

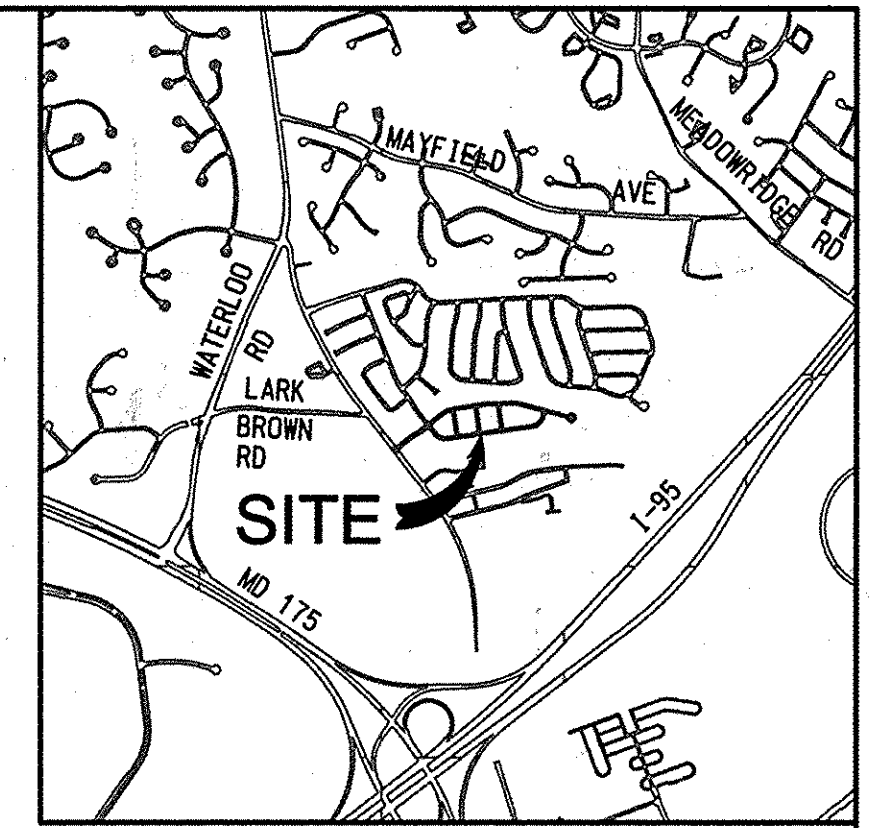
PIRCH WAY/ASPERN DRIVE WATER MAIN REPLACEMENT

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. W-8321

CONTRACT No. 44-4807



VICINITY MAP
SCALE: 1" = 2000'

RESTORATION SCHEDULE		
LOCATION	DISTANCE	TYPE
PIRCH WAY	2063	ASPHALT
ASPERN DRIVE	1335	ASPHALT
DEVON PLACE	278	ASPHALT
JENA PLACE	277	ASPHALT
ULM PLACE	263	ASPHALT

* REFER TO PERMANENT SEEDING NOTES ON SHEET 12 OF 14

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.

GENERAL NOTES

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN INTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON FEB 2013 BY KCI TECHNOLOGIES, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/ADJUSTED 2007 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 376F AND NO. 376I. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE REBAR & CAPS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- UNLESS OTHERWISE SHOWN, SPECIFIED, OR DIRECTED, CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL UTILITY POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHEN TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT & T.....	1-800-252-1133
BGE (CONTRACTOR SERVICES).....	410-637-8713
BGE (UNDERGROUND DAMAGE CONTROL).....	410-787-9068
BGE (EMERGENCY).....	410-695-0123
BUREAU OF UTILITIES.....	410-313-4900
COLONIAL PIPELINE CO.....	410-795-1390
MISS UTILITY.....	1-800-257-7777
STATE HIGHWAY ADMINISTRATION.....	410-531-5533
VERIZON.....	1-800-743-0033
MCI WORLDCOM.....	1-800-624-9675

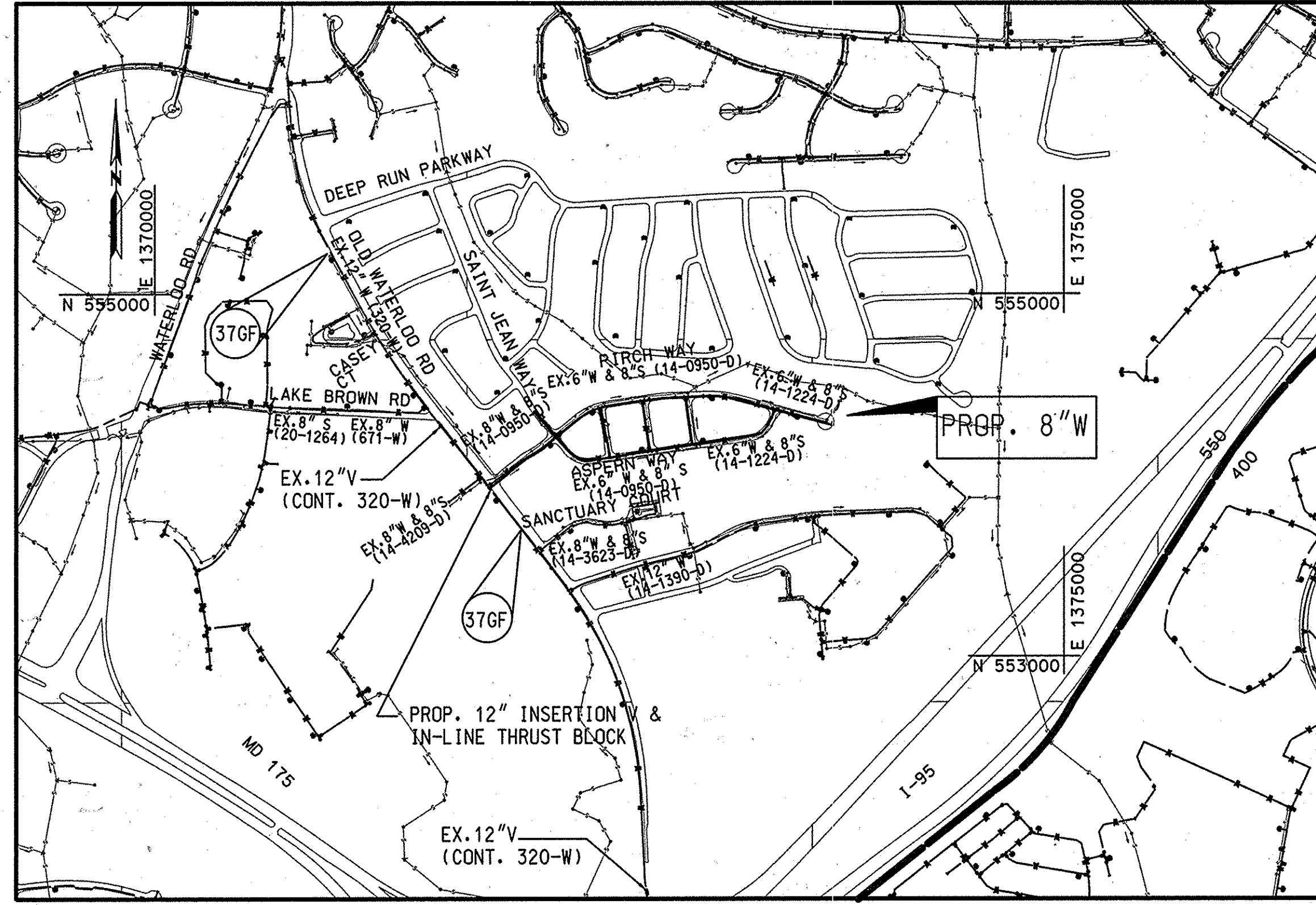
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE TEMPORARY CONSTRUCTION EASEMENT/STRIP ARE NOT TO BE REMOVED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS SECTION 18.114(A) OF HOWARD COUNTY CODE.
- EXCEPT AS INDICATED ON THE PLANS, ALL PUBLIC WATER MAINS (INCLUDING HYDRANT AND BLOW-OFF LEADS) SHALL BE POLYVINYL CHLORIDE (PVC) AWWA C900 PIPE MEETING THE REQUIREMENTS OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.
- ALL PROPOSED PVC C900 WATER MAIN PIPING SHALL BE PRESSURE CLASS 305 (OR 14).
- ALL HYDRANTS, MAINLINE GATE VALVES, WATER SERVICE VALVE AND PIPING, AND SIMILAR (FOR BOTH PERMANENT AND TEMPORARY INSTALLATIONS) SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 250 PSI.
- FIVE (5) DEGREE BENDS SHALL BE ACCOMPLISHED USING SWEEPS, WHICH ALONG WITH HIGH DEFLECTION COUPLINGS, SHALL BE THE PVC PUSH-ON TYPE WITH RUBBER GASKETED JOINTS APPROPRIATE FOR PVC C900 WATER MAIN PIPE (INJECTION MOLDED PER AWWA C907 FOR PRESSURE CLASS 235 PVC PIPE; FABRICATED PER AWWA C900 FOR PRESSURE CLASS 305 PVC PIPE).

TEES, CROSSES, CAPS, BENDS GREATER THAN 5 DEGREES, AND SIMILAR FITTINGS THAT REQUIRE RESTRAINED JOINTS SHALL BE DUCTILE IRON MECHANICAL JOINT (AWWA C153) FITTINGS APPROPRIATE FOR PVC C900 WATER MAIN PIPE. ALL DUCTILE IRON FITTINGS SHALL BE DOUBLE CEMENT LINED IN ACCORDANCE WITH AWWA/ANSI C104/A21.4.

PIPE RESTRAINT SHALL BE PROVIDED IN THE FOLLOWING MANNER USING SYSTEMS MANUFACTURED BY EBAA IRON INC. OR APPROVED EQUAL: 1) ALL DUCTILE IRON MECHANICAL JOINT FITTINGS (INCLUDING MECHANICAL JOINT HYDRANT CONNECTIONS) SHALL BE RESTRAINED USING THE SERIES 2000 PVC MECHANICAL JOINT FITTING RESTRAINT SYSTEM. 2) ALL FIVE (5) DEGREE SWEEPS SHALL BE RESTRAINED (BUT ONLY WHEN LOCATED WITHIN THE RESTRAINED JOINT LIMITS NOTED ON THE PROFILES) USING THE SERIES 1500 PVC FITTING HARNESSING SYSTEM. 3) HIGH DEFLECTION COUPLINGS AND PUSH-ON BELL OR SPIGOT PIPE JOINTS SHALL BE RESTRAINED (BUT ONLY WHEN LOCATED WITHIN THE RESTRAINED JOINT LIMITS NOTED ON THE PROFILES) USING THE SERIES 1500 PVC HARNESSING SYSTEM. BEND HARNESSING RODS TO MATCH THE ANGLE AT HIGH DEFLECTION COUPLINGS.

- HIGH DEFLECTION COUPLINGS ARE LIMITED TO A MAXIMUM DEFLECTION OF 3 DEGREES AND DO NOT REQUIRE RESTRAINT UNLESS LOCATED WITHIN RESTRAINED JOINT LIMITS NOTED ON THE PROFILES).
- ALL MECHANICAL PIPE RESTRAINT SYSTEMS SHALL BE RATED FOR 305 PSI.
 - INSTALL CONCRETE ANCHOR COLLARS WHERE SHOWN, SPECIFIED OR DIRECTED, AND WHEN SUFFICIENT ROOM EXISTS (AS DETERMINED BY THE ENGINEER), INSTALL CONCRETE BUTTRESSING AT ALL TEES, CAPS, HORIZONTAL AND VERTICAL BENDS, AND HYDRANT INSTALLATIONS SHOWN WITH OR WITHOUT HARNESSING RESTRAINT UNLESS RESTRAINED JOINTS ARE SPECIFIED ON THE PROFILES. REMOVE PIPING THAT IS TO BE ABANDONED AS NEEDED TO PREVENT CONFLICT WITH THE INSTALLATION OF CONCRETE BUTTRESSING.
 - MAINLINE VALVES SHALL BE STRAPPED TO ADJACENT TEES OR CROSSES PER HOWARD CO STD. DET W-2.13. MAINLINE VALVES WHICH ARE NOT SHOWN ADJACENT TO TEES OR CROSSES SHALL BE ANCHORED TO A CONCRETE BLOCK IN ACCORDANCE WITH HOWARD CO. STD. DETAIL W-5.01. VALVES ON HYDRANT LEADS SHALL BE RESTRAINED USING THE SERIES 2000 PVC M.J. FITTING RESTRAINT SYSTEM BY EBAA IRON, INC. OR APPROVED EQUAL.
 - ALL WATER HOUSE CONNECTIONS SHALL BE COPPER MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.

- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS (TO THE NEAREST 6" INCREMENT THAT PLACES THE HYDRANT BOTTOM AT OR ABOVE GRADE). ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL TIE-INS TO EXISTING WATER MAINS SHALL BE COORDINATED WITH THE HOWARD COUNTY BUREAU OF UTILITIES AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING WORK. A DETAILED PLAN FOR THE SHUTDOWN OF EXISTING WATER MAINS SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE COUNTY.
- THE CONTRACTOR SHALL LOCATE ALL WATER AND SEWER HOUSE CONNECTIONS, AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THESE EXISTING CONNECTIONS. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. ALL EXISTING CONNECTIONS SHALL BE RECONNECTED UPON COMPLETION OF CONSTRUCTION IN ACCORDANCE WITH COUNTY STANDARDS. TEMPORARY SERVICE SHALL BE PROVIDED FOR ANY SERVICE THAT IS DAMAGED BY THE WORK OF THE CONTRACTOR. HOMEOWNER SHALL BE IMMEDIATELY NOTIFIED OF THE LOSS OF SERVICE. NO HOUSE SHALL BE WITHOUT SERVICE OF ANY KIND, FOR MORE THAN 2 HOURS AT ANY ONE TIME.
- EXISTING STORM DRAINS DISTURBED BY THE CONSTRUCTION SHALL BE REPLACED IN KIND AT THE SAME LINE AND GRADE AS THE EXISTING STORM DRAINS. STORM DRAIN REPLACEMENT SHALL BE INCIDENTAL TO THE WORK OF THE CONTRACT.
- ANY TREES OUTSIDE OF EXISTING EASEMENTS, DISTURBED BY CONSTRUCTION SHALL BE REPLACED IN KIND (3" CALIPER MINIMUM).
- THE CONTRACTOR MUST FOLLOW ALL CONDITIONS AND REQUIREMENTS AS SET FORTH IN THE REQUIRED PERMITS FOR THIS PROJECT.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AS WELL AS ANY EXISTING THRUST RESTRAINT.



LOCATION MAP
SCALE: 1" = 600'

HOWARD COUNTY GEODETIC SURVEY CONTROL

THE HORIZONTAL AND VERTICAL DATUM BASED ON NAD 83/ADJUSTED 2007 (HORIZONTAL) NAVD 88 (VERTICAL)

376F N 555222.17 E 1370948.56 ELEV. 330.87	376I N 563697.27 E 1372014.96 ELEV. 292.10
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TYPE OF BUILDING:	RESIDENTIAL
NUMBER OF PARCELS:	122
NUMBER OF WATER HOUSE CONNECTIONS:	60 WHC & 28 TWIN
DRAINAGE AREA:	PATAPSCO
PRESSURE ZONE:	550
WATER TEST GRADIENT:	700

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.....	TITLE SHEET
2.....	PHASING PLAN
3.....	PLAN & PROFILE PIRCH WAY STA 0+00 TO STA 7+00 PLAN & PROFILE ASPERN DRIVE (NORTH) STA 50+00 TO STA 51+47
4.....	PLAN & PROFILE PIRCH WAY STA 7+00 TO STA 14+00
5.....	PLAN & PROFILE PIRCH WAY STA 14+00 TO STA 20+63
6.....	PLAN & PROFILE ASPERN DRIVE STA 100+00 TO STA 107+00
7.....	PLAN & PROFILE ASPERN DRIVE STA 107+00 TO STA 113+41
8.....	PLAN & PROFILE DEVON PLACE, JENA PLACE, & ULM PLACE
9.....	WATER MAIN DETAILS
10.....	SEDIMENT AND EROSION CONTROL PLAN PIRCH WAY, ASPERN DRIVE, DEVON PLACE, & JENA PLACE
11.....	SEDIMENT AND EROSION CONTROL PLAN PIRCH WAY, ASPERN DRIVE, & ULM PLACE
12.....	SEDIMENT AND EROSION CONTROL NOTES & DETAILS
13.....	NOT/TRAFFIC CONTROL
14.....	CORROSION CONTROL

APPENDIX A	AS-BUILT CONTRACT 320-W
APPENDIX B	AS-BUILT CONTRACT 14-0950-D
APPENDIX C	AS-BUILT CONTRACT 14-1224-D
APPENDIX D	AS-BUILT CONTRACT 14-3623-D

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

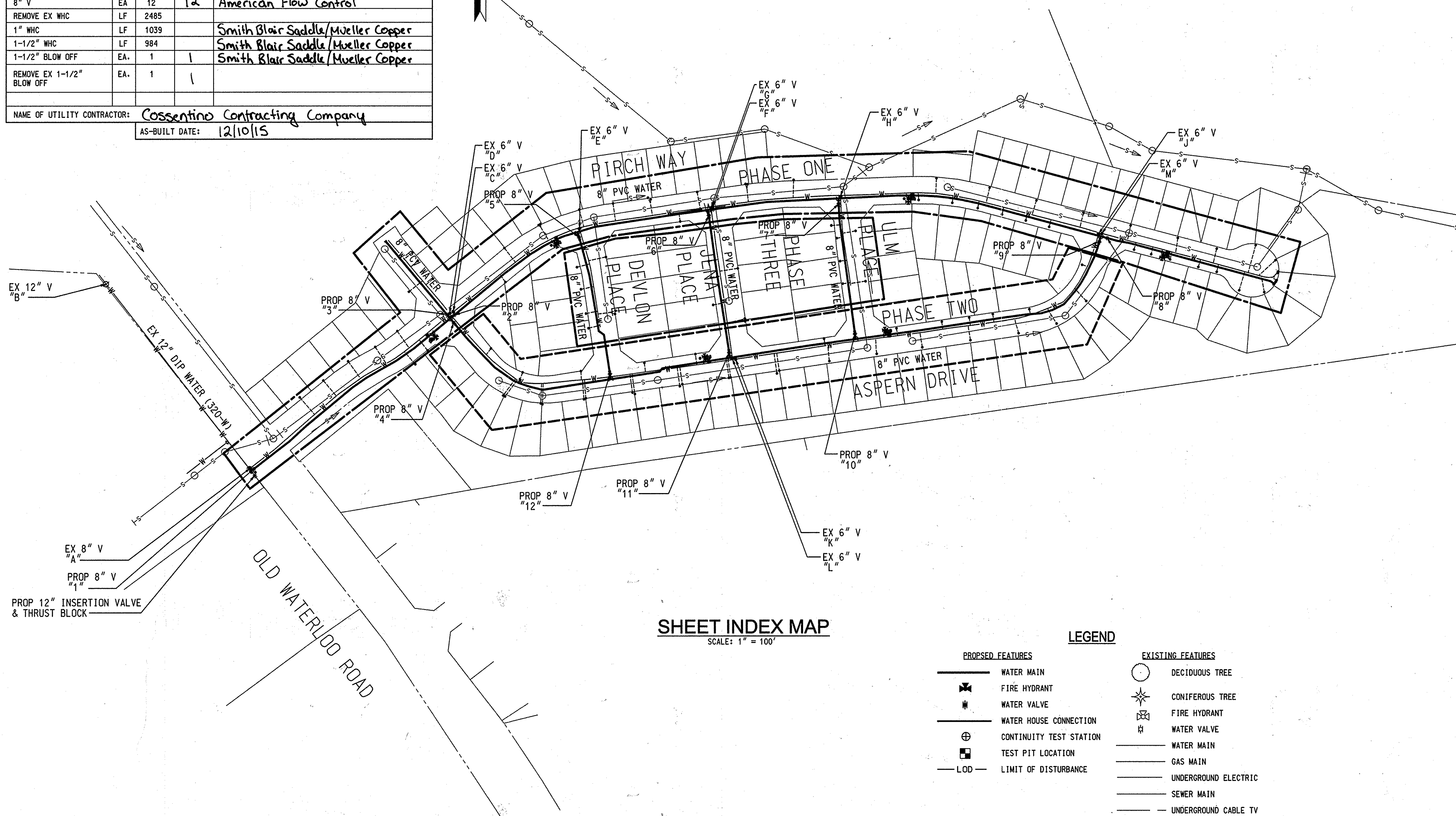
AS-BUILT
DATE 12/10/15

PLOTED: 07:01 AM on Thursday, August 15, 2015
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS DATE 8/23/15 CHIEF, BUREAU OF UTILITIES DATE 8/23/15		KCI TECHNOLOGIES ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 936 RIDGEBOOK ROAD SPARKS, MARYLAND 21152 Telephone: (410) 316-7800 Fax: (410) 316-7818 www.kci.com		 STATE OF MARYLAND PROFESSIONAL ENGINEER NO. 31363 EXPIRATION DATE: 1/16/2014 8/4/15		DES: GS DRN: GS CHK: GW/TWW DATE: AUG. 2013 BY: MRL NO.: AS-BUILT REVISION: 2/10/15		PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT CAPITAL PROJECT No. W-8321 CONTRACT No. 44-4807 TITLE SHEET SCALE AS SHOWN SHEET 1 OF 14		ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND BLOCK NO. 12 & 21 SCALE 600' SCALE MAP NO. 37 REVISION DATE	
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QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
MOBILIZATION/M.O.T.	EA.	1	1	
8" WATER (PVC)	LF	4216	4322	North American Pipe
TAPPING SLEEVE & VALVE 12" INSERTION VALVE & THRUST BLOCK	EA.	1	1	Smith Blair Tapping Sleeve/Mueller
CORROSION PROTECTION	EA.	1	1	Piping + Corrosion Specialties
REMOVE EX FH & V	EA.	6	6	
6" FH & V	EA.	6	6	American Flow Control
REMOVE EX 8" V	EA.	1	1	
REMOVE EX 6" V	EA.	6	6	
8" V	EA.	12	12	American Flow Control
REMOVE EX WHC	LF	2485		
1" WHC	LF	1039		Smith Blair Saddle/Mueller Copper
1-1/2" WHC	LF	984		Smith Blair Saddle/Mueller Copper
1-1/2" BLOW OFF	EA.	1	1	Smith Blair Saddle/Mueller Copper
REMOVE EX 1-1/2" BLOW OFF	EA.	1	1	
NAME OF UTILITY CONTRACTOR: Cossentino Contracting Company				
AS-BUILT DATE: 12/10/15				

LIMIT OF PHASE ONE CONSTRUCTION SHEETS 3, 4, & 5
 LIMIT OF PHASE TWO CONSTRUCTION SHEETS 6 & 7
 LIMIT OF PHASE THREE CONSTRUCTION SHEET 7 & 8



SHEET INDEX MAP
SCALE: 1" = 100'

PROPOSED FEATURES		EXISTING FEATURES	
	WATER MAIN		DECIDUOUS TREE
	FIRE HYDRANT		CONIFEROUS TREE
	WATER VALVE		FIRE HYDRANT
	WATER HOUSE CONNECTION		WATER VALVE
	CONTINUITY TEST STATION		WATER MAIN
	TEST PIT LOCATION		GAS MAIN
	LIMIT OF DISTURBANCE		UNDERGROUND ELECTRIC
			SEWER MAIN
			UNDERGROUND CABLE TV
			MANHOLE
			WATER METER
			SANITARY CLEANOUT

SEQUENCE OF CONSTRUCTION

THE PHASES ARE NOT IN A PARTICULAR ORDER. HOWEVER, THE CONTRACTOR SHALL COMPLETE EACH PHASE PRIOR TO THE NEXT PHASE

- PHASE ONE**
- INSTALL 12" INSERTION VALVE
 - CLOSE EXISTING VALVE "B" & INSERTION VALVE
 - INSTALL 12"x8" TEE ON EXISTING 12" WATER MAIN. INSTALL VALVE "1". STRAP VALVE & TEMPORARY CAP TO TEE. CLOSE VALVE.
 - OPEN VALVE "B" AND INSERTION VALVE.
 - INSTALL 8" PVC WATER MAIN IN PIRCH WAY AND ASPERN DRIVE FROM STA. 50+00 TO STA. 51+87. INCLUDE VALVES "4", "5", "6", "7", "9" AND TEMPORARY CAPS AS SHOWN ON PLAN SHEETS. STRAP VALVES AND CAPS TO TEE.
 - PERFORM PRESSURE TESTING AND DISINFECT THE 8" WATER MAIN
 - MAKE CONNECTIONS TO EX. 12" WATER
 - OPEN VALVE "1" - VALVES "4", "5", "6", "7", "9" REMAIN CLOSED.
 - REPLACE AND RECONNECT WHC
 - CLOSE EXISTING VALVE "M"
 - REMOVE EXISTING BLOW-OFF
 - REMOVE EXISTING FIRE HYDRANTS WITHIN LIMITS OF PHASE ONE

- PHASE TWO**
- INSTALL 8" PVC WATER MAIN IN ASPERN DRIVE. INCLUDE VALVES "10", "11", "12" AND TEMPORARY CAPS AS SHOWN ON PLAN SHEETS. STRAP THE VALVES AND CAPS TO TEE.
 - PERFORM PRESSURE TEST AND DISINFECT THE 8" WATER MAIN
 - REMOVE TEMPORARY CAP AT VALVES "4" AND "9" AND CONNECT TO 8" WATER MAIN
 - REPLACE AND RECONNECT WHC
 - OPEN VALVES "4" AND "9" - VALVES "10", "11", "12" REMAIN CLOSED
 - CLOSE EXISTING VALVES "J" & "K"
 - REMOVE EXISTING FIRE HYDRANTS WITHIN THE LIMITS OF PHASE TWO

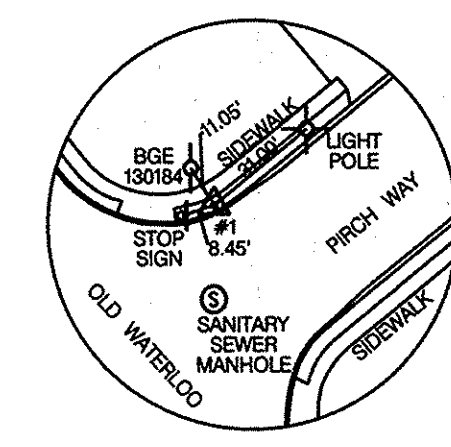
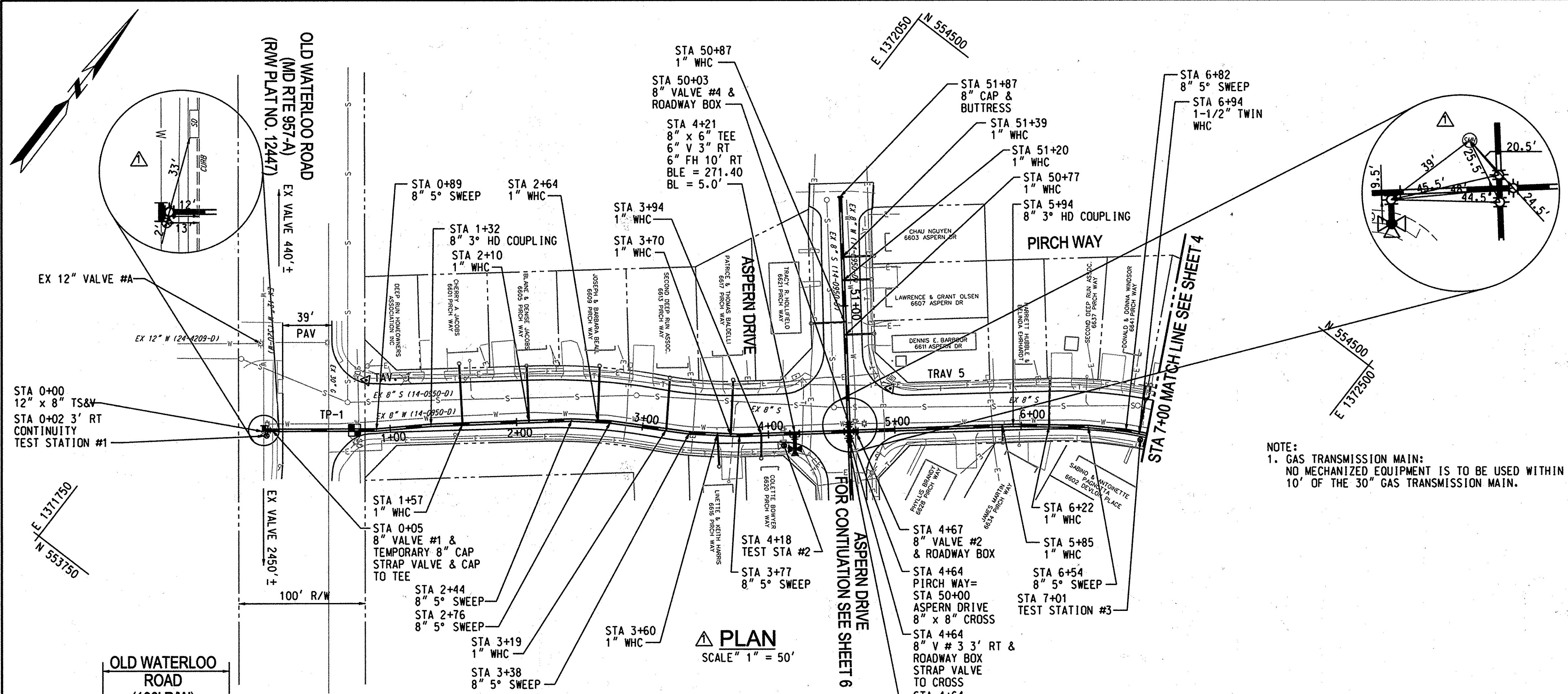
- PHASE THREE**
- INSTALL 8" PVC WATER MAIN IN ULM PLACE
 - PERFORM PRESSURE TEST AND DISINFECT THE 8" WATER MAIN
 - REMOVE TEMPORARY CAP AT VALVE "10" AND CONNECT TO 8" WATER
 - REMOVE TEMPORARY CAP AT VALVE "7" AND CONNECT TO 8" WATER MAIN
 - OPEN VALVES "7", "10"
 - REPLACE AND RECONNECT WHC
 - CLOSE EXISTING VALVE "H"
 - INSTALL 8" PVC WATER MAIN IN JENA PLACE
 - PERFORM PRESSURE TEST AND DISINFECT THE 8" WATER MAIN
 - REMOVE TEMPORARY CAP AT VALVE "12" AND CONNECT TO 8" WATER MAIN
 - REMOVE TEMPORARY CAP AT VALVE "11" AND CONNECT TO 8" WATER MAIN
 - OPEN VALVES "6", "11"
 - REPLACE AND RECONNECT WHC
 - CLOSE EXISTING VALVE "G"
 - INSTALL 8" PVC WATER MAIN IN DEVLON PLACE.
 - PERFORM PRESSURE TEST AND DISINFECT THE 8" WATER MAIN
 - REMOVE TEMPORARY CAP AT VALVE "5" AND CONNECT TO 8" WATER.
 - REMOVE TEMPORARY CAP AT VALVE "12" AND CONNECT TO 8" WATER.
 - OPEN VALVES "5", "12"
 - REPLACE AND RECONNECT WHC.
 - CLOSE EXISTING VALVE "E"
 - CLOSE EXISTING VALVES "A" AND "B". CLOSE VALVE "1" AND INSERTION VALVE.
 - REMOVE EXISTING VALVE "A" WITH 12" SLEEVE AND SPACER.
 - OPEN EXISTING VALVE "B", INSERTION VALVE AND VALVE "1".
 - REMOVE ALL EXISTING VALVES ON EXISTING WATER MAIN.
 - ABANDON EXISTING WATER MAIN IN PLACE.

AS-BUILT
DATE: 12/10/15

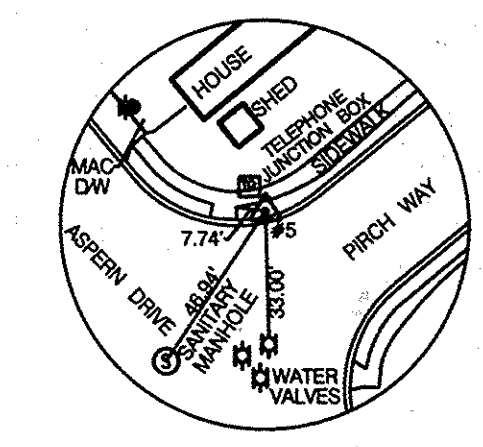
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31363 EXPIRATION DATE: 1/16/2014

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS CHIEF, BUREAU OF UTILITIES	 ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM	 STATE OF MARYLAND GUOHUA WANG PROFESSIONAL ENGINEER LICENSE NO. 31363 EXPIRES 1/16/2014	DES: GS DRN: GS CHK: GW/TWW DATE: AUG. 2013 BY: MRL NO.: AS-BUILT	PHASING PLAN	SCALE AS SHOWN SHEET 2 OF 14
PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT CAPITAL PROJECT No. W-8321 CONTRACT No. 44-4807					ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND



TRAV 1
NOT TO SCALE



TRAV 5
NOT TO SCALE

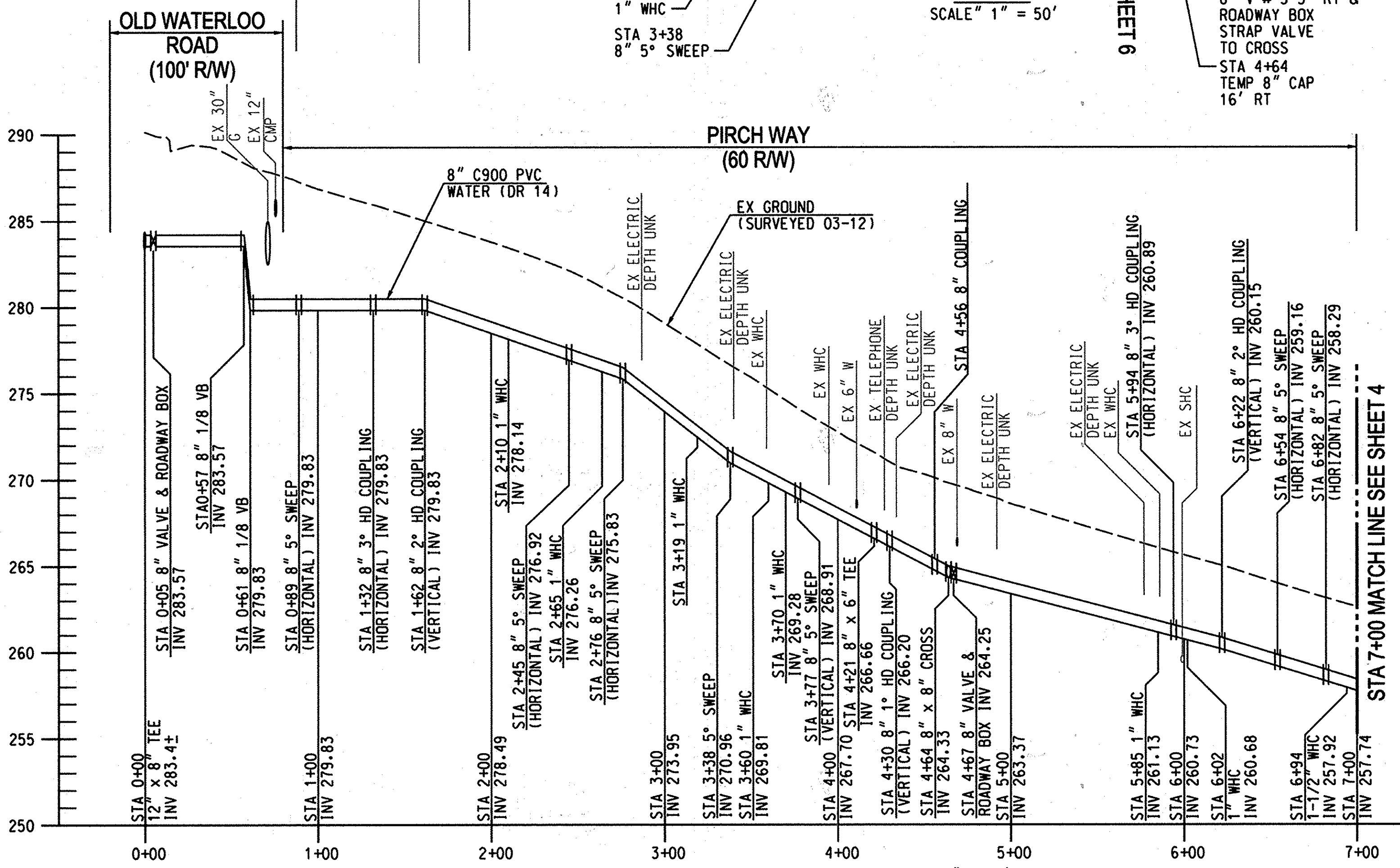
TRAVERSE COORDINATE SCHEDULE			
NUMBER	NORTHING	EASTING	ELEVATION
TRAV 1	554006.27	1371879.67	287.83
TRAV 5	554254.28	1372211.62	269.54

TEST PIT DATA			
TEST PIT NUMBER	UTILITY	MATERIAL	DEPTH
TP - 1	30" GAS	STEEL	4.70'

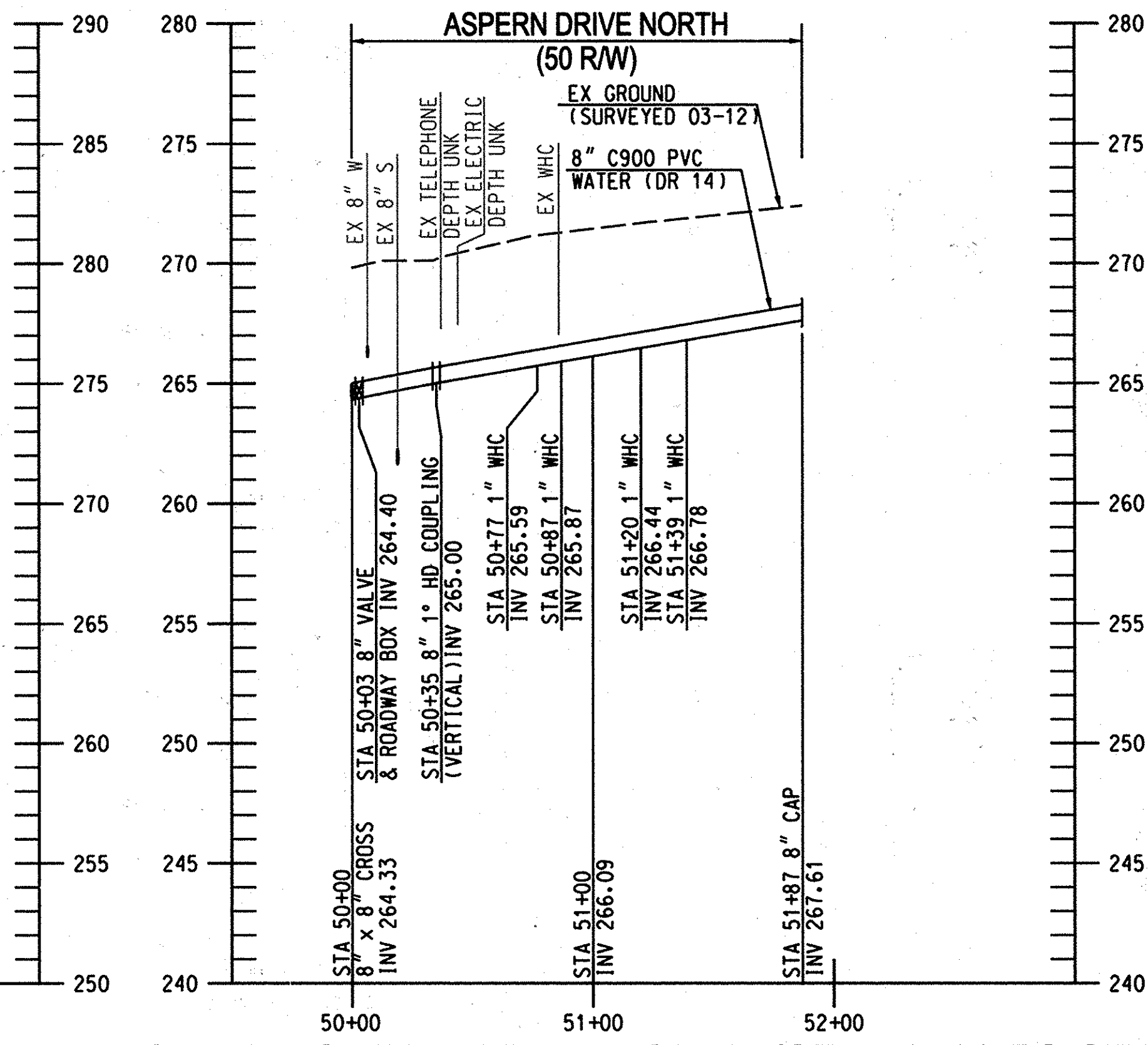
NOTE:
1. GAS TRANSMISSION MAIN:
NO MECHANIZED EQUIPMENT IS TO BE USED WITHIN
10' OF THE 30" GAS TRANSMISSION MAIN.

PLAN
SCALE 1" = 50'

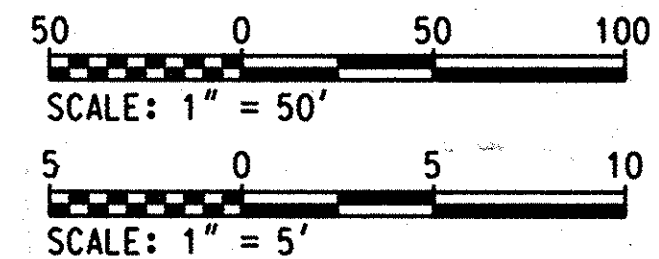
FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
PIRCH WAY			
0+00	TIE-IN	553925.21	1371839.80
0+89	8" 5" SWEEP	553979.76	1371910.21
1+32	8" HD COUPLING	554009.15	1371941.99
2+44	8" 5" SWEEP	554080.34	1372027.52
2+74	8" 5" SWEEP	554097.87	1372052.78
3+38	8" 5" SWEEP	554129.21	1372107.57
3+77	8" 5" SWEEP	554151.79	1372140.09
4+21	8" x 6" TEE	554179.71	1372173.64
4+64	8" x 8" CROSS	554207.21	1372206.68
4+64	8" V	554205±	1372209±
4+64	8" CAP	554195±	1372217±
4+67	8" V	554209±	1372209±
5+94	8" HD COUPLING	554290.33	1372306.56
6+54	8" 5" SWEEP	554326±	1372355±
6+82	8" 5" SWEEP	554341±	1372379±
ASPERN DRIVE			
50+03	8" V	554210±	1372205±
51+87	8" CAP	554350.80	1372087.18



PROFILE: PIRCH WAY SCALE: HOR. 1" = 50', VERT. 1" = 5'



PROFILE: ASPERN DRIVE NORTH (STA 50+00 TO STA 51+87)



AS-BUILT REPLACEMENT SHEET
12/10/2015

PLOTTED: 11/23/15 11:35 PM on Friday, December 11, 2015
 BY: J. Williams
 FILE: M:\2015\13122677.D\Drawings\13122677-03-W.dwg

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

J. Williams
DIRECTOR OF PUBLIC WORKS
DATE: 11/16/15

Thomas Bedell
CHIEF, BUREAU OF ENGINEERING
DATE: 12/10/15

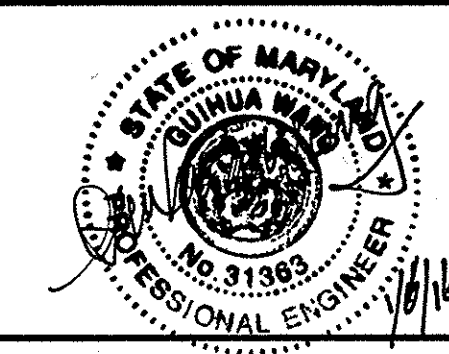
John C. ...
CHIEF, BUREAU OF UTILITIES
DATE: 12/10/15

...
CHIEF, UTILITY DESIGN DIVISION
DATE: 12/10/15

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:	GS
DRN:	GS
CHK:	GW/TWW
DATE:	AUG. 2013
BY:	NO.
KFJ	AS-BUILT
REVISION	
DATE	12/10/15

PLAN & PROFILE
PIRCH WAY PHASE 1
STA 0+00 TO STA 7+00
ASPERN DRIVE
STA 50+00 TO STA 51+87

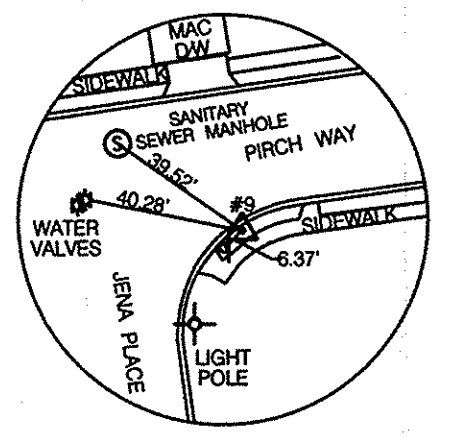
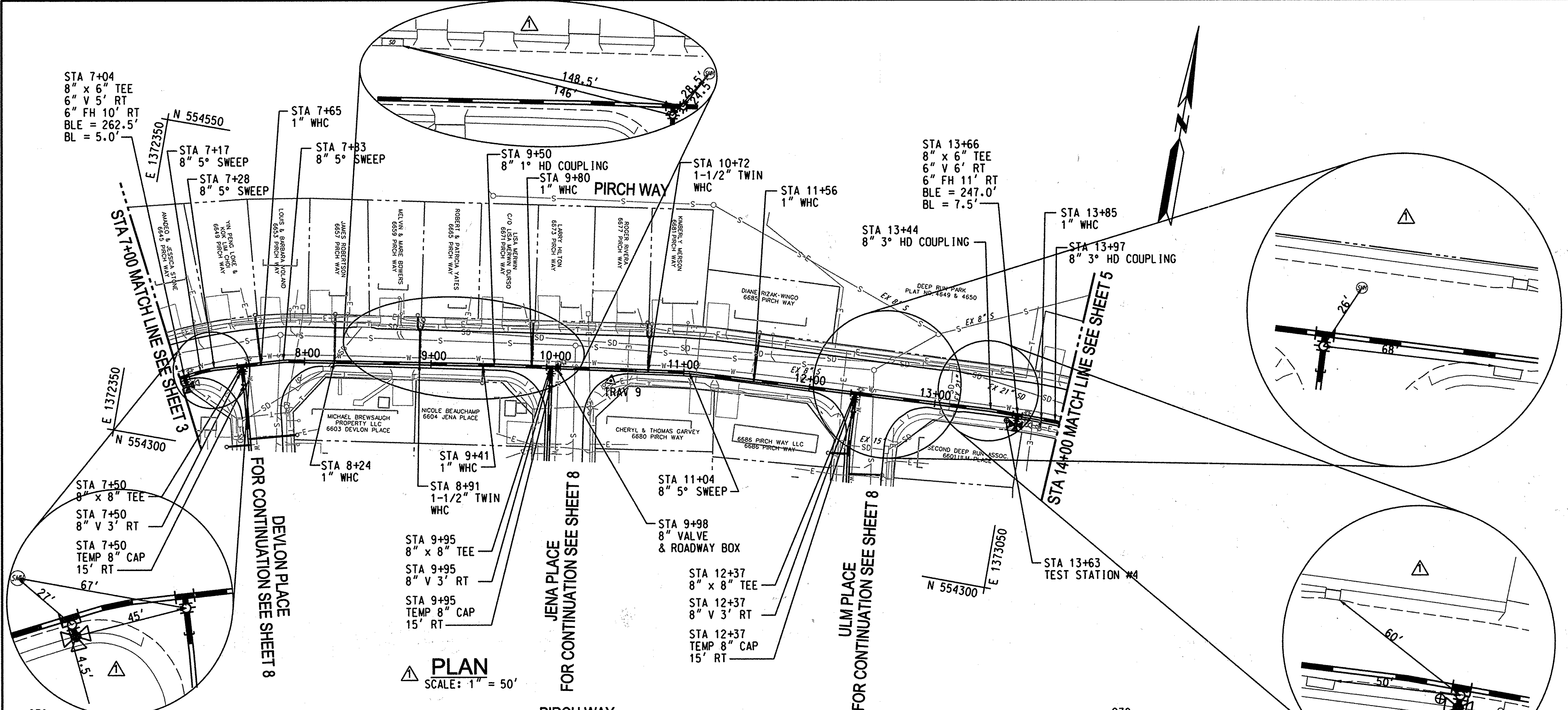
600' SCALE MAP NO. 37 BLOCK NO. 21

PIRCH WAY/ASPERN DRIVE
WATER REPLACEMENT

CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 14

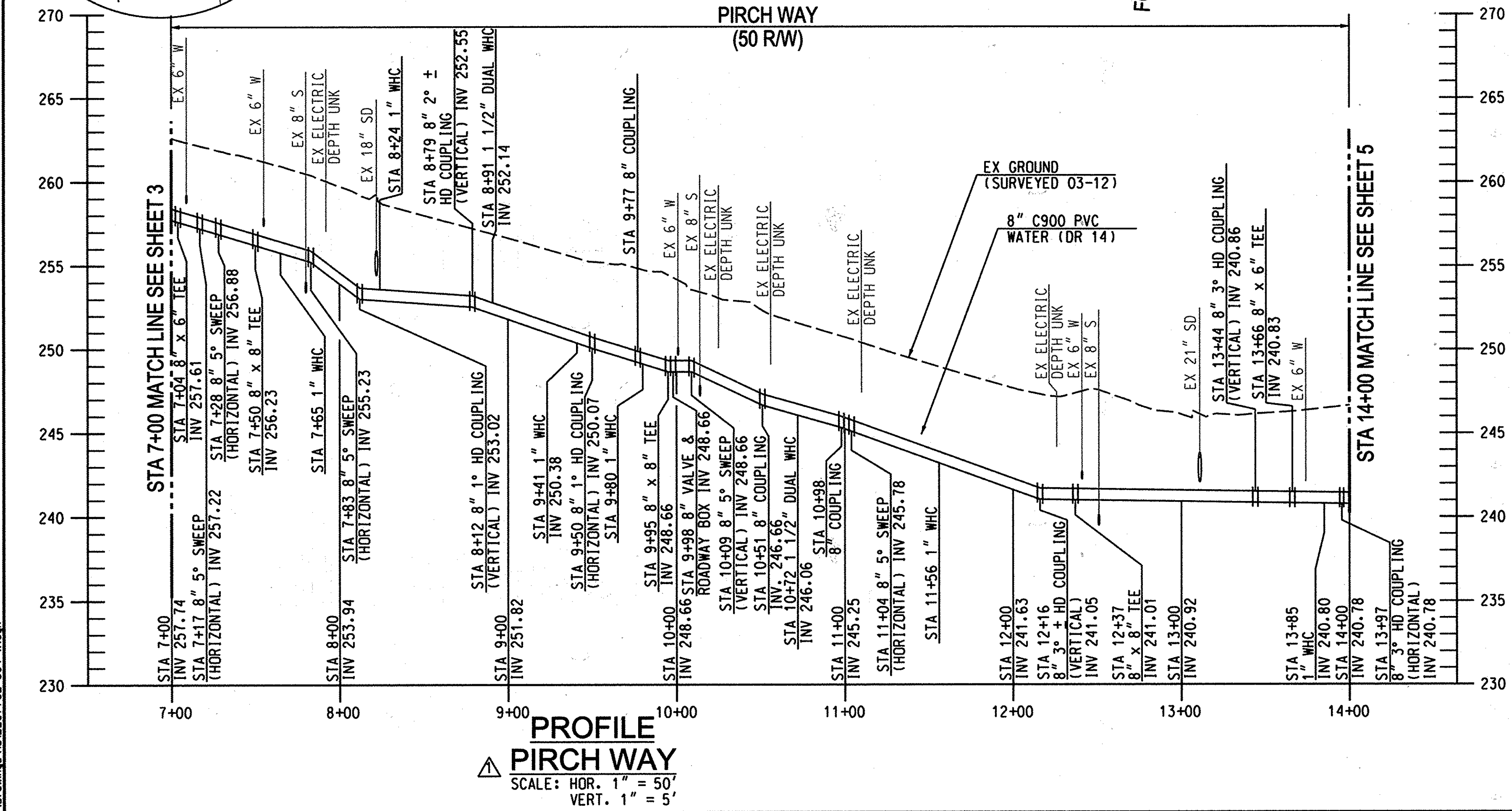


TRAV 9
NOT TO SCALE

TRAVERSE COORDINATE SCHEDULE			
NUMBER	NORTHING	EASTING	ELEVATION
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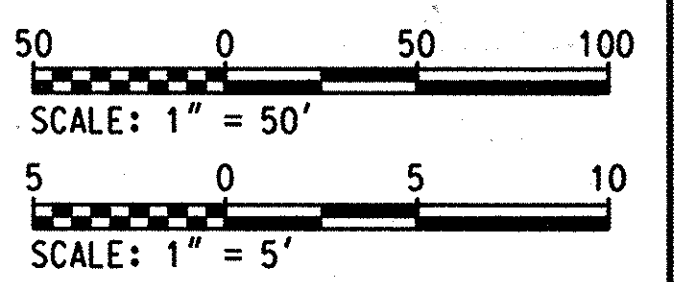
FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
7+04	8" x 6" TEE	554351.05	1372398.24
7+17	8" 5" SWEEP	554357.10	1372410.23
7+28	8" 5" SWEEP	554361±	1372420±
7+50	8" x 8" TEE	554367.16	1372441.61
7+50 3' RT	8" V	554364±	1372442±
7+50 15' RT	8" CAP	554352.80	1372445.94
7+83	8" 5" SWEEP	554376.68	1372473.18
9+50	8" HD COUPLING	554402±	1372637±
9+95	8" x 8" TEE	554408.19	1372682.56
9+95 3' RT	8" V	554405±	1372682±
9+95 15' RT	8" CAP	554393.33	1372684.59
9+98	8" V	554408±	1372685±
11+04	8" 5" SWEEP	554422.95	1372790.72
12+37	8" x 8" TEE	554429.35	1372923.19
12+37 3' RT	8" V	554426±	1372923±
12+37 15' RT	8" CAP	554414.37	1372923.92
13+44	8" HD COUPLING	554434.55	1373030.63
13+66	8" x 6" TEE	554434.46	1373052.31
13+97	8" HD COUPLING	554434±	1373082±

PLAN
SCALE: 1" = 50'

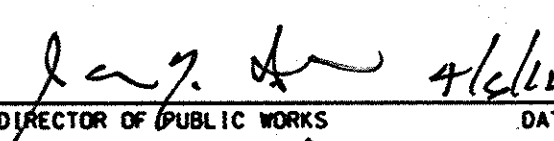
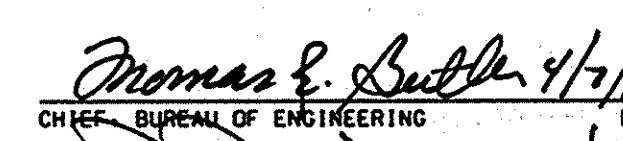


PROFILE
PIRCH WAY
SCALE: HOR. 1" = 50'
VERT. 1" = 5'

AS-BUILT REPLACEMENT SHEET
12/10/2015



PLOTTED: 11/13/17 PM on Friday, December 11, 2015
 BY: C. D. Williams
 FILE: M:\2015\1372677.D\Drawings\1372677-04-W.dwg

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  DIRECTOR OF PUBLIC WORKS CHIEF, BUREAU OF UTILITIES		 CHIEF, UTILITY DESIGN DIVISION PSD	
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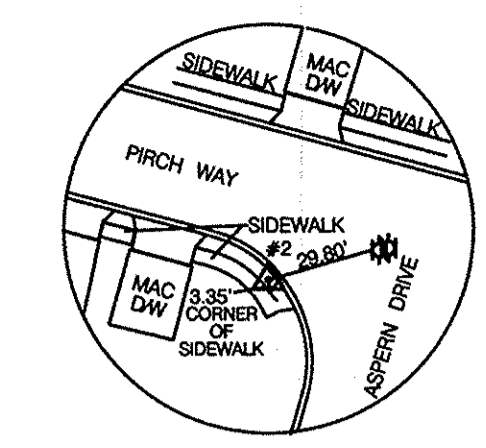
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DRN:	GS			
CHK:	GW/TWW			
DATE:	AUG. 2013			
BY:	KFJ	NO.		
REVISION:	AS-BUILT			
DATE:	12/10/15			

PLAN & PROFILE
PIRCH WAY PHASE 1
STA 7+00 TO STA 14+00

PIRCH WAY/ASPERN DRIVE
WATER REPLACEMENT
 CAPITAL PROJECT No. W-8321
 CONTRACT No. 44-4807
 ELECTION DISTRICT NO. 1
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN
 SHEET
 4 OF 14

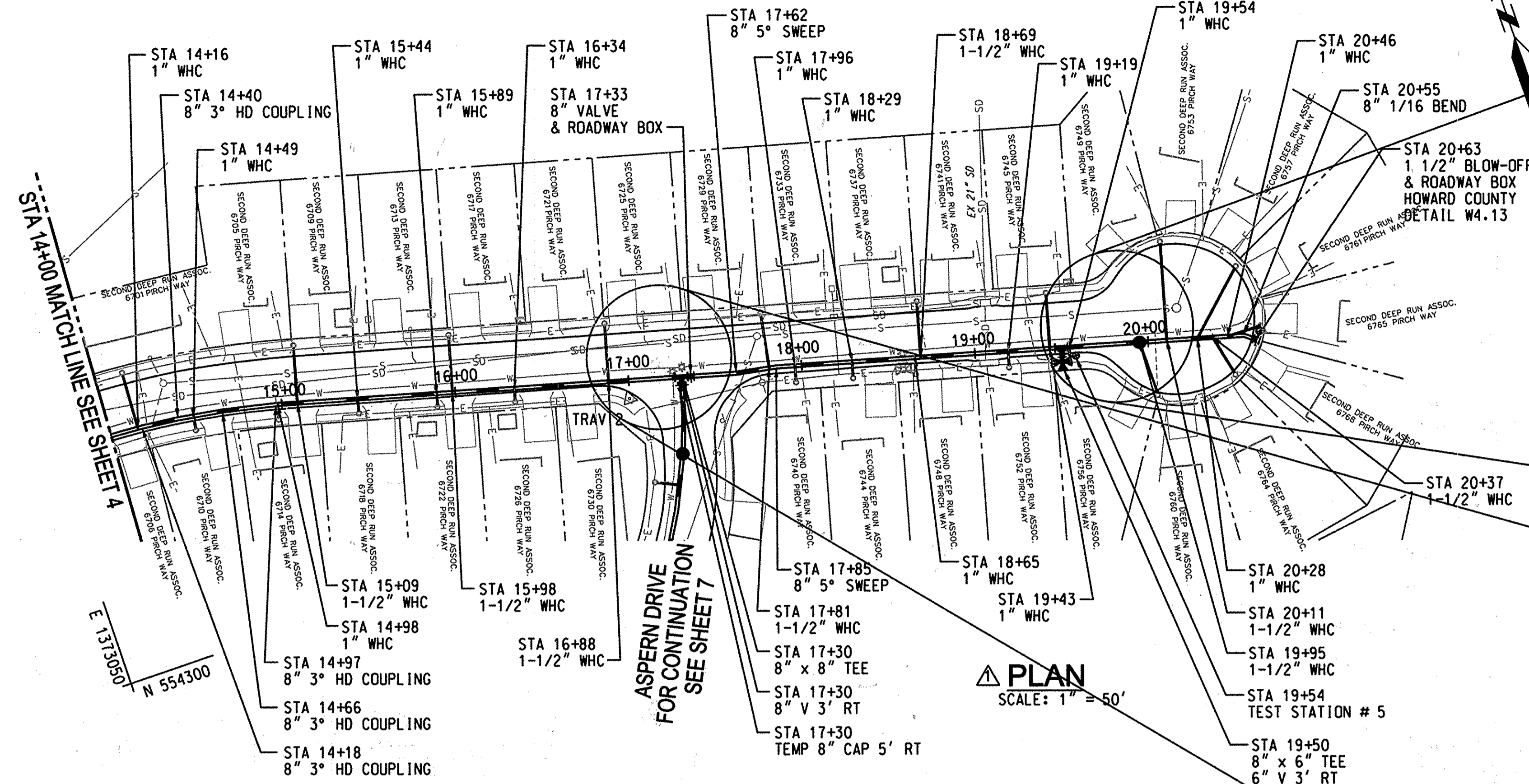
N 554700
E 1373050

PIRCH WAY

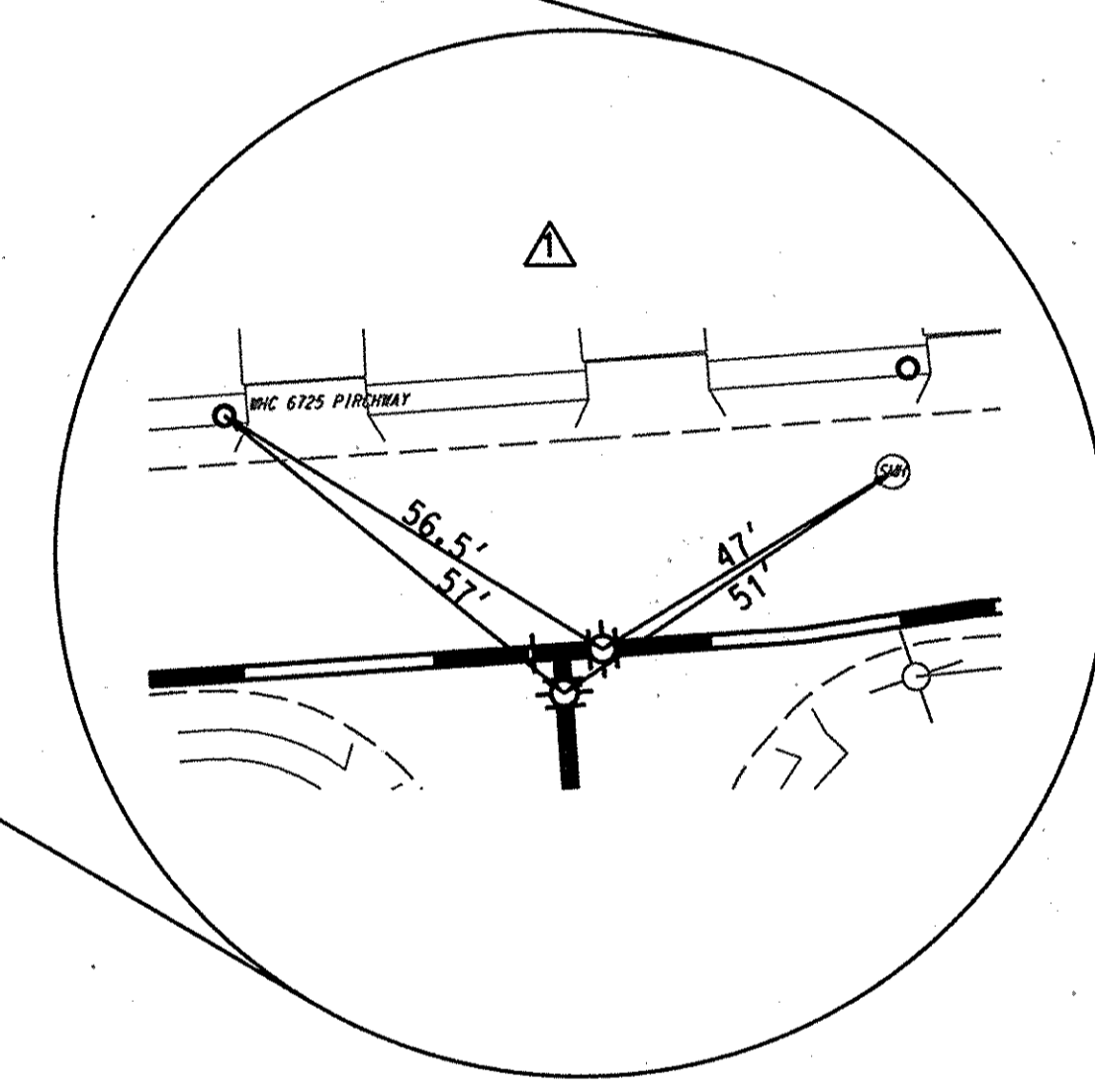
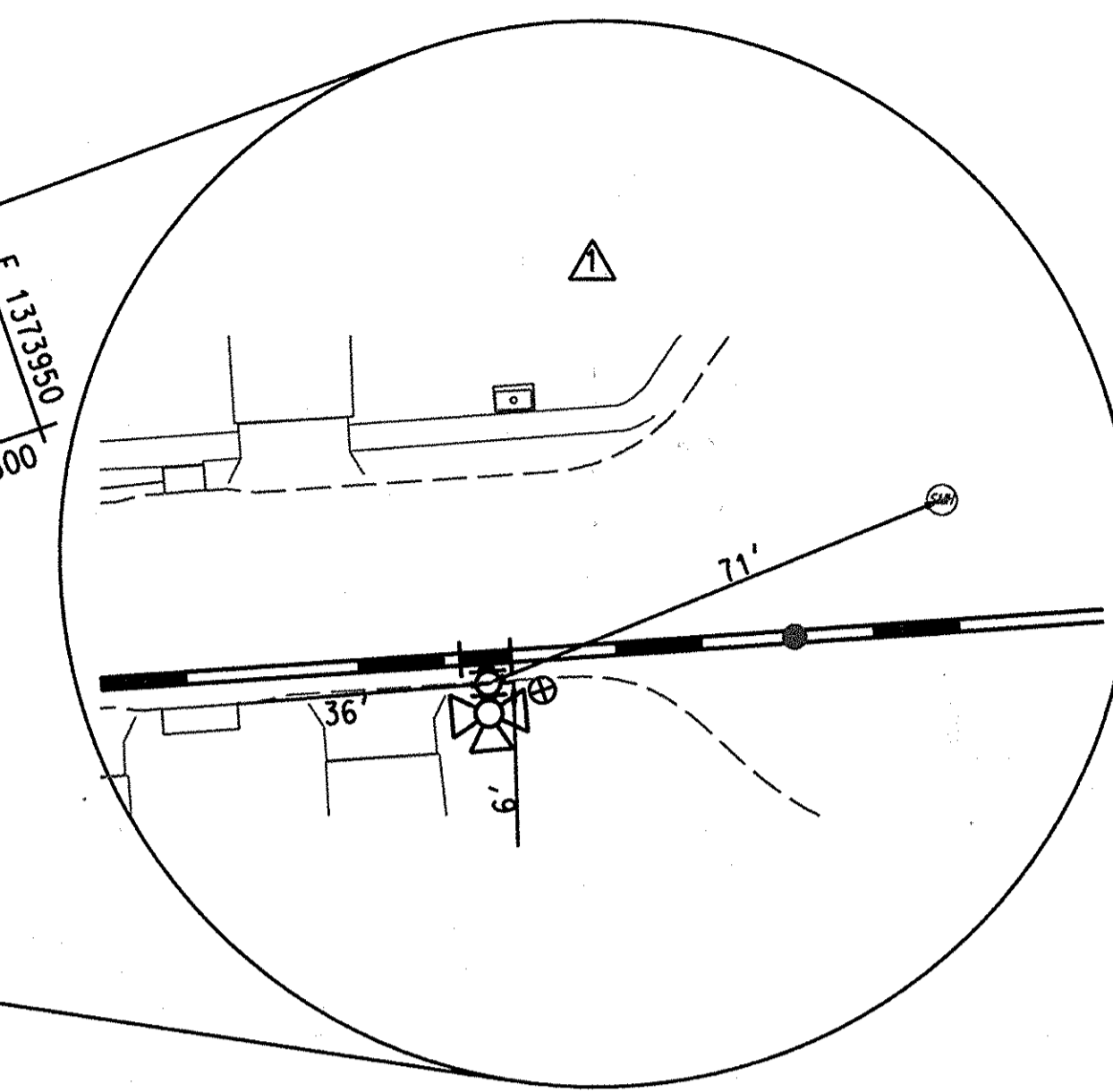


TRAV 2
NOT TO SCALE

TRAVERSE COORDINATE SCHEDULE			
NUMBER	NORTHING	EASTING	ELEVATION
TRAV 2	554356.51	1373375.04	240.46



PLAN
SCALE: 1" = 50'

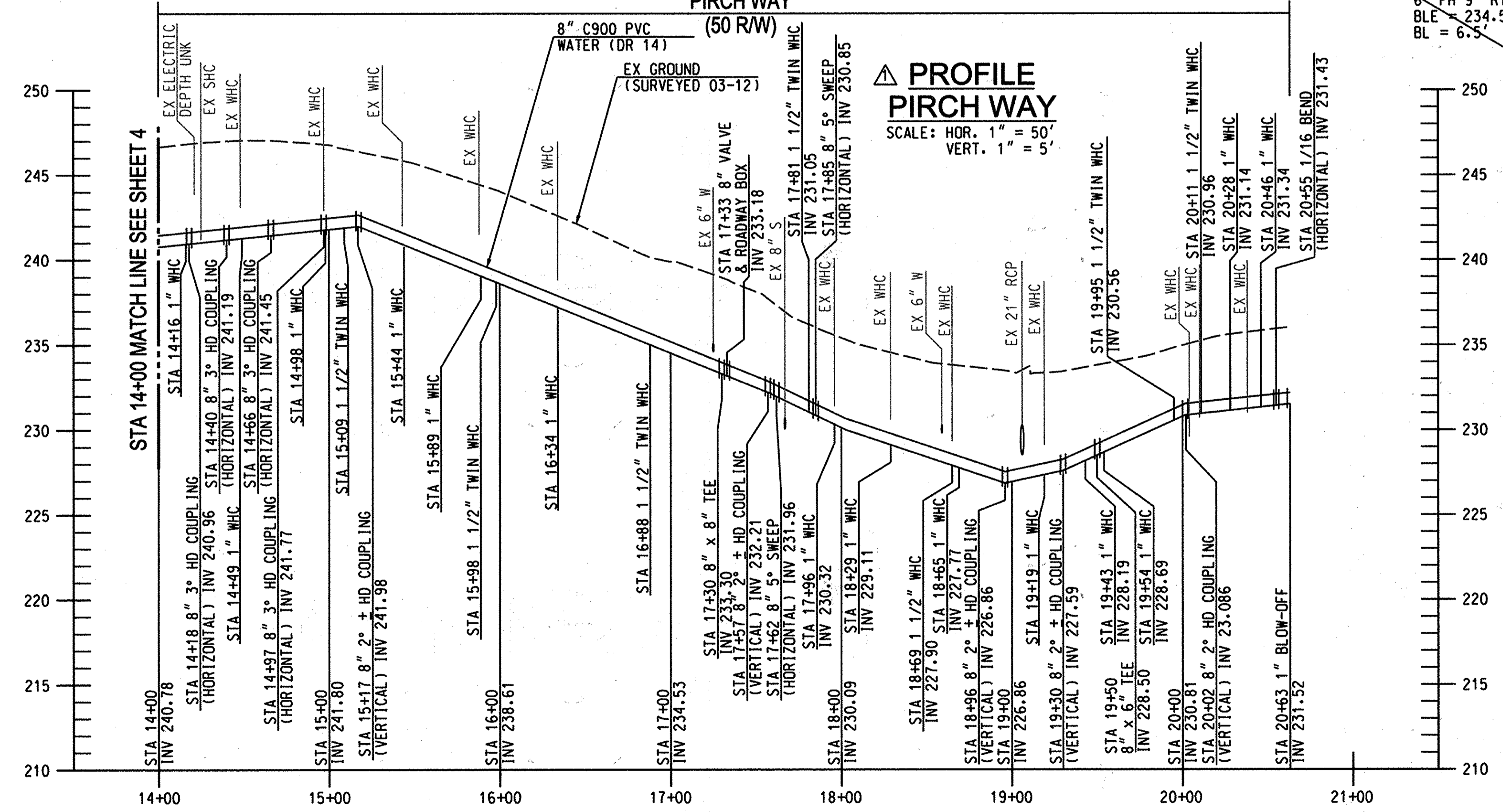


FITTING SCHEDULE

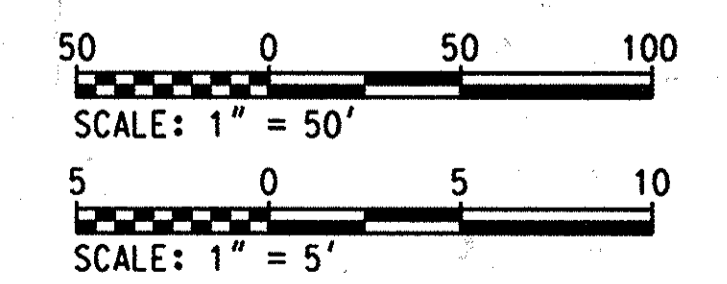
STATION	FITTING	NORTHING	EASTING
14+18	8" HD COUPLING	554433.03	1373104.58
14+40	8" HD COUPLING	554430.72	1373125.73
14+66	8" HD COUPLING	554426.56	1373151.37
14+97	8" HD COUPLING	554419±	1373182±
17+30	8" x 8" TEE	554358.56	1373407.26
17+30 3' RT	8" V	554355±	1373406±
17+30 5' RT	8" CAP	554353±	1373405±
17+33	8" V	554357±	1373410±
17+62	8" 5" SWEEP	554350.22	1373437.89
17+85	8" 5" SWEEP	554346.12	1373460.60
19+50	8" x 6" TEE	554302±	1373619±
20+55	8" 1/16 BEND	554275.21	1373721.01
20+63	8" V	554270.38	1373727.26

PIRCH WAY

PROFILE PIRCH WAY
SCALE: HOR. 1" = 50'
VERT. 1" = 5'



AS-BUILT REPLACEMENT SHEET
12/10/2015



PLOTTED: 10:04 AM on Friday, December 11, 2015
 BY: D:\dwg\13722677.DWG
 FILE: M:\2012\13722677.DWG

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

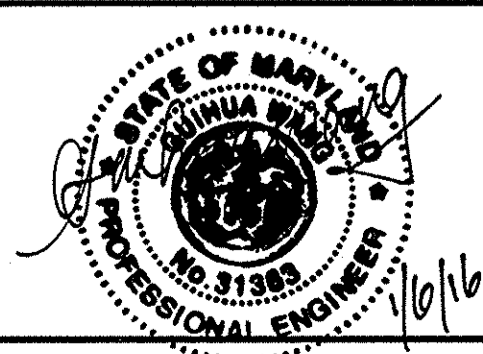
[Signature] DATE: 3/11/16
DIRECTOR OF PUBLIC WORKS

[Signature] DATE: 3/11/16
CHIEF, BUREAU OF UTILITIES

[Signature] DATE: 3/11/16
CHIEF, UTILITY DESIGN DIVISION

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DES:	GS
DRN:	GS
CHK:	GW/TWW
DATE:	AUG. 2013
BY:	KFJ
NO.:	AS-BUILT
REVISION:	
DATE:	12/10/15

PLAN & PROFILE
PIRCH WAY PHASE 1
STA 14+00 TO STA 20+63

600' SCALE MAP NO. 37 BLOCK NO. 21

PIRCH WAY/ASPEN DRIVE
WATER REPLACEMENT

CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

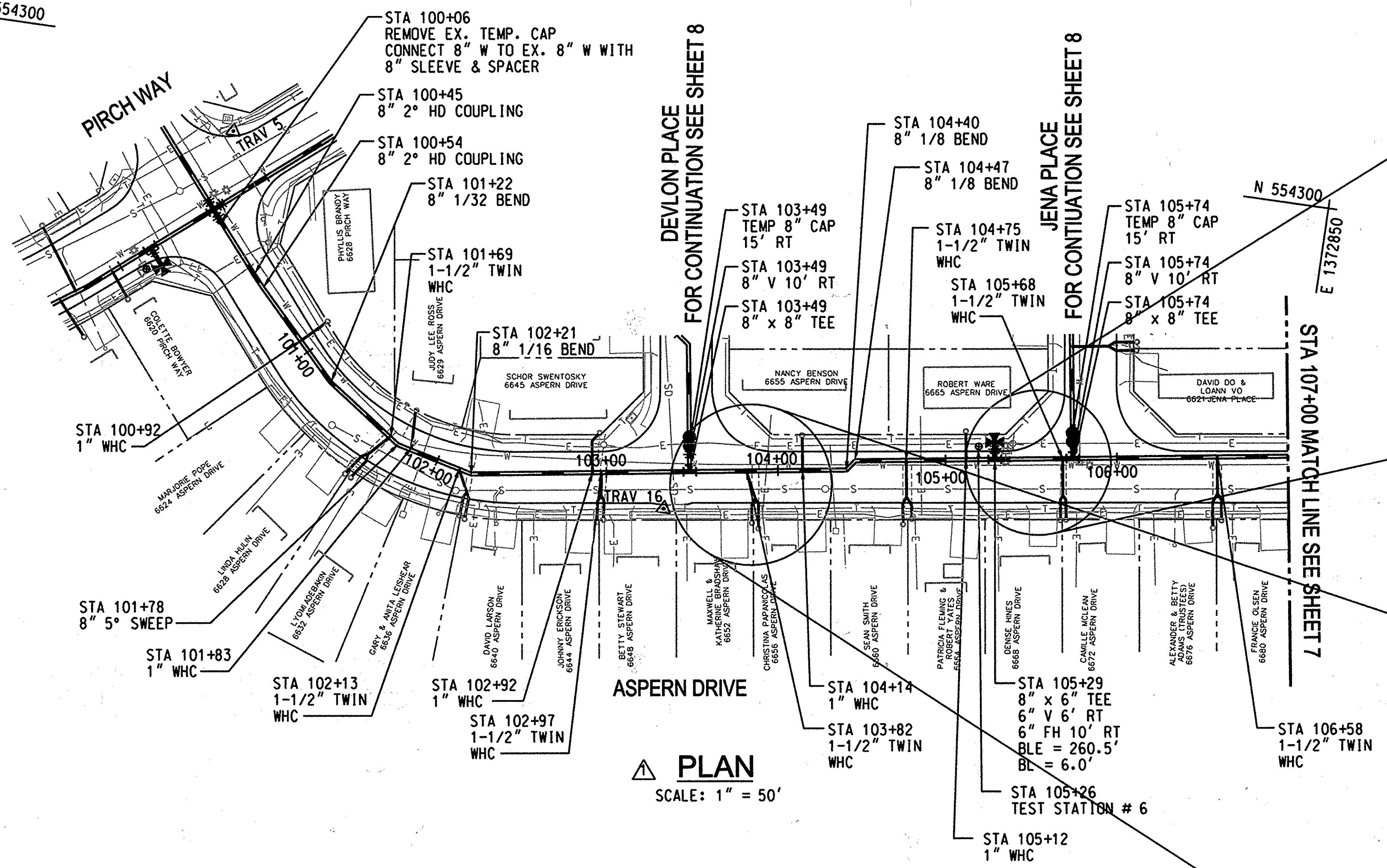
ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 14

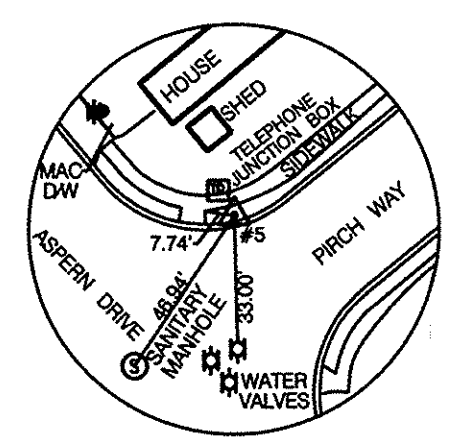
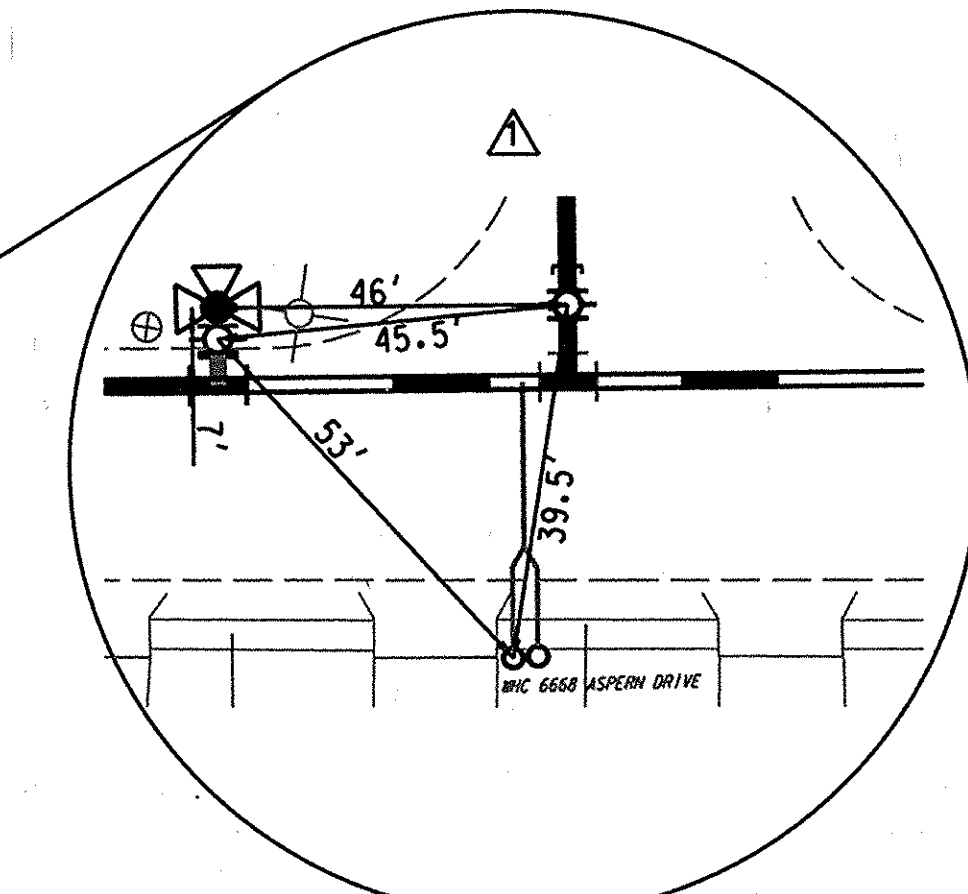


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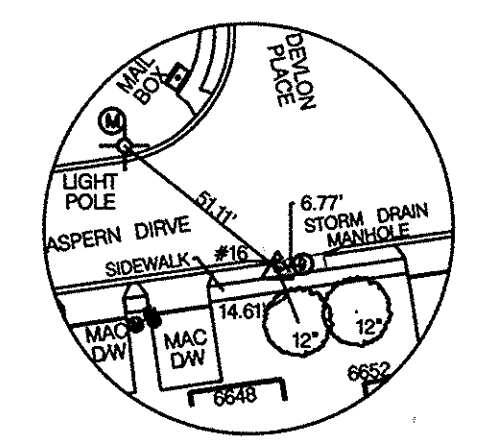
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PLAN
SCALE: 1" = 50'

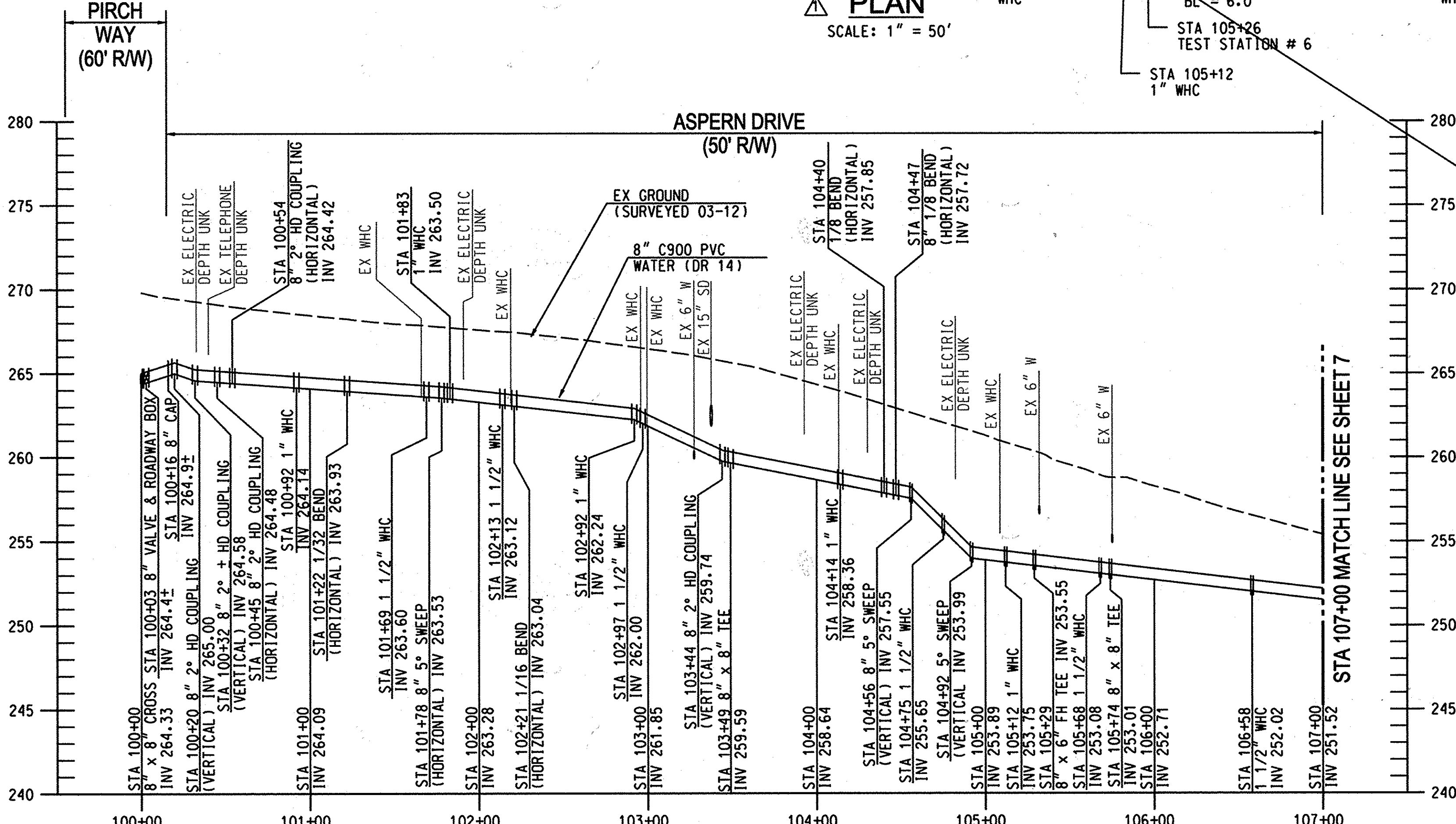


TRAV 5
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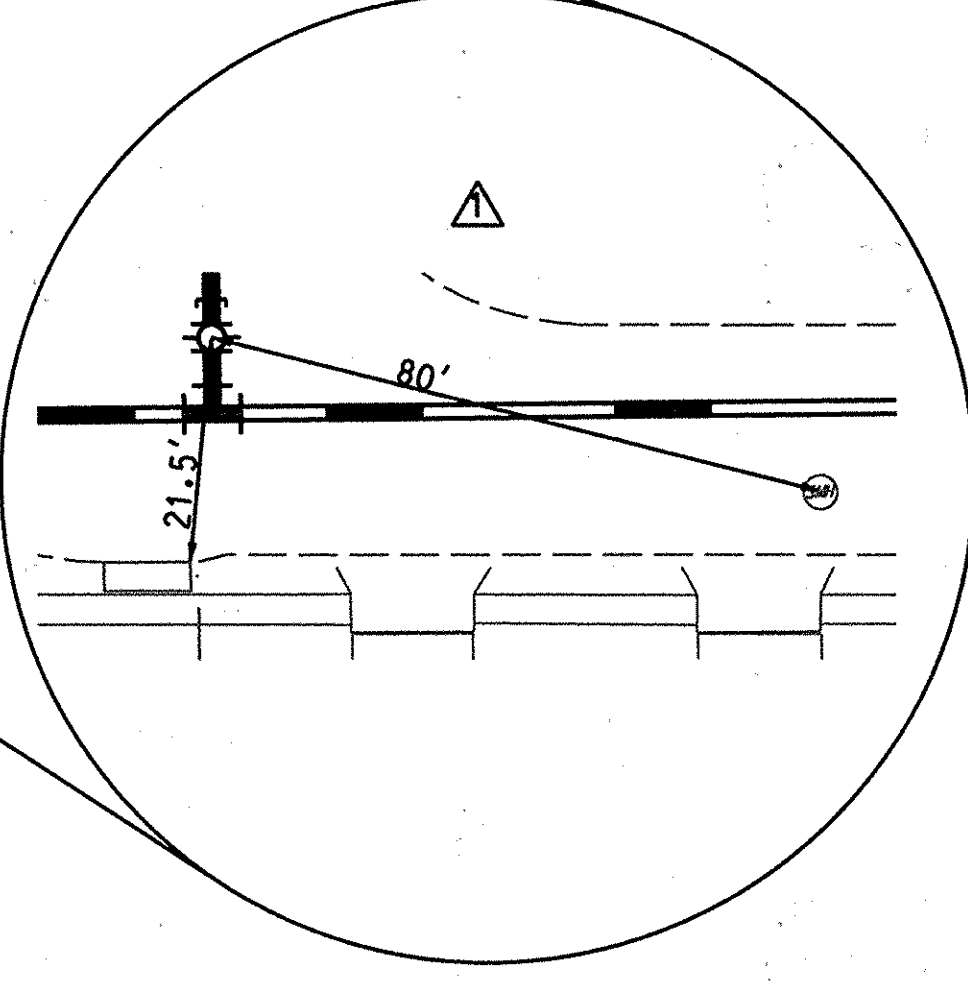


TRAV 16
NOT TO SCALE

TRAVERSE COORDINATE SCHEDULE			
NUMBER	NORTHING	EASTING	ELEVATION
TRAV 5	554254.28	1372211.62	269.54
TRAV 16	554071.03	1372491.12	266.30



PROFILE ASPERN DRIVE
SCALE: HOR. 1" = 50', VERT. 1" = 5'



FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
100+15	TIE-IN	554202±	1372210±
100+45	8" HD COUPLING	554172.90	1372235.24
100+54	8" HD COUPLING	554165.87	1372241.51
101+22	8" 1/32 BEND	554116.91	1372288.42
101+78	8" 5" SWEEP	554086±	1372332±
102+21	8" 1/16 BEND	554075.16	1372377.16
103+49	8" x 8" TEE	554094.60	1372503.19
103+49 10' RT	8" V	554104.48	1372501.66
103+49 15' RT	8" CAP	554109.42	1372500.90
104+40	8" 1/8 BEND	554108.52	1372593.45
104+47	8" 1/8 BEND	554114.55	1372597.86
105+29	8" x 6" TEE	554126.94	1372678.21
105+74	8" x 8" TEE	554133.88	1372723.17
105+74 10' RT	8" V	554143.76	1372721.65
105+74 15' RT	8" CAP	554148.70	1372720.89

AS-BUILT REPLACEMENT SHEET
12/10/2015

50 0 50 100
SCALE: 1" = 50'

PLOTTED: 09:08 AM on Friday, December 11, 2015
 BY: D:\d\p\13122677.02.D\dwg\1312267702-006-w.dwg

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James R. Heltz
DIRECTOR OF PUBLIC WORKS
DATE: 3/16/16

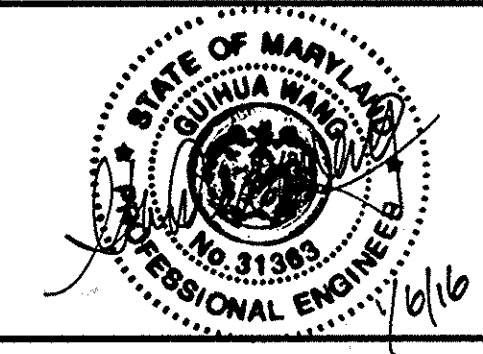
Thomas R. Butler
CHIEF, BUREAU OF ENGINEERING
DATE: 3/16/16

David P. Sullivan
CHIEF, BUREAU OF UTILITIES
DATE: 3/16/16

David P. Sullivan
CHIEF, UTILITY DESIGN DIVISION
DATE: 3/16/16

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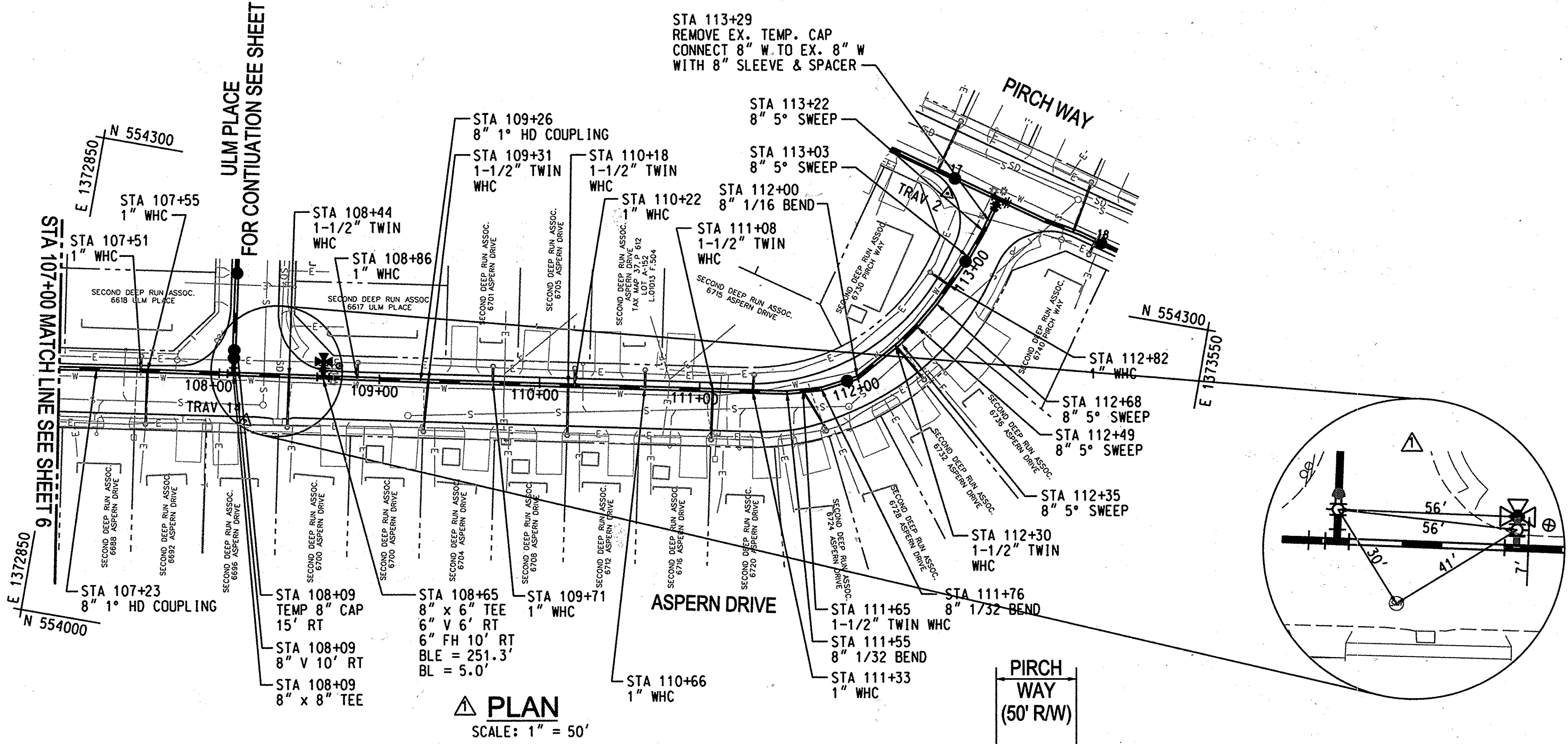
DES:	GS		
DRN:	GS		
CHK:	GW/TWW		
DATE:	AUG. 2013		
BY:	KFJ		
NO.:	AS-BUILT		
REVISION:			
DATE:	12/10/15		

PLAN & PROFILE ASPERN DRIVE PHASE 2
STA 100+00 TO STA 107+00

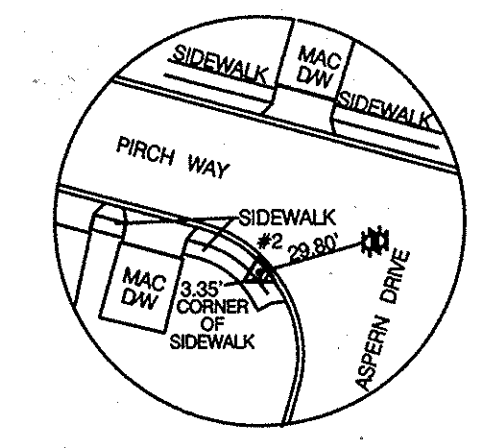
PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND

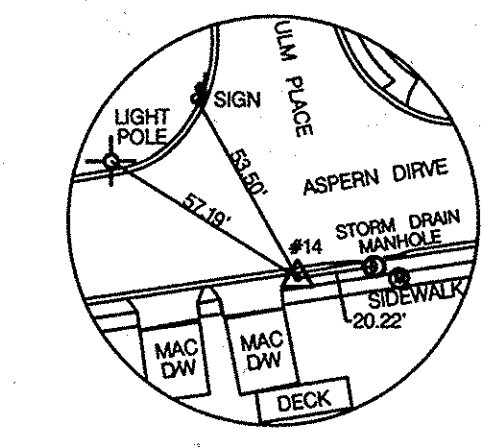
SCALE AS SHOWN
SHEET 6 OF 14



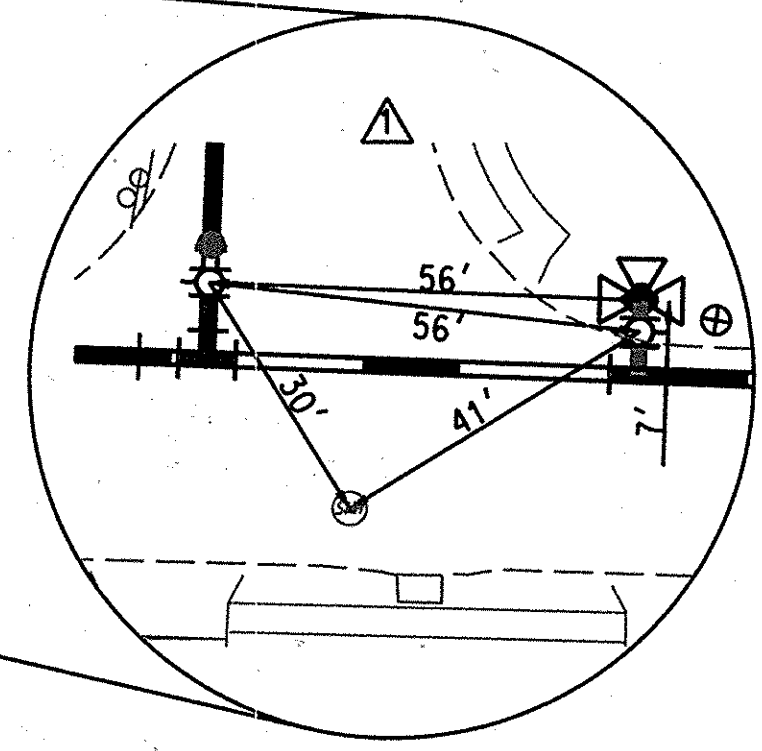
PLAN
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TRAV 2
NOT TO SCALE

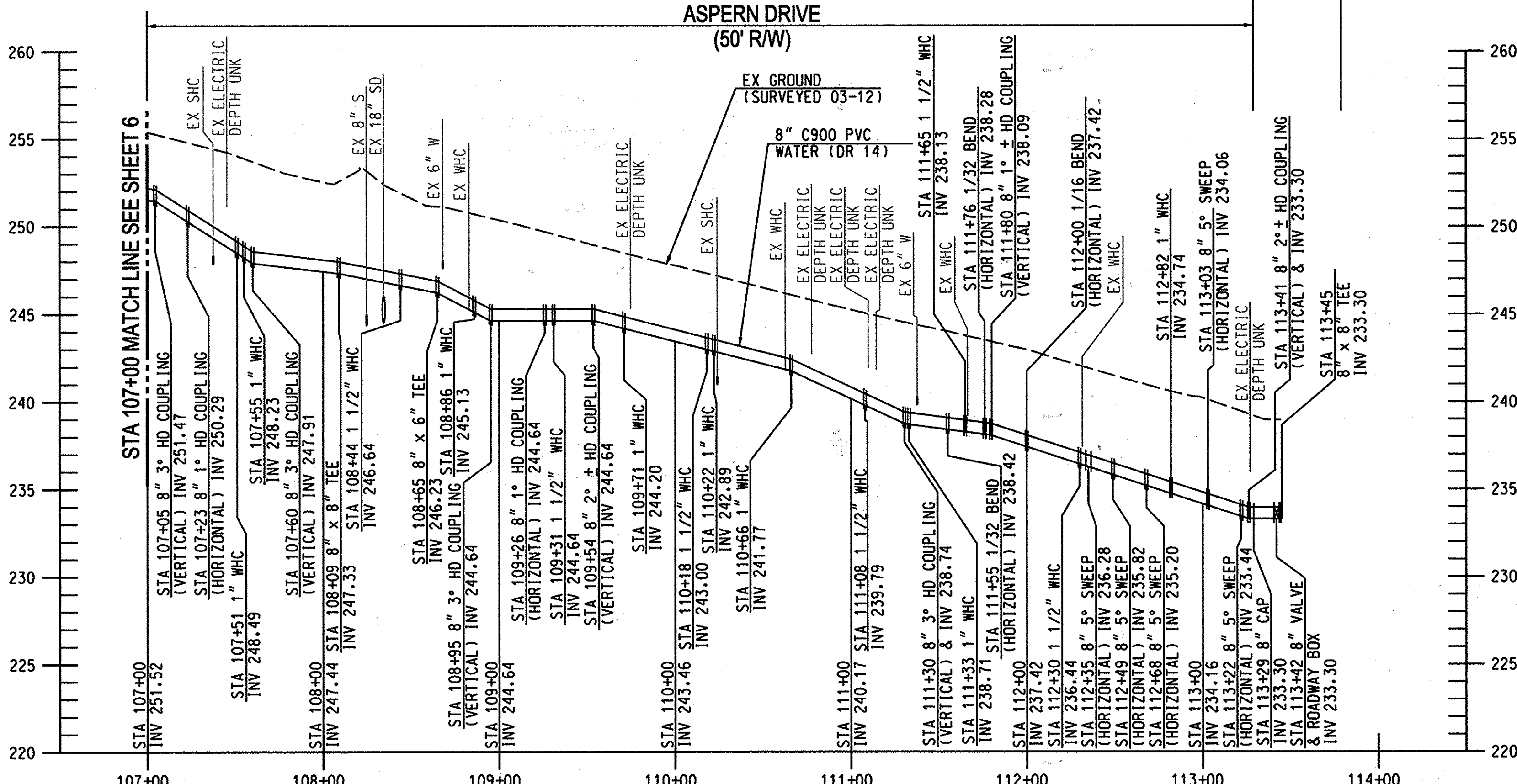


TRAV 14
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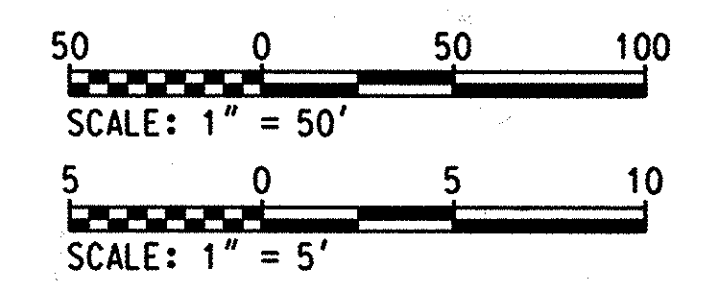
TRAVERSE COORDINATE SCHEDULE			
NUMBER	NORTHING	EASTING	ELEVATION
TRAV 2	554356.51	1373375.04	240.46
TRAV 14	554140.53	1372967.61	252.85

FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
107+23	8" HD COUPLING	554156.59	1372870.45
108+09	8" x 8" TEE	554168.16	1372955.22
108+09	8" V	554178.06	1372953.87
108+09	8" CAP	554183.02	1372953.19
108+65	8" x 6" TEE	554175.74	1373010.76
109+26	8" HD COUPLING	554183.95	1373070.96
111+55	8" 1/32 BEND	554216.08	1373297.73
111+76	8" 1/32 BEND	554222.03	1373318.44
112+00	8" 1/16 BEND	554233.02	1373339.76
112+35	8" 5" SWEEP	554259.29	1373361.98
112+49	8" 5" SWEEP	554271.03	1373370.27
112+68	8" 5" SWEEP	554287.33	1373379.77
113+03	8" 5" SWEEP	554319.41	1373394.89
113+22	8" 5" SWEEP	554337.17	1373401.44
113+29	TIE-IN	554344.09	1373403.32



PROFILE
ASPERN DRIVE
SCALE: HOR. 1" = 50'
VERT. 1" = 5'

AS-BUILT REPLACEMENT SHEET
12/10/2015



PLOTTED: 11/24/14 PM on Friday, December 11, 2015
 BY: D:\d...
 FILE: M:\2012\13122677.02\Drawings\1312267702-C07-W.dwg

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 12/10/15
DIRECTOR OF PUBLIC WORKS

[Signature] 12/10/15
CHIEF, BUREAU OF UTILITIES

[Signature] 12/10/15
CHIEF, UTILITY DESIGN DIVISION

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STATE OF MARYLAND
QUIHUA WANG
REGISTERED PROFESSIONAL ENGINEER
NO. 31369

DES:	GS		
DRN:	GS		
CHK:	GW/TWW		
DATE:	AUG. 2013		
BY:	NO.		
REVISION			
DATE:	12/10/15		

PLAN & PROFILE
ASPERN DRIVE PHASE 2
STA 107+00 TO STA 113+45

DATE: 12/10/15

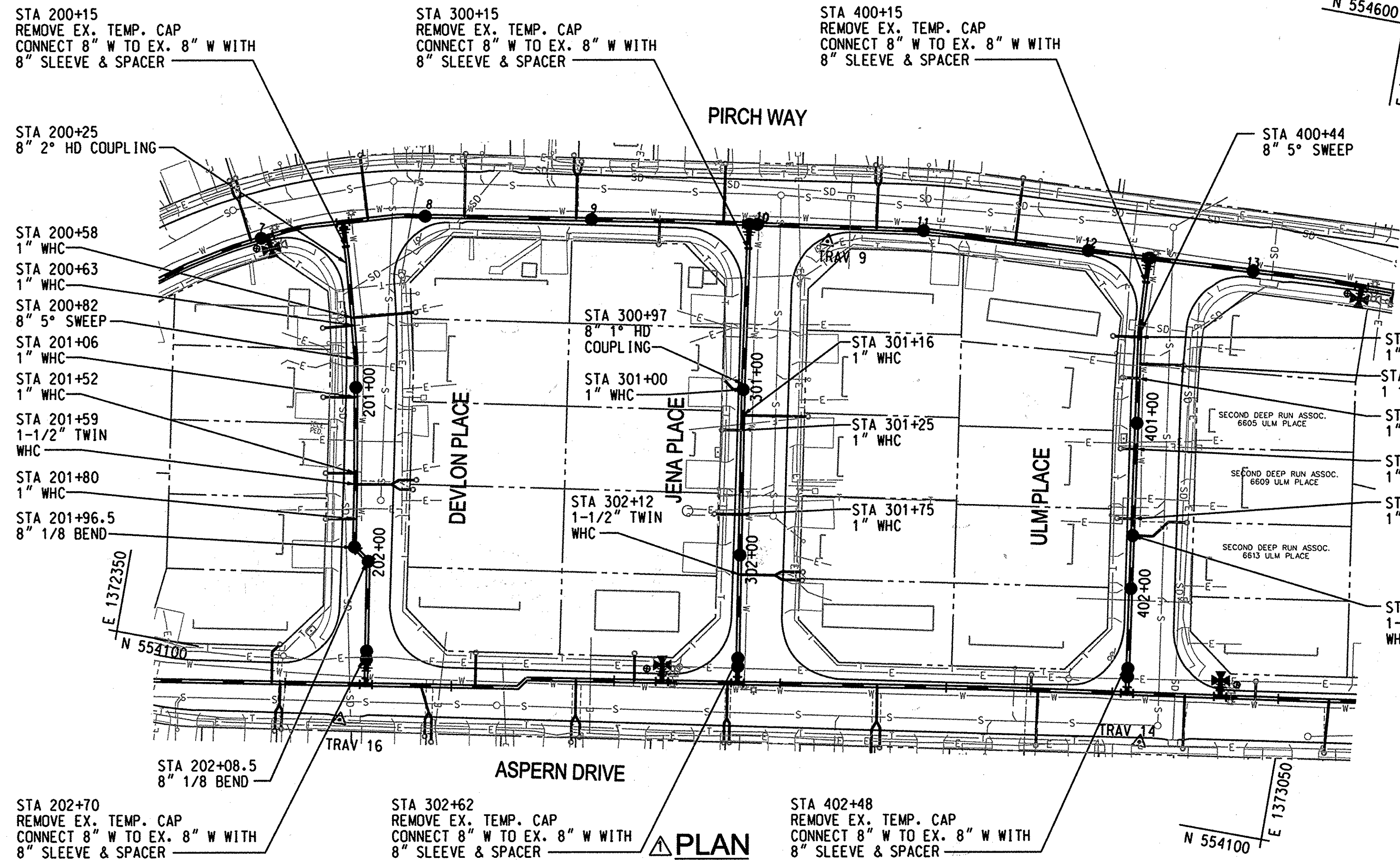
PIRCH WAY/ASPERN DRIVE
WATER REPLACEMENT

CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

SCALE AS SHOWN

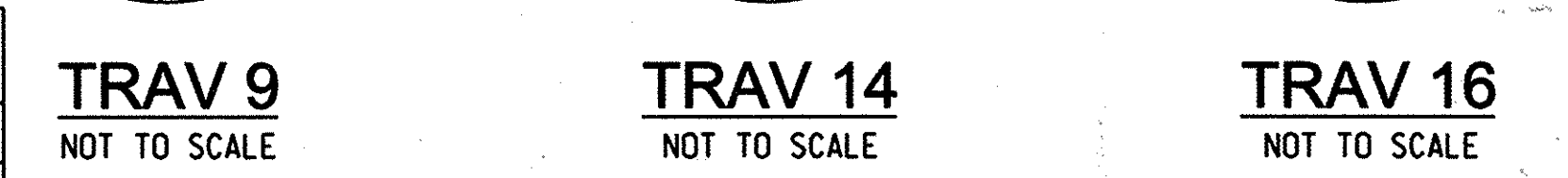
SHEET **1** OF **14**

ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND



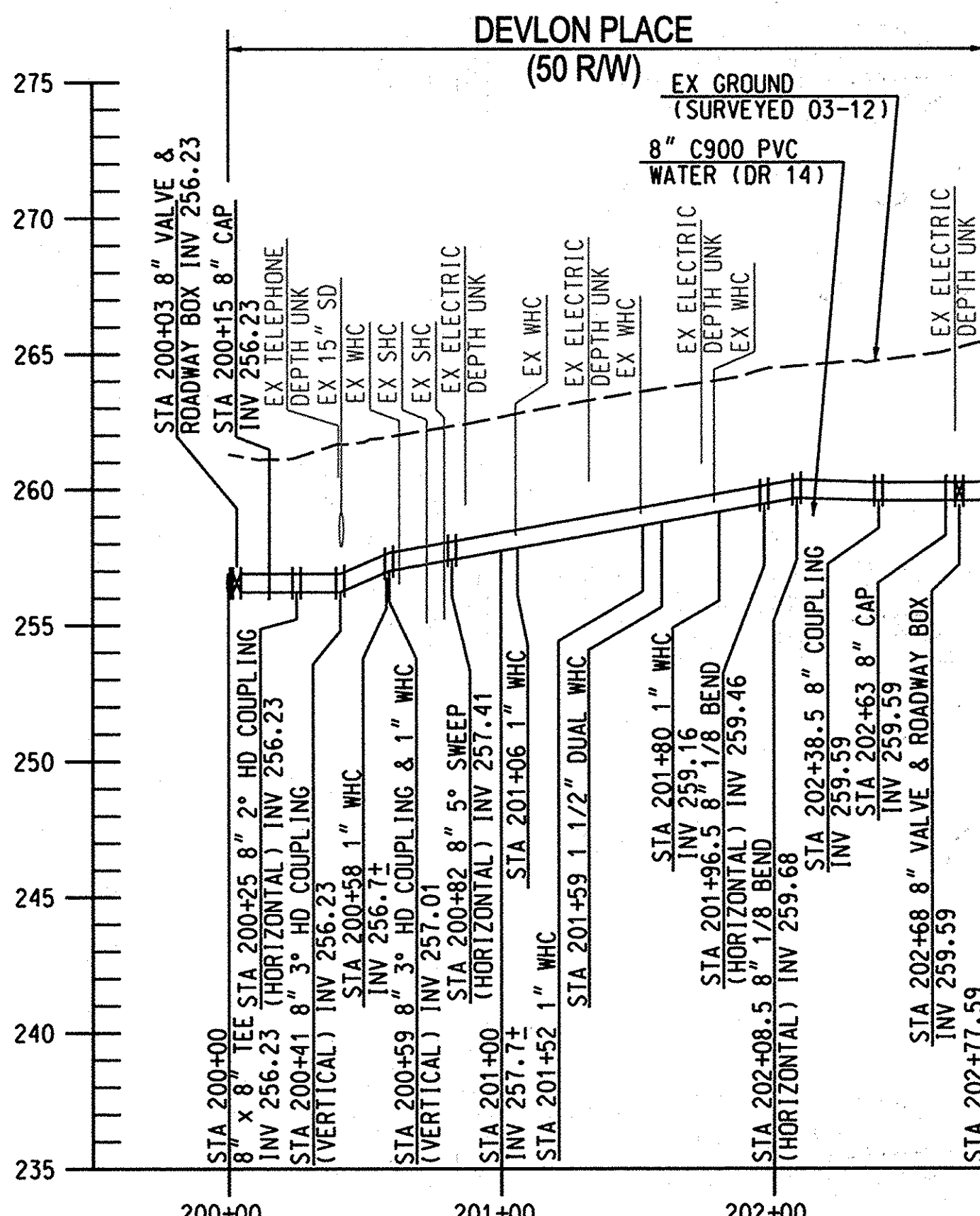
FITTING SCHEDULE

STATION	FITTING	NORTHING	EASTING
DEVLON PLACE			
200+25	8" HD COUPLING	554343±	1372448±
200+82	8" 5° SWEEP	554287±	1372463±
201+96.5	8" 1/8 BEND	554175±	1372482±
202+08.5	8" 1/8 BEND	554168±	1372491±
202+63	TIE-IN	554114.64	1372500.09
JENA PLACE			
300+15	TIE-IN	554393.33	1372684.59
300+97	8" HD COUPLING	554312.36	1372695.64
302+62	TIE-IN	554148.69	1372720.88
ULM PLACE			
400+15	TIE-IN	554414.37	1372923.92
400+44	8" 5° SWEEP	554385±	1372925±
402+48	TIE-IN	554183.02	1372953.19

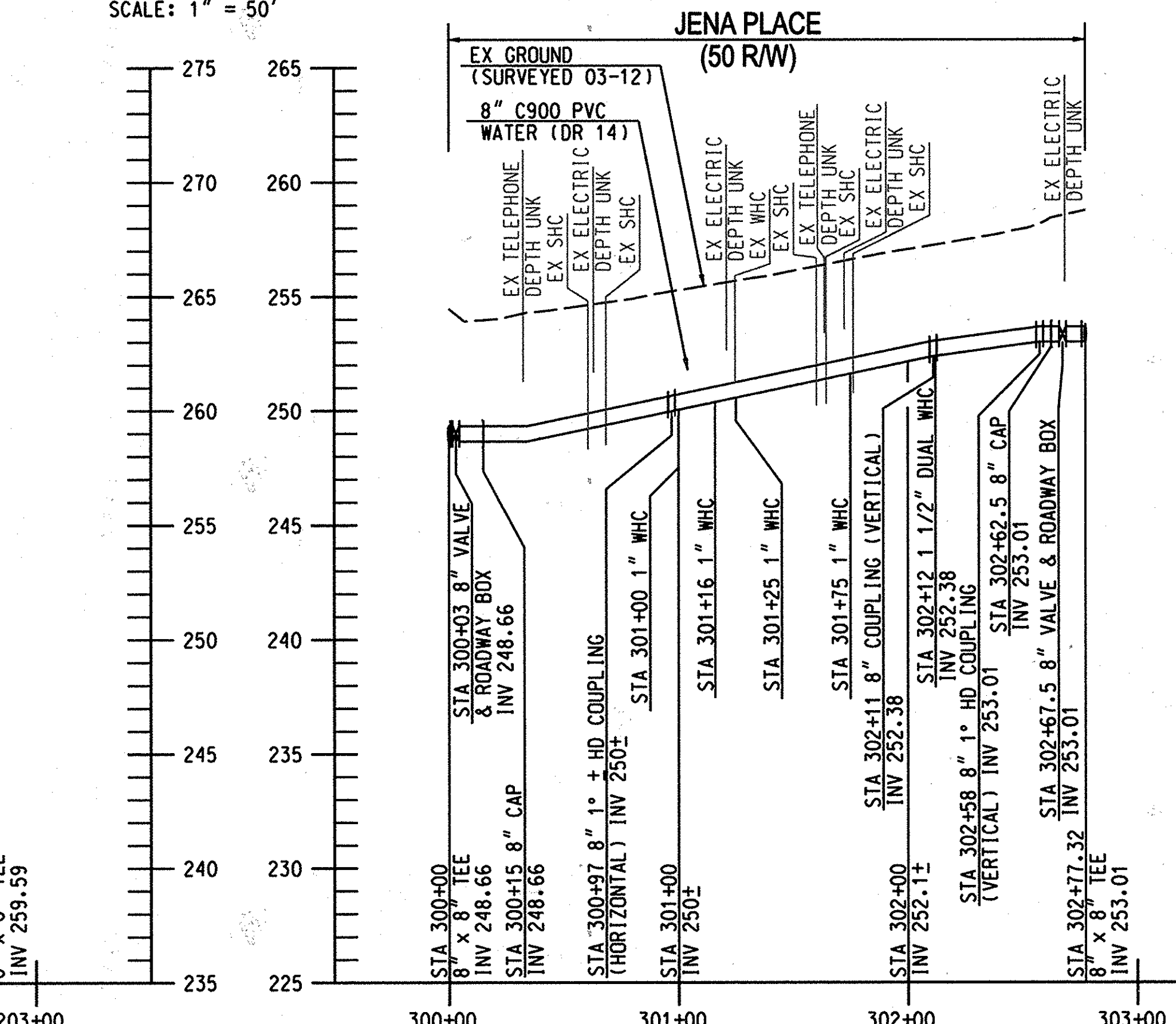


TRAVERSE COORDINATE SCHEDULE

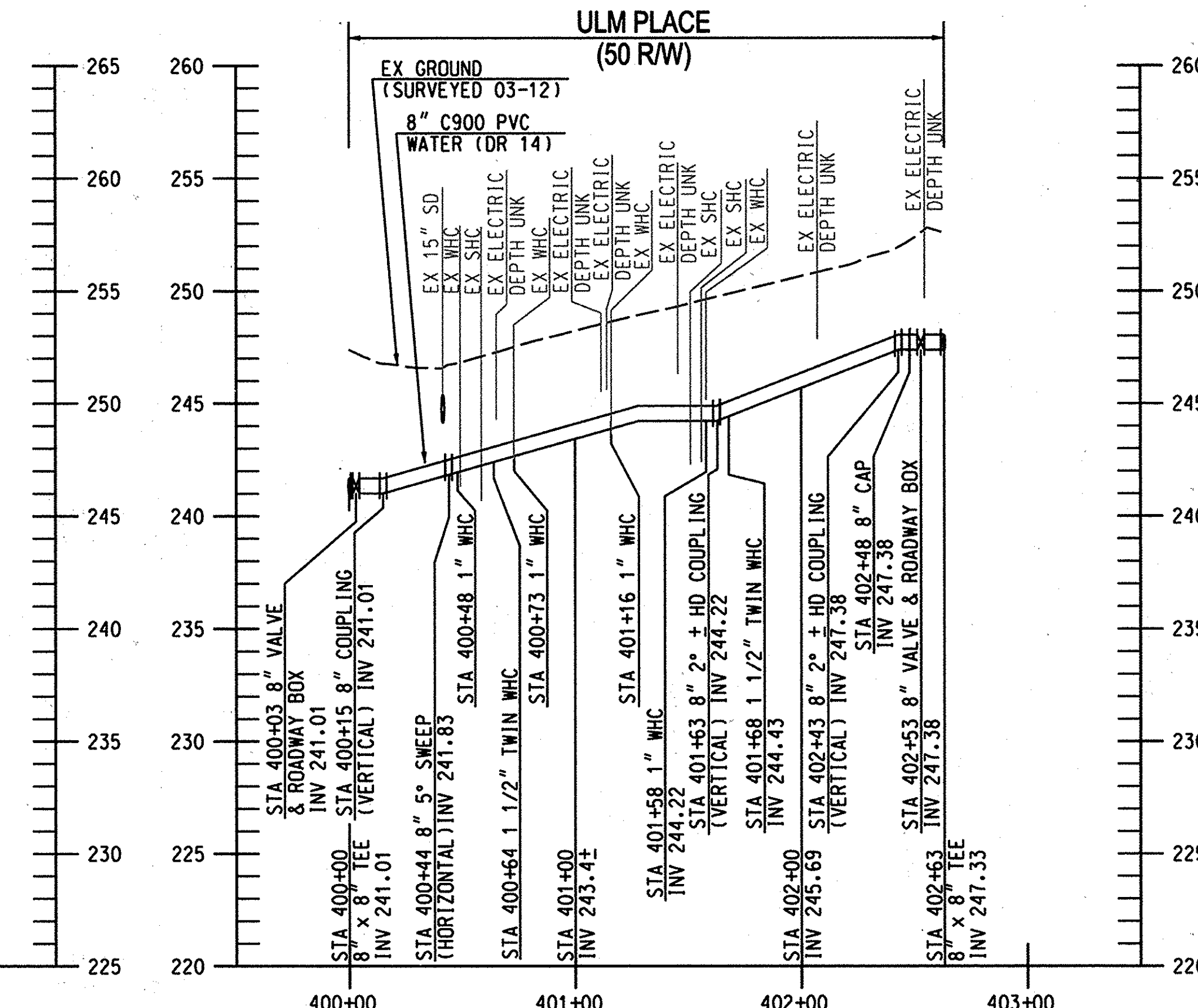
NUMBER	NORTHING	EASTING	ELEVATION
TRAV 9	554406.04	1372730.78	252.96
TRAV 14	554140.53	1372967.61	252.85
TRAV 16	554071.03	1372491.12	266.30



**PROFILE
DEVLON PLACE**
SCALE: HOR. 1" = 50'
VERT. 1" = 5'

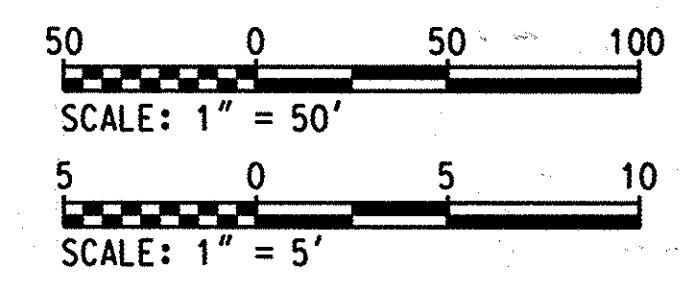


**PROFILE
JENA PLACE**
SCALE: HOR. 1" = 50'
VERT. 1" = 5'



**PROFILE
ULM PLACE**
SCALE: HOR. 1" = 50'
VERT. 1" = 5'

**AS-BUILT
REPLACEMENT SHEET
12/10/2015**



PLOTTED: 11/25/17 PM on Friday, December 11, 2015
 BY: J. Williams
 FILE: \\MA\2015\13122677.02\Drawings\13122677-02-W.dwg

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James A. Allen
DIRECTOR OF PUBLIC WORKS
DATE: 12/10/15

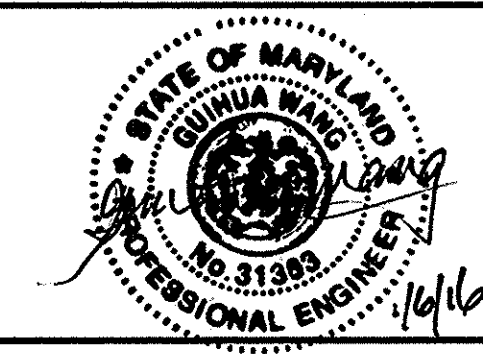
Thomas E. Butler
CHIEF, BUREAU OF ENGINEERING
DATE: 3/1/16

Thomas E. Butler
CHIEF, UTILITY DESIGN DIVISION
DATE: 3/1/16

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SHARPS, MARYLAND 21152
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DES:	GS
DRN:	GS
CHK:	GW/TWW
DATE:	AUG. 2013
BY:	NO.
KFJ	AS-BUILT
NO.	

**PLAN & PROFILES PHASE 3
DEVLON PLACE,
JENA PLACE
& ULM PLACE**

DATE: 12/10/15

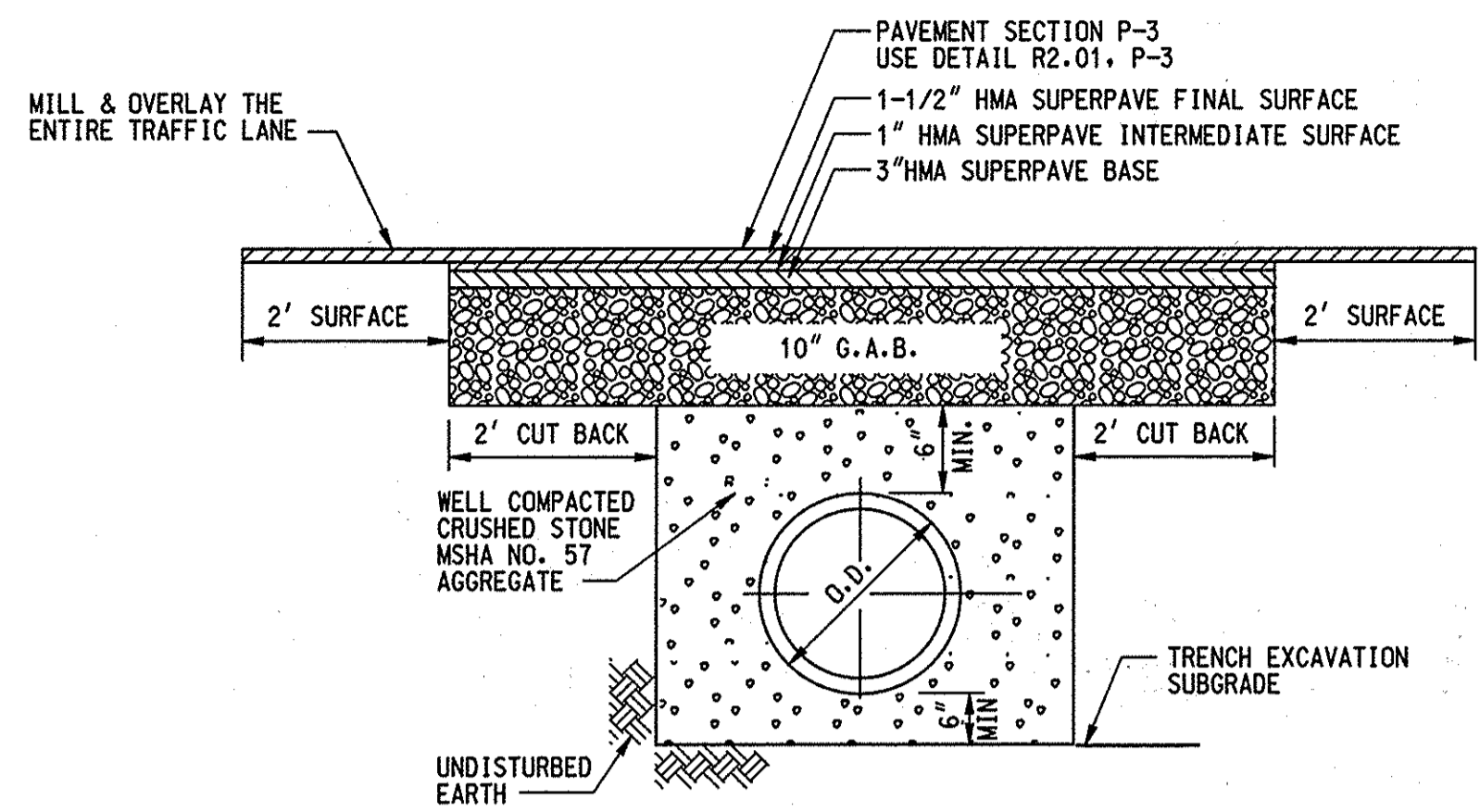
600' SCALE MAP NO. 37 BLOCK NO. 21

**PIRCH WAY/ASPERN DRIVE
WATER REPLACEMENT**

CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

ELECTION DISTRICT No. 1
HOWARD COUNTY, MARYLAND

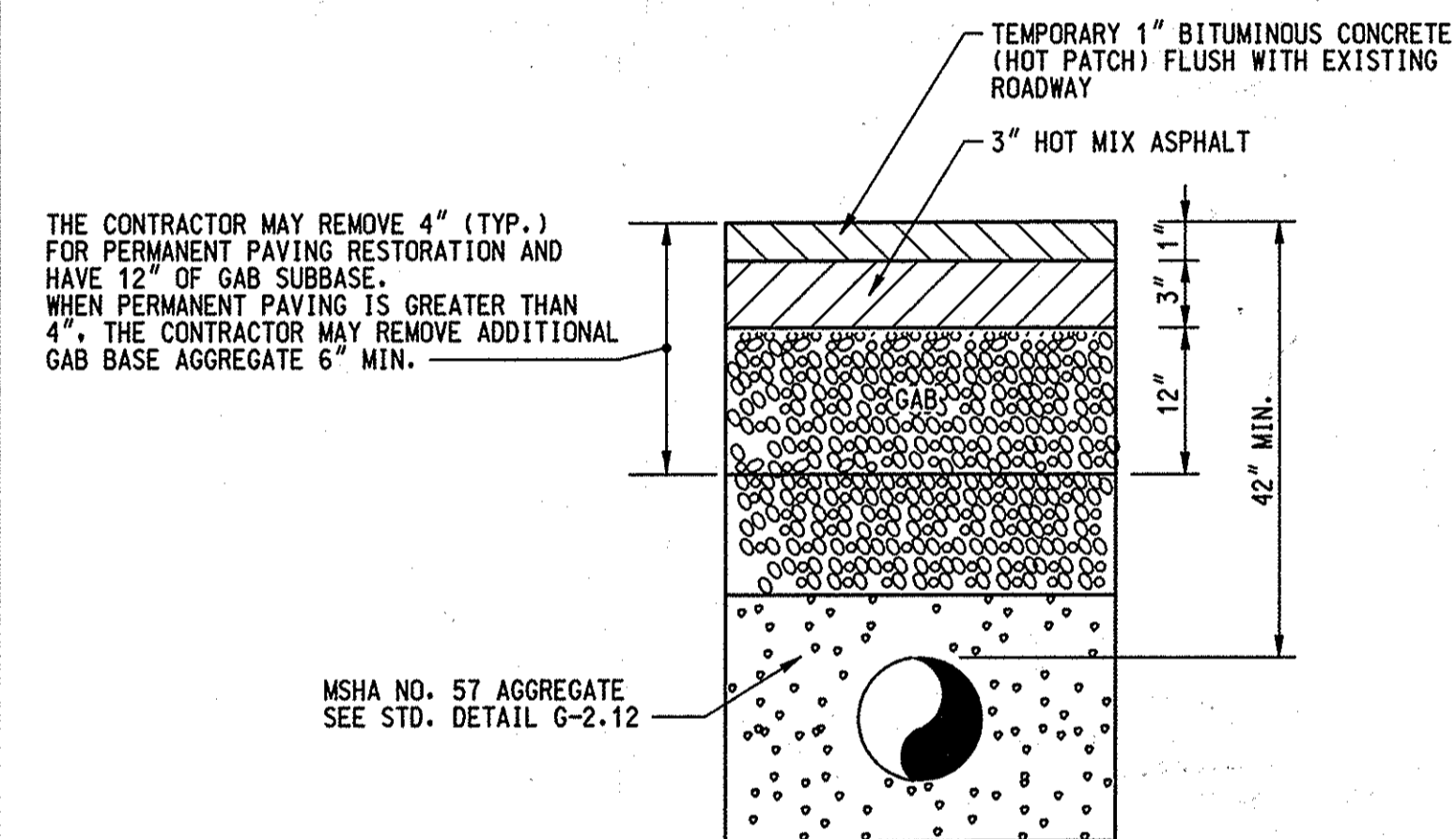
SCALE AS SHOWN
SHEET 8 OF 14



*** DETAIL - PVC PIPE TRENCH AND PERMANENT PAVING RESTORATION**

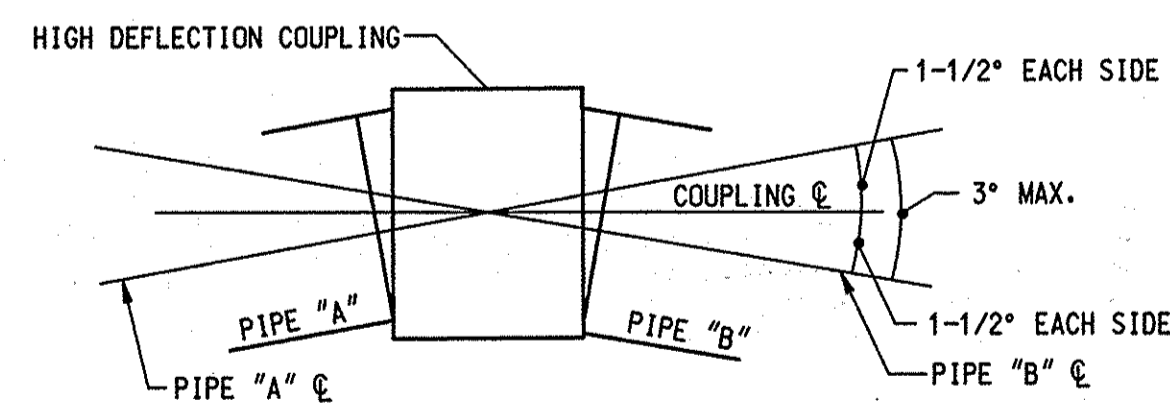
NOT TO SCALE

* BASED ON HOWARD COUNTY STANDARD DETAIL G-2.12 & G-4.01 THE PAVEMENT SHOWN IS FOR THE ROADS WITHIN THE SUBDIVISION. FOR THE PAVEMENT ON OLD WATERLOO ROAD, USE DETAIL R-2.02, P-5 IN HOWARD COUNTY STANDARD DETAIL.



DETAIL - TEMPORARY PAVING RESTORATION

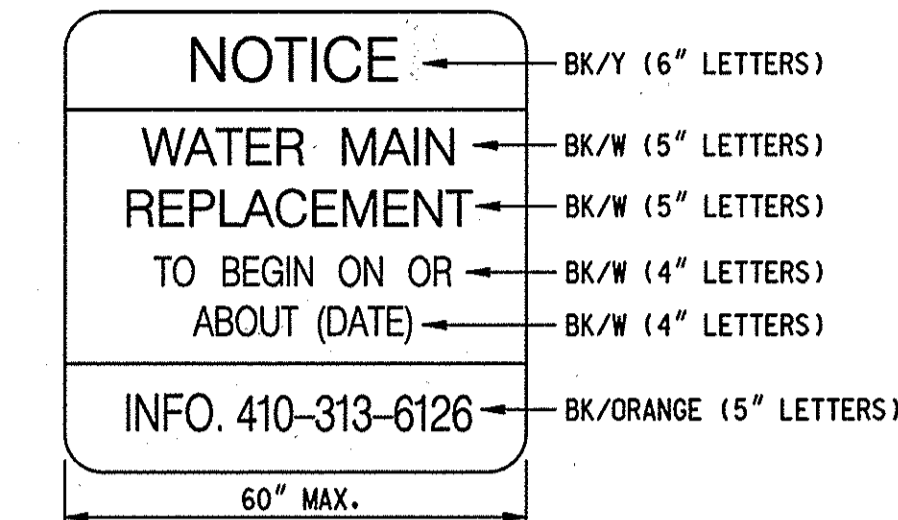
NOT TO SCALE



NOTE: THE MAXIMUM ALLOWED DEFLECTION AT THE HIGH DEFLECTION COUPLING IS 3". 1-1/2" EACH SIDE MAXIMUM

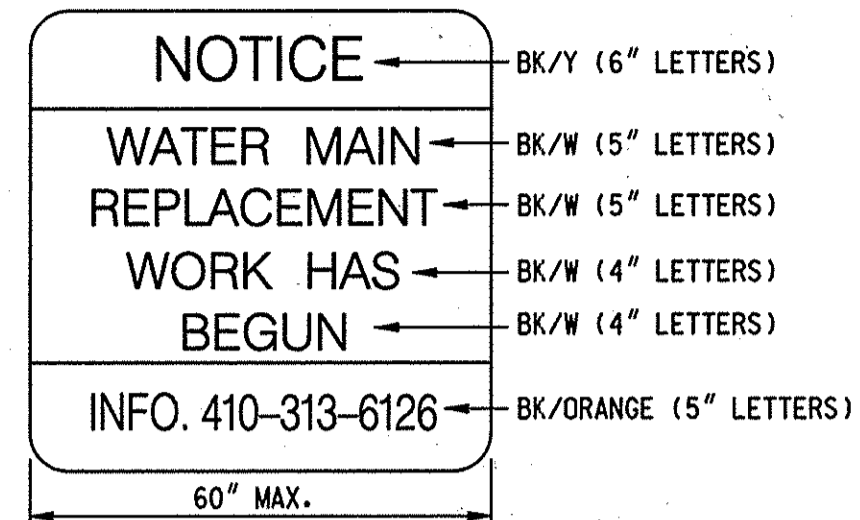
HIGH DEFLECTION COUPLING INSTALLATION FOR HORIZONTAL AND VERTICAL DEFLECTION

NOT TO SCALE



NOTICE SIGN WORK TO BEGIN

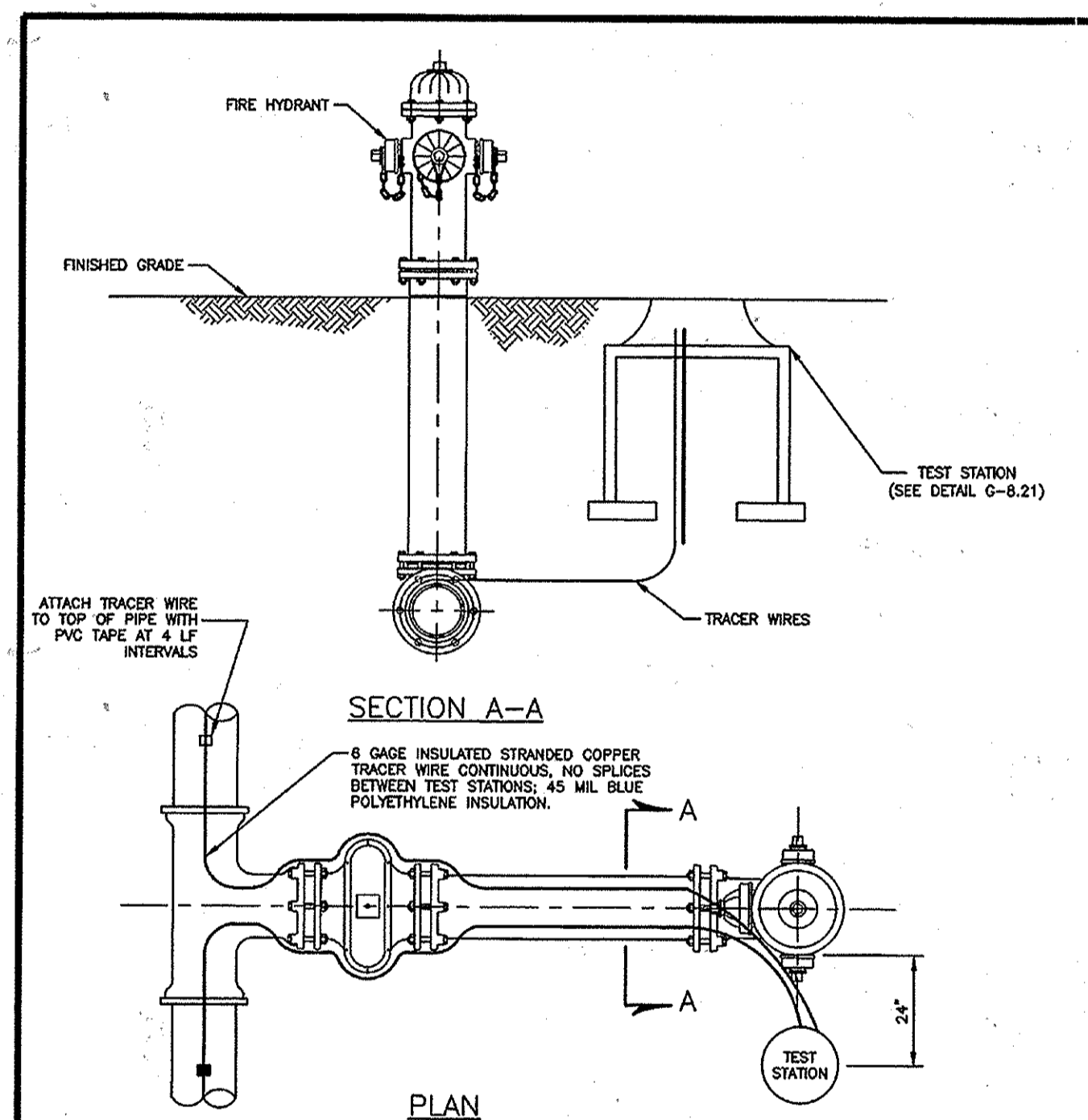
NOT TO SCALE



NOTICE SIGN WORK HAS BEGUN

NOT TO SCALE

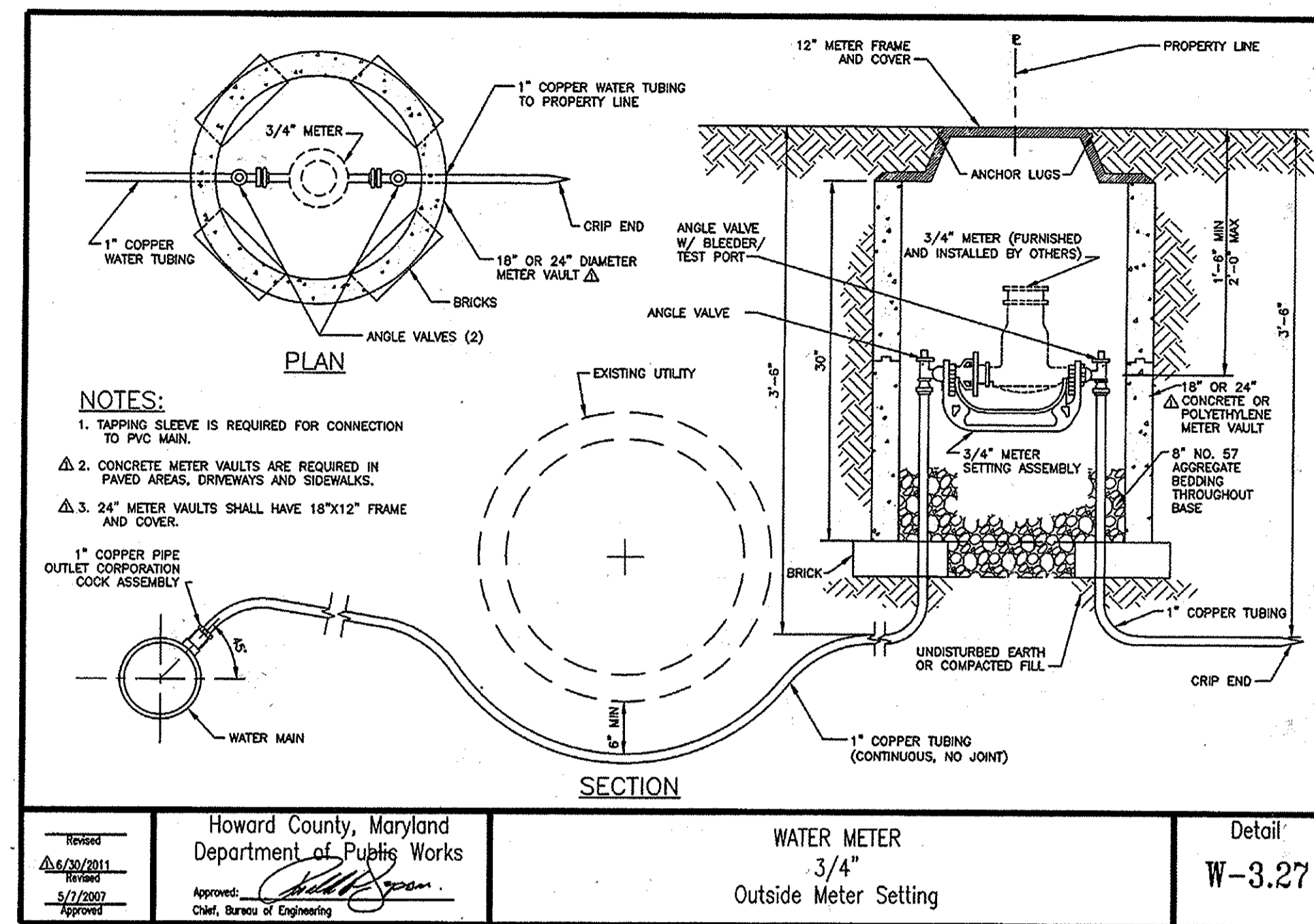
NOTE: LOCATE THESE SIGNS AT EACH ENTRANCE TO THE WORK SITE



NOTES:

1. TEST STATION MUST BE PLACED TO THE RIGHT OR LEFT SIDE OF THE FIRE HYDRANT.
2. VALVE VAULT FRAME AND COVER TO BE SET FLUSH WITH FINAL GRADE.
3. BUTTRESSES AND STRAPPING NOT SHOWN FOR CLARITY.
4. NO SPLICES BETWEEN TEST STATIONS, UNLESS APPROVED BY HOWARD COUNTY. LATERAL SPLICES APPROVED BY THE COUNTY SHALL CONSIST OF A BRASS COMPRESSION JOINT, WATERPROOF BAND, AND UNDERGROUND ELECTRICAL TAPE. EXTENSION SPLICES SHALL BE MADE USING A CRIMP CONNECTOR AND SHRINK TUBING.

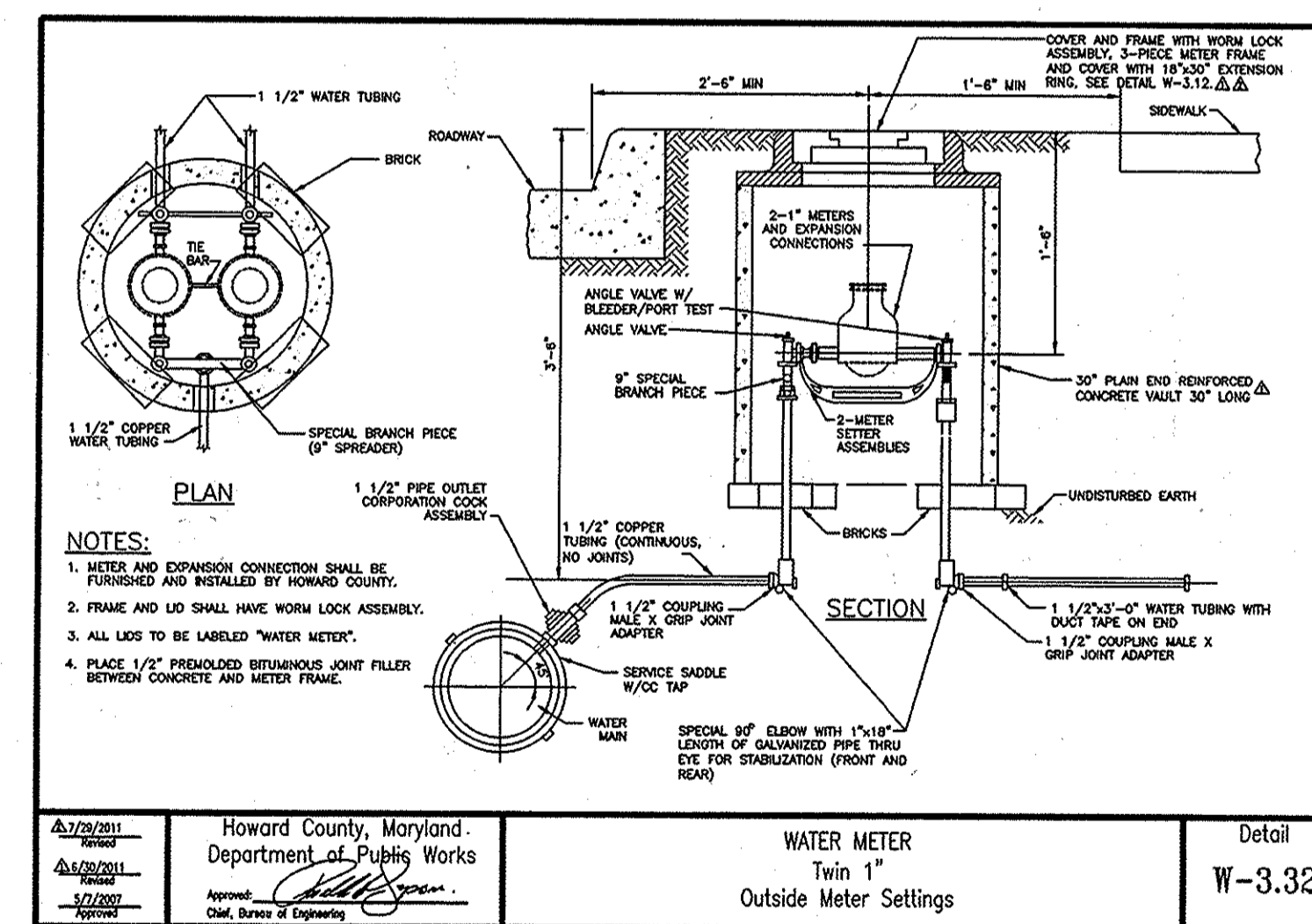
Revised 6/26/2011	Howard County, Maryland Department of Public Works	FIRE HYDRANT Continuity Test Station	Detail W-1.15
Approved 5/1/2007	Approved: <i>[Signature]</i> Chief, Bureau of Engineering		



NOTES:

1. TAPPING SLEEVE IS REQUIRED FOR CONNECTION TO PVC MAIN.
2. CONCRETE METER VAULTS ARE REQUIRED IN PAVED AREAS, DRIVEWAYS AND SIDEWALKS.
3. 24" METER VAULTS SHALL HAVE 18"x12" FRAME AND COVER.

Revised 6/26/2011	Howard County, Maryland Department of Public Works	WATER METER 3/4" Outside Meter Setting	Detail W-3.27
Approved 5/1/2007	Approved: <i>[Signature]</i> Chief, Bureau of Engineering		

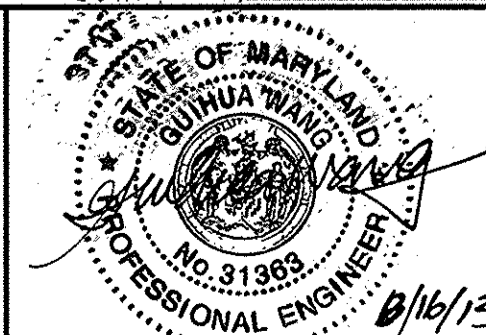


NOTES:

1. METER AND EXPANSION CONNECTION SHALL BE TURNED AND REVEALED BY HOWARD COUNTY.
2. FRAME AND LID SHALL HAVE WORM LOCK ASSEMBLY.
3. ALL LIDS TO BE LABELED "WATER METER".
4. PLACE 1/2" PREFOAMED BITUMINOUS JOINT FILLER BETWEEN CONCRETE AND METER FRAME.

Revised 6/26/2011	Howard County, Maryland Department of Public Works	WATER METER Twin 1" Outside Meter Settings	Detail W-3.32
Approved 5/1/2007	Approved: <i>[Signature]</i> Chief, Bureau of Engineering		

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



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:	GS				
DRN:	GS				
CHK:	GW/TWW				
DATE:	AUG. 2013	BY:	MRL	NO.	AS-BUILT
REVISION					

DATE:	600' SCALE MAP NO. 37	BLOCK NO.	21
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WATER MAIN DETAILS		PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT	
		CAPITAL PROJECT No. W-8321	
		CONTRACT No. 44-4807	
ELECTION DISTRICT NO. 1		HOWARD COUNTY, MARYLAND	

SCALE AS SHOWN
SHEET 9 OF 14

AS-BUILT
DATE 12/10/13

PLOTTED: 10/7/09 AM on Thursday, August 15, 2013
FILE: W-3.27.dwg
PLOTTER: HP DesignJet 2400

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 8/23/13
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 8/22/13
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 8/22/13
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 8/22/13
CHIEF, UTILITY DESIGN DIVISION DATE

- NOTES:
- SOIL INFORMATION IS BASED ON HOWARD COUNTY GIS SOIL MAP
 Fa: FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES
 RuB: RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES
 Ud: URBAN LAND - UDORTHERN COMPLEX, 0 TO 15 PERCENT SLOPES

- TOPSOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATION OF CONSTRUCTION AND MATERIALS, SECTION 920 - LANDSCAPING MATERIALS.



E 1371750
N 554500

N 554500
E 1373000

OLD WATERLOO ROAD

PIRCH

DEVLON PLACE

WAY

JENA PLACE

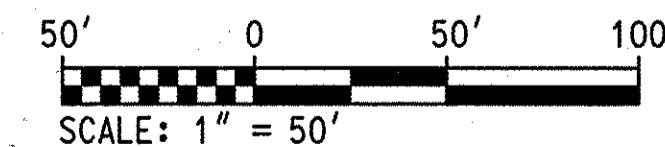
MATCH LINE SEE SHEET 11

RuB

ASPERN DRIVE

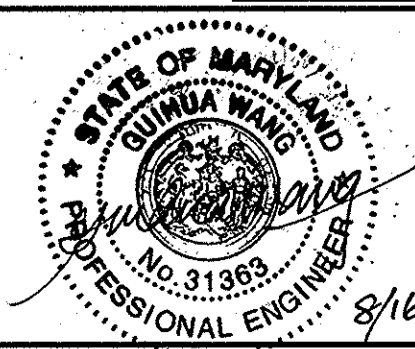
Fa

PLAN
SCALE: 1" = 50'



AS-BUILT
DATE 12/10/15

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



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WWW.KCI.COM

DES:	GS				
DRN:	GS				
CHK:	GW/TWW				
DATE:	AUG. 2013	MRL	AS-BUILT	REVISION	DATE

SEDIMENT AND EROSION CONTROL PLAN
PIRCH WAY, ASPERN DRIVE, DEVLON PLACE, JENA PLACE

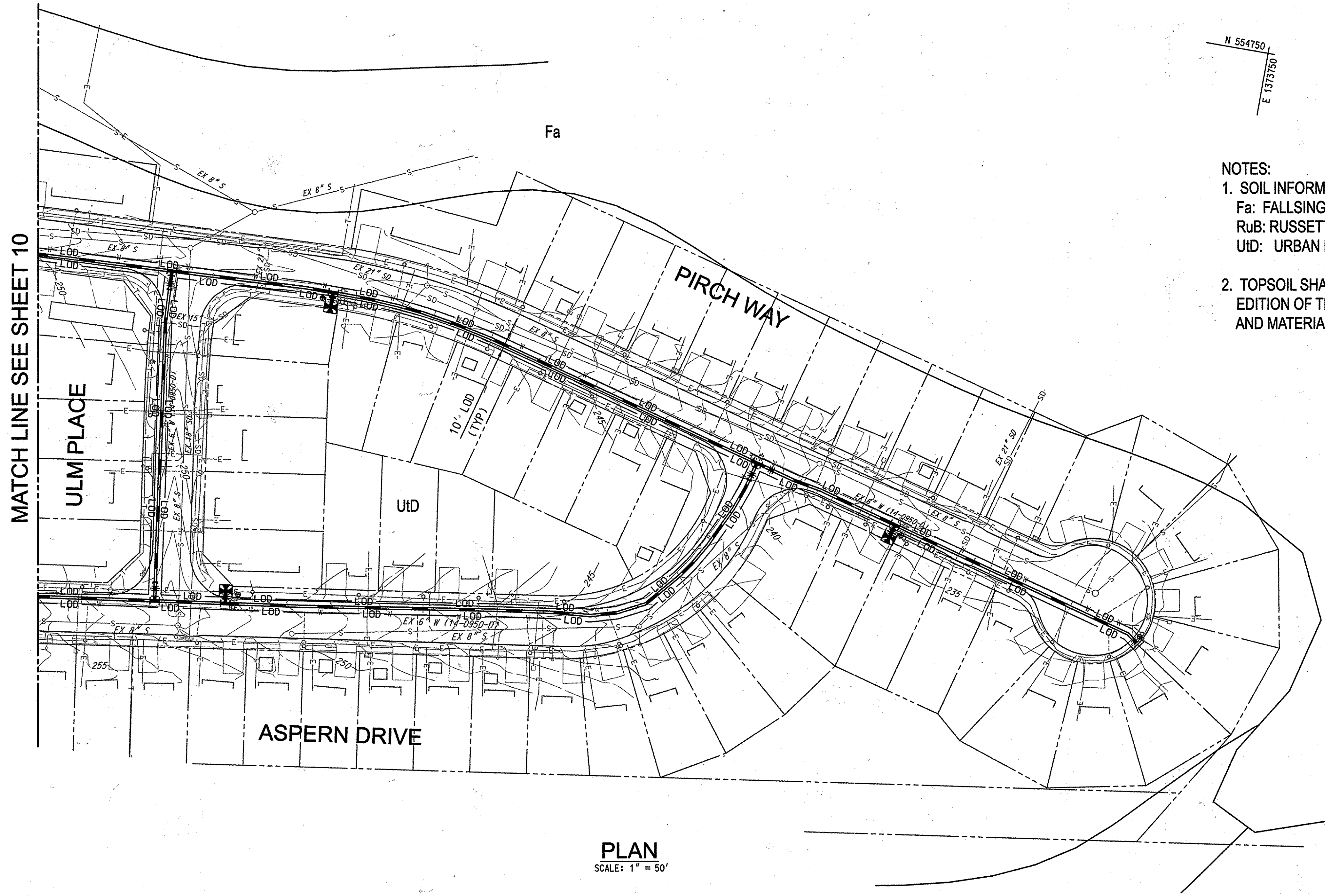
PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

SCALE AS SHOWN
SHEET 10 OF 14

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] DATE: [Blank]
 Chief, Bureau of Engineering: [Signature] DATE: [Blank]
 Chief, Bureau of Utilities: [Signature] DATE: [Blank]
 Chief, Utility Design Division: [Signature] DATE: 8/20/13

PLOTTED: 10:10 AM on Thursday, August 15, 2013
 FILE: M:\2013\1322677.dwg
 PLOT: M:\2013\1322677.dwg
 PLOT: M:\2013\1322677.dwg



- NOTES:
- SOIL INFORMATION IS BASED ON HOWARD COUNTY GIS SOIL MAP
 Fa: FALLSINGTON SANDY LOADM, 0 TO 2 PERCENT SLOPES
 RuB: RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES
 UID: URBAN LAND - UDORTHENT COMPLEX, 0 TO 15 PERCENT SLOPES
 - TOPSOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATION OF CONSTRUCTION AND MATERIALS, SECTION 920 - LANDSCAPING MATERIALS.

PLAN
SCALE: 1" = 50'

50' 0 50' 100'
SCALE: 1" = 50'

AS-BUILT
DATE 12/10/15

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: 10:21 AM on Thursday, August 15, 2013
FILE: W:\2013\13122677.02\Drawings\13122677-02-C01-W.dwg

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

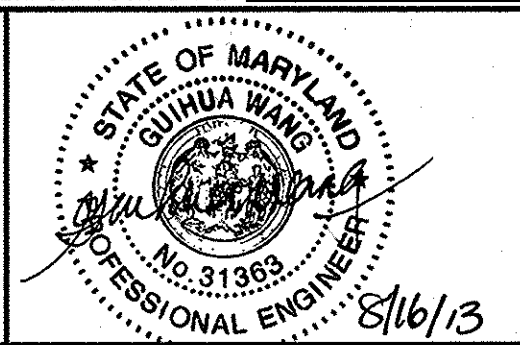
Raymond 8/16/13
DIRECTOR OF PUBLIC WORKS DATE

Thomas P. Butler 8/16/13
CHIEF, BUREAU OF ENGINEERING DATE

William Chan 8/22/13
CHIEF, BUREAU OF UTILITIES DATE

Chen 8/22/13
CHIEF, UTILITY DESIGN DIVISION DATE

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TELEPHONE: (410) 316-7800
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www.kci.com



DES:	GS				
DRN:	GS				
CHK:	GW/TWW				
DATE:	AUG. 2013	MRL	AS-BUILT		
BY:					
NO.:					
REVISION:					

SEDIMENT & EROSION CONTROL PLAN
PIRCH WAY, ASPERN DRIVE, ULM PLACE

PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 11 OF 14

DETAIL 22 - SILT FENCE

Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1/2" x 1/2" square (minimum cut, or 1/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 - Tensile Strength: 50 lbs/in (min.) Test: MSMT 509
 - Tensile Modulus: 20 lbs/in (min.) Test: MSMT 509
 - Flow Rate: 0.3 gal/f²/minute (max.) Test: MSMT 322
 - Filtering Efficiency: 75% (min.) Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE | MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

DETAIL 23B - AT GRADE INLET PROTECTION

Construction Specifications

- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 1/2" x 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE | MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

DETAIL 23C-CURB INLET PROTECTION (COG OR COS INLETS)

Construction Specifications

- Attach a continuous piece of wire mesh (30" minimum width with throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
- Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
- Securely nail the 2" x 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4" apart).
- Place the assembly against the inlet throat and minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
- The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
- Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure that storm flow does not bypass the inlet by installing temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE | MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

HOWARD SOIL CONSERVATION DISTRICT 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 re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days as to all other disturbed or graded areas on the project site.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). 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	0.24	Acres
Area Disturbed	0.24	Acres
Area to be reseed or paved	0.24	Acres
Area to be vegetatively stabilized	N/A	Acres
Total Cut	N/A	Cu Yds.
Total Fill	N/A	Cu Yds.
Offsite waste/borrow area location	CONTRACTOR TO COORDINATE	
- Any sediment control practice that is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control 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 pipe lengths or that which shall be back-filled and stabilized by the end of each workday, whichever is shorter.
- Any changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding with construction.
- A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the enforcement authority. Unless otherwise specified and approved by the approval authority, no more than 30 acres cumulatively may be disturbed at a given time.

Rev. 4/2013

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
To stabilize disturbed soils with permanent vegetation.

PURPOSE
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

CONDITIONS WHERE PRACTICES APPLY
Exposed soils where ground cover is needed for 6 months or more.

CRITERIA

- Seed Mixtures
 - General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 362 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/4 pounds per 1000 square feet (150 pounds per acre) in the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
 - Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purposes. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivar Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 55 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Notes:
Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland".
Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

TABLE B.3 - IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b)
Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

7. All areas to receive seed by diskless or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1/4 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
8. If soil moisture is deficient, supply zone seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SIDE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. REMOVE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM, AND SPECIFIED DIMENSIONS IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPPING, AND/OR SHEEPING. WASHING ROADWAY TO REMOVE AND TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE | MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

OWNER'S/DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WILL BE DONE PURSUANT TO THE PLAN AND THAT A RESPONSIBLE PERSON INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE, BEFORE BEGINNING THE PROJECT, A CERTIFICATION OF TRAINING AT A PROGRAM APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THE CONTROL OF SEDIMENT AND EROSION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

BUREAU OF ENGINEERING DEPARTMENT OF PUBLIC WORKS | DATE

HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION

THIS PLAN IS APPROVED THE SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT | DATE APPROVED

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT
- REQUEST PRE-CONSTRUCTION MEETING ON-SITE WITH REPRESENTATIVE OF HOWARD COUNTY SOIL CONSERVATION
- LAYOUT ALIGNMENT AT SITE. (2 DAYS)
- CLEAR AND GRUB AS NEEDED FOR THE INSTALLATION OF THE SEDIMENT CONTROL DEVICES AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. INSTALL AND STABILIZE SEDIMENT CONTROL DEVICES IF NECESSARY. INSTALL A STABILIZED CONSTRUCTION ENTRANCE AT THE DIRECTION OF INSPECTOR IF NECESSARY.
- INSTALL TRAFFIC CONTROL SIGNS IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.
- EXCAVATE TRENCH TO THE GRADE SPECIFIED ON THE WATER MAIN PROFILES. INSTALL WATER MAIN AND STABILIZE OR BACKFILL TRENCH. SEE DETAIL ON SHEET 9 OF 14 FOR TYPICAL TRENCH DETAIL. DURING THE COURSE OF CONSTRUCTION, TRENCHES FOR THE CONSTRUCTION OF THE NEW WATER MAIN SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED 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 AND ALL VEGETATED AREAS DISTURBED DURING THE COURSE OF CONSTRUCTION SHALL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE TEMPORARY SEEDING SUMMARY SHOWN ON THIS SHEET AT THE END OF EACH WORK DAY. ALL DISTURBED PAVING AREAS WITHIN THE EXISTING ROAD SHALL BE TEMPORARILY PATCHED. SEE TEMPORARY PAVING DETAIL ON SHEET 9 OF 14 AT THE END OF EACH WORKING DAY. THE ESTIMATED CONSTRUCTION TIME FOR THE WATER MAIN IS 180 DAYS.
- PERMANENTLY STABILIZE ALL DISTURBED VEGETATED AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION SHOWN ON THIS SHEET.
- PERMANENTLY REPAIR ALL DISTURBED PAVING AREAS IN ACCORDANCE WITH THE DETAIL ON SHEET 9 OF 14.
- CLEAN UP CONSTRUCTION SITE. (1 DAY)
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR.
- STABILIZE AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROL DEVICES.

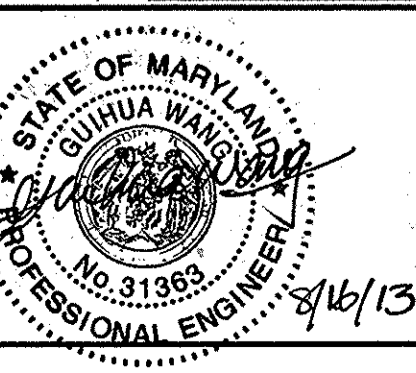
ENGINEER'S CERTIFICATION

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

Guohua Wang | 8/16/13 | DATE

GUOHUA WANG
601 TECHNOLOGIES, INC.
936 RIDGEBROOK ROAD
SPARKS, MD 21152

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



ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
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DES:	GS
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BY:	AS-BUILT
NO.:	AS-BUILT
REVISION:	

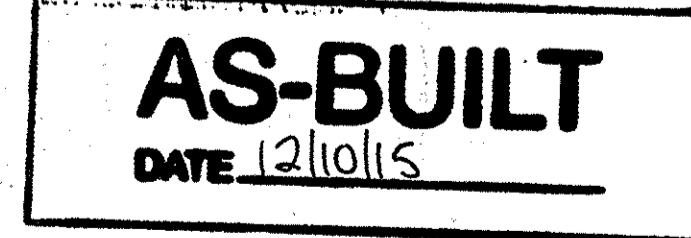
SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

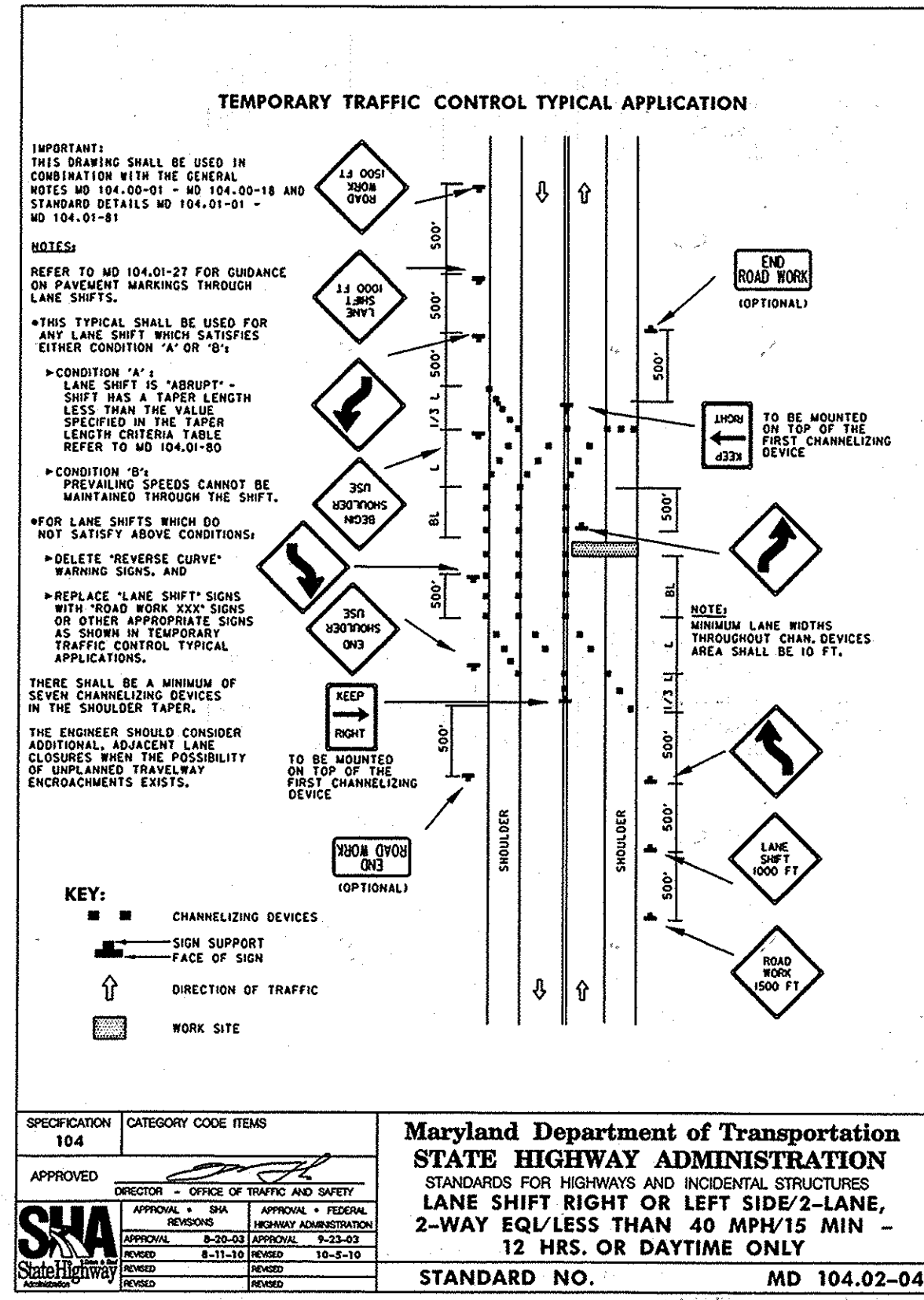
600' SCALE MAP NO. 37 | BLOCK NO. 21 | ELECTION DISTRICT NO. 1

PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT

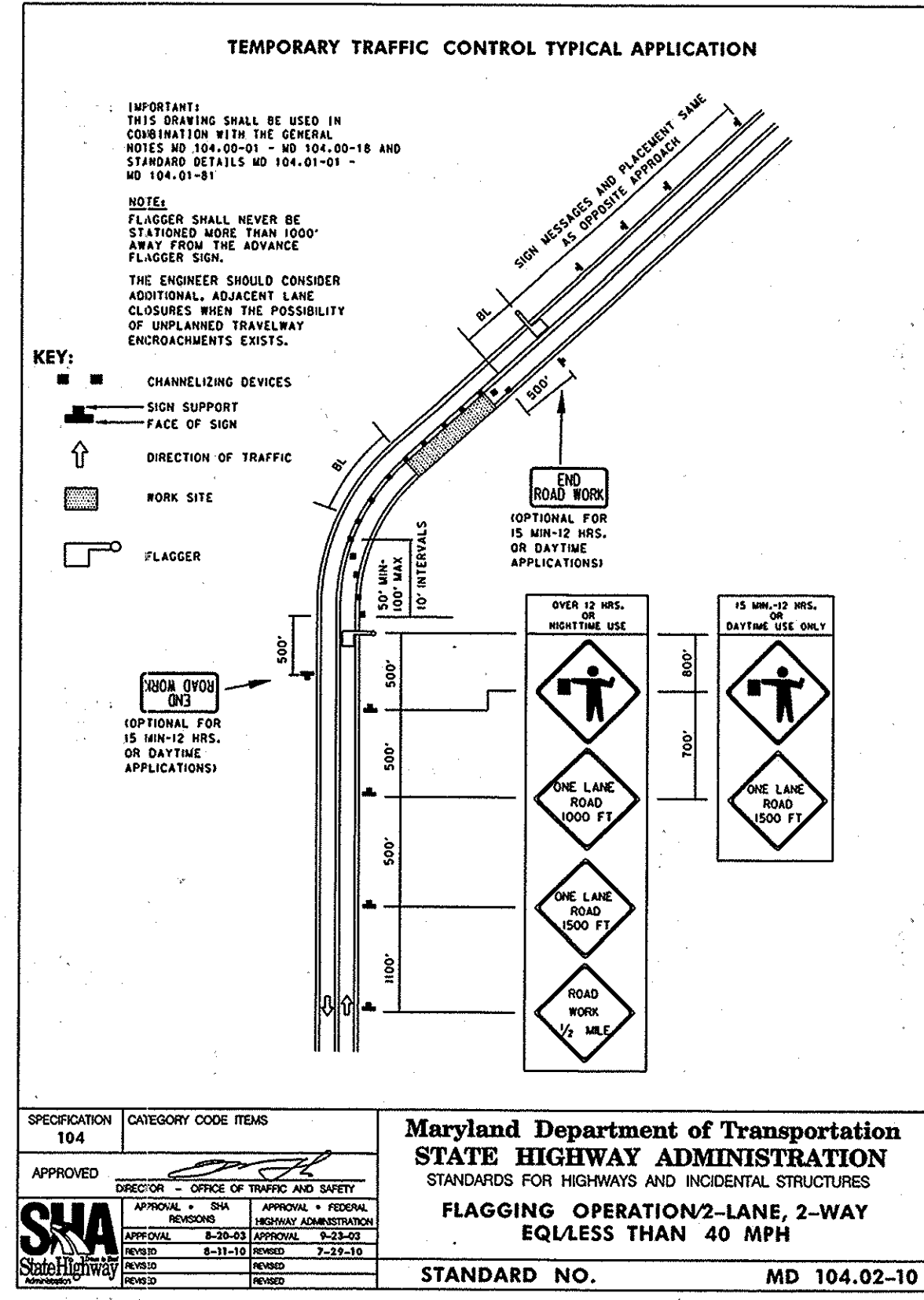
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

SCALE AS SHOWN
SHEET 12 OF 14

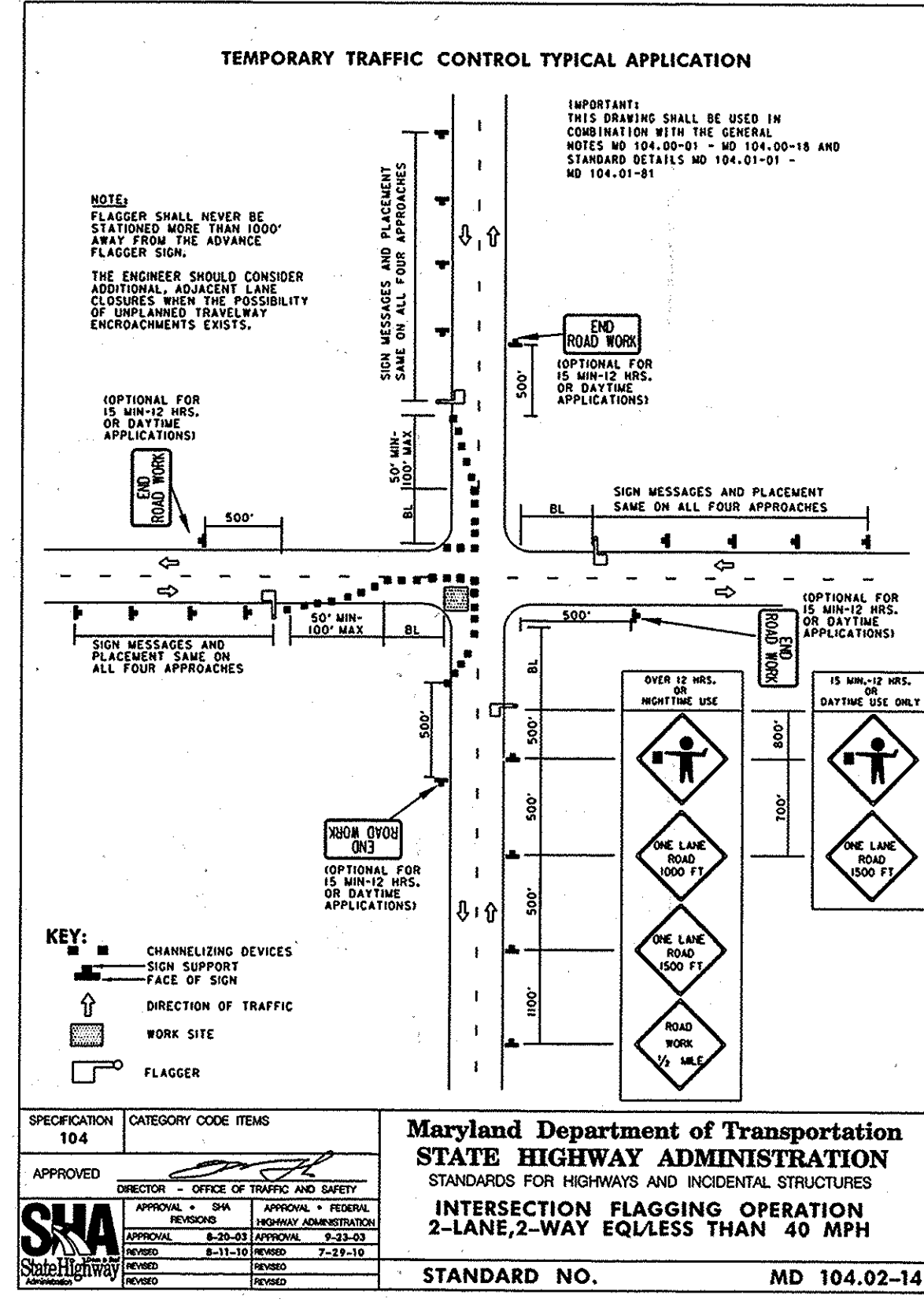




USE ON OLD WATERLOO ROAD AT PIRCH WAY

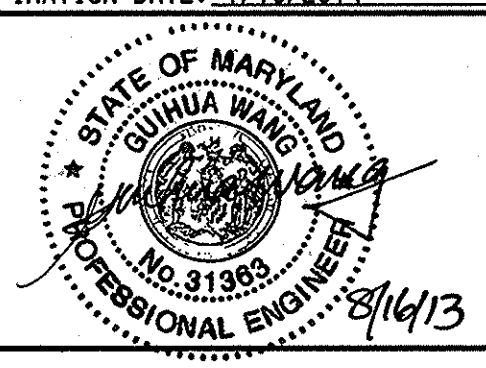


USE ON PIRCH WAY
USE ON ST. JEAN WAY
USE ON ASPERN DRIVE
USE ON DEVLON PLACE
USE ON JENA PLACE
USE ON ULM PLACE



USE ON OLD WATERLOO ROAD AT PIRCH WAY
USE ON PIRCH WAY AT ASPERN DRIVE
USE ON PIRCH WAY AT DEVLON PLACE
USE ON PIRCH WAY AT JENA PLACE
USE ON PIRCH WAY AT ULM PLACE

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



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

DES:	GS				
DRN:	GS				
CHK:	GW/TWW				
DATE:	AUG. 2013	BY:	MRL	NO.:	AS-BUILT
REVISION:		DATE:	12/10/15		

M.O.T. MAINTENANCE OF TRAFFIC

600' SCALE MAP NO. 37 BLOCK NO. 21

PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4807

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

AS-BUILT
DATE 12/10/15

SCALE AS SHOWN
SHEET 13 OF 14

PLOTTED: 10/28 AM on Thursday, August 15, 2013
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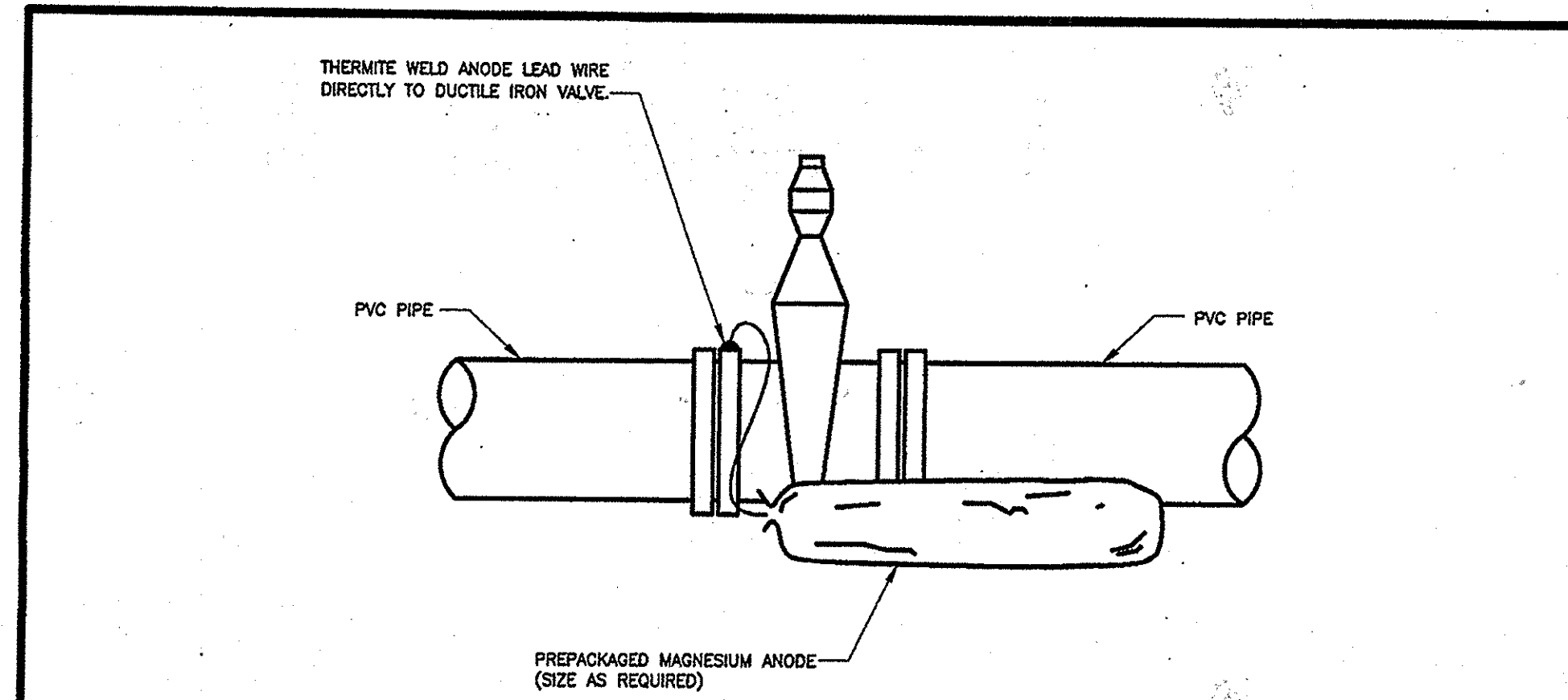
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Jay An 8/23/13
DIRECTOR OF PUBLIC WORKS DATE

Thomas E. Butler 8/21/13
CHIEF, BUREAU OF ENGINEERING DATE

Steve Clemen 8/22/13
CHIEF, BUREAU OF UTILITIES DATE

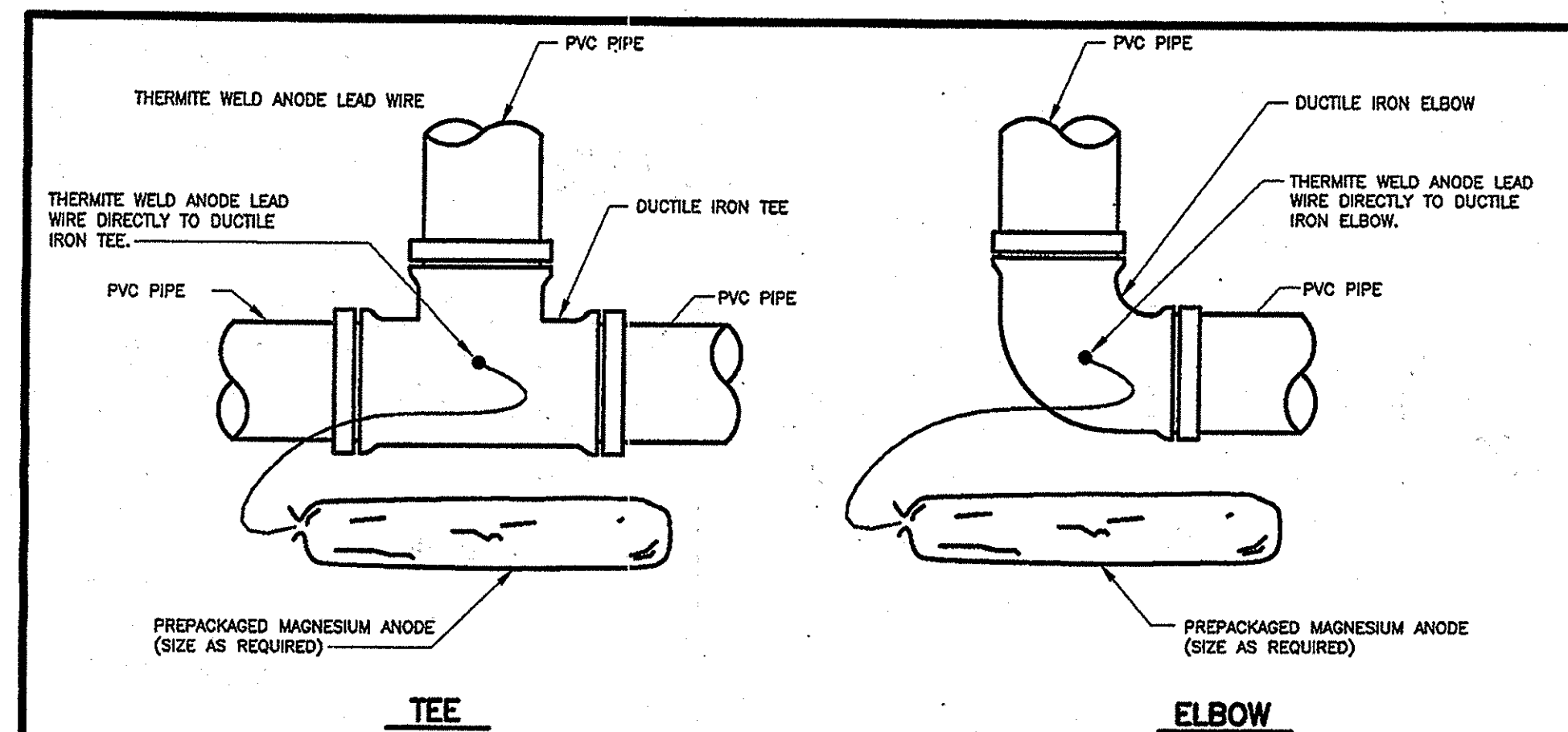
Chad Lewis 8/22/13
CHIEF, UTILITY DESIGN DIVISION DATE



NOTES:

1. DO NOT THERMITE WELD TO PVC PIPE.
2. INSTALL ANODE A MINIMUM OF 12 INCHES FROM MAIN.
3. INSTALL ANODE IN NATIVE SOIL. DO NOT BACKFILL WITH SAND OR STONE.
4. SEE ANODE AND REFERENCE ELECTRODE PLACEMENT DETAIL.

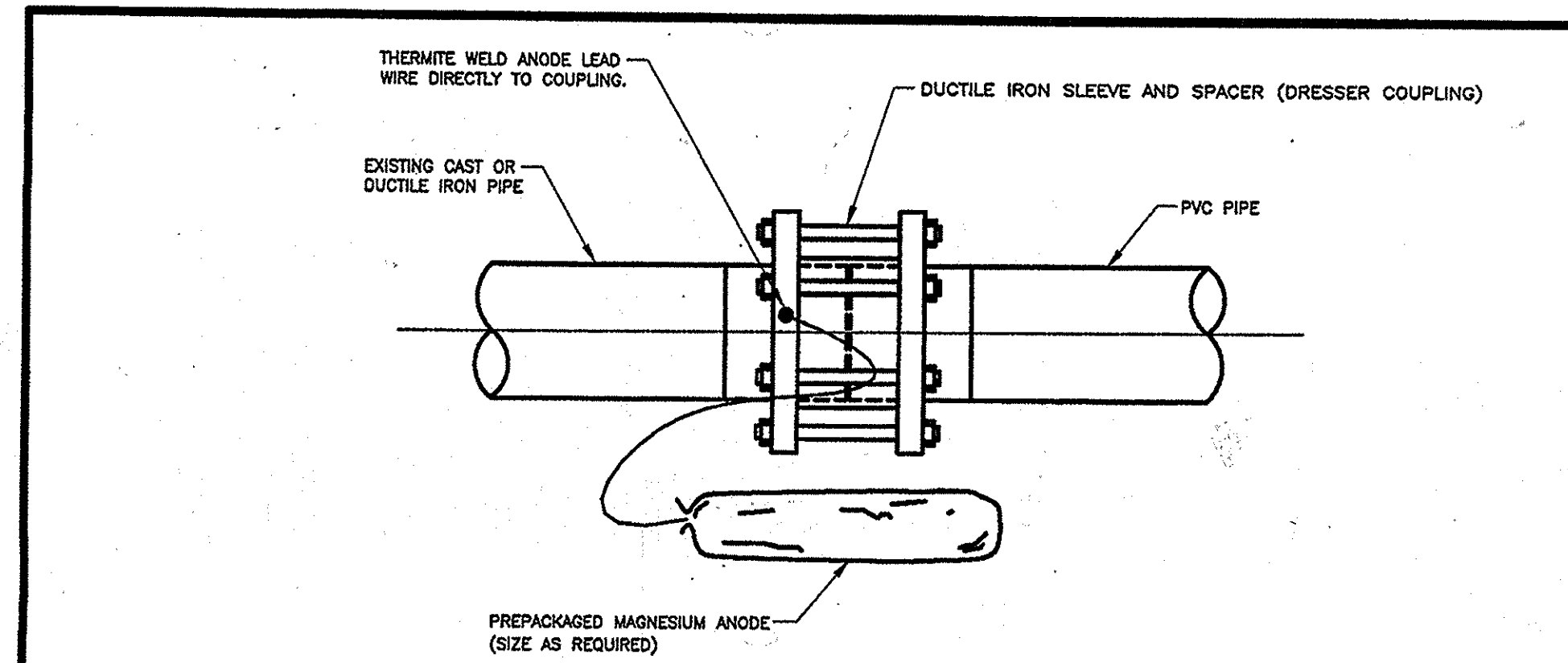
Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	PVC MAIN Ductile Iron Valve	Detail C-5.01
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NOTES:

1. ANODES REQUIRED ONLY IF TEE OR ELBOW IS DUCTILE IRON.
2. DO NOT THERMITE WELD TO PVC PIPE.
3. INSTALL ANODES A MINIMUM OF 12 INCHES FROM MAIN.
4. INSTALL ANODES IN NATIVE SOIL. DO NOT BACKFILL WITH SAND OR STONE.
5. SEE ANODE AND REFERENCE ELECTRODE PLACEMENT DETAIL.

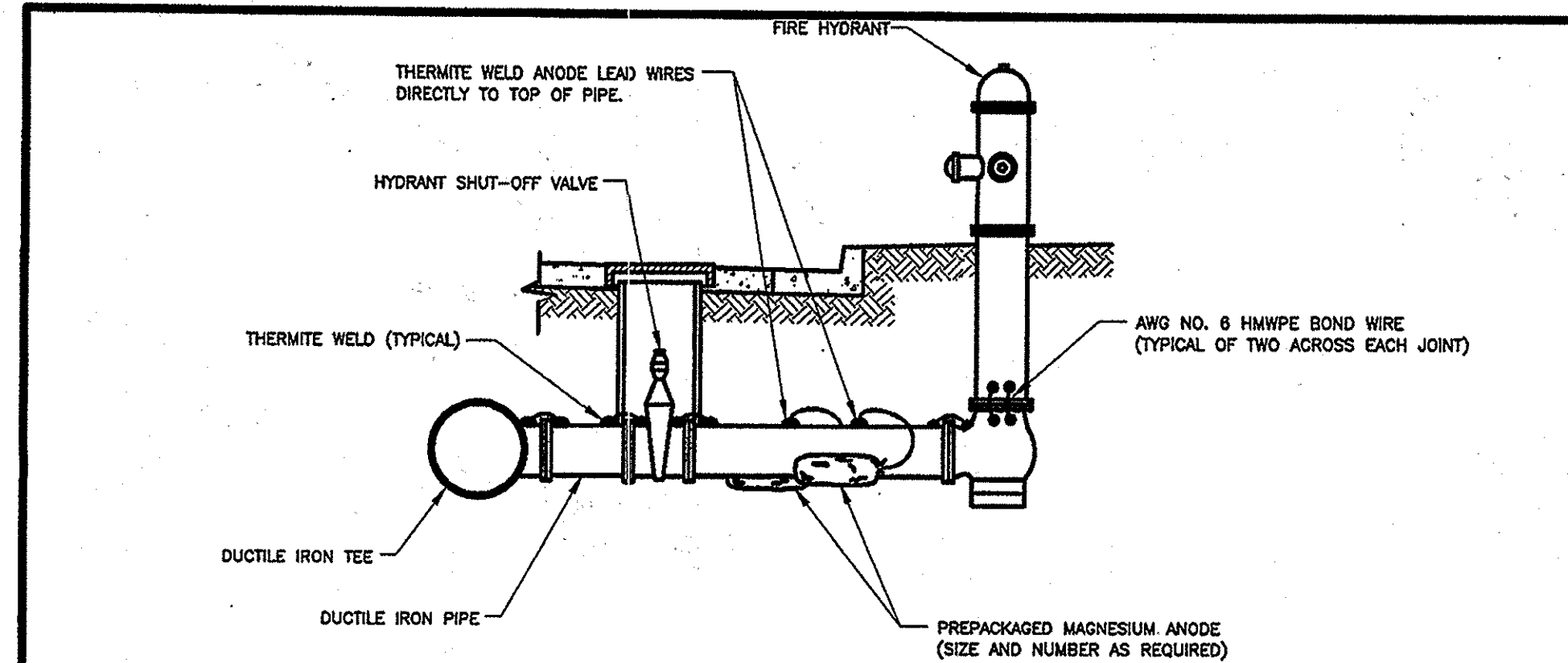
Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	PVC MAIN Ductile Iron Fittings	Detail C-5.02
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NOTES:

1. DO NOT THERMITE WELD TO PVC PIPE.
2. INSTALL ANODE A MINIMUM OF 12 INCHES FROM MAIN.
3. INSTALL ANODE IN NATIVE SOIL. DO NOT BACKFILL WITH SAND OR STONE.
4. SEE ANODE AND REFERENCE ELECTRODE PLACEMENT DETAIL.

Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	PVC MAIN Ductile Iron Sleeve and Spacer	Detail C-5.03
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NOTES:

1. BOND ALL DUCTILE IRON COMPONENTS TOGETHER WITH AWG NO. 6 HMWPE WIRES.
2. INSTALL BOND WIRES ON TOP OF DUCTILE IRON PIPE OR DUCTILE IRON FITTING WHERE POSSIBLE.
3. INSTALL A MINIMUM OF TWO BOND CABLES ACROSS EACH DUCTILE IRON PIPE OR FITTING JOINT. ALL PIPE JOINTS NOT SHOWN ON THIS DETAIL.
4. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE.
5. DO NOT THERMITE WELD TO PVC PIPE.
6. SEE ANODE AND REFERENCE ELECTRODE PLACEMENT DETAIL.
7. SEE JOINTS BONDING DETAIL.

Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	PVC MAIN Ductile Iron Fire Hydrant Piping	Detail C-5.04
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AS-BUILT
DATE: 12/10/15

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: 07:29 AM on Thursday, August 15, 2013
 FILE: H:\V\2013\13122877.02\Drawings\13122877-02-C15-W.dgn

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> DATE: 8/23/13 Chief, Bureau of Utilities: <i>[Signature]</i> DATE: 8/23/13	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: GS DRN: GS CHK: GW/TWW DATE: AUG. 2013 MRL BY NO. AS-BUILT REVISION DATE: 600' SCALE MAP NO. 37 BLOCK NO. 21	CORROSION CONTROL	PIRCH WAY/ASPERN DRIVE WATER REPLACEMENT CAPITAL PROJECT No. W-8321 CONTRACT No. 44-4807 ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 14 OF 14
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