "C"**

SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 11)

NOTE:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: PINE RIDGE (CONTRACT NO. 14-1572-D), DATED 3/19/87, REVISED 9/28/89.  
 2. W.D.C = HIGH DEFLECTION COUPLING.

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. 31363 EXPIRATION DATE: 1/16/2012

**AS-BUILT**  
 DATE 7/23/13

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division PO#2 W-WW-Solid Waste O&M Emp  
 FILE: MAZ60\01071928 05.dwg\dwg\0107192805-C-13-W.dwg

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 1/25/11  
 Chief, Bureau of Engineering: *[Signature]* 1/25/11  
 Chief, Bureau of Utilities: *[Signature]* 1/25/11  
 Chief, Utility Design Division: *[Signature]* 1/25/11

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
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**KCI**  
 TECHNOLOGIES

936 RIDGEBROOK ROAD  
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STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 NO. 31363  
 EXPIRATION DATE: 1/16/2012

DES:	MRD		
DRN:	KFJ		
CHK:	GW/TWW		
DATE:	JAN. 2011	BY:	NO.
			AS-BUILT
		REVISION	
		DATE:	7/23/13

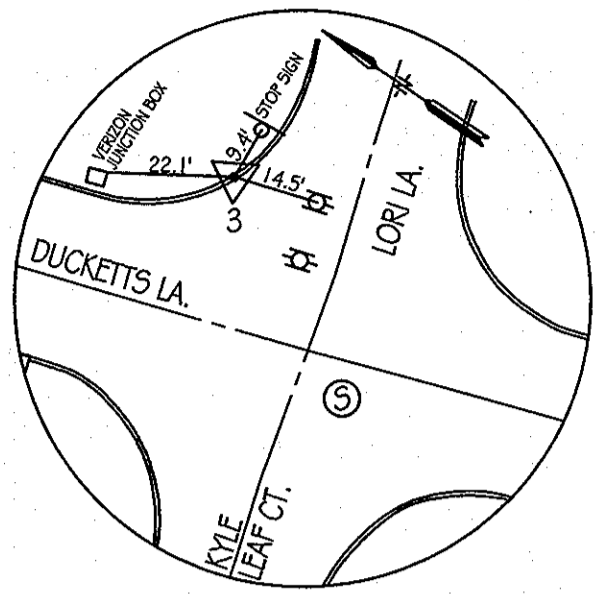
PROFILES  
 PINE RIDGE

600' SCALE MAP NO. 37 BLOCK NO. 18

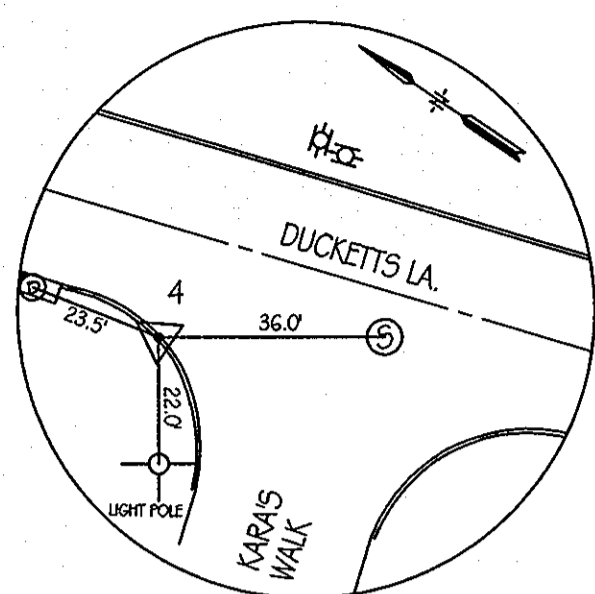
DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE  
 AS SHOWN  
 SHEET  
 13 OF 29

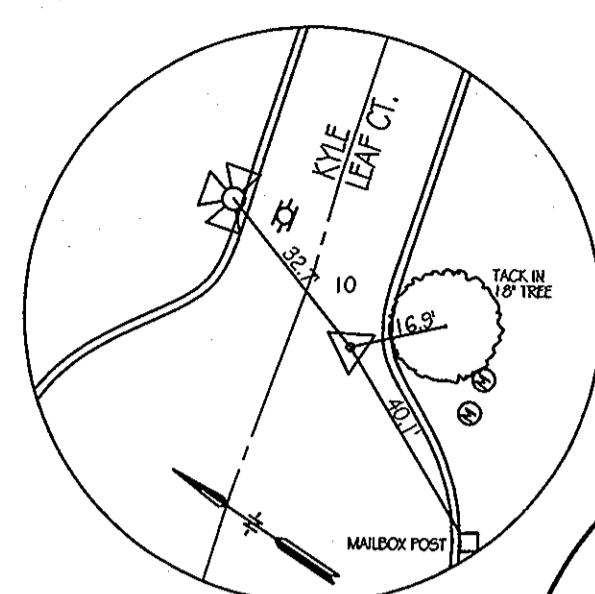
NOTES:  
 1. THE PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE PROFILE FROM THE FOLLOWING AS-BUILTS:  
 MARBLE HILL PHASE I (CONTRACT NO. 768-D-WAS), DATED 9/6/78  
 THE HORIZONTAL INFORMATION IS BASED ON SURVEY PERFORMED BY KCI TECHNOLOGIES IN SEPTEMBER 2010.  
 2. H.D.C. = HIGH DEFLECTION COUPLING.  
 3. REPLACE EX. W.H.C UP TO THE METER PIT OR CURB STOP.



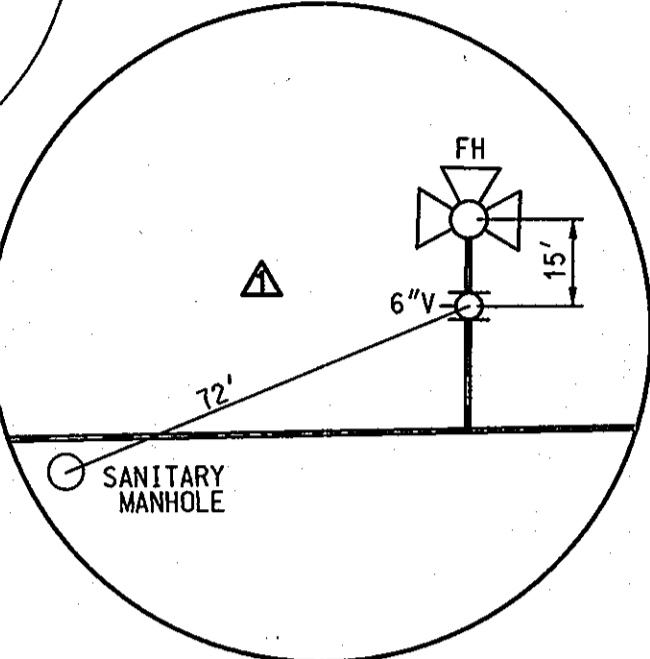
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SCALE: N.T.S.



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



TRAV. #10  
SCALE: N.T.S.



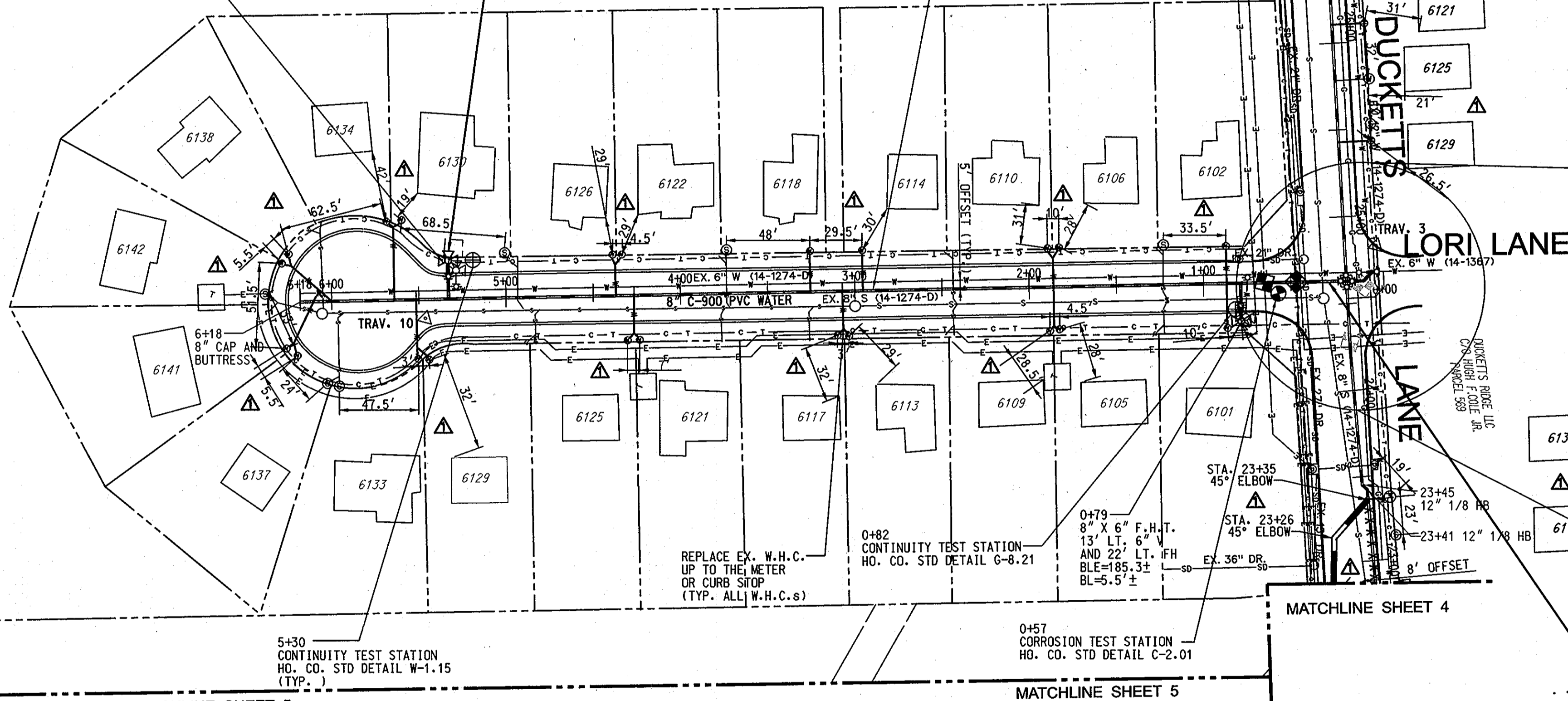
E 1383400  
N 559750

KARA'S WALK

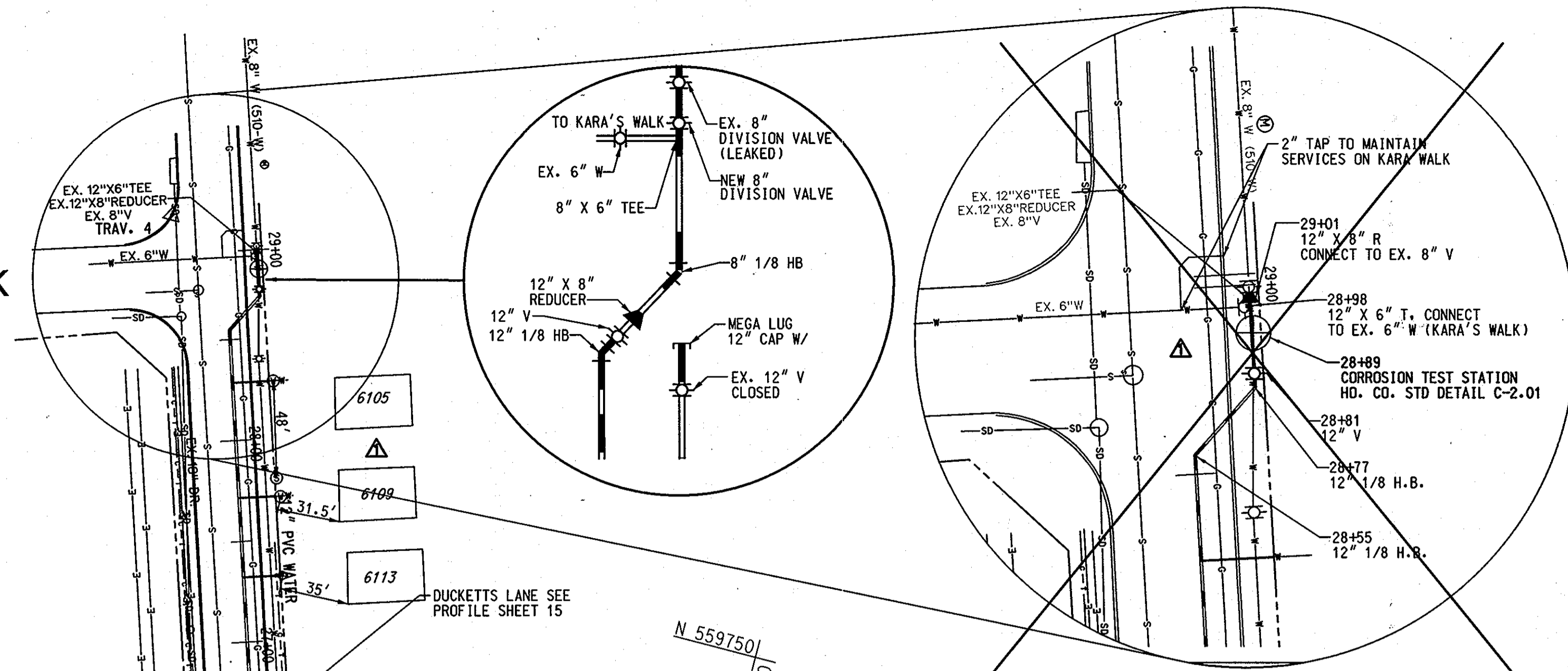
KYLE LEAF CT.

FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
DUCKETTS LA.			
23+41	12" 1/8 H.B.	559355.3	1384021.1
23+45	12" 1/8 H.B.	559356.9	1384017.7
24+21	12" 2" H.D.C.	559428.7	1383991.9
24+55	12" 1" H.D.C.(V)		
24+60	12" V	559465.1	1383980.1
24+63	12" X 8" CROSS	559468.3	1383979.0
24+66	12" V	559471.4	1383977.9
24+71	12" 1/32 V.B.		
24+82	12" 1/32 V.B.		
26+78	12" 1" H.D.C.(V)		
28+55	12" 1/8 H.B.	559840.9	1383858.4
28+77	12" 1/8 H.B.	559860.8	1383868.5
28+81	12" V	559864.2	1383867.4
28+98	12" X 6" TEE	559880.1	1383862.1
29+01	12" X 8" REDUCER	559883.4	1383861.1
KYLE LEAF CT.			
0+01	6" 1/8 H.B.	559477.2	1383992.0
0+08	6" 1/8 H.B.	559470.9	1383988.5
0+10	6" 1/8 V.B.		
0+12	6" 1/8 V.B.		
0+13	8" X 6" REDUCER	559469.9	1383984.7
0+15	8" V	559469.1	1383982.3
0+21	8" V	559467.6	1383975.8
0+47	8" 5" SWEEP(V)		
0+79	8" X 6" F.H.T. 6" V & FH	559451.7	1383920.8
0+81	8" 2" H.D.C.(V)		
0+91	8" 2" H.D.C.(V)		
1+83	8" 1" H.D.C.(V)		
2+90	8" 1" H.D.C.(V)		
3+91	8" 1" H.D.C.(V)		
5+33	8" X 6" F.H.T. 6" V & FH	559327.5	1383483.9
5+47	8" 1" H.D.C.(V)		
6+18	8" CAP & BUTTRESS	559304.2	1383402.0

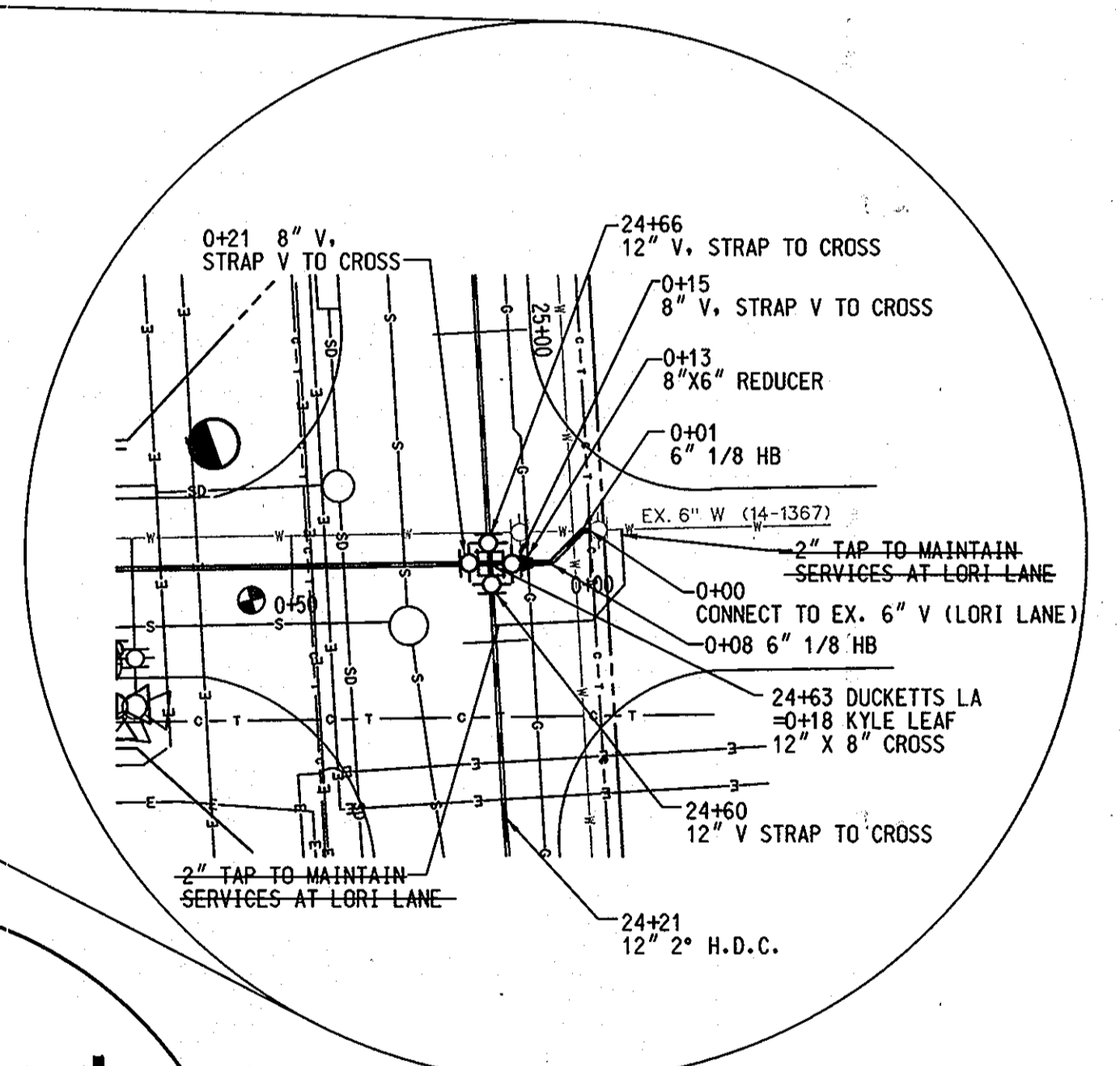
TRAVERSE COORDINATE SCHEDULE			
NUMBER	DISCRPTION	NORTHING	EASTING
TRAV. #3	X-CUT	559492.3	1383990.3
TRAV. #4	X-CUT	559888.5	1383816.5
TRAV. #10	PK NAIL	559313.4	1383473.8



PLAN  
SCALE: 1" = 50'



NOTE: SEE SHEET 2. SUGGESTED SEQUENCE OF CONSTRUCTION, FOR CONSTRUCTION AND CONNECTION DETAILS.



NOTE: SEE SHEET 2. SUGGESTED SEQUENCE OF CONSTRUCTION, FOR CONSTRUCTION AND CONNECTION DETAILS.

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. 31363 EXPIRATION DATE: 1/16/2014

PLOTTED: 09/23/13 At: Wednesday, November 13, 2013 8:11 AM  
 BY: Kevin Jackson Division: P042 Water-WW Emp. FILE: M:\2007\01071378\05\Drawings\0107137805-C-14-W.dwg

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Kevin Jackson* 11/23/13  
 DIRECTOR OF PUBLIC WORKS DATE

*Michael Schum* 11/23/13  
 CHIEF, BUREAU OF UTILITIES DATE

*Morgan & Butler* 11/23/13  
 CHIEF, BUREAU OF ENGINEERING DATE

*Q. D. Lee* 11/23/13  
 CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

**KCI**  
 TECHNOLOGIES

936 RIDGEBOOK ROAD  
 SPARKS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7918  
 WWW.KCI.COM

STATE OF MARYLAND  
 SUBIQUA WATERS  
 PROFESSIONAL ENGINEER  
 No. 31363  
 11/13

DES: MRD	
DRN: KFJ	
CHK: GW/TWW	
DATE: JAN. 2011	7/23/13
BY: NO.	REVISION
AS-BUILT REPLACEMENT SHEET	

PLAN  
 KYLE LEAF COURT

600' SCALE MAP NO. 37 BLOCK NO. 12

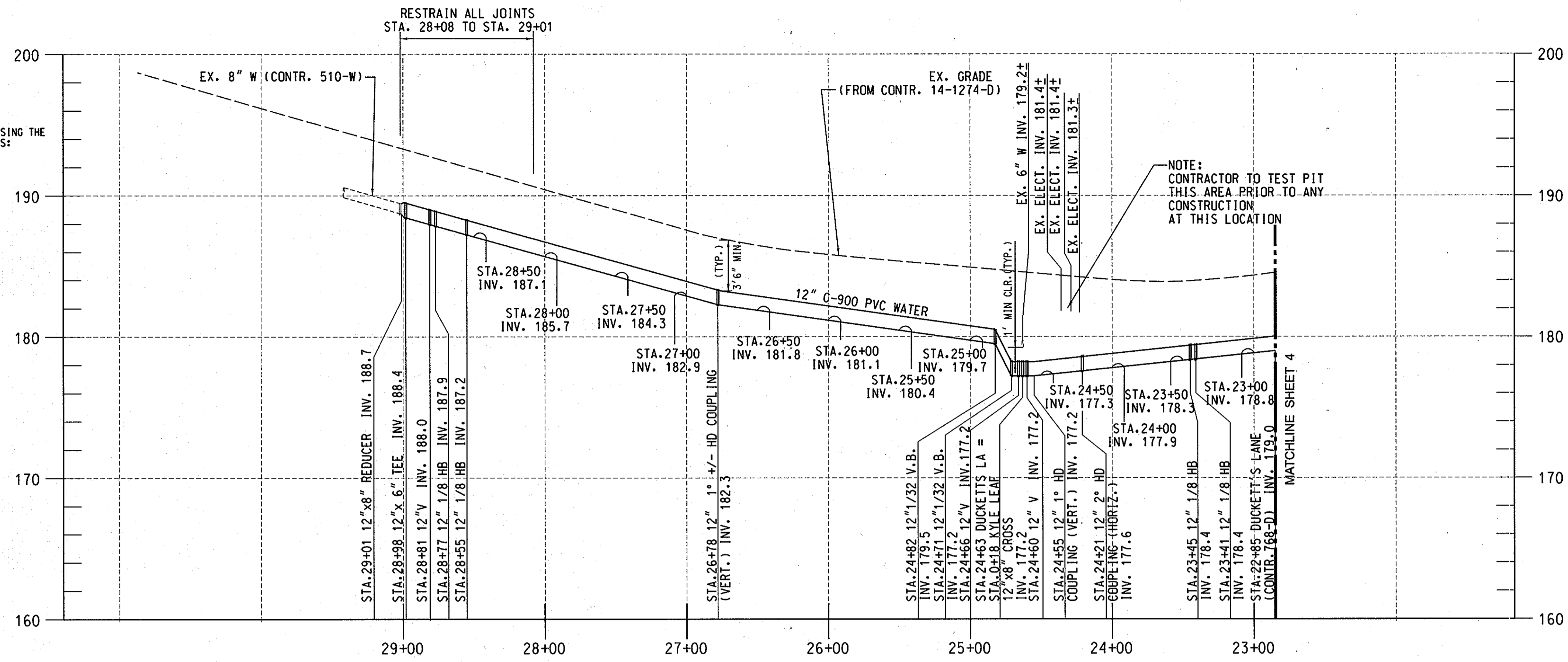
DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 14 OF 29

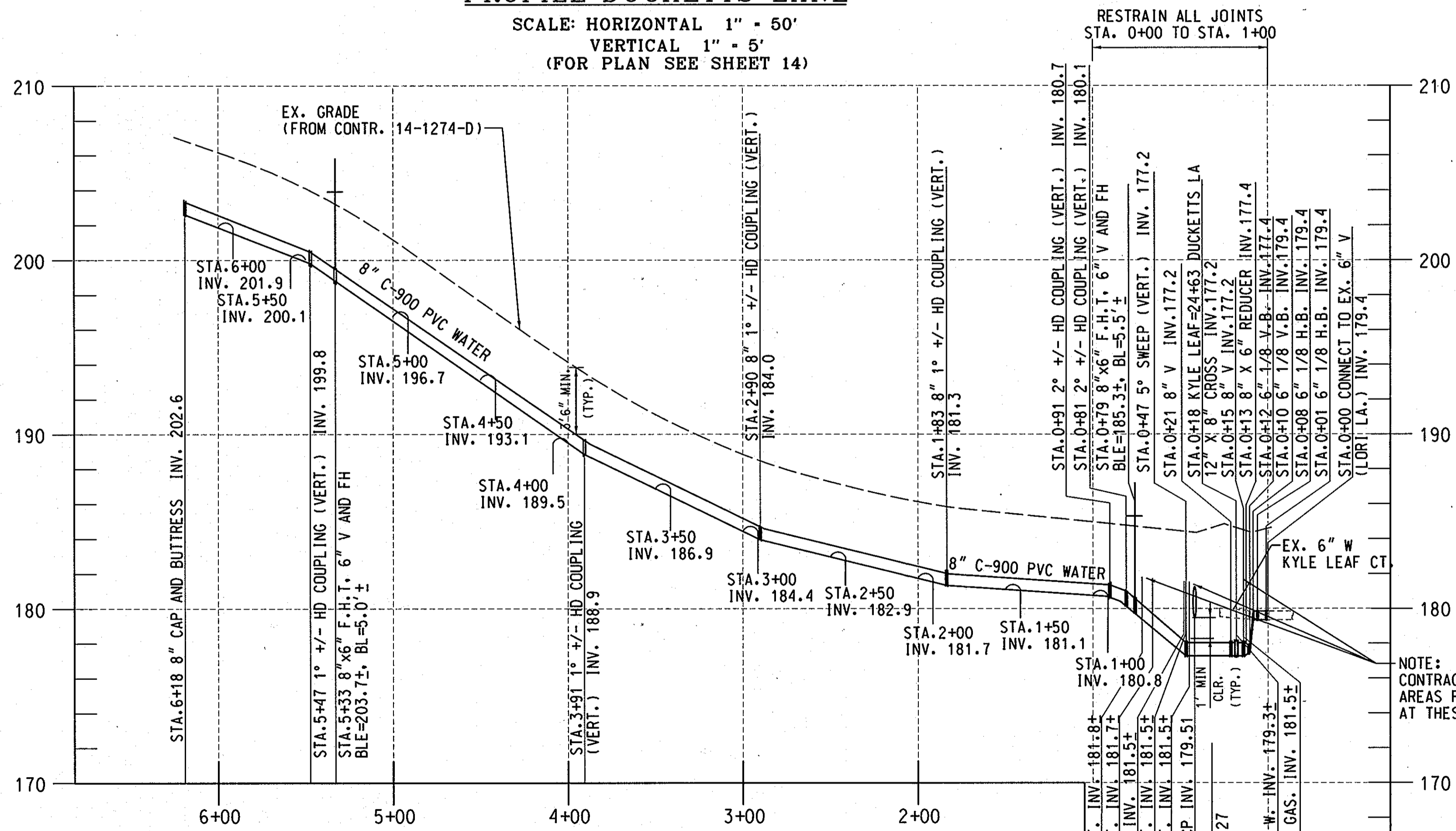
AS-BUILT  
 DATE 7/23/2013

NOTE:  
 1. THE BASE MAP AND PROFILE WAS CREATED BY KCI TECHNOLOGIES, INC. USING THE TOPOGRAPHIC INFORMATION AND PROFILE FROM THE FOLLOWING AS-BUILTS: GLEN COVE ESTATES (CONTRACT NO. 14-1274-D), DATED 5/1984.  
 2. H.D.C = HIGH DEFLECTION COUPLING



**PROFILE-DUCKETTS LANE**

SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 14)



**PROFILE-KYLE LEAF COURT**

SCALE: HORIZONTAL 1" = 50'  
 VERTICAL 1" = 5'  
 (FOR PLAN SEE SHEET 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. 31363 EXPIRATION DATE: 1/16/2012

**AS-BUILT**  
 DATE 7/23/2013

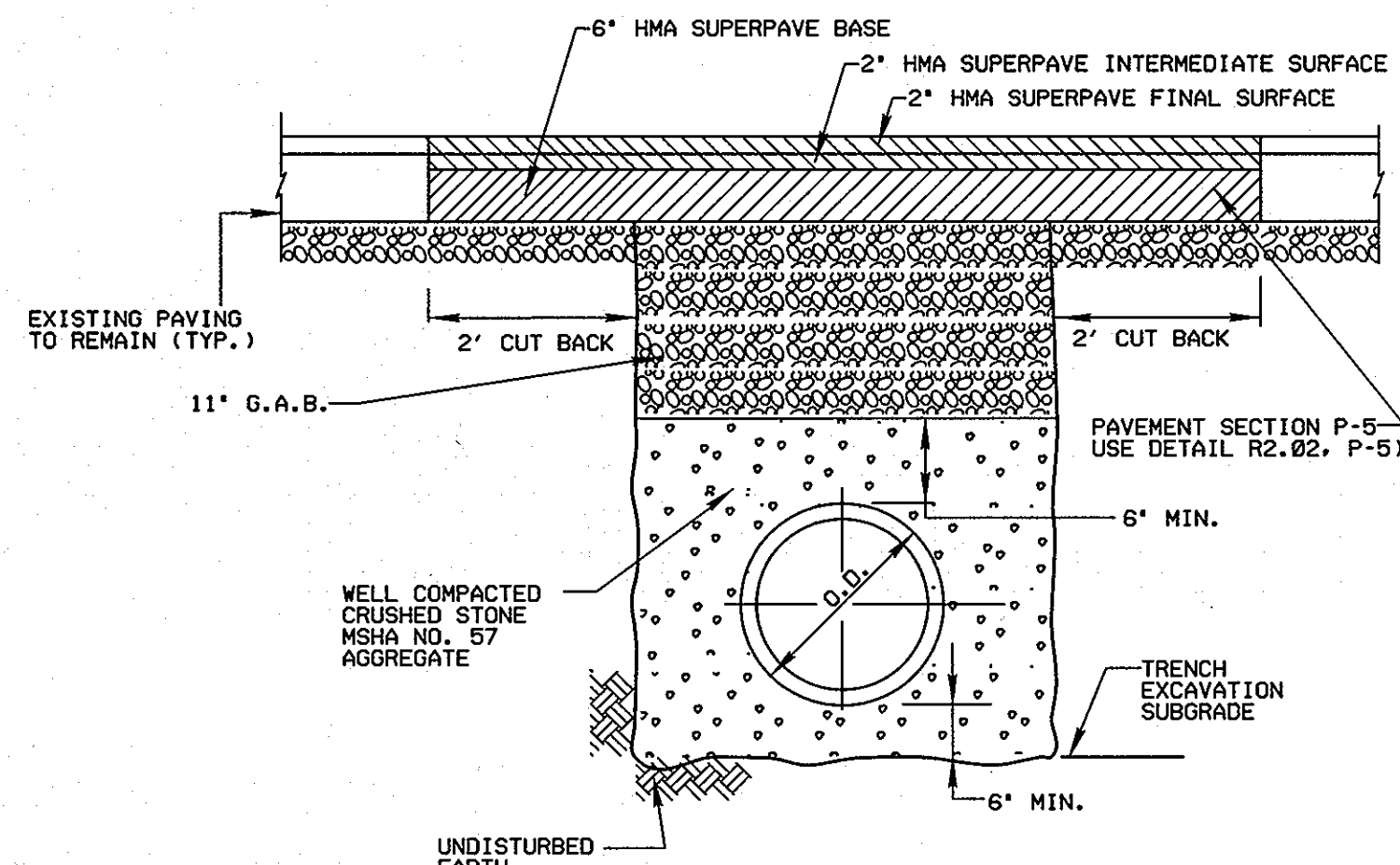
PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division PO#2, W-W-W-Solid Waste GMA, Emp. FILE: M:\2007\01071378\05\Drawings\0107137805-C-15-W.dgn

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		<p>ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS</p> <p>936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM</p>	DES: MRD DRN: KFJ CHK: GW/TWW DATE: 7/23/13	AS-BUILT REVISION	DATE: 7/23/13 600' SCALE MAP NO. 37 BLOCK NO. 12
DIRECTOR OF PUBLIC WORKS <i>John C. ...</i> 1/25/11	ACT. CHIEF, BUREAU OF ENGINEERING <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES <i>...</i> 1/25/11	ACT. CHIEF, UTILITY DESIGN DIVISION <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	15 OF 29
DATE: 1/25/11			DATE: 1/25/11	SHEET	15 OF 29

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		<p>ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS</p> <p>936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM</p>	DES: MRD DRN: KFJ CHK: GW/TWW DATE: 7/23/13	AS-BUILT REVISION	DATE: 7/23/13 600' SCALE MAP NO. 37 BLOCK NO. 12
DIRECTOR OF PUBLIC WORKS <i>John C. ...</i> 1/25/11	ACT. CHIEF, BUREAU OF ENGINEERING <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES <i>...</i> 1/25/11	ACT. CHIEF, UTILITY DESIGN DIVISION <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	15 OF 29
DATE: 1/25/11			DATE: 1/25/11	SHEET	15 OF 29

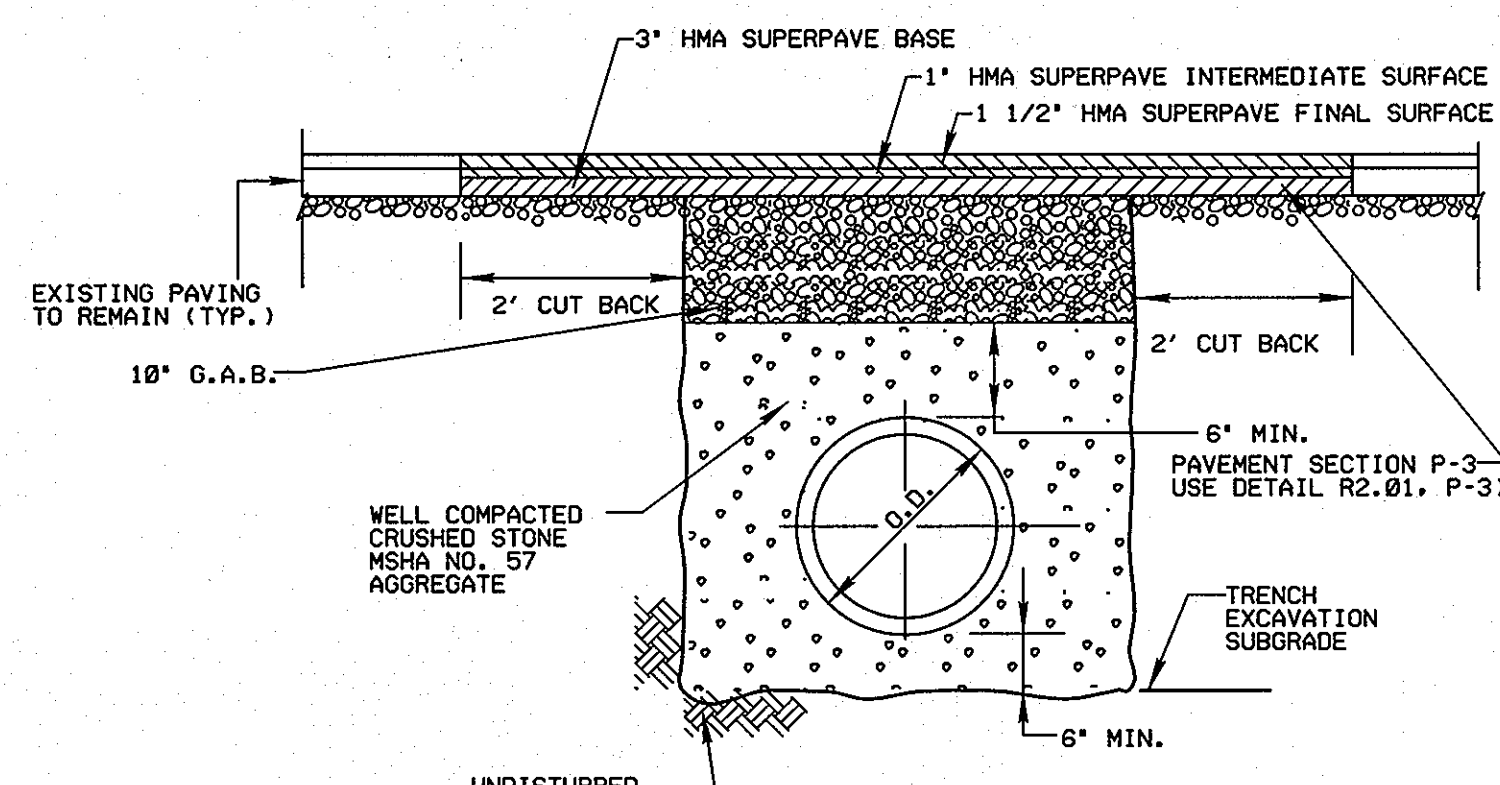
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		<p>ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS</p> <p>936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM</p>	DES: MRD DRN: KFJ CHK: GW/TWW DATE: 7/23/13	AS-BUILT REVISION	DATE: 7/23/13 600' SCALE MAP NO. 37 BLOCK NO. 12
DIRECTOR OF PUBLIC WORKS <i>John C. ...</i> 1/25/11	ACT. CHIEF, BUREAU OF ENGINEERING <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES <i>...</i> 1/25/11	ACT. CHIEF, UTILITY DESIGN DIVISION <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	15 OF 29
DATE: 1/25/11			DATE: 1/25/11	SHEET	15 OF 29

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		<p>ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS</p> <p>936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM</p>	DES: MRD DRN: KFJ CHK: GW/TWW DATE: 7/23/13	AS-BUILT REVISION	DATE: 7/23/13 600' SCALE MAP NO. 37 BLOCK NO. 12
DIRECTOR OF PUBLIC WORKS <i>John C. ...</i> 1/25/11	ACT. CHIEF, BUREAU OF ENGINEERING <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES <i>...</i> 1/25/11	ACT. CHIEF, UTILITY DESIGN DIVISION <i>...</i> 1/25/11		DATE: 7/23/13	SHEET	15 OF 29
DATE: 1/25/11			DATE: 1/25/11	SHEET	15 OF 29



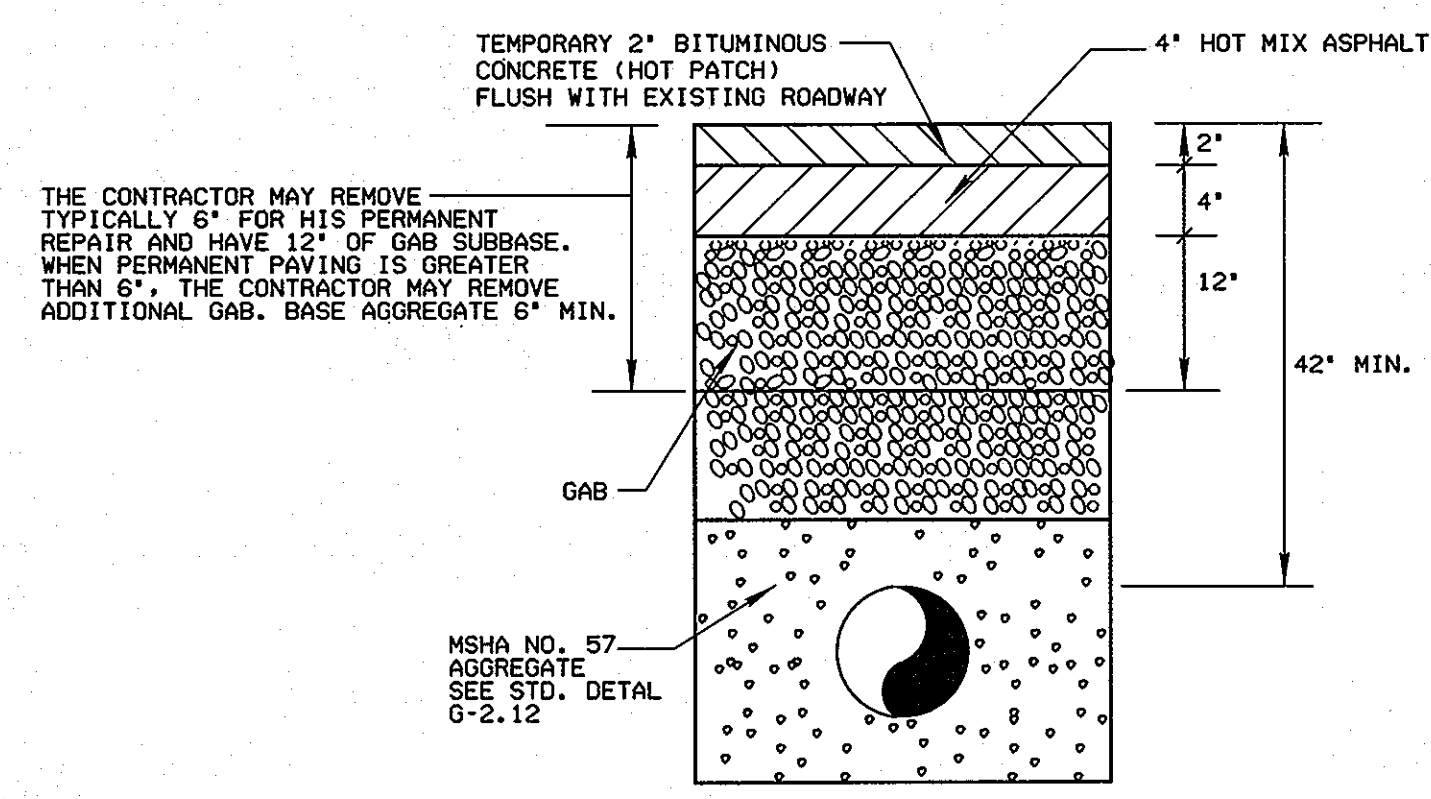
**DETAIL \*  
TRENCH FOR PVC PIPE  
& PAVEMENT - DUCKETTS LANE**

NOT TO SCALE  
\* BASED ON HOWARD COUNTY STANDARD DETAIL G-2.12 & G-4.01



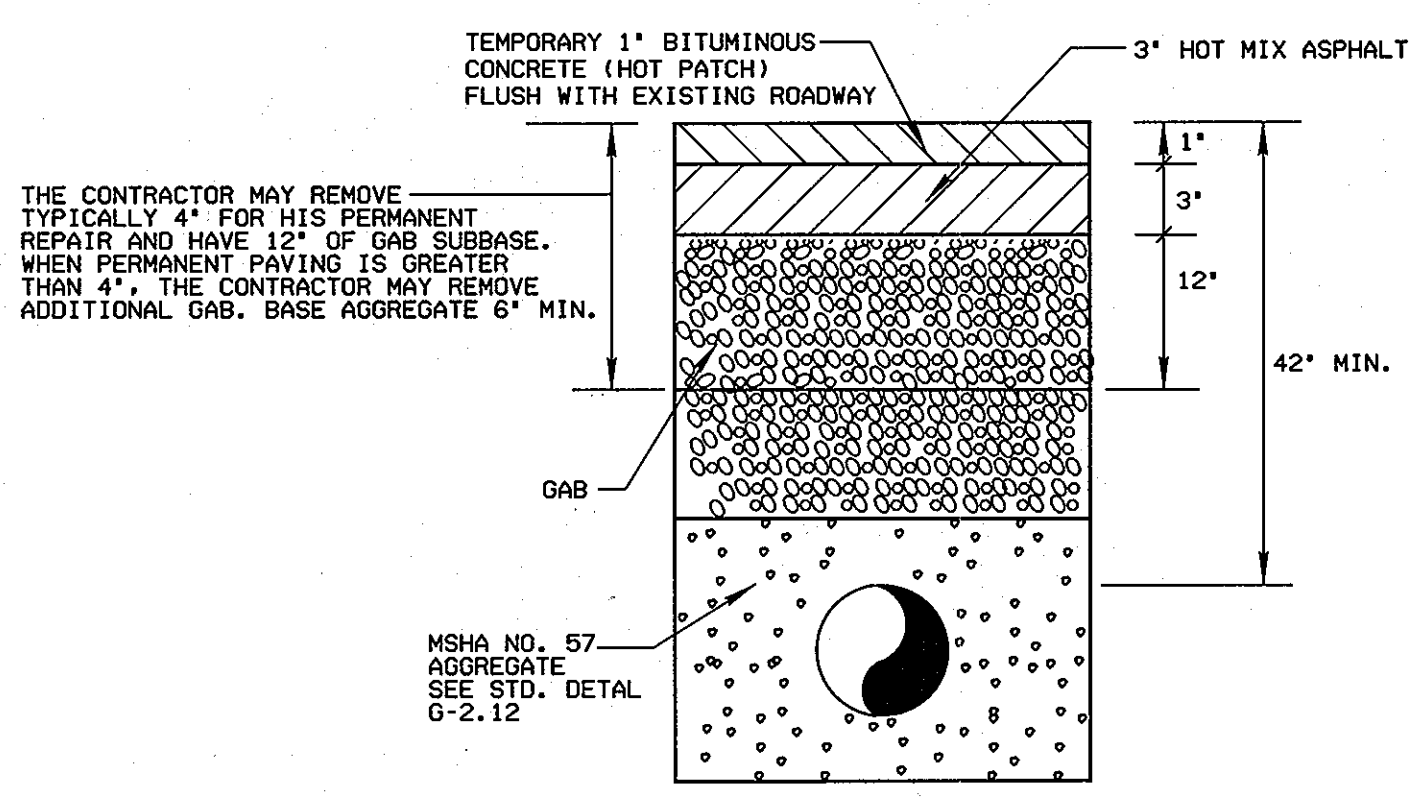
**DETAIL \*  
TRENCH FOR PVC PIPE  
& PAVEMENT - SUBDIVISION**

NOT TO SCALE  
\* BASED ON HOWARD COUNTY STANDARD DETAIL G-2.12 & G-4.01



**TEMPORARY PAVING DETAIL  
ON DUCKETTS LANE**

NOT TO SCALE

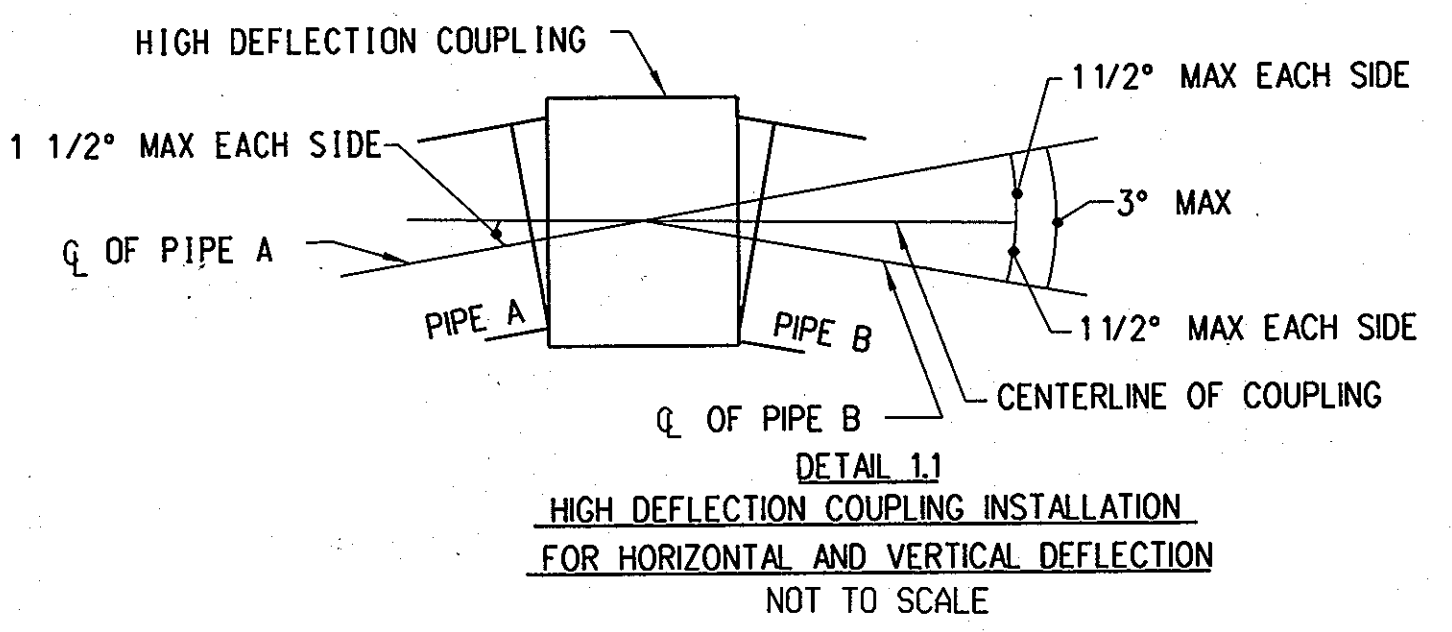
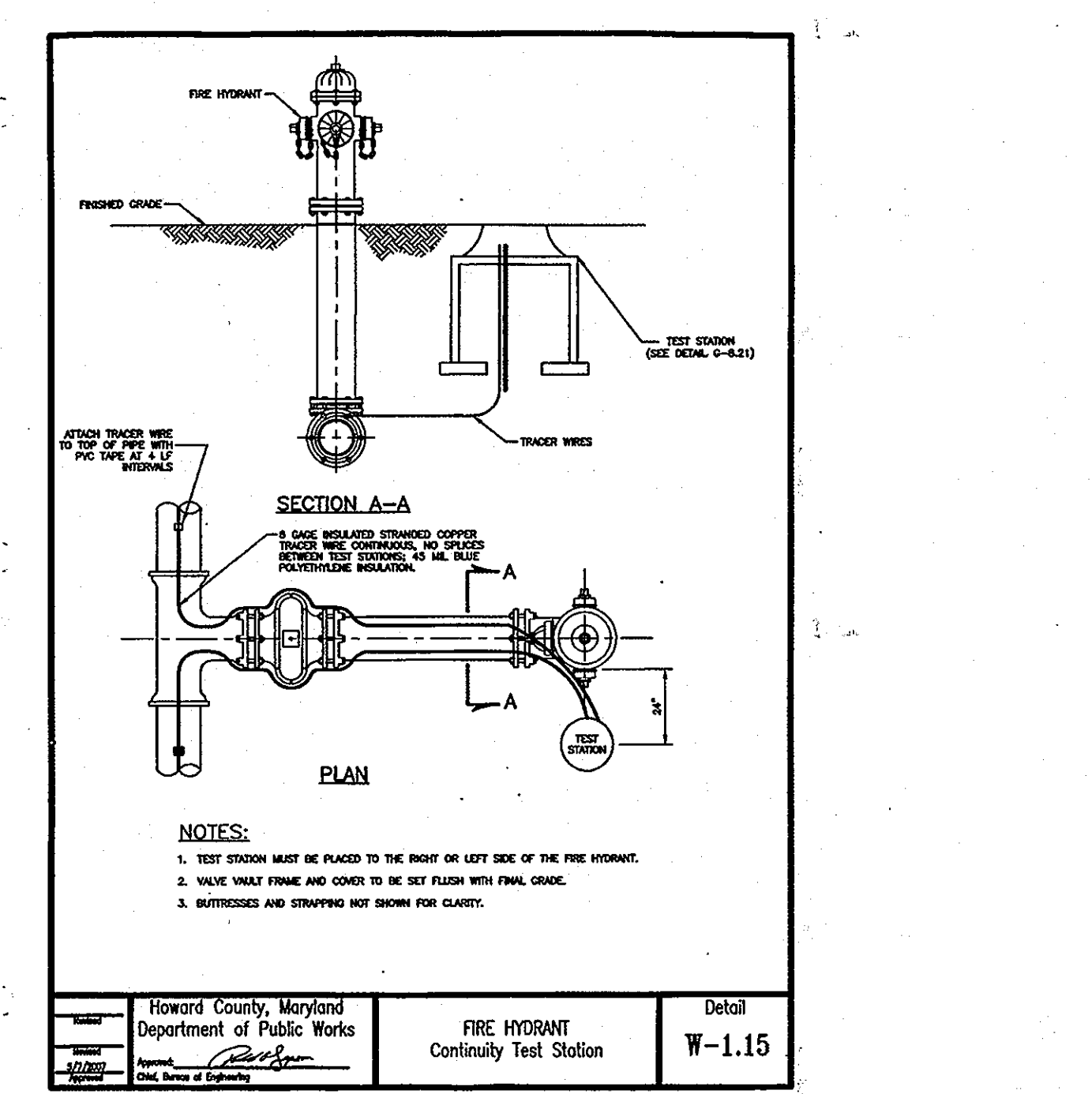
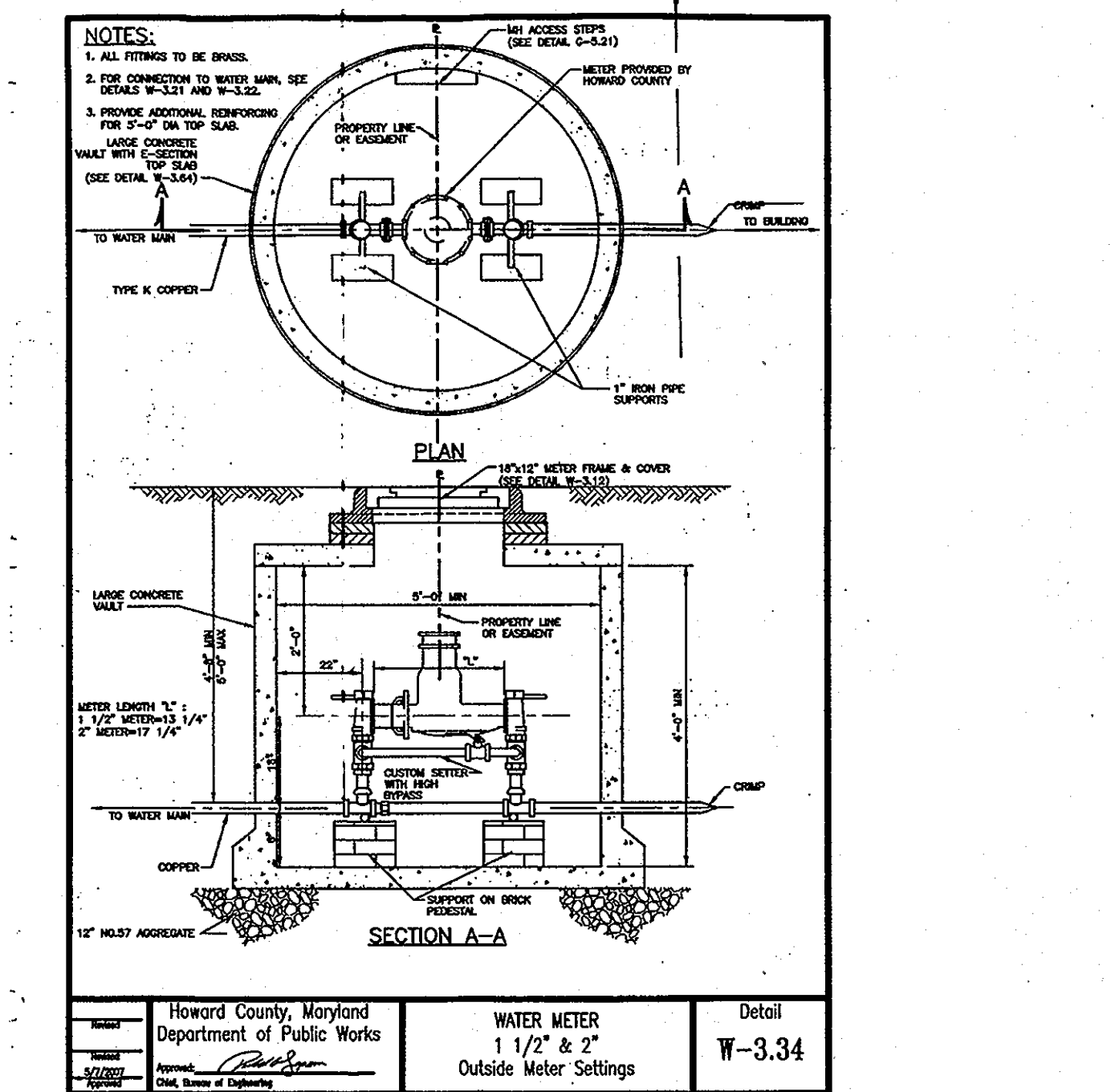
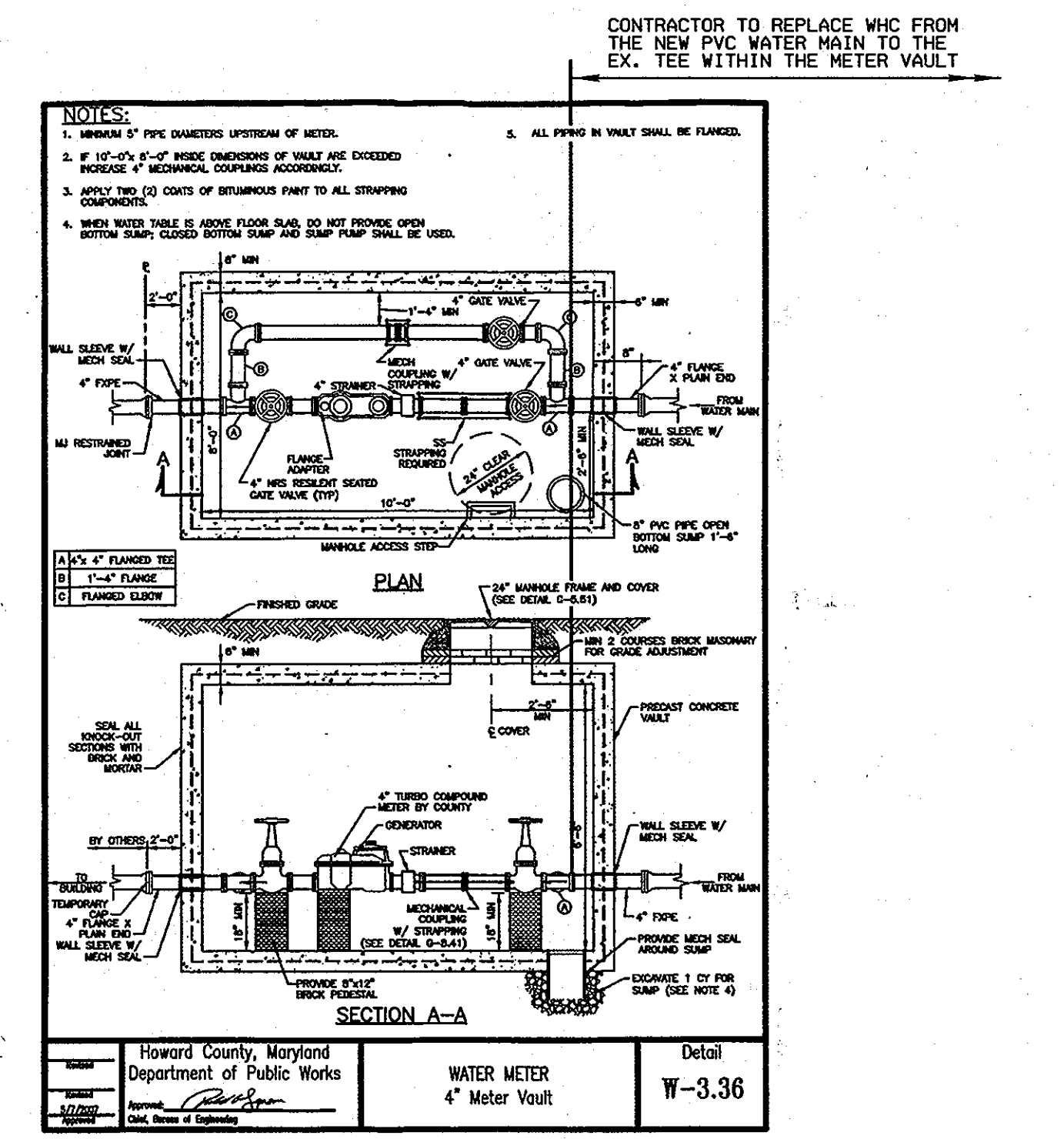
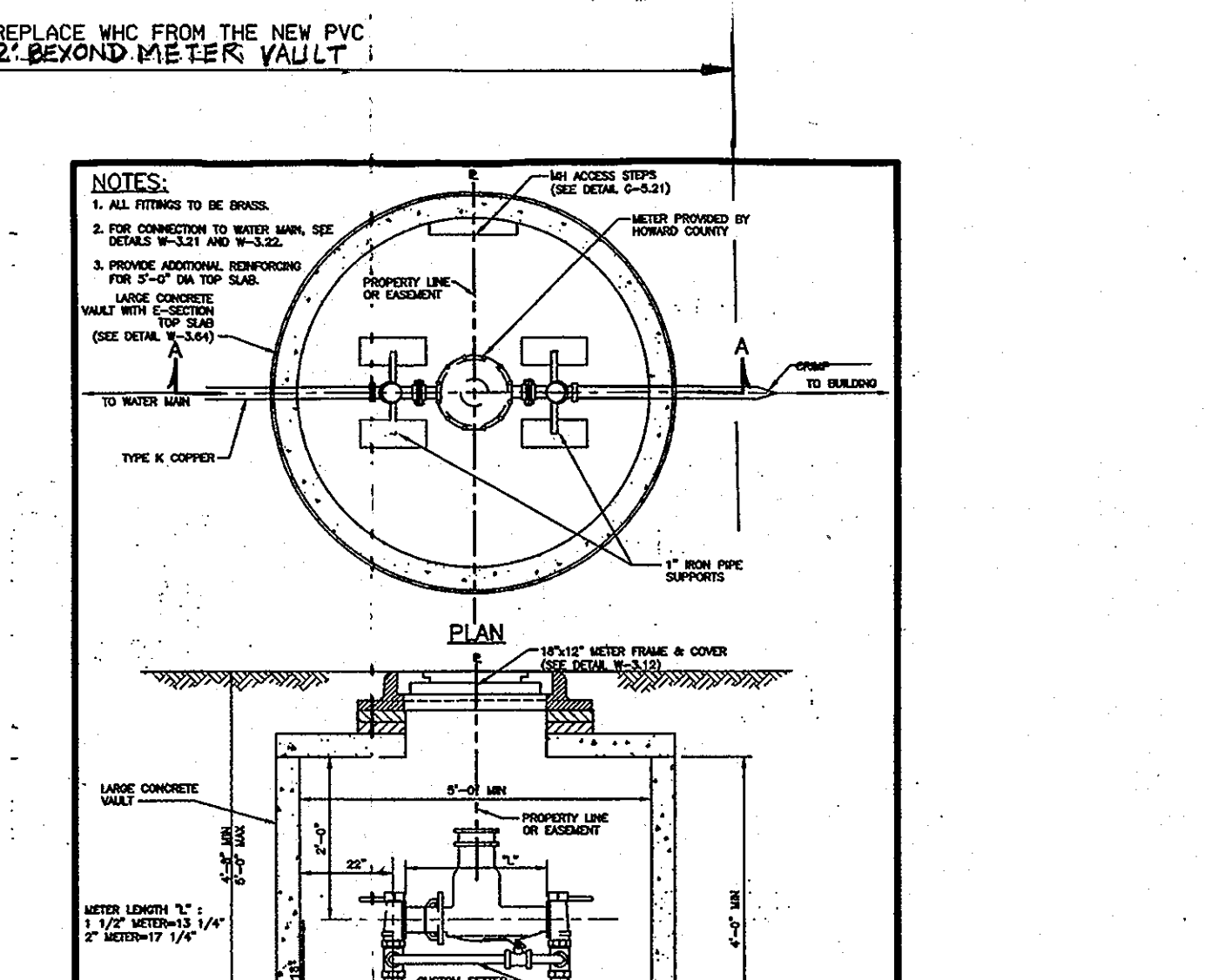
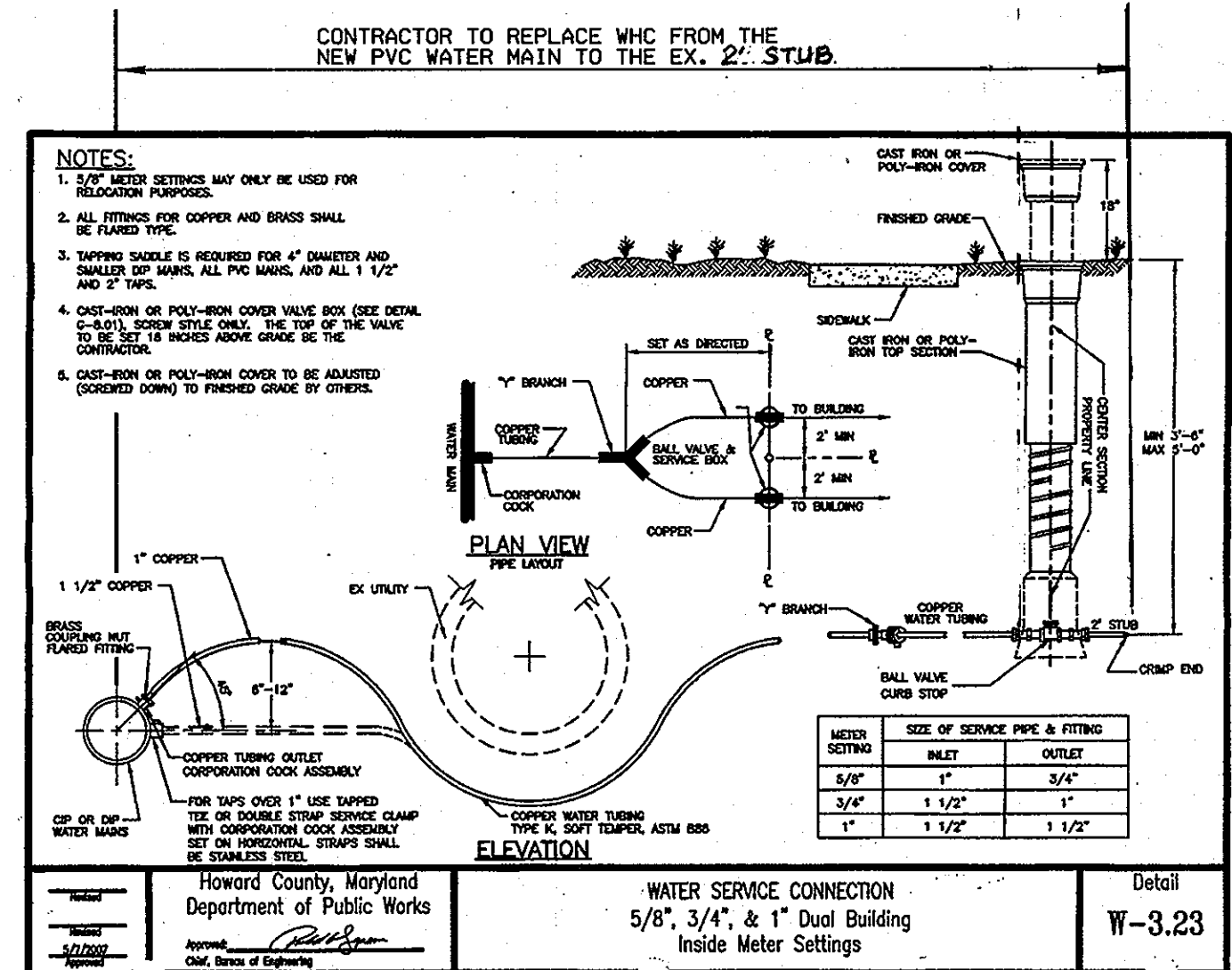
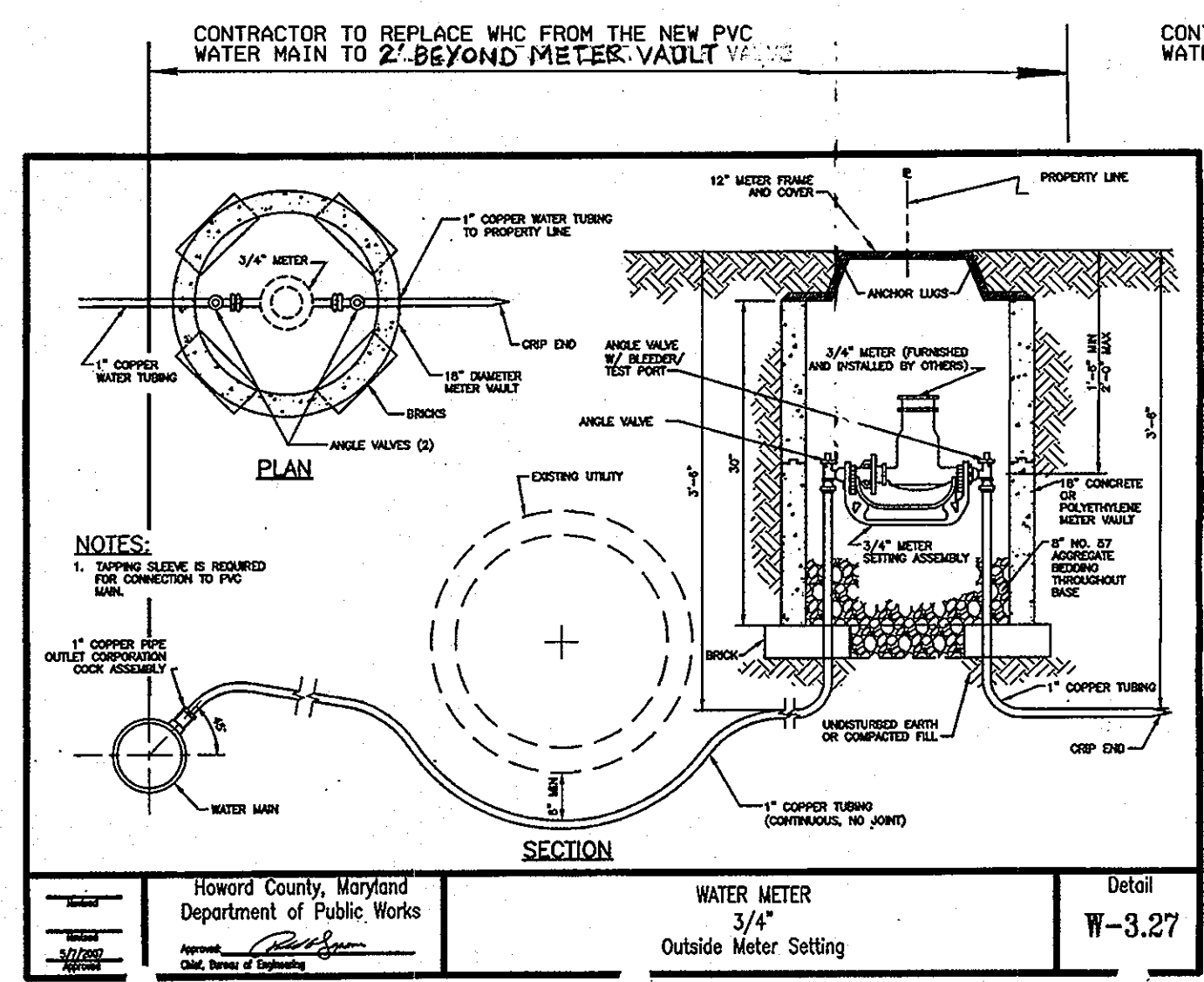
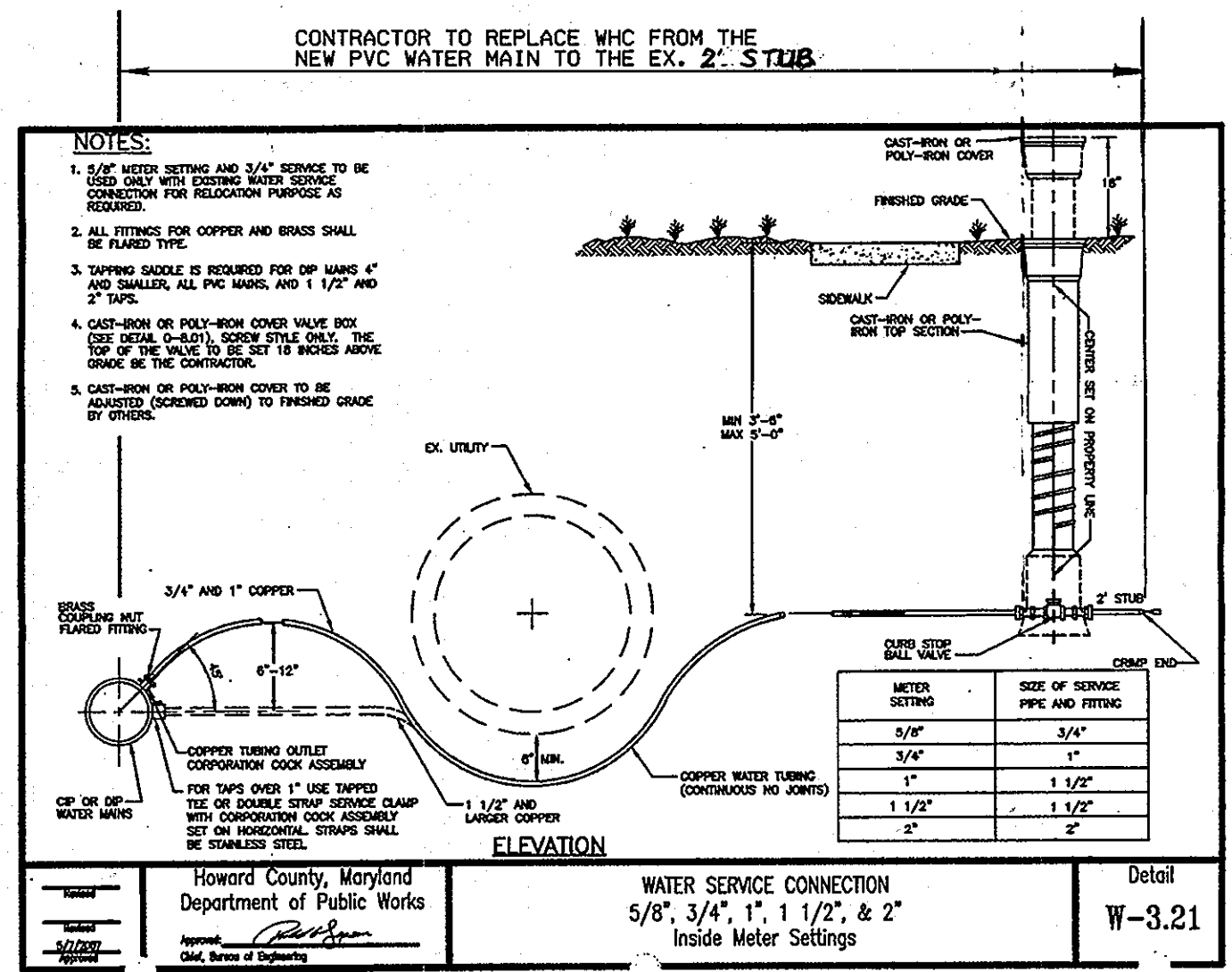


**TEMPORARY PAVING DETAIL  
SUBDIVISION**

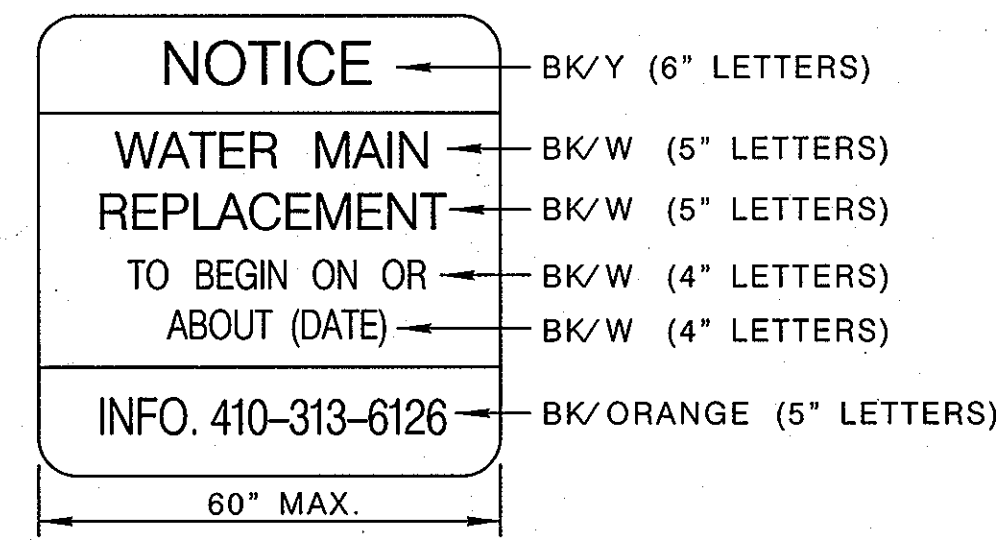
NOT TO SCALE

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. 31363 EXPIRATION DATE: 1/16/2012

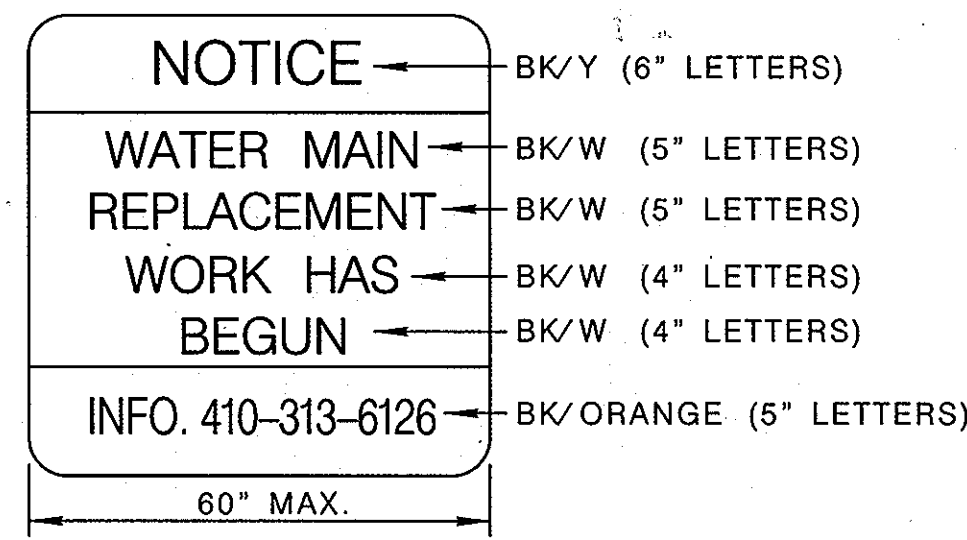
**AS-BUILT**  
DATE 7/23/2013



NOTE: THE MAXIMUM ALLOWED DEFLECTION AT THE HIGH DEFLECTION COUPLING IS 3\"/>



NOTICE SIGN-WORK TO BEGIN  
NOT TO SCALE



NOTICE SIGN-WORK HAS BEGUN  
NOT TO SCALE

NOTE: LOCATE THESE SIGNS AT EACH ENTRANCE TO THE SUBDIVISION

PLOTED: 09:50 AM on Tuesday, January 25, 2011  
BY: Kevin Jackson, Division FO42 W-WW-Solid Waste GMA  
FILE: M:\2007\01071378\05\Drawings\0107137805-C-18-DETAILS.dgn

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Kevin Jackson* 1/25/11  
DIRECTOR OF PUBLIC WORKS DATE

*John P. ...* 1/25/11  
ACT. CHIEF, BUREAU OF ENGINEERING DATE

*John P. ...* 1/25/11  
ACT. CHIEF, UTILITY DESIGN DIVISION DATE

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SPARKS, MARYLAND 21152  
TELEPHONE: (410) 316-7800  
FAX: (410) 316-7818  
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STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
No. 31363  
1/25/11

DES:	MRD				
DRN:	KFJ				
CHK:	GW/TWW				
DATE:	7/23/13				
JAN. 2011	BY NO.	AS-BUILT	REVISION	DATE	7/23/13

600'	SCALE MAP NO.	37	BLOCK NO.	18
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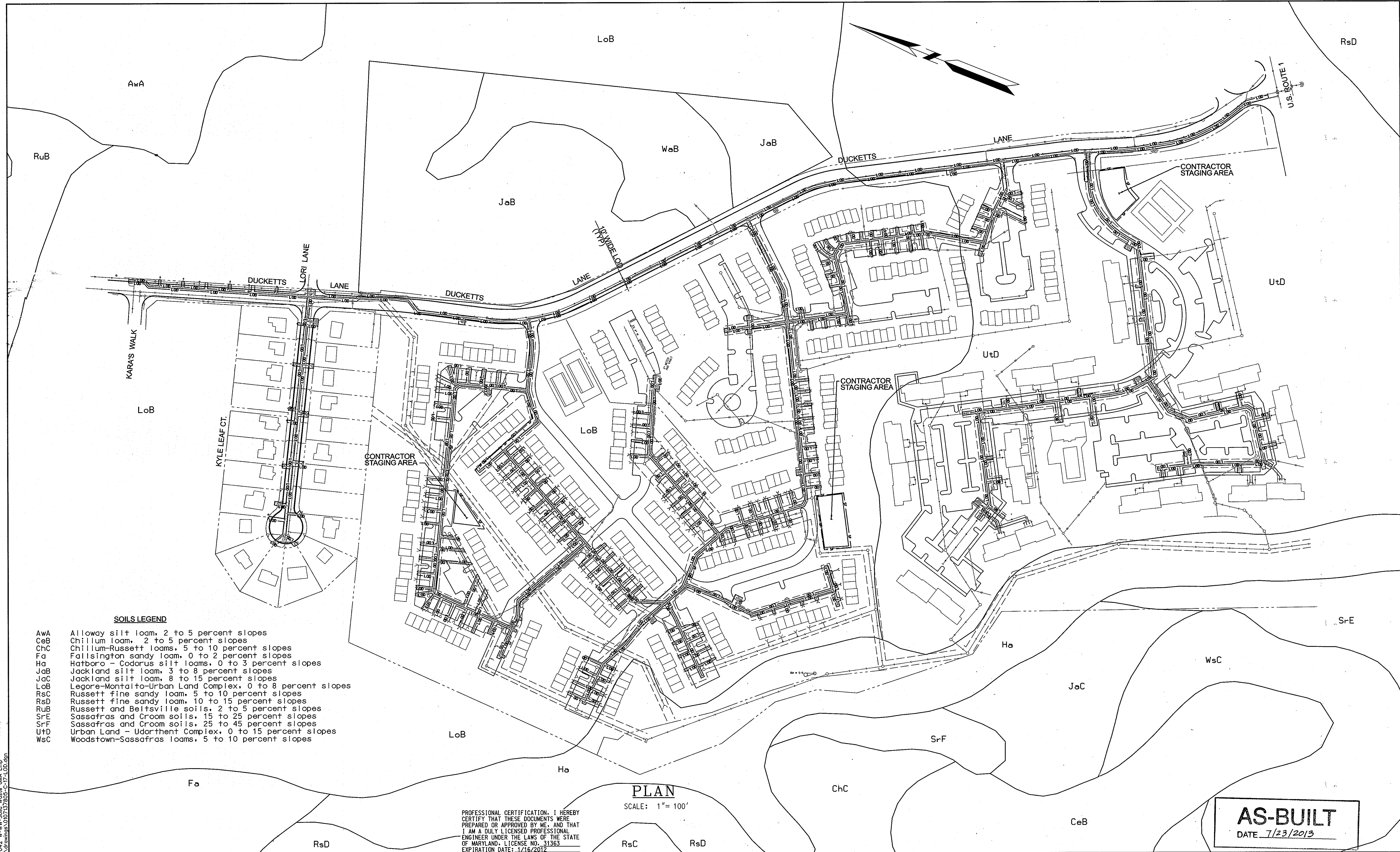
**DUCKETTS LANE  
WATER MAIN REPLACEMENT**

CAPITAL PROJECT NO. W-8286  
CONTRACT NO. 44-4877

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 16 OF 29





**SOILS LEGEND**

- AWA Alloway silt loam, 2 to 5 percent slopes
- CeB Chillum loam, 2 to 5 percent slopes
- ChC Chillum-Russett loams, 5 to 10 percent slopes
- Fa Fallington sandy loam, 0 to 2 percent slopes
- Ha Hatboro - Codorus silt loams, 0 to 3 percent slopes
- JaB Jackland silt loam, 3 to 8 percent slopes
- JaC Jackland silt loam, 8 to 15 percent slopes
- LoB Legore-Montalto-Urban Land Complex, 0 to 8 percent slopes
- LoC Russett fine sandy loam, 5 to 10 percent slopes
- LoD Russett fine sandy loam, 10 to 15 percent slopes
- LoE Russett and Beltsville soils, 2 to 5 percent slopes
- LoF Sassafras and Croom soils, 15 to 25 percent slopes
- LoG Sassafras and Croom soils, 25 to 45 percent slopes
- LoH Urban Land - Udorthent Complex, 0 to 15 percent slopes
- LoI Woodstown-Sassafras loams, 5 to 10 percent slopes

**PLAN**

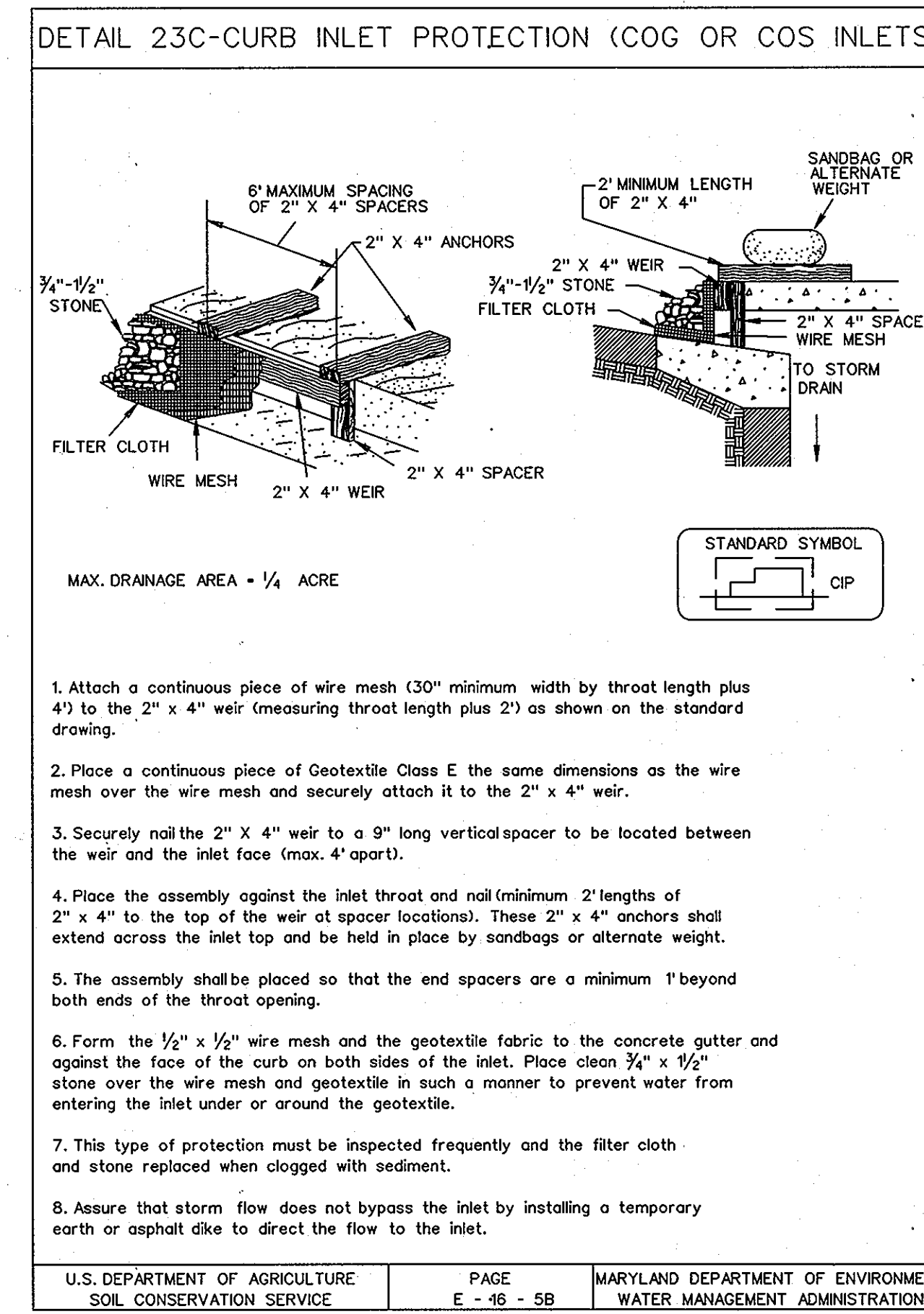
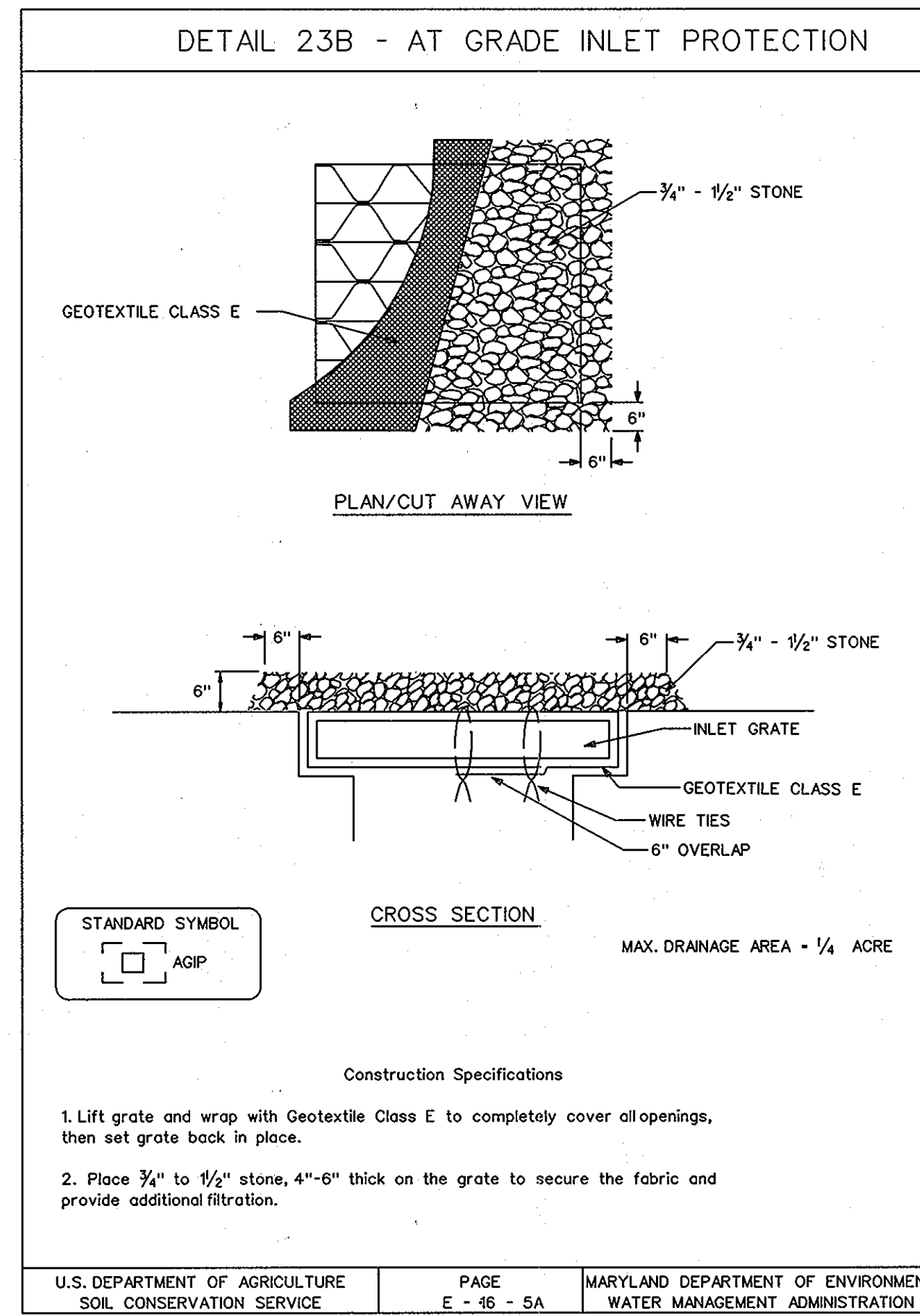
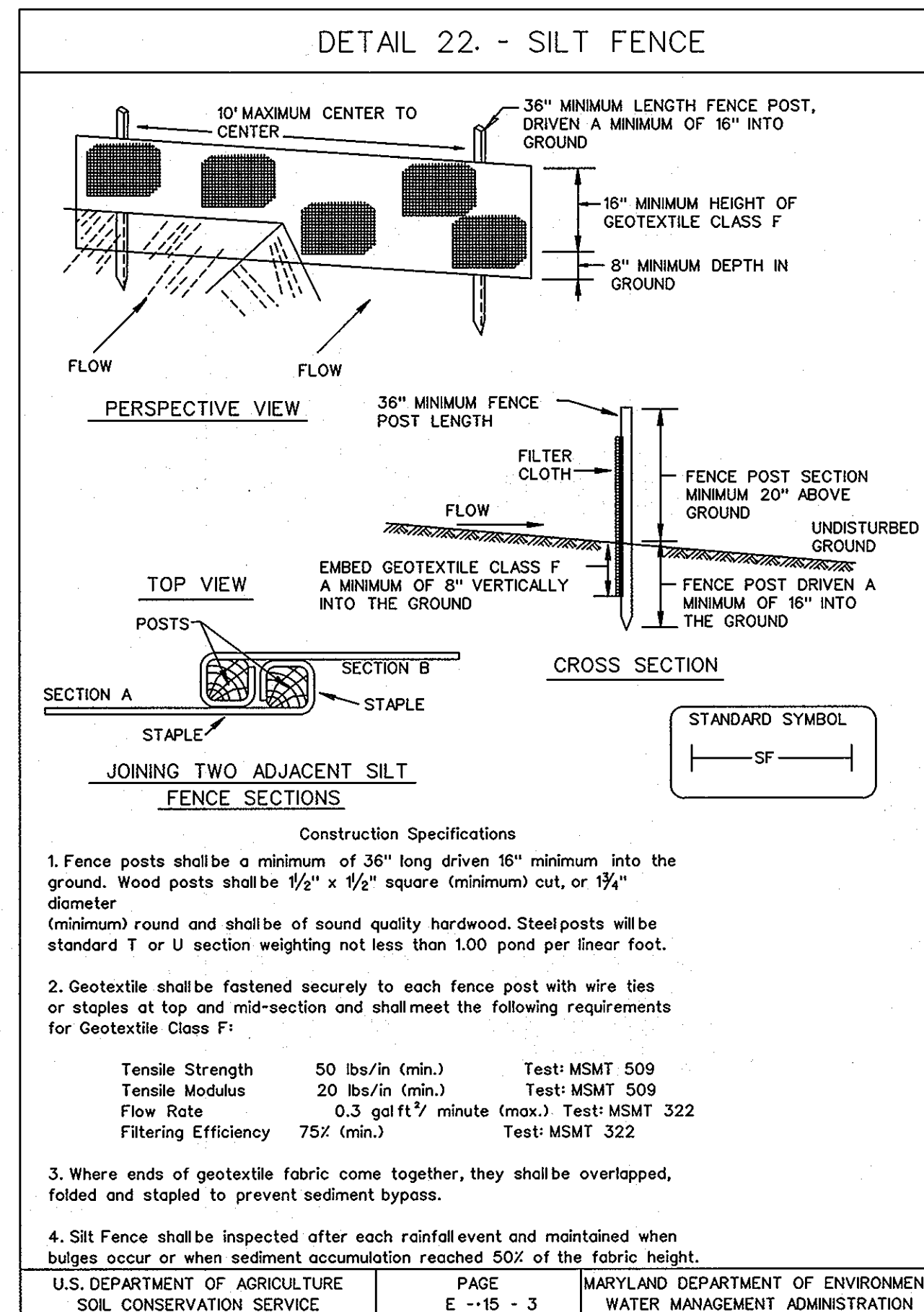
SCALE: 1" = 100'

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. 31363 EXPIRATION DATE: 1/15/2012

**AS-BUILT**  
DATE 7/23/2013

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division P042 W-WW-Solid Waste O&A Emp.  
 FILE: M:\2007\00071378\_05.dwg

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS CHIEF - BUREAU OF UTILITIES	<b>KCI</b> TECHNOLOGIES 936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM	KEVIN JACKSON LICENSE NO. 31363 EXPIRES 1/15/2012	DES: MRD DRN: KFJ CHK: GW/TWW DATE: JAN. 2011 BY: NO.	AS - BUILT REVISION DATE: 7/23/13	<b>LIMITS OF DISTURBANCE</b> 600' SCALE MAP NO. 37 BLOCK NO. 12 & 18	<b>DUCKETTS LANE          WATER MAIN REPLACEMENT</b> CAPITAL PROJECT No. W-8286 CONTRACT No. 44-4677 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 17 OF 23
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### STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
  - 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (SEC. 020.0) FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING AND MULCHING. TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	2.7 ACRES
AREA DISTURBED	0.63 ACRES
AREA TO BE ROOFED OR PAVED	0.62 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.01 ACRES
TOTAL CUT	N/A CU. YDS.
TOTAL FILL	N/A CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF THE DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE ON DOWNHILL SIDE OF TRENCH.

#### PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

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

**SOIL AMENDMENTS:** IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED** - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14LBS/1000 SQ FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT.).
- ACCEPTABLE** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

**SEEDING** - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

**MULCHING** - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

**MAINTENANCE** - INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

#### TEMPORARY SEEDING NOTES

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

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

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

**SEEDING:** - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

**MULCHING:** - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

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

#### TRAFFIC MAINTENANCE

FOR TRAFFIC MAINTENANCE REQUIREMENTS SEE SPECIFICATION DOCUMENT D, PARAGRAPH 15 AND SHEET 23 "M.O.T-TRAFFIC CONTROL"

#### SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- LAYOUT TEMPORARY WATER PIPE.
- LAYOUT ALIGNMENT AT SITE. (1 DAY)
- THE CONTRACTOR SHALL INSTALL SEDIMENT CONTROL DEVICES AT THE DIRECTION OF SEDIMENT CONTROL INSPECTOR.
- EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE, INSTALL WATER MAIN AND STABILIZE OR BACKFILL TRENCH AND RESURFACE WITH BITUMINOUS PAVING AS APPROPRIATE (30 DAYS) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO 25' OF PIPE LENGTH OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CLEAN UP CONSTRUCTION SITE. (1 DAY)
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR. (1 DAY)

**AS-BUILT**  
DATE 7/23/2013

PLOTED: 09:50 AM on Tuesday, January 25, 2011  
By: Kevin Jackson, Division FOI2 W-WW-Solid Waste GMA Emp.  
FILE: M:\2007\010178 US Drawings\01017805-C-18-ESC.dgn

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>John G. ...</i> DIRECTOR OF PUBLIC WORKS DATE 1/25/11	<i>Acq. Chief ...</i> ACQ. CHIEF, BUREAU OF ENGINEERING DATE 1/25/11
<i>Shirley ...</i> CHIEF, BUREAU OF UTILITIES DATE 1/25/11	<i>Acq. Chief ...</i> ACQ. CHIEF, UTILITY DESIGN DIVISION DATE 1/25/11

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SPARKS, MARYLAND 21152  
TELEPHONE: (410) 316-7800  
FAX: (410) 316-7818  
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*[Signature]*  
PROFESSIONAL ENGINEER  
DATE 1/25/11

DES: MRD	
DRN: KFJ	
CHK: GW/TWW	
DATE: 1/25/11	7/23/13
JAN. 2011	BY NO.
AS-BUILT	

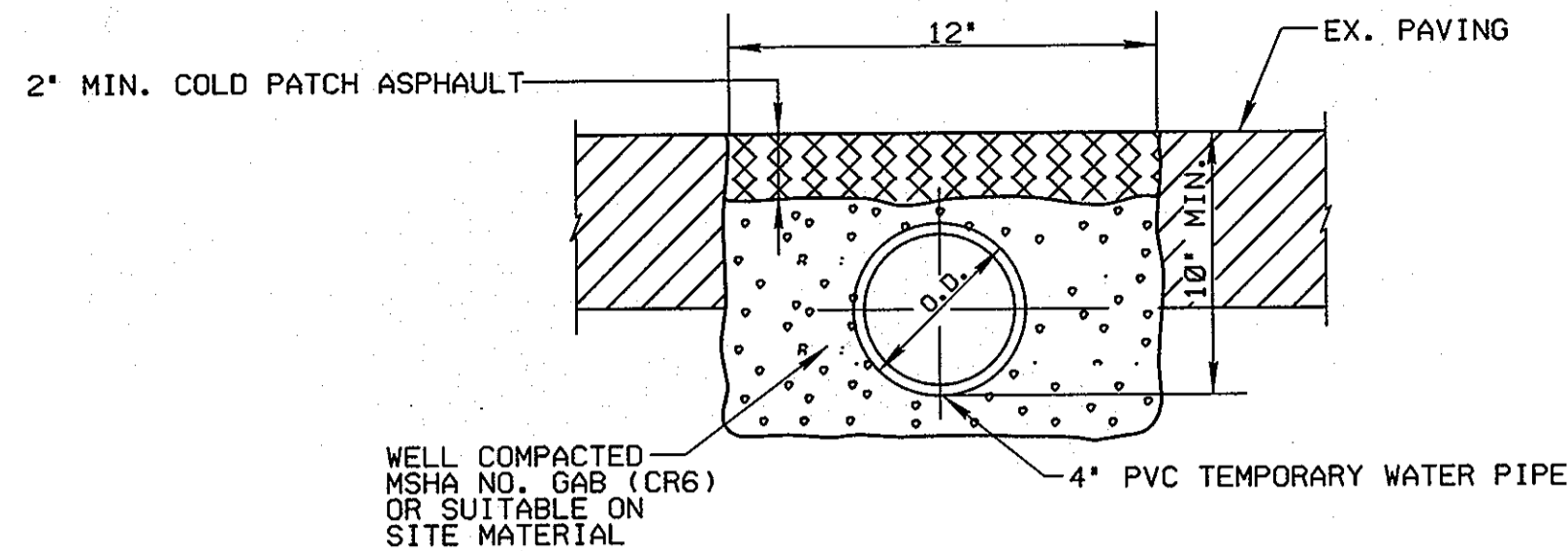
**EROSION AND SEDIMENT CONTROL NOTES AND DETAILS**

600' SCALE MAP NO. 37 BLOCK NO. 12 & 18

**DUCKETTS LANE WATER MAIN REPLACEMENT**  
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

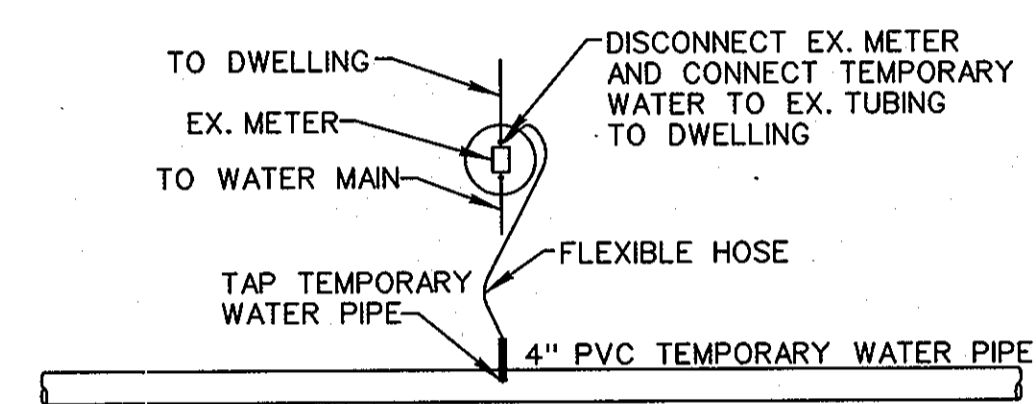
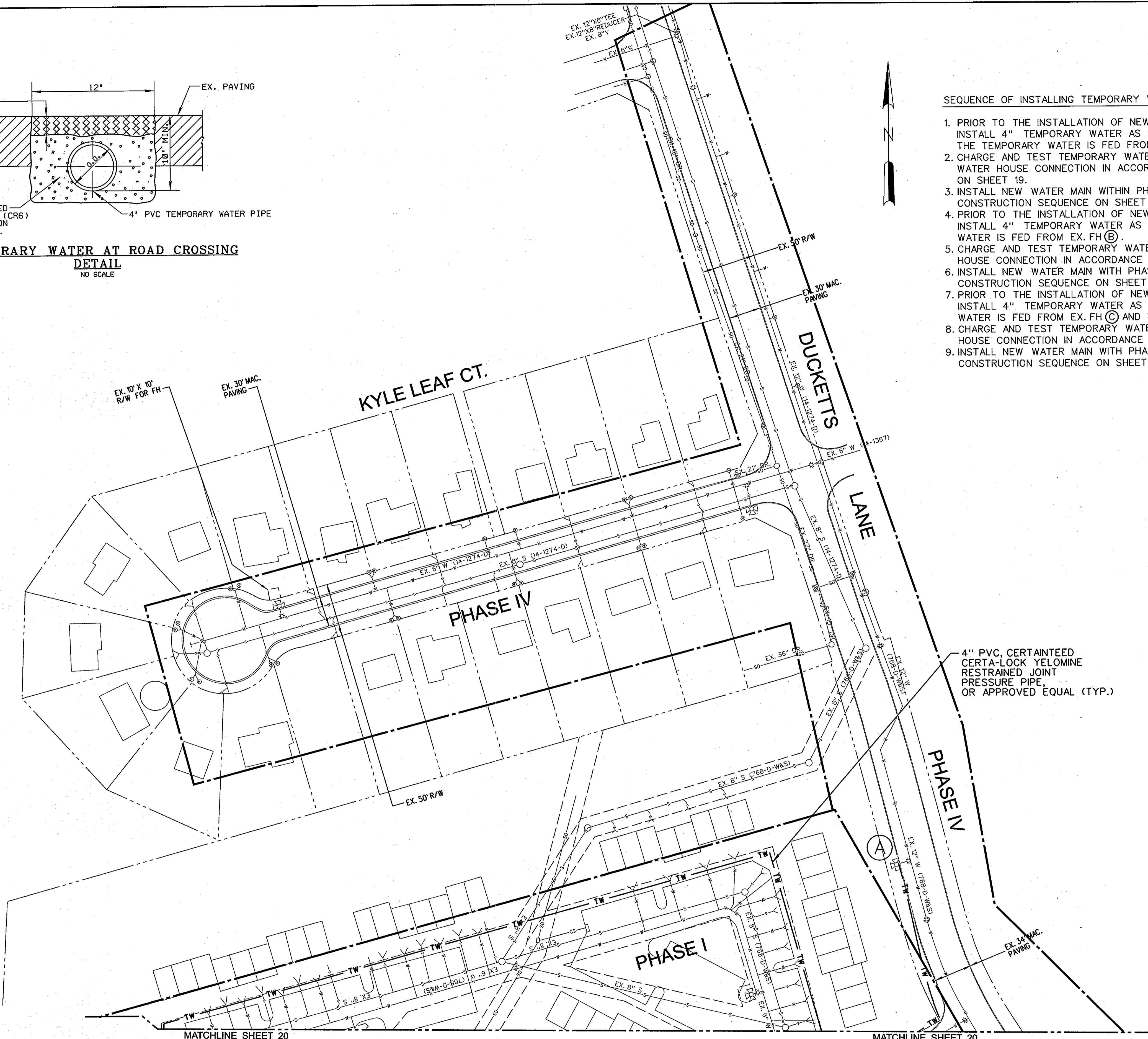
SCALE AS SHOWN SHEET 18 OF 29



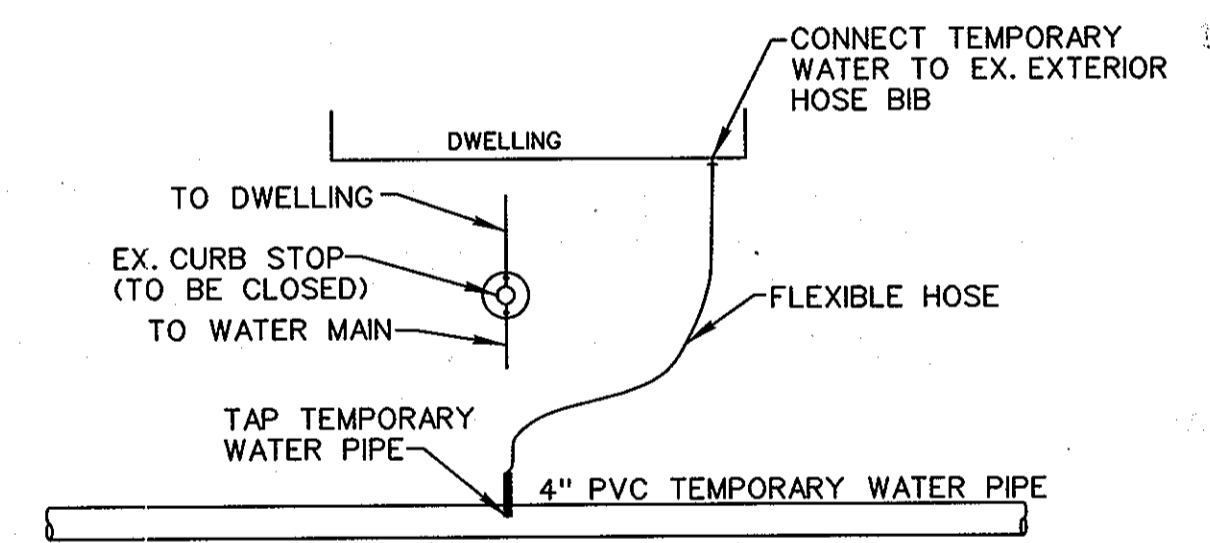
**TEMPORARY WATER AT ROAD CROSSING**  
DETAIL  
NO SCALE

**SEQUENCE OF INSTALLING TEMPORARY WATER:**

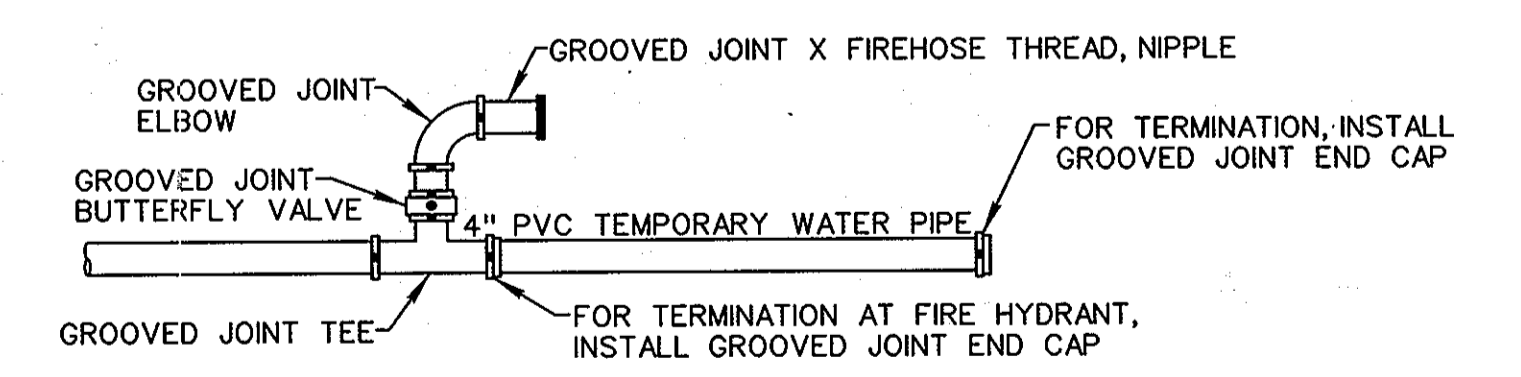
1. PRIOR TO THE INSTALLATION OF NEW WATER MAIN WITHIN PHASE I LIMIT, INSTALL 4" TEMPORARY WATER AS SHOWN ON SHEETS 19 AND 20. THE TEMPORARY WATER IS FED FROM EX. FH (A).
2. CHARGE AND TEST TEMPORARY WATER PIPING. CONNECT TEMPORARY WATER HOUSE CONNECTION IN ACCORDANCE WITH THE DETAILS PROVIDED ON SHEET 19.
3. INSTALL NEW WATER MAIN WITHIN PHASE I IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE ON SHEET 2.
4. PRIOR TO THE INSTALLATION OF NEW WATER MAIN WITH PHASE II LIMIT, INSTALL 4" TEMPORARY WATER AS SHOWN ON SHEET 20. THE TEMPORARY WATER IS FED FROM EX. FH (B).
5. CHARGE AND TEST TEMPORARY WATER PIPING. CONNECT TEMPORARY WATER HOUSE CONNECTION IN ACCORDANCE WITH THE DETAILS PROVIDED ON SHEET 19.
6. INSTALL NEW WATER MAIN WITH PHASE III IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE ON SHEET 2.
7. PRIOR TO THE INSTALLATION OF NEW WATER MAIN WITHIN PHASE III LIMIT, INSTALL 4" TEMPORARY WATER AS SHOWN ON SHEETS 21 AND 22. THE TEMPORARY WATER IS FED FROM EX. FH (C) AND EX. FH (D).
8. CHARGE AND TEST TEMPORARY WATER PIPING. CONNECT TEMPORARY WATER HOUSE CONNECTION IN ACCORDANCE WITH THE DETAILS PROVIDED ON SHEET 19.
9. INSTALL NEW WATER MAIN WITH PHASE III IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE ON SHEET 2.



**TEMPORARY WATER HOUSE CONNECTION**  
OUTSIDE METER DETAIL  
NO SCALE



**TEMPORARY WATER HOUSE CONNECTION**  
INSIDE METER DETAIL  
NO SCALE



**TEMPORARY WATER**  
FIRE HYDRANT DETAIL  
NO SCALE

PHASING LIMITS

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PLAN  
SCALE: 1" = 50'

**AS-BUILT**  
DATE 7/23/2013

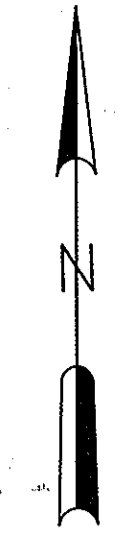
PLOTTED: 10:50 AM on Tuesday, January 25, 2011  
BY: Kevin Jackson Division P042 W-WW-Solid Waste OMA Emp  
FILE: M:\2007\007378\_05\Drawings\00737805-C-19-TW.dwg

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		 <b>KCI</b> TECHNOLOGIES 936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7900 FAX: (410) 316-7918 www.kci.com	
Director of Public Works <i>[Signature]</i> DATE 1/25/11	Chief, Bureau of Engineering <i>[Signature]</i> DATE 1/25/11	Chief, Utility Design Division <i>[Signature]</i> DATE 1/25/11	PSD

DES: MRD	DRN: KFJ	CHK: GW/TWW	DATE: JAN. 2011	BY: [Signature]	NO.:	REVISION:	DATE: 7/23/13	600' SCALE MAP NO. 37	BLOCK NO. 12 & 18
<b>AS-BUILT</b>									

<b>TEMPORARY WATER</b>	
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND	

<b>DUCKETTS LANE</b> <b>WATER MAIN REPLACEMENT</b> CAPITAL PROJECT No. W-8286 CONTRACT No. 44-4677		SCALE AS SHOWN
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND		SHEET 19 OF 23



4" PVC, CERTAITEED  
CERTA-LOCK YELOMINE  
RESTRAINED JOINT  
PRESSURE PIPE  
OR APPROVED EQUAL (TYP.)  
SEE DETAILS, SHEET 19

PHASE II

PHASE I

PHASE IV

PHASE III

PLAN  
SCALE: 1" = 50'

**AS-BUILT**  
DATE: 7/23/2013

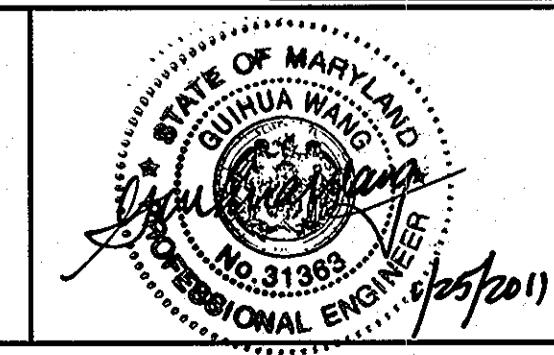
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OF MARYLAND. LICENSE NO. 31363  
EXPIRATION DATE: 1/16/2012

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division PO#2 W-WW-Solid Waste GMA Emp.  
 FILE: M:\2007\0101378\05\Drawings\010137805-C-20-TW.dwg

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
Director of Public Works <i>Kevin Jackson</i> DATE: 1/25/11	Chief, Bureau of Engineering <i>Robert Linn</i> DATE: 1/25/11
Chief, Bureau of Utilities <i>Sharon C. Lane</i> DATE: 1/25/11	Chief, Utility Design Division <i>PSD</i> DATE: 1/25/11

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
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 936 RIDGEBROOK ROAD  
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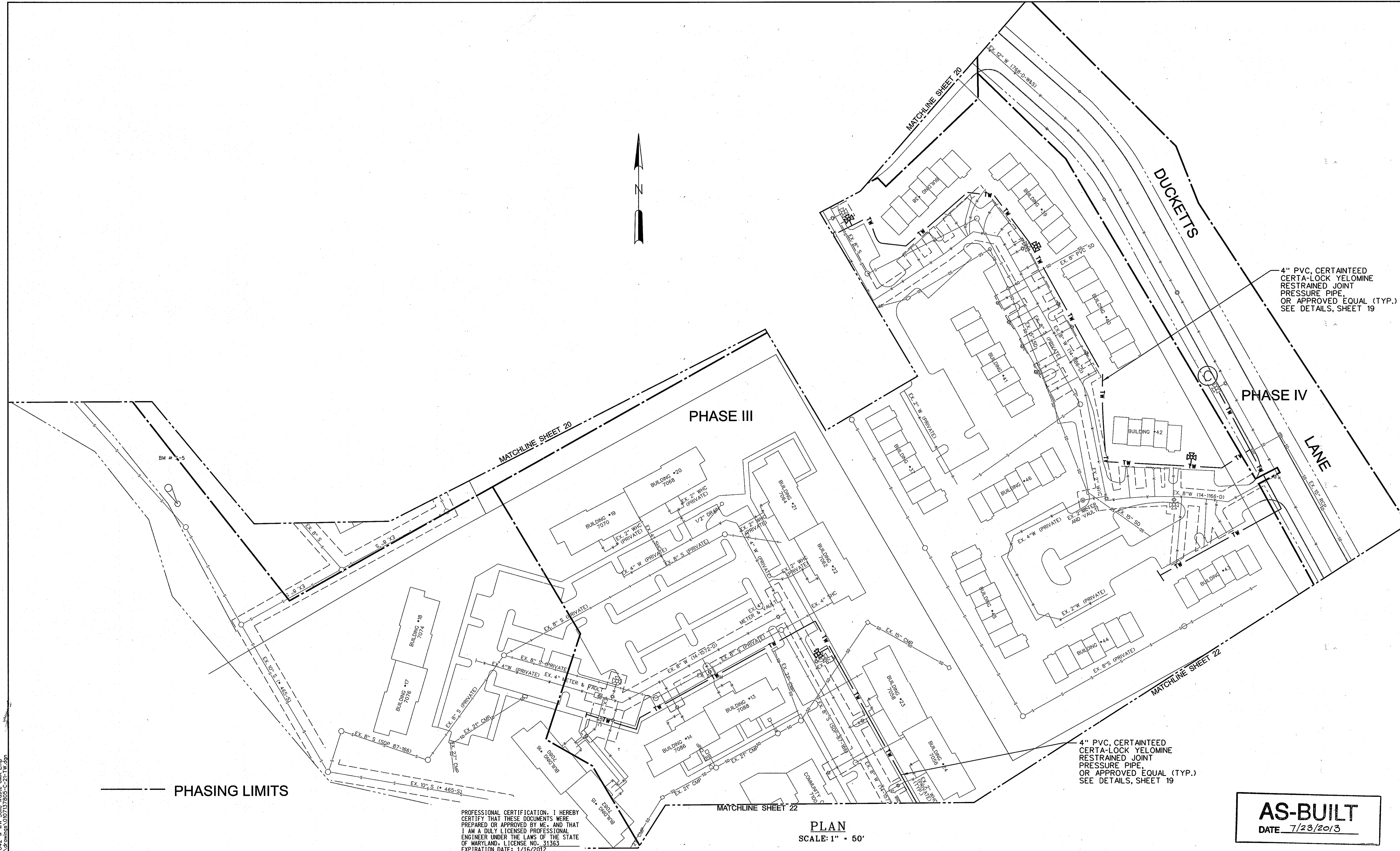


DES:	MRD				
DRN:	KFJ				
CHK:	GW/TWW				
DATE:	JAN. 2011	BY:	GS	NO.	AS-BUILT
REVISION:		DATE:	7/23/13		

**TEMPORARY WATER**  
 600' SCALE MAP NO. 37 BLOCK NO. 18

DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE  
 AS SHOWN  
 SHEET  
 20 OF 29




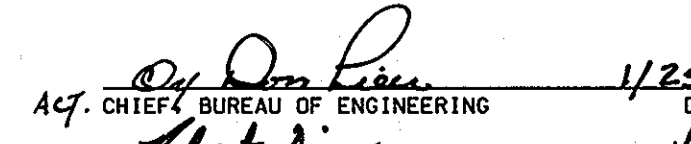
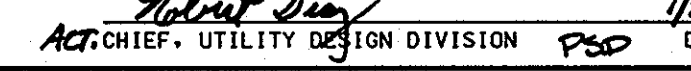
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31363 EXPIRATION DATE: 1/16/2012

PLAN  
SCALE: 1" = 50'

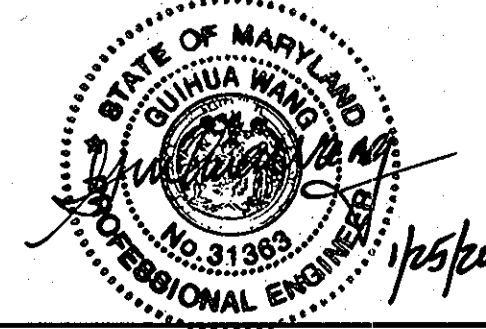
**AS-BUILT**  
DATE 7/23/2013

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division: P042 - W-Water/Solid Waste OMA, Emp. #1007  
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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

 1/25/11  
 DIRECTOR OF PUBLIC WORKS DATE  
 1/25/11  
 CHIEF, BUREAU OF ENGINEERING DATE  
 1/25/11  
 CHIEF, UTILITY DESIGN DIVISION DATE


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PLANNERS  
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www.kci.com


 KEVIN JACKSON  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 31363  
 EXPIRES 1/16/2012

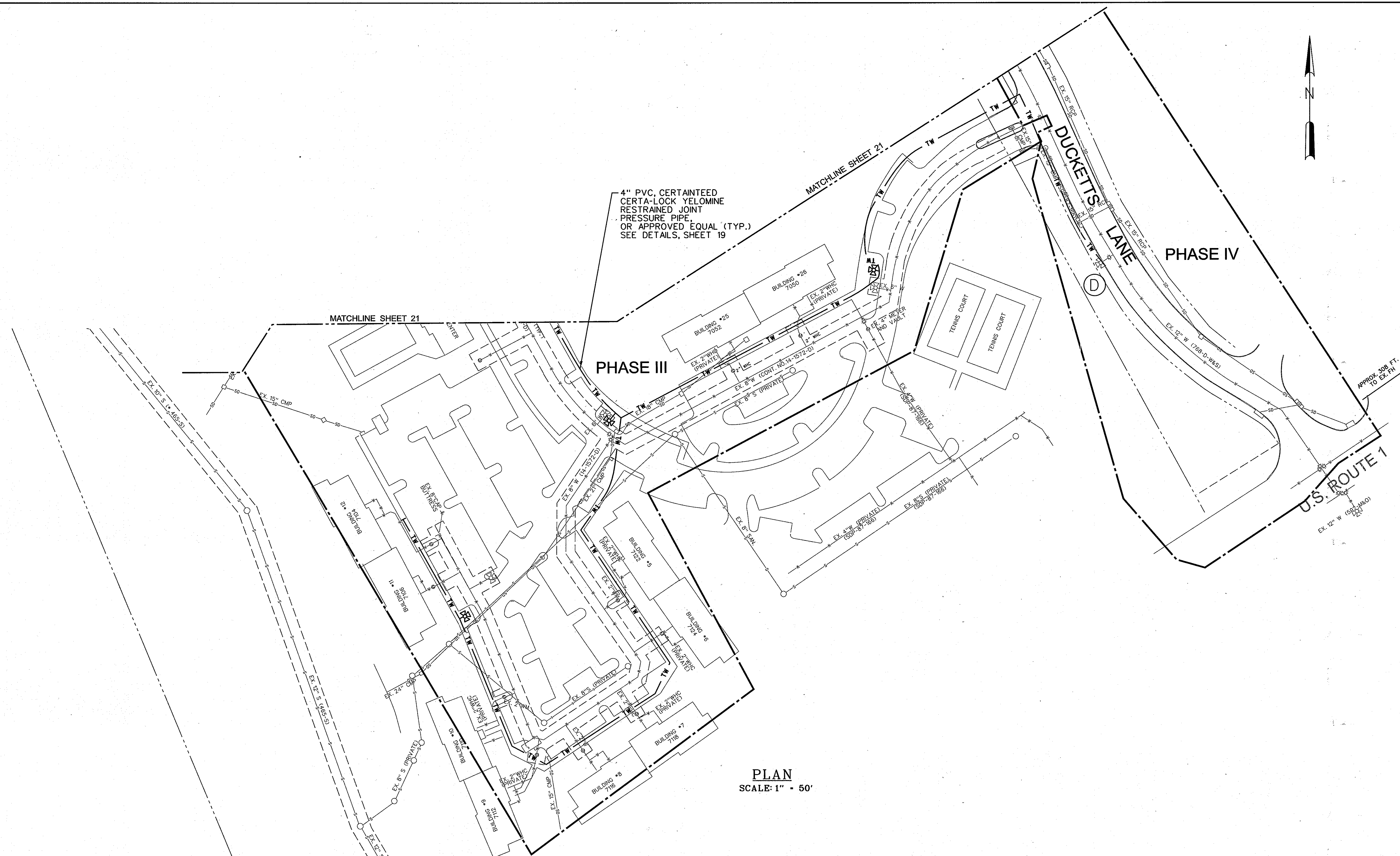
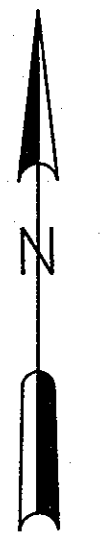
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DRN: KFJ					
CHK: GW/TWW					
DATE: 1/23/11	BY: AS	NO.:	REVISION:	DATE: 7/23/13	
AS-BUILT					

TEMPORARY WATER

600' SCALE MAP NO. 37 BLOCK NO. 18

DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 21 OF 29



4" PVC, CERTAITEED  
CERTA-LOCK YELOMINE  
RESTRAINED JOINT  
PRESSURE PIPE,  
OR APPROVED EQUAL (TYP.)  
SEE DETAILS, SHEET 19

MATCHLINE SHEET 21

MATCHLINE SHEET 21

PHASE III

PHASE IV

PLAN  
SCALE: 1" = 50'

--- PHASING LIMITS

PROFESSIONAL CERTIFICATION. I HEREBY  
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OF MARYLAND, LICENSE NO. 31363  
EXPIRATION DATE: 1/18/2012

**AS-BUILT**  
DATE 7/23/2013

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
BY: Kevin Jackson, Division: P042, W-WW-Solid Waste GMA Emp.  
FILE: M:\2007\01071378\03\Drawings\0107137805-C-22-TW.dwg

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Janet K...* 1/25/11  
DIRECTOR OF PUBLIC WORKS DATE

*Robert D...* 1/25/11  
ACT. CHIEF, BUREAU OF ENGINEERING DATE

*...* 1/25/11  
CHIEF, BUREAU OF UTILITIES DATE

*...* 1/25/11  
ACT. CHIEF, UTILITY DESIGN DIVISION DATE

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STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
No. 31363  
EXPIRES 1/18/2012

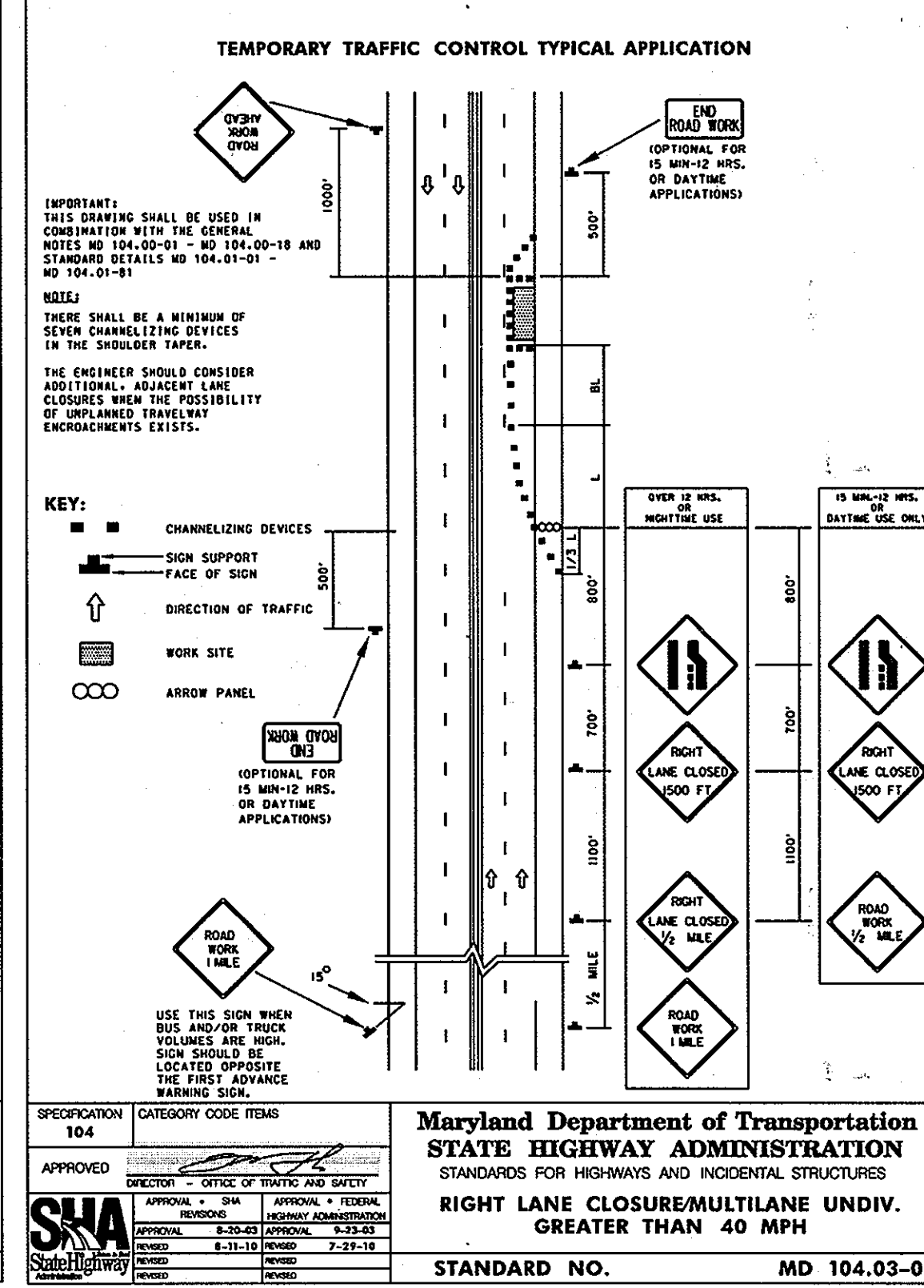
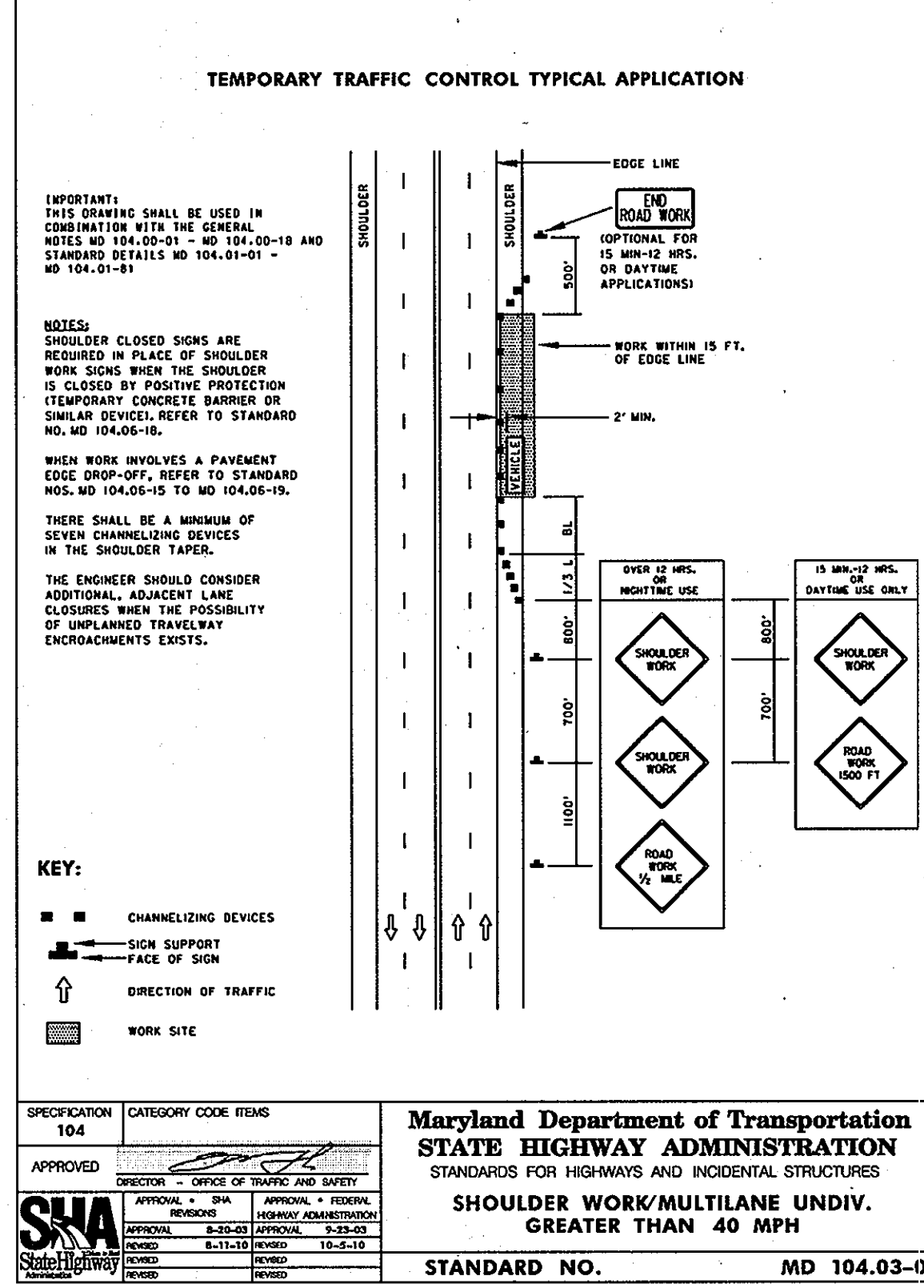
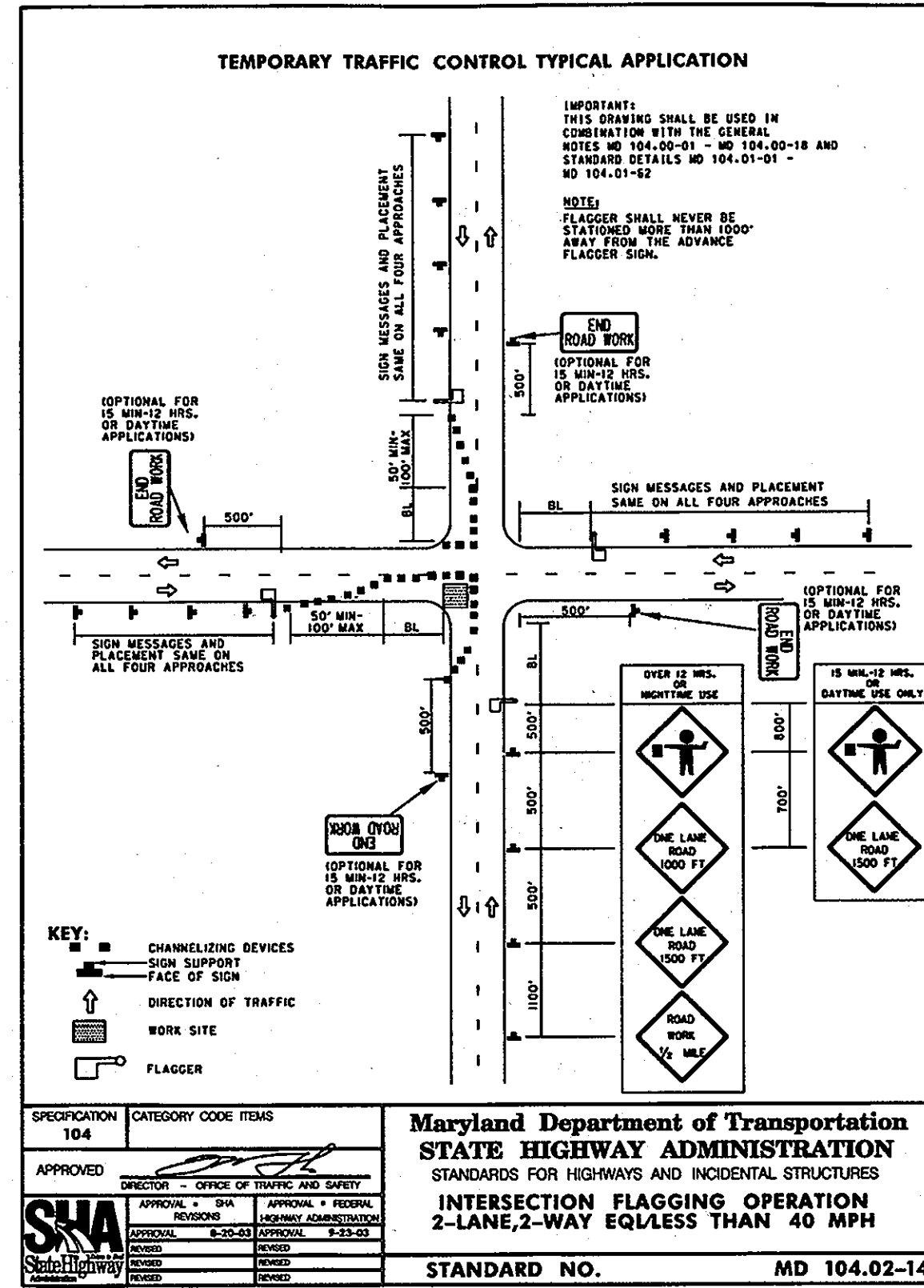
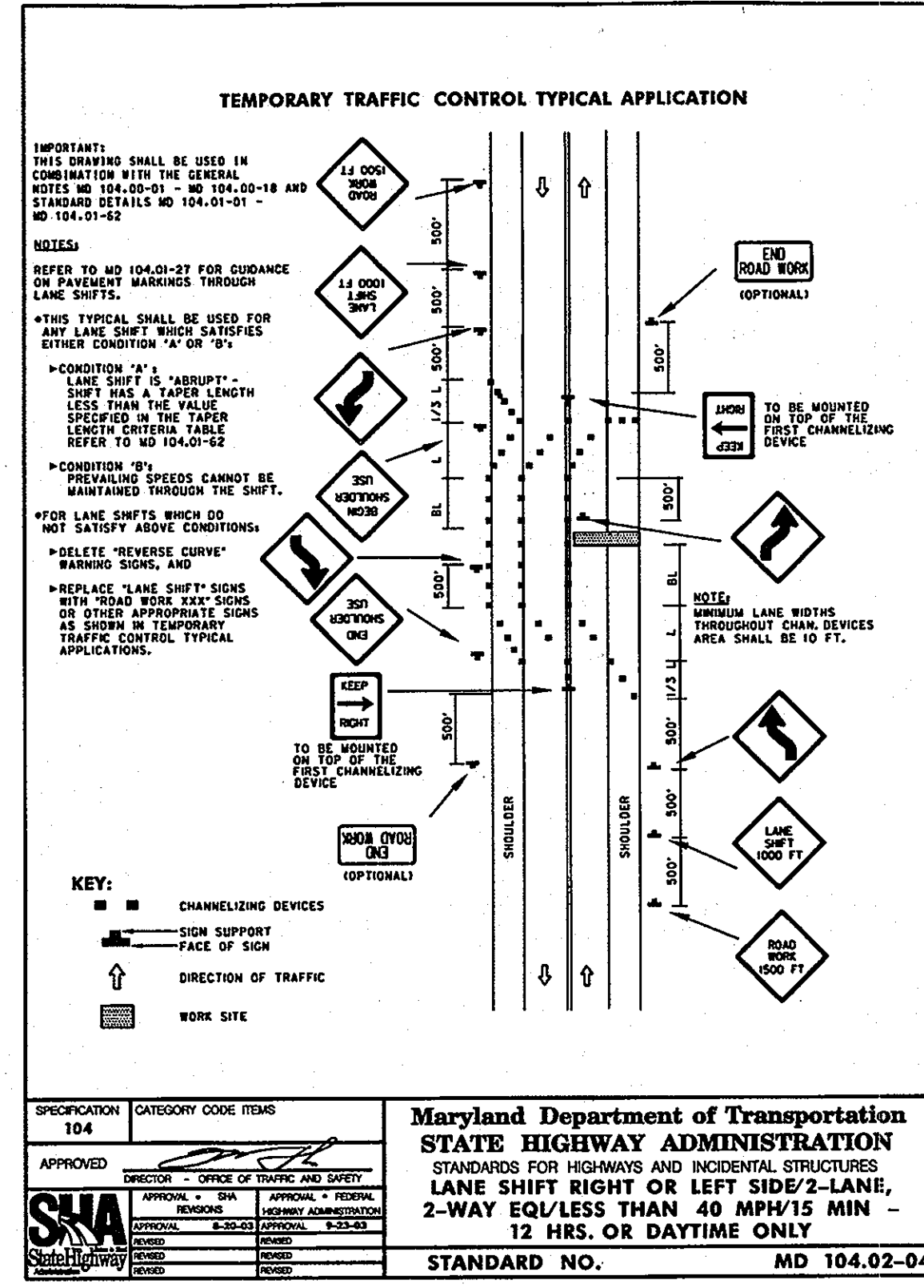
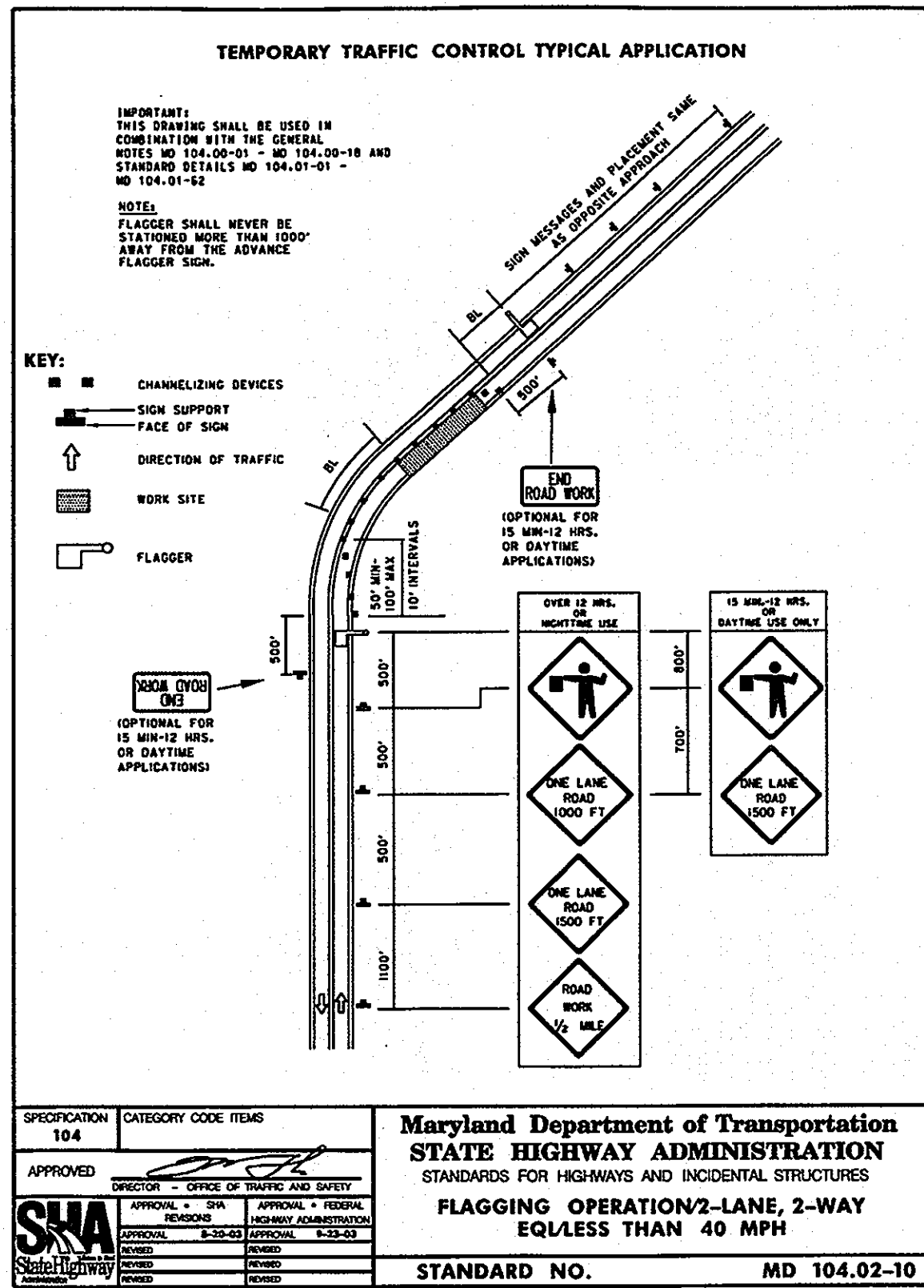
DES:	MRD				
DRN:	KFJ				
CHK:	GW/TWW				
DATE:	JAN. 2011	BY:	NO.	REVISION	DATE
				AS-BUILT	7/23/13

TEMPORARY WATER

600' SCALE MAP NO. 37 BLOCK NO. 18

DUCKETTS LANE  
WATER MAIN REPLACEMENT  
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 22 OF 29



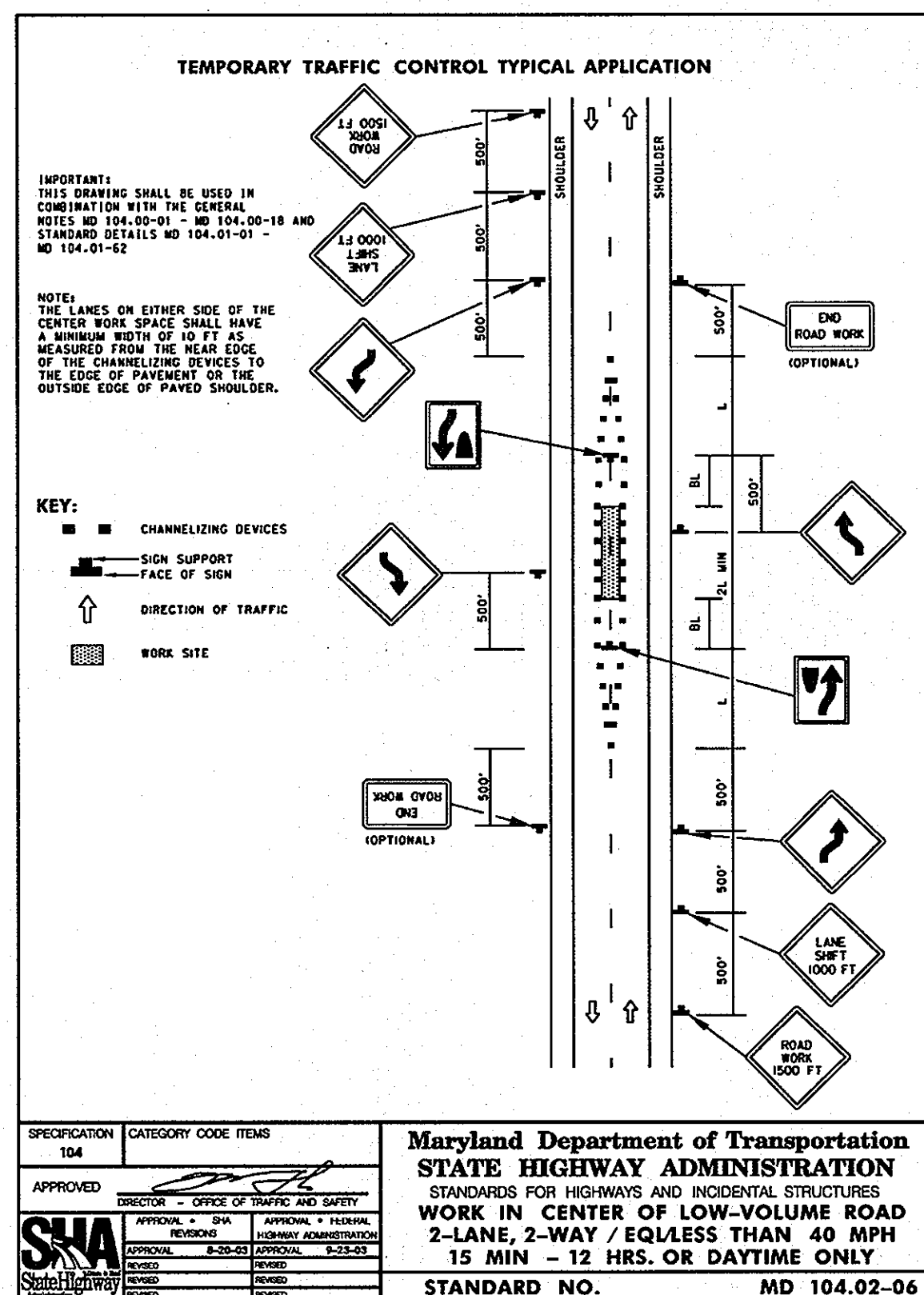
USE ON DUCKETTS LANE  
 FROM STA. 21+80 TO STA. 22+18 &  
 FROM STA. 23+40 TO STA. 29+02  
 USE ON KYLE LEAF COURT.  
 FROM STA. 1+00 TO STA. 6+18  
 USE THROUGHOUT THE MARBLE HILL  
 AND PINE RIDGE COMMUNITIES AS NEEDED

USE ON DUCKETTS LANE  
 FROM STA. 0+00 TO STA. 21+80 &  
 FROM STA. 22+18 TO STA. 23+40

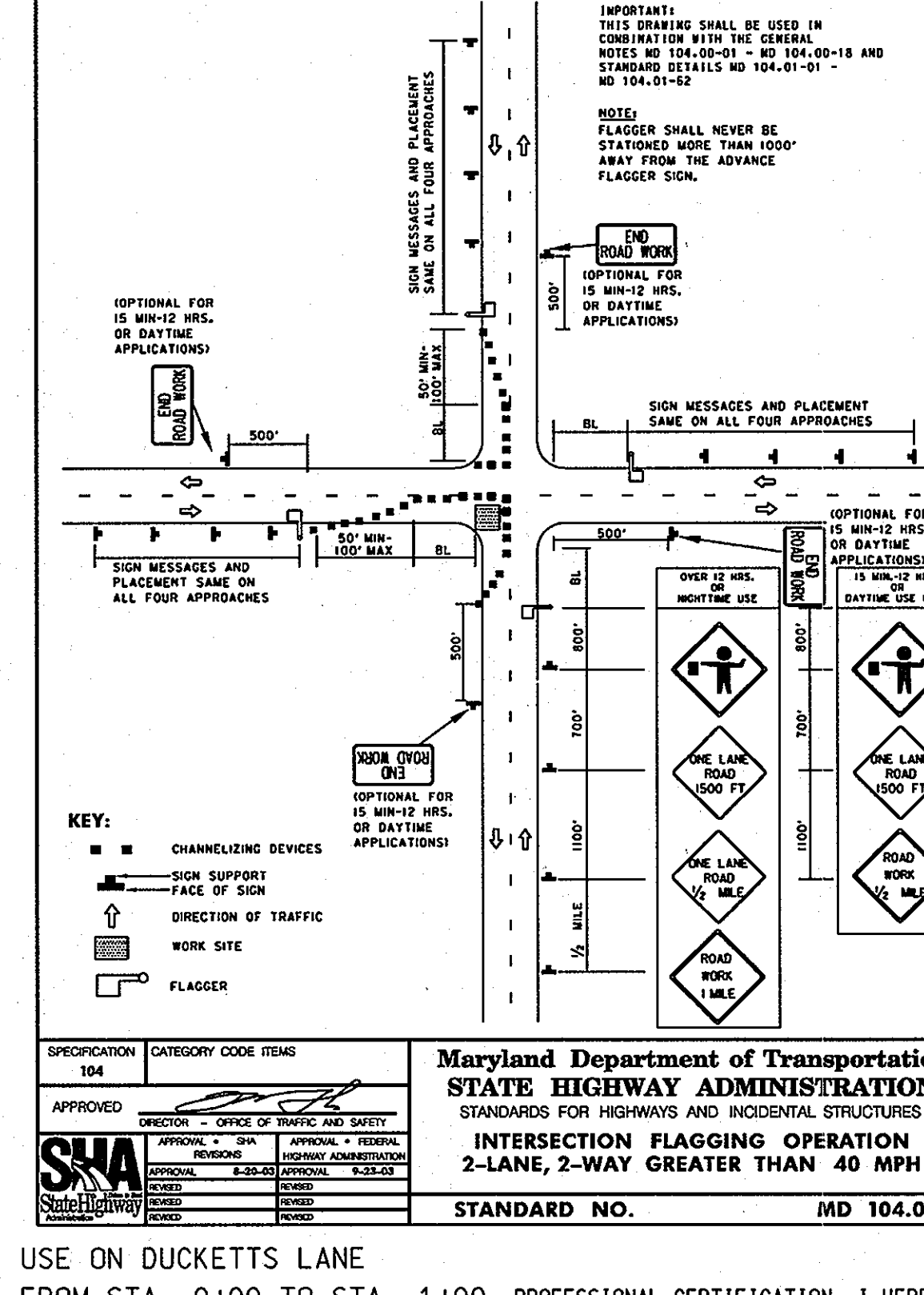
USE ON DUCKETTS LANE  
 AT STA. 4+50, 6+70, 13+00 & STA. 19+00  
 USE ON KYLE LEAF COURT.  
 FROM STA. 0+00 TO STA. 1+00

USE ON U.S. ROUTE 1

USE ON U.S. ROUTE 1

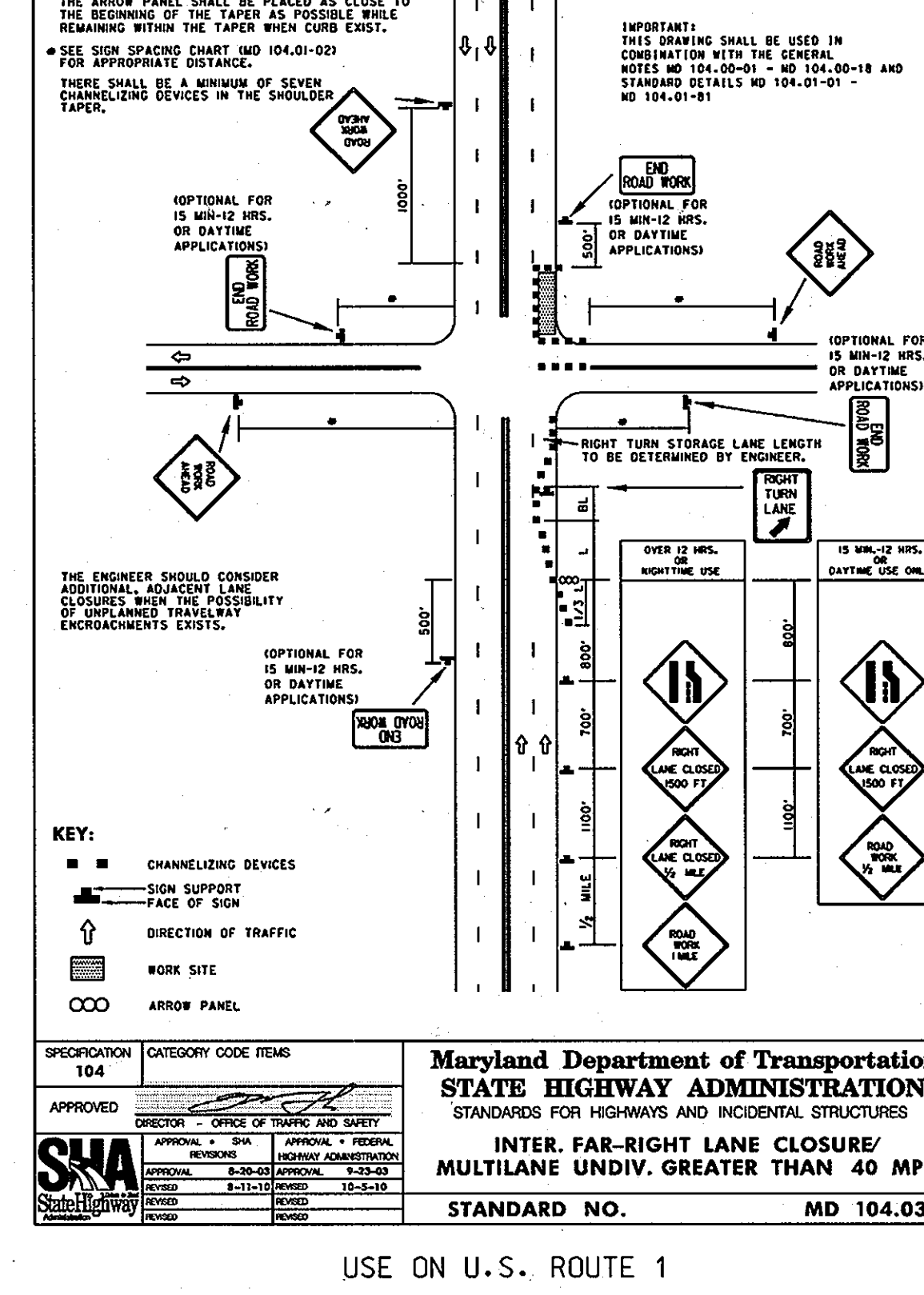


USE ON DUCKETTS LANE  
 FROM STA. 21+80 TO STA. 22+18

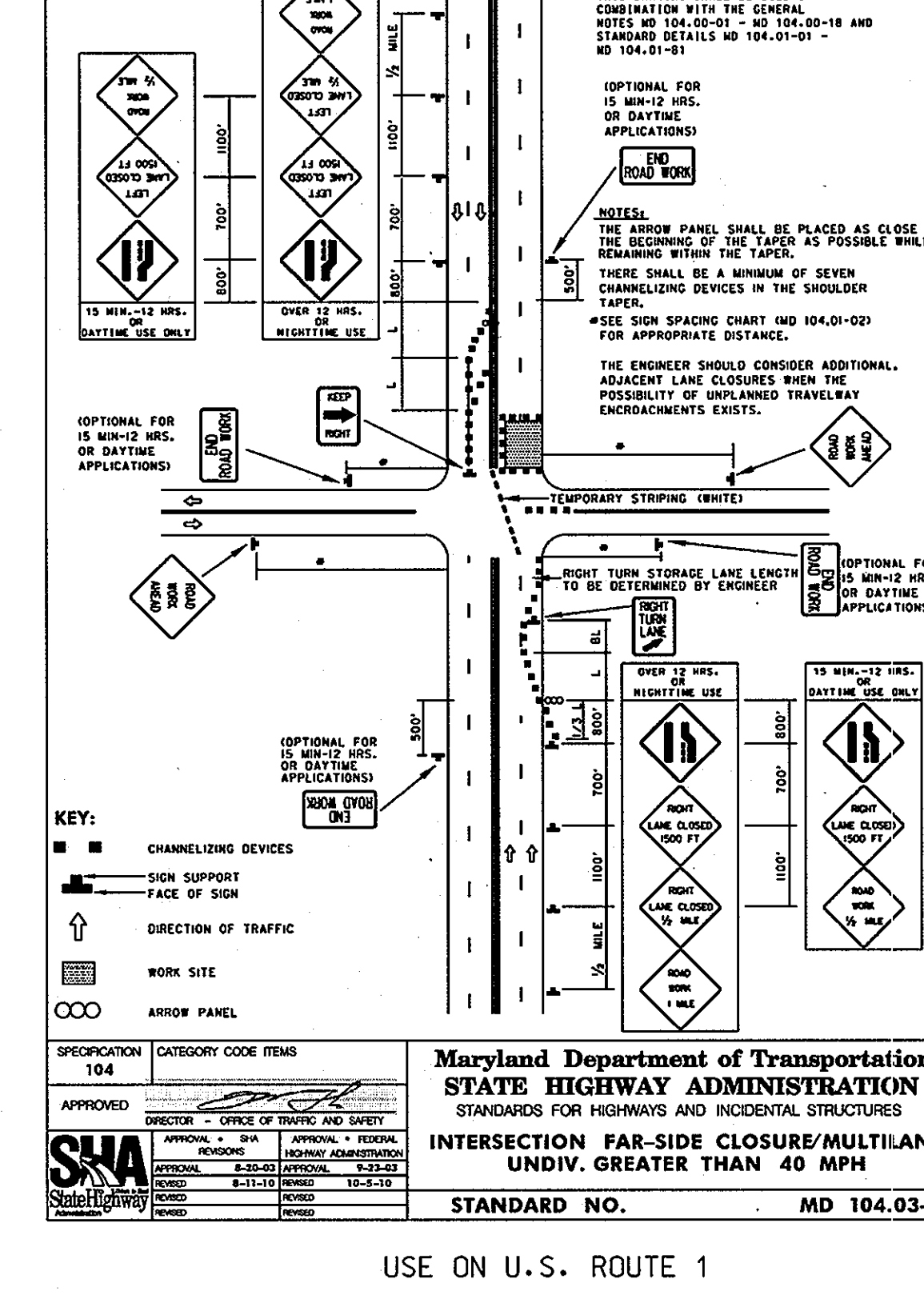


USE ON DUCKETTS LANE  
 FROM STA. 0+00 TO STA. 1+00

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USE ON U.S. ROUTE 1



USE ON U.S. ROUTE 1

**AS-BUILT**  
 DATE 7/23/2013

PLOTTED: 09:50 AM on Tuesday, January 25, 2011  
 BY: Kevin Jackson, Division: P042, W:\WWW\Solid Waste\GMA\ETD  
 FILE: MZ000\1017128 US\Drawings\101712805-C-23-MOT.dgn

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

[Signature] 1/25/11  
 DIRECTOR OF PUBLIC WORKS DATE  
 [Signature] 1/25/11  
 CHIEF, BUREAU OF UTILITIES DATE

ACT. CHIEF, BUREAU OF ENGINEERING 1/25/11  
 [Signature] DATE  
 ACT. CHIEF, UTILITY DESIGN DIVISION P50 DATE

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STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 [Signature] 1/25/11

DES: MRD  
 DRN: KFJ  
 CHK: GW/TWW  
 DATE: 1/25/11  
 BY: GS

AS-BUILT

REVISION

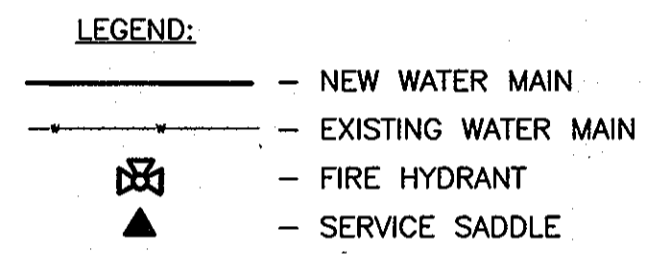
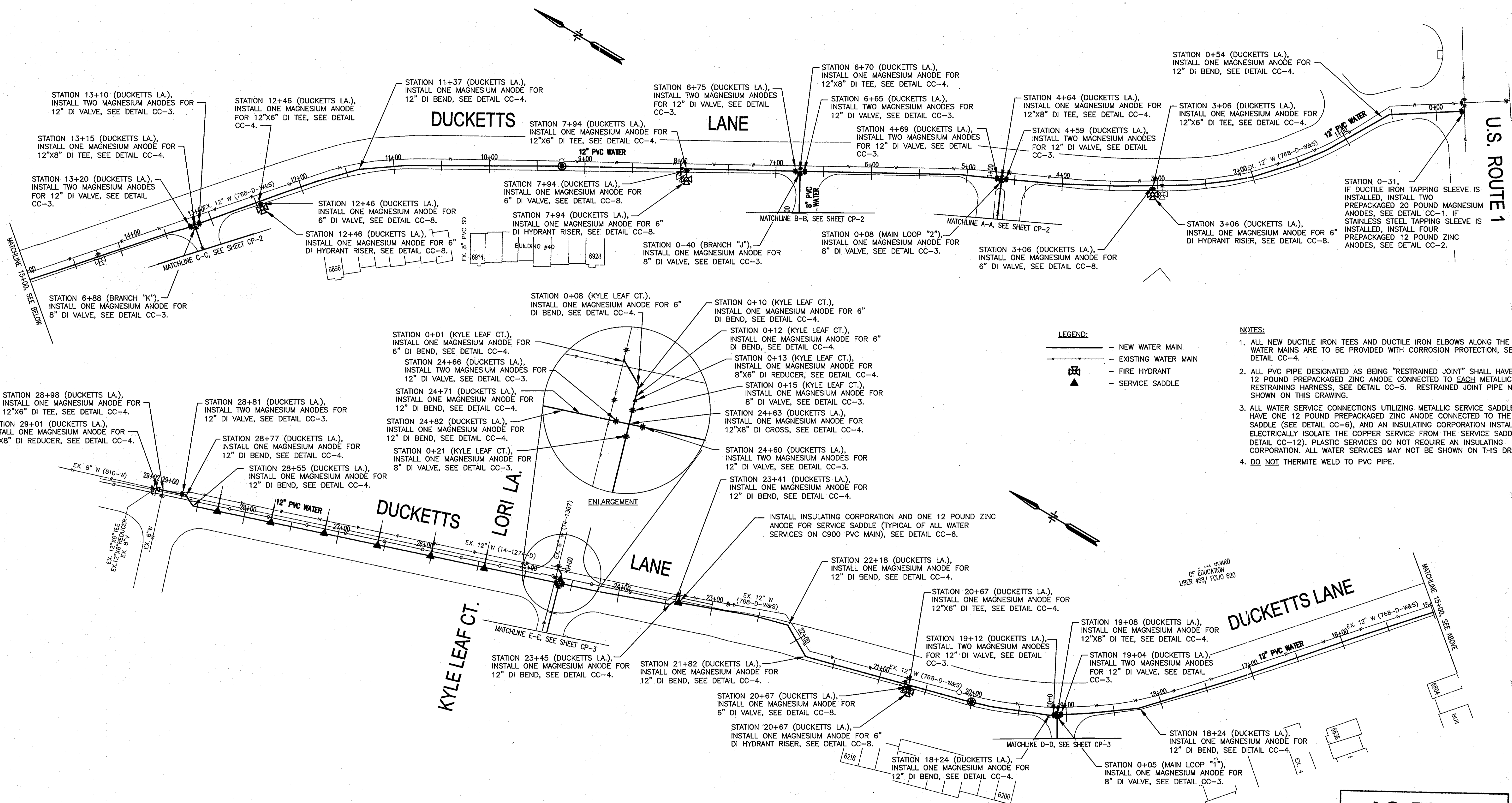
M.O.T. - TRAFFIC CONTROL

600' SCALE MAP NO. 37 BLOCK NO. 12 & 18

DUCKETTS LANE  
 WATER MAIN REPLACEMENT  
 CAPITAL PROJECT NO. W-8286  
 CONTRACT NO. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 23 OF 29



- NOTES:
- 1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON ELBOWS ALONG THE PVC WATER MAINS ARE TO BE PROVIDED WITH CORROSION PROTECTION, SEE DETAIL CC-4.
  - 2. ALL PVC PIPE DESIGNATED AS BEING "RESTRAINED JOINT" SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO EACH METALLIC RESTRAINING HARNESS, SEE DETAIL CC-5. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
  - 3. ALL WATER SERVICE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-6), AND AN INSULATING CORPORATION INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE FROM THE SERVICE SADDLE (SEE DETAIL CC-12). PLASTIC SERVICES DO NOT REQUIRE AN INSULATING CORPORATION. ALL WATER SERVICES MAY NOT BE SHOWN ON THIS DRAWING.
  - 4. DO NOT THERMITE WELD TO PVC PIPE.

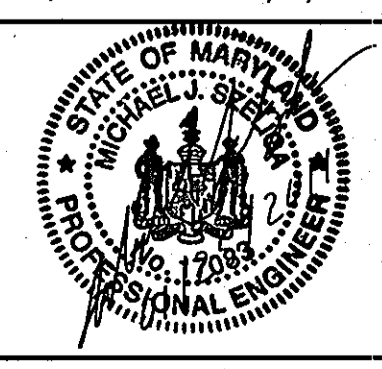
**AS-BUILT**  
DATE 7/23/2013

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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. 17083, EXPIRATION DATE 9/27/2012

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HOWARD COUNTY, MARYLAND

*John K. ...* 1/25/11  
DIRECTOR OF PUBLIC WORKS DATE  
*John S. ...* 1/25/11  
CHIEF, BUREAU OF UTILITIES DATE  
1/25/11  
1/25/11  
CHIEF, UTILITY DESIGN DIVISION P&D DATE



DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	JAN. 2011	BY:	AS-BUILT	DATE:	7/23/13
REVISION				60' SCALE MAP NO.	37
				BLOCK NO.	18

**CORROSION CONTROL LAYOUT 1**

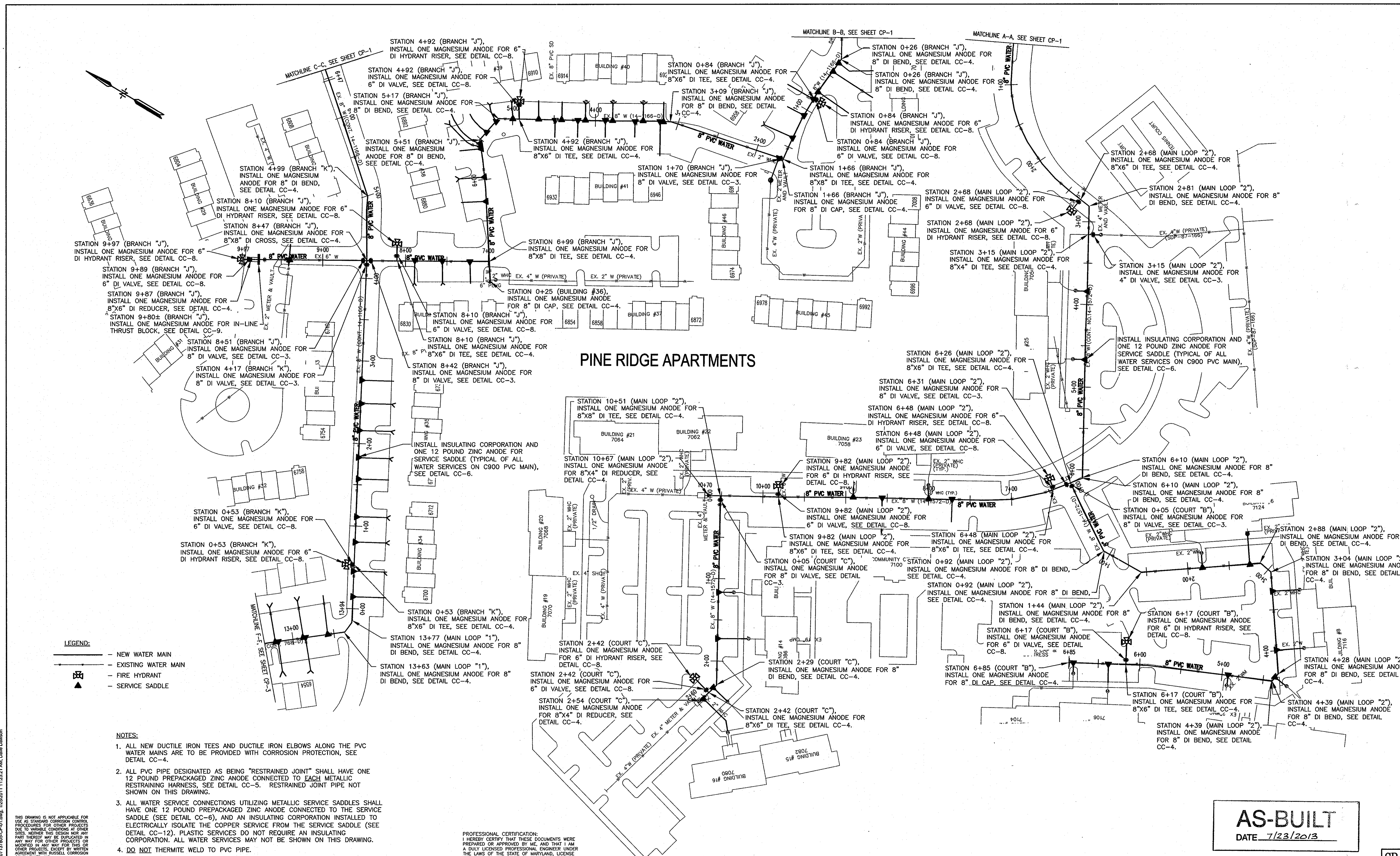
**DUCKETTS LANE WATER MAIN REPLACEMENT**  
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

CP-1  
SCALE  
AS SHOWN  
SHEET  
24 OF 29

FN\CD\Ducketts Lane\Design 08\_2010\0107137805-CP-01.dwg, 1/25/2011 11:18:08 AM, Dave Dawson





**PINE RIDGE APARTMENTS**

- LEGEND:**
- NEW WATER MAIN
  - EXISTING WATER MAIN
  - FIRE HYDRANT
  - SERVICE SADDLE

- NOTES:**
1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON ELBOWS ALONG THE PVC WATER MAINS ARE TO BE PROVIDED WITH CORROSION PROTECTION, SEE DETAIL CC-4.
  2. ALL PVC PIPE DESIGNATED AS BEING "RESTRAINED JOINT" SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO EACH METALLIC RESTRAINING HARNESS, SEE DETAIL CC-5. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
  3. ALL WATER SERVICE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-6), AND AN INSULATING CORPORATION INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE FROM THE SERVICE SADDLE (SEE DETAIL CC-12). PLASTIC SERVICES DO NOT REQUIRE AN INSULATING CORPORATION. ALL WATER SERVICES MAY NOT BE SHOWN ON THIS DRAWING.
  4. DO NOT THERMITE WELD TO PVC PIPE.

PROFESSIONAL CERTIFICATION:  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17083, EXPIRATION DATE 9/27/2012

**AS-BUILT**  
 DATE 7/23/2013

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DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*J. P. De...* 1/25/11  
 DIRECTOR OF PUBLIC WORKS DATE

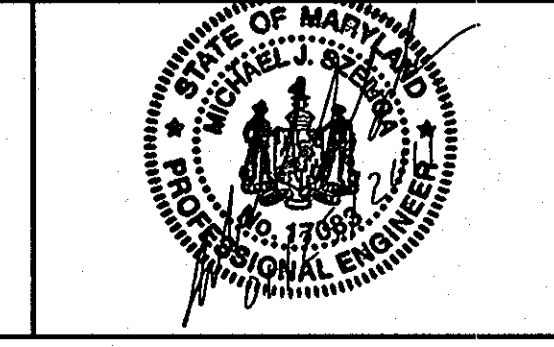
*...* 1/25/11  
 CHIEF, BUREAU OF ENGINEERING DATE

*...* 1/25/11  
 CHIEF, BUREAU OF UTILITIES DATE

*...* 1/25/11  
 ACT. CHIEF, UTILITY DESIGN DIVISION DATE

PSD DATE

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

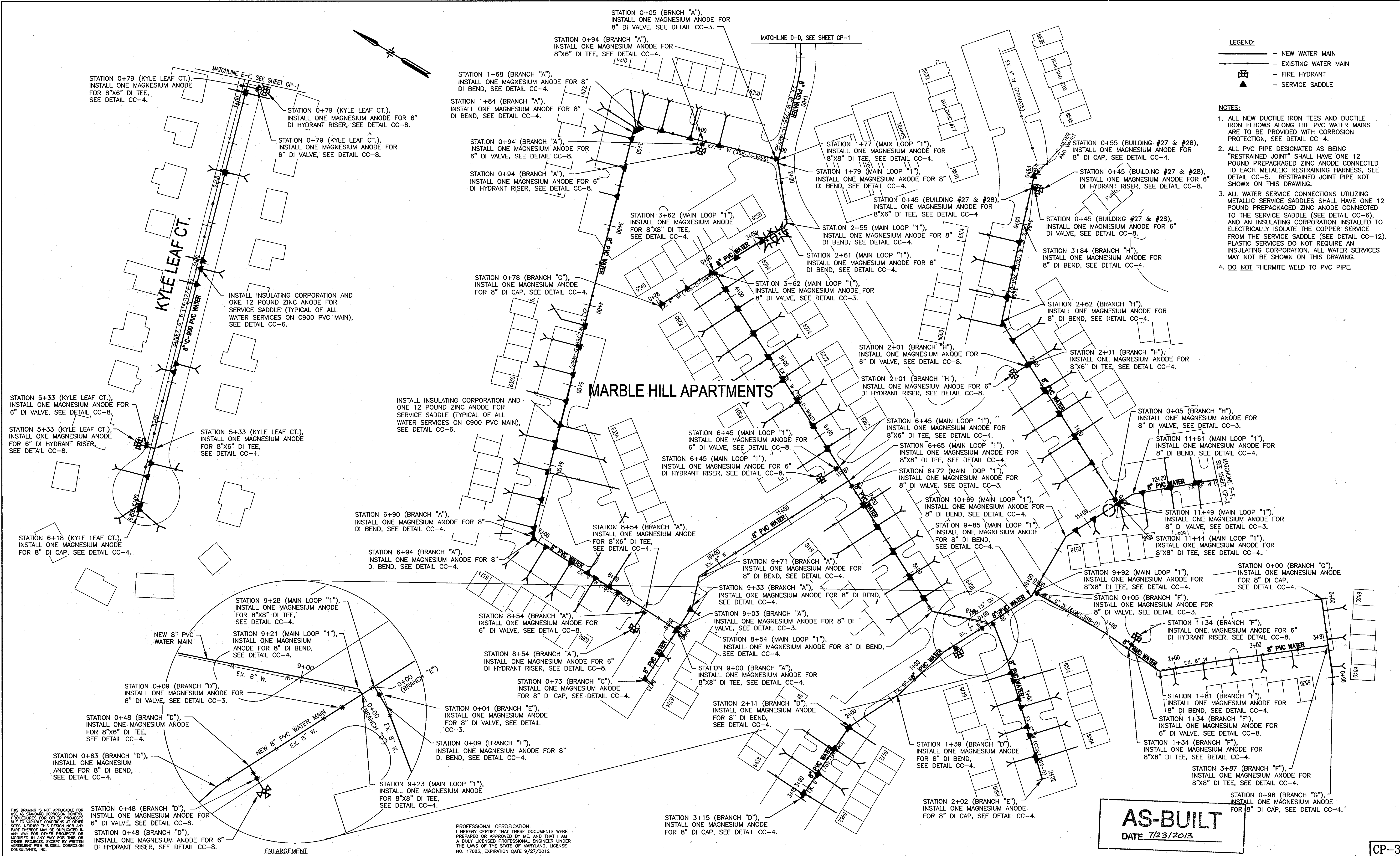


DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	JAN. 2011	BY:	NO.	REVISION	
					7/23/13

<b>CORROSION CONTROL LAYOUT 2</b>	
DATE:	7/23/13
60' SCALE MAP NO. 37	BLOCK NO. 18

**DUCKETT'S LANE WATER MAIN REPLACEMENT**  
 CAPITAL PROJECT No. W-8286  
 CONTRACT No. 44-4677  
 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

CP-2  
 SCALE AS SHOWN  
 SHEET 25 OF 29



- LEGEND:**
- NEW WATER MAIN
  - - - EXISTING WATER MAIN
  - ⊠ FIRE HYDRANT
  - ▲ SERVICE SADDLE

- NOTES:**
1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON ELBOWS ALONG THE PVC WATER MAINS ARE TO BE PROVIDED WITH CORROSION PROTECTION, SEE DETAIL CC-4.
  2. ALL PVC PIPE DESIGNATED AS BEING "RESTRAINED JOINT" SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO EACH METALLIC RESTRAINING HARNESS, SEE DETAIL CC-5. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
  3. ALL WATER SERVICE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-6), AND AN INSULATING CORPORATION INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE FROM THE SERVICE SADDLE (SEE DETAIL CC-12). PLASTIC SERVICES DO NOT REQUIRE AN INSULATING CORPORATION. ALL WATER SERVICES MAY NOT BE SHOWN ON THIS DRAWING.
  4. DO NOT THERMITE WELD TO PVC PIPE.

**MARBLE HILL APARTMENTS**

**AS-BUILT**  
DATE 7/23/2013

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PROFESSIONAL CERTIFICATION:  
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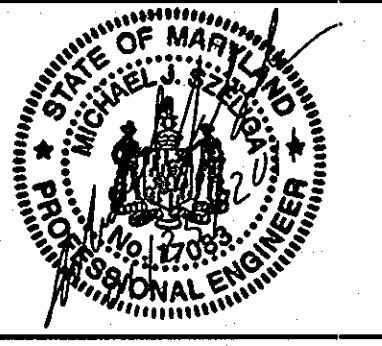
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jay K. [Signature]* 1/26/11  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 1/25/11  
AS-CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 1/25/11  
AS-CHIEF, UTILITY DESIGN DIVISION DATE

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



DES: MJS			
DRN: DJD			
CHK: MJS			
DATE: JAN. 2011	BY: GS	NO.:	REVISION:
			AS-BUILT

**CORROSION CONTROL LAYOUT 3**

DATE 7/23/13

600' SCALE MAP NO. 37 BLOCK NO. 18

**DUCKETTS LANE WATER MAIN REPLACEMENT**

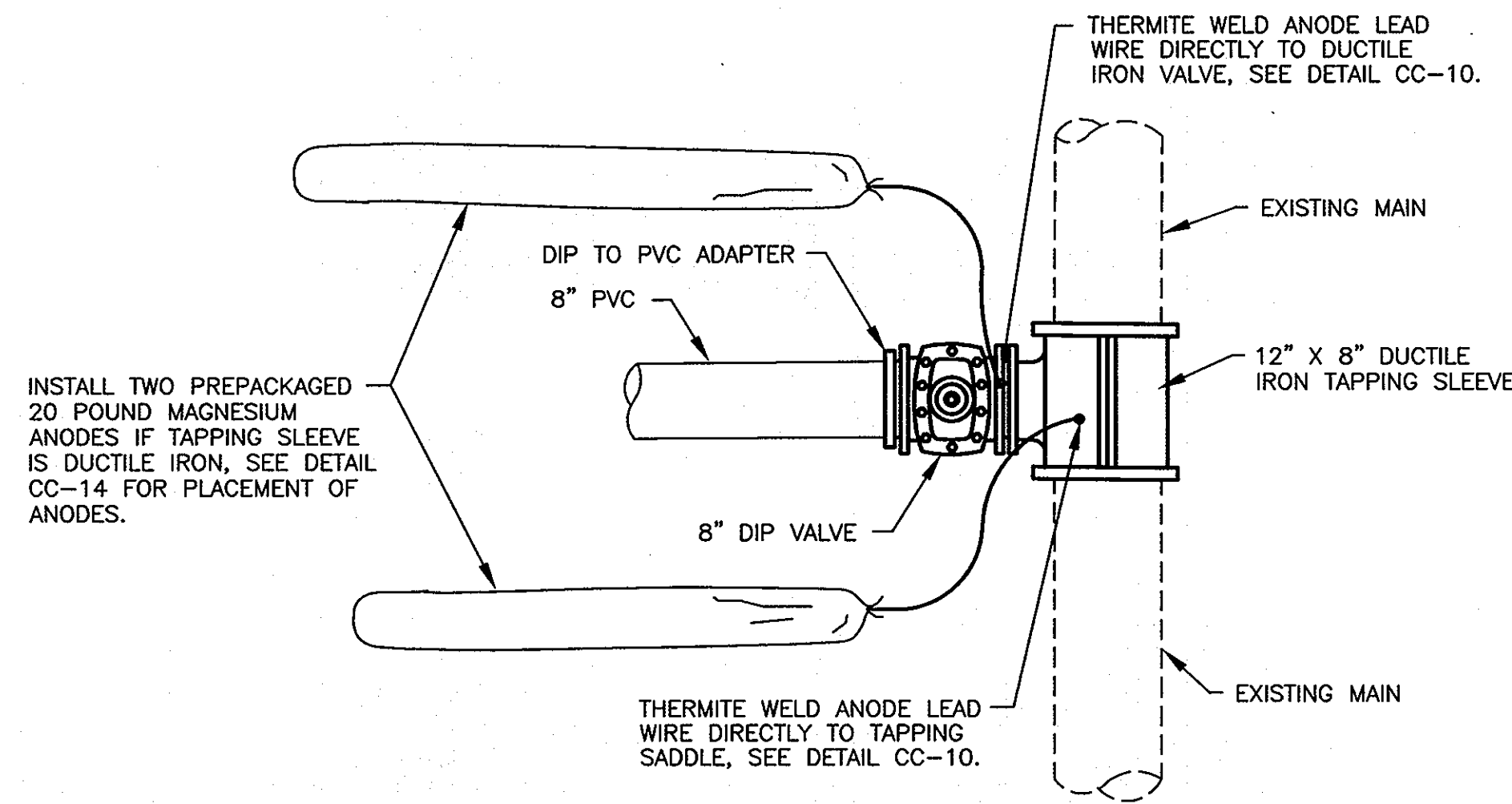
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

CP-3

SCALE AS SHOWN

SHEET 28 OF 29



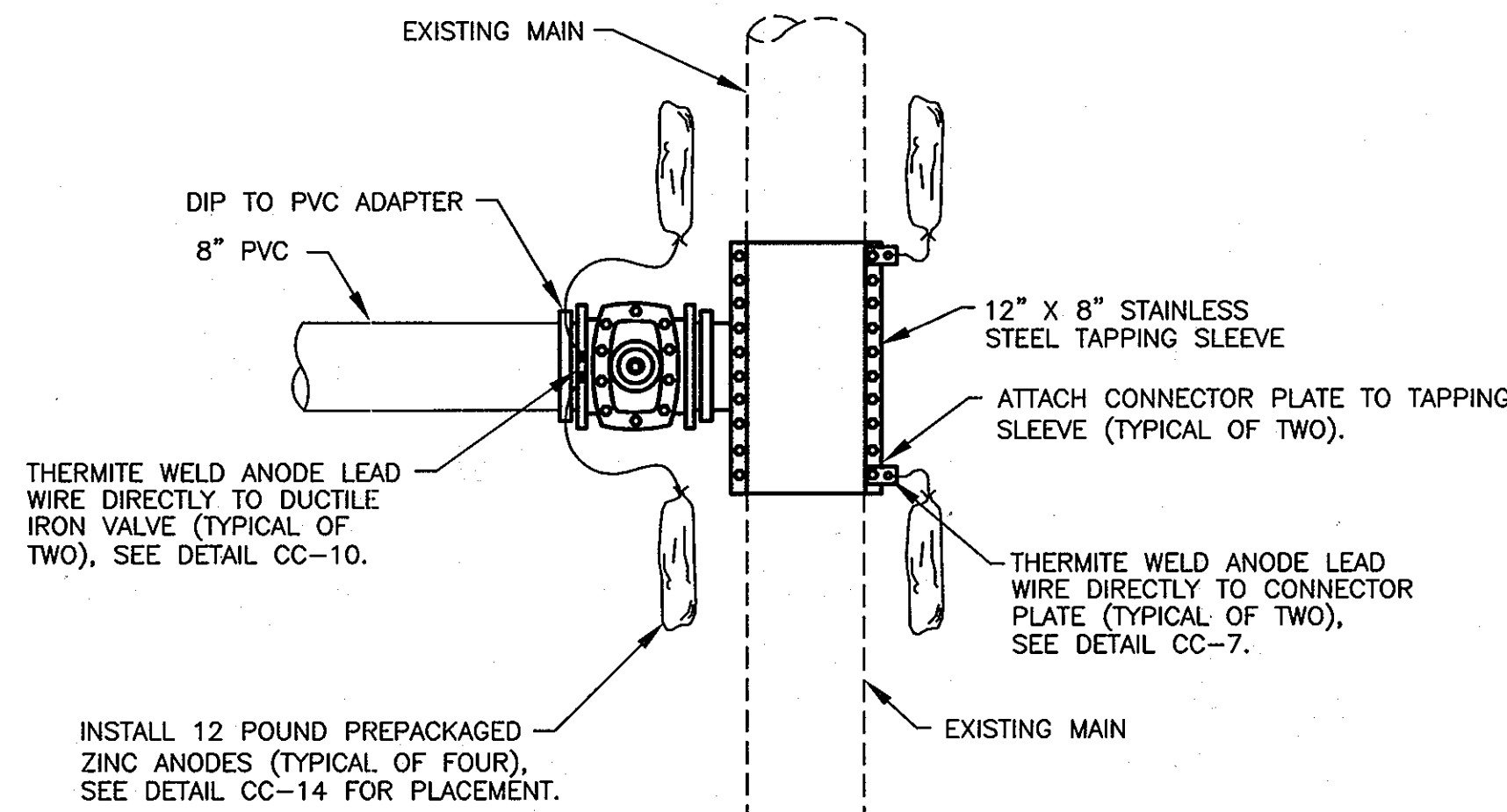
INSTALL TWO PREPACKAGED 20 POUND MAGNESIUM ANODES IF TAPPING SLEEVE IS DUCTILE IRON, SEE DETAIL CC-14 FOR PLACEMENT OF ANODES.

**NOTES:**

1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-14.
2. DO NOT THERMITE WELD TO PVC PIPE.

**DETAIL CC-1: CORROSION PROTECTION OF DUCTILE IRON TAPPING SLEEVE AND VALVE**

SCALE: NONE



THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON VALVE (TYPICAL OF TWO), SEE DETAIL CC-10.

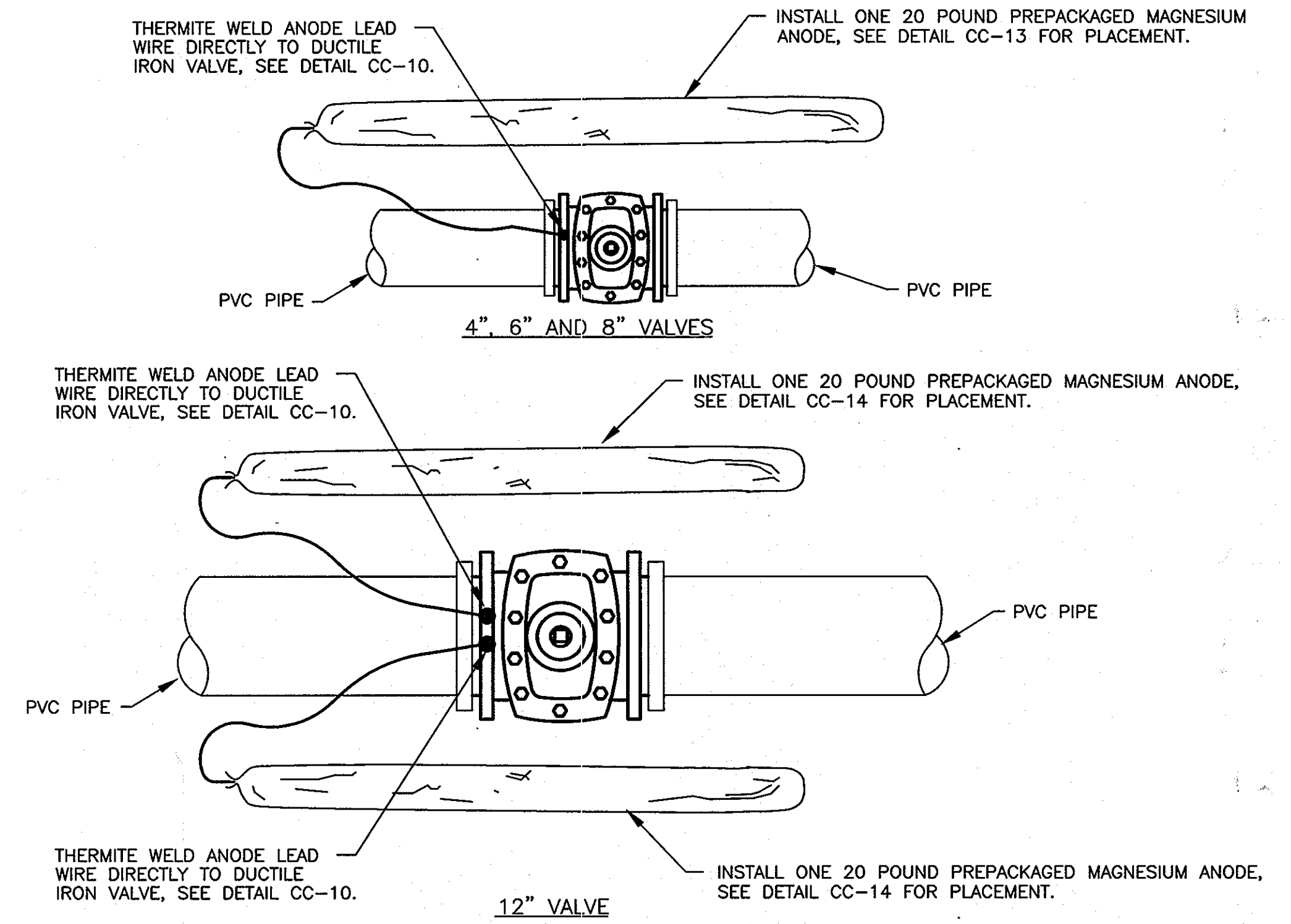
INSTALL 12 POUND PREPACKAGED ZINC ANODES (TYPICAL OF FOUR), SEE DETAIL CC-14 FOR PLACEMENT.

**NOTES:**

1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-14.
2. DO NOT THERMITE WELD TO PVC PIPE.

**DETAIL CC-2: CORROSION PROTECTION OF STAINLESS STEEL TAPPING SLEEVE AND VALVE**

SCALE: NONE



THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON VALVE, SEE DETAIL CC-10.

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-14 FOR PLACEMENT.

THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON VALVE, SEE DETAIL CC-10.

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-14 FOR PLACEMENT.

THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON VALVE, SEE DETAIL CC-10.

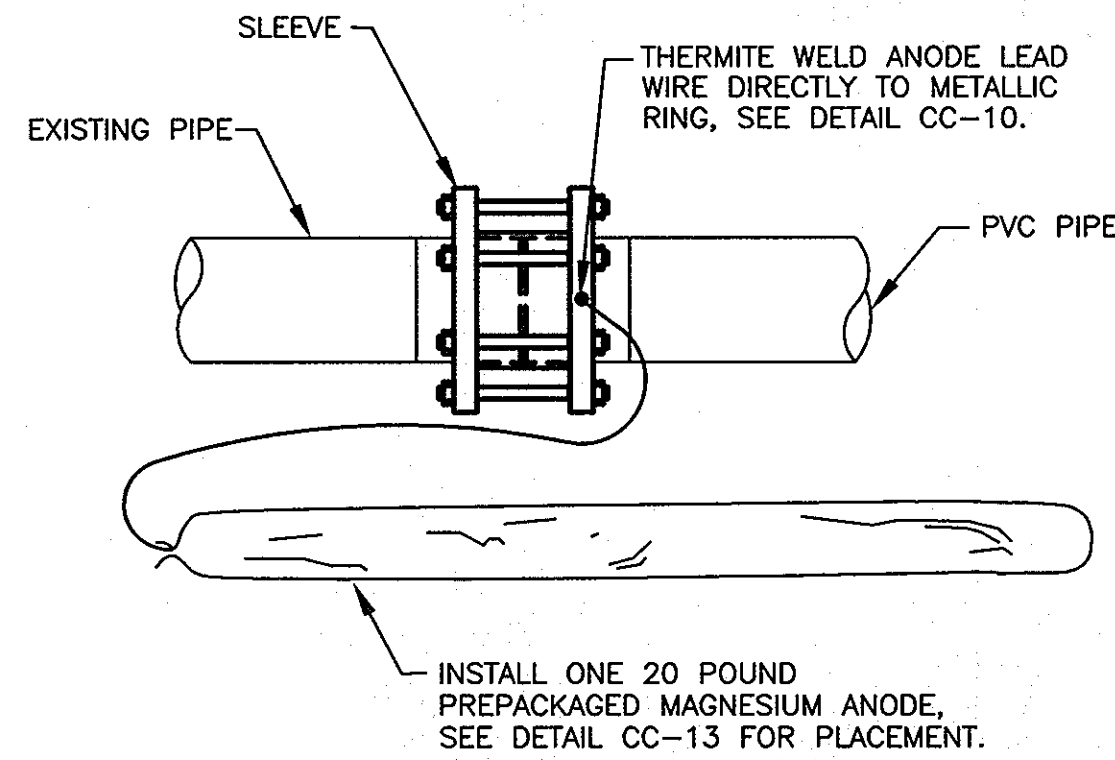
INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-14 FOR PLACEMENT.

**NOTES:**

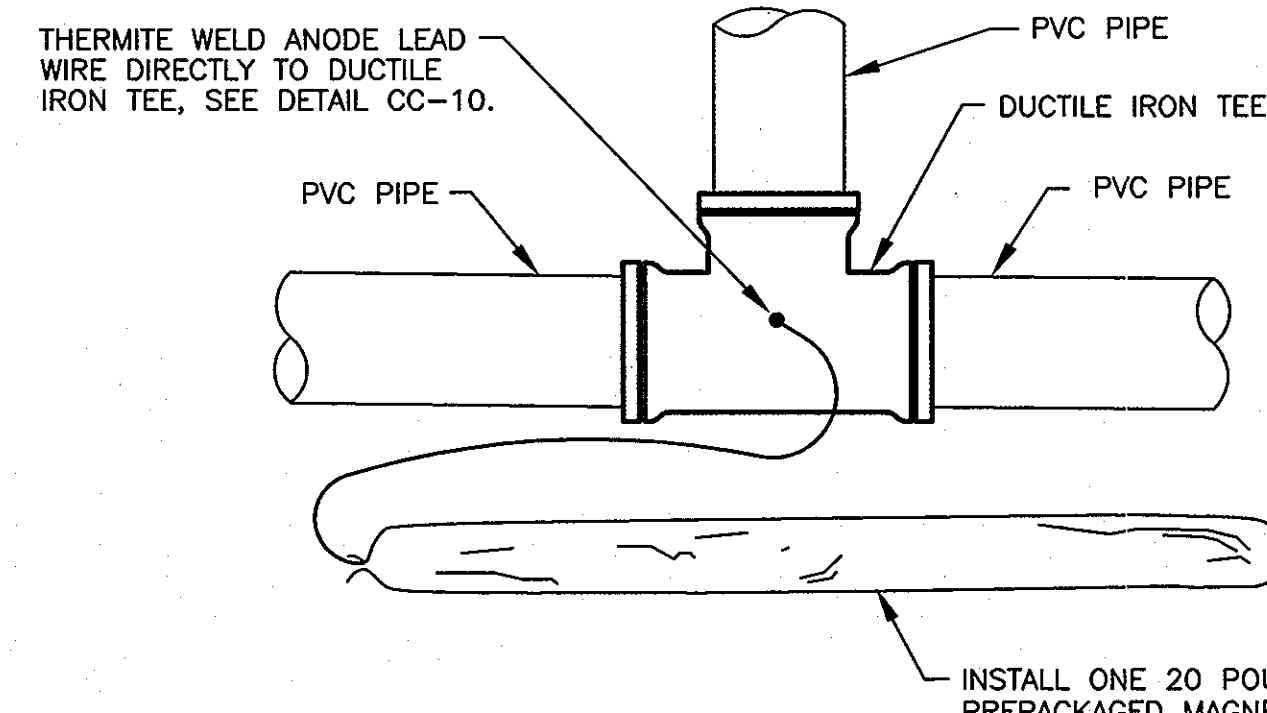
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAILS CC-13 AND CC-14.
2. DO NOT THERMITE WELD TO PVC PIPE.

**CC-3: CORROSION PROTECTION OF DUCTILE IRON VALVES (4", 6", 8" AND 12")**

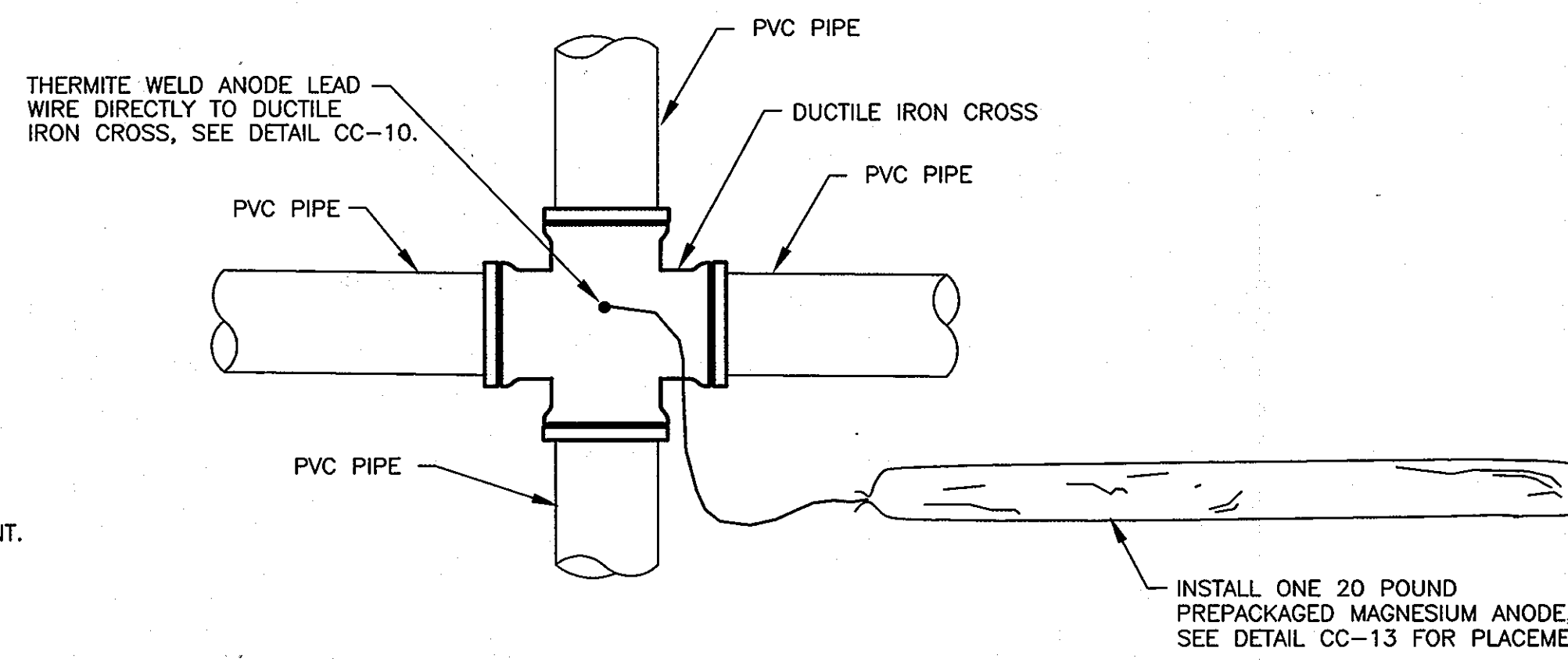
NOT TO SCALE



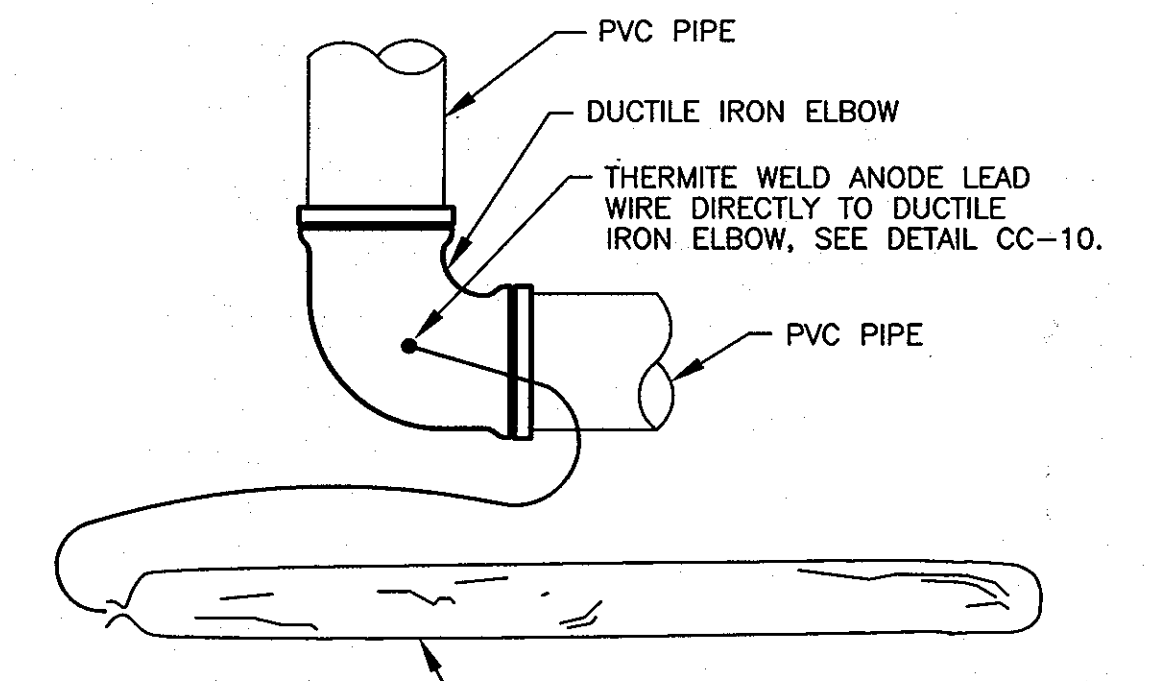
INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-13 FOR PLACEMENT.



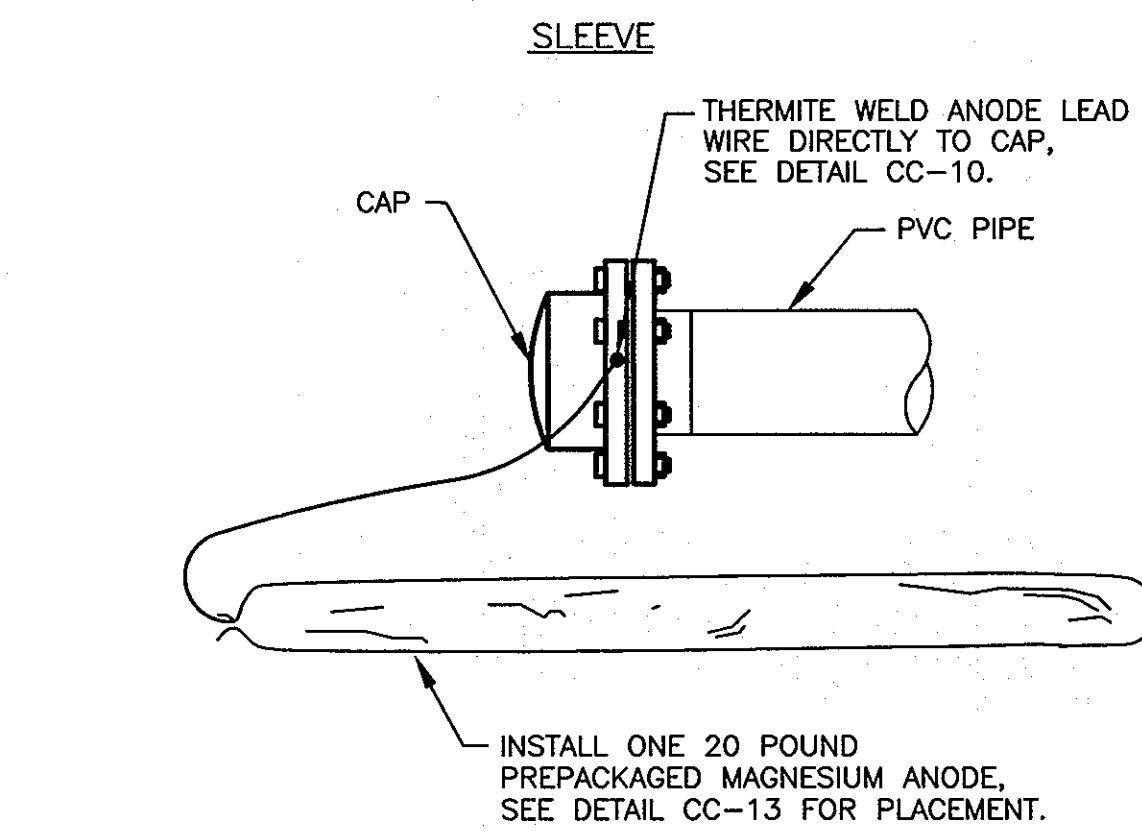
INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-13 FOR PLACEMENT.



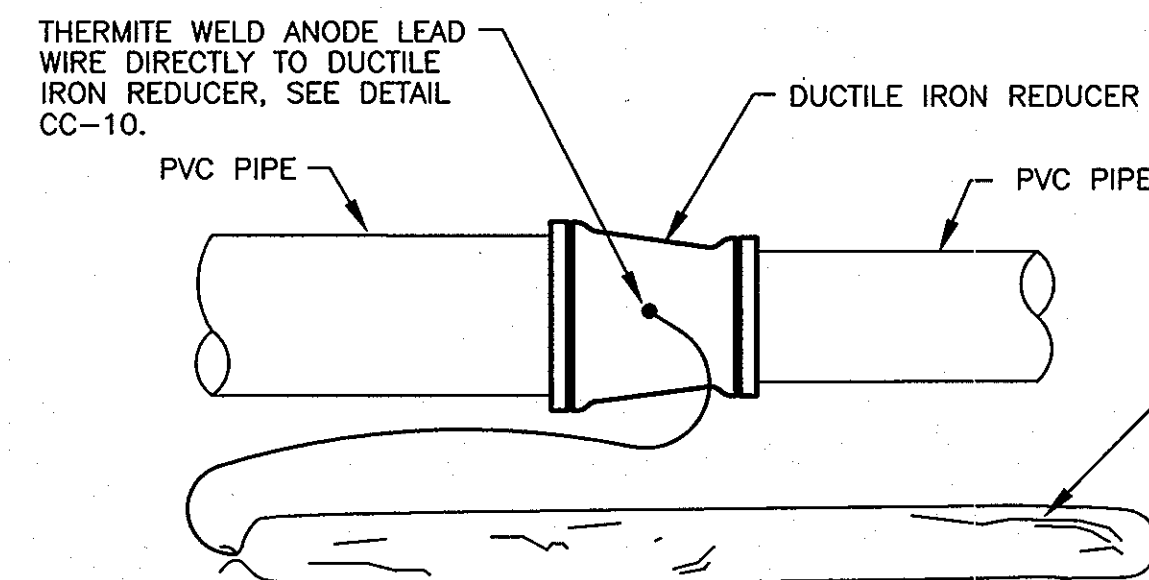
INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-13 FOR PLACEMENT.



INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-13 FOR PLACEMENT.



INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-13 FOR PLACEMENT.



INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-13 FOR PLACEMENT.

**NOTES:**

1. ANODES REQUIRED ONLY IF TEE, CROSS, CAP, REDUCER, OR ELBOW IS DUCTILE IRON.
2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-13.
3. DO NOT THERMITE WELD TO PVC PIPE.

**CC-4: CORROSION PROTECTION OF DUCTILE IRON FITTINGS**

NOT TO SCALE

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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. 17083, EXPIRATION DATE 9/27/2012

**AS-BUILT**  
DATE 7/23/2013

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jan D. ...* 1/25/11  
DIRECTOR OF PUBLIC WORKS DATE

*Robert ...* 1/25/11  
CHIEF, BUREAU OF UTILITIES DATE

*...* 1/25/11  
CHIEF, UTILITY DESIGN DIVISION DATE

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



DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	JAN. 2011	BY:	GS	NO.	AS-BUILT
					7/23/13

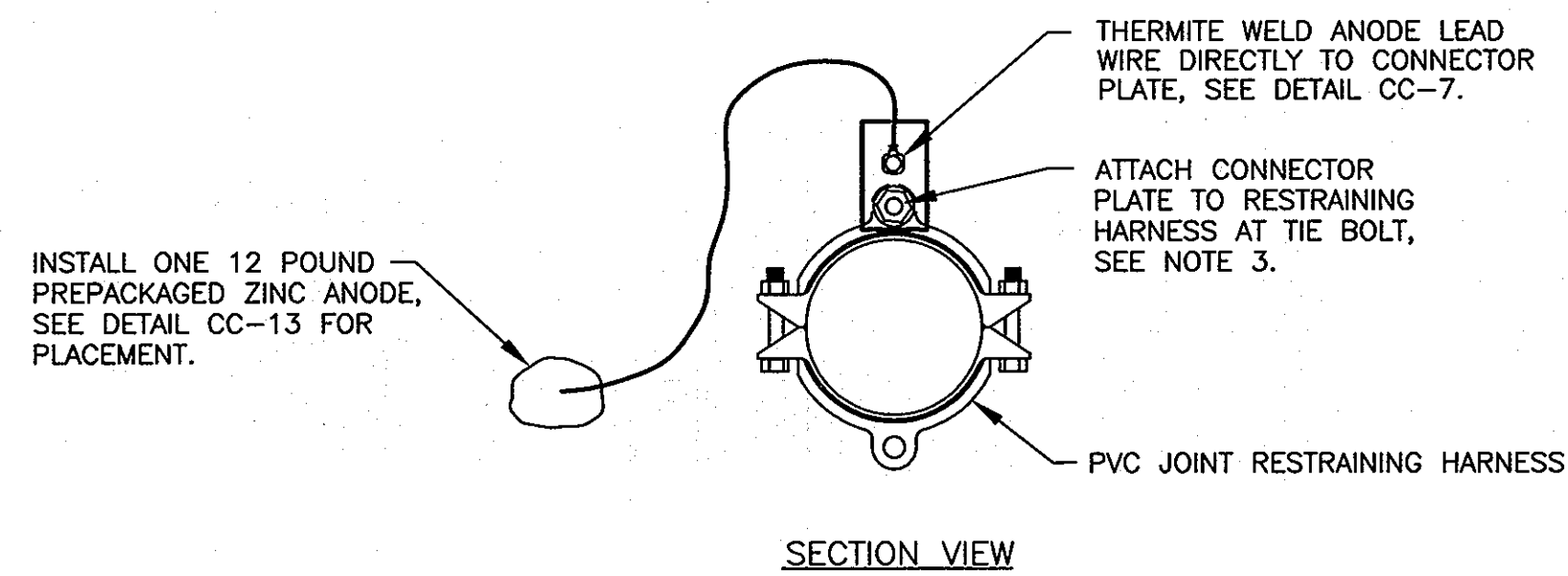
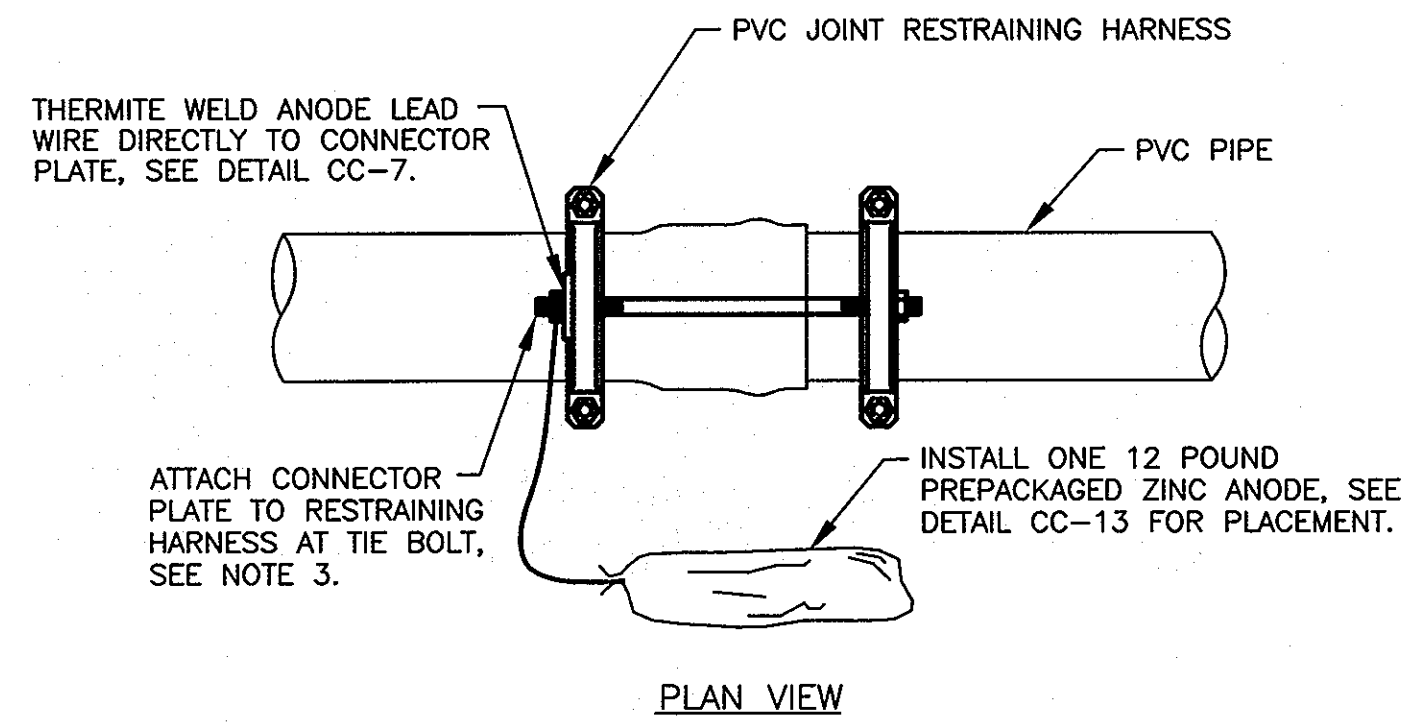
**CORROSION CONTROL DETAILS 1**

60' SCALE MAP NO. 37 BLOCK NO. 18

**DUCKETTS LANE WATER MAIN REPLACEMENT**  
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677

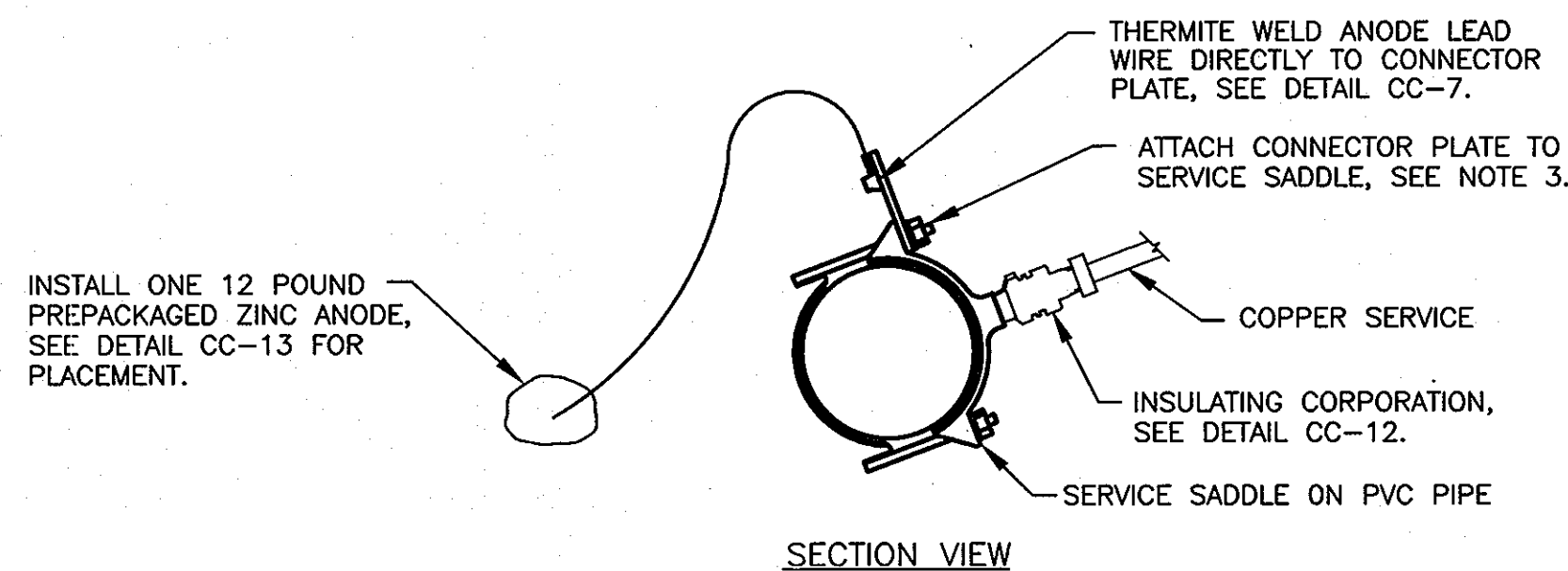
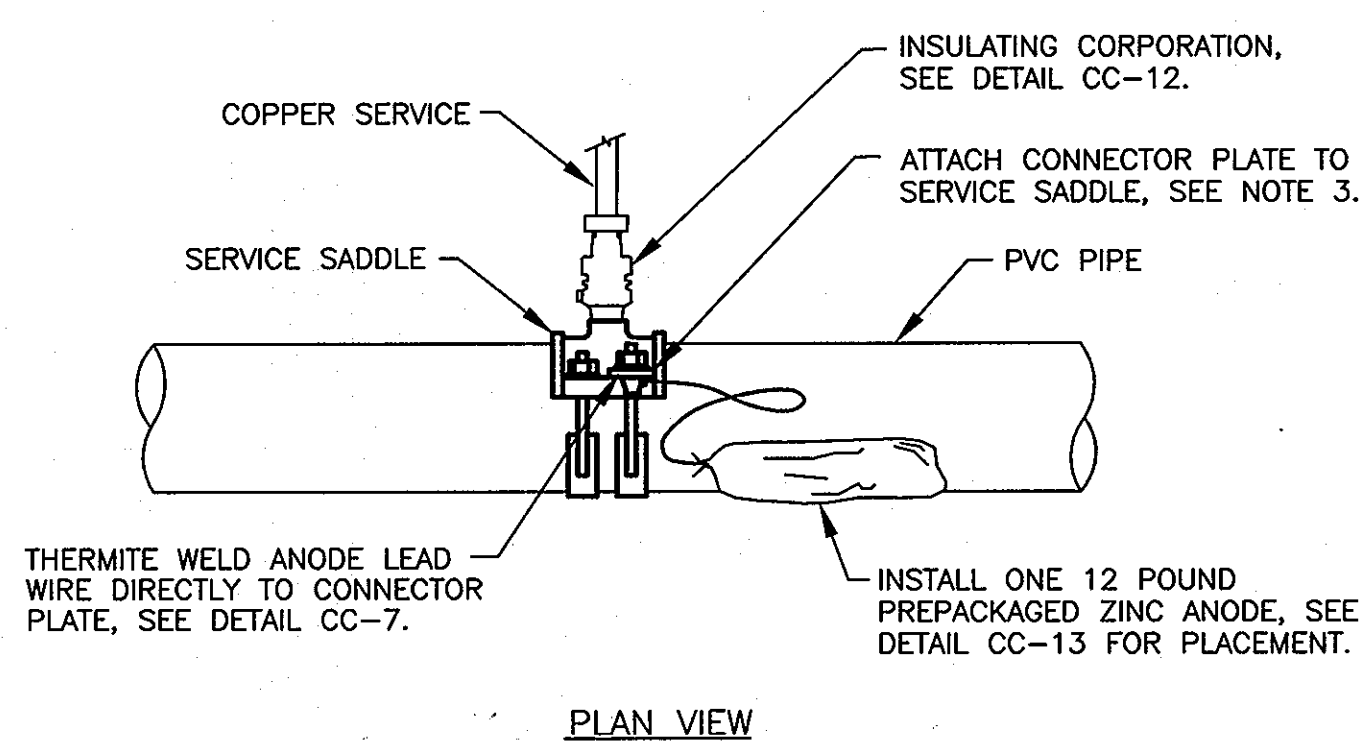
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

CP-4  
SCALE AS SHOWN  
SHEET 27 OF 28



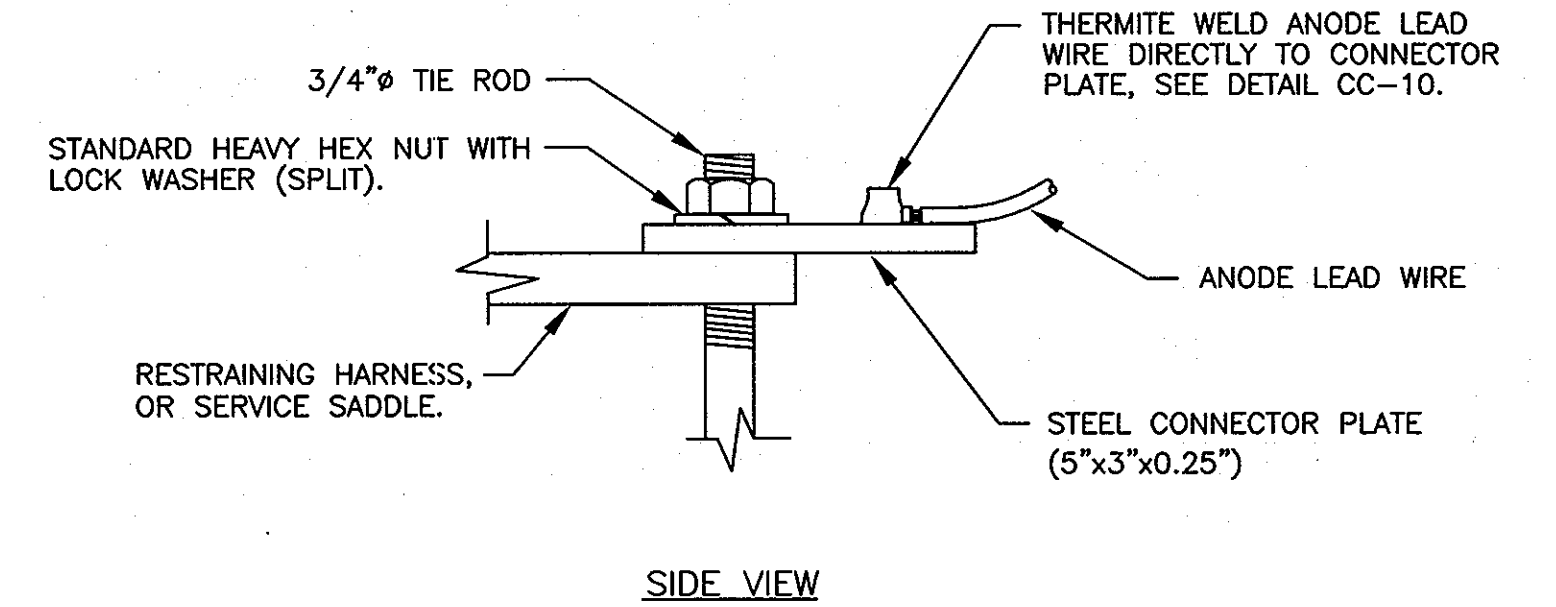
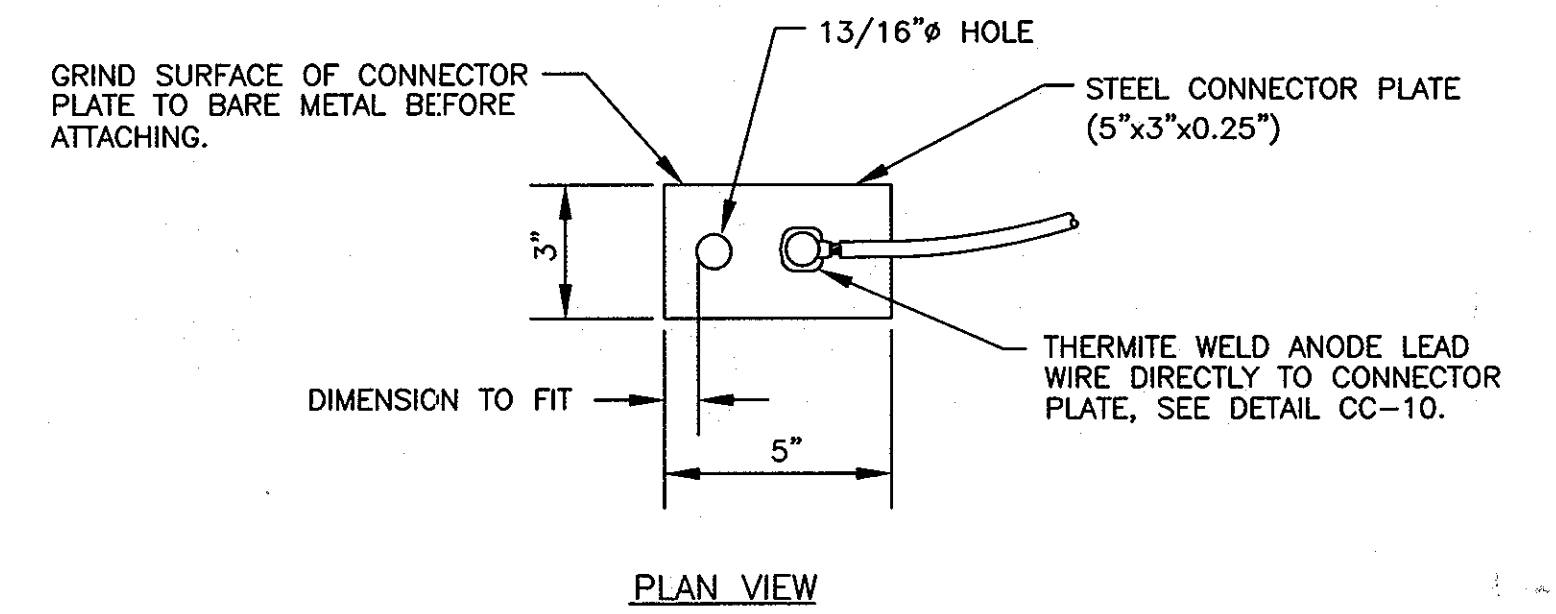
- NOTES:
- CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS.
  - ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-13.
  - REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
  - DO NOT THERMITE WELD TO PVC PIPE.

**CC-5: CORROSION PROTECTION OF RESTRAINING HARNESS**  
NOT TO SCALE



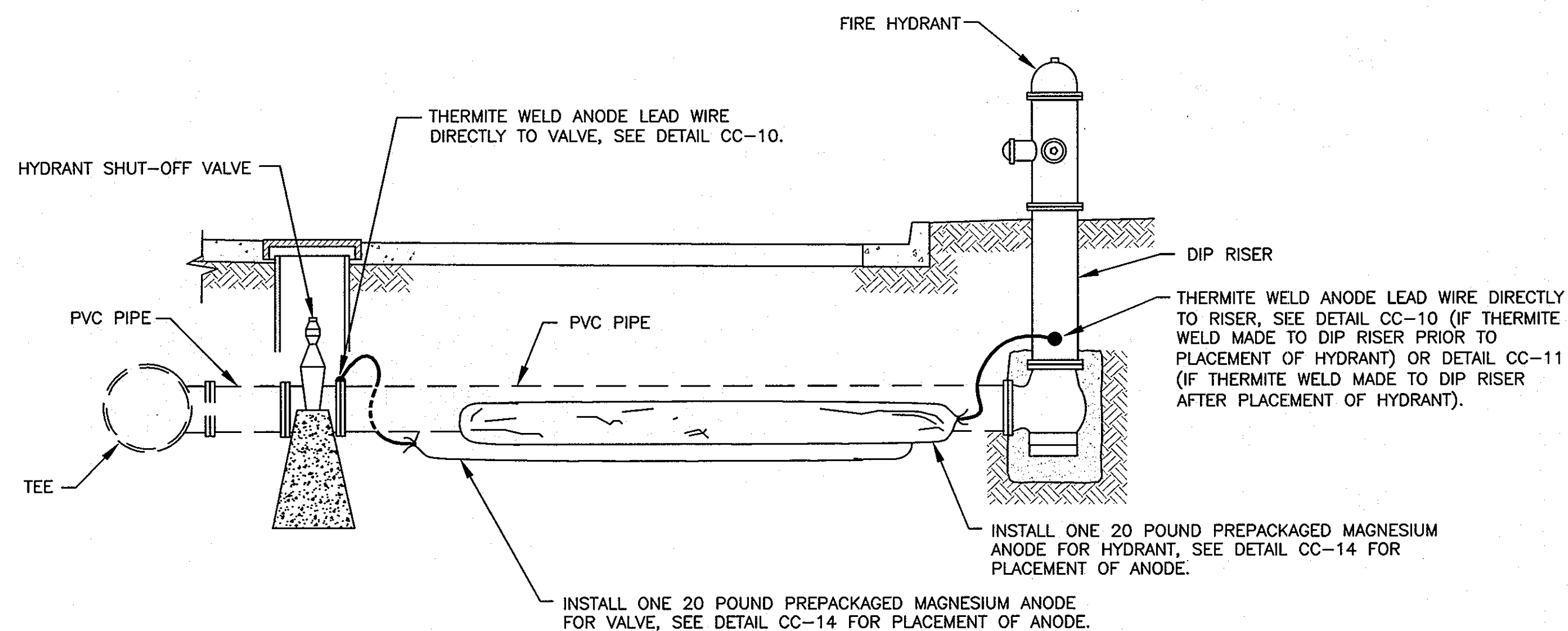
- NOTES:
- CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO SERVICE SADDLE.
  - ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-13.
  - REMOVE COATING FROM SERVICE SADDLE WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
  - PLASTIC SERVICE PIPING DOES NOT REQUIRE AN INSULATING CORPORATION, A NON-INSULATING CORPORATION MAY BE USED.
  - DO NOT THERMITE WELD TO PVC PIPE.

**CC-6: CORROSION PROTECTION OF SERVICE SADDLE**  
NOT TO SCALE



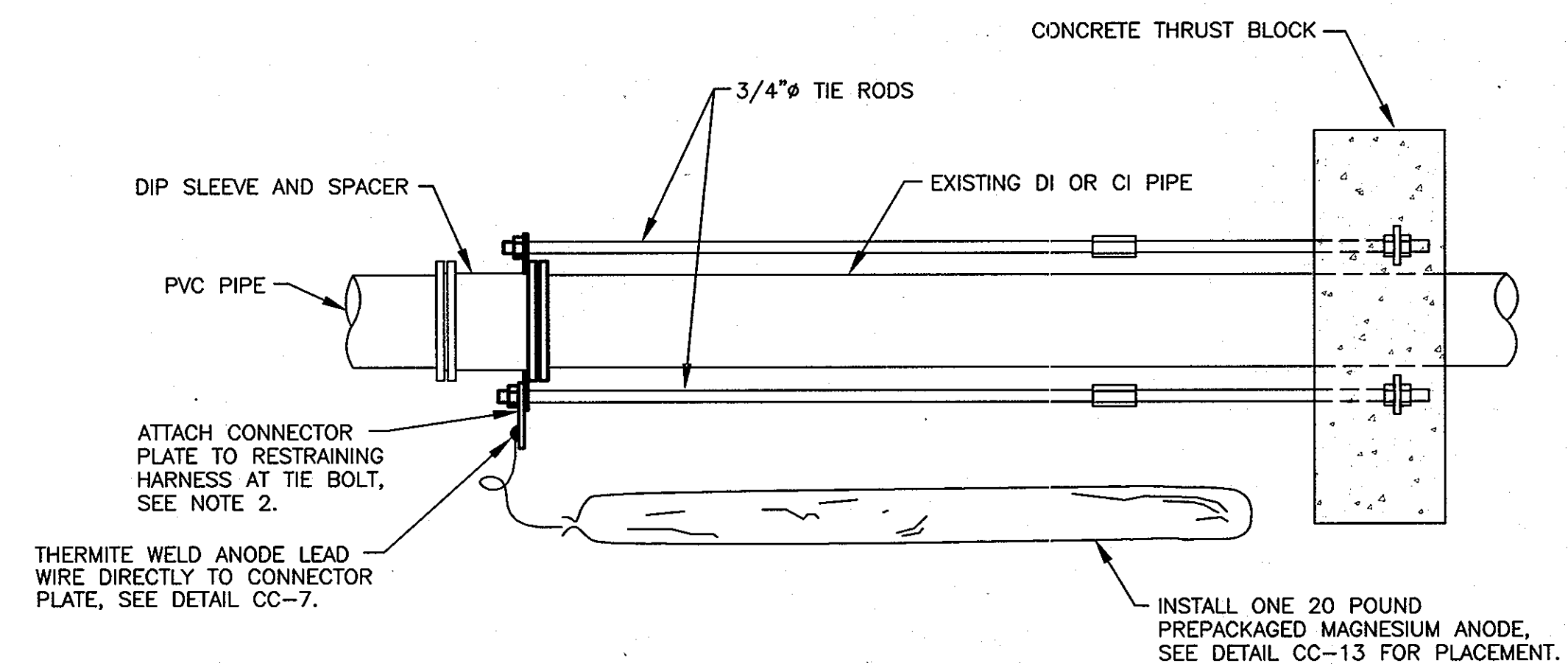
- NOTES:
- CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS, OR SERVICE SADDLE.
  - THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.

**CC-7: CONNECTION PLATE DETAIL**  
NOT TO SCALE



- NOTES:
- ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-14.
  - DO NOT THERMITE WELD TO PVC PIPE.

**CC-8: CORROSION PROTECTION AT FIRE HYDRANT**  
NOT TO SCALE



- NOTES:
- ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-13.
  - REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
  - DO NOT THERMITE WELD TO PVC PIPE.

**CC-9: CORROSION PROTECTION AT IN-LINE THRUST BLOCK**  
NOT TO SCALE

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PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17083, EXPIRATION DATE 9/27/2012

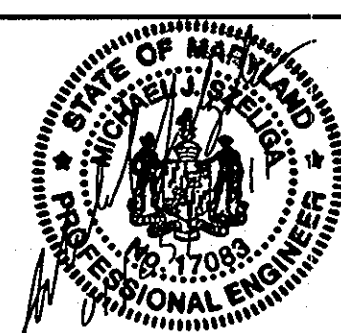
**AS-BUILT**  
DATE 7/23/2013

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 1/25/11  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 1/25/11  
ACT. CHIEF, BUREAU OF ENGINEERING DATE

RUSSELL CORROSION CONSULTANTS, INC.  
Columbia, Maryland



DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	JAN. 2011	BY:	NO.	AS-BUILT	DATE: 7/23/13
REVISION					

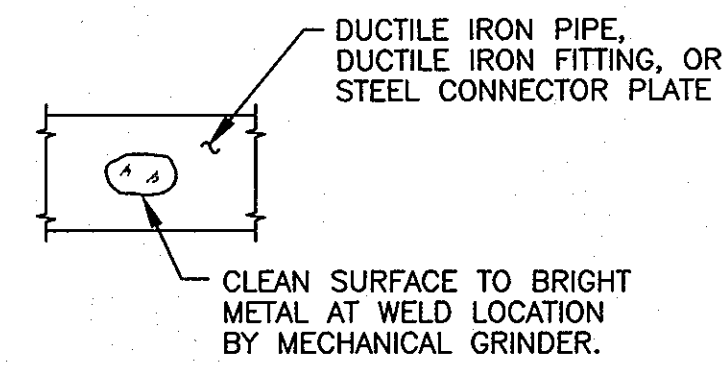
**CORROSION CONTROL  
DETAILS 2**

DUCKETTS LANE  
WATER MAIN REPLACEMENT

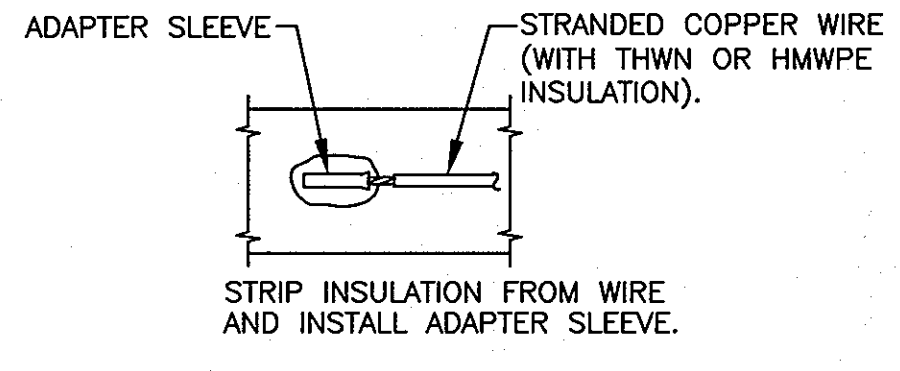
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

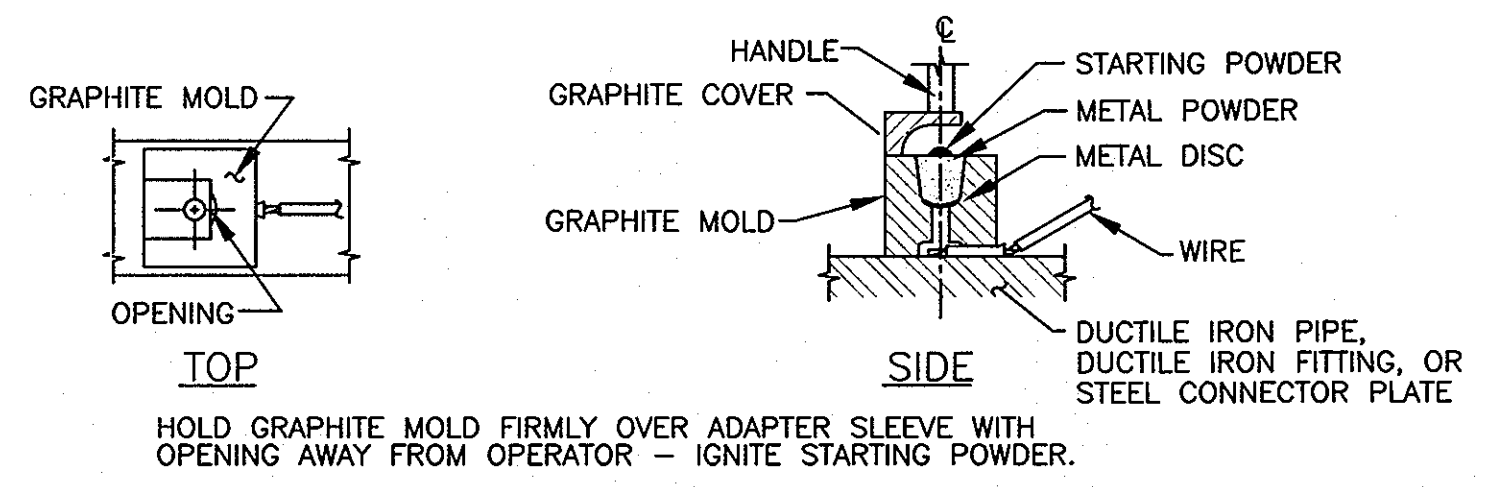
CP-5  
SCALE  
AS SHOWN  
SHEET  
28 OF 28



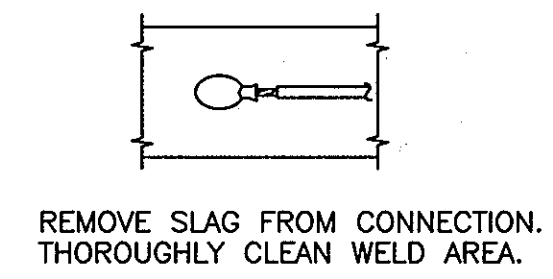
STEP 1



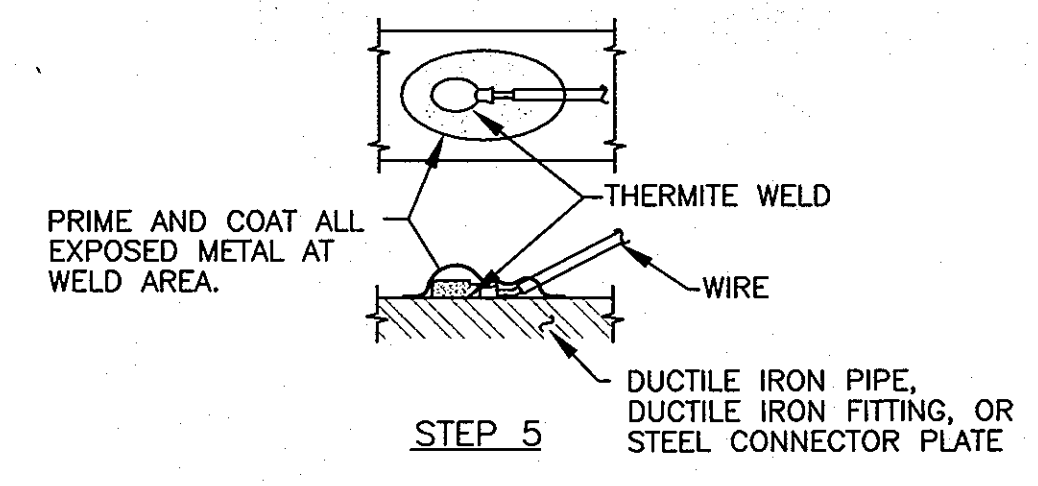
STEP 2



STEP 3



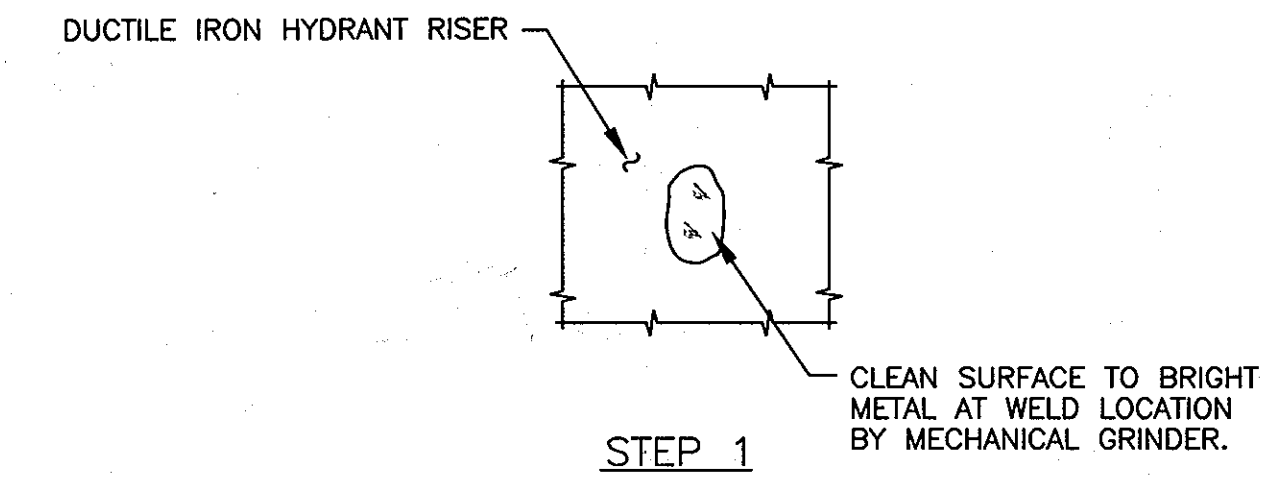
STEP 4



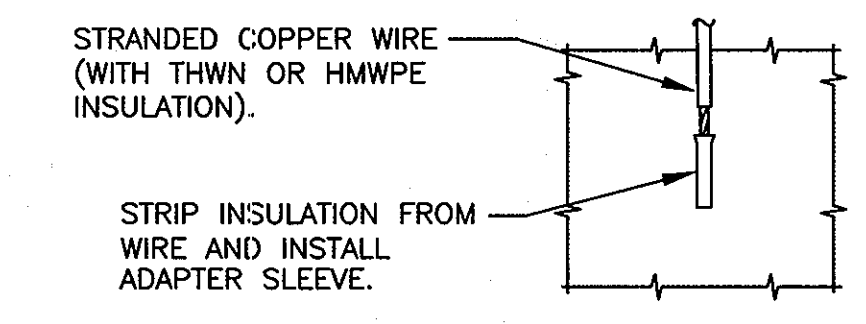
STEP 5

CC-10: HORIZONTAL THERMITE WELD  
SCALE: NONE

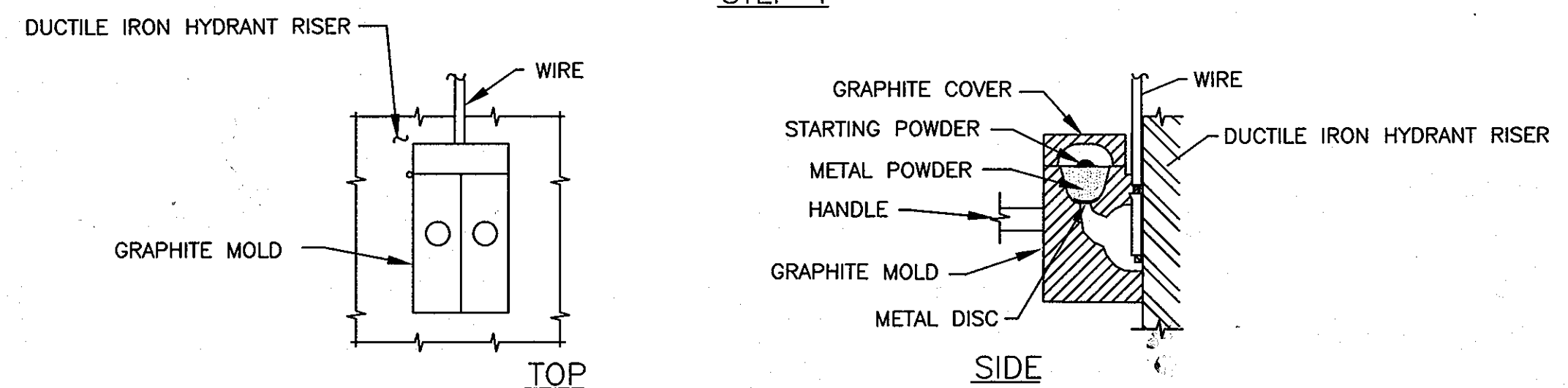
- NOTES:
1. THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.
  2. DO NOT THERMITE WELD TO PVC PIPE.



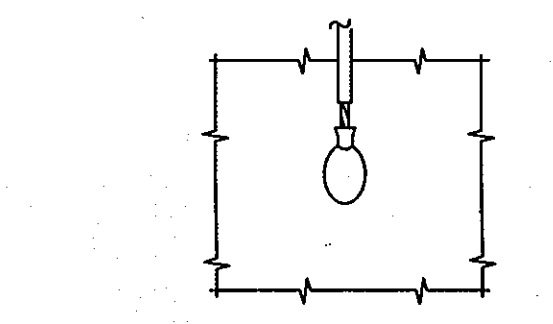
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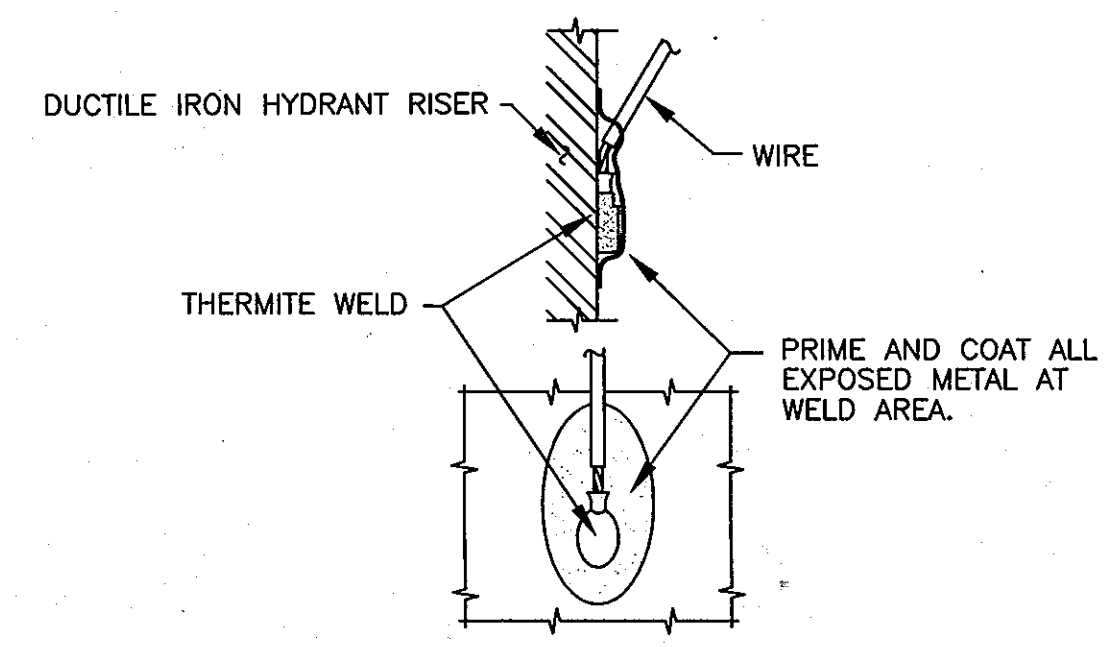
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STEP 3



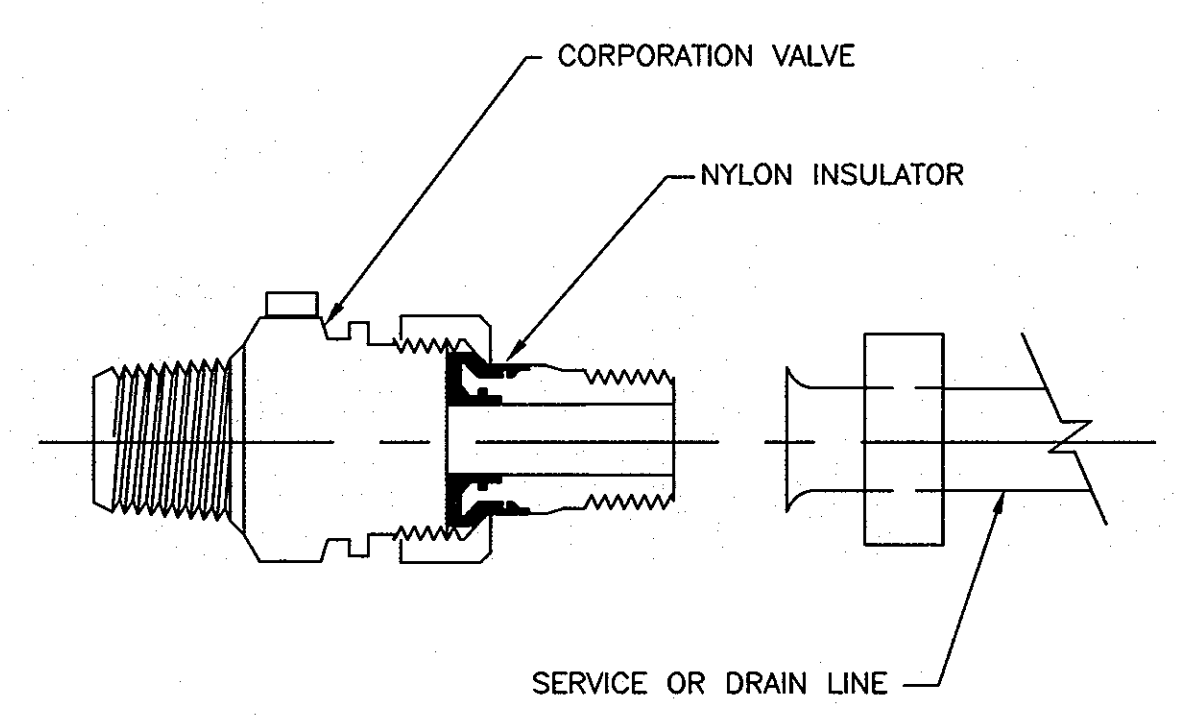
STEP 4



STEP 5

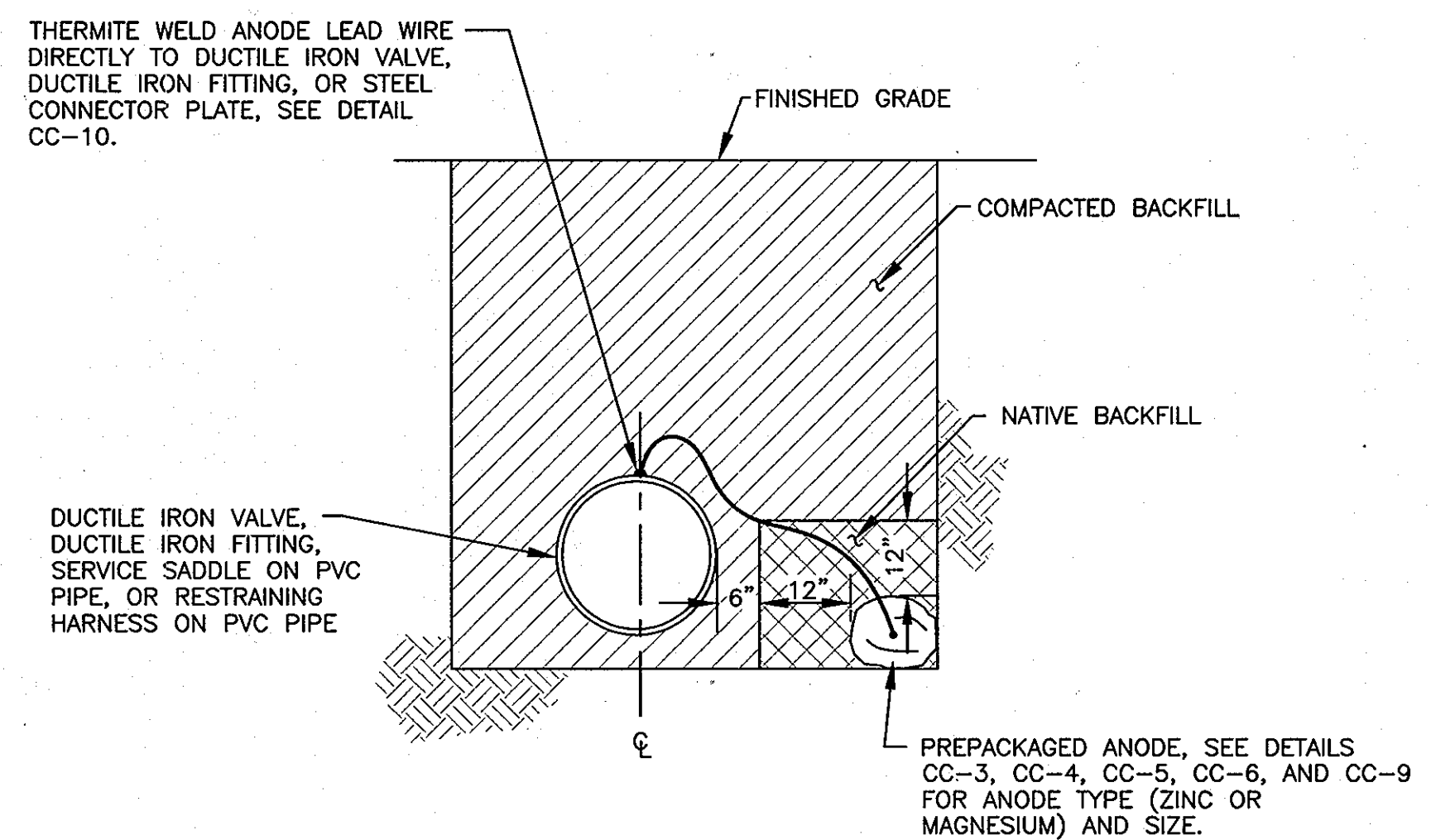
CC-11: VERTICAL THERMITE WELD  
NOT TO SCALE

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



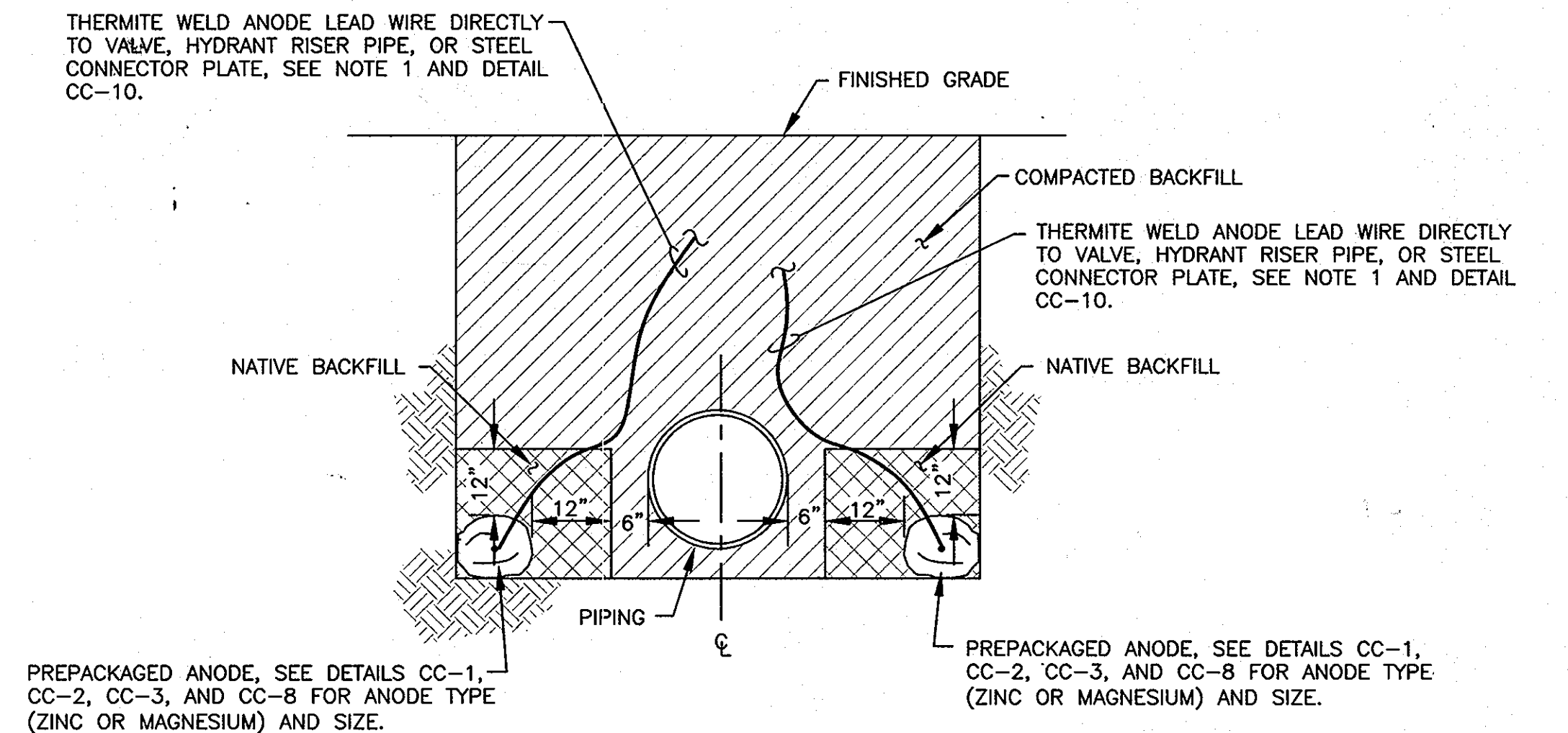
- NOTES:
1. INSTALL ELECTRICAL ISOLATION ON ALL WATER SERVICE AND DRAIN LINE CONNECTIONS TO MAIN.
  2. COAT EXTERIOR OF CORPORATION STOP, AND SERVICE PIPING AND/OR DRAIN LINE FOR A DISTANCE OF 12 INCHES WITH MASTIC COATING (ROYSTON ROSKOTE R28). MASTIC COATING TO BE MINIMUM OF 20 MILS IN THICKNESS.
  3. INSULATED CORPORATION NOT REQUIRED FOR PLASTIC SERVICES.

CC-12: INSULATING CORPORATION  
NOT TO SCALE



- NOTES:
1. INSTALL ANODE IN NATIVE SOIL. DO NOT BACKFILL ANODE WITH SAND OR STONE.
  2. DO NOT THERMITE WELD TO PVC PIPE.

CC-13: SINGLE ANODE PLACEMENT  
NOT TO SCALE



- NOTES:
1. WHEN INSTALLING ANODES AT HYDRANTS, ATTACH ONE ANODE LEAD TO SHUT-OFF VALVE, AND ONE ANODE LEAD TO HYDRANT RISER PIPE, SEE DETAIL CC-8.
  2. INSTALL ANODES A MINIMUM OF 12 INCHES FROM PIPE.
  3. BACKFILL ANODES WITH NATIVE SOIL FOR A MINIMUM OF 12 INCHES ON ALL SIDES. DO NOT BACKFILL ANODES WITH SAND OR STONE.
  4. DO NOT THERMITE WELD TO PVC PIPE.

CC-14: DOUBLE ANODE PLACEMENT  
NOT TO SCALE

**AS-BUILT**  
DATE 7/23/2013

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 1/25/11  
 Chief, Bureau of Engineering: *[Signature]* 1/25/11  
 Chief, Bureau of Utilities: *[Signature]* 1/25/11  
 Act. Chief, Utility Design Division: *[Signature]* 1/25/11

RUSSELL CORROSION CONSULTANTS, INC.  
Columbia, Maryland

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. 17083, EXPIRATION DATE 9/27/2012

DES:	MJS			
DRN:	DJD			
CHK:	MJS			
DATE:	JAN. 2011	BY:	NO.	AS-BUILT
REVISION:				

CORROSION CONTROL  
DETAILS 3

DUCKETT'S LANE  
WATER MAIN REPLACEMENT  
CAPITAL PROJECT No. W-8286  
CONTRACT No. 44-4677  
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

CP-6  
SCALE  
AS SHOWN  
SHEET  
29 OF 29