


SANCTUARY COURT WATER MAIN REPLACEMENT

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

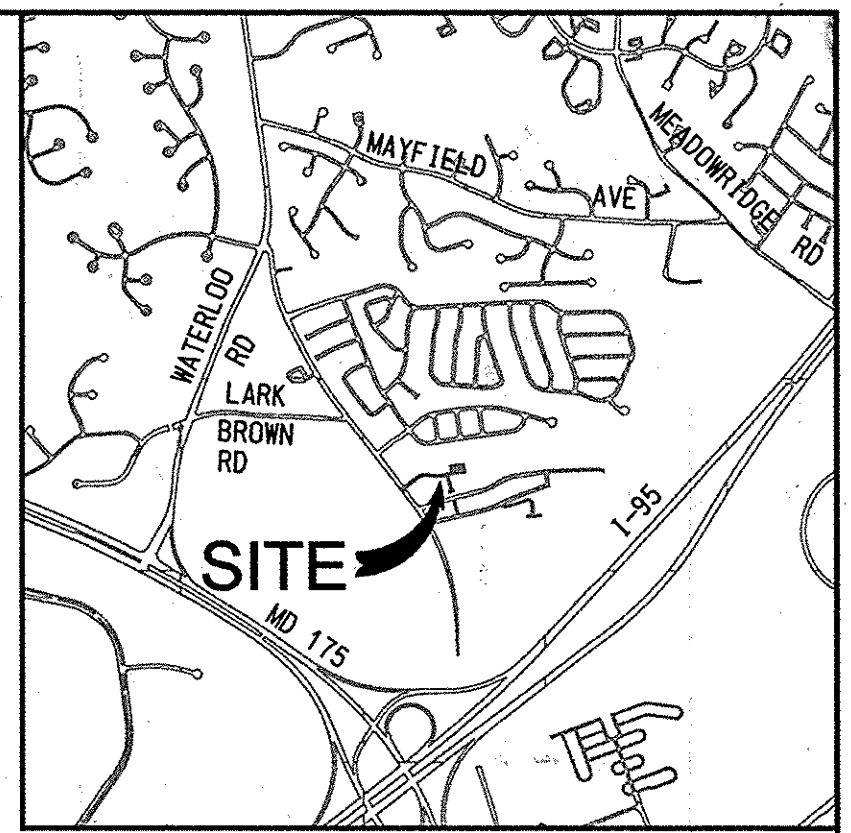
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4846

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 IN MAY 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. 37GF AND NO. 37GI.
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 MONEYS OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE 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
BOE (CONTRACTOR SERVICES)	410-637-8713
BOE (UNDERGROUND DAMAGE CONTROL)	410-787-9068
BOE (EMERGENCY)	410-685-0123
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 (DR 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, MINIMUM.
- INSTALL CONCRETE ANCHOR COLLARS WHERE SHOWN, SPECIFIED OR DIRECTED, AND WHEN SUFFICIENT ROOM EXISTS (AS DETERMINED BY THE ENGINEER). INSTALL CONCRETE BUTTRRESSING 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 BUTTRRESSING.
- 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 OR 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.



VICINITY MAP
SCALE: 1" = 2000'

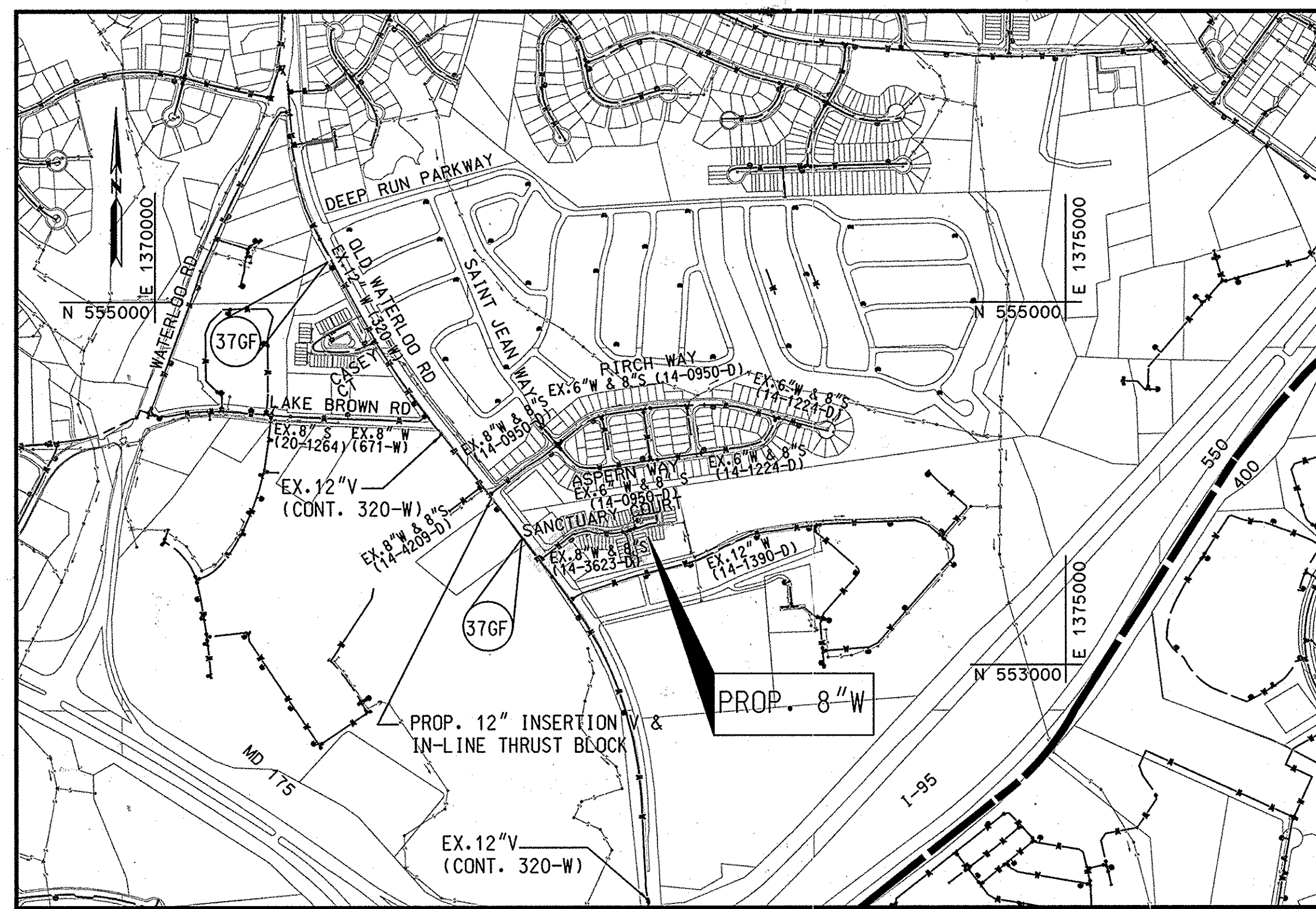
RESTORATION SCHEDULE		
LOCATION	DISTANCE	TYPE
SANCTUARY CT	913	ASPHALT
TRANQUILL WAY	200	ASPHALT
OLD WATERLOO RD	45	ASPHALT

* REFER TO PERMANENT SEEDING NOTES ON SHEET 6 OF 8

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 CONTINUED

- CONTRACTOR SHALL REPLACE ALL WATER HOUSE CONNECTIONS. ALL WATER HOUSE CONNECTIONS SHALL BE MADE AT THE NEW VALVE BOX (INSIDE METERED LOCATIONS) OR NEW METER VAULTS (OUTSIDE METERED LOCATIONS). FOR TWIN HOUSE CONNECTIONS, THE METERS SHALL BE INSTALLED IN ONE METER VAULT, AS SHOWN IN DETAIL W-3.32.
- EXISTING WATER MAINS, INCLUDING PIPE MATERIAL, FITTINGS, VALVES AND APPURTENANCES EXCAVATED OR REMOVED FOR THE CONSTRUCTION OF THE NEW WATER MAIN SHALL BE REMOVED FROM THE WORK SITE AND DISPOSED OF BY THE CONTRACTOR AT AN APPROPRIATE RECEIVING FACILITY (LICENSED FOR SUCH DISPOSAL) AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED BY THE HOWARD COUNTY PROJECT MANAGER. EXISTING WATER MAINS ABANDONED IN PLACE SHALL BE CAPPED AT EACH CUT END. VALVES ABANDONED IN PLACE SHALL HAVE VALVE BOXES REMOVED. EXISTING FIRE HYDRANTS REMOVED, AS PART OF CONSTRUCTION, SHALL BE DELIVERED TO THE BUREAU OF UTILITIES.
- PVC WATER MAINS SHALL BE ALLOWED TO CHANGE VERTICAL OR HORIZONTAL DIRECTION ONLY AT PVC HIGH DEFLECTION (HD) COUPLINGS. 5-DEGREE SWEEPS OR STANDARD BENDS. DEFLECTIONS MADE AT STANDARD PIPE JOINTS AND/OR PIPE LENGTHS BENT TO ACHIEVE CURVATURE OF THE WATER MAIN WILL NOT BE ALLOWED UNDER ANY CIRCUMSTANCES.
- IF ANY FIRE HYDRANT WILL BE PLACED OUT OF SERVICE IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE HOWARD COUNTY FIRE DEPARTMENT (HCFD) DURING CONSTRUCTION CONCERNING FIRE HYDRANTS THAT ARE OUT OF SERVICE. FIRE HYDRANTS THAT ARE OUT OF SERVICE SHALL BE CLEARLY SIGNED "OUT OF SERVICE".
- CONTINUITY TEST STATIONS SHALL BE PLACED ADJACENT TO EACH FIRE HYDRANT. REFER TO THE FIRE HYDRANT CONTINUITY TEST STATIONS DETAIL W-1.15 ON SHEET 4. ALL THE REST OF THE CONTINUITY TEST STATIONS SHALL BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY DETAIL 68.21.
- TRACER WIRES AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
- THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATIONS OF THE PROPOSED FACILITIES.
- EXISTING WATER MAINS SHALL BE LOCATED BY THE ALIGNMENT MARKED IN THE FIELD BY HOWARD COUNTY PERSONNEL. INSTALL NEW WATER MAINS BASED ON THE ALIGNMENT AND OFFSET DIMENSION SHOWN RELATIVE TO THE EXISTING WATER MAINS. MAINTAIN REQUIRED SEPARATION FROM SANITARY AND STORM SEWER PIPING.
- PIPE TRENCHING AND PAVEMENT REPLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE PVC PIPE TRENCH AND PERMANENT PAVING RESTORATION DETAIL AS SHOWN ON SHEET 4.
- TEMPORARY PAVING PATCH FOR UTILITY TRENCH REPAIR OF HMA PAVED ROADS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET 4. REFILL ALL DEPRESSIONS AND SETTLEMENT (AS THEY DEVELOP) WITH THE SPECIFIED MATERIALS. PRIOR TO PLACEMENT OF THE PERMANENT PAVING SECTION, REMOVE THE TOP SIX INCHES OF MATERIAL, SCARIFY, RECOMPACT, AND TACK COAT THE REMAINING 12-INCH MINIMUM NO. 57 AGGREGATE SUB-BASE, AND REPAVE THE UTILITY TRENCH (AND WHERE REQUIRED, THE REMAINING PORTION OF THE TRAVEL LANE) ALL IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL G-4.01. THE HMA MATERIALS SHALL MEET THE TYPICAL SUPERPAVE MIX SPECIFIED IN HOWARD COUNTY STANDARD DETAIL R-2.01, P-3 ON THE ROADS WITHIN SUBDIVISION AND R2.02, P-5 ON OLD WATERLOO ROAD.
- WATER MAIN TEST GRADIENT:
THE EXISTING STATIC PRESSURE GRADIENT FOR PROPOSED WATER MAIN SYSTEM IS 600FT.
WATER MAIN SHALL BE FILLED WITH WATER AND BROUGHT TO 150PSI HYDROSTATIC TEST PRESSURE AT THE LOW POINT FOR TWO HOURS.
- IN ACCORDANCE WITH 10 STATE STANDARDS REQUIREMENTS - ALL CROSSINGS OF THE NEW WATER MAIN WITH EXISTING SANITARY OR STORM SEWER PIPING (RESULTING IN LESS THAN 18" OF SEPARATION) SHALL BE ACCOMPLISHED BY CENTERING A FULL LENGTH OF THE NEW WATER MAIN PIPING AT THE CROSSING TO MAXIMIZE THE DISTANCE OF ANY WATER MAIN JOINT FROM THE CROSSING.
- THE CONTRACTOR SHALL NOT ENTER UPON PUBLIC OR PRIVATE PROPERTY (OUTSIDE OF THE RIGHT-OF-WAY OR CONSTRUCTION STRIP) FOR ANY PURPOSE WITHOUT OBTAINING PERMISSION AND IT SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE PROPERTY, TREES, MONUMENTS, SIGNS AND MARKERS AND FENCES THEREON, AND SHALL USE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE OR INJURY THERETO.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PROPERTY OF ANY CHARACTER DURING THE PROSECUTION OF THE WORK, RESULTING FROM ANY ACT, OMISSION, NEGLIGENCE OR MISCONDUCT IN ITS MANNER OR METHOD OF EXECUTING SAID WORK, OR AT ANY TIME DUE TO DEFECTIVE WORK OR MATERIALS, AND SAID RESPONSIBILITY SHALL NOT BE RELEASED UNTIL THE WORK SHALL HAVE BEEN COMPLETED AND ACCEPTED.



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)	
37GF N 555222.17 E 1370948.56 ELEV. 330.87	37GI N 553697.27 E 1372014.96 ELEV. 292.10
TYPE OF BUILDING:	RESIDENTIAL
NUMBER OF PARCELS:	1
NUMBER OF WATER HOUSE CONNECTIONS:	7 WHC & 24 TWIN
DRAINAGE AREA:	DEEP RUN
PRESSURE ZONE:	550
WATER TEST GRADIENT:	600

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PHASING PLAN AND TEMPORARY WATER PLAN
3	PLAN & PROFILE SANCTUARY COURT
4	WATER MAIN DETAILS
5	SEDIMENT AND EROSION CONTROL PLAN
6	SEDIMENT AND EROSION CONTROL NOTES & DETAILS
7	MOT/TRAFFIC CONTROL
8	CORROSION CONTROL
APPENDIX A 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 1/09/16

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



Larry G. Kelly
DIRECTOR OF PUBLIC WORKS
DATE 1/13/14

Thomas E. Butler
CHIEF, BUREAU OF ENGINEERING
DATE 1/14/14

Dr. Dan...
CHIEF, UTILITY DESIGN DIVISION
DATE 1/14/14

(Signature)
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

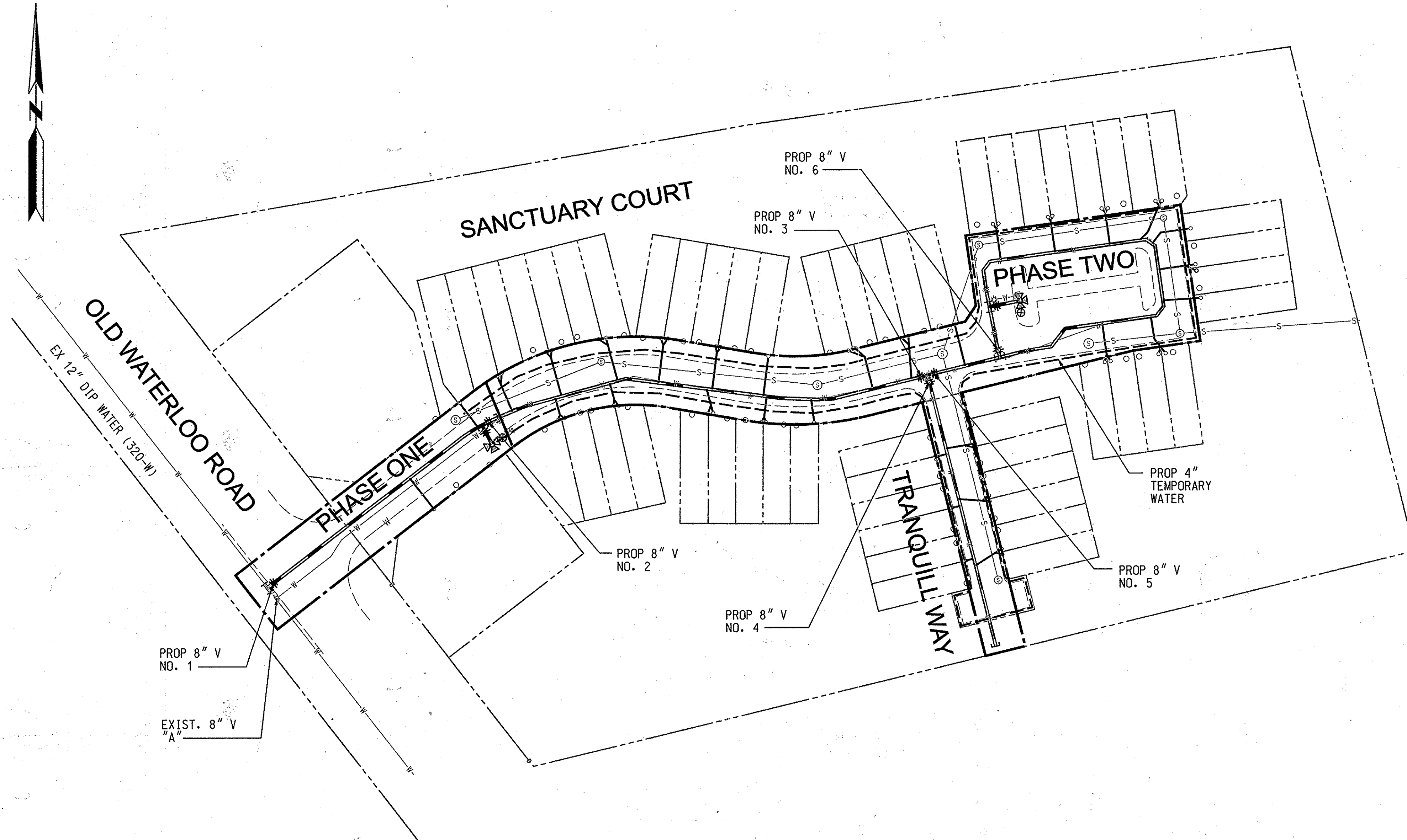
KCI TECHNOLOGIES
936 RINGBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE (410) 316-7800
FAX (410) 316-7818
WWW.KCI.COM

DES:	GS		
DRN:	GS		
CHK:	GW/TWW		
DATE:	JUNE 2013		
BY:	ML	NO.	AS-BUILT
REVISION			
DATE	1/09/16		

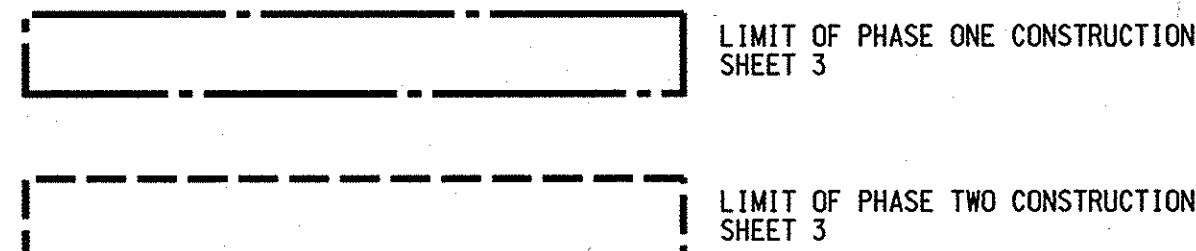
TITLE SHEET	SCALE AS SHOWN
SANCTUARY COURT & TRANQUILL WAY WATER REPLACEMENT	SHEET 1 OF 8
CAPITAL PROJECT No. W-8321 CONTRACT No. 44-4846	ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND
600' SCALE MAP NO. 37	BLOCK NO. 21

PLOTED: 0846 AM on Friday, January 10, 2014
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QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
MOBILIZATION/M.O.T.	EA.	1		
SELECTED BACKFILL	CY	500		GAB
CORROSION PROTECTION	EA.	1	1	Piping & Corrosion Specialties
8" WATER (PVC)	LF	1158	1093	North American Pipe
TS & V	EA.	1	1	Smith Blair/Moeller
REMOVE EX FH & V	EA.	2	2	
6" FH & V	EA.	2	2	American Flow Control
REMOVE EX 8" V	EA.	4	4	
REMOVE EX 6" V	EA.	2	2	
8" V	EA.	5	5	American Flow Control
REMOVE EX WHC	LF	950		
1" WHC	EA.	7	7	Smith Blair/Moeller
1-1/2" WHC	EA.	24	24	Smith Blair/Moeller
4" TEMPORARY WATER	LF	1625		
8" CAP	EA.	1		
NAME OF UTILITY CONTRACTOR: <u>Cossentino Contracting Co.</u>				
AS-BUILT DATE: <u>1/04/16</u>				



SHEET INDEX MAP
SCALE: 1" = 50'



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
	TEMPORARY WATER		SEWER MAIN
			UNDERGROUND CABLE TV
			MANHOLE
			WATER METER
			SANITARY CLEANOUT

SEQUENCE OF CONSTRUCTION

- PHASE ONE**
- INSTALL 8" WATER MAIN FROM STA 0+05 TO STA 2+10. RESTRAIN ALL JOINTS
 - PRESSURE TEST AND DISINFECT THE 8" WATER MAIN
 - MAKE CONNECTION TO EX. 12" WATER MAIN BY TAPPING SLEEVE & VALVE.
 - PROP 8" V NO. 1 & 2 TO REMAIN CLOSED
 - INSTALL TEMPORARY WATER AS SHOWN ON THIS SHEET. INSTALL TEMPORARY WHC WITHIN THE LIMITS OF PHASE TWO. THE TEMPORARY WATER IS FED FROM THE PROP. FIRE HYDRANT.
 - REPLACE AND RECONNECT EXISTING WHC WITHIN THE LIMITS OF PHASE ONE.
 - OPEN PROP 8" V NO. 1, 2, 3, 4, 5, AND 6
 - ABANDON EXIST VALVE "A" AND EXIST FIRE HYDRANT ASSEMBLY IN PHASE ONE.
- PHASE TWO**
- INSTALL 8" WATER MAIN FROM STA 2+10 TO STA 9+58 SANCTUARY COURT. REMOVE EXISTING WATER MAIN AS REQUIRED TO INSTALL NEW WATER MAIN.
 - INSTALL 8" WATER MAIN ALONG TRANQUILL WAY. REMOVE EXISTING WATER MAIN AS REQUIRED TO INSTALL NEW WATER MAIN.
 - PRESSURE TEST AND DISINFECT THE 8" WATER MAIN.
 - MAKE CONNECTION TO 8" WATER MAIN INSTALLED IN PHASE ONE.
 - REPLACE AND RECONNECT EXISTING WHC.
 - OPEN PROP 8" V NO. 2, 3, 4, 5, AND 6
 - REMOVE TEMPORARY WATER
 - ABANDON EXISTING FIRE HYDRANTS WITHIN THE LIMITS OF PHASE TWO.
 - ABANDON ANY REMAINING EXISTING VALVES ON EXISTING WATER MAIN.

AS-BUILT
DATE 1/04/16

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

John G. ... 1/22/14
DIRECTOR OF PUBLIC WORKS DATE

Thomas P. Butler 1/14/14
CHIEF, BUREAU OF ENGINEERING DATE

... 1/14/14
CHIEF, UTILITY DESIGN DIVISION DATE

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
No. 31363
1/10/14

DES:	GS			
DRN:	GS			
CHK:	GW/TWW			
DATE:	JUNE 2013	BY:	ML	NO.
			AS-BUILT	

**PHASING PLAN AND
TEMPORARY WATER PLAN**

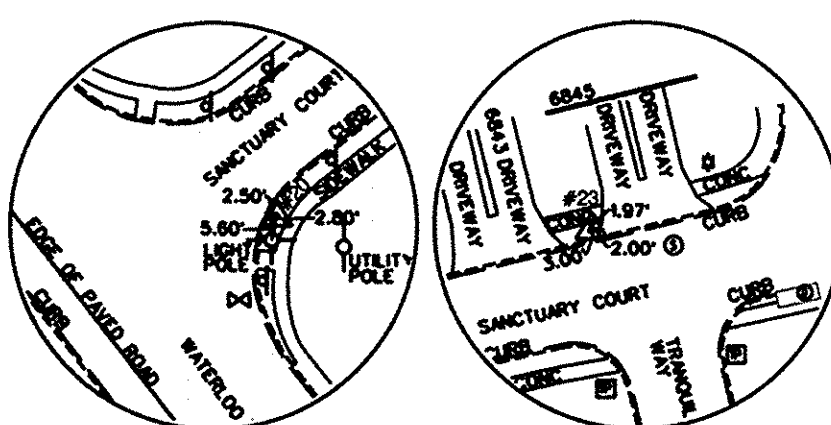
DATE: 1/04/16

600' SCALE MAP NO. 37 BLOCK NO. 21

**SANCTUARY COURT & TRANQUILL WAY
WATER REPLACEMENT**

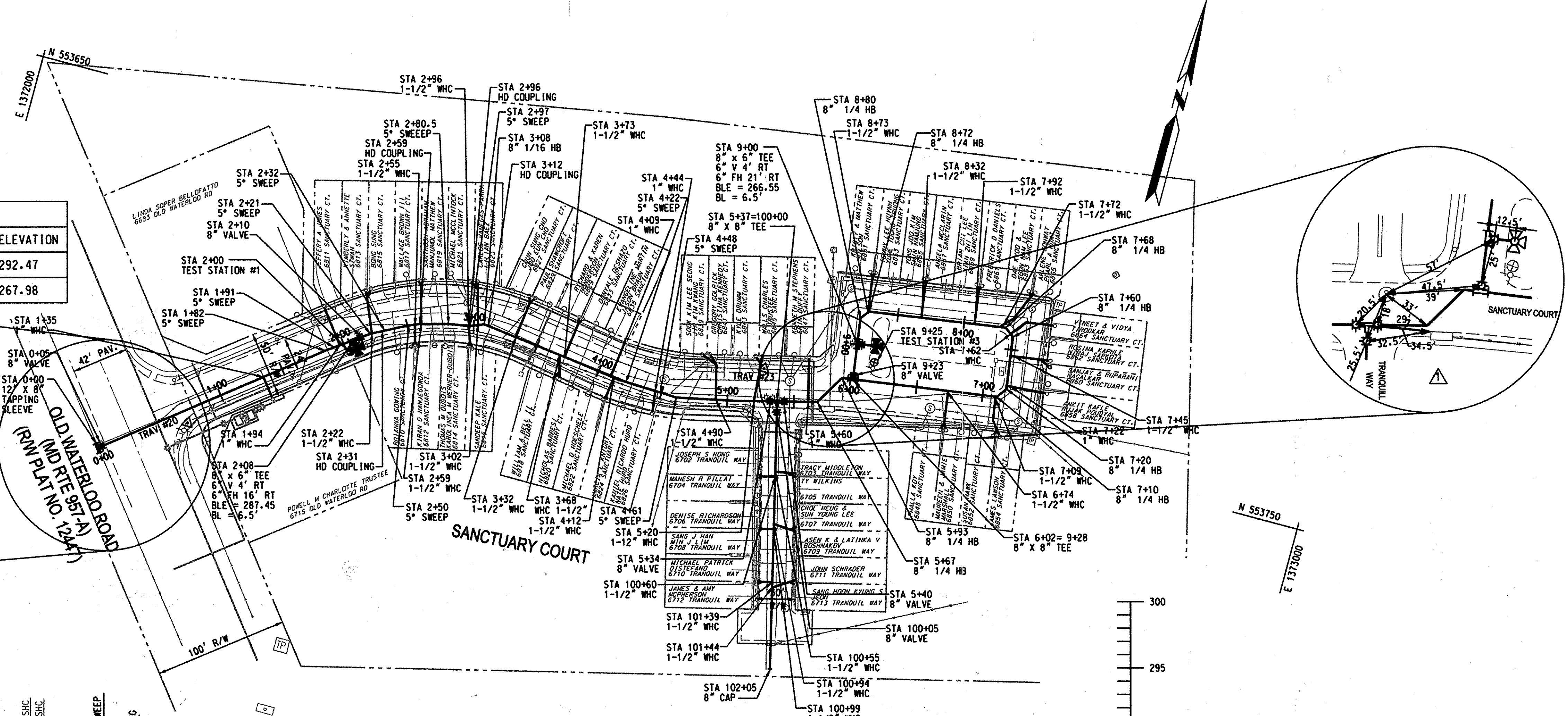
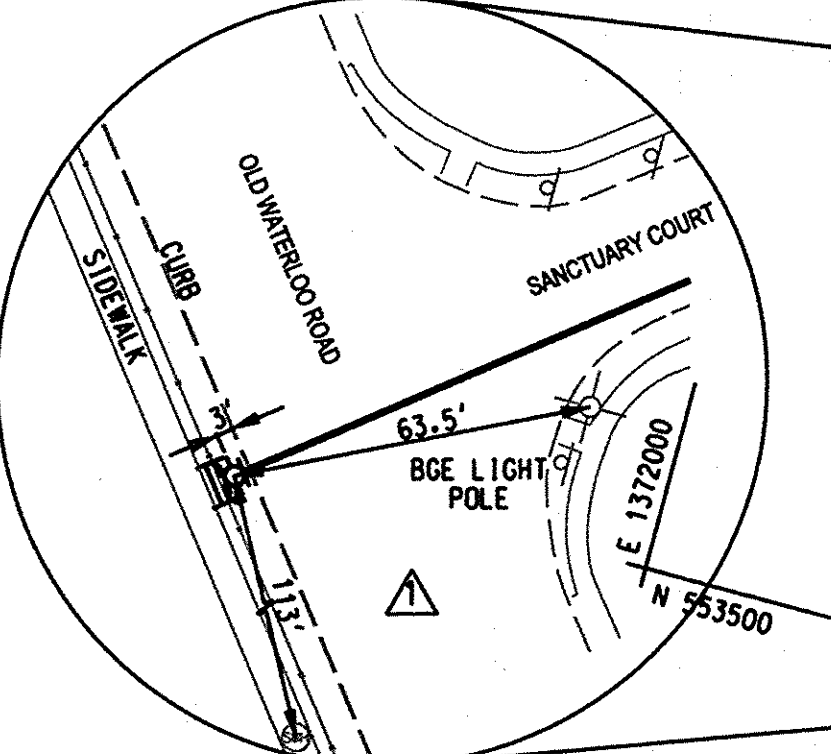
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4846

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

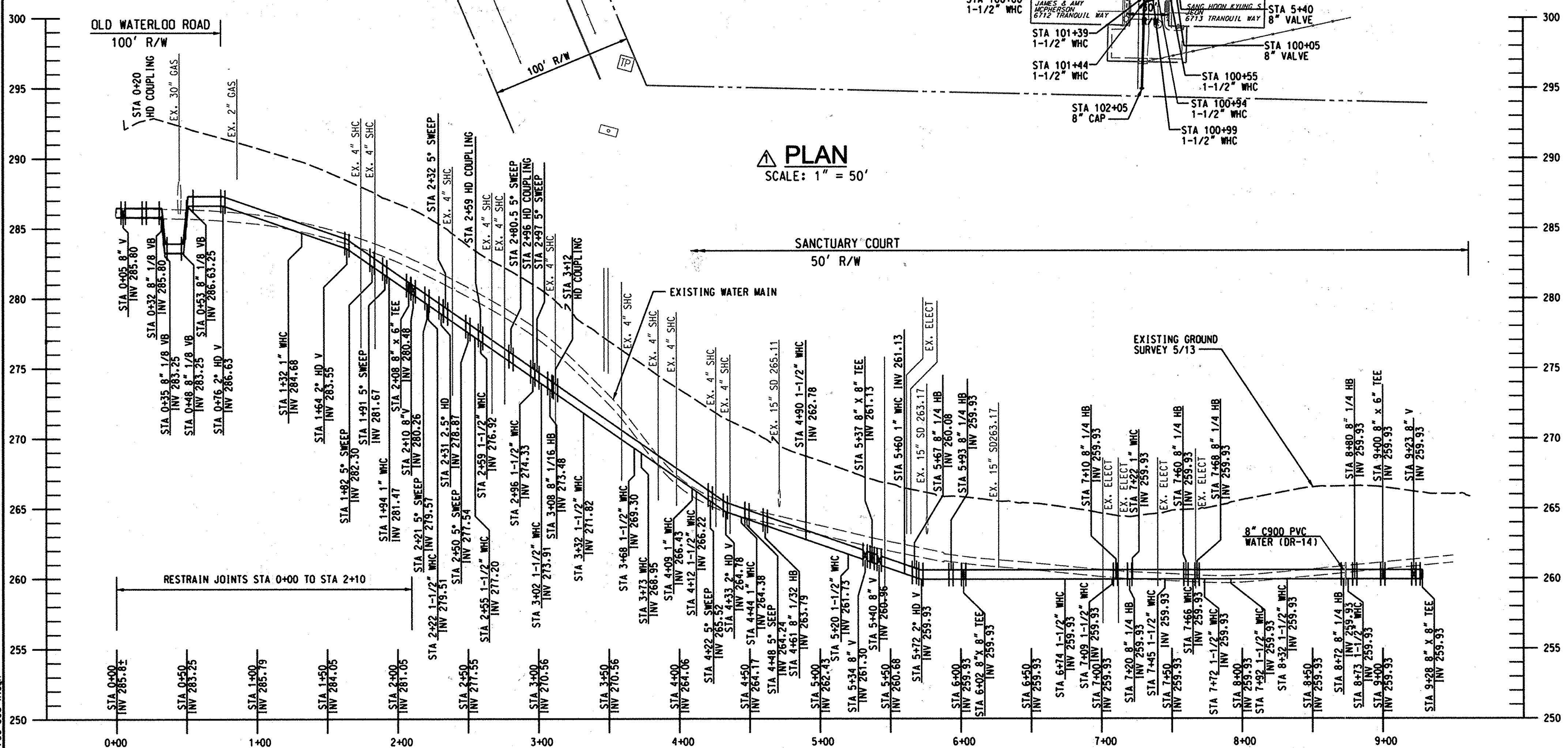


TRAV #20 NOT TO SCALE
TRAV #23 NOT TO SCALE

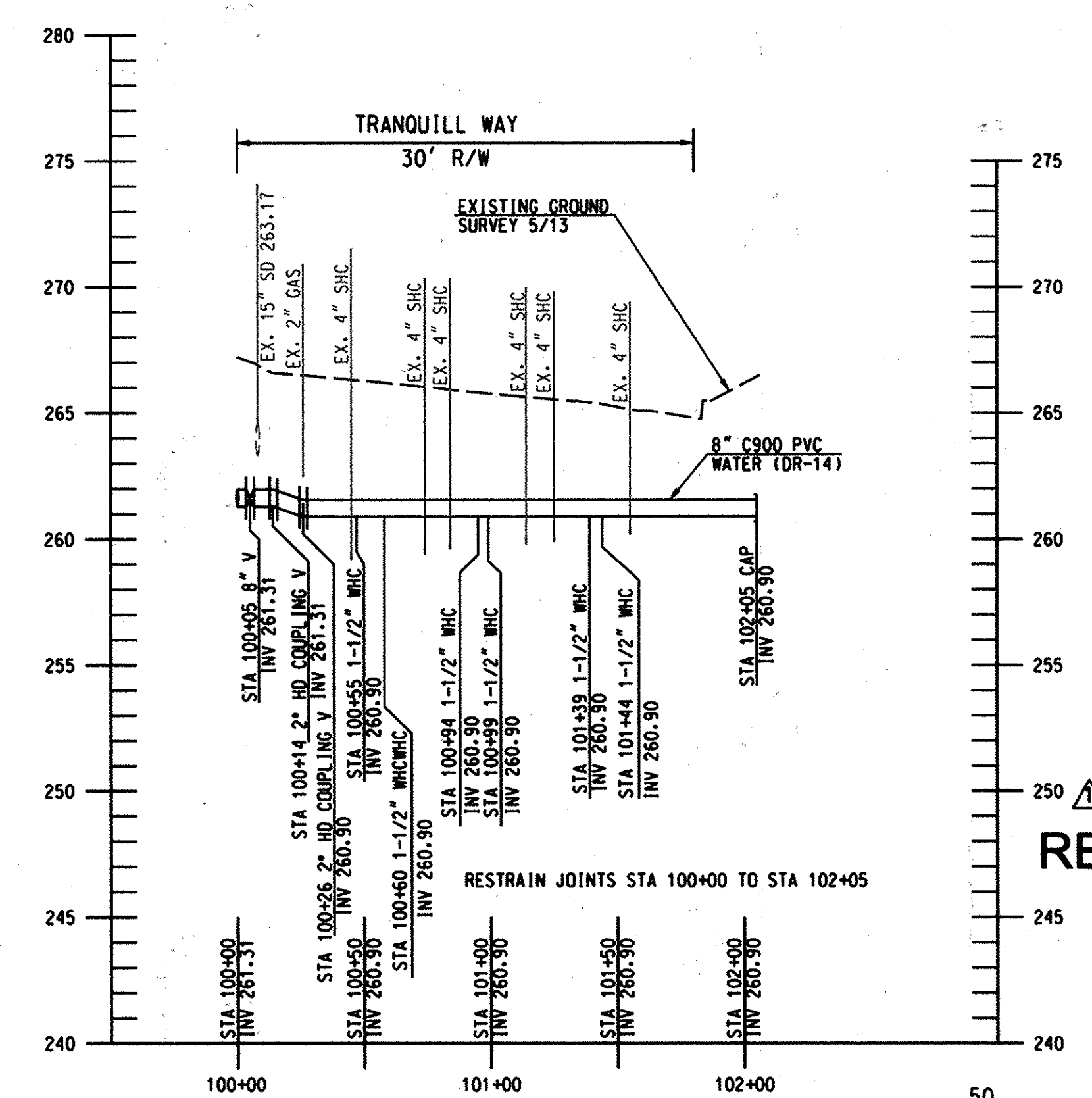
TRAVERSE COORDINATE SCHEDULE			
NUMBER	NORTHING	EASTING	ELEVATION
TRAV 20	553611.42	1372174.66	292.47
TRAV 23	553762.98	1372582.20	267.98



PLAN SCALE: 1" = 50'



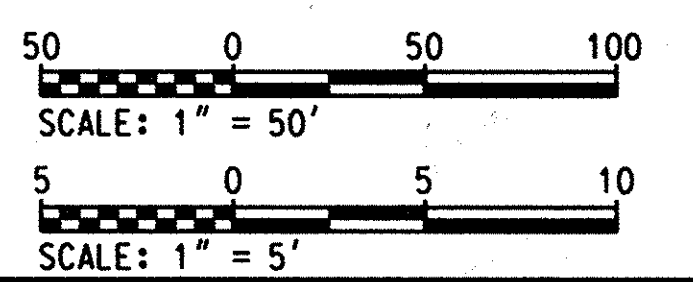
PROFILE: SANCTUARY CT SCALE: HOR. 1" = 50' VERT. 1" = 5'



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

FITTING SCHEDULE			
STATION	FITTING	NORTHING	EASTING
SANCTUARY CT.			
0+00	TIE IN	553576.0±	1372114.8±
0+05	8" VALVE	553577.7±	1372116.9±
1+82	5" SWEEP	553690.8±	1372260.3±
1+91	5" SWEEP	553694.8±	1372266.0±
2+08	8" X 6" TEE	553703.9±	1372278.6±
2+10	8" VALVE	553707.3±	1372283.4±
2+21	5" SWEEP	553711.9±	1372289.7±
2+31	2.5" HD COUPLING	553716.1±	1372297.9±
2+32	5" SWEEP	553716.9±	1372299.5±
2+50	5" SWEEP	553725.5±	1372316.0±
2+97	5" SWEEP	553736.8±	1372360.4±
3+08	8" 1/16 HB	553741.0±	1372370.5±
4+22	5" SWEEP	553726.51	1372484.75
4+48	5" SWEEP	553725.47	1372511.57
4+61	8" 1/32 HB	553724.9±	1372524.0±
5+34	8" VALVE	553740.3±	1372592.7±
5+37	8" X 8" TEE	553741.6±	1372598.0±
5+40	8" VALVE	553742.9±	1372603.3±
5+67	8" 1/4 HB	553749.1±	1372627.3±
5+93	8" 1/4 HB	553771.3±	1372640.4±
6+02	8" X 8" TEE	553722.5±	1372648.7±
7+10	8" 1/4 HB	553787.6±	1372756.3±
7+20	8" 1/4 HB	553795.3±	1372762.0±
7+60	8" 1/4 HB	553834.6±	1372756.5±
7+68	8" 1/4 HB	553839.9±	1372749.4±
8+72	8" 1/4 HB	553825.0±	1372647.2±
8+80	8" 1/4 HB	553818.5±	1372642.2±
9+00	8" X 6" TEE	553799.2±	1372644.9±
9+23	8" VALVE	553775.6±	1372648.3±
102+05	8" CAP	553545.0±	1372645.0±

AS-BUILT REPLACEMENT SHEET 01/04/2016



PLOT: 01/04/2016 10:24 AM on Tuesday, January 05, 2016

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

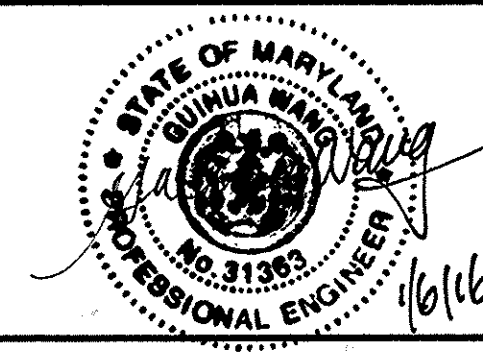
James R. Hulse
DIRECTOR OF PUBLIC WORKS

Monica R. Gullen 3/1/16
CHIEF, BUREAU OF ENGINEERING

3/3/16
CHIEF, UTILITY DESIGN DIVISION

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI TECHNOLOGIES
936 RIDGEBOOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE (410) 316-7800
FAX (410) 316-7818
www.kci.com



DES: GS
DRN: GS
CHK: GW/TWW
DATE: JUNE 2013

BY: NO.

AS-BUILT

REVISION

DATE: 01/04/16

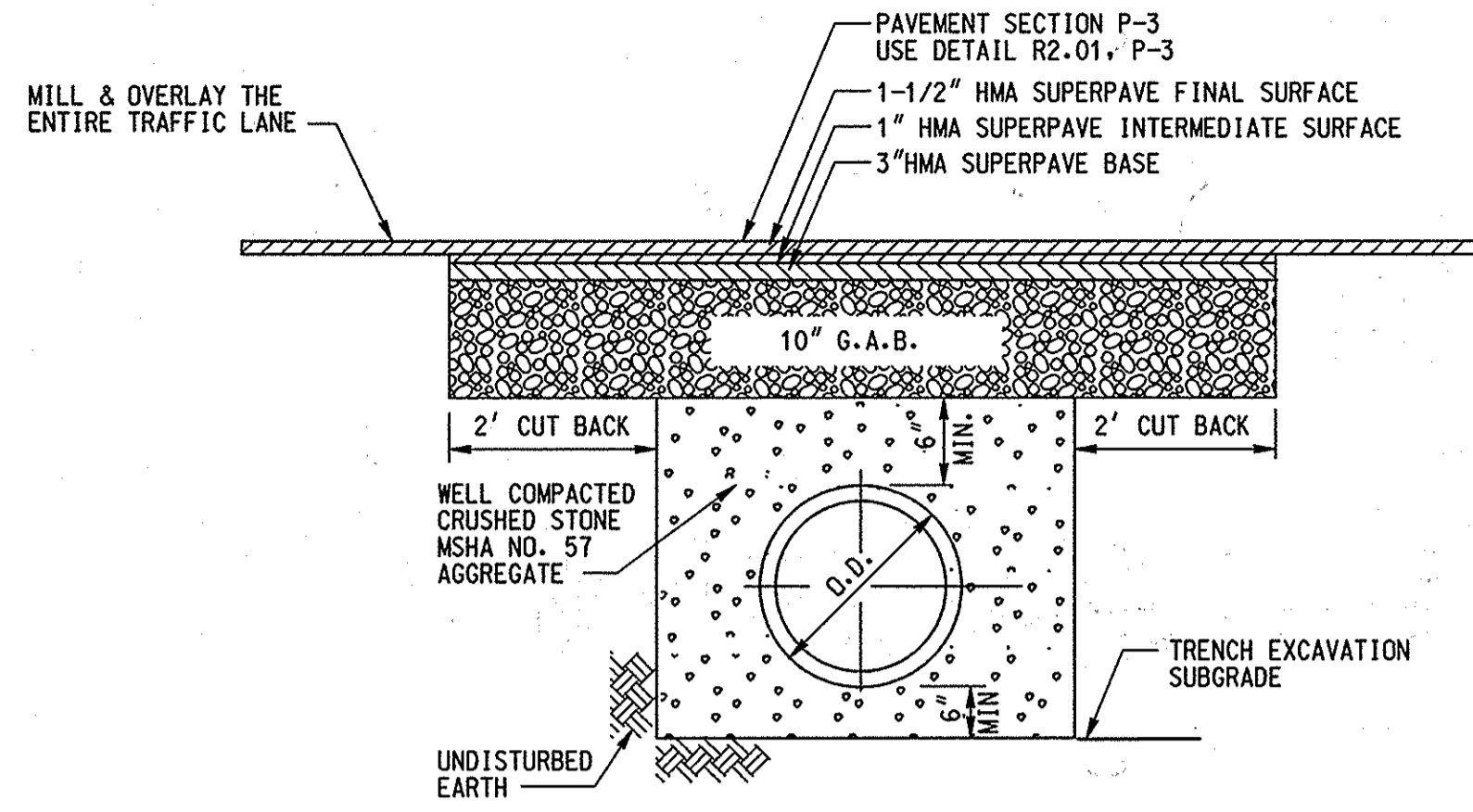
PLAN & PROFILE
SANCTUARY COURT &
TRANQUILL WAY

SANCTUARY COURT & TRANQUILL WAY
WATER REPLACEMENT

CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4846

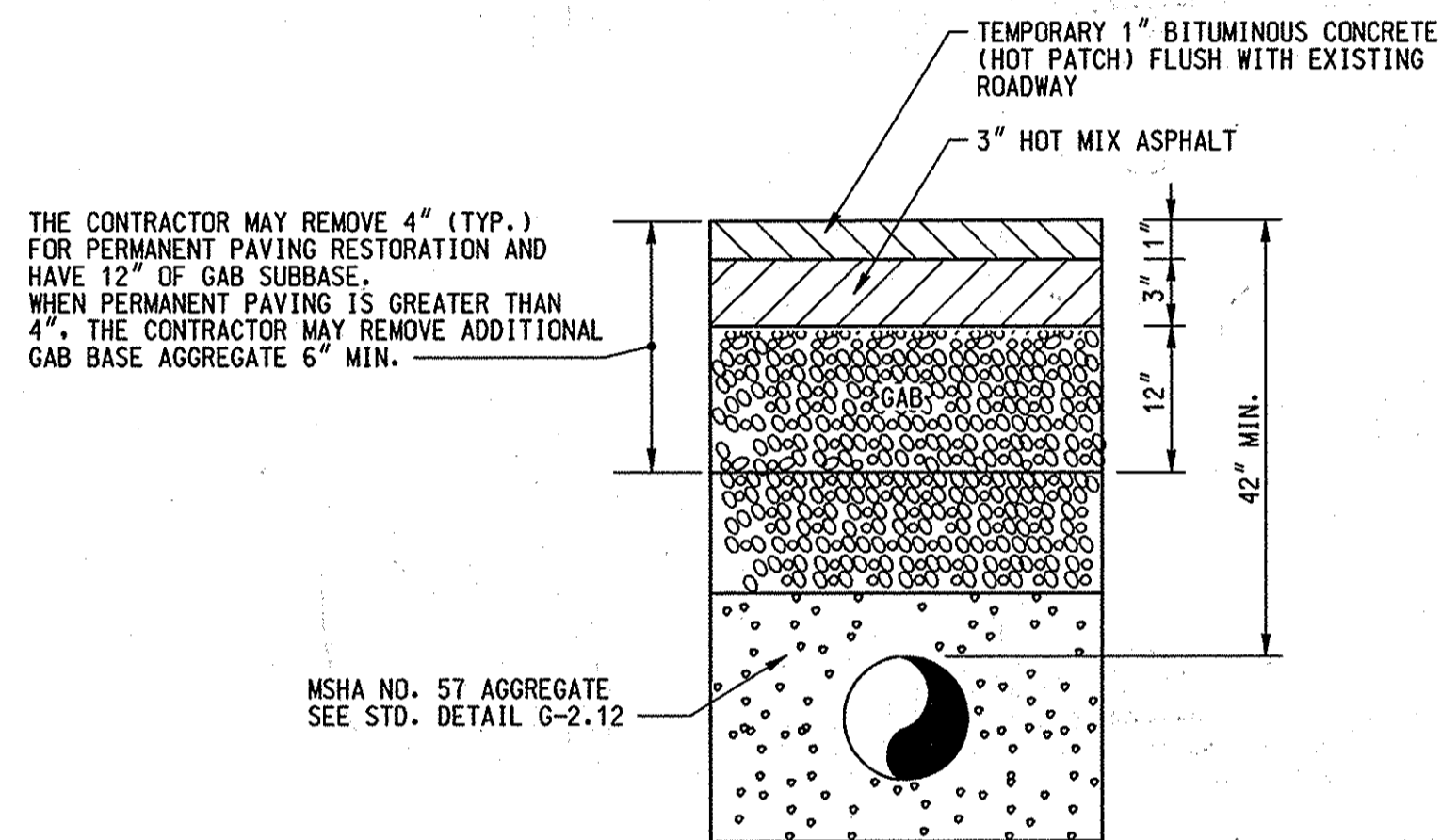
ELECTION DISTRICT No. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 8



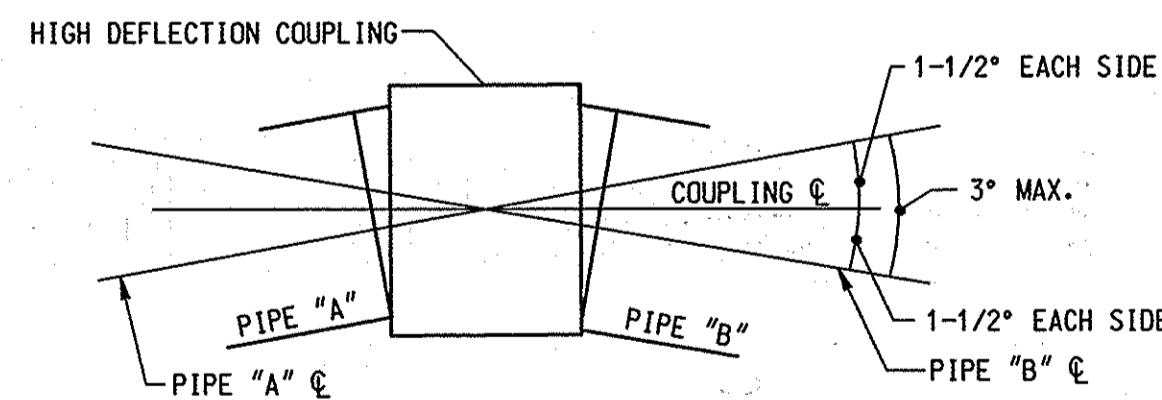
*** DETAIL - PVC PIPE TRENCH AND PERMANENT PAVING RESTORATION**

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

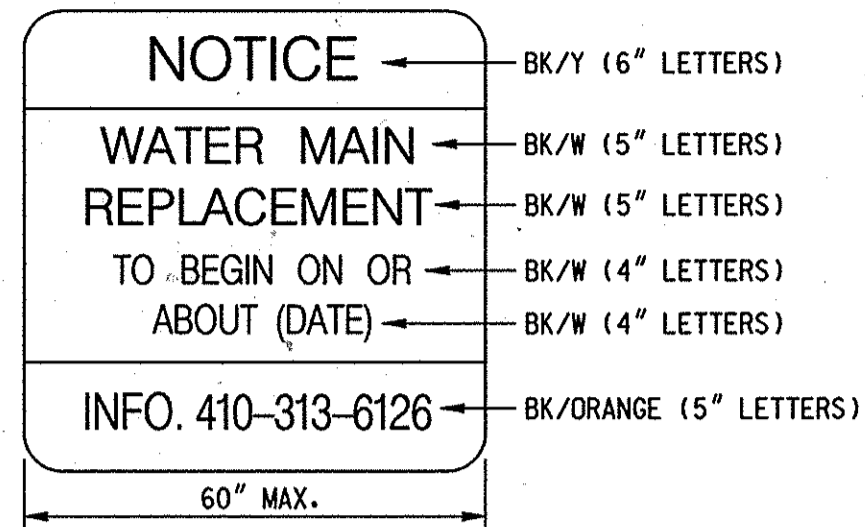
NOT TO SCALE



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

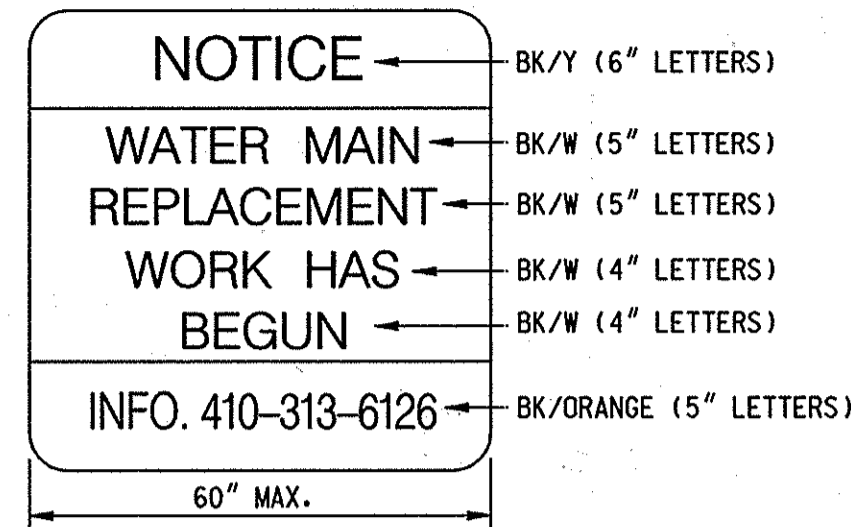
HIGH DEFLECTION COUPLING INSTALLATION FOR HORIZONTAL AND VERTICAL DEFLECTION

NOT TO SCALE



NOTICE SIGN WORK TO BEGIN

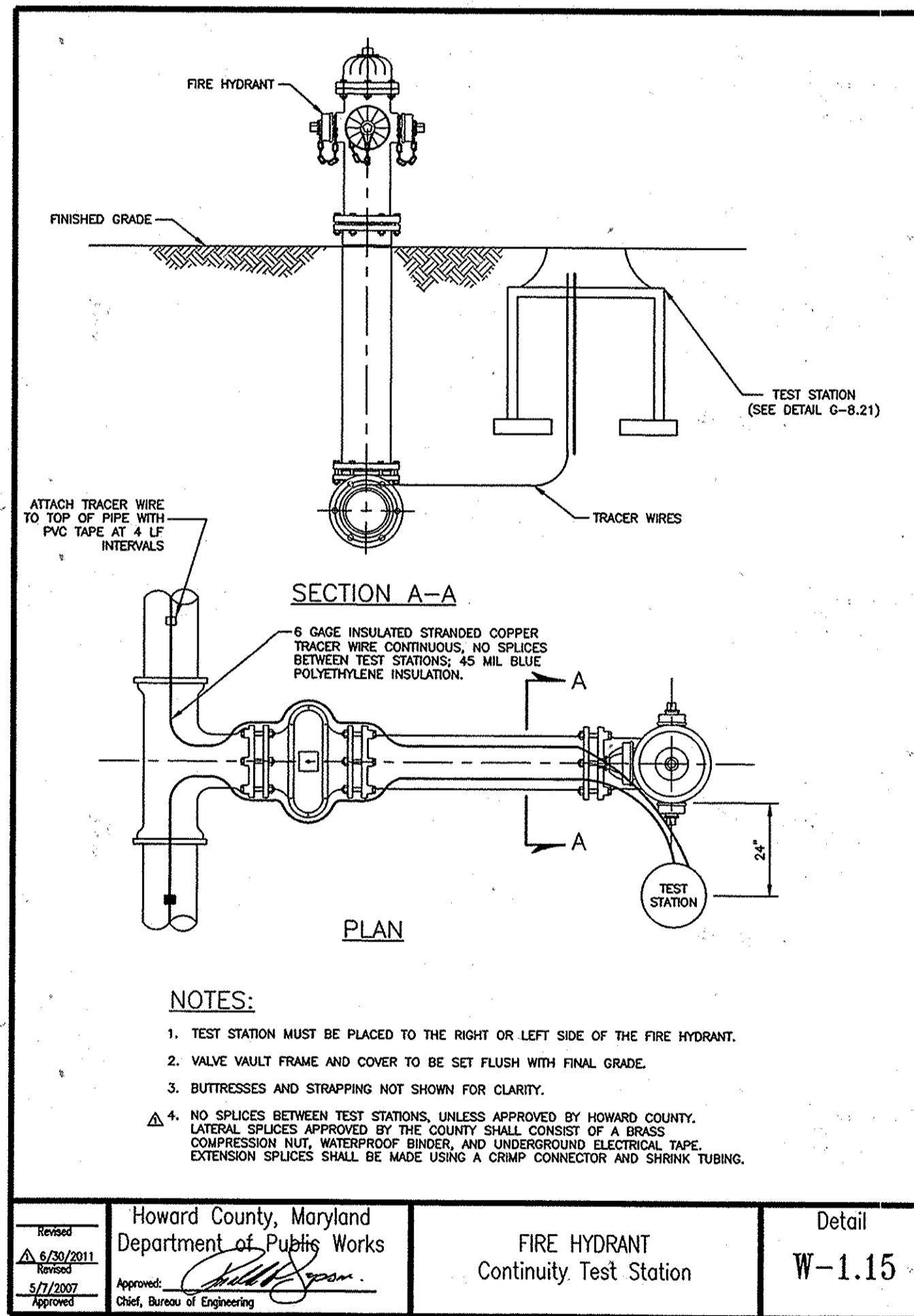
NOT TO SCALE



NOTICE SIGN WORK HAS BEGUN

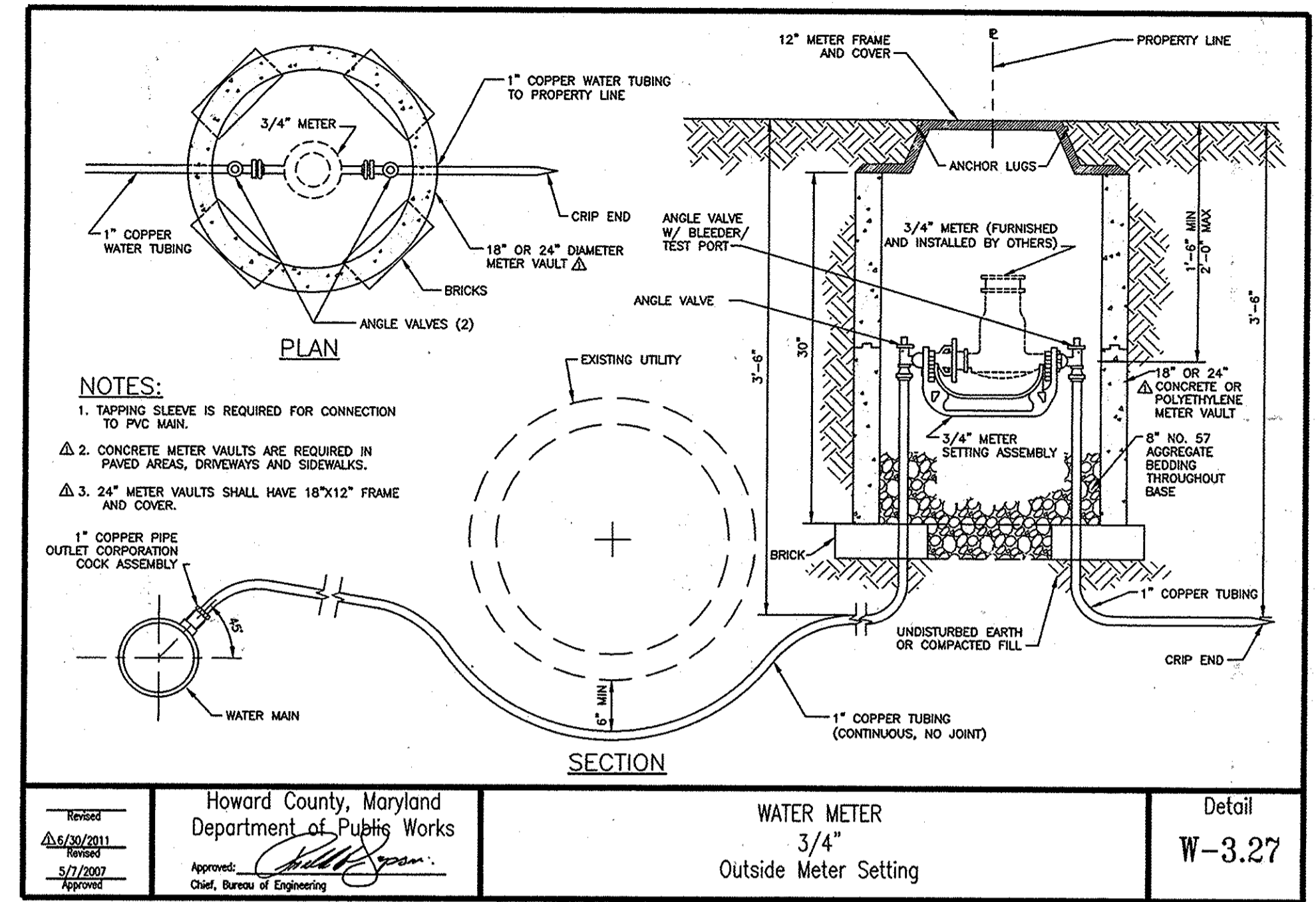
NOT TO SCALE

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



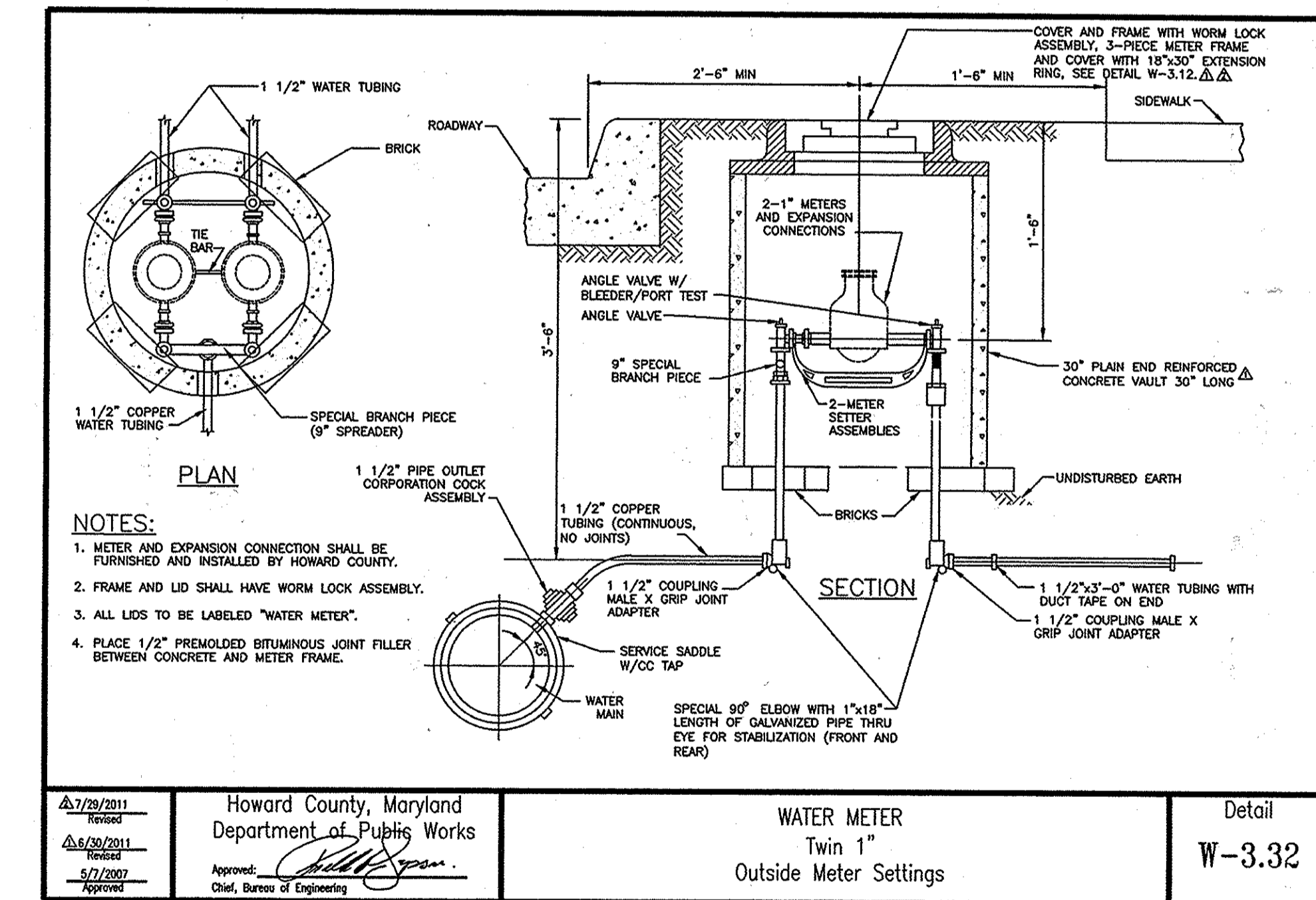
NOTES:
 1. TEST STATION MUST BE PLACED TO THE RIGHT OR LEFT SIDE OF THE FIRE HYDRANT.
 2. VALVE VAULT FRAME AND COVER TO BE SET FLUSH WITH FINAL GRADE.
 3. BUTTRESSES AND STRAPPING NOT SHOWN FOR CLARITY.
 4. NO SPICES BETWEEN TEST STATIONS, UNLESS APPROVED BY HOWARD COUNTY. LATERAL SPICES APPROVED BY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

Revised 6/20/2011 Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	Detail FIRE HYDRANT Continuity Test Station W-1.15
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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.
 1" COPPER PIPE OUTLET CORPORATION COCK ASSEMBLY

Revised 6/20/2011 Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	Detail WATER METER 3/4" Outside Meter Setting W-3.27
---	---	--



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

Revised 6/20/2011 Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works Approved: <i>[Signature]</i> Chief, Bureau of Engineering	Detail WATER METER Twin 1" Outside Meter Settings W-3.32
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AS-BUILT
 DATE 1/04/16

PLOTTED: 08:56 AM on Friday, January 10, 2014
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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *[Signature]*
 Chief, Bureau of Engineering: *[Signature]*
 Chief, Utility Design Division: *[Signature]*

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

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

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 NO. 31363
 1/04/16

DES: GS				
DRN: GS				
CHK: GW/TWW				
DATE: JUNE 2013	ML	AS-BUILT	1/04/16	
BY: NO.				
REVISION				

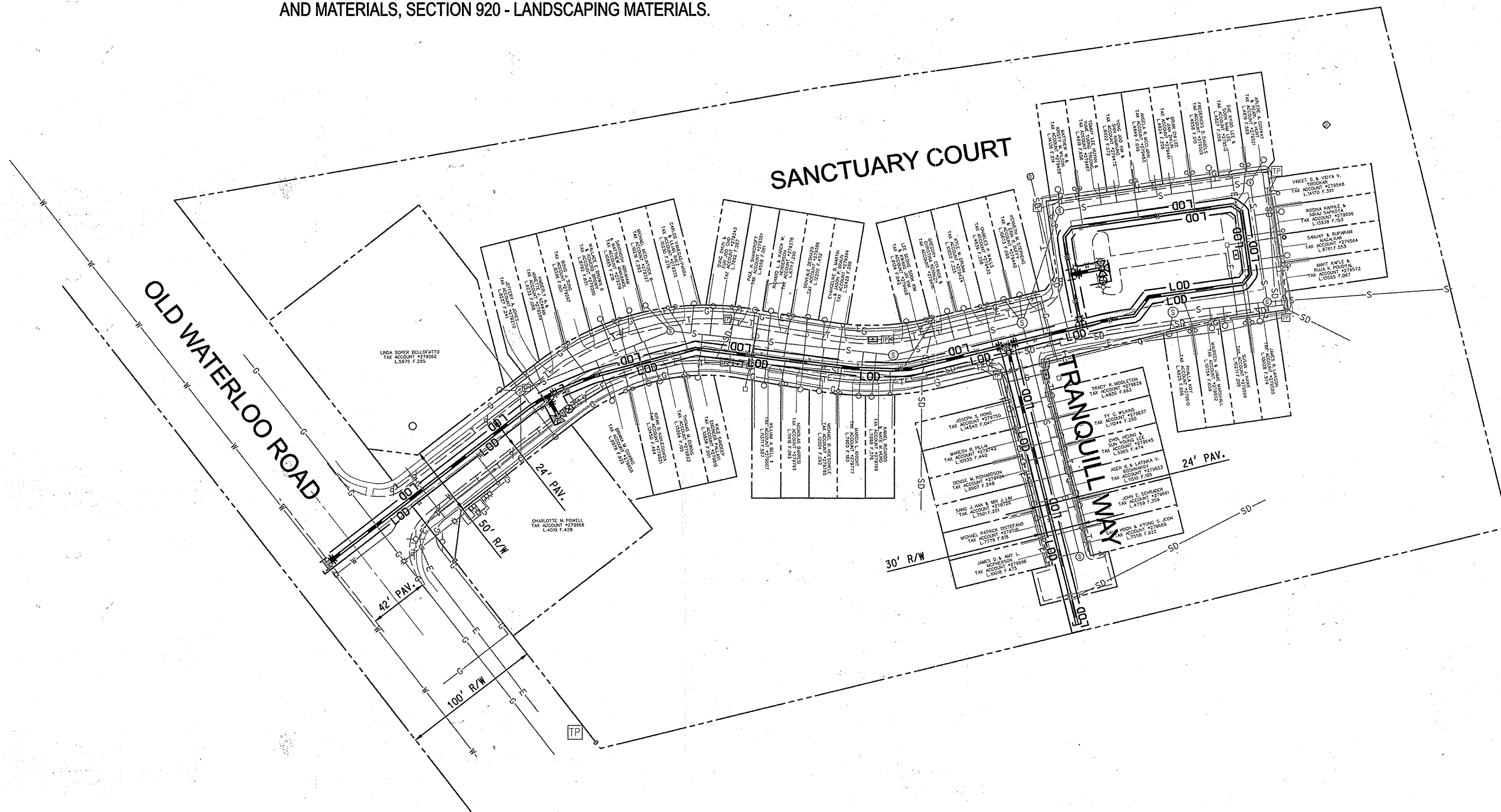
WATER MAIN DETAILS
 600' SCALE MAP NO. 37 BLOCK NO. 21

SANCTUARY COURT & TRANQUILL WAY
 WATER REPLACEMENT
 CAPITAL PROJECT No. W-8321
 CONTRACT No. 44-4846
 ELECTION DISTRICT NO. 1
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN
 SHEET 4 OF 8

NOTES:

- SOIL INFORMATION IS BASED ON HOWARD COUNTY GIS SOIL MAP
 ChB: CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES
 Fa: FALLSINGTON SANDY LOADM, 0 TO 2 PERCENT SLOPES
 RuB: RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES
 Ufa: URBAN LAND - FALLSINGTON COMPLEX, 0 TO 2 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'



N 554000
E 1371750

N 554000
E 1373250

N 553500
E 1371750

PLOTTED: 08:57 AM on Friday, January 10, 2014
 FILE: \\ms01\proj\2013\13122877\06\Drawings\13122877\05-C05-W.dwg

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 1/04/16

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

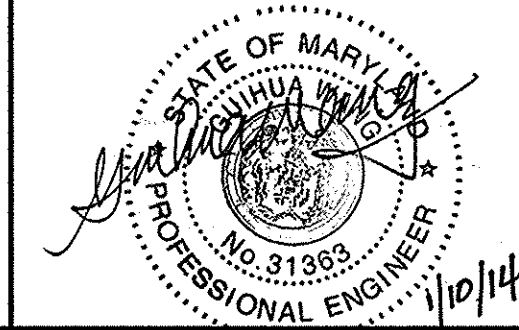
Ray A. Walsh 1/14/14
DIRECTOR OF PUBLIC WORKS DATE

James E. Butler 1/14/14
CHIEF, BUREAU OF ENGINEERING DATE

Chris Deane 1/14/14
CHIEF, UTILITY DESIGN DIVISION DATE

BUREAU OF UTILITIES

KCI TECHNOLOGIES
ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
936 RIDGEBROOK ROAD
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TELEPHONE (410) 316-7800
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WWW.KCI.COM



DES:	GS				
DRN:	GS				
CHK:	GW/TWW				
DATE:	JUNE 2013	BY:	ML	NO.	AS-BUILT
REVISION:		DATE:	1/04/16		

SEDIMENT AND EROSION CONTROL PLAN
SANCTUARY COURT

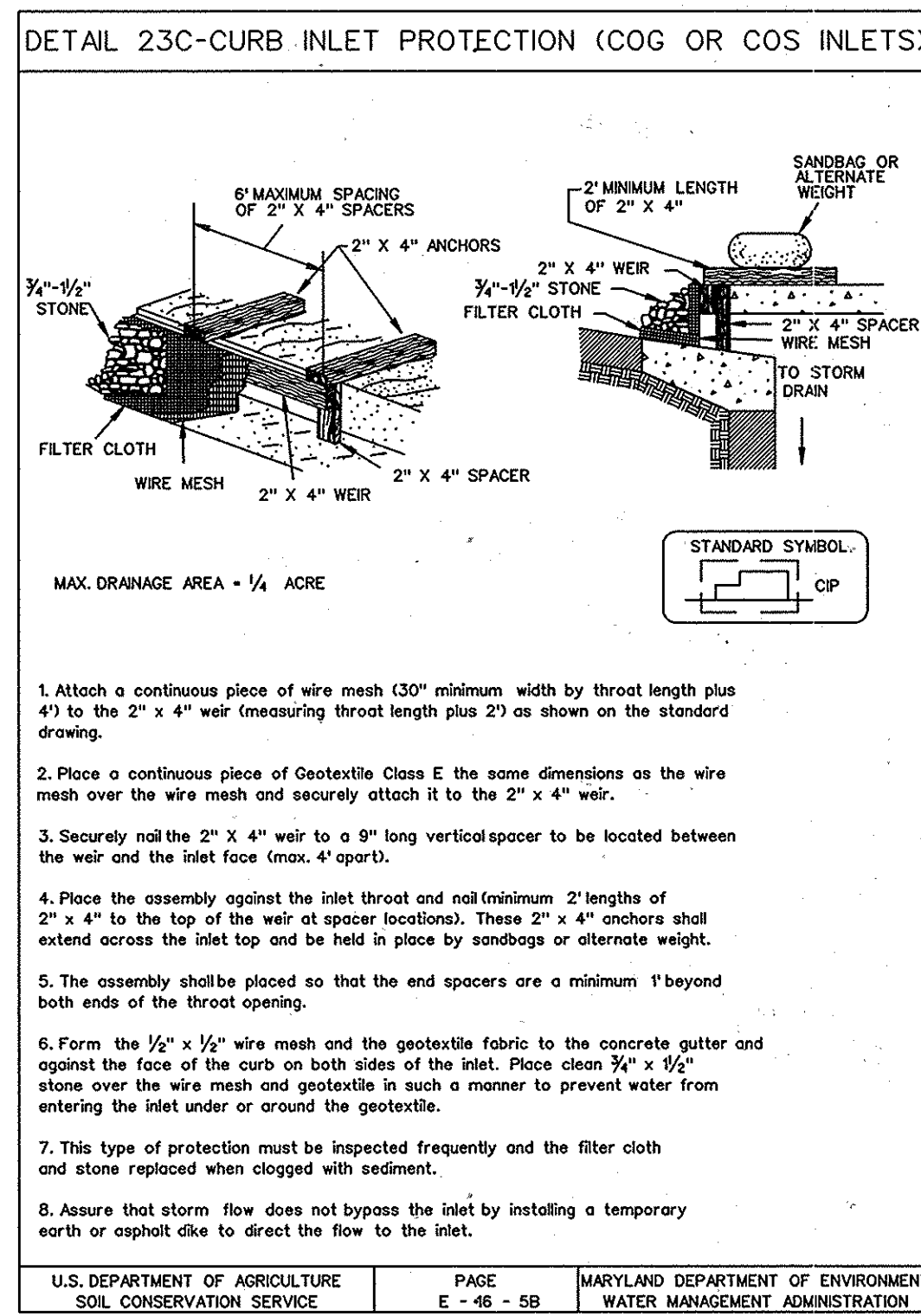
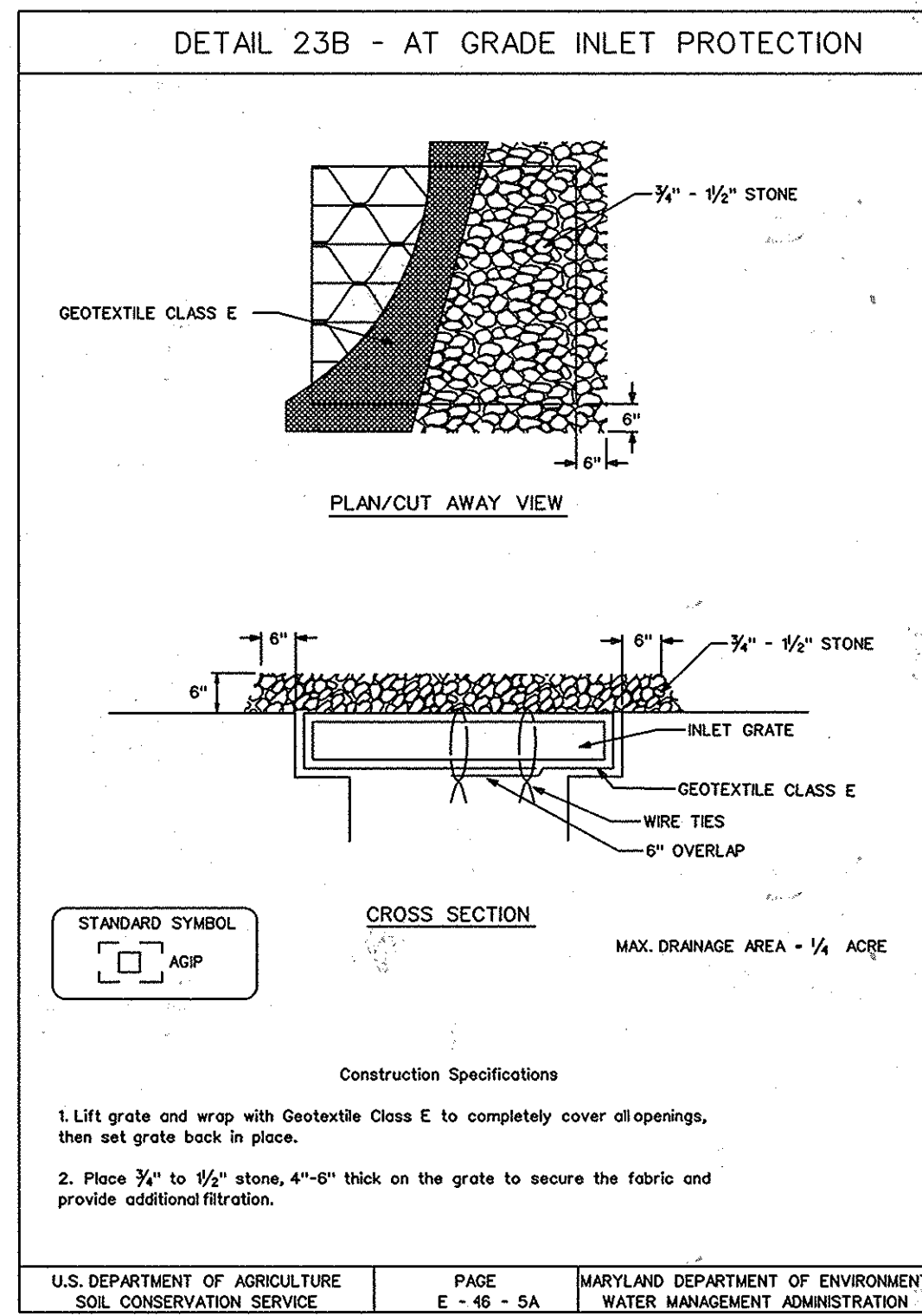
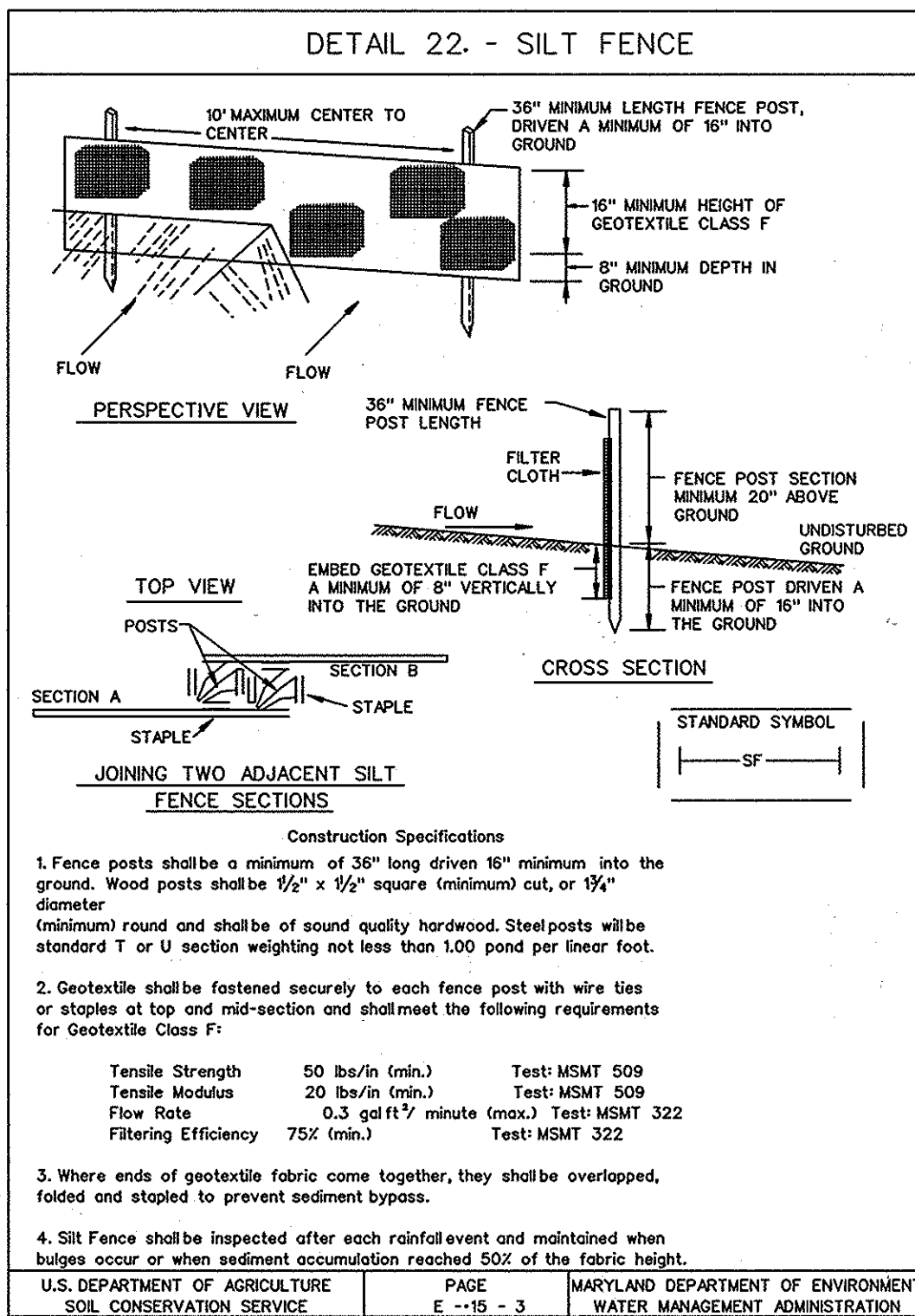
600' SCALE MAP NO. 37 BLOCK NO. 21

SANCTUARY COURT & TRANQUILL WAY
WATER REPLACEMENT

CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4846

ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 8



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:

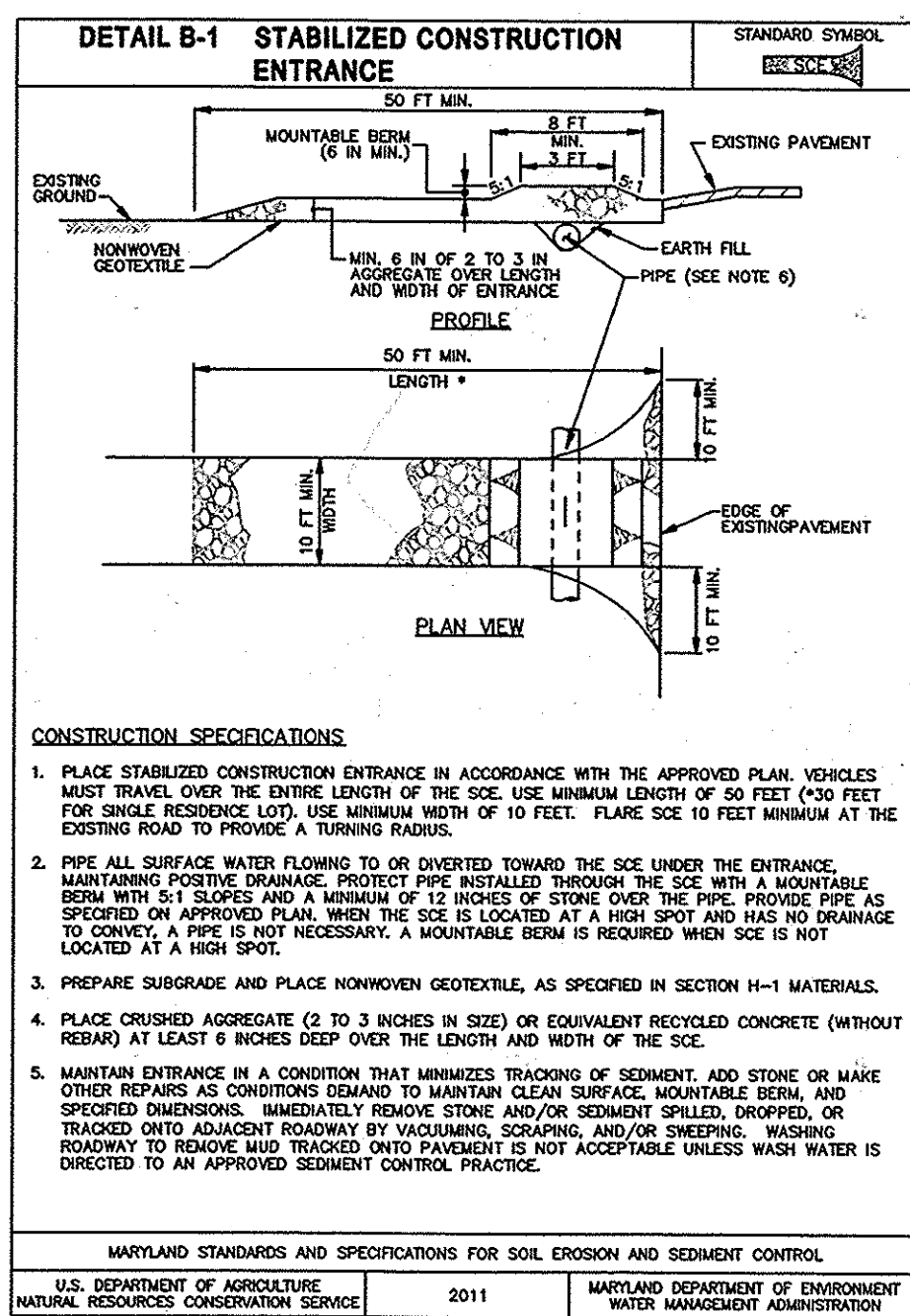
Total Area of Site	0.28	Acres
Area Disturbed	0.28	Acres
Area to be roofed or paved	0.25	Acres
Area to be vegetatively stabilized	0.03	Acres
Total Cut	N/A	Cu. Yds.
Total Fill	N/A	Cu. Yds.
Offsite waste/borrow are location	CONTRACTOR COORDINATE	
- Any sediment control practice that is disturbed by grading 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.

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 Practice Applies**
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 342 - 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 1/2 pounds per 1000 square feet (120 pounds per acre) at 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 purpose. 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 Cultivars 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 with 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 95 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.
- 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 15 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)
- Till areas to receive seed by disking 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 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
 - If soil moisture is deficient, supply new seedlings 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 seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

TRAFFIC MAINTENANCE

FOR TRAFFIC MAINTENANCE REQUIREMENTS SEE SPECIFICATION DOCUMENT D, PARAGRAPH 15 AND SHEET 14 "M.O.T. / TRAFFIC CONTROL"



TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER	
					RATE (10-20-20)	LIME RATE
HARDINESS ZONE (FROM FIGURE B.3):						
SEED MIXTURE (FROM TABLE B.1):						
	COOL-SEASON GRASS					
	ANNUAL RYE GRASS (LULIUM PERENNIS SSP. MULTIFLORUM)	40	MAR 1 TO MAY 15; AUG 1 TO SEP 30	0.5		
	BARLEY (HORDEUM)	96	MAR 15 TO MAY 31; AUG 1 TO SEP 30	1.0		
	OATS (AVENA SATIVA)	72	MAR 15 TO MAY 31; AUG 1 TO SEP 30	1.0	436 LB/AC	2 TONS/AC
	WHEAT (TRITICUM AESTIVUM)	120	MAR 15 TO MAY 31; AUG 1 TO SEP 30	1.0	(10LB/1000 SF)	(90LB/1000 SF)
	CEREAL RYE (SECALE CEREALE)	112	MAR 15 TO MAY 31; AUG 1 TO OCT 30	1.0		
	WARM-SEASON GRASS					
	FOXTAIL MILLET (SETARIA ITALICA)	30	JUN 1 TO JUL 31	0.5		
	PEARL MILLET (PENNISETUM GLAUCUM)	20	JUN 1 TO JUL 31	0.5		

- NOTES:**
- Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.
 - Seeding rates listed above are for temporary seedings, when planted as a nurse crop with permanent seed mixtures, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 25% by weight of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.
 - Oats are the recommended nurse crop for warm-season grasses.
 - For sandy soils, plant seeds at twice the depth listed above.
 - The planting dates listed are averages for each zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

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 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 4 OF 8 FOR TYPICAL TRENCH DETAIL. DURING THE COURSE OF CONSTRUCTION, TRENCHES FOR THE CONSTRUCTION OF THE NEW WATER MAIN SHALL BE LIMITED TO 25' OF PIPE LENGTH OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- 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 4 OF 8 AT THE END OF EACH WORKING DAY.
- THE ESTIMATED CONSTRUCTION TIME FOR THE WATER MAIN IS 30 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 4 OF 8.
- CLEAN UP CONSTRUCTION SITE. (1 DAY)
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR.
- STABILIZE OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROL DEVICES.

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.

Paul Shuman 1/22/14
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
DATE

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 1/10/14
DATE
GUOHUA WANG
KCI TECHNOLOGIES, INC.
336 RIDGEBROOK ROAD
SPARKS, MD. 21152

HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION

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

John A. Robertson 1/22/14
DATE
HOWARD SOIL CONSERVATION DISTRICT
APPROVED

AS-BUILT
DATE 1/04/16

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:	JUNE 2013	ML	AS-BUILT		1/04/16
BY:	NO.				
REVISION					

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

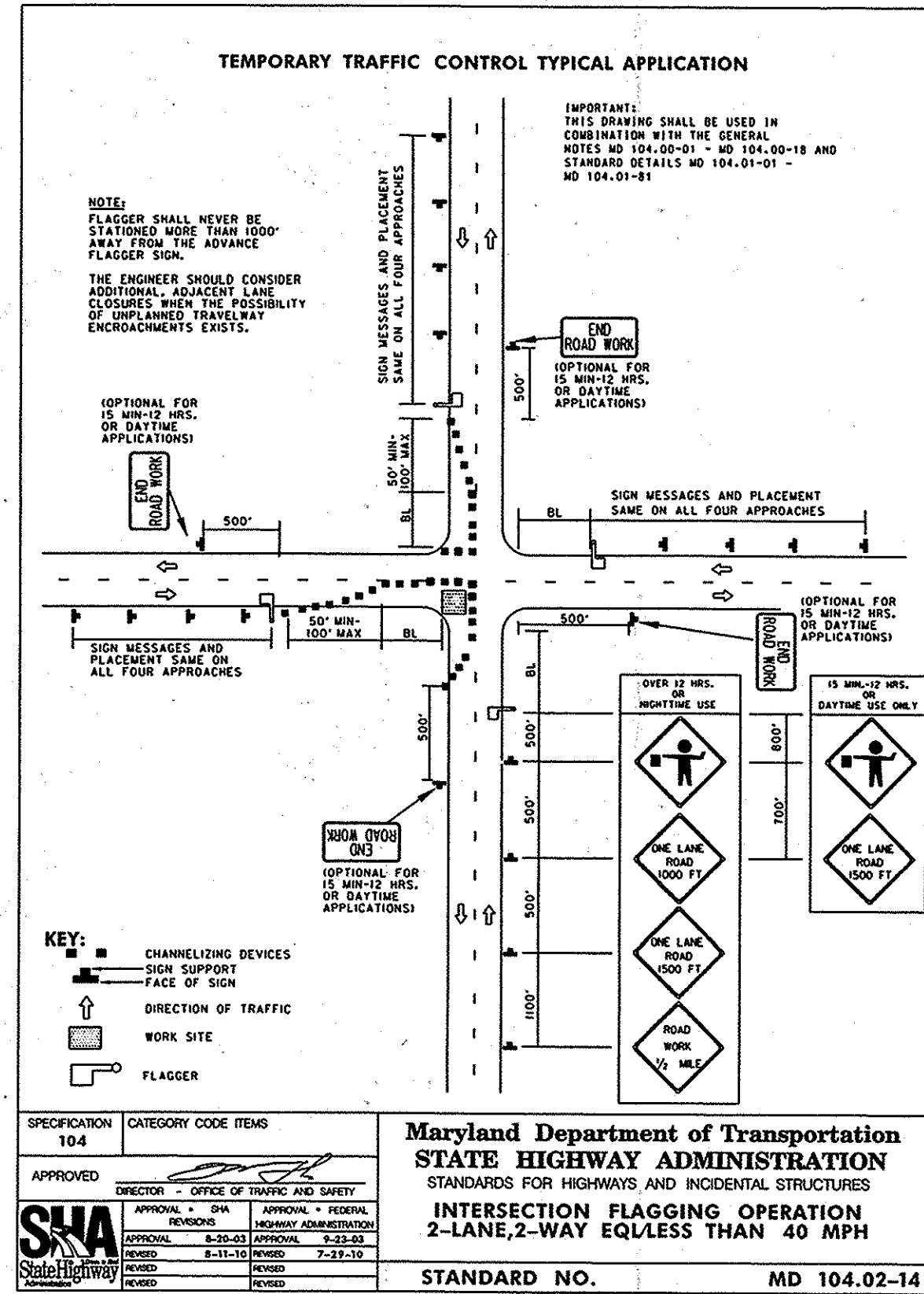
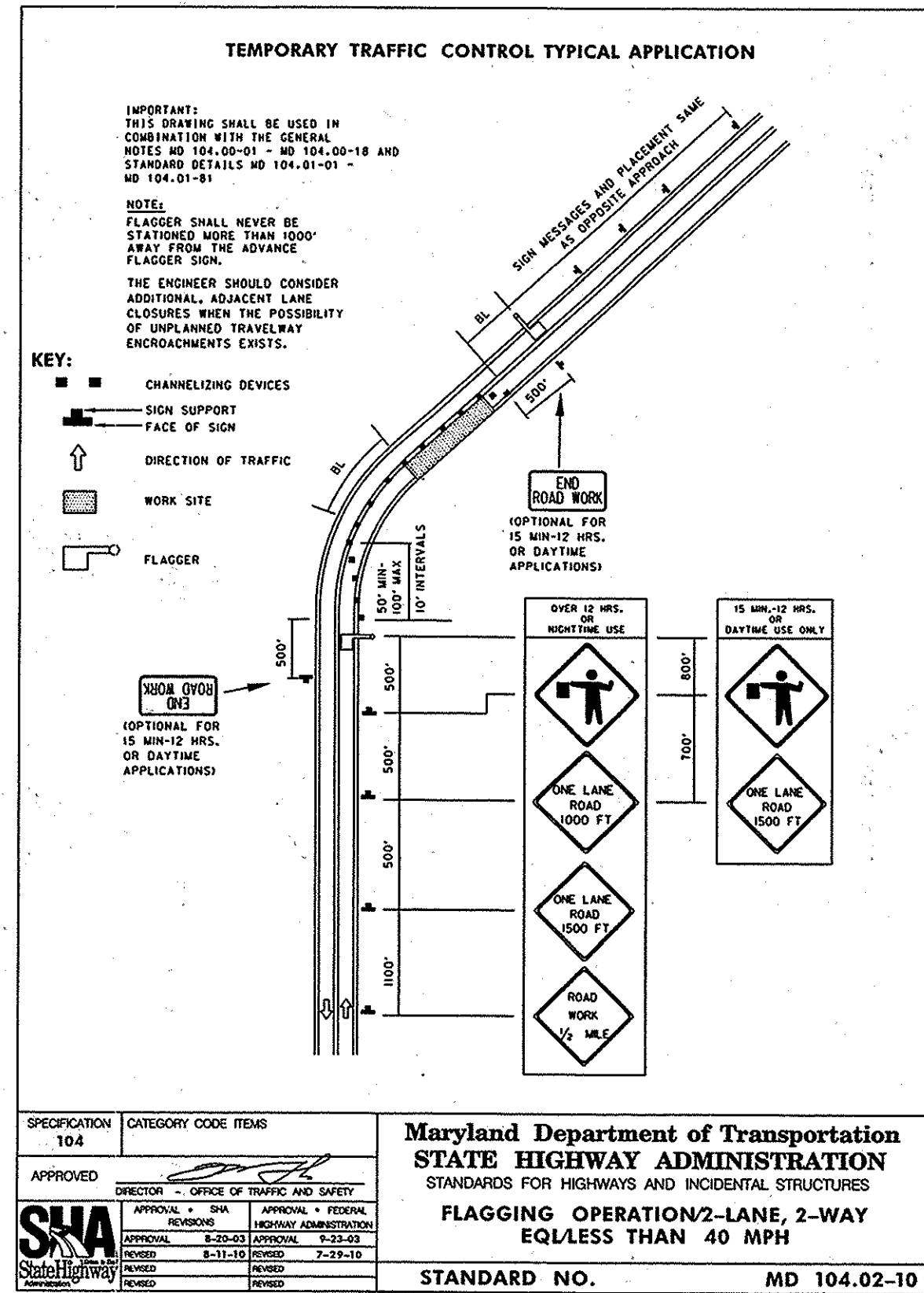
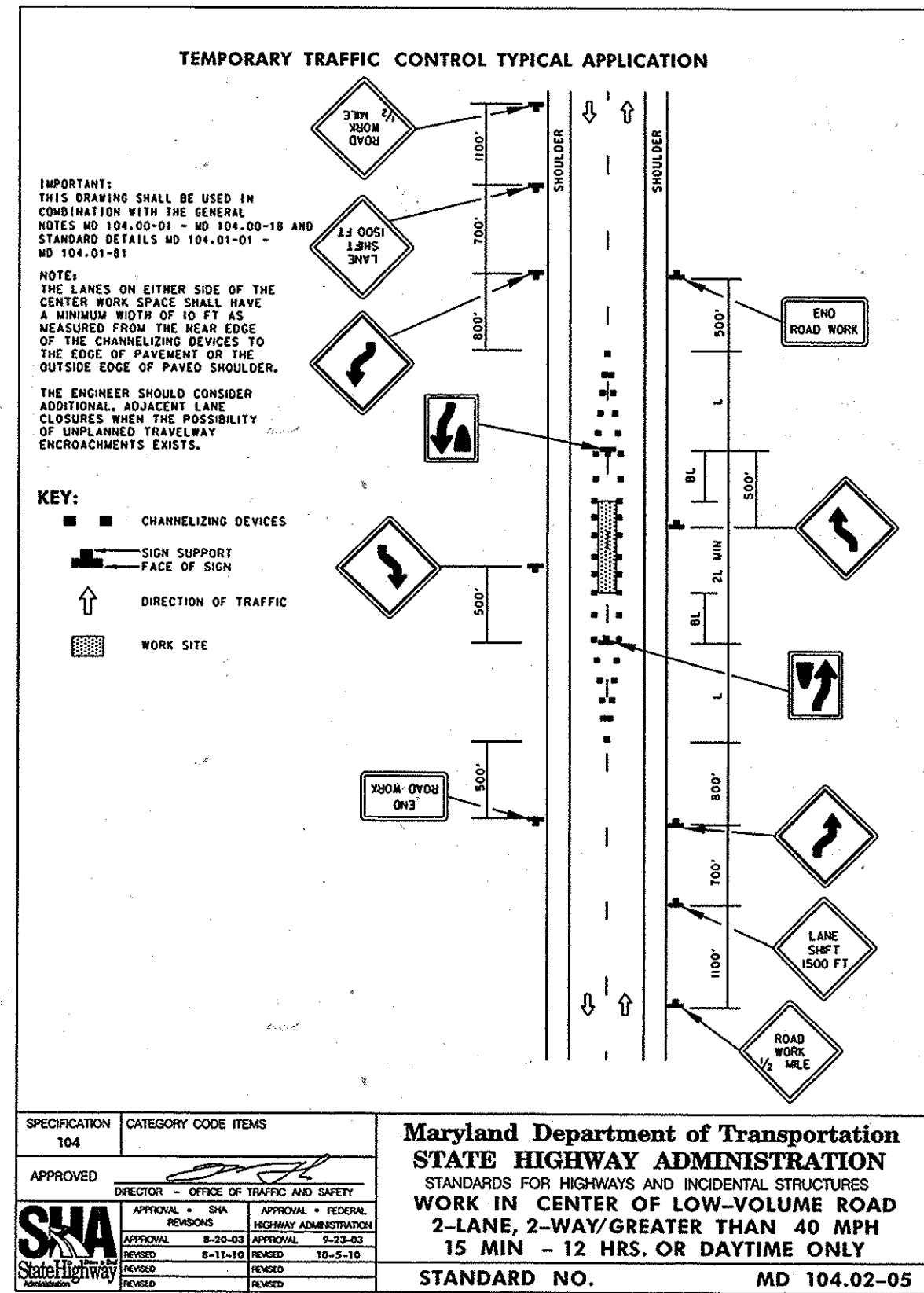
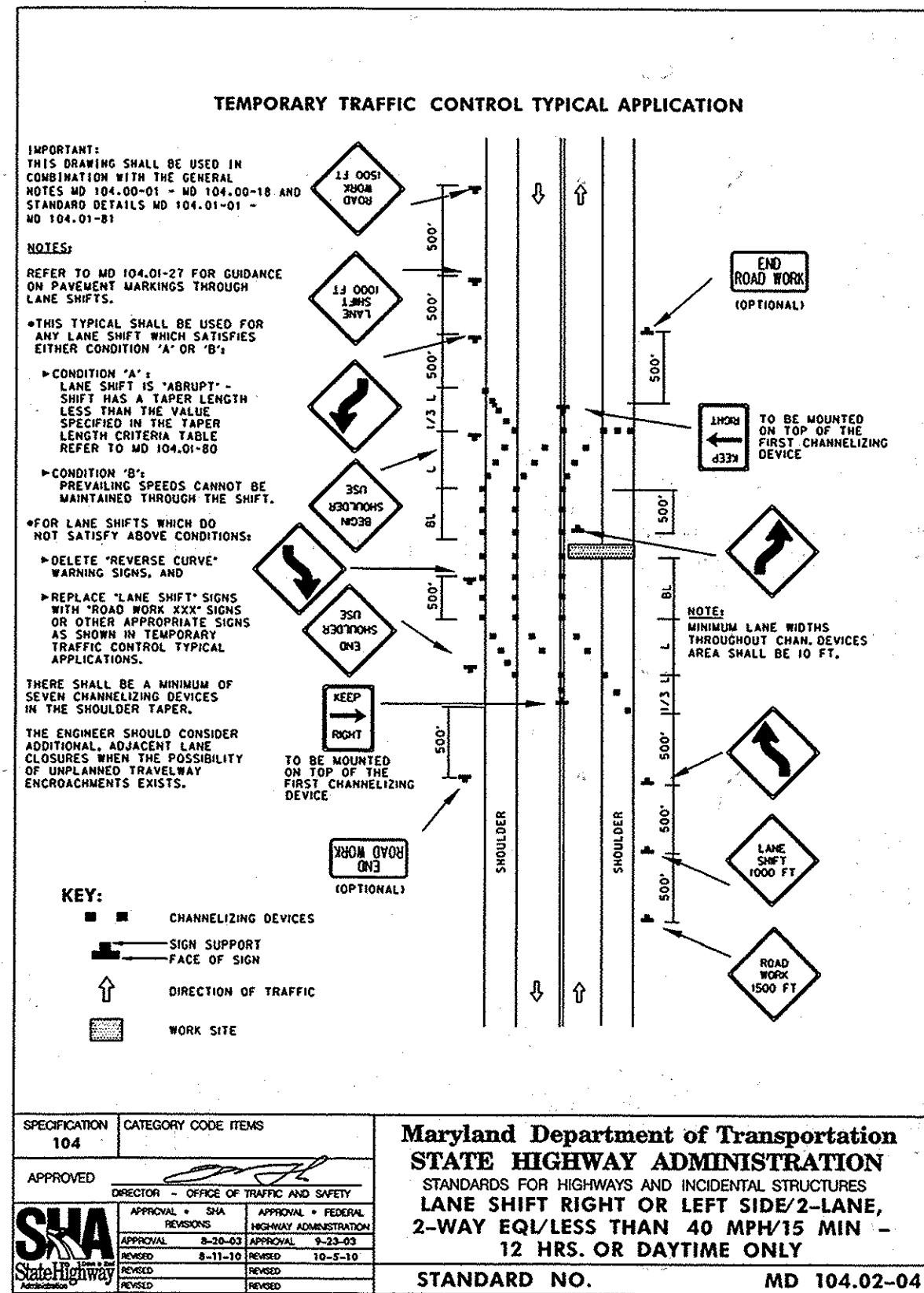
SANCTUARY COURT & TRANQUILL WAY WATER REPLACEMENT
CAPITAL PROJECT No. W-8321
CONTRACT No. 44-4846
ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 6 OF 8

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Langdon 1/22/14
DIRECTOR OF PUBLIC WORKS
BUREAU OF UTILITIES

Thomas E. Butler 1/14/14
CHIEF, BUREAU OF ENGINEERING

David Jones 1/14/14
CHIEF, UTILITY DESIGN DIVISION



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AS-BUILT
 DATE 1/14/16

PLOTTED: 09:58 AM on Friday, January 10, 2014
 FILE: M:\2012\13122677\06.dwg
 PLOTTER: HP DesignJet 2400

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

1/22/14
 DATE

1/14/14
 DATE

1/14/14
 DATE

KCI
 TECHNOLOGIES

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STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 NO. 31363
 1/14/14

DES: GS
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 BY: ML
 NO. AS-BUILT
 REVISION

M.O.T.
 MAINTENANCE OF TRAFFIC

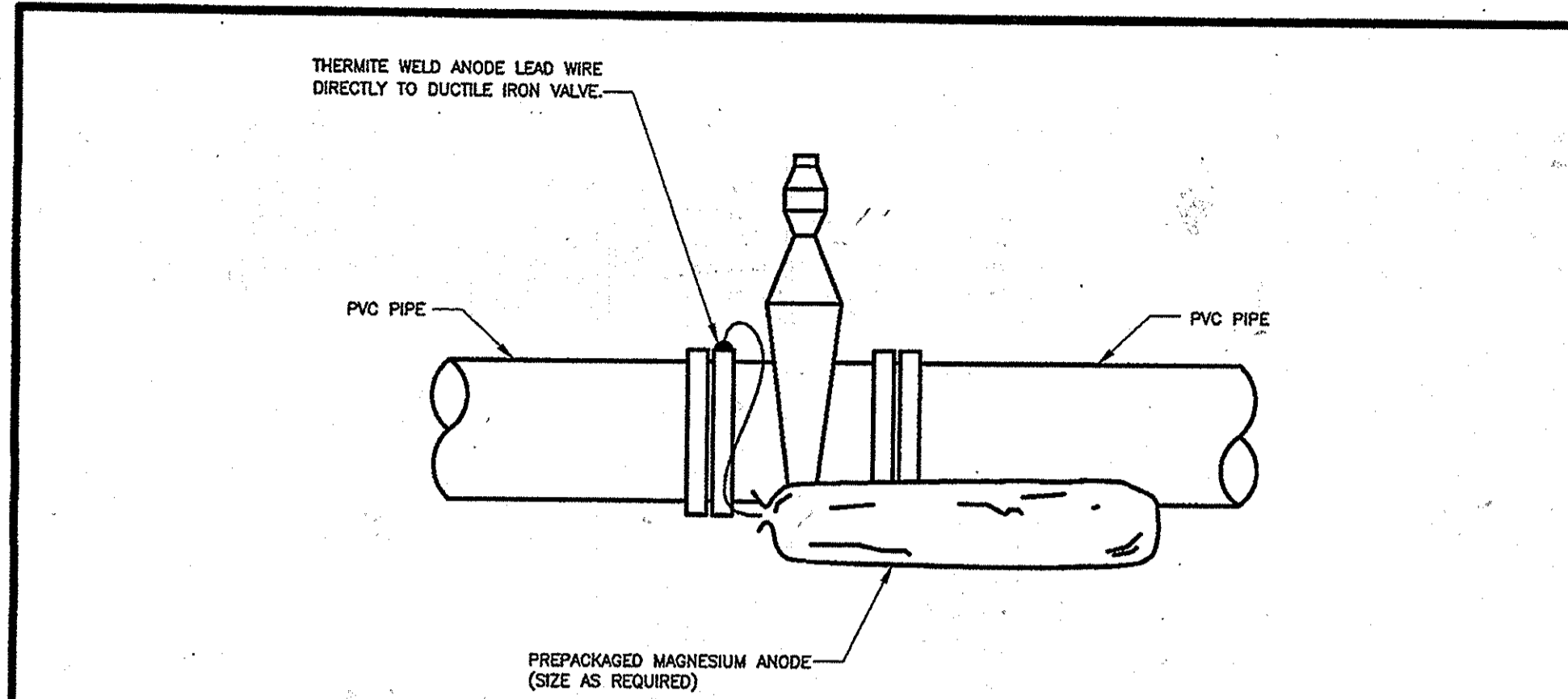
600' SCALE MAP NO. 37 BLOCK NO. 21

SANCTUARY COURT & TRANQUILL WAY
 WATER REPLACEMENT

CAPITAL PROJECT No. W-8321
 CONTRACT No. 44-4846

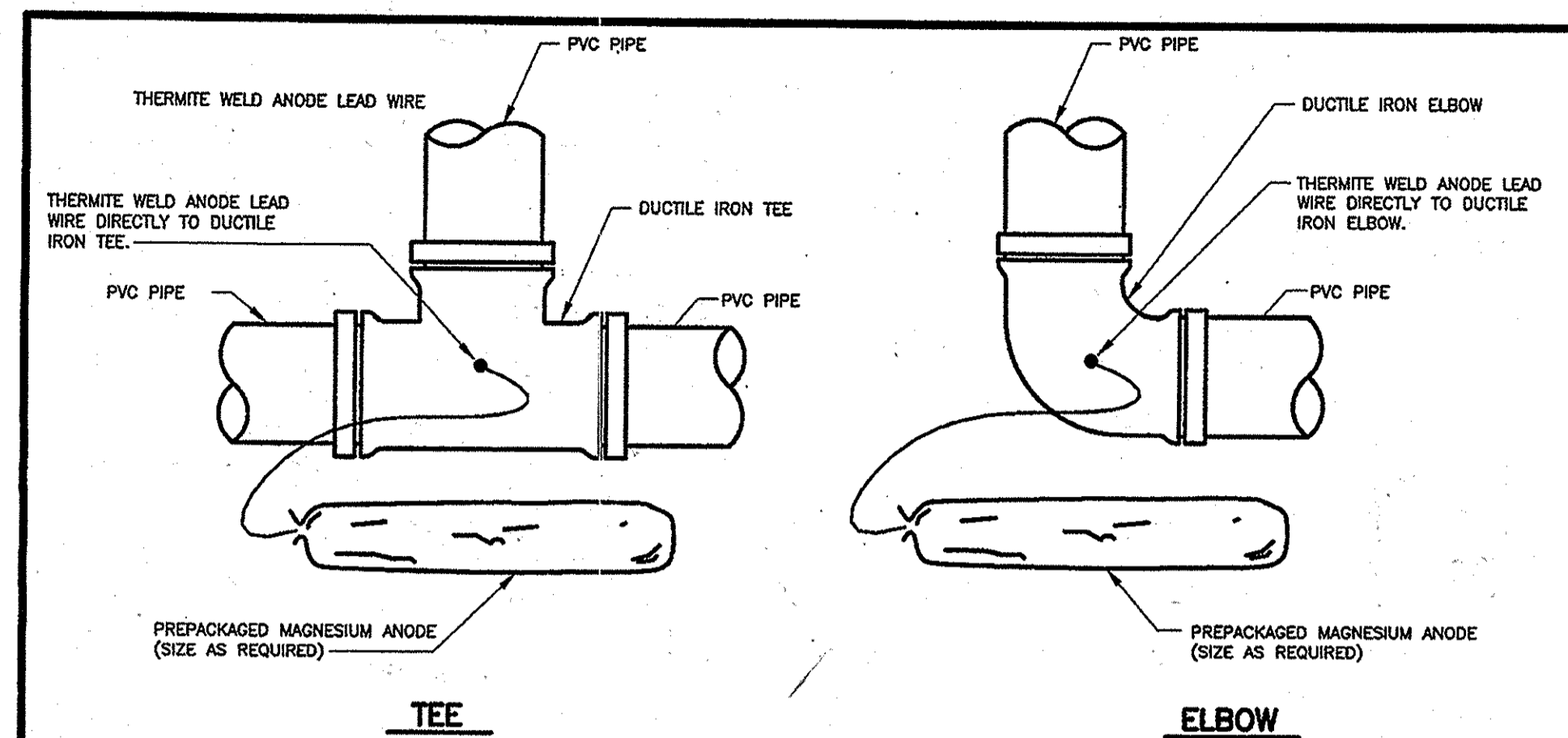
ELECTION DISTRICT NO. 1
 HOWARD COUNTY, MARYLAND

SCALE
 AS SHOWN
 SHEET
 7 OF 8



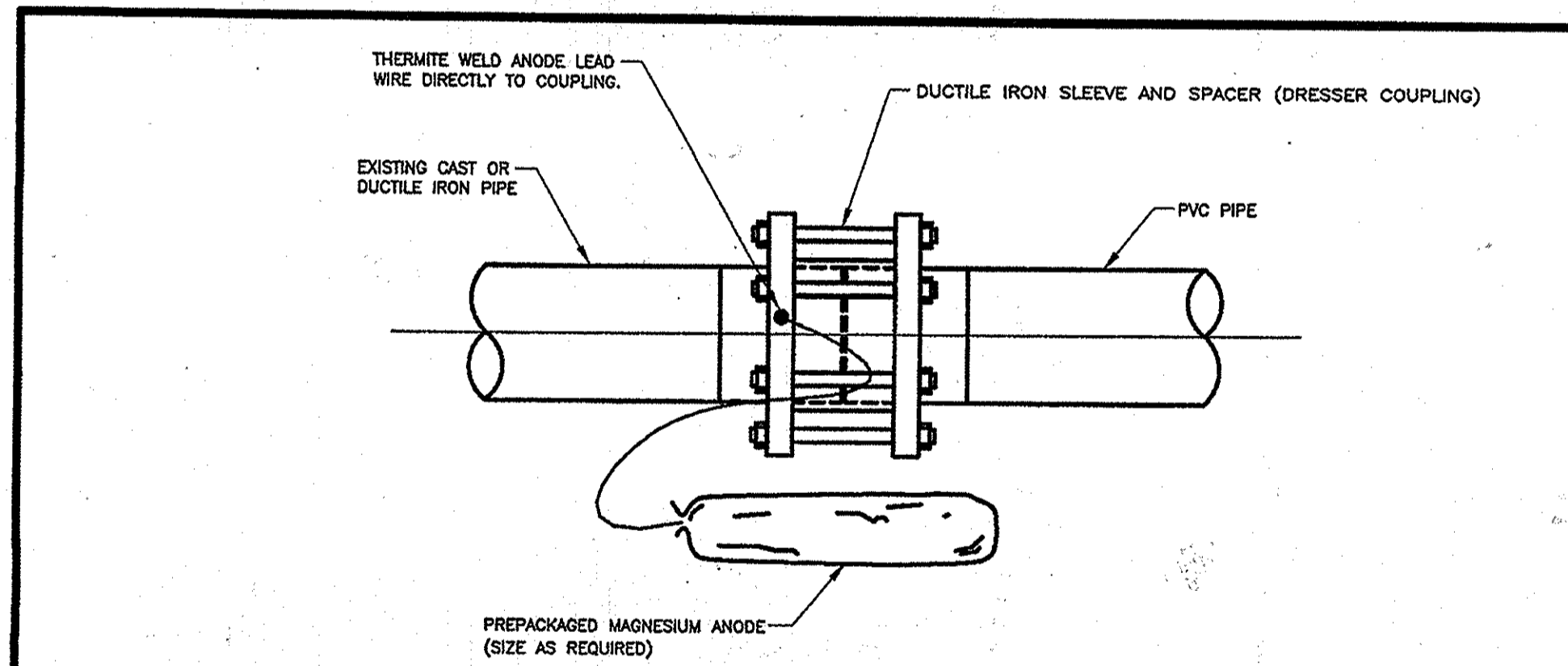
- NOTES:**
1. DO NOT THERMITE WELD TO PVC PIPE.
 2. INSTALL ANODE A MINIMUM OF 12 INCHES FROM MAIN.
 3. INSTALL ANODE IN NATIVE SOIL. DO NOT BACKFILL WITH SAND OR STONE.
 4. SEE ANODE AND REFERENCE ELECTRODE PLACEMENT DETAIL.

Revised 5/7/2007 Approved	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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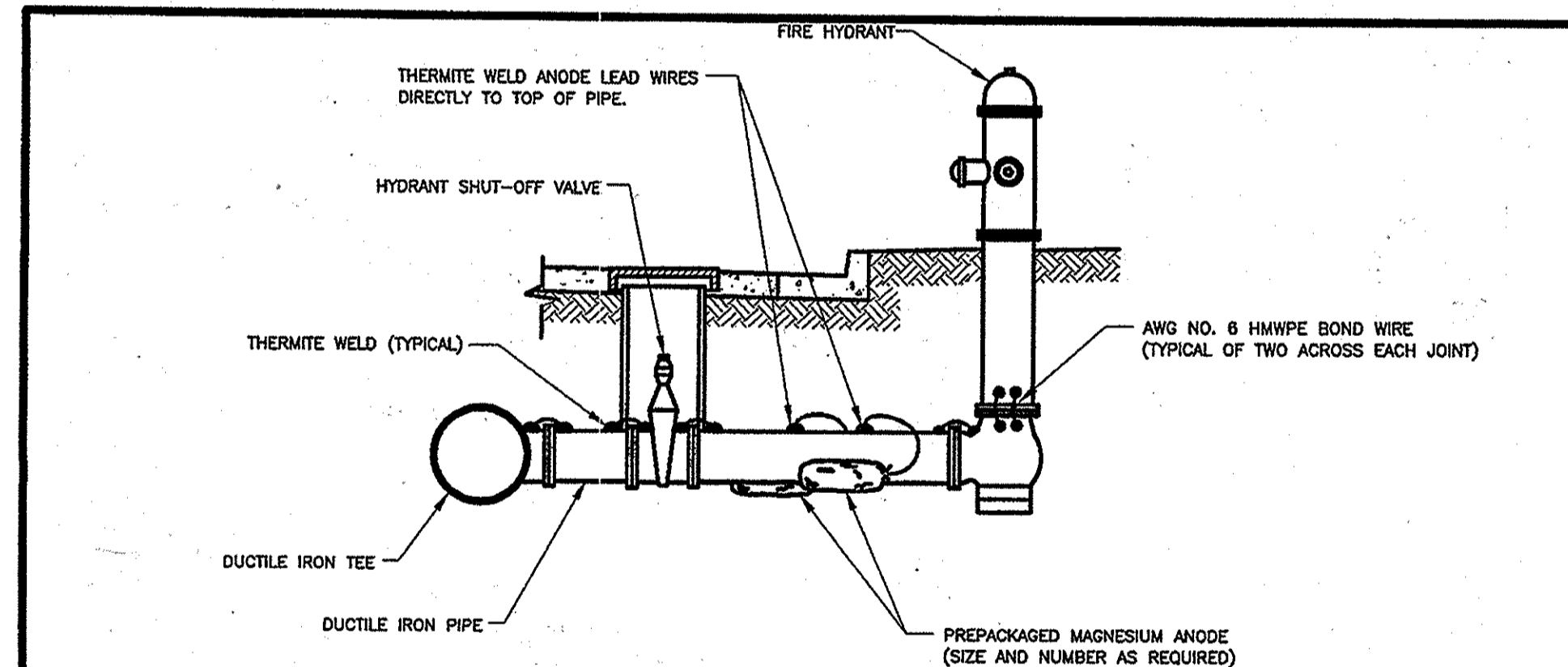
- NOTES:**
1. ANODES REQUIRED ONLY IF TEE OR ELBOW IS DUCTILE IRON.
 2. DO NOT THERMITE WELD TO PVC PIPE.
 3. INSTALL ANODES A MINIMUM OF 12 INCHES FROM MAIN.
 4. INSTALL ANODES IN NATIVE SOIL. DO NOT BACKFILL WITH SAND OR STONE.
 5. SEE ANODE AND REFERENCE ELECTRODE PLACEMENT DETAIL.

Revised 5/7/2007 Approved	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.

Revised 5/7/2007 Approved	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.

Revised 5/7/2007 Approved	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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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 1/22/14
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 1/14/14
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 1/14/14
CHIEF, UTILITY DESIGN DIVISION DATE

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CORROSION CONTROL

DATE 1/04/16

600' SCALE MAP NO. 37 BLOCK NO. 21

**SANCTUARY COURT & TRANQUILL WAY
WATER REPLACEMENT**

CAPITAL PROJECT No. W-8321
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ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE
AS SHOWN

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