



ILCHESTER ROAD 12-INCH WATER TRANSMISSION MAIN

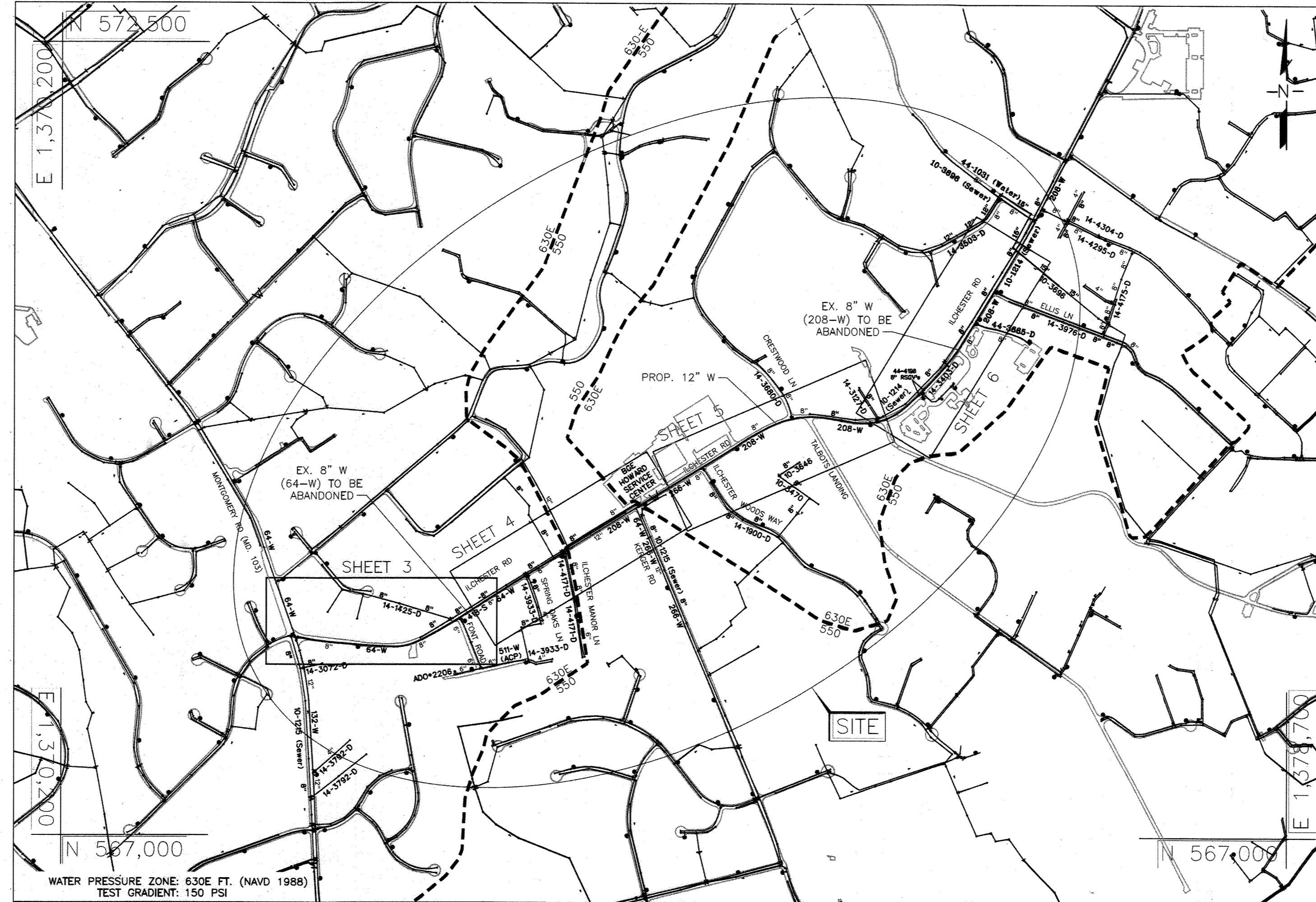
HOWARD COUNTY, MD

CAPITAL PROJECT NO. W-8316

CONTRACT NO. 44-4825

GENERAL NOTES:

- PART I**
- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN MAY 2013 BY MERCADO CONSULTANTS, INC. AERIAL PHOTOGRAPHY AND TOPOGRAPHIC MAPPING WAS PROVIDED BY VIRGINIA RESOURCE MAPPING (VRM).
 - HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS:
NO. 31EA, N 569641.1675, E 1374816.0130, ELEV. 468.842'
NO. 31EB, N 568731.0273, E 1376273.5589, ELEV. 452.628'
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE ALUMINUM STAMPED DISCS.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
 - CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL 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 THE 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 DRAWING, 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.
 - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE 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 (CONSTRUCTION SERVICES) | 410.637.8713 |
| BGE (EMERGENCY) | 410.685.0123 |
| BUREAU OF UTILITIES | 410.313.4900 |
| COLONIAL PIPELINE COMPANY | 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 CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG THE 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/LACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.
 - THE CONTRACTOR SHALL COORDINATE ANY DISRUPTION OF TRAFFIC SIGNALS, SENSORS OR WIRING WITH MARYLAND STATE HIGHWAY ADMINISTRATION, OFFICE OF TRAFFIC AND SAFETY FOR WORK AT THE INTERSECTION OF MD. 103 (MONTGOMERY RD.) AND ILCHESTER ROAD.
 - SEE SPECIFICATIONS FOR PERMITTED WORKING DAYS/HOURS.
 - THE CONTRACTOR MUST FOLLOW ALL CONDITIONS AND REQUIREMENTS AS SET FORTH IN THE REQUIRED PERMITS FOR THIS PROJECT.
 - THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN THE MARYLAND HIGH VOLTAGE LINE ACT (HVLA). THE CONTRACTOR MUST NOTIFY BGE AT 800.685.0123 BEFORE ANY WORK BEGINS THAT MAY BRING PEOPLE OR EQUIPMENT WITHIN 10 FEET OF OVERHEAD UTILITIES. BGE WILL MAKE THE AREA SAFE FOR THE WORK TO BE DONE. HVLA GUIDELINES APPLY TO BOTH PROFESSIONAL AND NON-PROFESSIONAL WORKERS. NO ONE IS EXEMPT FROM COMPLIANCE.
 - THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIRES THAT WHEN USING A CRANE OR DERRICK IN PERFORMANCE OF THE WORK SET FORTH IN THIS CONTRACT, A 20 FOOT CLEARANCE IS REQUIRED TO BE MAINTAINED FROM ALL OVERHEAD POWER LINES UNTIL THE VOLTAGE OF THE OVERHEAD LINE IS IDENTIFIED BY THE UTILITY OWNER. CONTACT BGE FOR ASSISTANCE WHEN USING CRANES OR DERRICKS AT 877.427.2008.
 - 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 THEREON, AND SHALL USE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE OR INJURY THEREON.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PROPERTY OF ANY CHARACTER DURING THE EXECUTION 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.



VICINITY MAP

SCALE: 1"=600'

QUANTITIES

NAME OF UTILITY CONTRACTOR:		SURVEY AND DRAFTING DIVISION AS-BUILT DATE:		AS-BUILT	
ITEM	UNITS	QUANTITY ESTIMATED	QUANTITY	MANUFACTURER / SUPPLIER	
12" C900 PVC WATER MAIN	L.F.	5,725	5,725	NATIONAL PIPE & PLASTICS, INC.	
12" VALVE	EA.	7	7	MUELLER CO.	
12" TEMP. PLUG & BUTTRESS	EA.	1	1		
12"x12" TAPPING SLEEVE	EA.	1	1	MUELLER CO.	
12"x6" TAPPING SLEEVE	EA.	1	1	MUELLER CO.	
8" C900 PVC WATER MAIN	L.F.	120	120	NATIONAL PIPE & PLASTICS, INC.	
8" VALVE	EA.	5	6	MUELLER CO.	
6" C900 PVC WATER MAIN & F.H. LEADS	L.F.	200	168	NATIONAL PIPE & PLASTICS, INC.	
6" VALVE	EA.	12	12	MUELLER CO.	
4" C900 PVC WATER MAIN	L.F.	55	45	NATIONAL PIPE & PLASTICS, INC.	
4" VALVE	EA.	3	3	MUELLER CO.	
2"-6900-PVC-WATER-MAIN	L.F.	30			
FIRE HYDRANT	EA.	11	11	MUELLER CO.	
3/4" WATER SERVICE	L.F.	613			
1" WATER SERVICE	L.F.	202	821	CAMBRIDGE-LBE INDUSTRIES, LLC	
2" WATER SERVICE	L.F.	31	31	CAMBRIDGE-LBE INDUSTRIES, LLC	

- NOTE:**
- QUANTITIES IN THIS TABLE ARE SOLELY FOR RECORD PURPOSES. CONTRACTOR SHALL NOT RELY ON THE QUANTITIES IN THE TABLE AND SHALL USE HIS/HER OWN TAKEOFF TO ESTABLISH MATERIALS AND QUANTITIES NEED FOR THIS PROJECT.
 - FOR WATER STAKEOUT TABLE, SEE SHEET 9.

INDEX OF SHEETS	
SHEET SET NO.	DESCRIPTION
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2	SHEET INDEX & SUGGESTED SEQUENCE OF CONSTRUCTION
3	PROP. 12" WATER MAIN - PLAN & PROFILE
4	PROP. 12" WATER MAIN - PLAN & PROFILE
4A	550/630E ZONE BOUNDARIES & WATER SCHEMATIC
5	PROP. 12" WATER MAIN - PLAN & PROFILE
6	PROP. 12" WATER MAIN - PLAN & PROFILE
7	PROP. 12" WATER MAIN - BRANCH CONNECTION PROFILES
8	PROP. 12" WATER MAIN - BRANCH CONNECTION & FIRE HYDRANT PROFILES
9	PROP. 12" WATER MAIN - FITTING SCHEDULE AND WMC CHART
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15	EROSION & SEDIMENT CONTROL NOTES & DETAILS

WATER NOTES:

- PART II - WATER**
- UNLESS OTHERWISE NOTED, ALL PROPOSED WATER MAINS (INCLUDING HYDRANT AND BLOW-OFF LEADS) SHALL BE C900 PVC DR18 PIPE MEETING THE REQUIREMENTS OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THEREON.
 - TOP OF ALL WATER MAINS TO HAVE A MINIMUM OF 4'-0" OF COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - ALL FITTINGS SHALL BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. 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.
 - 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 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. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL IRON FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
 - THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL, AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF THE PVC PIPE.
 - ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED WHERE HIGH DEFLECTING COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED. THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING. PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (16-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900. SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTY PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL. FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR 18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (PEX) BLUE BRUTE DR18 OR EQUAL.
 - WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.
 - CONTRACTOR SHALL REPLACE ALL WATER HOUSE CONNECTIONS AS INDICATED IN THE CONTRACT DOCUMENTS. ALL WATER HOUSE CONNECTIONS SHALL BE MADE AT THE EXISTING VALVE BOX (INSIDE METERED LOCATIONS) OR METER VAULTS (OUTSIDE METERED LOCATIONS).
 - 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.
 - PIPE RESTRAINT SYSTEMS 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 CONNECTIONS) SHALL BE RESTRAINED USING THE SERIES 2000PV MECHANICAL JOINT FITTING RESTRAINT SYSTEM, 2) HIGH DEFLECTION COUPLINGS AND PUSH-ON BELL OR SPIGOT PIPE JOINTS SHALL BE RESTRAINED (BUT ONLY WHEN LOCATED WITHIN THE RESTRAINED JOINT LIMITS ON THE PROFILES) USING THE SERIES 1500 HARNESING SYSTEM. BEND HARNESING 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 HIGH DEFLECTION WITHIN RESTRAINED JOINT LIMITS NOTED ON THE PROFILES).
 - 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.
 - ALL HYDRANTS, MAINLINE GATE VALVES, WATER SERVICE VALVE AND PIPING, MECHANICAL JOINT RESTRAINT SYSTEMS AND SIMILAR (FOR BOTH PERMANENT AND TEMPORARY INSTALLATIONS) SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 250PSI.
 - WATER MAIN TESTING GRADIENT:
THE EXISTING STATIC PRESSURE ELEVATION FOR PROPOSED WATER MAIN IS 630FT NAVD 1988.
THE WATER MAIN SHALL BE FILLED WITH WATER AND BROUGHT TO 150 PSI HYDROSTATIC TEST PRESSURE AT THE LOW POINT-FOR TWO HOURS.
 - THE CONTRACTOR SHALL NOTIFY HOWARD COUNTY DPW AS ANY UNKNOWN UTILITY SERVICES ARE ENCOUNTERED. CONTRACTOR SHALL RECONNECT ALL ACTIVE WATER SERVICES ENCOUNTERED.
 - THE CONTRACTOR SHALL VERIFY THAT EXISTING WATER LINES AND VALVES ARE RESTRAINED PRIOR TO REMOVAL OF EXISTING WATERLINE. AT CONNECTION LOCATIONS, CONTRACTOR SHALL PROVIDE THURST BLOCKING AND/OR DEADEN ANCHORS ON THE EXISTING WATER SYSTEM WHERE THERE IS NO EXISTING THURST PROTECTION.
 - THE CONTRACTOR SHALL ABANDON EXISTING WATER LINE IN PLACE UNLESS OTHERWISE INDICATED ON THE PLANS. THE CONTRACTOR SHALL CAP ALL CUT OR OPEN ENDS, REMOVE EXISTING VALVE ROADWAY BOXES AND ABANDON EXISTING VALVES IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF EXISTING WATERLINE WHERE INDICATED TO BE REPLACED IN-KIND. EXISTING FIRE HYDRANTS REMOVED, AS PART OF CONSTRUCTION, SHALL BE DELIVERED TO THE BUREAU OF UTILITIES. THE CONTRACTOR SHALL SALVAGE MAJOR WATER ITEMS WHICH CAN BE USED TO SALVAGE PARTS.
 - 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.
 - THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATIONS OF THE PROPOSED FACILITIES.
 - THE CONTRACTOR SHALL VERIFY THE LOCATION OF AND DEPTH OF THE EXISTING WATER MAINS AND UTILITY CROSSINGS. ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - PIPE TRENCHING AND PAVEMENT REPLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE PVC PIPE TRENCH AND PERMANENT PAVING RESTORATION DETAIL AS SHOWN ON SHEET 10.
 - IN ACCORDANCE WITH THE 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 TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AS WELL AS ANY EXISTING THRUST RESTRAINTS.

EP-14-014

HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION:
THE DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John R. Robertson 9/30/14
HOWARD S.C.D. DATE

ENGINEER'S DESIGN CERTIFICATION:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Erin A. McKenna-Streytle, P.E. 9/19/2014
ERIN A. MCKENNA-STREYLE, P.E. DATE

OWNER'S / DEVELOPER'S CERTIFICATION:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Heidi Jensen 9/24/2014
BUREAU OF ENGINEERING DEPARTMENT OF PUBLIC WORKS DATE

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
MICHAEL BAKER INTERNATIONAL
BY: *Elis*

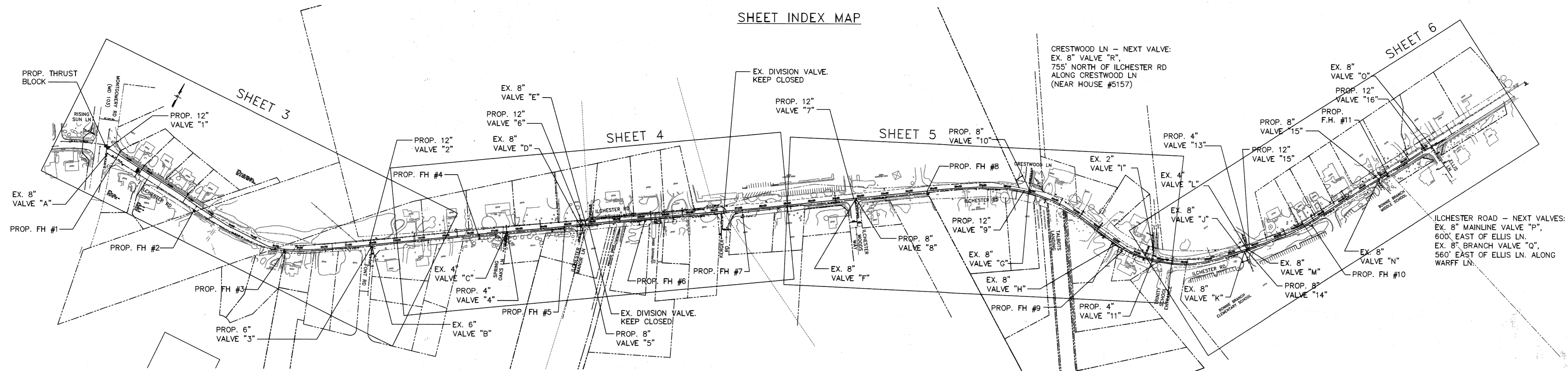
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
John R. Robertson 9/30/14
DIRECTOR OF PUBLIC WORKS DATE
Stacy C. Lewis 9/23/14
CHIEF, BUREAU OF UTILITIES DATE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO.: 36830 EXPIRATION DATE: 08/22/18
Erin A. McKenna-Streytle, P.E.
ERIN A. MCKENNA-STREYLE, P.E.

DESIGN:	EAM	AS-BUILTS	3/11/16	EAM
DRAWN:	EAM			
CHECKED:	SGZ			
DATE:	9/19/2014	NO.		REVISION
DATE:		NO.		REVISION

TITLE SHEET
ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 1 OF 15
600 SCALE MAP NO. 31 BLOCK NO. 15

SHEET INDEX MAP



SCALE: 1"=200'

SUGGESTED SEQUENCE OF CONSTRUCTION

PHASE I:
THIS SEQUENCE OF CONSTRUCTION IS WRITTEN IN THE ORDER OF WHICH THE ACTIVITIES SHOULD BE PERFORMED BY THE CONTRACTOR AND DOES NOT INCLUDE CONCURRENT EROSION AND SEDIMENT CONTROL AND MAINTENANCE OF TRAFFIC ACTIVITIES WHICH SHOULD ALSO BE FOLLOWED AS DESCRIBED IN THE CONTRACT DOCUMENTS.

PROP. 12" WATER MAIN - ILCHESTER RD

- INSTALL PROP. 12" PVC WATER MAIN FROM STA. 0+05 TO STA. 57+05, INCLUDING ALL PROP. FIRE HYDRANT TEES, PROP. VALVES AND PROP. FIRE HYDRANTS. INSTALL PROP. FIRE HYDRANT #6 COMPLETE & IN PLACE. IN CONJUNCTION WITH THE INSTALLATION OF THE PROP. 12" PVC WATER MAIN, INSTALL ALL PROP. WATER MAIN BRANCH CONNECTIONS OF VARIOUS SIZE PVC WATER MAIN PIPE ALONG THE SIDE STREETS BELOW. THE CONTRACTOR SHALL INSTALL THE SIDE STREET (BRANCH) CONNECTIONS AS FAR ACROSS THE ROAD AS POSSIBLE TO MINIMIZE THE AMOUNT OF TIME TO TIE-IN TO THE PROP. 12" WATER MAIN AND REDUCE TRAFFIC IMPACTS.
 - FRONT RD UP TO AND INCLUDING PROP. VALVE "3"
 - SPRING OAKS LN UP TO AND INCLUDING PROP. VALVE "4"
 - ICHESTER MANOR LN UP TO AND INCLUDING PROP. VALVE "5"
 - ILCHESTER WOODS WAY UP TO AND INCLUDING PROP. VALVE "8"
 - CRESTWOOD LN UP TO AND INCLUDING PROP. VALVE "10"
 - CONNECTION AT HOUSE #5060 UP TO AND INCLUDING PROP. VALVE "11"
 - CONNECTION AT BONNIE BRANCH E.S. UP TO AND INCLUDING PROP. VALVE "12"
 - CONNECTION AT CAMP ILCHESTER UP TO AND INCLUDING PROP. VALVE "13"
 - CONNECTION AT BONNIE BRANCH M.S. UP TO AND INCLUDING PROP. VALVE "15"
- PERFORM PRESSURE TEST AND DISINFECT THE 12" MAIN.
- INSTALL PROP. 12"x12" TAPPING SLEEVE AND 12" VALVE (STA. 0+00) AND POUR BUTTRISS PER HOWARD COUNTY STANDARD DETAIL W-2.23 WATER MAIN BUTTRISS FOR TEE.
- CONNECT TO PROP. 12" MAIN (INSTALL PROP. 12" WATER MAIN FROM STA. 0+00 TO STA. 0+05 TO MAKE THE CONNECTION).
- PRESSURIZE THE PROP. 12" MAIN FOR SERVICE.
- RESTORE THE AREA.

PROP. 8" WATER MAIN - FRONT RD

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "3" AND EX. VALVE "A".
 - INSTALL PROP. 8" PVC WATER MAIN FROM PROP. VALVE "3" TO STA. 0+29.3 AND CONNECT TO EX. 6" WATER MAIN (64-W).
 - OPEN PROP. VALVE "3".
 - RESTORE THE AREA.

PROP. 4" WATER MAIN - SPRING OAKS LN

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "4" AND EX. VALVE "C".
 - INSTALL PROP. 4" PVC WATER MAIN FROM PROP. VALVE "4" TO STA. 0+21.8 AND CONNECT TO EX. 6" WATER MAIN (1439-33-D).
 - OPEN PROP. VALVE "4".
 - RESTORE THE AREA.

PROP. 8" WATER MAIN - ILCHESTER MANOR LN

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "5" AND EX. VALVE "D".
 - INSTALL PROP. 8" PVC WATER MAIN FROM PROP. VALVE "5" TO STA. 0+16.2 AND CONNECT TO EX. 8" WATER MAIN (14-117-D).
 - OPEN PROP. VALVE "5".
 - RESTORE THE AREA.

PROP. 8" WATER MAIN - ILCHESTER WOODS WAY

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "8" AND EX. VALVE "F".
 - INSTALL PROP. 8" PVC WATER MAIN FROM PROP. VALVE "8" TO STA. 0+23.7 AND CONNECT TO EX. 8" WATER MAIN (14-1900-D).
 - OPEN PROP. VALVE "8".
 - RESTORE THE AREA.

PROP. 8" WATER MAIN - CRESTWOOD LN

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "10" AND EX. VALVES "G" & "R".
 - INSTALL PROP. 8" PVC WATER MAIN FROM PROP. VALVE "10" TO STA. 0+37.3 AND CONNECT TO EX. 8" WATER MAIN (14-3680-D).
 - OPEN PROP. VALVE "10" AND EX. VALVE "R".
 - RESTORE THE AREA.

PHASE I (CONTINUED):

PROP. 2" WATER MAIN - HOUSE #5056

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "11" AND EX. VALVES "H" & "J". EX. VALVE "J" SHALL REMAIN OPEN AS THIS WATER MAIN IS NOT BACKFED BY A LOOPED WATER SYSTEM.
 - INSTALL PROP. 2" & 4" PVC WATER MAINS FROM PROP. VALVE "11" TO STA. 0+33.4 AND CONNECT TO EX. 2" WATER MAIN (14-3127-D).
 - OPEN PROP. VALVE "11" AND EX. VALVES "H" & "J".
 - ABANDON EX. VALVE "J" IN PLACE IN OPEN POSITION. REMOVE THE VALVE BOX AND COVER.
 - RESTORE THE AREA.

PROP. 8" WATER MAIN - BONNIE BRANCH E.S.

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN DURING NON-OPERATIONAL HOURS OF THE SCHOOL:
- CLOSE PROP. VALVE "12" AND EX. VALVE "K".
 - INSTALL PROP. 8" PVC WATER MAIN FROM PROP. VALVE "12" TO STA. 0+23.9 AND CONNECT TO EX. 8" WATER MAIN (14-3403-D).
 - OPEN PROP. VALVE "12".
 - RESTORE THE AREA.

PROP. 4" WATER MAIN - CAMP ILCHESTER

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "13" AND EX. VALVE "L".
 - INSTALL PROP. 4" PVC WATER MAIN FROM PROP. VALVE "13" TO STA. 0+26.5 AND CONNECT TO EX. 4" WATER HOUSE CONNECTION.
 - OPEN PROP. VALVE "13".
 - RESTORE THE AREA.

PROP. 8" WATER MAIN - BONNIE BRANCH M.S.

- COMPLETE THE FOLLOWING WITHIN AN 8-HOUR SHUTDOWN DURING NON-OPERATIONAL HOURS OF THE SCHOOL:
- CLOSE PROP. VALVE "15" AND EX. VALVE "N".
 - INSTALL PROP. 8" PVC WATER MAIN FROM PROP. VALVE "15" TO STA. 0+18.3 AND CONNECT TO EX. 8" WATER MAIN (44-3665-D).
 - OPEN PROP. VALVE "15".
 - RESTORE THE AREA.

PHASE II:

THE CONTRACTOR IS TO COMPLETE PHASE II ACTIVITIES AFTER PHASE I HAS BEEN COMPLETED TO THE SATISFACTION OF THE ON-SITE INSPECTOR.

WATER HOUSE CONNECTIONS:

- ALL PROP. WATER HOUSE CONNECTIONS 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 IS RESPONSIBLE FOR ALL SHUT-DOWN NOTIFICATIONS TO RESIDENTS AND BUSINESSES. NO HOUSE SHALL BE WITHOUT SERVICE OF ANY KIND, FOR MORE THAN 8-HOURS AT ANY ONE TIME. CONNECT ALL EXISTING WATER HOUSE CONNECTIONS TO THE PROPOSED 12" WATER MAIN AS SHOWN IN THE WATER HOUSE CONNECTION CHART IN THE CONTRACT DOCUMENTS.

PROP. 12" WATER MAIN - ILCHESTER RD (CONTINUED)

- COMPLETE THE FOLLOWING WITHIN A 2-HOUR SHUTDOWN:
- CLOSE PROP. VALVE "16" AND EXISTING VALVES "O", "P" & "Q".
 - INSTALL PROP. 12" WATER MAIN FROM STA. 57+05 TO 57+24 AND CONNECT TO EX. 8" WATER MAIN (208-W).
 - OPEN PROP. VALVE "16" AND EXISTING VALVES "O" & "P" & "Q".
 - REMOVE AND SALVAGE ALL EXISTING FIRE HYDRANTS LABELED "TO BE REMOVED" ON THE CONTRACT DOCUMENTS ALONG THE EXISTING 12" WATER MAIN FOR RETURN TO HOWARD COUNTY. REMOVE ALL EXISTING EXTENSION VALVE STEMS AND VALVE BOXES FOR FUTURE PAVING OPERATIONS.
 - ABANDON EXISTING WATER MAIN IN PLACE.
 - RESTORE THE AREA.

NOTE: ROAD RESURFACING TO BE COMPLETED BY OTHERS

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

MICHAEL BAKER INTERNATIONAL

BY: *ebu*

LEGEND:

W	W	EXIST. WATER MAIN / VALVE VAULT	---	---	STREAM / WATERWAY EDGE
W	W	EXIST. WATER HOUSE CONNECTION	---	---	630E
W	W	PROP. WATER MAIN	---	---	550
W	W	TEMP. WATER MAIN	---	---	---
W	W	EXIST. WATER MAIN TO BE ABANDONED	---	---	---
S	S	EXIST. SEWER MAIN / MANHOLE	---	---	SHRUB
S	S	EXIST. SEWER HOUSE CONNECTION	---	---	PROP. VALVE
SD	SD	EXIST. STORM DRAIN / INLET	---	---	PROP. FIRE HYDRANT
G	G	EXIST. GAS	---	---	---
G	G	EXIST. GAS SERVICE CONNECTION	---	---	BGE POLE
E	E	EXIST. ELECTRIC - UNDERGROUND	---	---	STREET SIGN
O/H	O/H	EXIST. ELECTRIC - OVERHEAD	---	---	---
FO	FO	EXIST. FIBER OPTIC	---	---	BORING LOCATION
T	T	EXIST. TELEPHONE - UNDERGROUND	---	---	TEST PIT LOCATION
OHT	OHT	EXIST. TELEPHONE - OVERHEAD	---	---	TP-##
X	X	RIGHT OF WAY	---	---	CONTINUITY TEST STATION
X	X	FENCE	---	---	---
SF	SF	PROPERTY LINE	---	---	SANITARY MANHOLE ID
LOD	LOD	SILT FENCE	---	---	---
LOD	LOD	LIMITS OF DISTURBANCE	---	---	CP
LOD	LOD	EXIST. E.O.P.	---	---	---
△	△	TRAVERSE	---	---	---

TEST PIT DATA

NUMBER	UTILITY	MATERIAL	DEPTH
TP-1	12" WATER MAIN	DUCTILE IRON	4.92'
TP-2	8" WATER MAIN	DUCTILE IRON	4.93'
TP-3	8" WATER MAIN	DUCTILE IRON	3.56'
TP-4	8" WATER MAIN	DUCTILE IRON	3.99'
TP-5	8" WATER MAIN	STEEL	4.06'
TP-6	2-2" FIBER OPTIC	PLASTIC CONDUIT	2.95'
TP-7	2" GAS	PLASTIC	4.21'
TP-8	8" WATER MAIN	STEEL	4.32'
TP-9	8" WATER MAIN	STEEL	4.16'
TP-10	8" WATER MAIN	STEEL	4.81'
TP-11	8" WATER MAIN	STEEL	3.90'
TP-12	8" WATER MAIN	STEEL	3.71'
TP-13	8" WATER MAIN	STEEL	4.20'
TP-14	12" WATER MAIN	DUCTILE IRON	4.29'
TP-15	12" WATER MAIN	DUCTILE IRON	3.56'
TP-16	8" WATER MAIN	DUCTILE IRON	4.69'
TP-17	6" GAS	PLASTIC	3.70'
TP-18	8" WATER MAIN	STEEL	4.20'
TP-19	2" SANITARY FORCE MAIN	PLASTIC	3.92'

TEST PIT DATA

NUMBER	UTILITY	MATERIAL	DEPTH
TP-20	8" WATER MAIN	STEEL	4.36'
TP-21	8" WATER MAIN	STEEL	3.84'
TP-22	2" GAS	PLASTIC	2.25'
TP-23	8" WATER MAIN	STEEL	4.32'
TP-24	8" WATER MAIN	STEEL	4.32'
TP-25	8" WATER MAIN	DUCTILE IRON	4.63'
TP-26	2" GAS	PLASTIC	2.16'
TP-27	8" WATER MAIN	STEEL	4.61'
TP-28	2" WATER MAIN	GALVANIZED STEEL	5.77'
TP-29	8" WATER MAIN	STEEL	5.22'
TP-30	GAS	TEST HOLE CANCELLED	N/A
TP-31	NO UTILITY FOUND	N/A	N/A
TP-32	8" WATER MAIN	CAST IRON	4.16'
TP-33	8" WATER MAIN	CAST IRON	4.57'
TP-34	8" WATER MAIN	DUCTILE IRON	4.04'
TP-35	8" WATER MAIN	DUCTILE IRON	5.02'
TP-36	2" GAS	PLASTIC	3.98'
TP-37	8" WATER MAIN	CAST IRON	4.82'
TP-38	12" WATER MAIN	DUCTILE IRON	5.13'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *Jan Z. K.* DATE: 9/20/14
 Chief, Bureau of Engineering: *Thomas J. Butler* DATE: 9/29/14
 Chief, Bureau of Utilities: *Steve C. Genn* DATE: 9/20/14
 Chief, Utility Design Division: *KD* DATE: 9/25/14

Baker
MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 200
Linthicum, MD 21090-1014
Phone: (410) 689-3400

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.: 36830
EXPIRATION DATE: 08/01/18
ERIN A. MCKENNA-STREYLE, P.E.

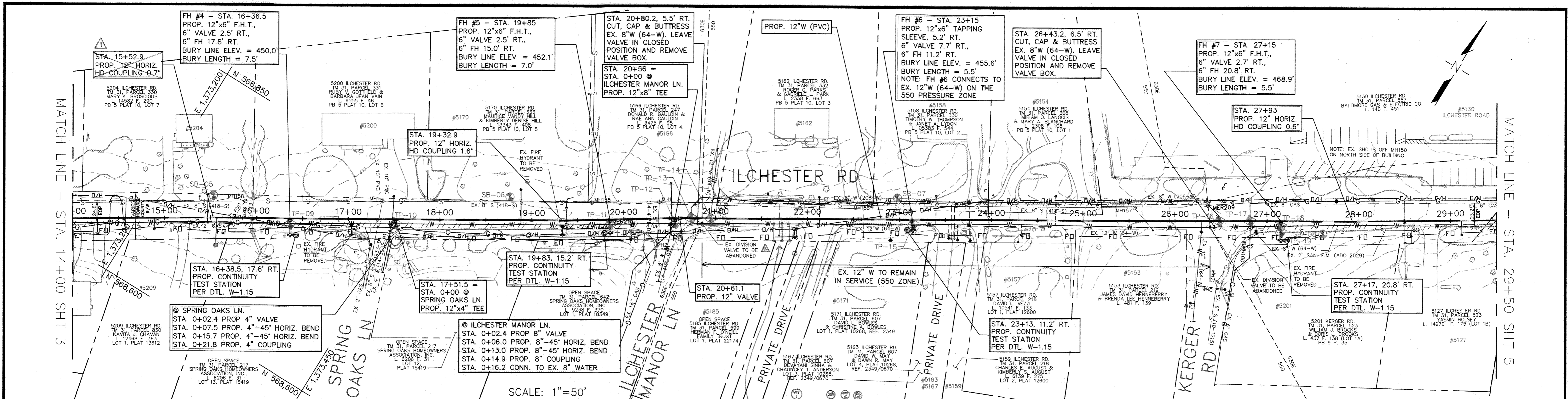
DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SOZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

SHEET INDEX & SUGGESTED SEQUENCE OF CONSTRUCTION

600 SCALE MAP NO. 31 BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 15
AS-BUILT



12" WATER MAIN - ILCHESTER ROAD
STA. 14+00 TO STA. 29+50

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

MICHAEL BAKER INTERNATIONAL

By: *Ehu*

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 9/30/14
DIRECTOR OF PUBLIC WORKS

[Signature] 9/29/14
CHIEF, BUREAU OF ENGINEERING

[Signature] 9/25/14
CHIEF, UTILITY DESIGN DIVISION

Baker

MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 300
Linthicum, MD 21090-1014
Phone: (410) 689-3400

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EXPIRATION DATE: 08/07/18

[Signature]
ERIN A. MCKENNA-STREY, P.E.

DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM	AS-BUILTS	3/21/24	WRA
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

PROP. 12" WATER MAIN PLAN & PROFILE

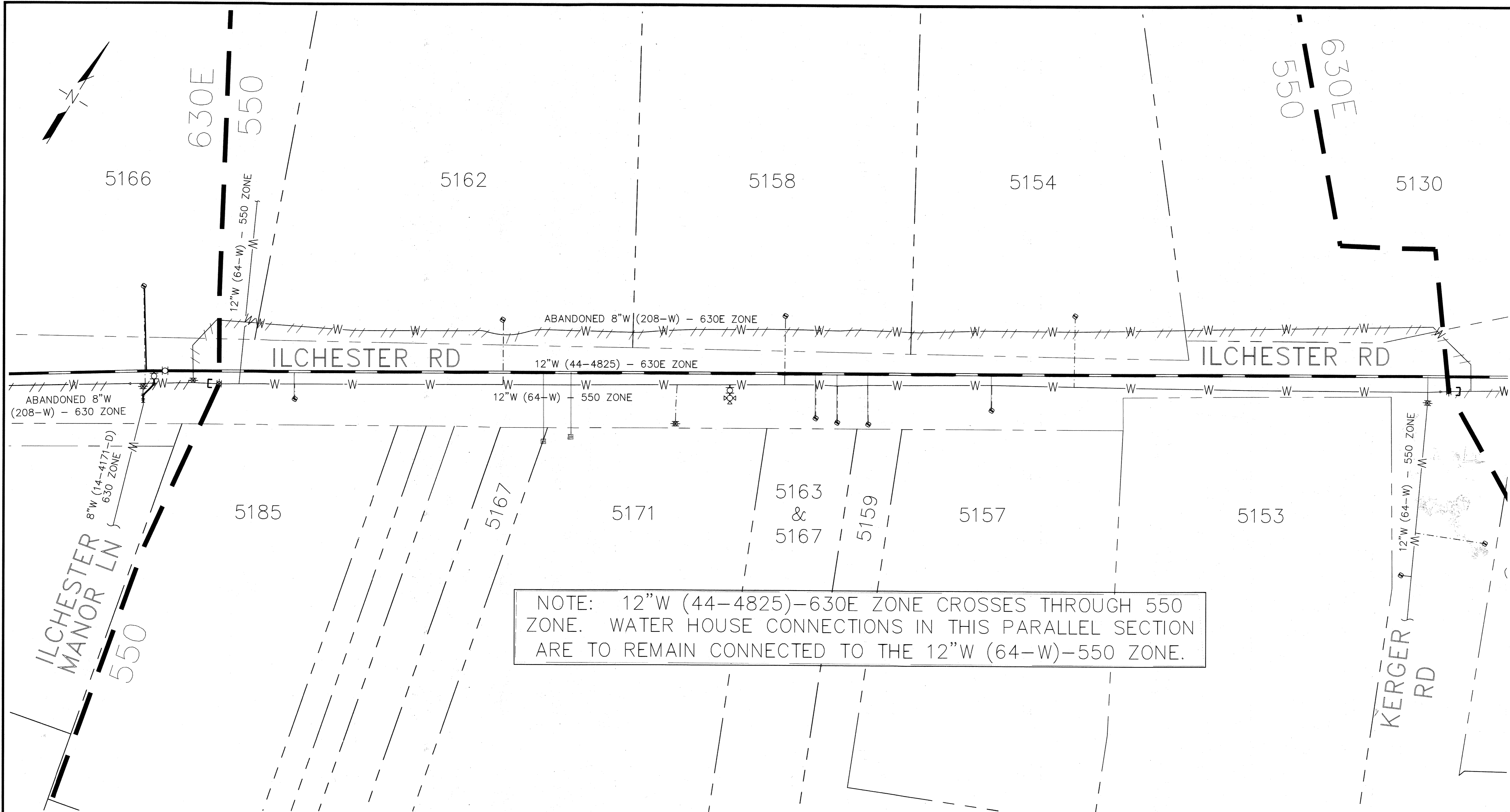
600 SCALE MAP NO. 31 BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 15

AS-BUILT



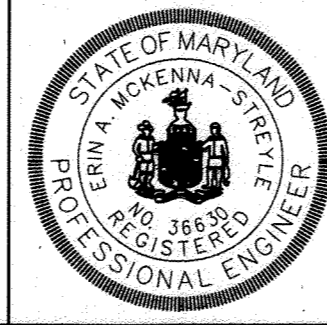
NOTE: 12" W (44-4825)-630E ZONE CROSSES THROUGH 550 ZONE. WATER HOUSE CONNECTIONS IN THIS PARALLEL SECTION ARE TO REMAIN CONNECTED TO THE 12" W (64-W)-550 ZONE.

550/630E ZONE BOUNDARIES & WATER SCHEMATIC
SCALE: 1"=20'

RECORD DRAWINGS TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
MICHAEL BAKER INTERNATIONAL
By: *Elu*

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *Jaime* 9/23/14
Chief, Bureau of Engineering: *Thomas & Sutter* 9/23/14
Chief, Bureau of Utilities: *Steve* 9/23/14
Chief, Utility Design Division: *JD* 9/23/14

Baker
MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 200
Linthicum, MD 21090-1014
Phone: (410) 689-3400



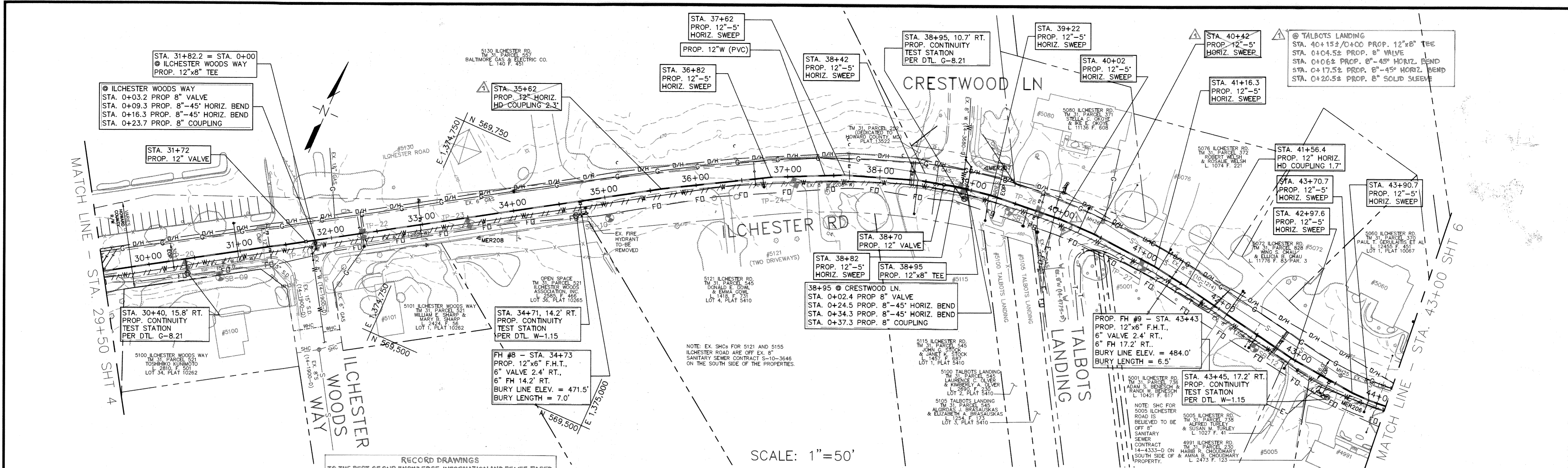
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 36830
EXPIRATION DATE: 06/07/18
ERIN A. MCKENNA-STREYKE, P.E.

DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

550/630E ZONE BOUNDARIES & WATER SCHEMATIC
600 SCALE MAP NO. 31
BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

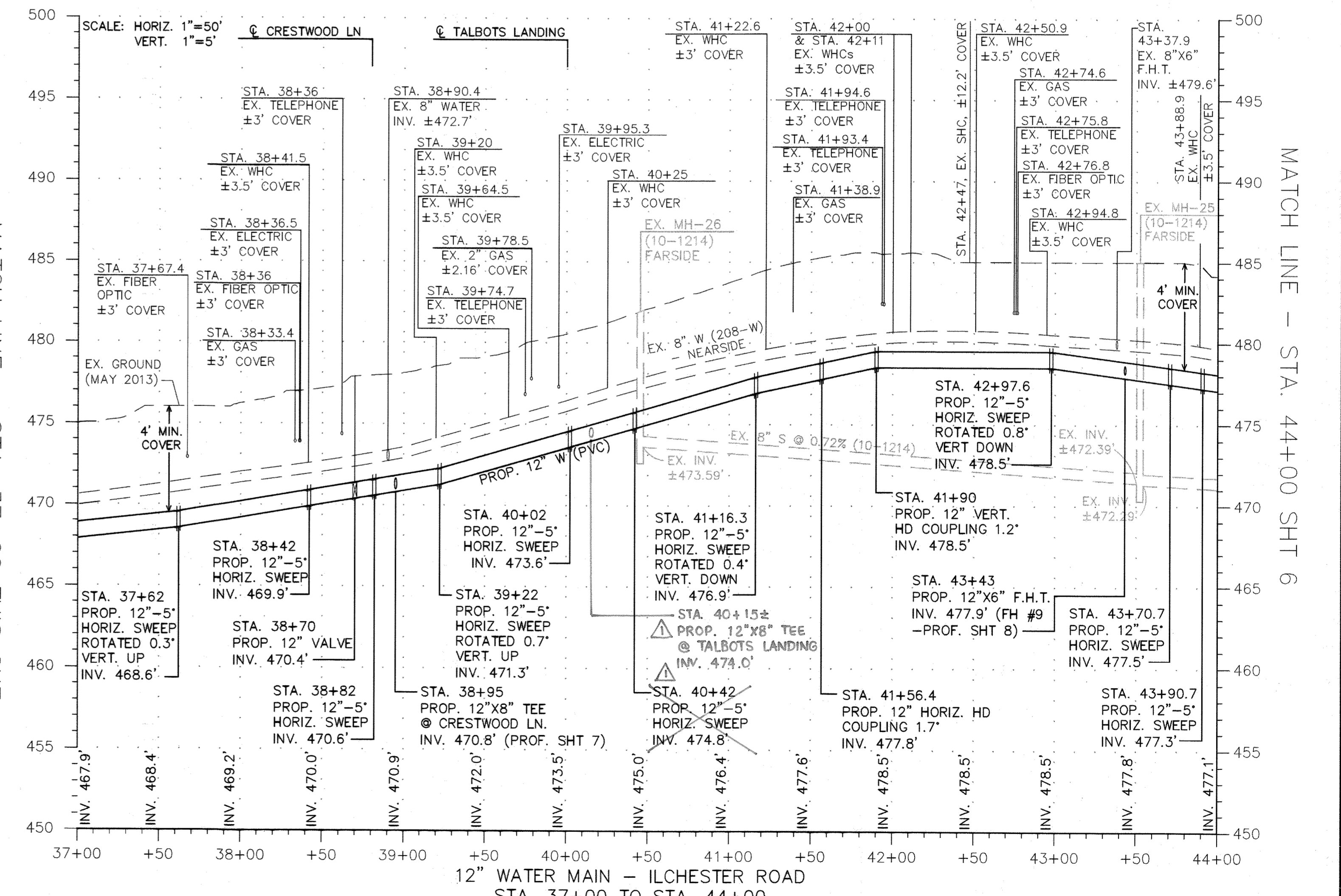
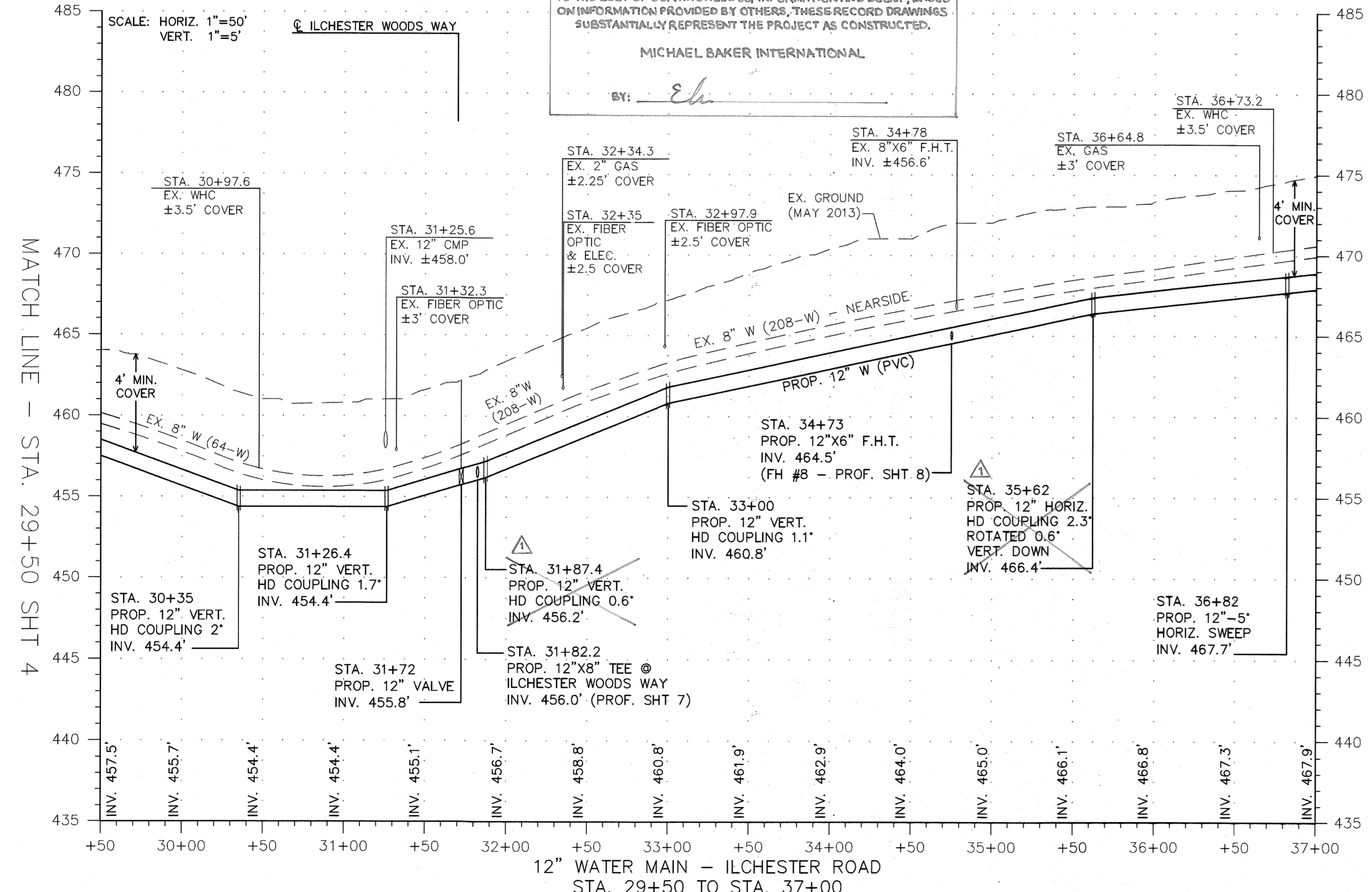
SCALE AS SHOWN
SHEET 4A OF 15



RECORD DRAWINGS
 TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED
 ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS
 SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

MICHAEL BAKER INTERNATIONAL
 BY: *Eh*

SCALE: 1"=50'



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Randy R... 9/6/14
 DIRECTOR OF PUBLIC WORKS DATE

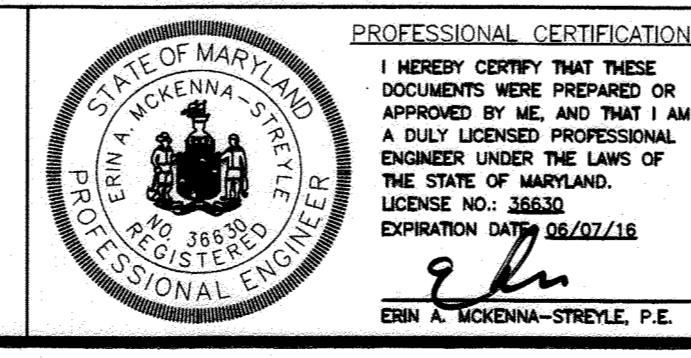
Thomas & Butler 9/29/14
 CHIEF BUREAU OF ENGINEERING DATE

Stacy Ann... 9/25/14
 CHIEF, BUREAU OF UTILITIES DATE

W. Davis 9/25/14
 CHIEF, UTILITY DESIGN DIVISION DATE

Baker

MICHAEL BAKER JR., INC.
 1304 Concourse Drive, Suite 200
 Linthicum, MD 21090-1014
 Phone: (410) 689-3400



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. 36630 EXPIRATION DATE 05/02/218

Erin A. McKenna-Streyke, P.E.

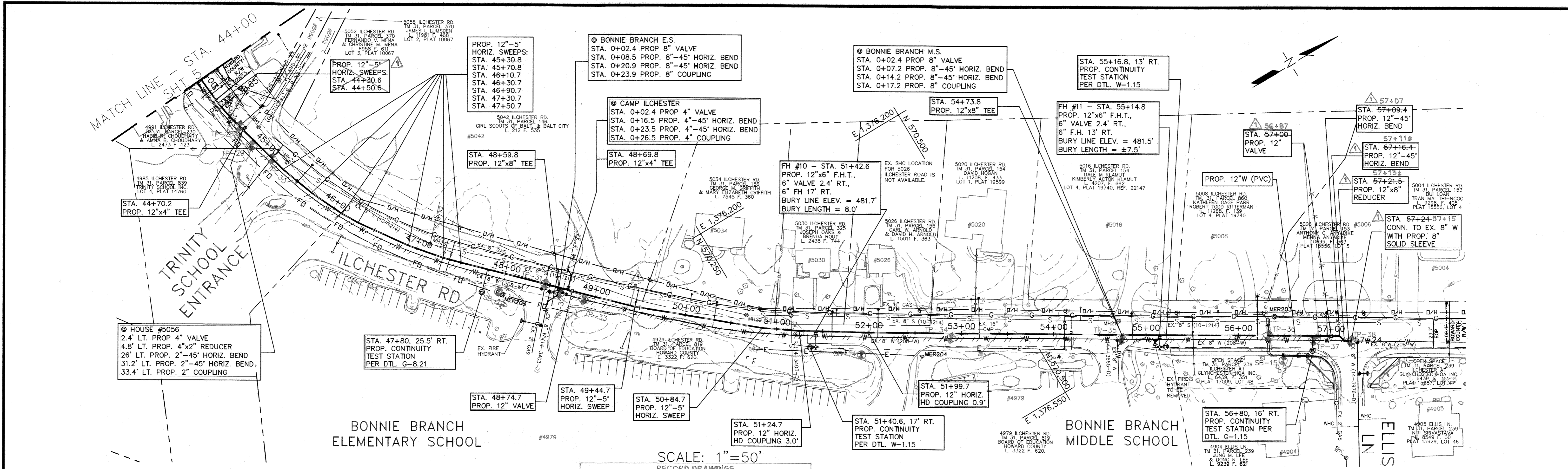
DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

PROP. 12" WATER MAIN PLAN & PROFILE

600 SCALE MAP NO. 31 BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
 MONTGOMERY RD TO ELLIS LN
 CAPITAL PROJECT NO.: W-8316
 CONTRACT NO.: 44-4825
 1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 5 OF 15
 AS-BUILT



BONNIE BRANCH
ELEMENTARY SCHOOL

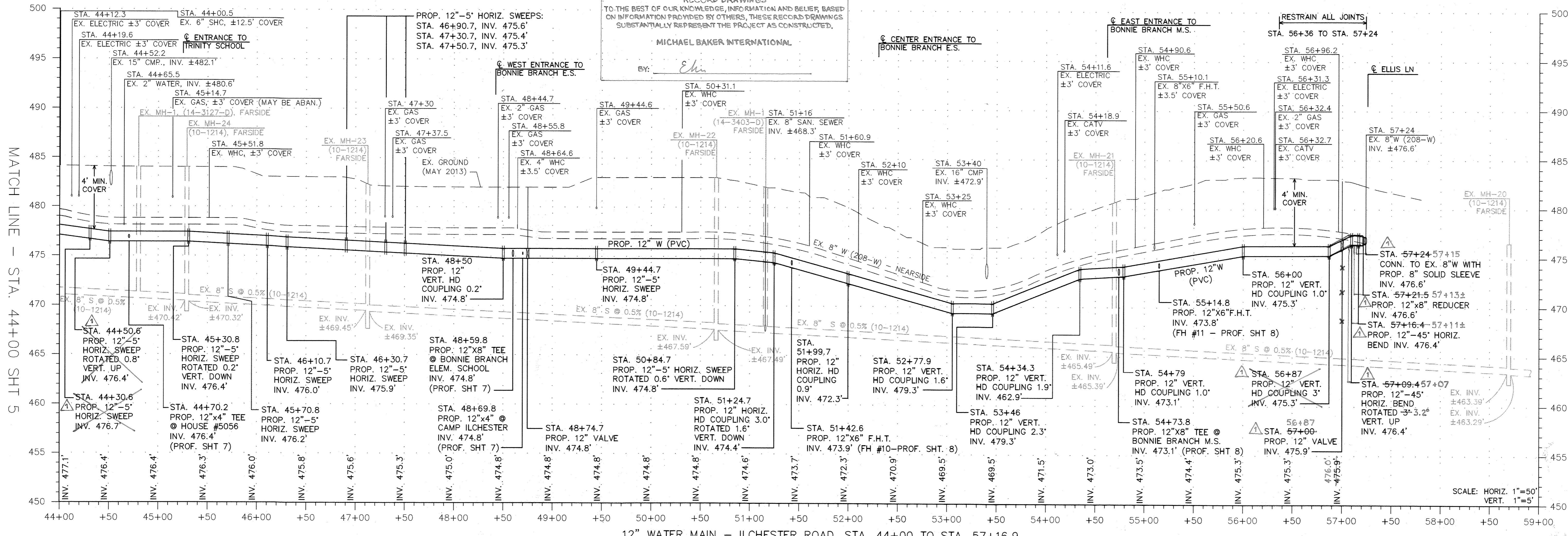
BONNIE BRANCH
MIDDLE SCHOOL

SCALE: 1"=50'

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED
ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS
SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

MICHAEL BAKER INTERNATIONAL

BY: *Eh*



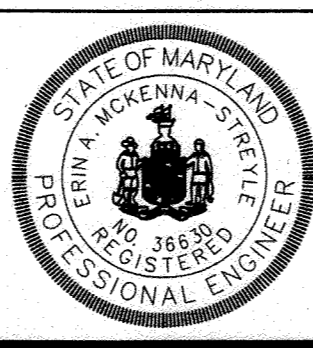
12" WATER MAIN - ILCHESTER ROAD, STA. 44+00 TO STA. 57+16.9

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DATE: 9/30/14
DATE: 9/25/14

DATE: 9/25/14
DATE: 9/25/14

Baker
MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 200
Linthicum, MD 21086-1014
Phone: (410) 689-3400



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. 36630
EXPIRATION DATE: 08/07/18
ERIN A. MCKENNA-STREY, P.E.

DESIGN:	AS-BUILTS	3/17/16	EAM
DRAWN:	EAM		
CHECKED:	SGZ		
DATE:	9/19/2014	NO.	REVISION

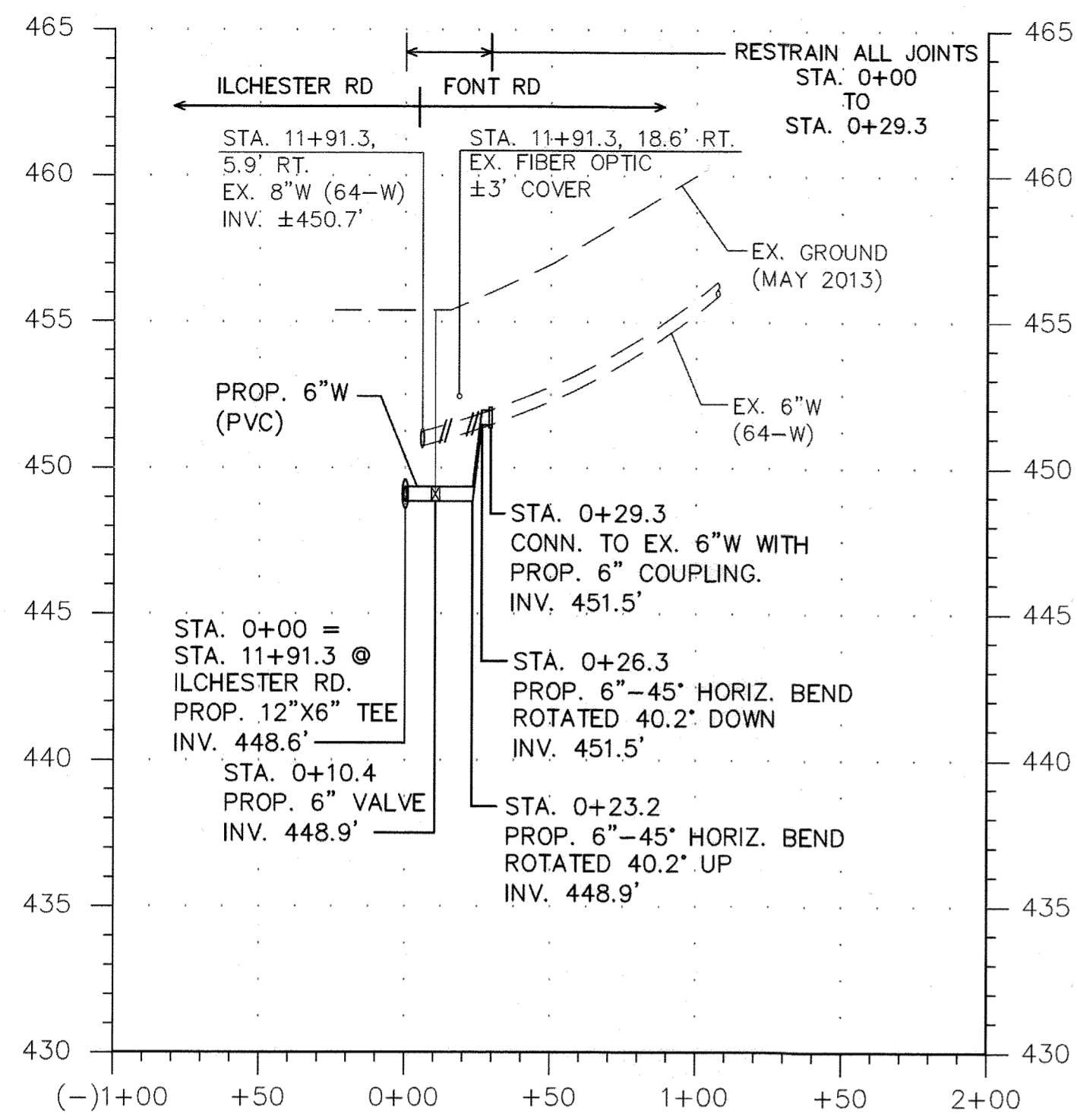
PROP. 12"
WATER MAIN
PLAN & PROFILE

ILCHESTER ROAD 12"
WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

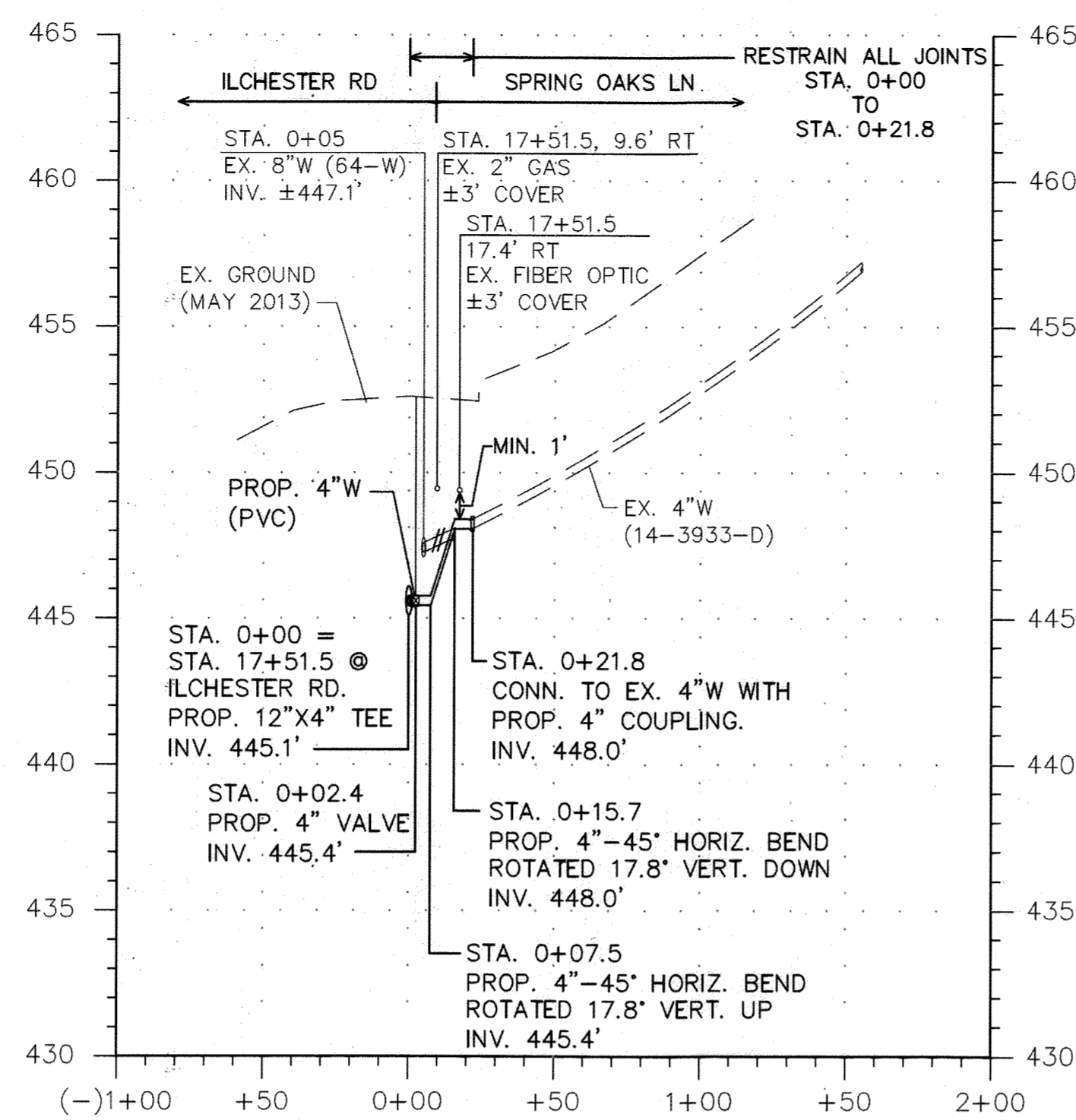
SCALE
AS SHOWN

SHEET
6 OF 15

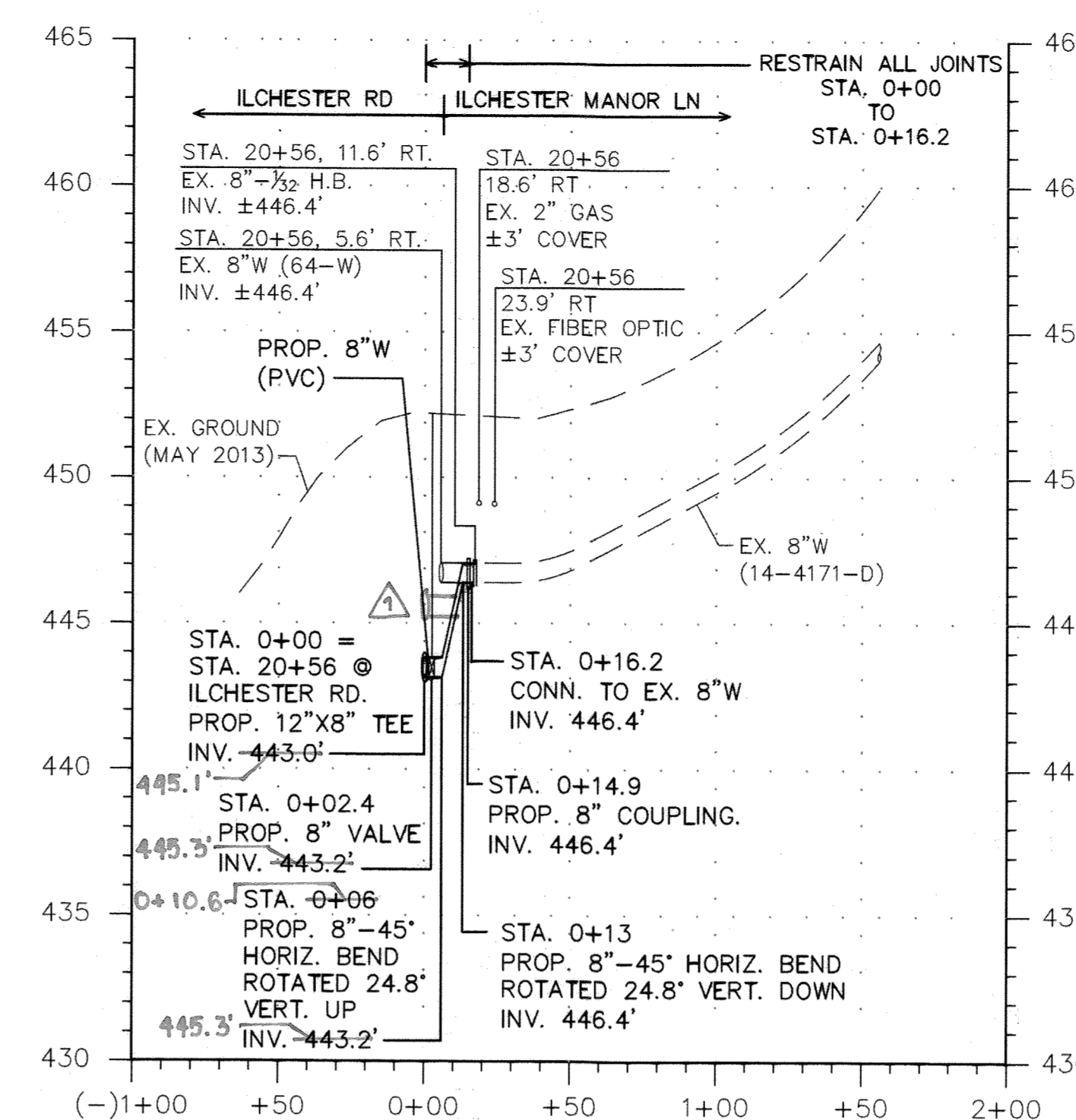
AS-BUILT



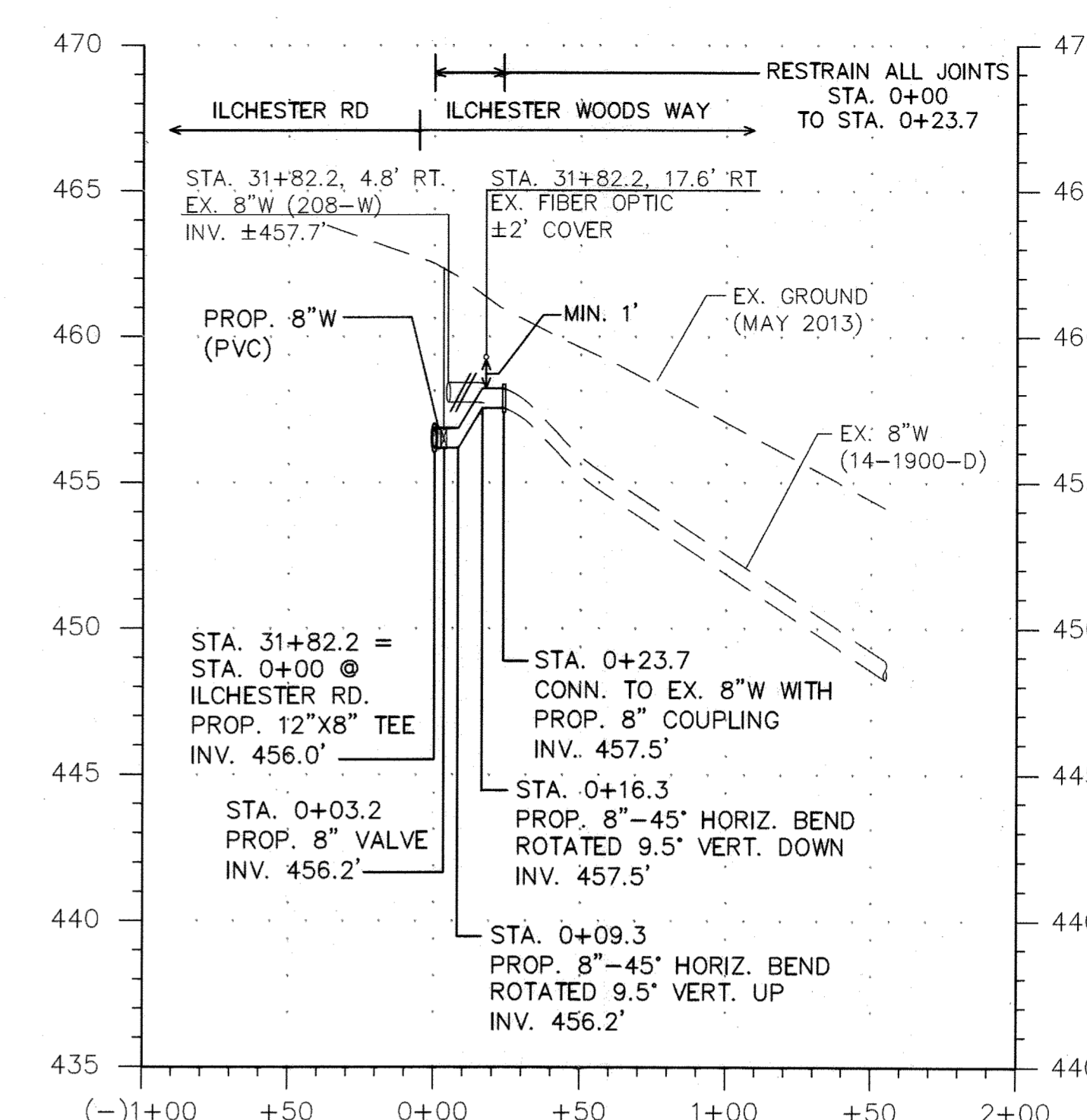
6" WATER MAIN - FONT RD
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



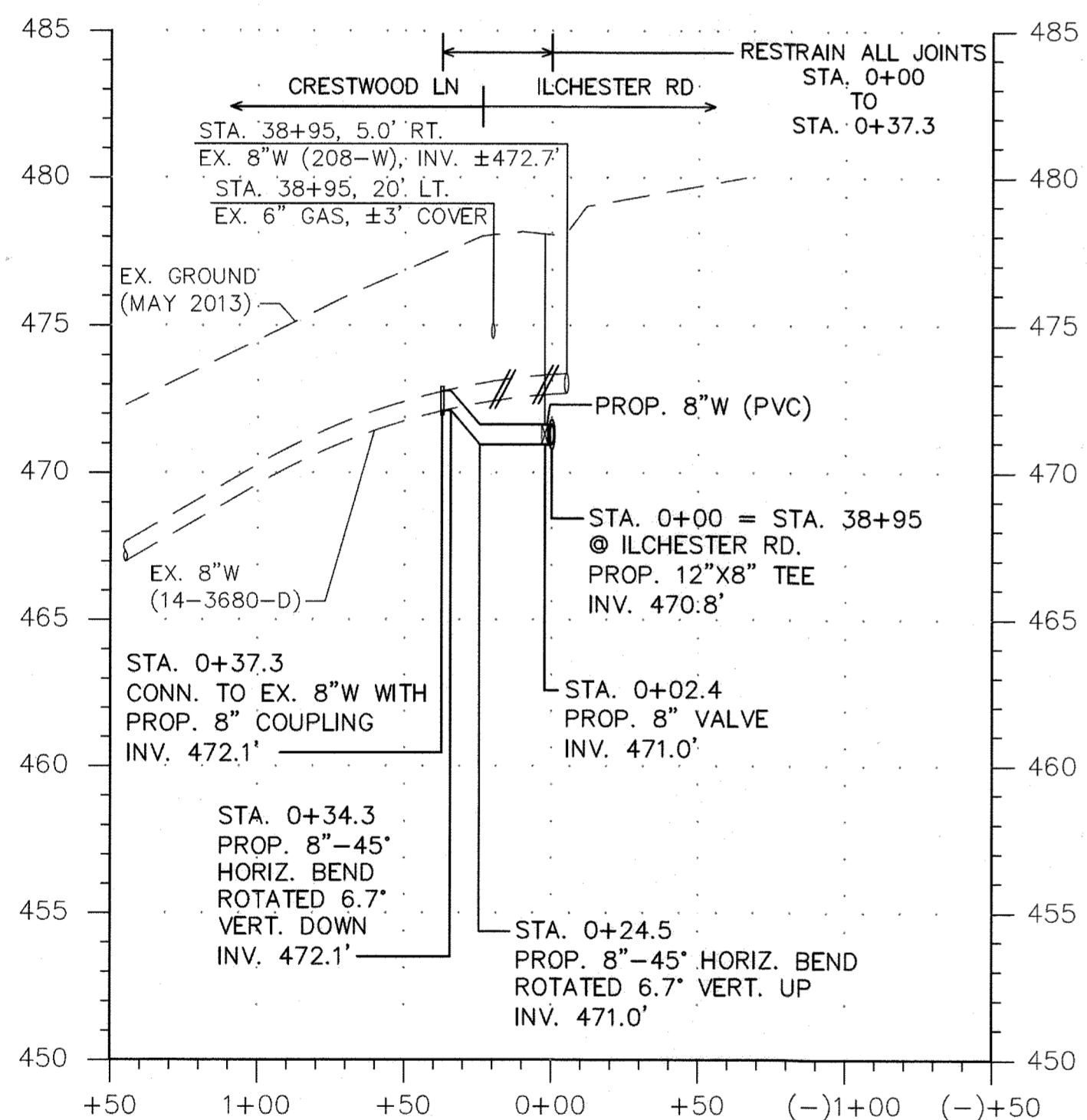
4" WATER MAIN - SPRING OAKS LN
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



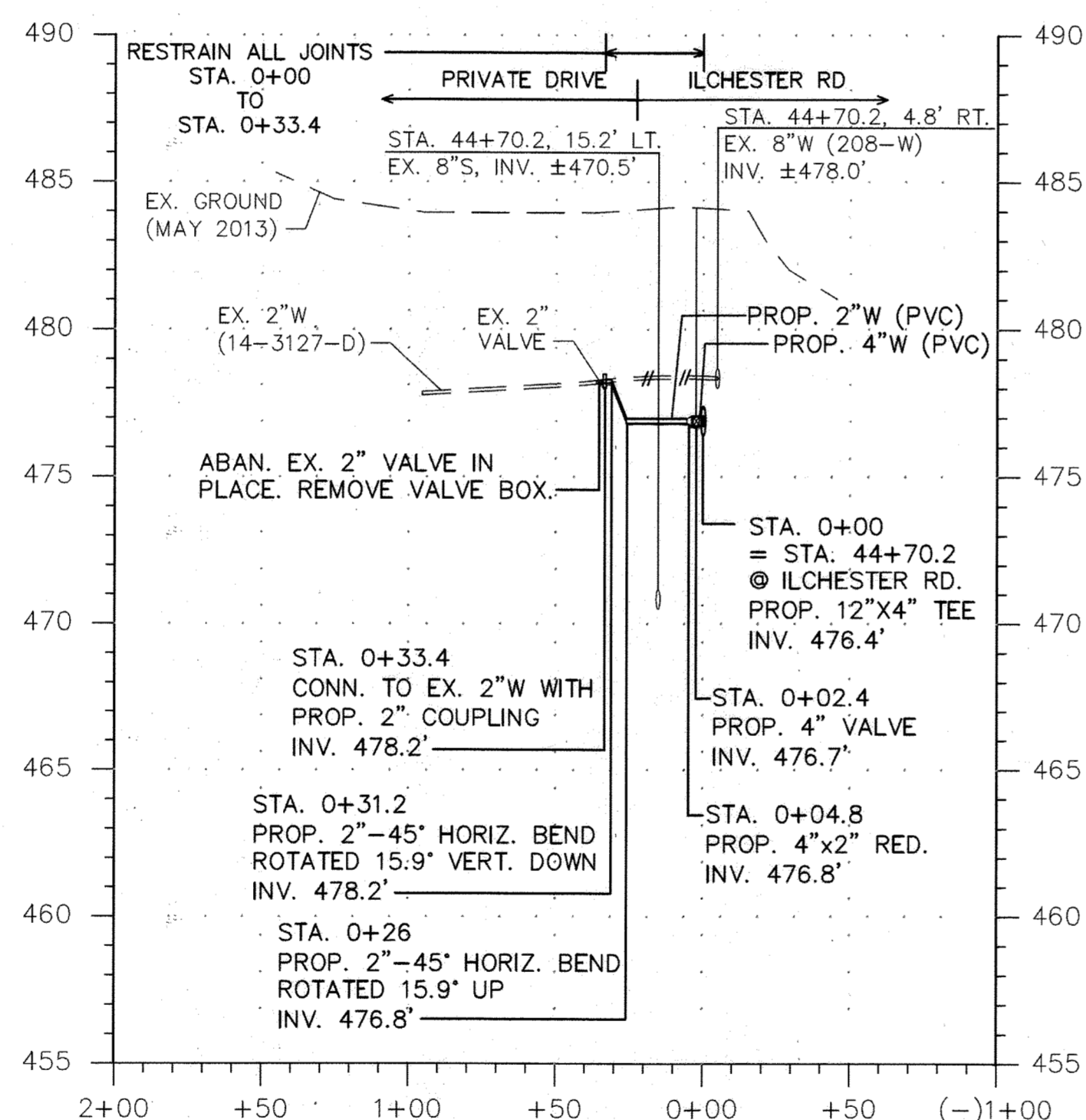
8" WATER MAIN - ILCHESTER MANOR LN
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



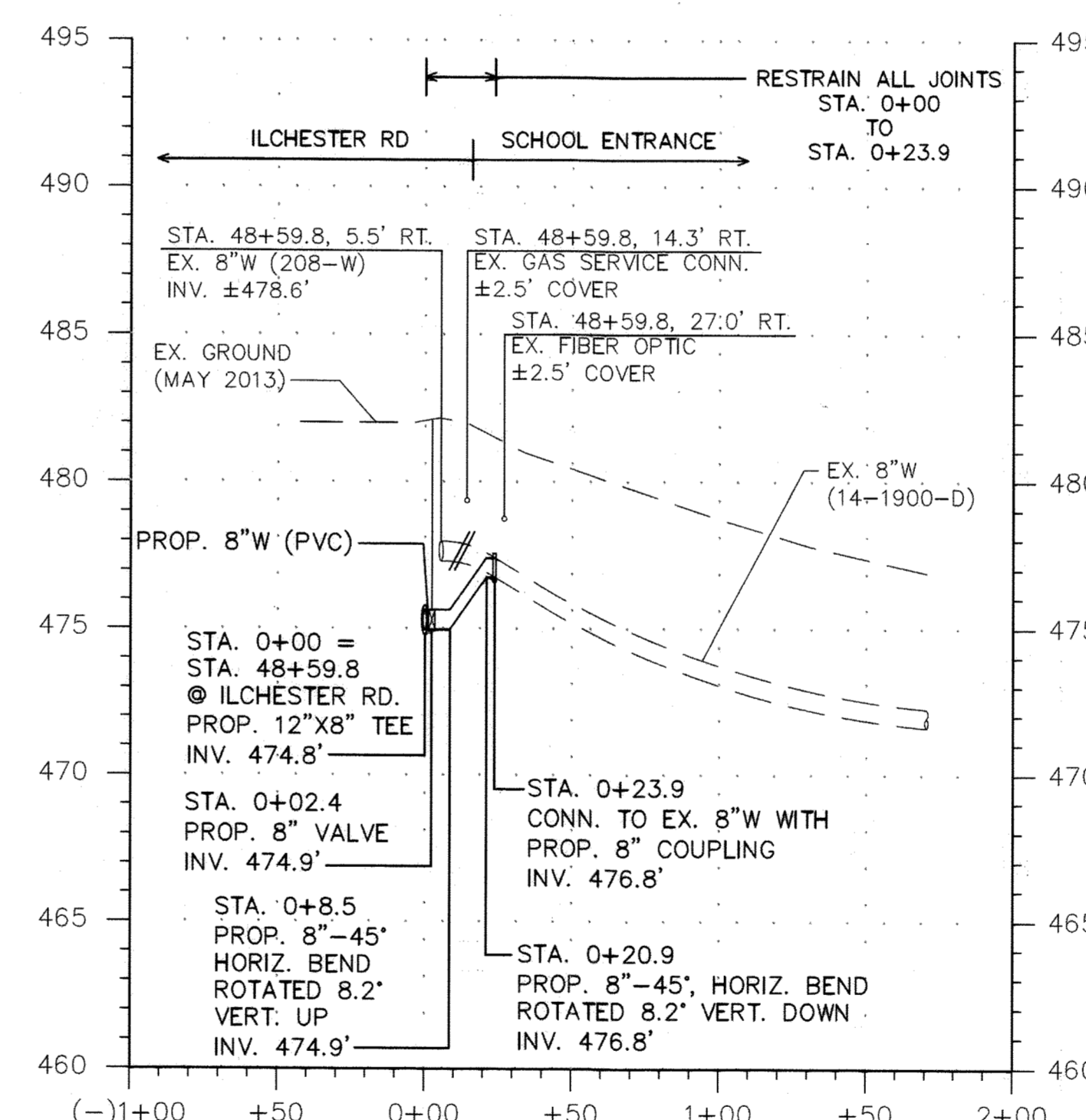
8" WATER MAIN - ILCHESTER WOODS WAY
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



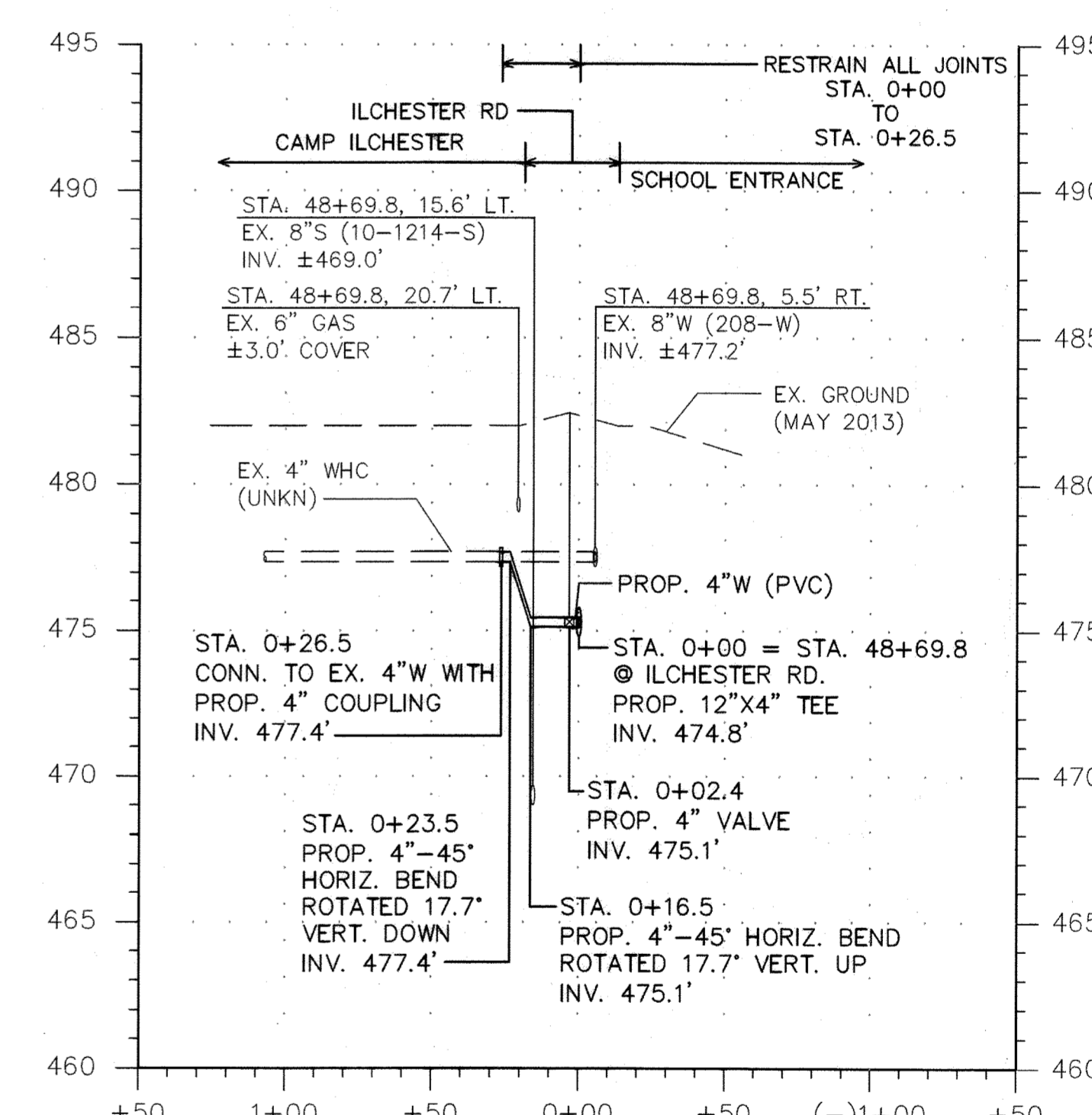
8" WATER MAIN - CRESTWOOD LN
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



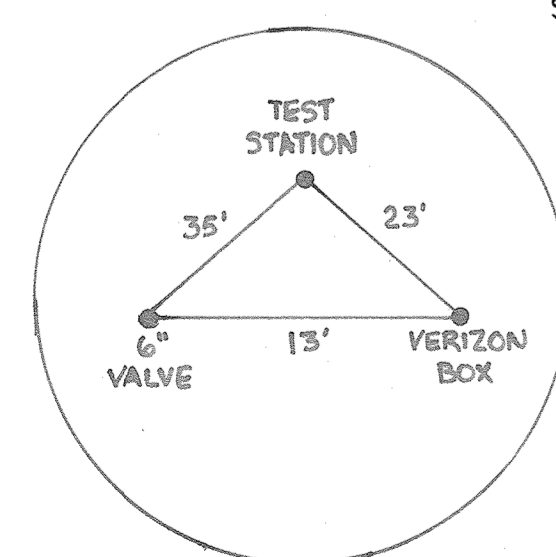
2" WATER MAIN - HOUSE #5056
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



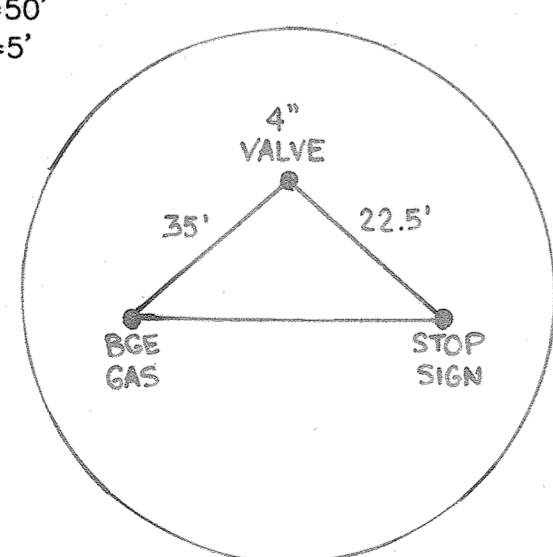
8" WATER MAIN - BONNIE BRANCH E.S.
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



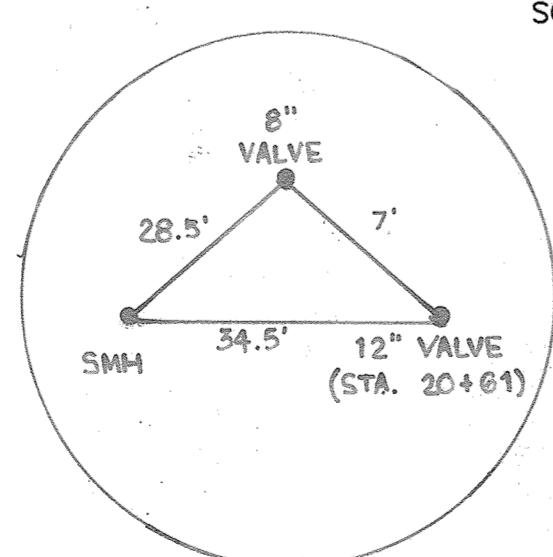
4" WHC - CAMP ILCHESTER
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



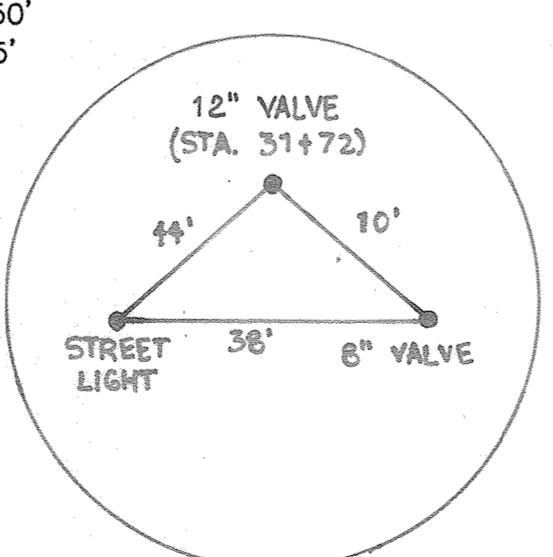
TEST STATION
FONT RD.
STA. 12+25, 8.7 RT.



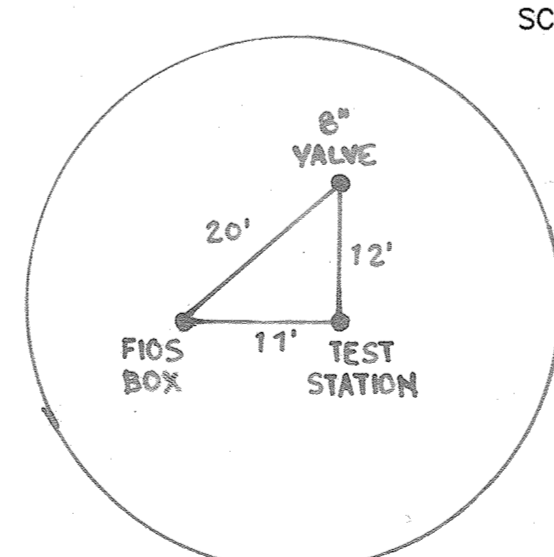
4" VALVE
SPRING OAKS LN.
STA. 0+02.4



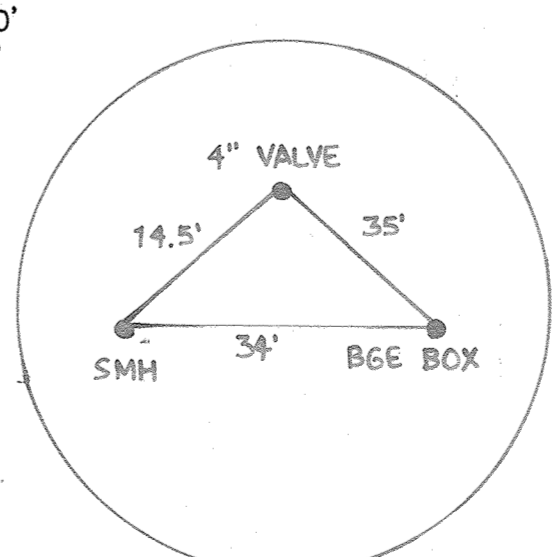
8" VALVE
ILCHESTER MANOR LN.
STA. 0+02.4



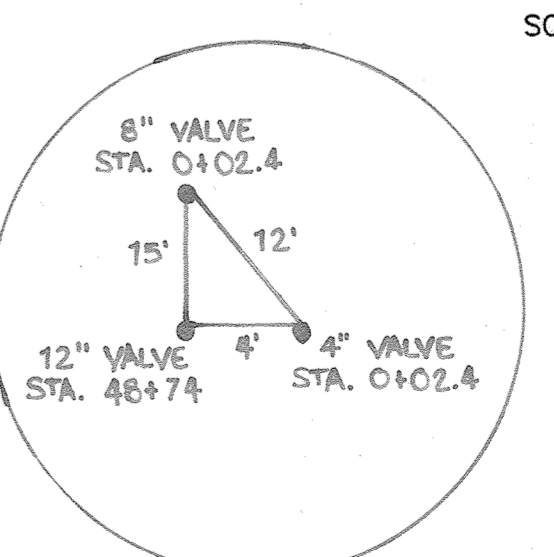
8" VALVE
ILCHESTER WOODS WAY
STA. 0+03.2



TEST STATION
CRESTWOOD LN.
STA. 38+95, 10.7 RT.



4" VALVE
HOUSE #5056
STA. 0+02.4

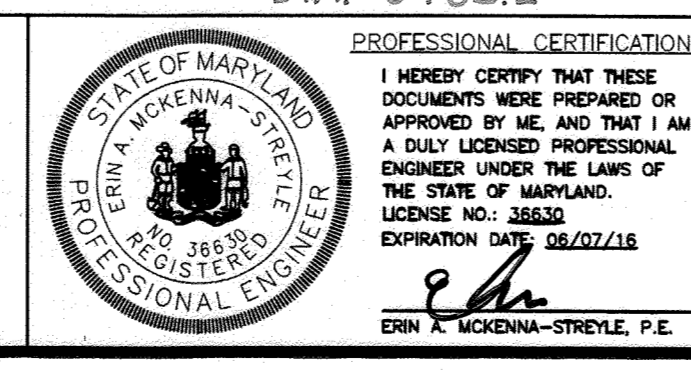


8" VALVE BONNIE BRANCH E.S.
& 4" VALVE CAMP ILCHESTER

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
MICHAEL BAKER INTERNATIONAL
By: *Els*

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 9/30/14
DATE: 9/25/14
DATE: 9/25/14

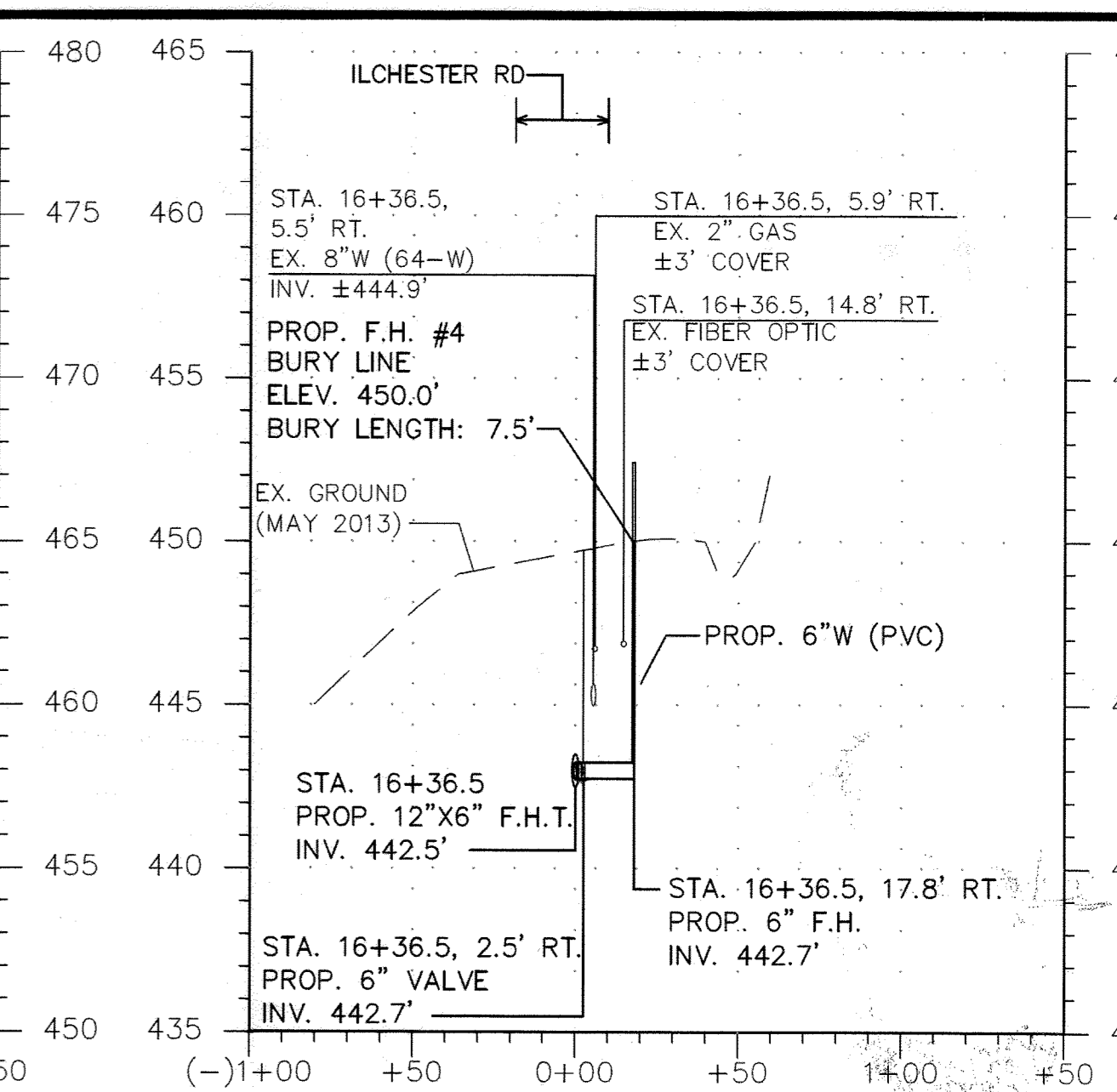
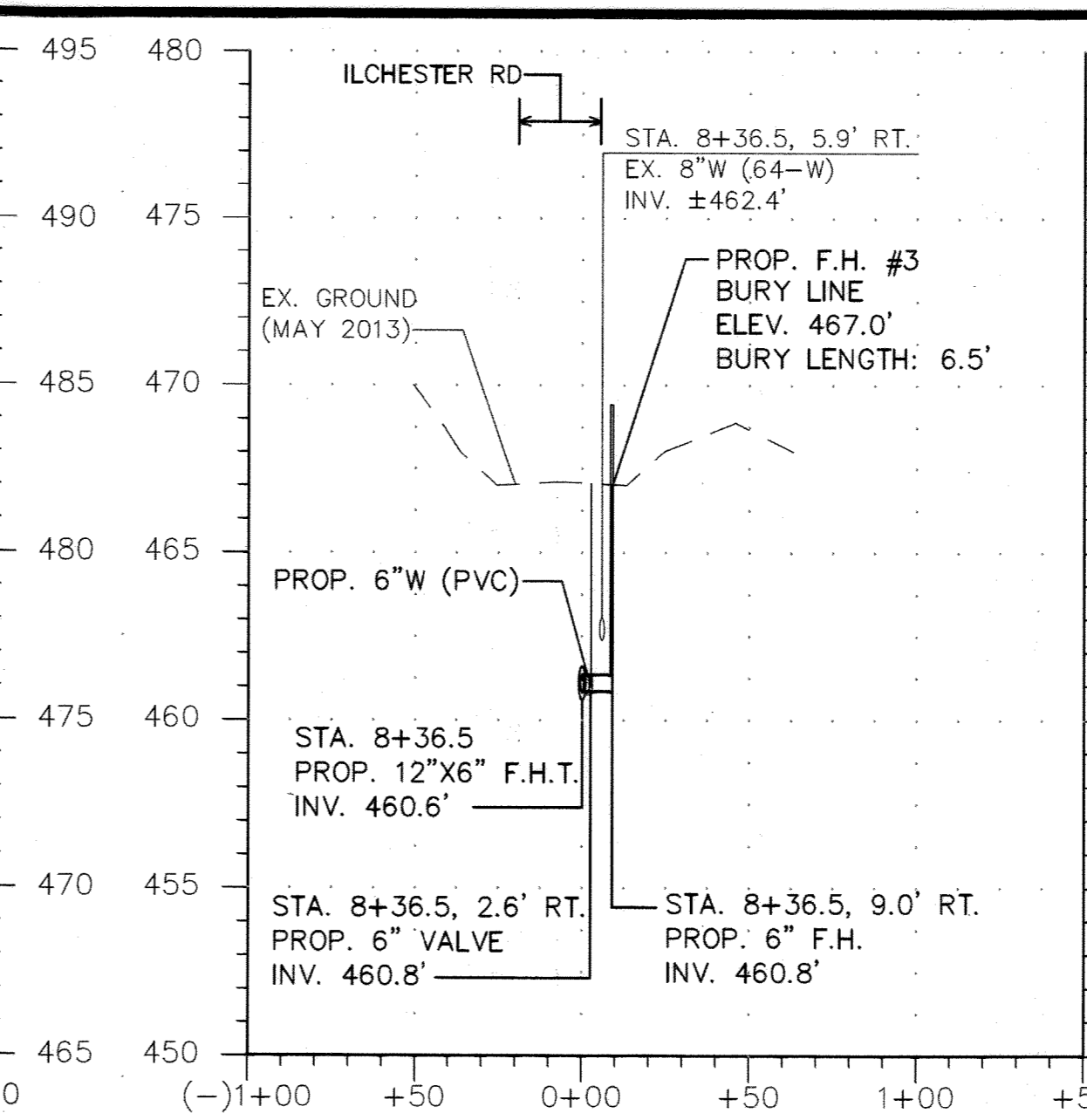
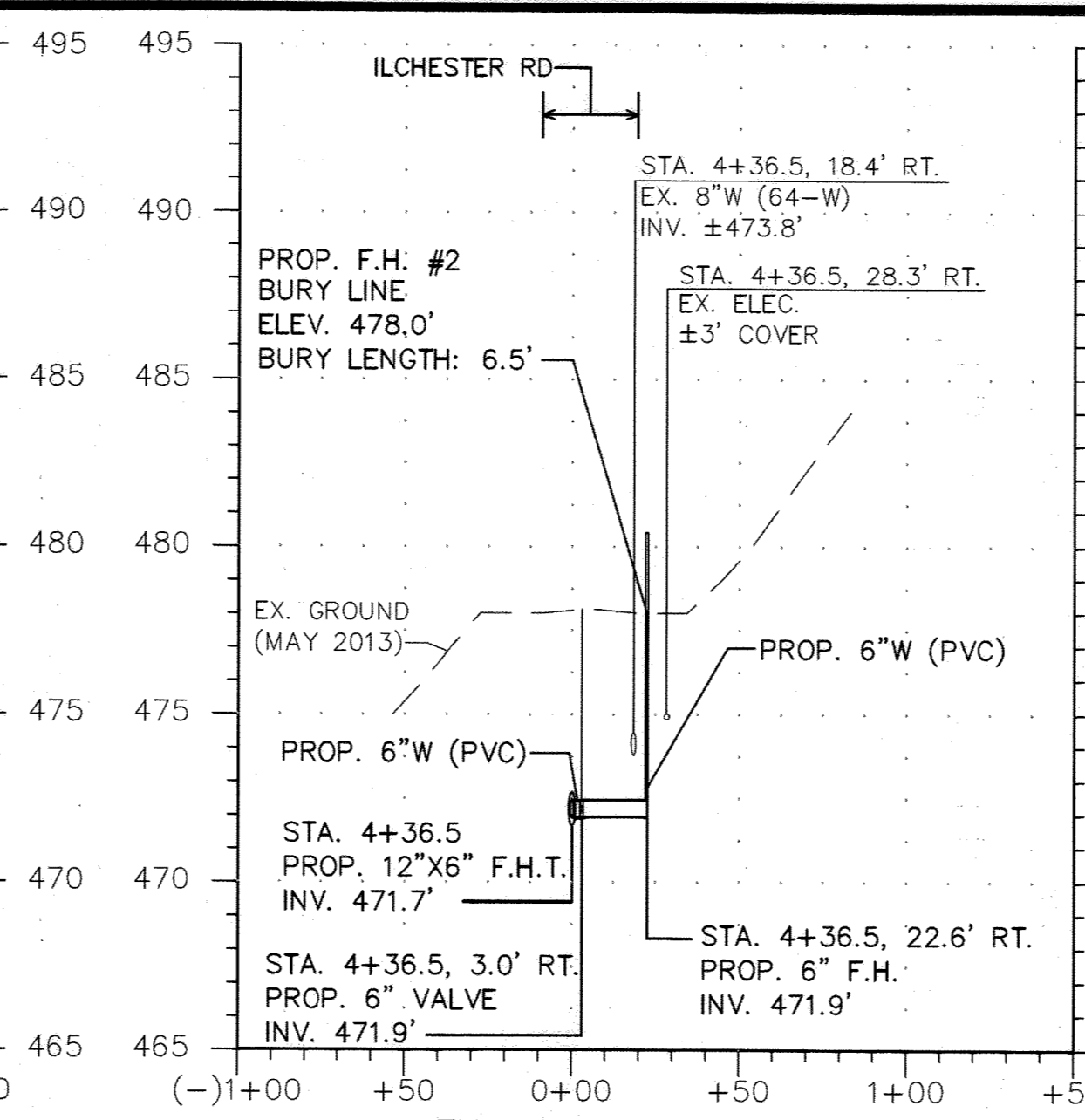
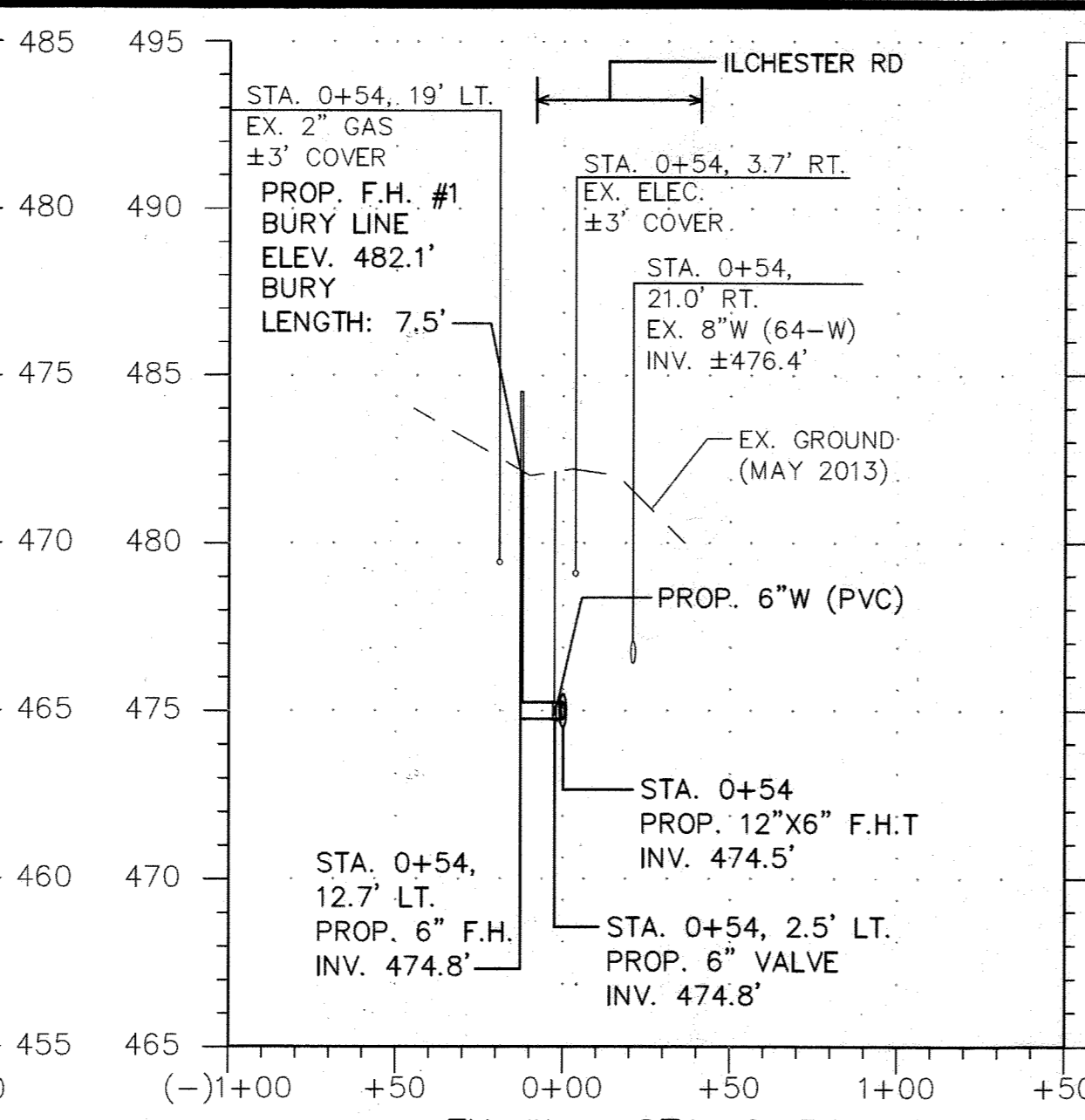
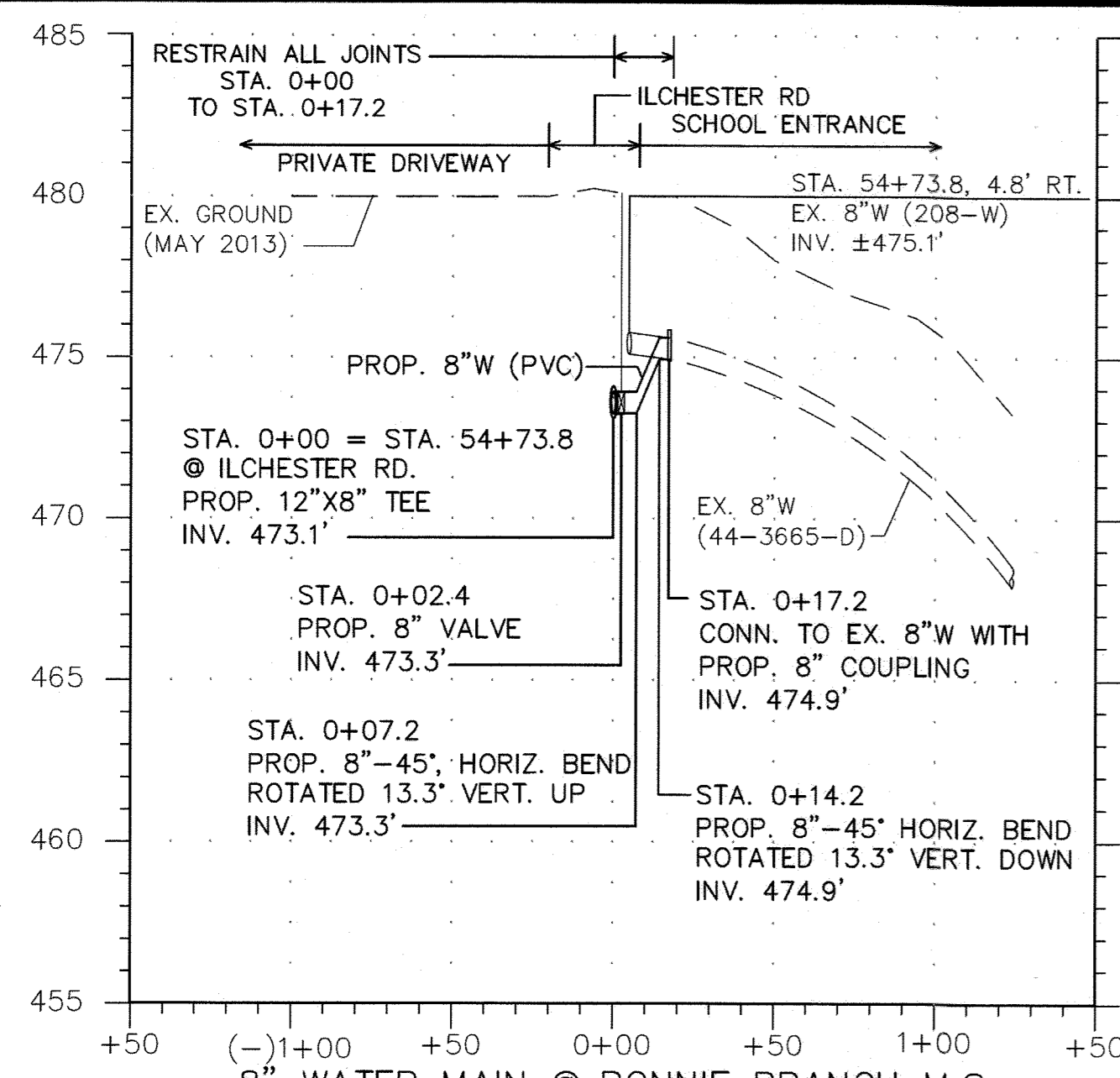
MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 300
Linthicum, MD 21090-1014
Phone: (410) 689-3400



DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

PROP. 12" WATER MAIN
BRANCH CONNECTION
PROFILES

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND



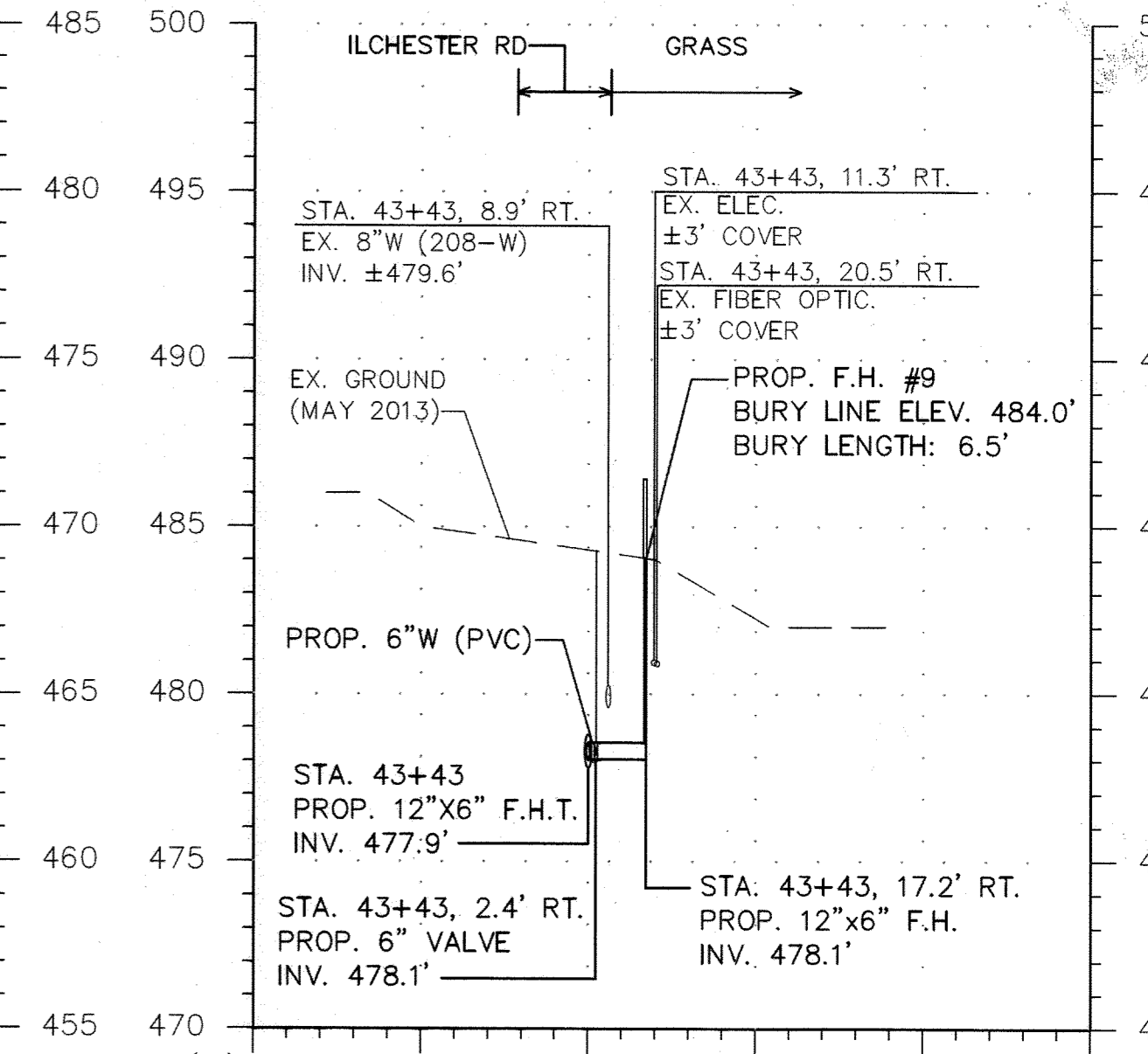
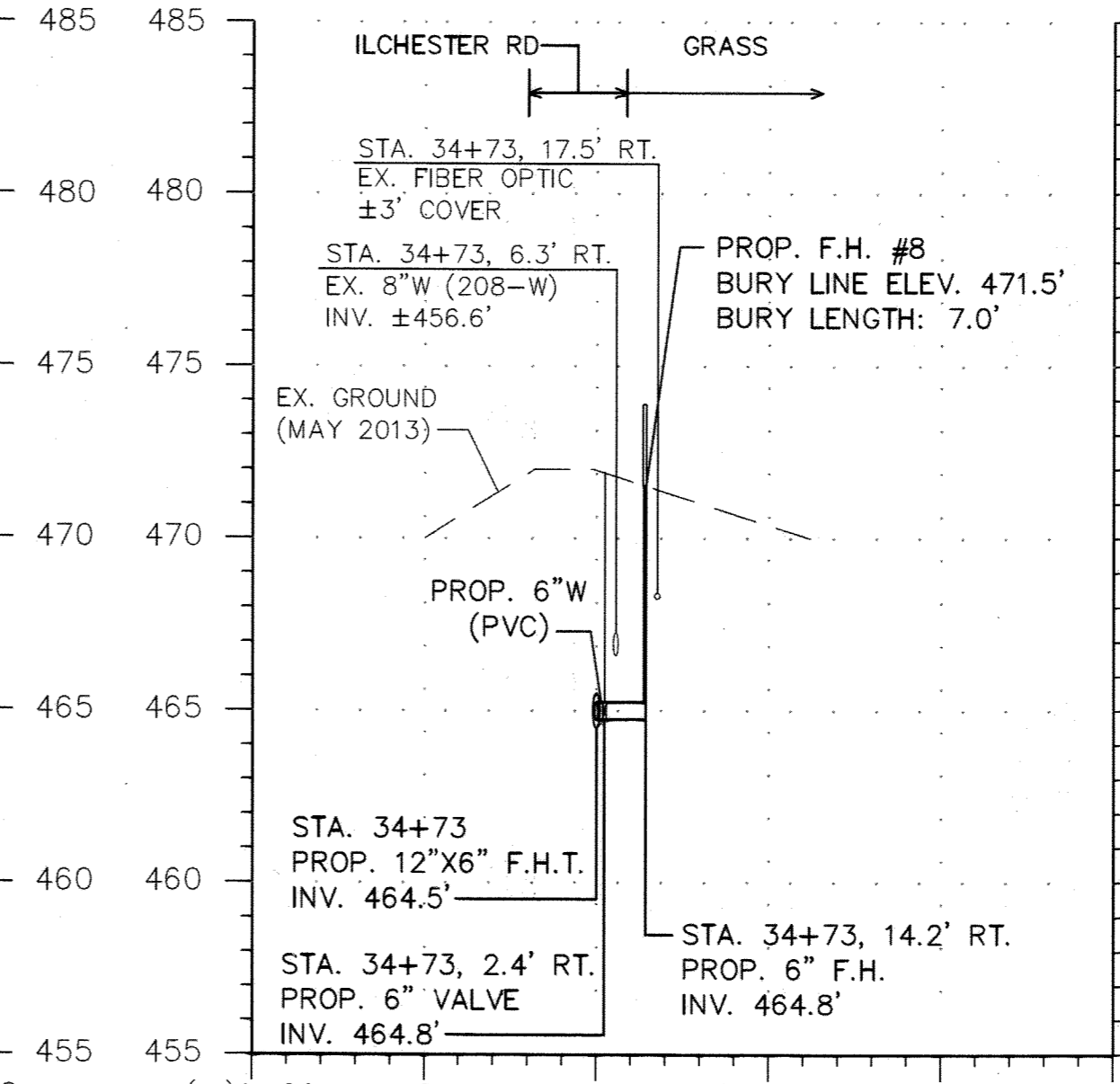
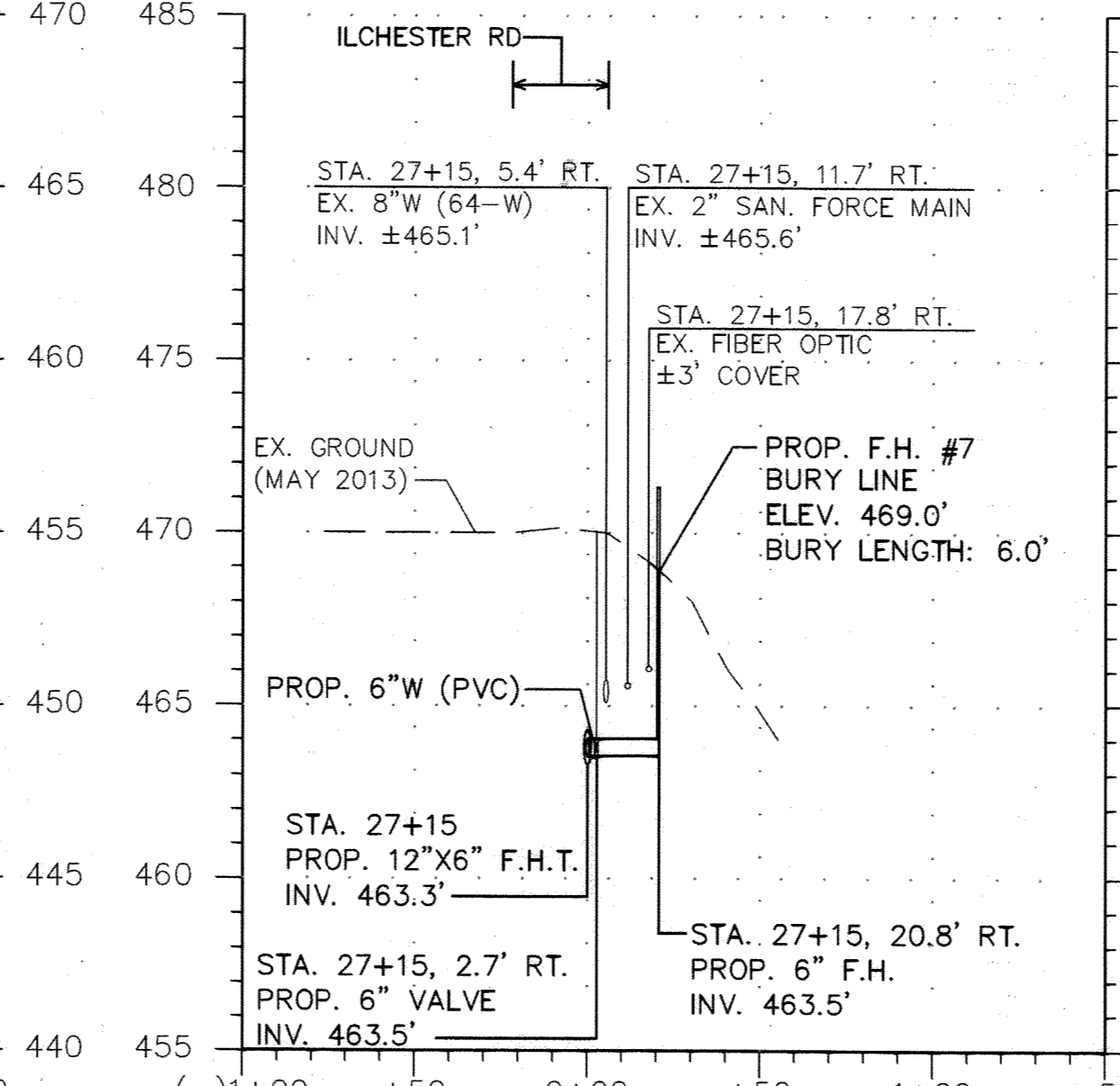
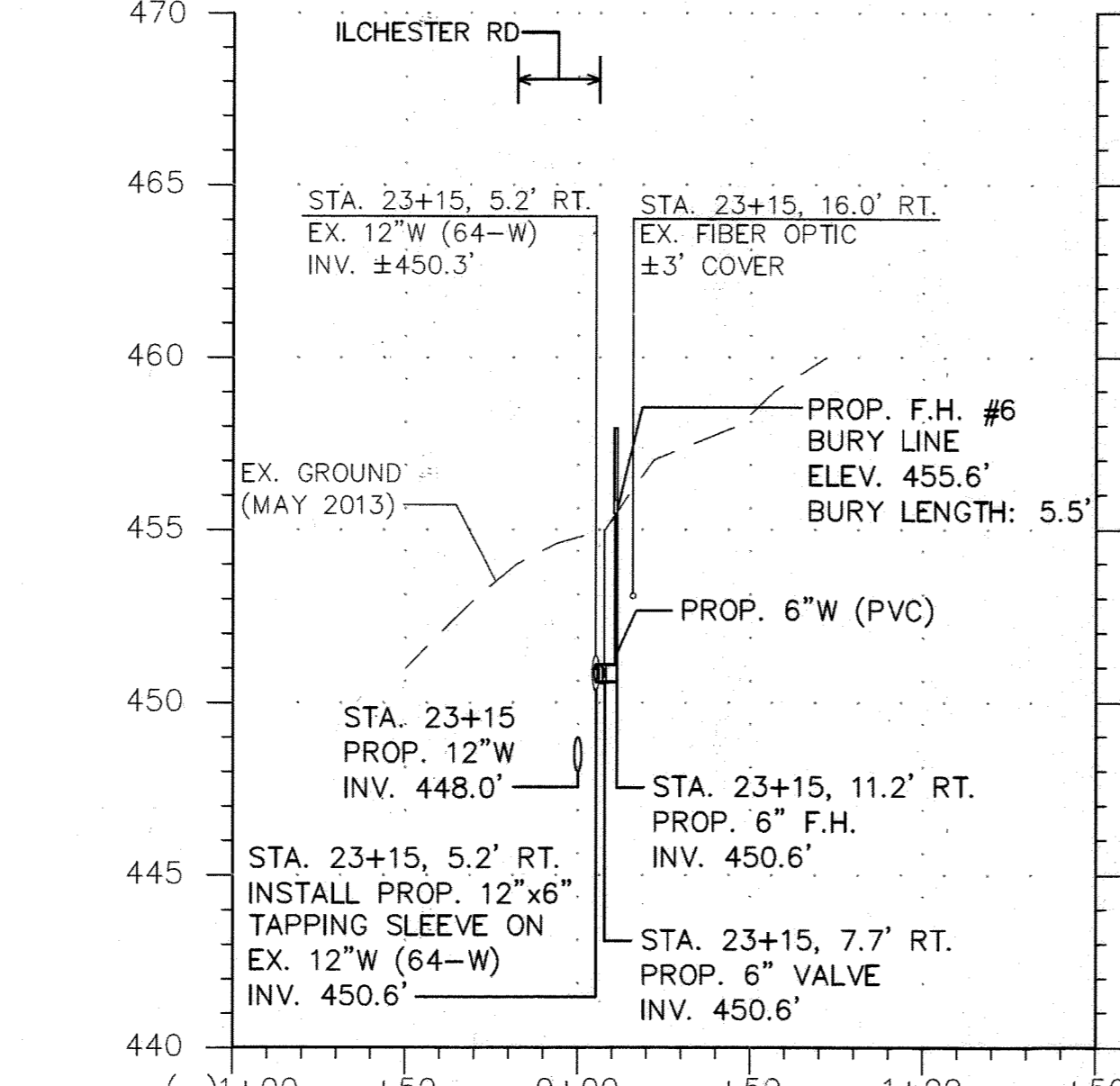
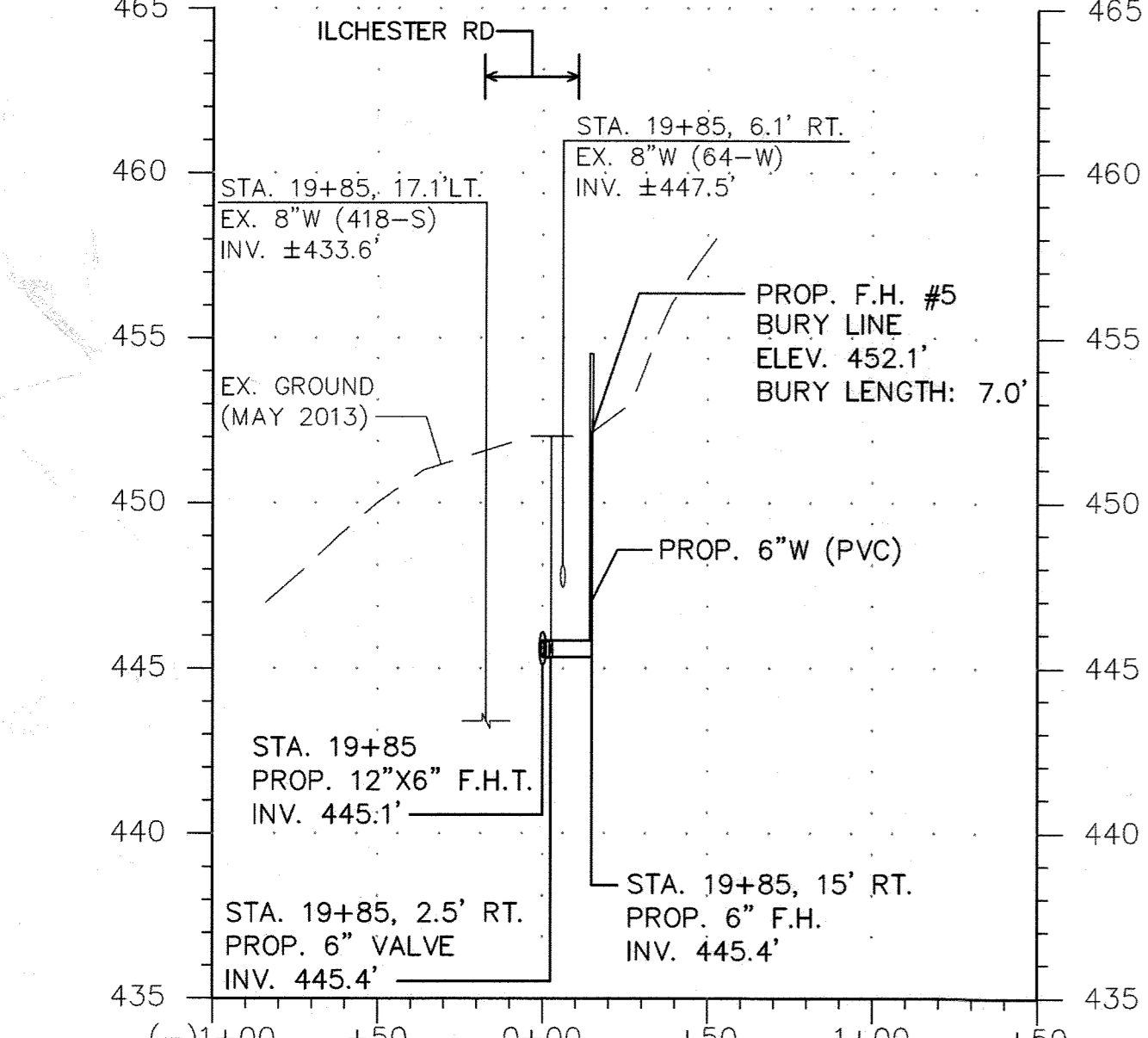
8" WATER MAIN @ BONNIE BRANCH M.S.
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #1 - STA. 0+54
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #2 - STA. 4+36.5
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #3 - STA. 8+36.5
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #4 - STA. 16+36.5
SCALE: HORIZ. 1"=50', VERT. 1"=5'



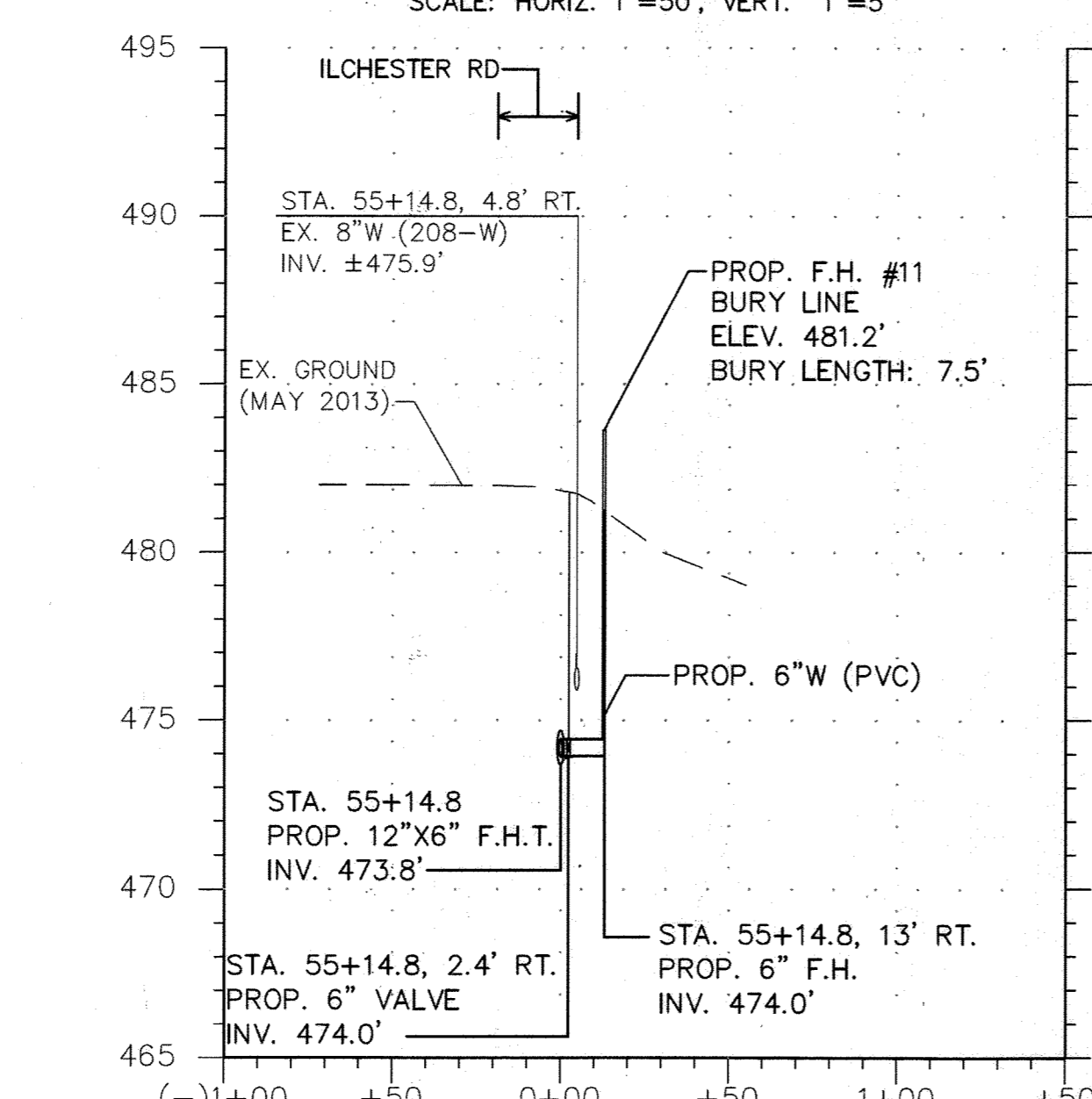
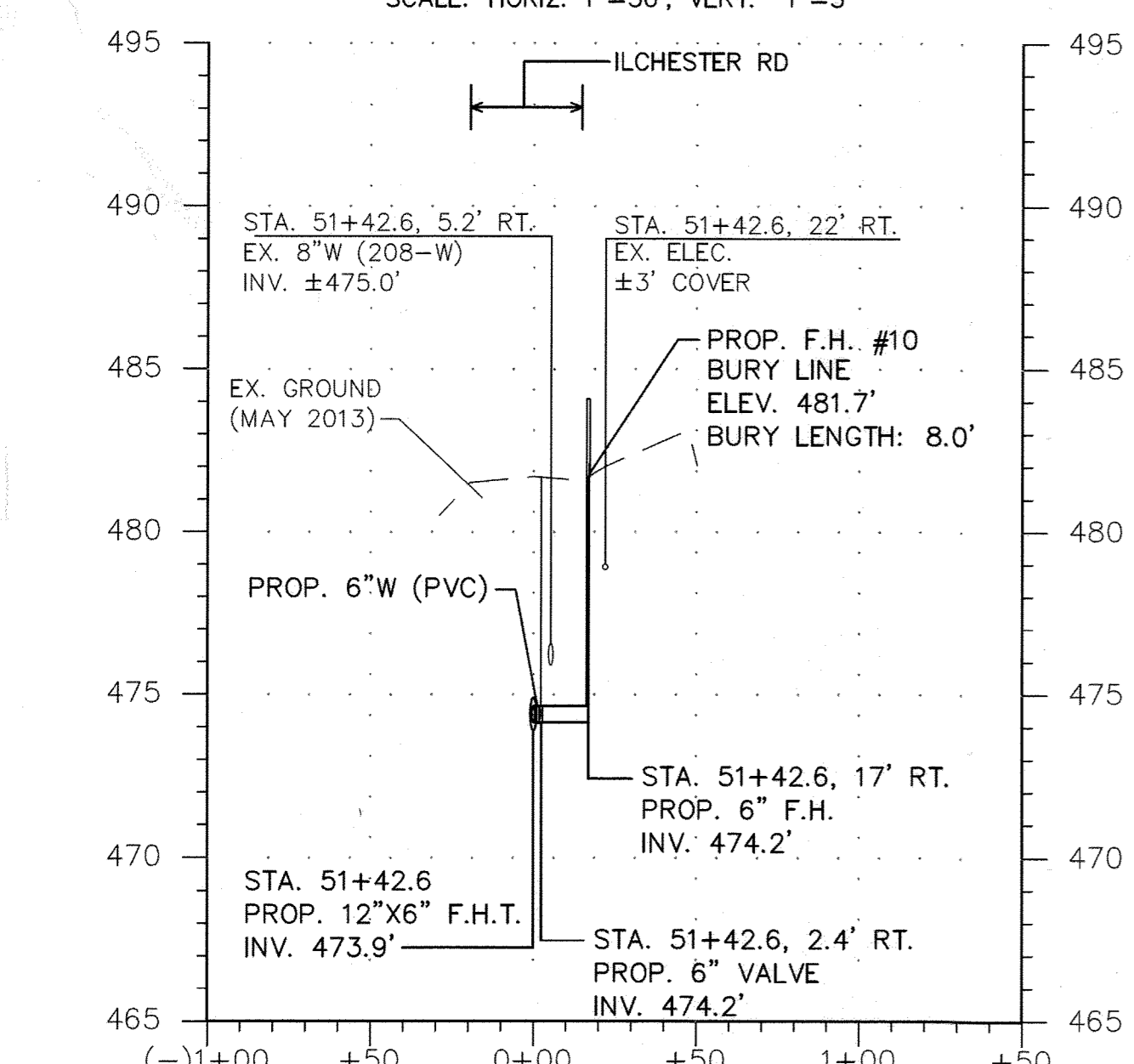
FH #5 - STA. 19+85
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #6 - STA. 23+15.11
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #7 - STA. 27+15
SCALE: HORIZ. 1"=50', VERT. 1"=5'

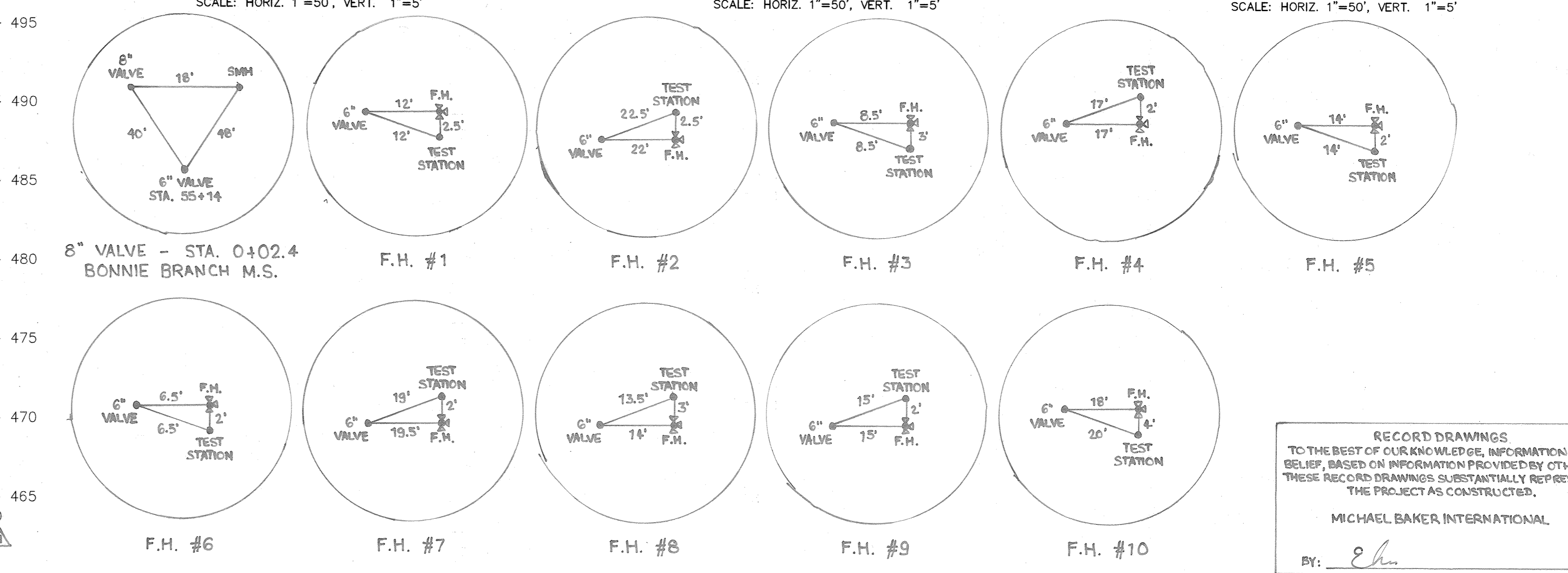
FH #8 - STA. 34+73
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #9 - STA. 43+43
SCALE: HORIZ. 1"=50', VERT. 1"=5'



FH #10 - STA. 51+42.6
SCALE: HORIZ. 1"=50', VERT. 1"=5'

FH #11 - STA. 55+14.8
SCALE: HORIZ. 1"=50', VERT. 1"=5'



RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
MICHAEL BAKER INTERNATIONAL
By: *E. Baker*

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *John A. ...* 9/26/14
Chief, Bureau of Engineering: *Thomas ...* 9/25/14
Chief, Bureau of Utilities: *...* 9/26/14
Chief, Utility Design Division: *...* 9/25/14

Baker
MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 200
Linthicum, MD 21090-1014
Phone: (410) 689-3400

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. 26630
EXPIRATION DATE: 08/07/18
Erin A. McKenna-Streyke, P.E.

DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

PROP. 12" WATER MAIN
BRANCH CONNECTION &
FIRE HYDRANT PROFILES

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 8 OF 15
AS-BUILT

WATER HOUSE CONNECTIONS							REMARKS/NOTES:
ADDRESS	EX. WHC SIZE	EX. WHC MATERIAL	EX. METER LOCATION	EX. METER SIZE	APPROX. LENGTH OF EX. WHC (LF)	APPROX. LENGTH OF PROP. WHC (LF)	
5283 ILCHESTER ROAD	3/4"	UNKNOWN	INSIDE	5/8"	15	37	METER NOT SURVEYED; APPROX. LOCATION SHOWN ON PLANS FROM FIELD MEASUREMENTS.
5279 ILCHESTER ROAD	3/4"	UNKNOWN	INSIDE	5/8"	17.5	40.5	
5275 ILCHESTER ROAD	3/4"	COPPER	UNKNOWN	5/8"	7	28	
5250 ILCHESTER ROAD	3/4"	UNKNOWN	INSIDE	5/8"	42.3	18.5	EX. 1" SHARED WHC SPLITS PRIOR TO CURB STOP (SHARED W/ 5246 ILCHESTER RD.)
5246 ILCHESTER ROAD	3/4"	UNKNOWN	INSIDE	5/8"	42.3	18.5	EX. 1" SHARED WHC SPLITS PRIOR TO CURB STOP (SHARED W/ 5250 ILCHESTER RD.)
5242 ILCHESTER ROAD	3/4"	UNKNOWN	INSIDE	5/8"	38.5	16	EX. 1" SHARED WHC SPLITS PRIOR TO CURB STOP (SHARED W/ 5242 ILCHESTER RD.)
5238 ILCHESTER ROAD	3/4"	UNKNOWN	INSIDE	5/8"	38.5	16	EX. 1" SHARED WHC SPLITS PRIOR TO CURB STOP (SHARED W/ 5238 ILCHESTER RD.)
5227 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	9	14	
5223 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	6	9.5	
5219 ILCHESTER ROAD							METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. METER MAY BE LOCATED OFF FONT RD AS SHOWN ON CONTRACT (418-S). DO NOT REPLACE.
5203 FONT ROAD							EX. WHC OFF FONT RD. DO NOT REPLACE.
5215 ILCHESTER ROAD	1"	COPPER	INSIDE	3/4"	11	14.5	METER NOT SURVEYED; APPROX. LOCATION SHOWN ON PLANS FROM FIELD MEASUREMENTS.
5209 ILCHESTER ROAD	3/4"	PLASTIC	OUTSIDE	5/8"	7.5	10.5	
5208 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	31.5	26.5	
5204 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	30	24	
5200 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	29	23.5	
5185 ILCHESTER ROAD							NO PLUMBING CARD. SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5171 ILCHESTER ROAD							NO PLUMBING CARD. SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5170 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	37	31.5	
5163 ILCHESTER ROAD							NO PLUMBING CARD. SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5167 ILCHESTER ROAD							NO PLUMBING CARD. SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5166 ILCHESTER ROAD	3/4"	COPPER	UNKNOWN	5/8"	44	37	METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. APPROX. LOCATION SHOWN ON PLANS FROM PLUMBING CARD.
5162 ILCHESTER ROAD							NO PLUMBING CARD. SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5159 ILCHESTER ROAD							SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5158 ILCHESTER ROAD							METER NOT SURVEYED; APPROX. LOCATION SHOWN ON PLANS FROM FIELD MEASUREMENTS. SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5157 ILCHESTER ROAD							SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5154 ILCHESTER ROAD							SERVICE LOCATED IN 550 PRESSURE ZONE. DO NOT REPLACE.
5153 ILCHESTER ROAD							EX. WHC OFF KERGER RD. DO NOT REPLACE.
5201 KERGER ROAD							EX. WHC OFF KERGER RD. DO NOT REPLACE.
5130 ILCHESTER ROAD	2"	COPPER	OUTSIDE	2"	37.5	30.5	METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. APPROX. LOCATION SHOWN ON PLANS FROM PLUMBING CARD.
5127 ILCHESTER ROAD	1"	COPPER	INSIDE	3/4"	13.5	11	METER NOT SURVEYED; APPROX. LOCATION SHOWN ON PLANS FROM FIELD MEASUREMENTS.
5121 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	3.5	8	
5101 ILCHESTER WOODS WAY							EX. WHC OFF ILCHESTER WOODS WAY. DO NOT REPLACE.
5100 ILCHESTER WOODS WAY							EX. WHC OFF ILCHESTER WOODS WAY. DO NOT REPLACE.
5115 ILCHESTER ROAD	3/4"	COPPER	INSIDE	5/8"	30	34.5	
5080 ILCHESTER ROAD	1"	COPPER	INSIDE	3/4"	28.5	22	
5100 TALBOTS LANDING					22	26.5	NO PLUMBING CARD. ASSUMED 3/4" CONN. & 5/8" METER
5105 TALBOTS LANDING					14	20	NO PLUMBING CARD. ASSUMED 3/4" CONN. & 5/8" METER
5076 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	30.5	23.5	
5072 ILCHESTER ROAD	1"	COPPER	OUTSIDE	3/4"	35.5	29.5	
5060 ILCHESTER ROAD							EX. WHC OFF 2"W (14-3127) BRANCH CONNECTION. DO NOT REPLACE.
5042 ILCHESTER ROAD	4"	DIP	N/A	N/A			EX. 4"W BRANCH CONNECTION. SEE PROFILE SHEET FOR CONNECTION @ CAMP ILCHESTER
5042 ILCHESTER ROAD	1"	UNKNOWN	INSIDE	3/4"	27	22.5	UNKNOWN SERVICE CONNECTION
5034 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	26	20.5	
5030 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	25.5	20.5	
5026 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	30	24	METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. APPROX. LOCATION SHOWN ON PLANS FROM PLUMBING CARD.
5020 ILCHESTER ROAD	1"	COPPER	OUTSIDE	3/4"	42.5	37	METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. APPROX. LOCATION SHOWN ON PLANS FROM PLUMBING CARD.
5016 ILCHESTER ROAD	3/4"	COPPER	OUTSIDE	5/8"	30	24	METER IS LOCATED UNDER CONCRETE PAVEMENT IN DRIVEWAY.
5008 ILCHESTER ROAD	1"	COPPER	OUTSIDE	3/4"	47	41	METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. APPROX. LOCATION SHOWN ON PLANS FROM PLUMBING CARD.
5006 ILCHESTER ROAD	1"	UNKNOWN	UNKNOWN	3/4"		24	METER NOT SURVEYED; NEEDS TO BE LOCATED IN FIELD. APPROX. LOCATION SHOWN ON PLANS FROM PLUMBING CARD.
5005 ILCHESTER ROAD					6	12	NO PLUMBING CARD. ASSUMED 3/4" CONN. & 5/8" METER
5001 ILCHESTER ROAD					9.5	15	NO PLUMBING CARD. ASSUMED 3/4" CONN. & 5/8" METER
4991 ILCHESTER ROAD	3/4"	COPPER	INSIDE	5/8"	28	33	METER NOT SURVEYED; APPROX. LOCATION SHOWN ON PLANS FROM FIELD MEASUREMENTS.
4985 ILCHESTER ROAD							NO WHC. PRIVATE DRIVEWAY TO THE TRINITY SCHOOL.
4979 ILCHESTER ROAD							EX. 8"W BRANCH CONNECTIONS. SEE PROFILE SHEETS FOR SCHOOL CONNECTIONS.
4905 ELLIS LN							EX. WHC OFF ILCHESTER WOODS WAY. DO NOT REPLACE.
4904 ELLIS LN							EX. WHC OFF ILCHESTER WOODS WAY. DO NOT REPLACE.
TOTAL LENGTH						844.5	

NOTES:
1. CONTRACTOR IS TO REPLACE WATER SERVICE CONNECTIONS IN KIND WITH THE SAME SIZE SERVICE CONNECTION AS EXISTING. THE METER VAULT AND SETTING SHALL BE REPLACED BY THE CONTRACTOR TO ACCEPT THE EXISTING SIZE METER.
2. THE PROPOSED WATER HOUSE CONNECTION (WHC) REPLACEMENT LENGTH FOR WATER METERS THAT WERE NOT SURVEYED OR COULD NOT BE LOCATED IN THE FIELD HAVE BEEN ESTIMATED FROM THE PROPERTY LINE TO THE PROPOSED WATER MAIN.

FITTING SCHEDULE - 6" W FONT RD. (STA. 0+00 = 11+81.3 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+10.4	6" VALVE	1,372,967.594	568,508.846
0+23.2	6"-45" HORIZ. BEND	1,372,973.925	568,497.944
0+26.3	6"-45" HORIZ. BEND	1,372,977.235	568,497.026
0+29.3	6" COUPLING	1,372,978.264	568,494.208

FITTING SCHEDULE - 8" W ILCHESTER MANOR LN. (STA. 0+00 = 20+50 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	8" VALVE	1,373,698.382	568,971.630
0+06	8"-45" HORIZ. BEND	1,373,700.278	568,968.560
0+13	8"-45" HORIZ. BEND	1,373,698.678	568,961.778
0+14.9	8" COUPLING	1,373,699.679	568,960.211

FITTING SCHEDULE - 8" W CRESTWOOD LN. (STA. 0+00 = 38+95 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	8" VALVE	1,375,277.668	569,906.758
0+24.5	8"-45" HORIZ. BEND	1,375,272.939	569,928.358
0+34.3	8"-45" HORIZ. BEND	1,375,264.322	569,933.084
0+37.3	8" COUPLING	1,375,263.482	569,935.964

FITTING SCHEDULE - 8" W BONNIE BRANCH E.S. (STA. 0+00 = 48+59.8 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	8" VALVE	1,376,172.281	570,087.102
0+08.5	8"-45" HORIZ. BEND	1,376,176.800	570,082.967
0+20.9	8"-45" HORIZ. BEND	1,376,177.179	570,070.619
0+23.9	8" COUPLING	1,376,179.376	570,068.576

FITTING SCHEDULE - 8" W BONNIE BRANCH M.S. (STA. 0+00 = STA. 54+73.8 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	8" VALVE	1,376,530.085	570,583.554
0+07.2	8"-45" HORIZ. BEND	1,376,534.286	570,581.232
0+14.2	8"-45" HORIZ. BEND	1,376,536.184	570,574.470
0+17.2	8" COUPLING	1,376,538.810	570,573.018

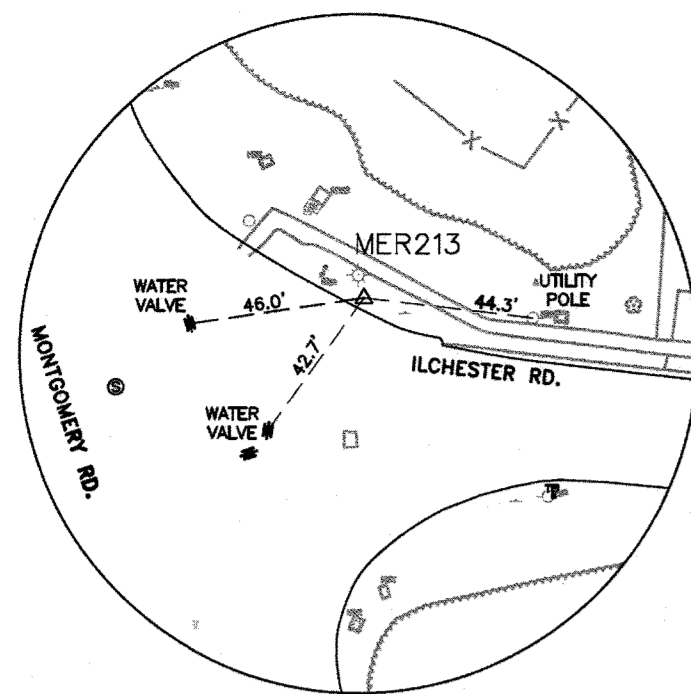
FITTING SCHEDULE - 4" W SPRING OAKS LN. (STA. 0+00 = 17+51.5 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	4" VALVE	1,373,440.010	568,810.557
0+07.5	4"-45" HORIZ. BEND	1,373,442.679	568,806.176
0+15.7	4"-45" HORIZ. BEND	1,373,440.739	568,798.220
0+21.8	4" COUPLING	1,373,443.545	568,792.826

FITTING SCHEDULE - 8" W ILCHESTER WOODS WAY (STA. 0+00 = 31+82.2 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+03.2	8" VALVE 2" RT.	1,374,655.997	569,564.177
0+09.3	8"-45" HORIZ. BEND	1,374,659.183	569,558.917
0+16.3	8"-45" HORIZ. BEND	1,374,657.579	569,552.079
0+23.7	8" COUPLING	1,374,661.460	569,545.818

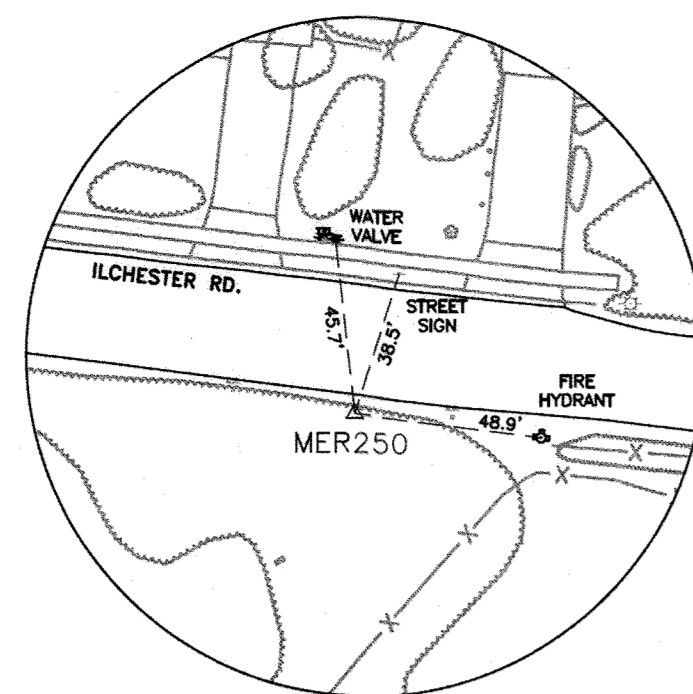
FITTING SCHEDULE - 2" W @ HOUSE #5060 (STA. 0+00 = 44+70.2 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	4" VALVE	1,375,847.633	569,885.798
0+04.8	4"x2" REDUCER	1,375,847.058	569,888.007
0+26	2"-45" HORIZ. BEND	1,375,841.685	569,908.649
0+31.2	2"-45" HORIZ. BEND	1,375,837.407	569,911.528
0+33.4	2" COUPLING	1,375,836.985	569,913.687

FITTING SCHEDULE - 4" W CAMP ILCHESTER (STA. 0+00 = STA. 48+69.8 ILCHESTER RD.)			
STATION	FITTING	NORTHING	EASTING
0+02.4	4" VALVE	1,376,175.875	570,097.386
0+16.5	4"-45" HORIZ. BEND	1,376,165.764	570,107.227
0+23.5	4"-45" HORIZ. BEND	1,376,158.747	570,107.275
0+26.5	4" COUPLING	1,376,156.610	570,109.381

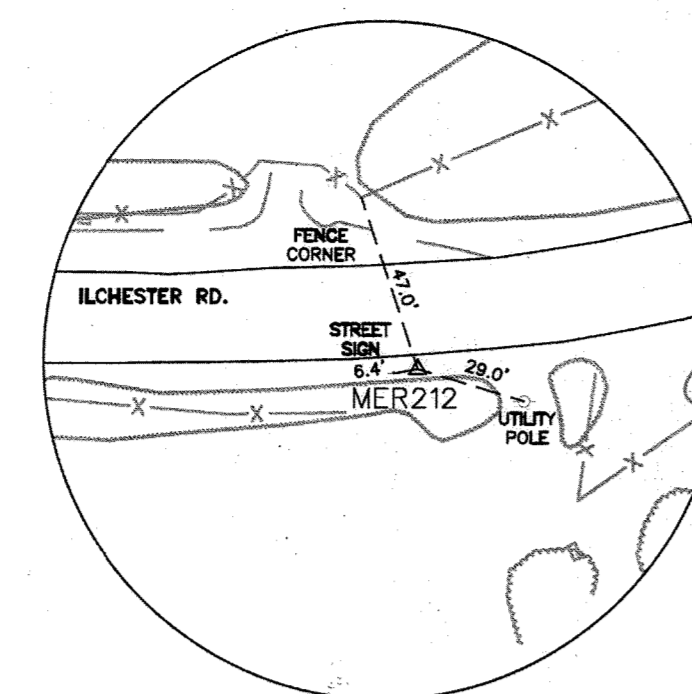
FITTING SCHEDULE - 12" W ILCHESTER ROAD			
STATION	FITTING	NORTHING	EASTING
0+00	12"x12" TS&V	1,371,823.647	568,388.121
0+12.9	12"-11.25" HORIZ. BEND	1,371,836.083	568,391.777
0+34.7	12" VERT. HD COUPLING 1.7'	1,371,857.694	568,389.414
0+54	12"x6" F.H.T.	1,371,876.879	568,387.324
	6" VALVE, 2.5' LT.	1,371,877.149	568,389.809
	6" FH, 12.7' RT.	1,371,878.251	568,399.949
1+31.8	12" VERT. HD COUPLING 1.7'	1,371,954.224	568,378.904
2+09.5	12" VERT. HD COUPLING 1.3'	1,372,031.467	568,370.494
3+44.8	12" HORIZ. HD COUPLING 2.7'	1,372,165.965	568,355.921
4+26.5	12" VERT. HD COUPLING 0.4'	1,372,246.728	568,343.485
	12"x6" F.H.T.	1,372,256.612	568,341.964
	6" VALVE, 3.0' RT.	1,372,256.156	568,338.999
4+36.5	6" FH, 22.6' RT.	1,372,253.362	568,319.557
	12" HORIZ. HD COUPLING 2.9'	1,372,268.037	568,340.217
5+84	12" HORIZ. 5' SWEEP	1,372,403.257	568,326.458
7+71.2	12"-11.25" HORIZ. BEND	1,372,590.536	568,326.465
7+81.2	12" HORIZ. 5' SWEEP	1,372,600.327	568,328.407
8+21.2	12" HORIZ. 5' SWEEP	1,372,638.714	568,339.607
8+36.5	12"x6" F.H.T.	1,372,653.239	568,344.312
	6" VALVE, 2.6' RT.	1,372,657.544	568,333.111
	6" FH, 9.0' RT.	1,372,656.468	568,335.911
8+61.2	12" HORIZ. 5' SWEEP	1,372,675.970	568,354.102
9+31.3	12" HORIZ. HD COUPLING 2.5'	1,372,738.840	568,385.112
9+91	12" HORIZ. HD COUPLING 2.5'	1,372,791.199	568,413.845
11+28.6	12" VERT. HD COUPLING 0.7'	1,372,908.710	568,485.153
11+86	12" VALVE	1,372,957.882	568,514.991
11+91.3	12"x6" TEE @ FONT RD.	1,372,962.394	568,517.728
12+20	12" VERT. HD COUPLING 2.3'	1,372,986.749	568,532.955
15+00	12" VERT. HD COUPLING 1.3'	1,373,224.057	568,681.316
15+52.9	12" HORIZ. HD COUPLING 0.7'	1,373,269.400	568,709.425
15+86	12" VERT. HD COUPLING 1.8'	1,373,297.210	568,726.537
16+36.5	12"x6" F.H.T.	1,373,340.352	568,752.780
	6" VALVE, 2.5' RT.	1,373,341.642	568,750.674
	6" FH, 17.8' RT.	1,373,349.638	568,737.617
16+43.5	12" VERT. HD COUPLING 1.8'	1,373,346.446	568,756.485
16+94.9	12" VERT. HD COUPLING 1.8'	1,373,390.254	568,783.118
17+51.5	12"x4" TEE @ SPRING OAKS LN.	1,373,438.760	568,812.607
19+85	12"x6" F.H.T.	1,373,636.868	568,935.805
	6" VALVE, 2.5' RT.	1,373,638.223	568,933.740
	6" FH, 15' RT.	1,373,645.226	568,923.078
20+27	12"-45" VERT. BEND	1,373,672.276	568,958.394
20+29.6	12"-45" VERT. BEND	1,373,674.462	568,959.799
20+56	12"x8" TEE @ ILCHESTER MANOR LN.	1,373,697.117	568,973.678
20+61.1	12" VALVE	1,373,701.344	568,976.271
21+14.4	12"-11.25" VERT. BEND	1,373,756.519	569,004.200



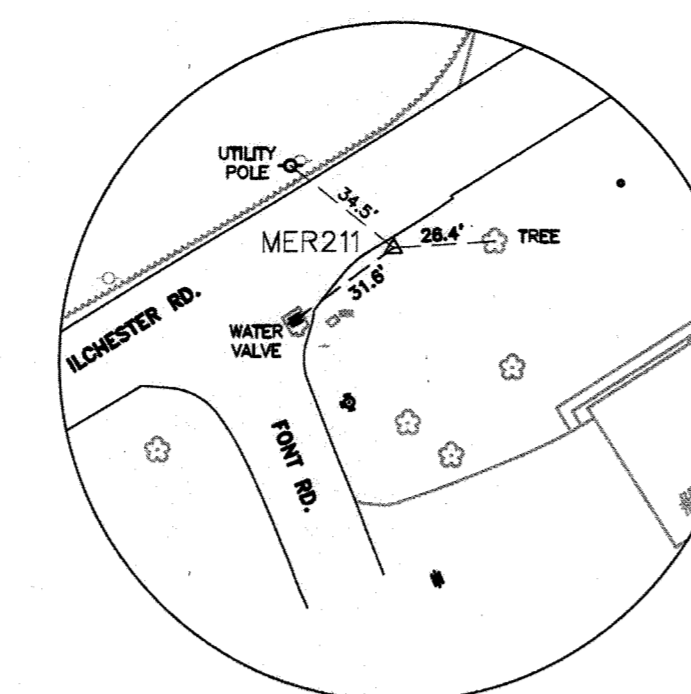
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E 1371860.445
ELEV. 481.88'



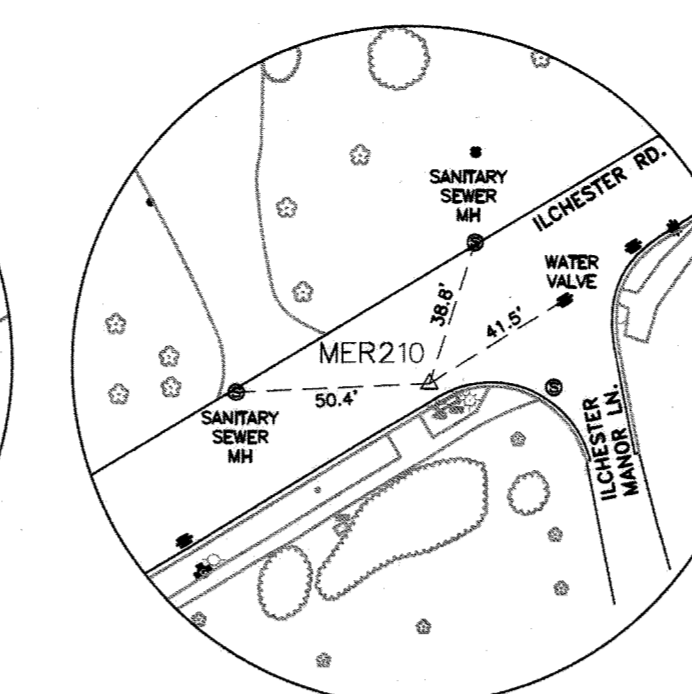
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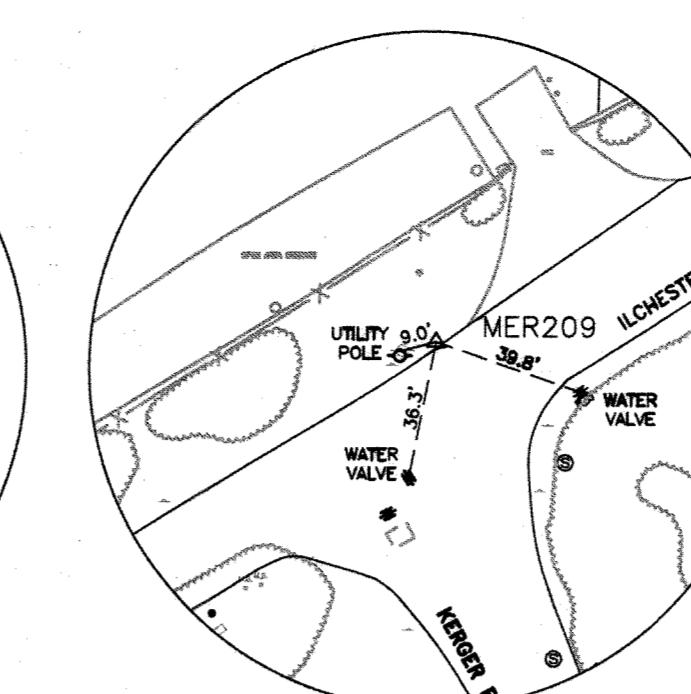
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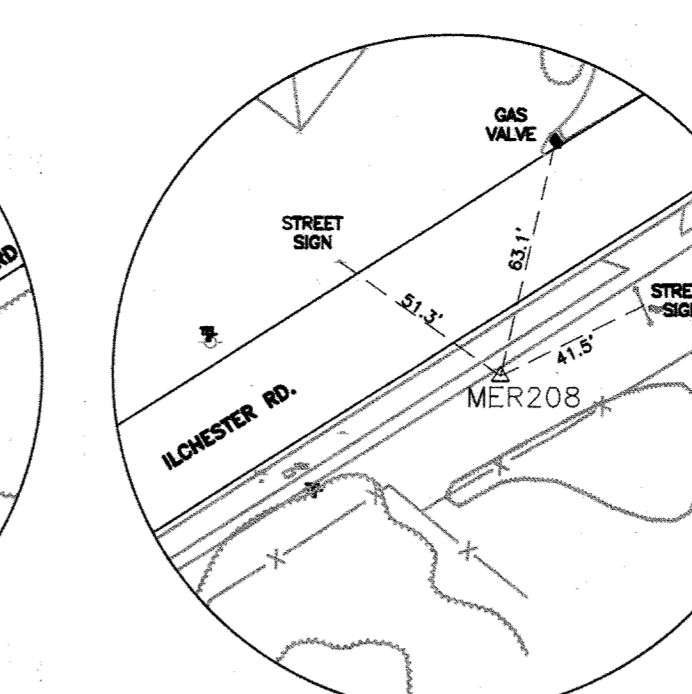
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ELEV. 454.150'



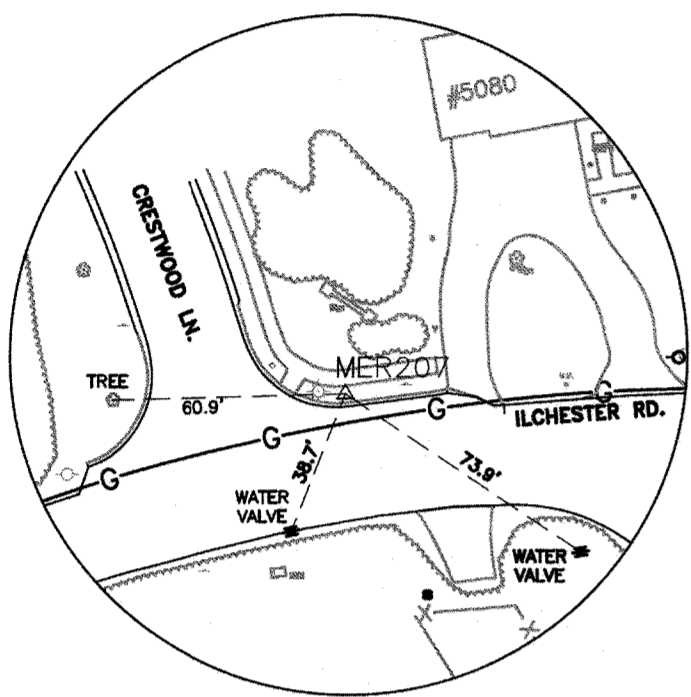
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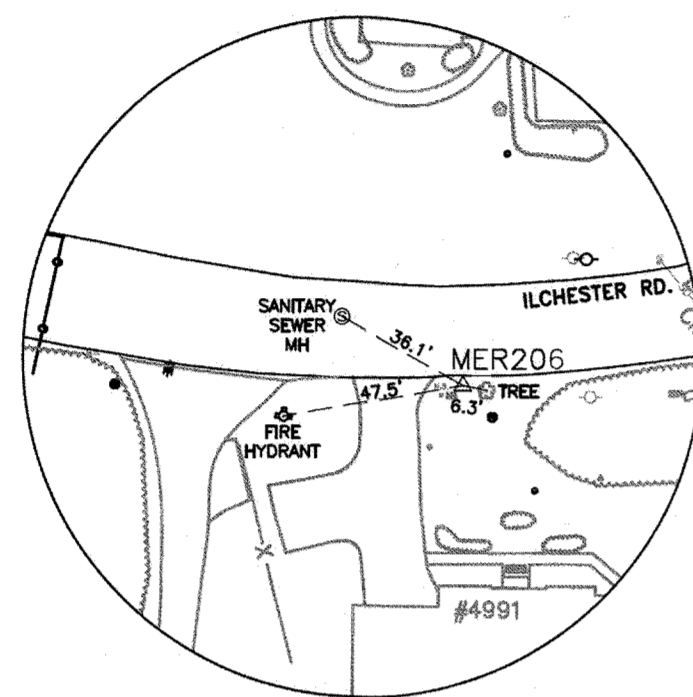
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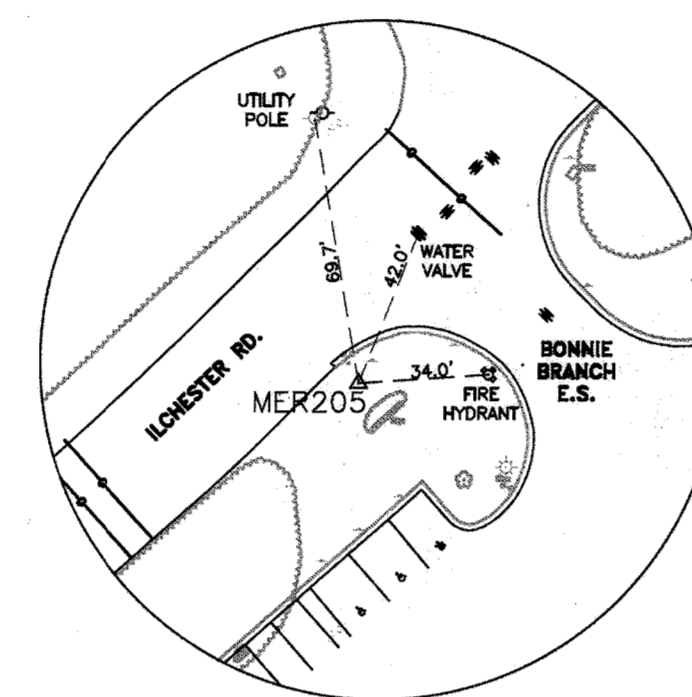
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ELEV. 468.84'



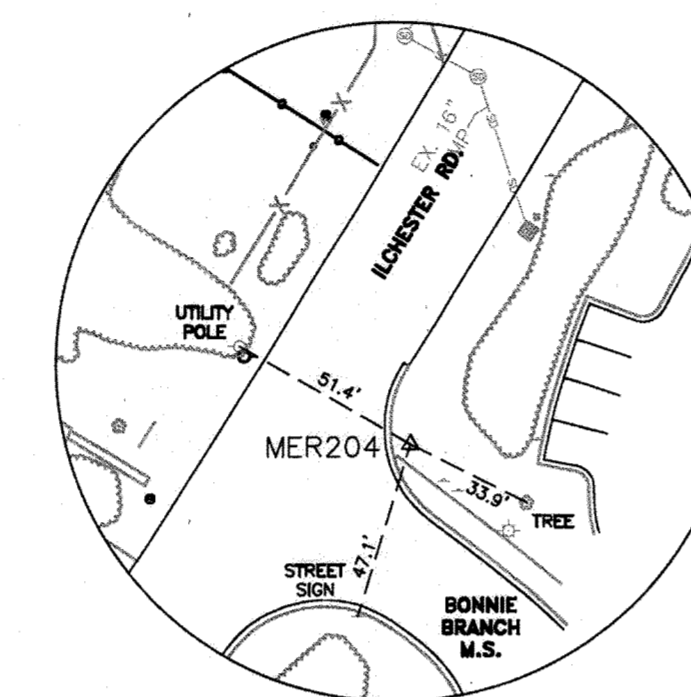
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ELEV. 479.37'



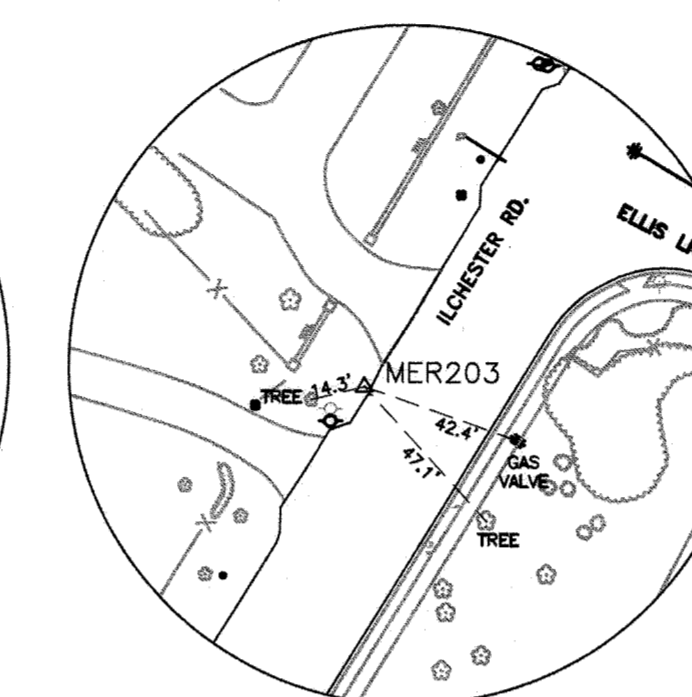
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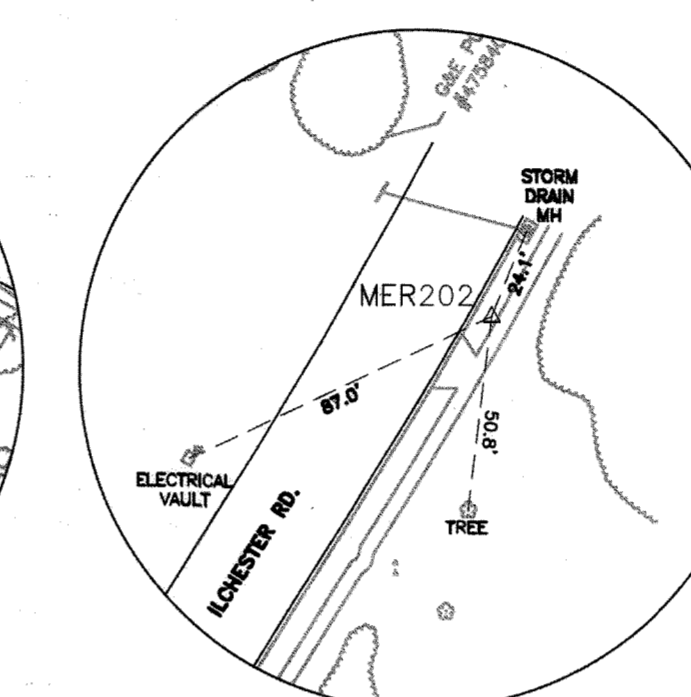
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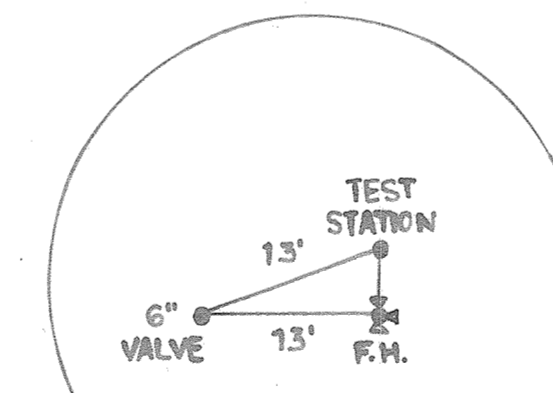
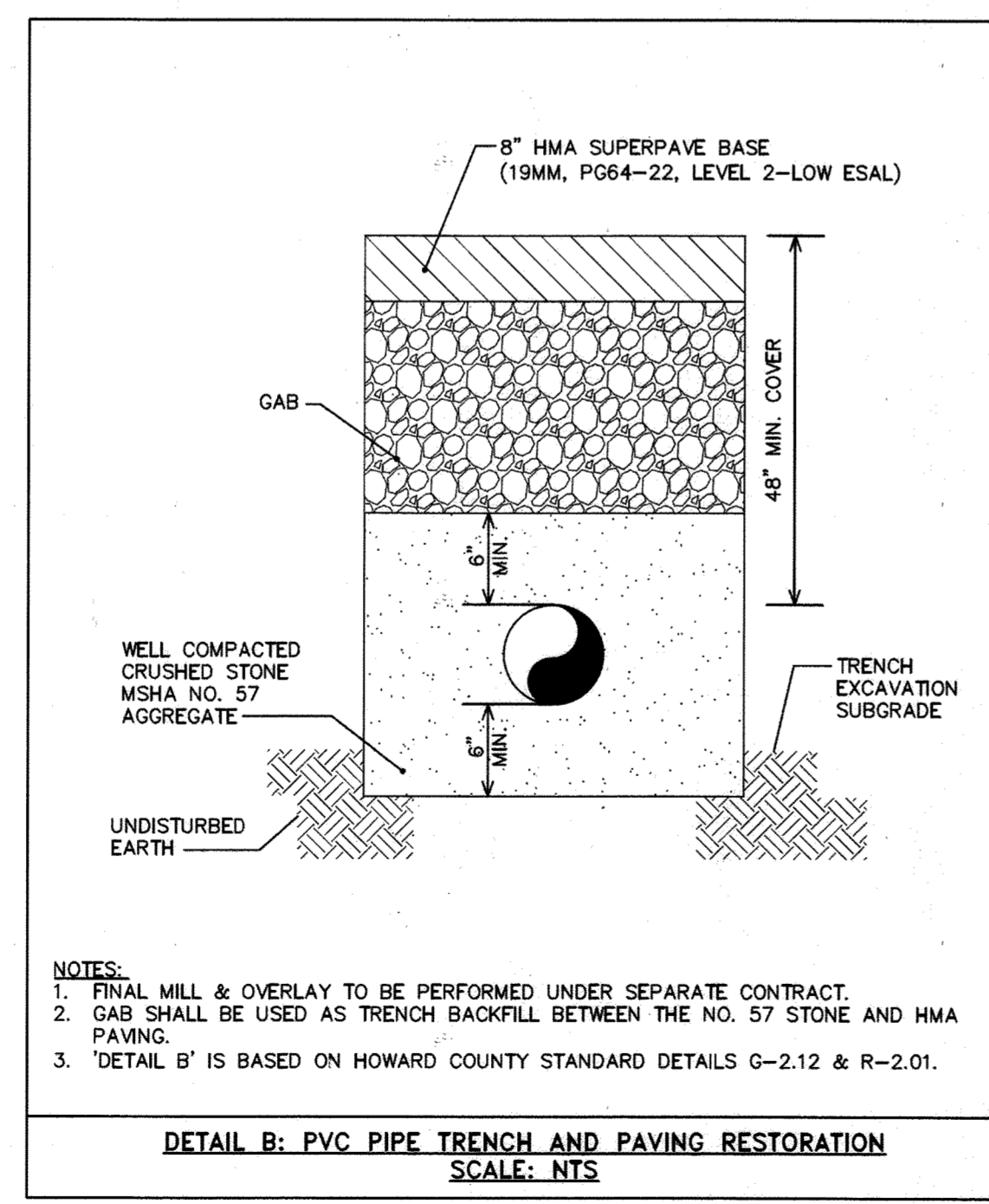
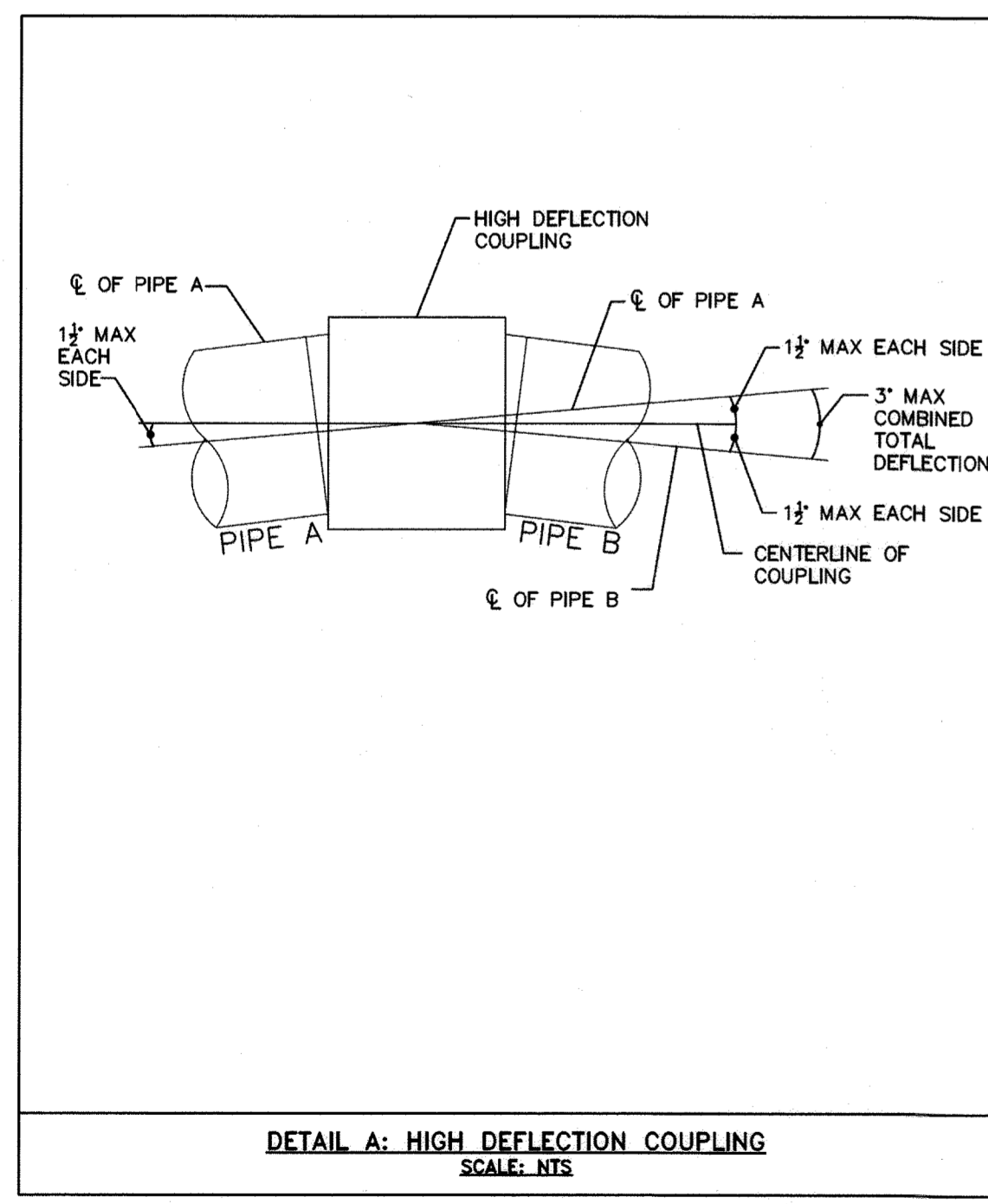
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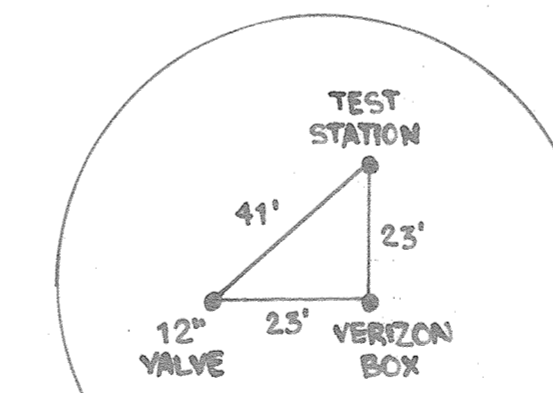
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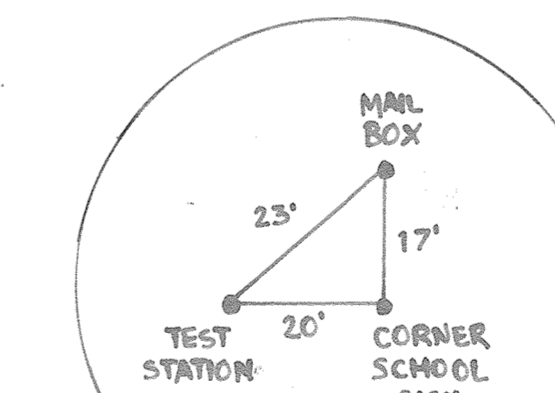
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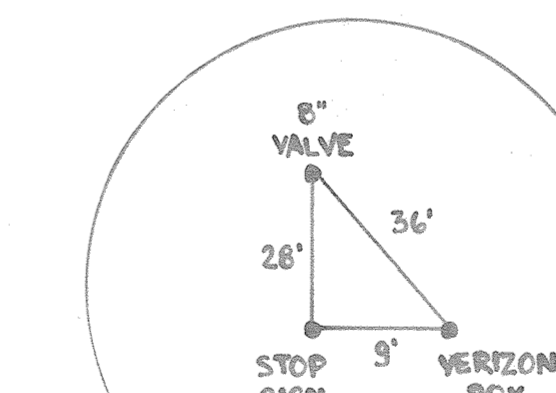
F.H. #11



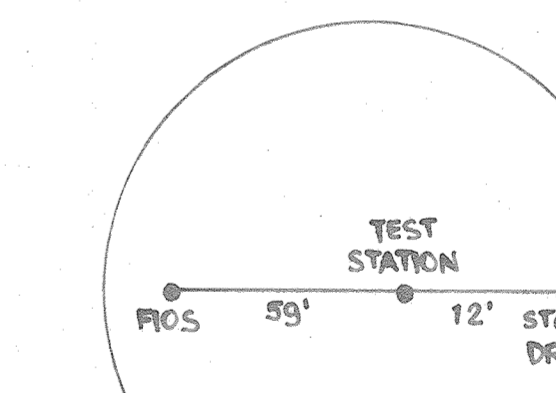
12" VALVE STA. 11+86



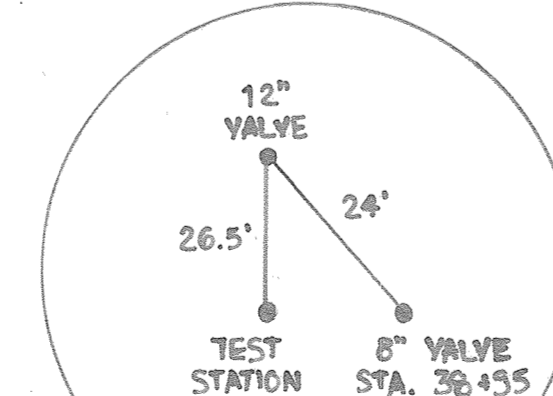
TEST STATION STA. 47+80, 25.5' RT.



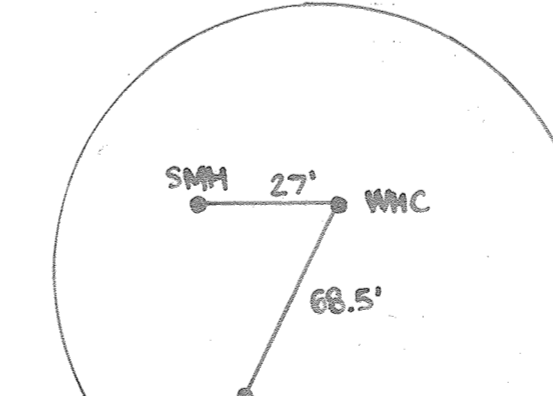
8" VALVE TALBOT'S LANDING (NEAR STA. 40+15)



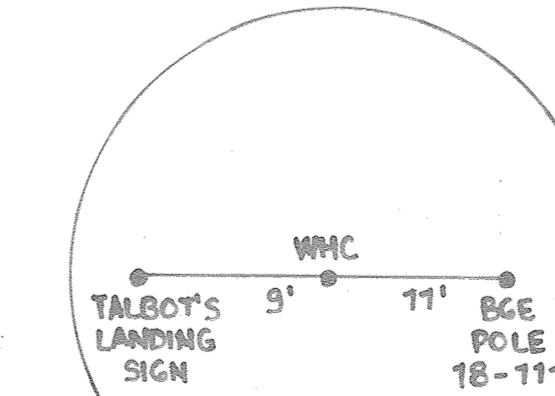
TEST STATION STA. 30+40, 15.8' RT.



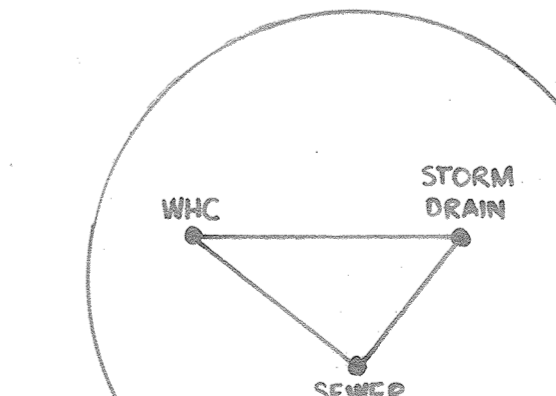
12" VALVE STA. 38+70



WHC NEAR CAMP ILCHESTER STA. 45+50



WHC NEAR CAMP ILCHESTER STA. 49+40



WHC OFF ILCHESTER RD. LOT 5210 FONT AVE.

RECORD DRAWINGS TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
MICHAEL BAKER INTERNATIONAL
BY: *Ehu*

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS: *Ray de*
DATE: *9/25/14*
CHIEF, BUREAU OF UTILITIES: *abalin*
DATE: *9/25/14*
CHIEF, BUREAU OF ENGINEERING: *Thomas & Butler*
DATE: *9/29/14*
CHIEF, UTILITY DESIGN DIVISION: *kd*
DATE: *9/25/14*

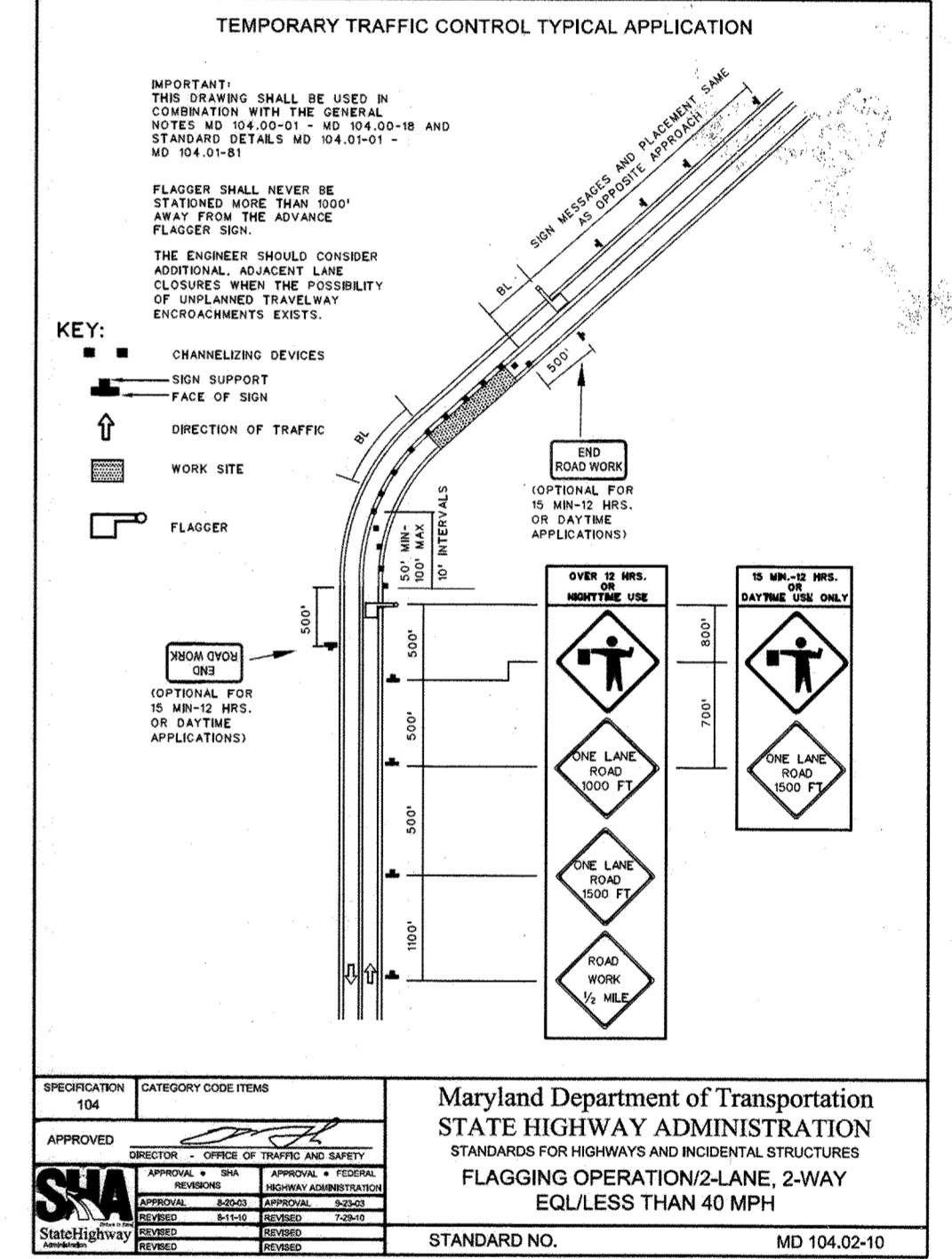
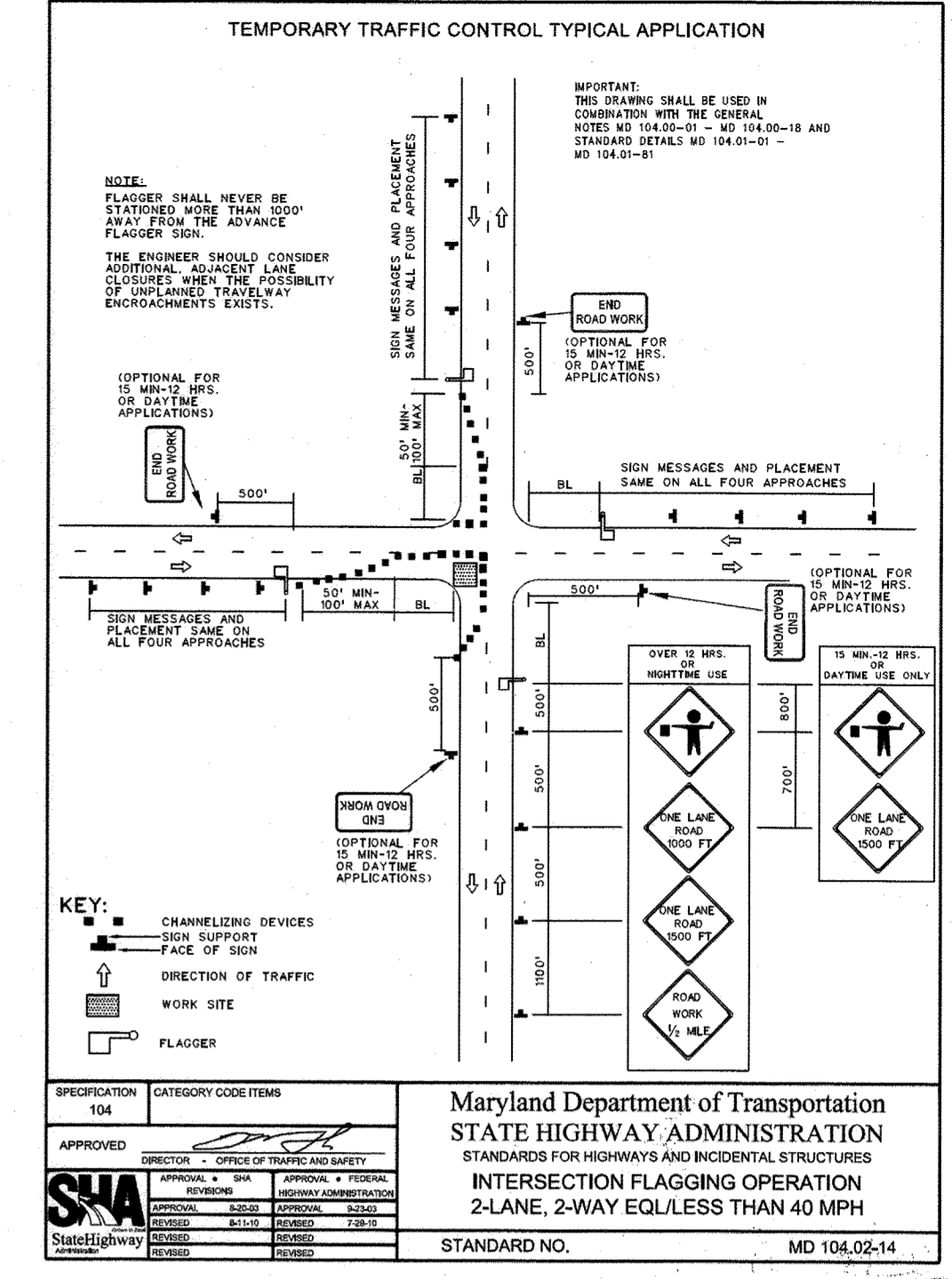
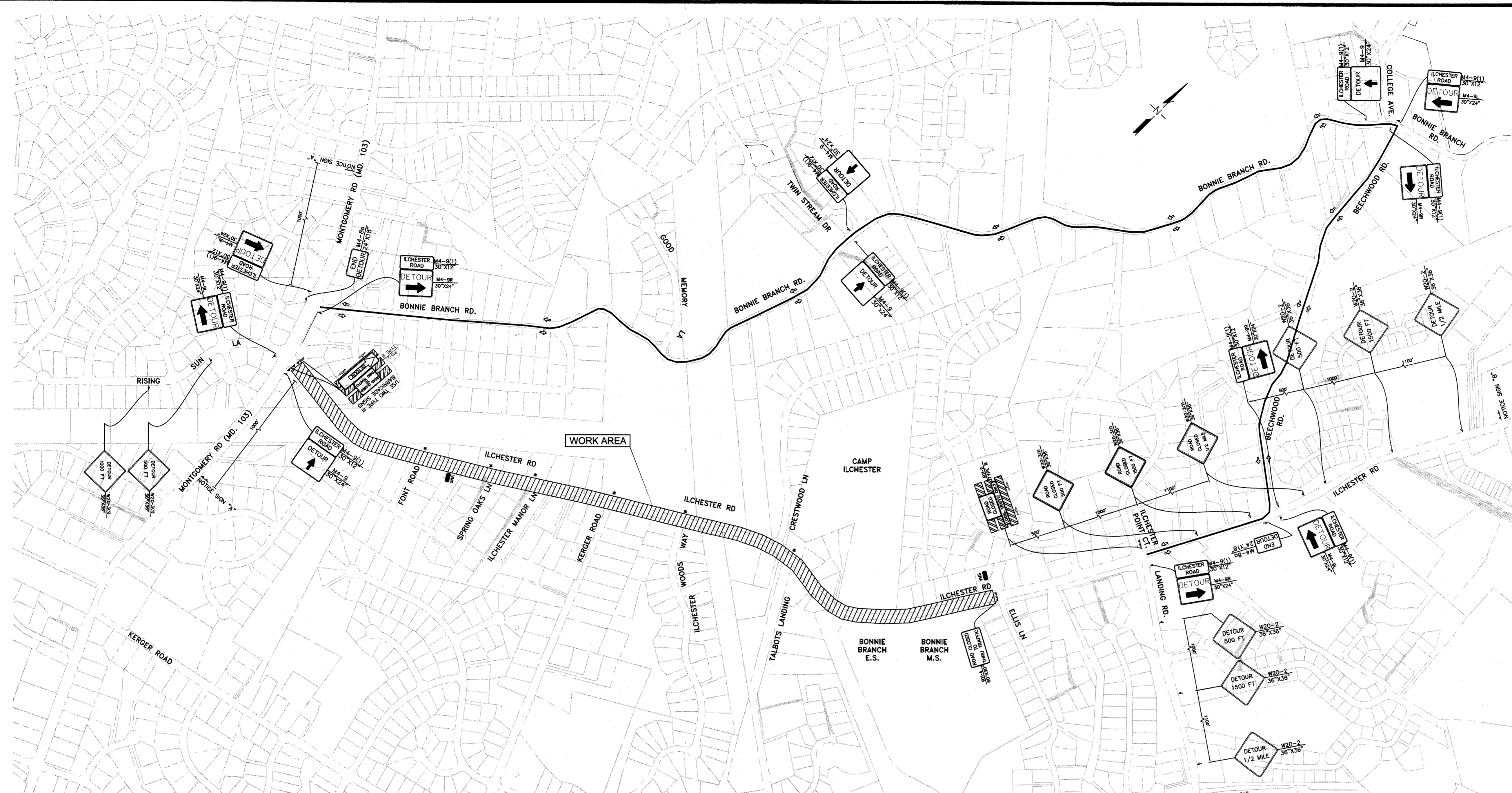
Baker
MICHAEL BAKER JR., INC.
1304 Concourse Drive, Suite 200
Linthicum, MD 21090-1014
Phone: (410) 689-3400

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. 26620
EXPIRATION DATE: 08/07/16
Ehu
ERIN A. MCKENNA-STREBLE, P.E.

DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

SURVEY CONTROL DATA & DETAILS
600 SCALE MAP NO. 31
BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 10 OF 15

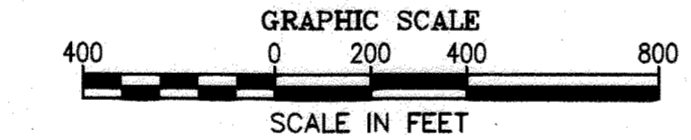


TRAFFIC CONTROL NOTES:

- HOWARD COUNTY TRAFFIC DIVISION SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO BEGINNING ANY WORK IN ORDER TO SCHEDULE A FIELD MEETING TO PRE-SPOT LOCATIONS OF THE TRAFFIC CONTROL DEVICES. CALL 410-313-2430.
- ALL CONSTRUCTION AND MATERIALS FOR THE TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE STANDARDS CONTAINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL CONTINUOUSLY PROVIDE ACCESS TO ALL EXITS, INTERSECTING ROADS, DRIVEWAYS AND ENTRANCES ALONG ILCHESTER ROAD DURING THE COURSE OF THIS PROJECT.
- THE CONTRACTOR SHALL BACKFILL THE TRENCH IMMEDIATELY AFTER THE INSTALLATION OF A SECTION OF PIPE. THE CONTRACTOR SHALL NOT LEAVE AN OPEN TRENCH UNATTENDED.
- ANY EXCAVATED AREA NOT BACKFILLED AT THE END OF A WORK-DAY/WORK-NIGHT MUST BE COVERED WITH STEEL PLATES. APPROPRIATE SIGNING WILL BE REQUIRED AND THE PLATES MUST BE PINNED AND RAMPED.
- IF A DROP OFF MEASURES GREATER THAN 2", A BARRIER OR 2:1 SLOPE OF COMPACTED CRUSHER-RUN GRAVEL WILL BE REQUIRED.
- ALL DETOUR SIGNS WILL BE EITHER REMOVED OR COVERED WHEN DETOUR IS NOT IN OPERATION.
- IF TEMPORARY PARKING RESTRICTIONS WILL BE REQUIRED, THE CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING SIGNS AND FOR NOTIFYING AT LEAST ONE DAY IN ADVANCE ALL AFFECTED RESIDENTS. THE CONTRACTOR MUST CONTACT TRAFFIC ENGINEERING BEFORE ANY PARKING RESTRICTIONS ARE ENACTED.
- CONSTRUCTION AND WORKMAN'S VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SIGHT DISTANCE. THESE VEHICLES SHOULD BE PARKED OFF-STREET ON THE CONSTRUCTION SITE OR ON A SIDE STREET NOT UNDER CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS, AND PAYING ANY ASSOCIATED FEES NECESSARY TO GAIN TRAFFIC CONTROL APPROVALS FROM AFFECTED AGENCIES.
- CONTRACTOR IS TO USE DETAIL MD 104.02-14 AT THE INTERSECTIONS OF MONTGOMERY ROAD AND ILCHESTER ROAD, AND ELLIS LANE AND ILCHESTER ROAD WHEN WATER TIE-INS ARE PERFORMED.
- DEPENDING ON STAGE OF WORK, PROVIDE LEFT OR RIGHT TURN DETOUR SIGNS ACROSS FROM ALL SIDE STREETS.
- ILCHESTER ROAD MAY ONLY BE CLOSED WHEN SCHOOL IS OUT. PLEASE REFER TO THE CONTRACT SPECIFICATIONS.

ROADWAY CLOSURE NOTES:

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES AT LEAST 4 WEEKS IN ADVANCE:
 HOWARD COUNTY DPW - TRAFFIC DIVISION 410-313-2430
 HOWARD COUNTY PUBLIC SCHOOLS/TRANSPORTATION DIVISION 410-313-8728 (IF DURING SCHOOL TIMES)
 HOWARD COUNTY TRANSIT SERVICES 240-581-5800
 HOWARD COUNTY BUREAU OF ENVIRONMENTAL SERVICES 410-313-6470
 HOWARD COUNTY EMERGENCY COMMUNICATIONS/911 CENTER 410-313-2300

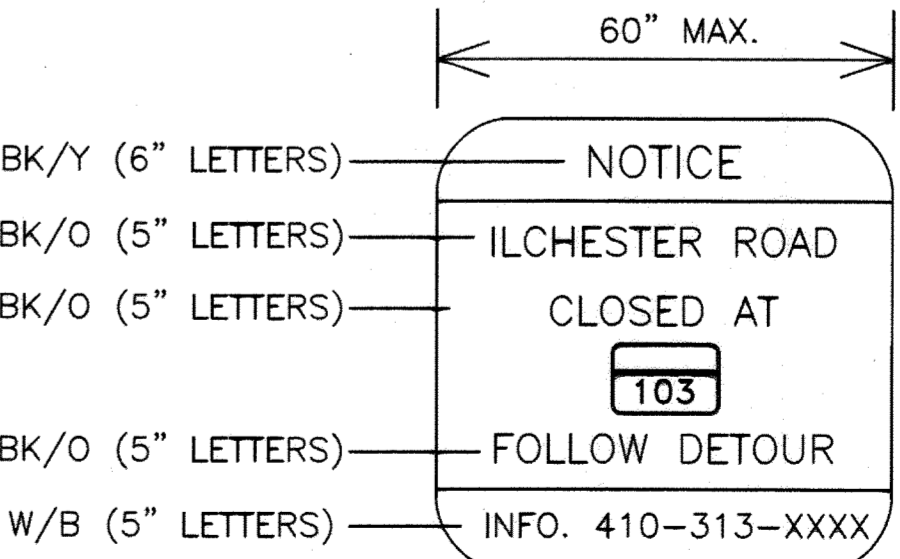
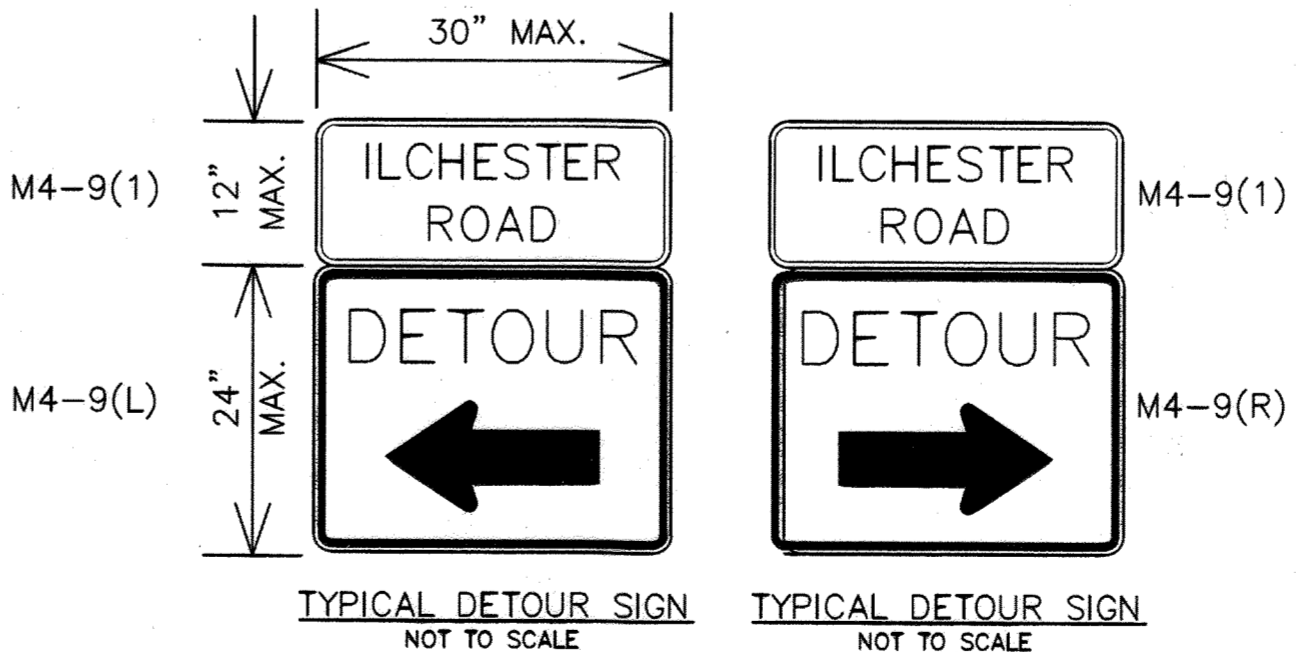
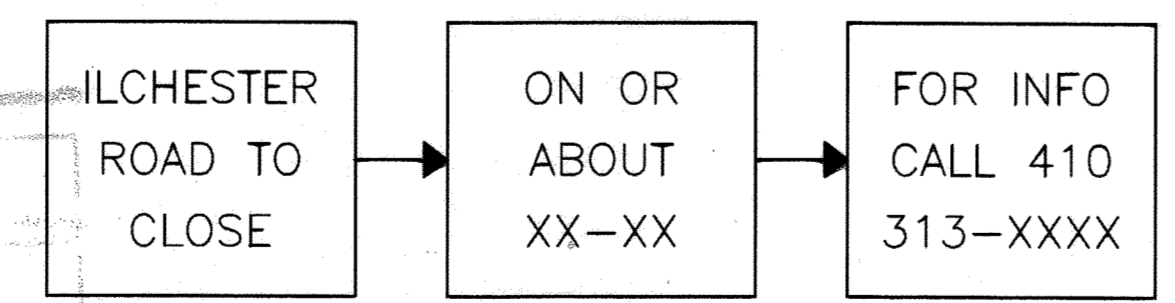
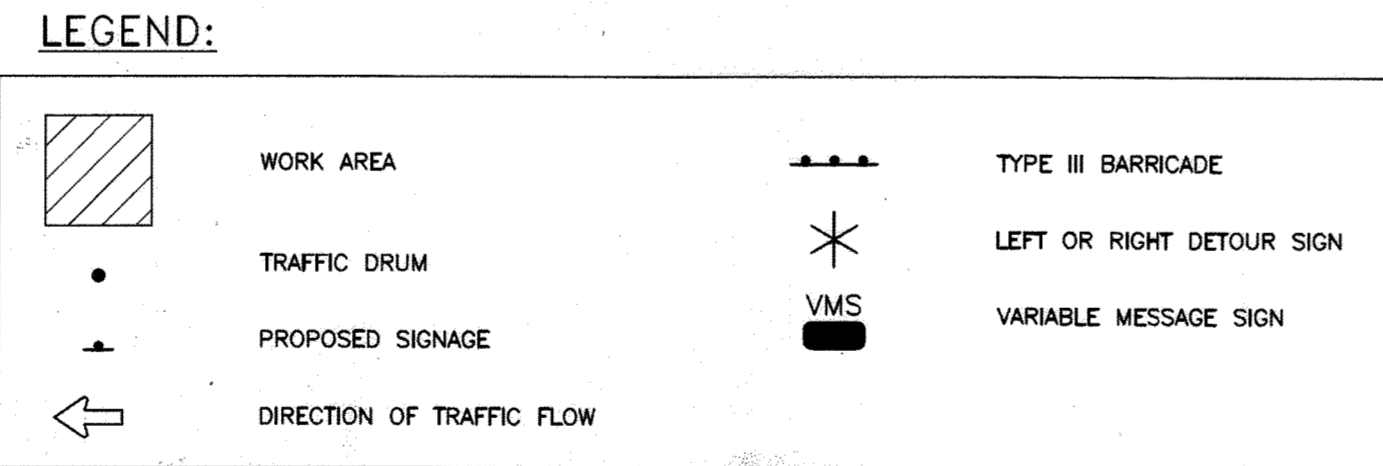


APPROXIMATE DURATION
130 WORKING DAYS

WORK HOURS
IN ACCORDANCE WITH PERMIT

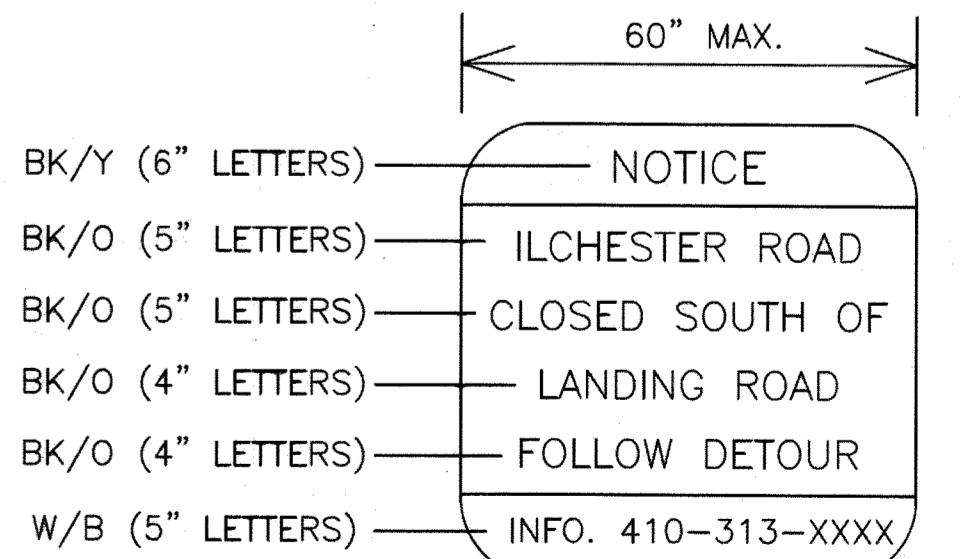
TRAFFIC IMPACTS
ILCHESTER ROAD TO BE CLOSED FROM MONTGOMERY ROAD TO WEST OF ELLIS LANE.

- SEQUENCE OF CONSTRUCTION**
- INSTALL TEMPORARY SIGNAGE AS SHOWN.
 - INSTALL WATER MAIN, FIRE HYDRANTS AND ASSOCIATED APPURTENANCES.
 - RESTORE PAVEMENT TO ORIGINAL CONDITION.
 - REMOVE TEMPORARY SIGNAGE. RE-STRIPE AS REQUIRED TO RESTORE ORIGINAL CONDITION.



RECORD DRAWINGS
 TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

BY: *Ed*



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *James E. Butler* 7/29/14
 Chief, Bureau of Engineering: *James E. Butler* 7/29/14
 Chief, Bureau of Utilities: *Steve Chen* 8/28/14
 Chief, Utility Design Division: *KD* 9/28/14

Baker
 MICHAEL BAKER JR., INC.
 1304 Concourse Drive, Suite 200
 Linthicum, MD 21090-1014
 Phone: (410) 689-3400

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. 36830 EXPIRATION DATE 08/07/16

Erin A. McKenna-Streyke, P.E.

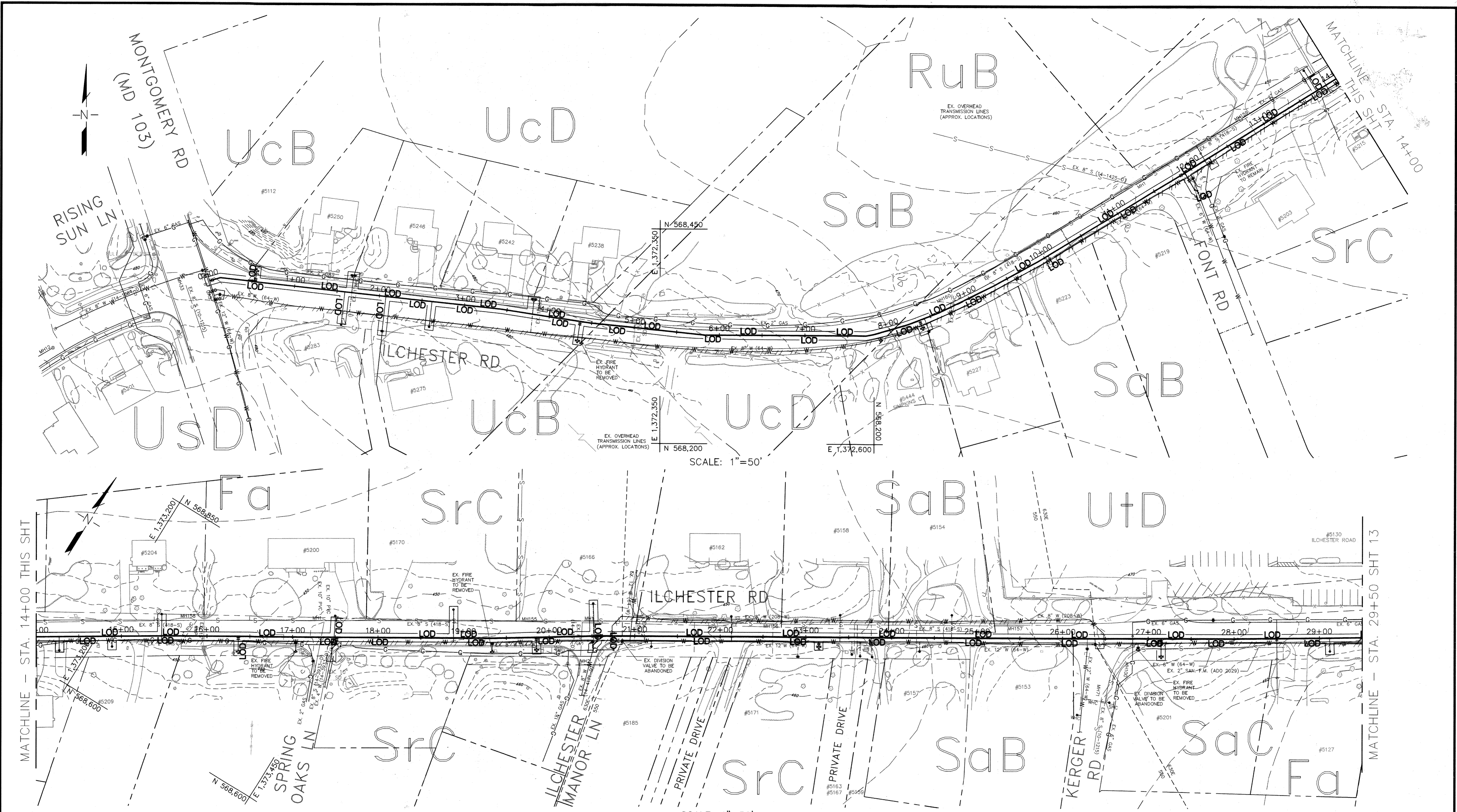
DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

TRAFFIC CONTROL PLAN & DETAILS

600 SCALE MAP NO. 31 BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
 MONTGOMERY RD TO ELLIS LN
 CAPITAL PROJECT NO.: W-8316
 CONTRACT NO.: 44-4825
 1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 11 OF 15
 AS-BUILT



NOTES:

- SOIL DATA IS BASED ON THE WEB SOIL SURVEY WEBSITE BY THE USDA NATURAL RESOURCES CONSERVATION SERVICE.
 Fa: FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES
 RuB: RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES
 SaB: SASSAFRAS LOAM, 0 TO 2 PERCENT SLOPES
 SraC: SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES
 SraB: SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES
 UcB: URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES
 UcD: URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES
 UsD: URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES
 UTD: URBAN LAND-LODTHRETS COMPLEX, 0 TO 15 PERCENT SLOPES
- TOP SOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATION OF CONSTRUCTION AND MATERIALS, SECTION 920-LANDSCAPING MATERIALS.

APPROVED PLAN
John Butler 9/29/14
 Technical Review Date

RECORD DRAWINGS
 TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
 MICHAEL BAKER INTERNATIONAL
 BY: *EJM*

E&S LEGEND:

— LOD — LOD —	LIMIT OF DISTURBANCE
- - - - -	SOIL BOUNDARY
abc	SOIL TYPE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Raymond 9/30/14
 DIRECTOR OF PUBLIC WORKS DATE

Thomas E. Butler 9/29/14
 CHIEF, BUREAU OF ENGINEERING DATE

Steve 9/29/14
 CHIEF, BUREAU OF UTILITIES DATE

KD
 CHIEF, UTILITY DESIGN DIVISION DATE

Baker
 MICHAEL BAKER JR., INC.
 1304 Concourse Drive, Suite 200
 Linthicum, MD 21090-1014
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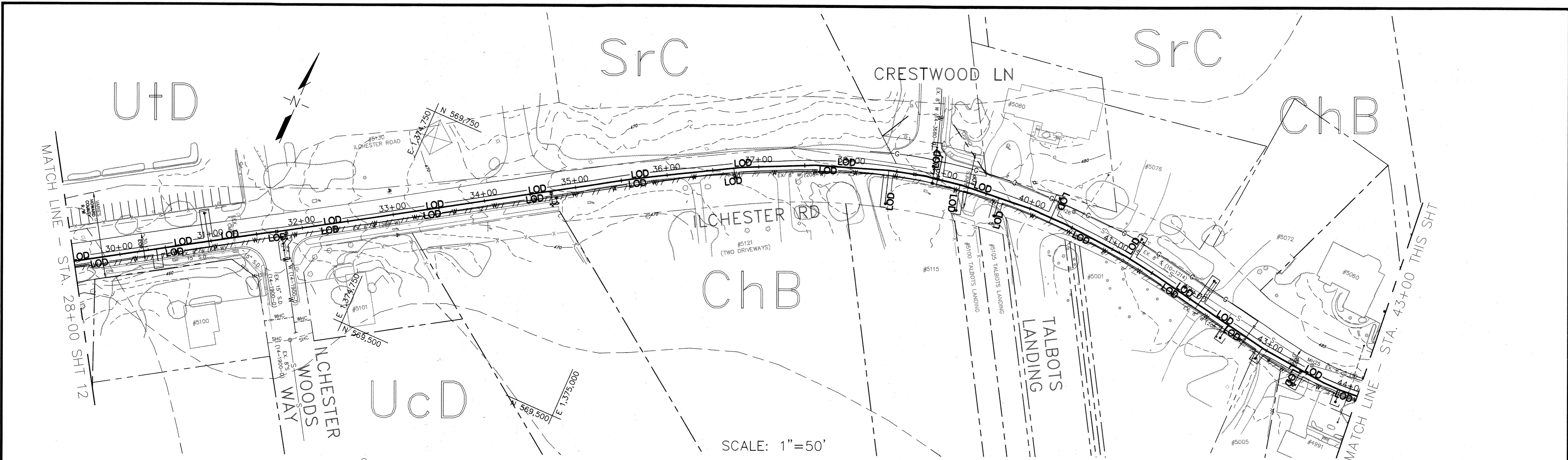
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO.: 36830
 EXPIRATION DATE: 06/07/18
EJM
 ERIN A. MCKENNA-STREYKE, P.E.

DESIGN: EAM	AS-BUILTS	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

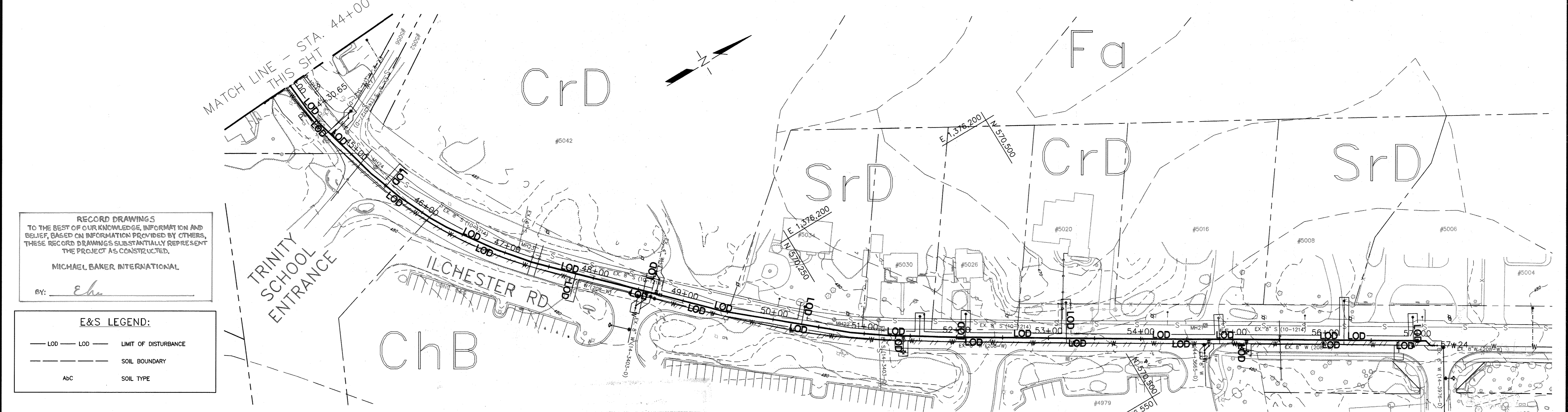
EROSION & SEDIMENT CONTROL PLAN

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
 MONTGOMERY RD TO ELLIS LN
 CAPITAL PROJECT NO.: W-8316
 CONTRACT NO.: 44-4825
 1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 12 OF 15
 AS-BUILT



SCALE: 1"=50'



SCALE: 1"=50'

RECORD DRAWINGS
 TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

MICHAEL BAKER INTERNATIONAL

BY: *Ehu*

E&S LEGEND:

— LOD — LOD — LIMIT OF DISTURBANCE

— — — SOIL BOUNDARY

abc SOIL TYPE

NOTES:

- SOIL DATA IS BASED ON THE WEB SOIL SURVEY WEBSITE BY THE USDA NATURAL RESOURCES CONSERVATION SERVICE.
 ChB: CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES
 CrD: CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES
 Fa: FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES
 SrC: SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES
 U+D: URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES
 UcD: URBAN LAND-UDORTMENTS COMPLEX, 0 TO 15 PERCENT SLOPES
- TOP SOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATION OF CONSTRUCTION AND MATERIALS, SECTION 920-LANDSCAPING MATERIALS.

Technical Review
John R. Butler 9/29/14
 Date

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John R. Butler 9/29/14
 DIRECTOR OF PUBLIC WORKS DATE

Thomas S. Butler 9/29/14
 CHIEF, BUREAU OF ENGINEERING DATE

Steve Chan 9/29/14
 CHIEF, BUREAU OF UTILITIES DATE

David 9/29/14
 CHIEF, UTILITY DESIGN DIVISION DATE

Baker

MICHAEL BAKER JR., INC.
 1304 Concourse Drive, Suite 200
 Linthicum, MD 21090-1014
 Phone: (410) 689-3400

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO.: 36630
 EXPIRATION DATE: 05/07/16

Ehu
 ERIN A. MCKENNA-STREBLE, P.E.

DESIGN: EAM	AS-BUILT	3/11/16	EAM
DRAWN: EAM			
CHECKED: SGZ			
DATE: 9/19/2014	NO.	REVISION	DATE

EROSION & SEDIMENT CONTROL PLAN

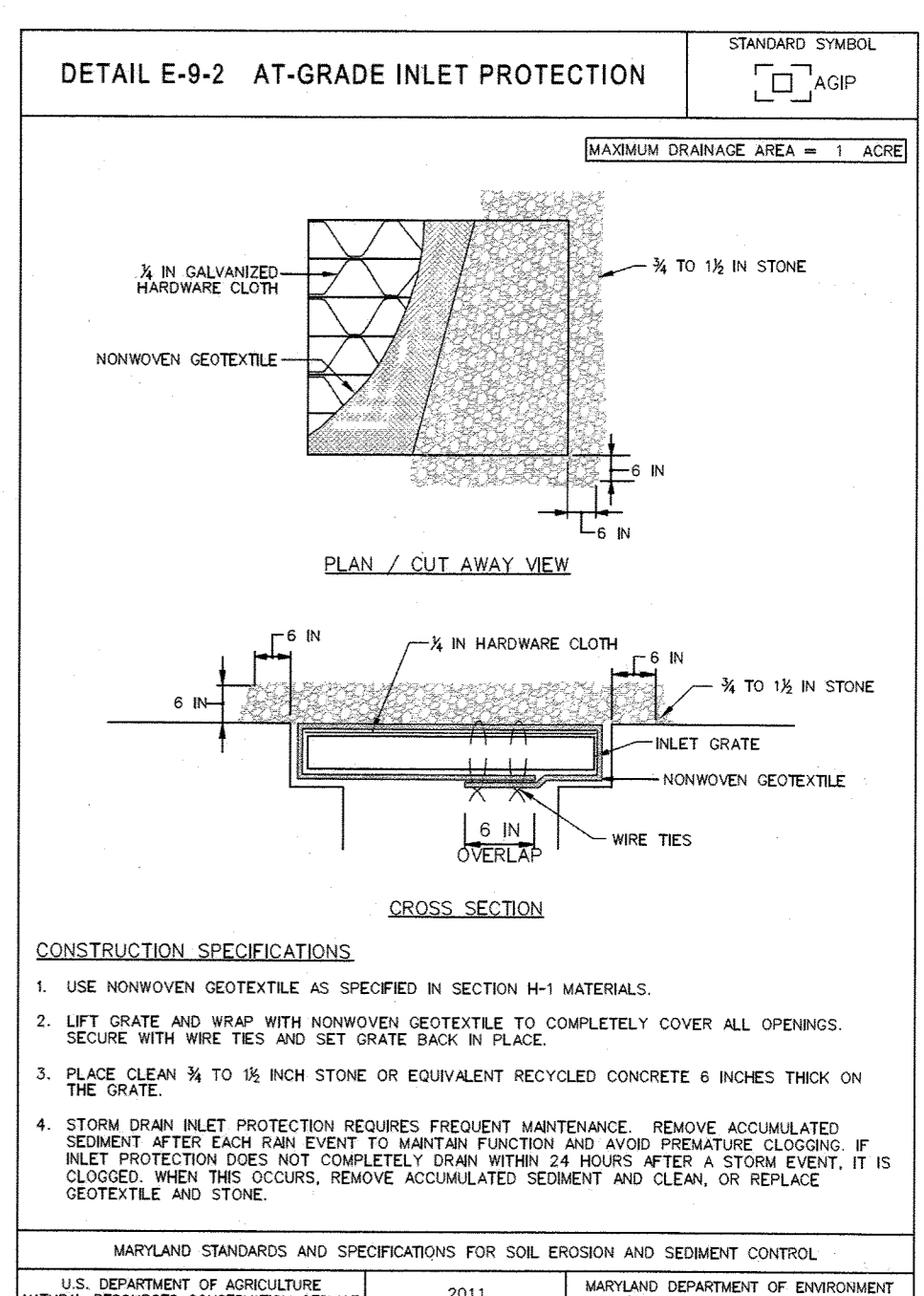
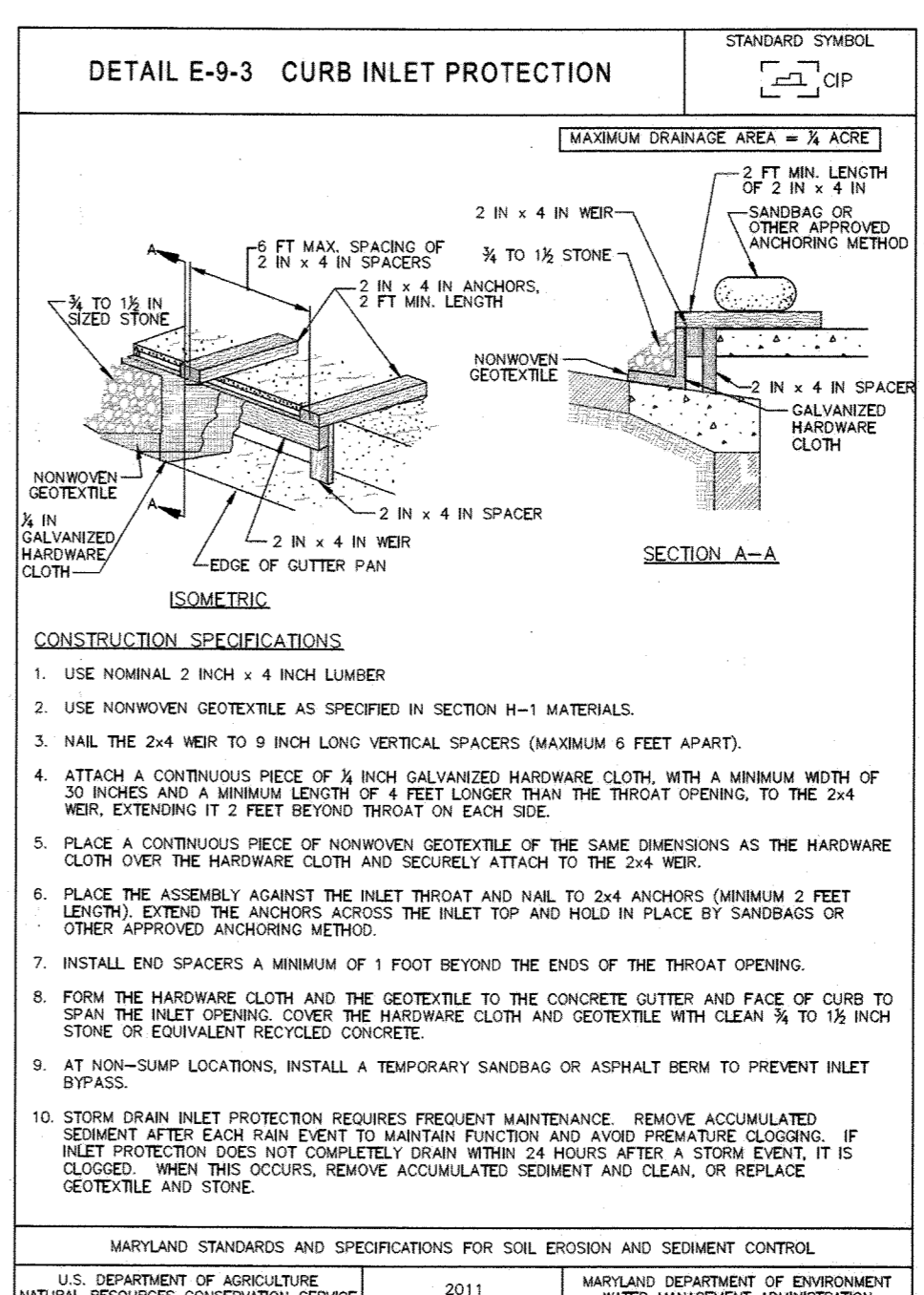
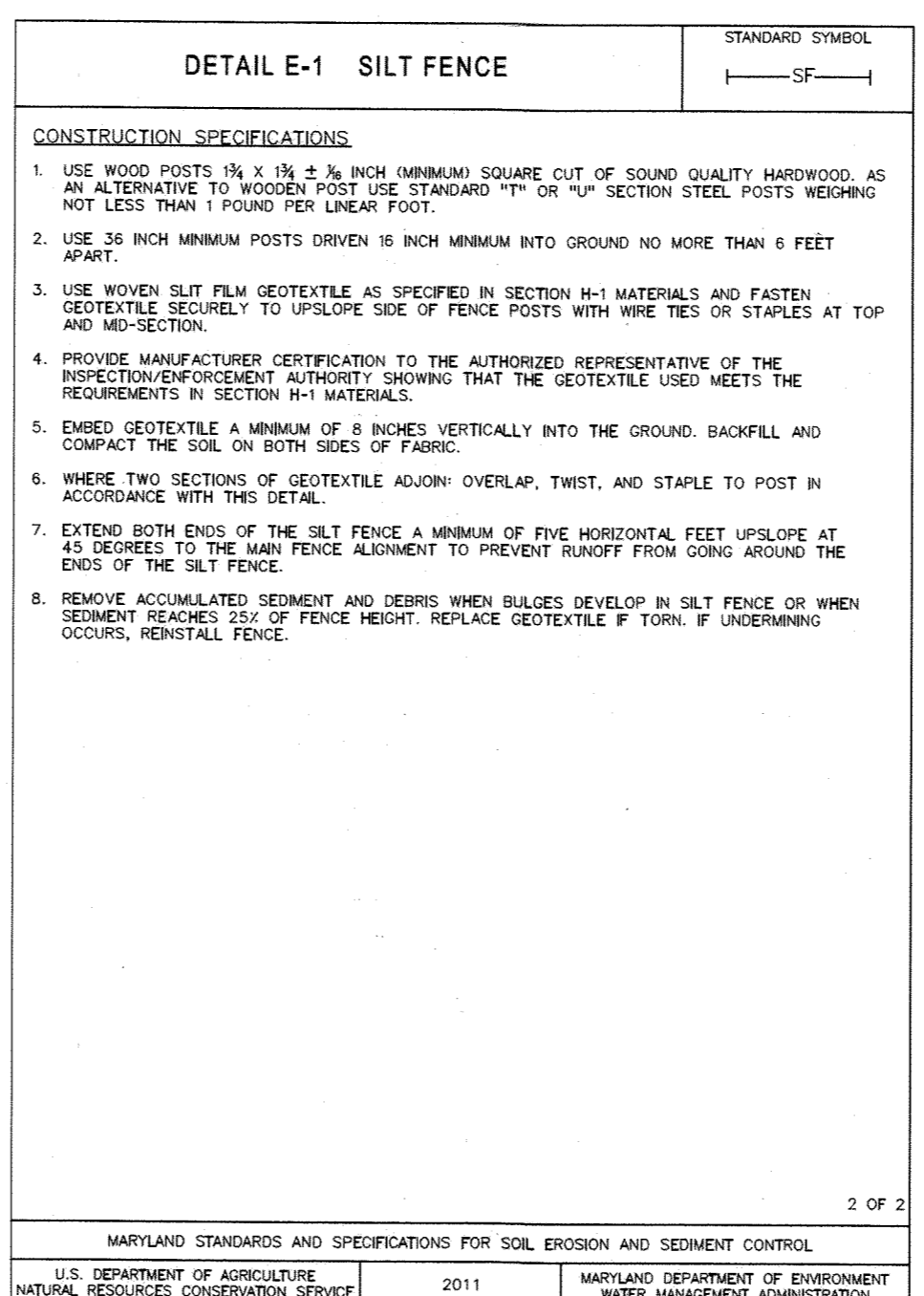
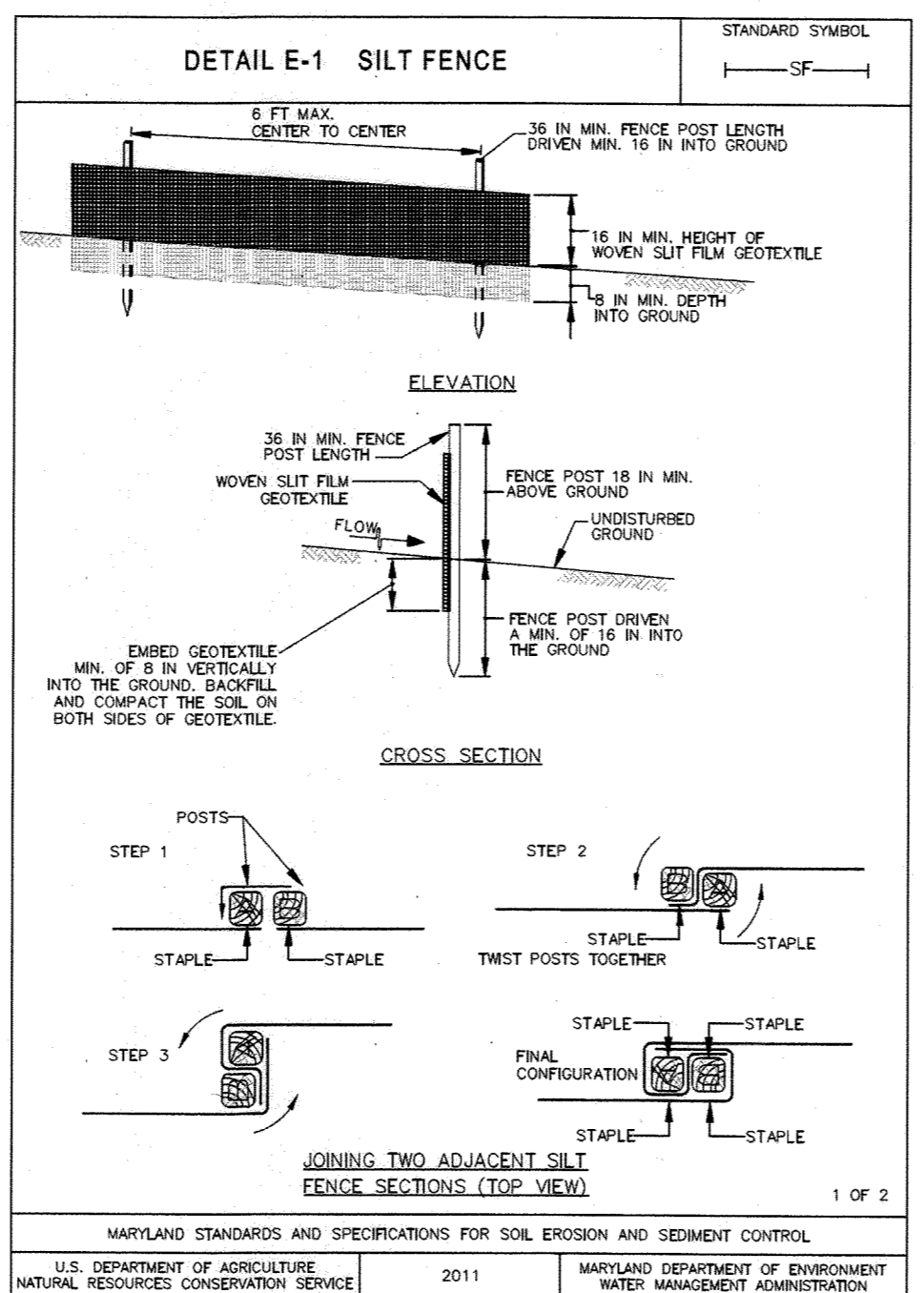
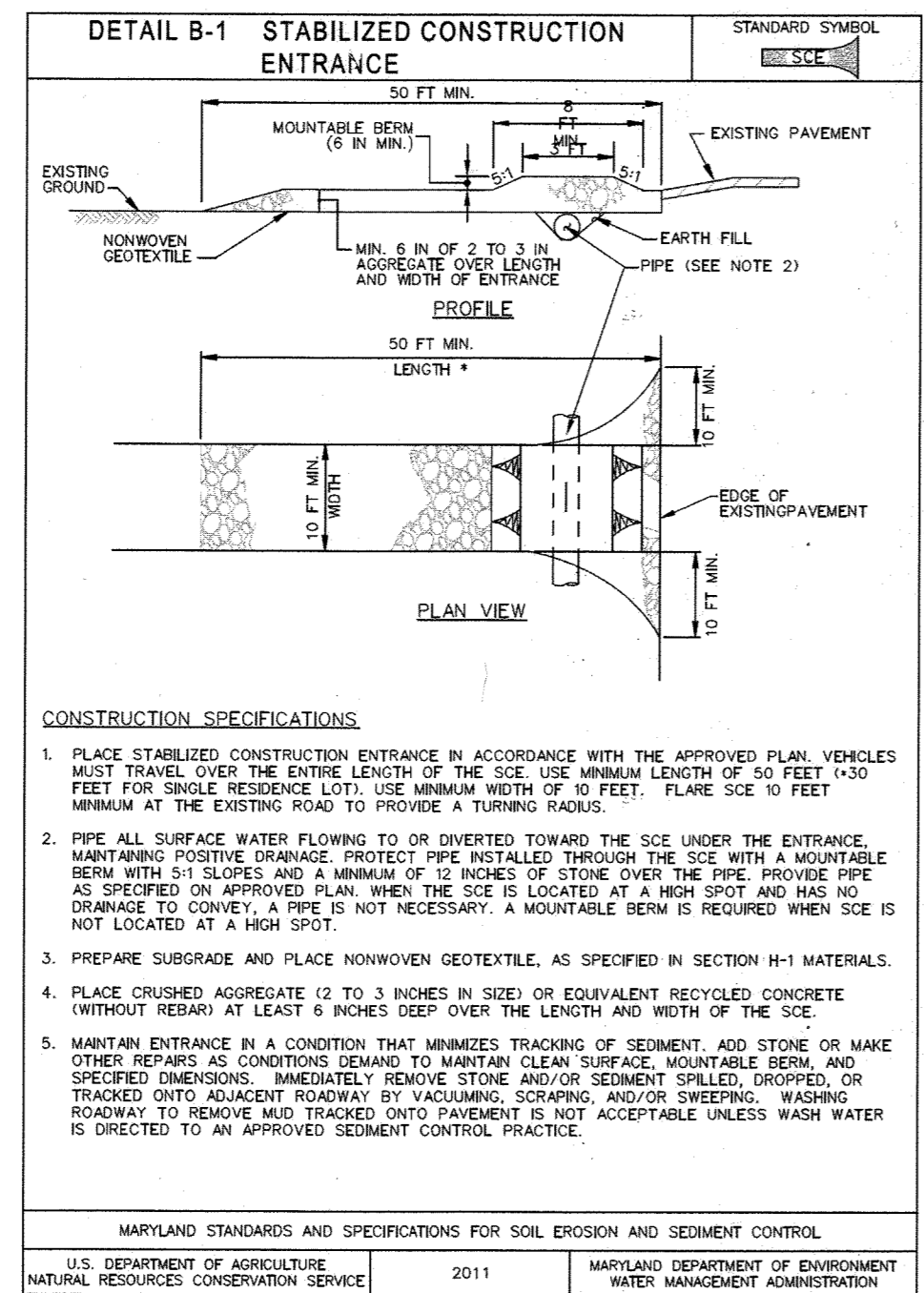
600 SCALE MAP NO. 31
 BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
 MONTGOMERY RD TO ELLIS LN
 CAPITAL PROJECT NO.: W-8316
 CONTRACT NO.: 44-4825
 1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 13 OF 15

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION TO THE START OF ANY CONSTRUCTION... 2. 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 THEREOF...



SEQUENCE OF CONSTRUCTION:

- NOTES: A. ALL SEDIMENT CONTROLS ARE TO BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. B. ALL SEEDING AND/OR STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. C. A STABILIZED CONSTRUCTION ENTRANCE IS TO BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS:

- A. SOIL PREPARATION 1. TEMPORARY STABILIZATION a. SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT... 2. PERMANENT STABILIZATION a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE... b. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION...

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (CONT'D):

- 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT... 3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME) MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING... 4. SOIL TESTS TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS...

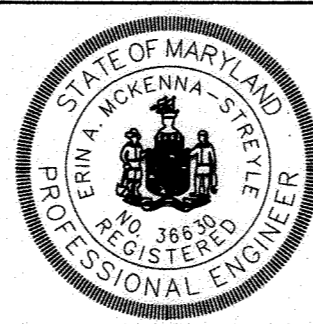
B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING:

- 1. SPECIFICATIONS a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW... b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN... 2. APPLICATION a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING... b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE...

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA:

- A. CRITERIA 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN... 2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL... 3. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE... B. MAINTENANCE 1. THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT...

APPROVED PLAN PREPARED BY J. M. Baker 9/20/14 Technical Review Date



MICHAEL BAKER JR., INC. 1304 Concourse Drive, Suite 200 Linthicum, MD 21090-1014 Phone: (410) 689-3400

Table with columns for Director of Public Works, Chief of Utilities, and Chief of Engineering/Design Division. Includes names and dates.

Table with columns for Design (EAM), Drawn (EAM), Checked (SGZ), Date (9/19/2014), and Revision (AS-BUILTS).

EROSION & SEDIMENT CONTROL NOTES & DETAILS 600 SCALE MAP NO. 31 BLOCK NO. 15

RECORD DRAWINGS TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED. MICHAEL BAKER INTERNATIONAL

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN MONTGOMERY RD TO ELLIS LN CAPITAL PROJECT NO.: W-8316 CONTRACT NO.: 44-4825 1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

TEMPORARY SEEDING NOTES:

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

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

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

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 1 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

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

PERMANENT SEEDING NOTES:

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

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

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

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

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY, OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

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

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

TEMPORARY SEEDING FOR SITE STABILIZATION

HARDINESS ZONE (FROM FIGURE B.3): 6b						
SEED MIXTURE (FROM TABLE B.1): SEE BELOW						
NO.	PLANT SPECIES	SEEDING RATE ^{1/} (LB/AC)	SEEDING DATES ^{2/}	SEEDING DEPTH ^{3/} (INCHES)	FERTILIZER RATE (10-20-20)	LIME RATE
COOL-SEASON GRASSES						
	ANNUAL RYEGRASS (LOLIUM PERENNE SPP. MULTIFLORUM)	40	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	0.5	436 LB/AC (10 LB./1000 SF)	2 TONS/AC (90 LB./1000 SF)
	BARLEY (HORDEUM VULGARE)	96	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
	OATS (Avena SATIVA)	72	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
	WHEAT (TRITICUM AESTIVUM)	120	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
	CEREAL RYE (SECALE CEREALE)	112	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
WARM-SEASON GRASSES						
	FOXTAIL MILLET (SETARIA ITALICA)	30	MAY 16 TO JUL. 31	0.5		
	PEARL MILLET (PENNISETUM GLAUCUM)	20	MAY 16 TO JUL. 31	0.5		

NOTES:
1/ 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 ALONE, WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, 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 5% (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.

2/ FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.

3/ THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

PERMANENT SEEDING FOR SITE STABILIZATION

HARDINESS ZONE (FROM FIGURE B.3): 6b					FERTILIZER RATE (10-20-20)			LIME RATE
SEED MIXTURE (FROM TABLE B.1): SEE BELOW					N	P ₂ O ₅	K ₂ O	
WARM-SEASON/COOL-SEASON GRASS MIXES								
NO.	PLANT SPECIES	SEEDING RATE ^{1/} (LB/AC)	SEEDING DATES	SEEDING DEPTH (INCHES)				
1	SWITCH GRASS (PANICUM VIRGATUM)	10	MAY 16 TO JUL. 31	1/4"-1/2"	45 LB/AC (1 LB./1000 SF)	90 LB/AC (2 LB./1000 SF)	90 LB/AC (2 LB./1000 SF)	2 TONS/AC (90 LB./1000 SF)
	CREeping RED FESCUE (FESTUCA RUBRA VAR. RUBRA)	15	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1/4"-1/2"				
	PARTRIDGE PEA (CHAMAECRISTA FASCICULATA)	4	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1/4"-1/2"				

NOTES:
1/ SEEDING RATES: SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES MUST BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES, LEGUMES, OR WILDLOWERS. ALL LEGUME SEEDS MUST BE INOCULATED BEFORE PLANTING WITH THE APPROPRIATE RHIZOBIUM BACTERIA. WHEN FEASIBLE, HARD-SEEDED LEGUMES SHOULD BE SCARIFIED TO IMPROVE GERMINATION.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, BASED ON INFORMATION PROVIDED BY OTHERS, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
MICHAEL BAKER INTERNATIONAL
BY: *Edu*

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9/13/14
9/25/14
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9/25/14

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PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 36830
EXPIRATION DATE: 06/30/15
ERIN A. MCKENNA-STREYLE, P.E.

DESIGN: EAM	AS-BUILTS	3/11/14	EAM
DRAWN: EAM			
CHECKED: SOZ			
DATE: 9/19/2014	NO.	REVISION	DATE BY

EROSION & SEDIMENT CONTROL NOTES & DETAILS
600 SCALE MAP NO. 31
BLOCK NO. 15

ILCHESTER ROAD 12" WATER TRANSMISSION MAIN
MONTGOMERY RD TO ELLIS LN
CAPITAL PROJECT NO.: W-8316
CONTRACT NO.: 44-4825
1ST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 15 OF 15
AS-BUILT