

**WATER NOTES:**

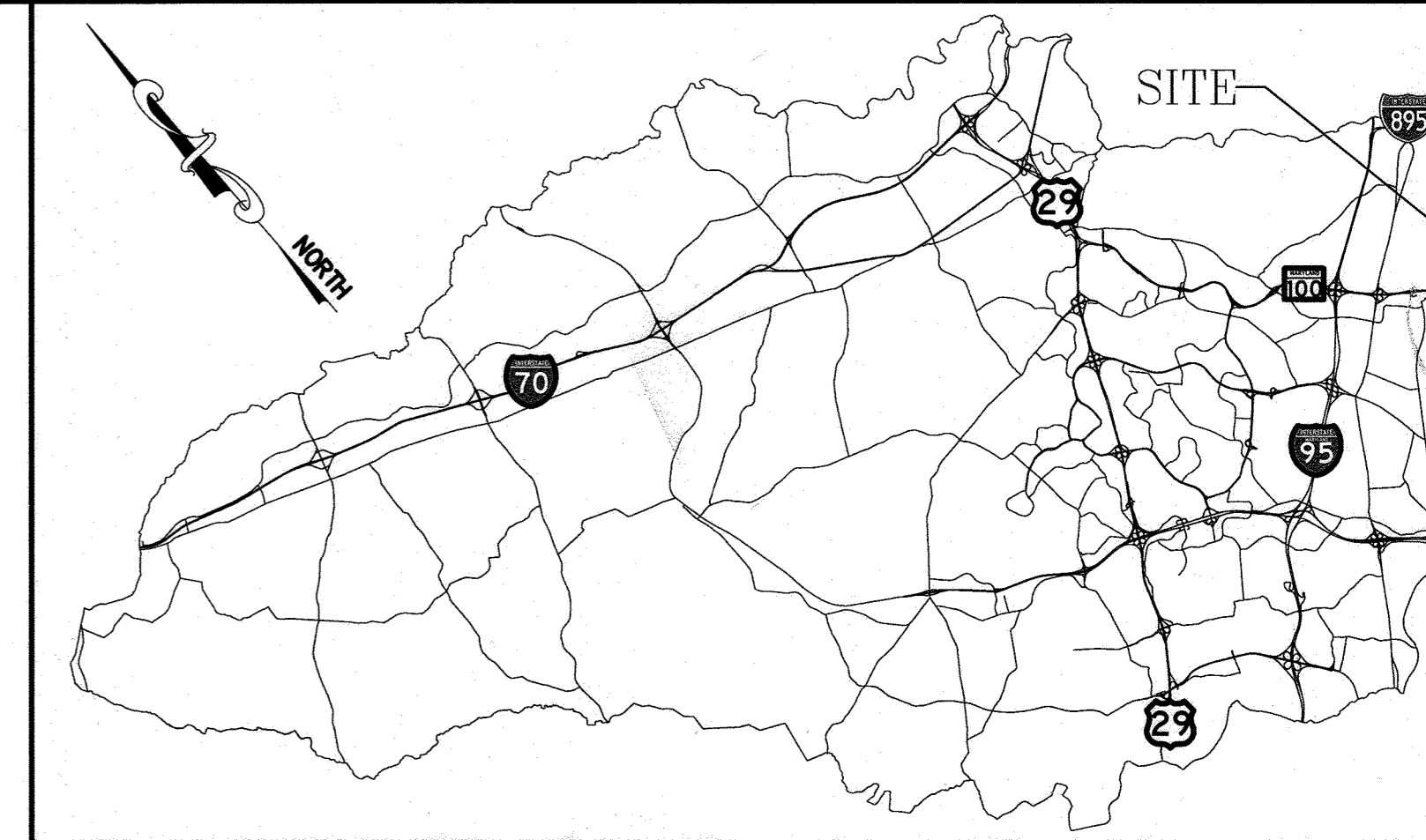
- ALL PROPOSED WATER MAINS SHALL BE POLYVINYL CHLORIDE (PVC) PRESSURE CLASS DR-14 IN ACCORDANCE WITH ANSI/AWWA C900, WITH DUCTILE IRON (DI) FITTINGS.
- ALL HYDRANTS, MAINLINE GATE VALVES, WATER SERVICE VALVES AND PIPING, AND SIMILAR APPURTENANCES (FOR BOTH PERMANENT AND TEMPORARY INSTALLATIONS) SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 305 PSI.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED/RESTRAINED TO TEES.
- ALL FITTINGS SHALL BE 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.
- 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 THE WORK.
- SALVAGEABLE VALVES AND APPURTENANCES TO BE REMOVED SHALL BE DELIVERED TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - BUREAU OF UTILITIES, AS DIRECTED BY THE ENGINEER OR THE COUNTY.
- IN ACCORDANCE WITH THE 10 STATE STANDARD REQUIREMENTS, WHERE PROPOSED WATER MAIN CROSSES EXISTING OR PROPOSED SEWER, THE WATER MAINS SHALL BE INSTALLED WITH MINIMUM 18-INCHES VERTICAL CLEARANCE (BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER). ALL CROSSINGS OF THE NEW WATER MAIN WITH EXISTING SANITARY OR STORM SEWER PIPING 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.
- NO WATER SHALL BE DISCHARGED FROM THE EXISTING WATER MAIN TO THE ENVIRONMENT, WITHOUT FIRST DECHLORINATING. THE CONTRACTOR SHALL SUBMIT THE DECHLORINATION METHOD TO THE ENGINEER FOR REVIEW.
- 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 HARNESSSES. TWELVE (12) POUND 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.
- PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES 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 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 DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE TO BE INSTALLED, 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 (1½-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 235 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 CERTAINTIEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL. FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 235 PSI, DR-18, MEETING THE REQUIREMENTS OF ANSI/AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR-18 OR EQUAL.

(WATER NOTES CONTINUED ON DRAWING C-01, SHEET 03)

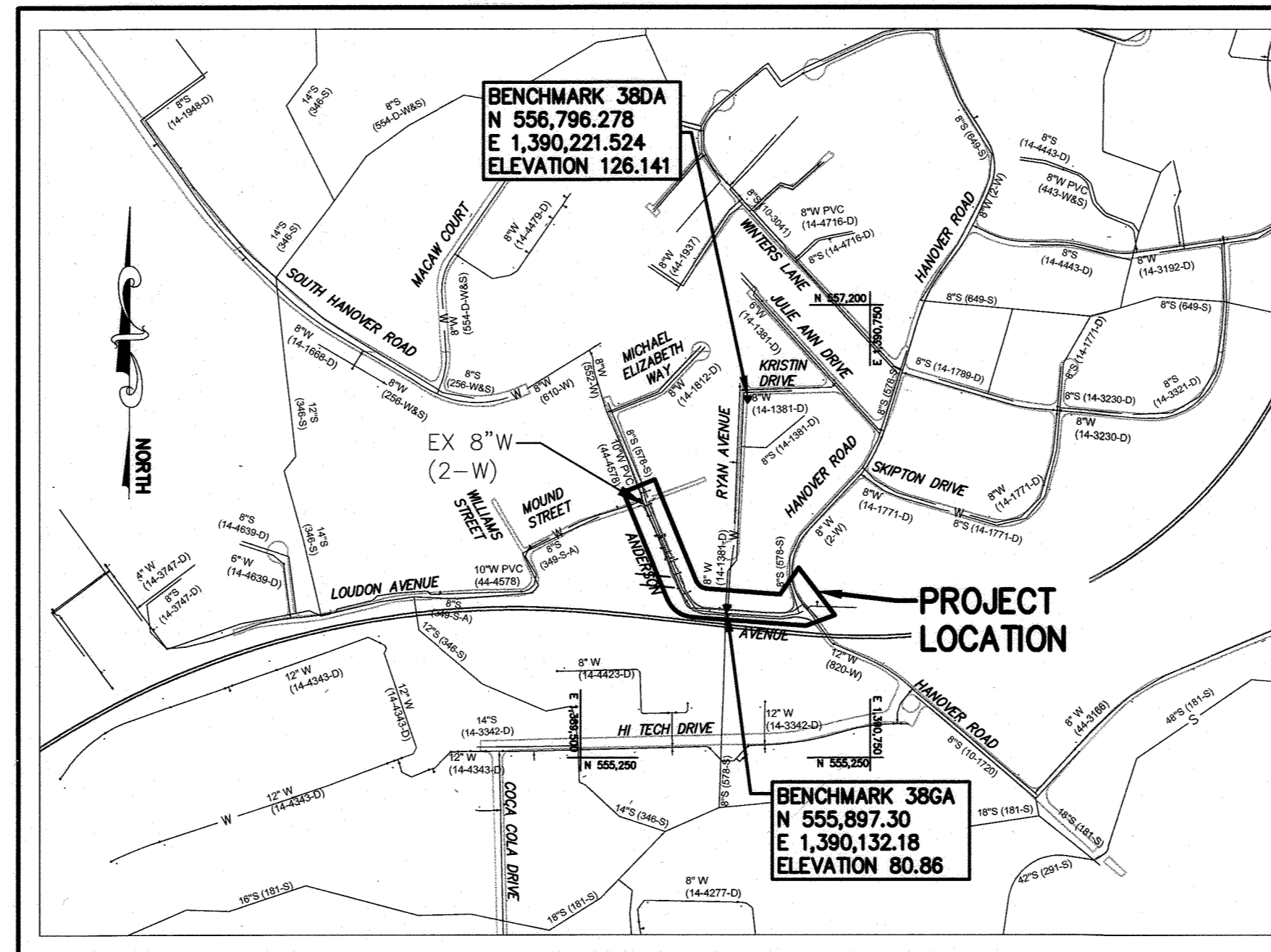
# ANDERSON AVENUE / MOUND STREET WATER MAIN

## HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

### CAPITAL PROJECT NO. W8303 CONTRACT NO. 44-5054



LOCATION MAP  
NOT TO SCALE



VICINITY MAP  
SCALE: 1" = 600'

**EROSION AND SEDIMENT CONTROL NOTES**  
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY DESIGN MANUAL - VOLUME IV: STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.

WATER ZONE: 400  
TEST GRADIENT: 654 FT  
TEST PRESSURE: 250 PSI  
TYPE OF BUILDINGS: N/A  
NUMBER OF PARCELS: N/A  
NO. OF WATER CONNECTIONS: 16  
NO. OF SEWER CONNECTIONS: N/A  
DRAINAGE AREA: DEEP RUN

STATION#	EAST	NORTH	ELEVATION
38DA	1,390,221.52	556,796.28	126.14
38GA	1,390,132.18	555,897.30	80.86

**INDEX OF DRAWINGS**

SHEET NO.	DRAWING NO.	DESCRIPTION
01	G-01	TITLE SHEET, GENERAL NOTES AND INDEX OF DRAWINGS
02	G-02	LEGEND, ABBREVIATIONS, SURVEY CONTROL AND STAKEOUT
03	C-01	WATER SHUTOFF PLAN, TEMPORARY BYPASS PLAN, AND SEQUENCE OF CONSTRUCTION
04	C-02	WATER PLAN (STA 0+00 TO STA 10+05)
05	C-03	WATER PROFILES (STA 0+00 TO STA 10+05)
06	C-04	WATER AND MISCELLANEOUS DETAILS
07	C-05	WATER AND MISCELLANEOUS DETAILS (CONTINUED)
08	CP-01	CORROSION CONTROL DETAILS
09	MT-01	MAINTENANCE OF TRAFFIC NOTES AND DETAILS
10	PV-01	PAVING PLAN
11	ES-01	EROSION AND SEDIMENT CONTROL PLAN
12	ES-02	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
13	ES-03	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

**AS-BUILT  
DEC. 2021**

**OWNER/DEVELOPER CERTIFICATION:**  
I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

ZACHARY C. KNIGHT  
Owner's/Developer's Signature  
6-1-2020  
Date

**HOWARD SOIL CONSERVATION DISTRICT:**  
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (HSCD).

Howard Soil Conservation District  
7/21/20  
Date

**ENGINEER'S CERTIFICATION:**  
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Engineer's Signature - Registration Number  
05-19-2020  
Date

**PURPOSE STATEMENT:**  
CONTRACT NO. 44-5054 WILL REPLACE APPROXIMATELY 1,000 FEET OF ANTIQUATED 8-INCH WATER MAIN WITH A NEW 12-INCH WATER MAIN ALONG ANDERSON AVENUE BETWEEN MOUND STREET AND HANOVER ROAD. THIS PROJECT IS REQUIRED UNDER THE HOWARD COUNTY MASTER PLAN FOR WATER AND SEWERAGE, AND IS NECESSARY TO PROVIDE A SECONDARY WATER LOOP FOR THIS AREA OF THE 400 WATER ZONE, AND TO PROVIDE ADEQUATE SERVICE AND SUPPLY TO LOCAL DEMANDS AND FIRE PROTECTION.

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

Melvin H. Boree  
DIRECTOR OF PUBLIC WORKS  
6-27-2020  
DATE

Thomas E. Burrell  
CHIEF, BUREAU OF ENGINEERING  
6/28/20  
DATE

CHIEF, BUREAU OF UTILITIES  
CHIEF, UTILITY DESIGN DIVISION

**RK&K**  
P: 410.728.2900  
700 East Pratt Street, Suite 500 | Baltimore, MD 21202  
www.rk.com  
Responsive People | Creative Solutions

**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. 20566  
EXPIRATION DATE: 09/06/2020

DES:	BY:	NO.	REVISION	DATE
WJG				
DRN:				
CHK:				
SIGN DATE:				

MAY 1, 2020

TITLE SHEET, GENERAL NOTES AND INDEX OF DRAWINGS

600' SCALE MAP NO. 38  
BLOCK NO. 14, 15

PROJECT NO. W8303  
CONTRACT NO. 44-5054

ANDERSON AVE/MOUND STREET WATER MAIN

ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

SCALE  
AS SHOWN

SHEET NO.  
01 OF 13

Plot By: bgrasso Tab: G-01  
 Plot Scale: 1"=1  
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 6/27/2020 12:14:14

**ABBREVIATIONS**

ABAN	ABANDONED
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE, ADJACENT
ALT	ALTERNATE, ALTERNATIVE
APPROX	APPROXIMATE
AUX	AUXILIARY
AVE.	AVENUE
BGE	BALTIMORE GAS AND ELECTRIC
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BLT(S)	BOLT(S)
BM	BENCHMARK
BOP	BOTTOM OF PIPE
CB	COMBINED BEND
CC	CORROSION CONTROL
CFM	CUBIC FEET PER MINUTE
C&G	CURB AND GUTTER
CI	CAST IRON
CIP	CAST IRON PIPE
CL	CLASS, CLEARANCE, CENTER LINE
CLR	CLEAR, CLEARANCE
CO	CLEAN OUT
COMB	COMBINATION
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION, CONTROL
COV	COVER
CP	CATHODIC PROTECTION
CPLG	COUPLING
CTV	CABLE TELEVISION
DEG	DEGREE
DEPT	DEPARTMENT
DET	DETAIL
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIV	DIVISION
DN	DOWN
DOT	DEPARTMENT OF TRANSPORTATION
DR	DRAIN
DTL	DETAIL
DV	DIVISION VALVE
DWG(S)	DRAWING(S)
E	EAST, ELECTRIC
EA	EACH
EBOX	ELECTRICAL BOX
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EX	EXISTING
EXT	EXTENSION, EXTERIOR, EXTERNAL
FH	FIRE HYDRANT
FLEX	FLEXIBLE
FLG	FLANGE
FM	FORCE MAIN, FLOW METER
FO	FIBER OPTIC
FP	FLOOD PLAIN
FT	FEET, FOOT
G	GAS
GAB	GRADED AGGREGATE BASE
GAL	GALLON
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GR	GRADE
GV	GATE VALVE, GRAVITY VENTILATOR
HB	HORIZONTAL BEND
HC	HOWARD COUNTY
HD	HIGH DEFLECTION
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HP	HIGH POINT, HORSEPOWER
HR	HOURLY
HWY	HIGHWAY
ID	INSIDE DIAMETER
IN	INCH, INCHES
INC	INCORPORATED
INCL	INCLUDING
INL	INLET

**ABBREVIATIONS (CONT'D)**

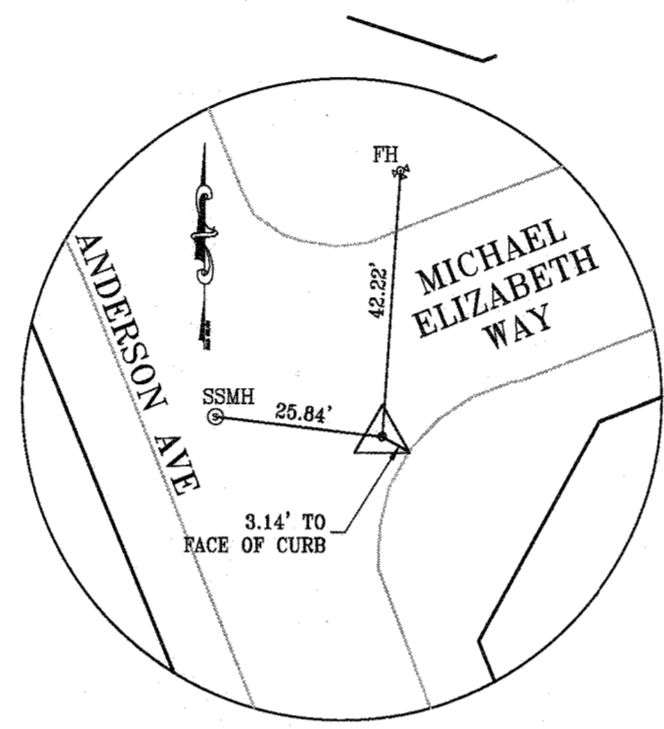
INSUL	INSULATE, INSULATION, INSULATING
INV	INVERT
JT	JOINT
L	LENGTH
LB(S)	POUND(S)
LF	LINEAR FEET
LG	LENGTH, LONG
LOC	LIMIT OF CONTRACT
LOD	LIMIT OF DISTURBANCE
LP	LOW POINT, LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MDSHA	MARYLAND STATE HIGHWAY ADMINISTRATION
MECH	MECHANICAL
MED	MEDIUM
MFR(S)	MANUFACTURER(S)
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MPH	MILES PER HOUR
N	NORTH
NA	NOT APPLICABLE
N.I.C	NOT IN CONTRACT
NO.(S)	NUMBER(S)
NPT	NATIONAL PIPE THREAD
NST	NATIONAL STANDARD THREAD
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPP	OPPOSITE, OPPOSING
PAV	PAVEMENT
PCF	POUNDS PER CUBIC FOOT
PE	PLAIN END
PK	PK NAIL
PL	PLATE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PT	POINT
PVC	POLYVINYL CHLORIDE
R	RADIUS, RISER, RIM ELEVATION
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REF	REFERENCE
REQD	REQUIRED
REV	REVISION, REVISED
ROW	RIGHT-OF-WAY
R/W	RIGHT-OF-WAY
RT	RIGHT
S	SOUTH, SEWER
SAN	SANITARY
SB	SOIL BORING
SCE	STABILIZED CONSTRUCTION ENTRANCE
SCH	SCHEDULE
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SF	SILT FENCE
SHC	SANITARY SEWER HOUSE CONNECTION
SHT	SHEET
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL, SANITARY SEWER
STA	STATION
STD	STANDARD
STL	STEEL
SYS	SYSTEM
T	TOP
TBD	TO BE DETERMINED
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
TH, TP	TEST HOLE, TEST PIT
TOP	TOP (OF PIPE) ELEVATION
TRAV	TRAVERSE
TYP	TYPICAL
USGS	UNITED STATES GEOLOGICAL SURVEY
V	VALVE, VERTICAL
VB	VERTICAL BEND
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL

**ABBREVIATIONS (CONT'D)**

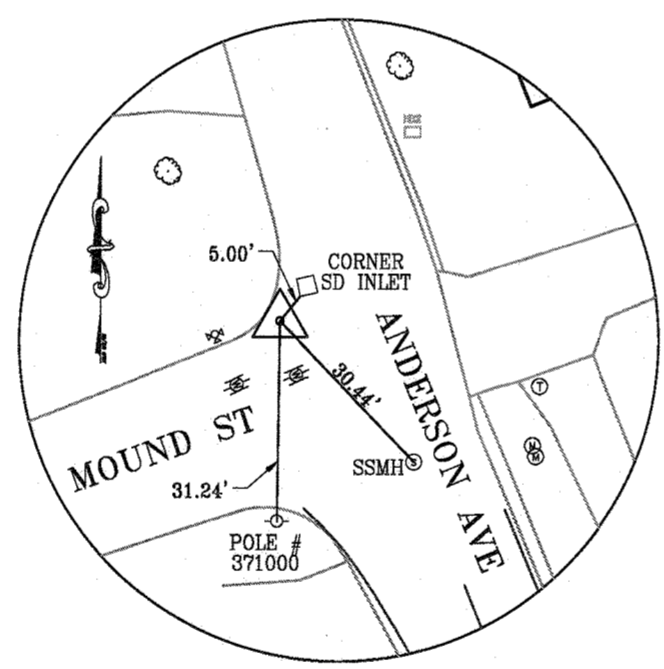
W	WEST, WIDTH, WATER
W/	WITH
WHC	WATER HOUSE CONNECTION
WM	WATER MAIN
W/O	WITHOUT
WSS	WATER SUPPLY SERVICE
WV	WATER VALVE
X	BY, TIMES
YD	YARD
&	AND
AT	AT
#	NUMBER
%	PERCENT

**PROPERTY INFORMATION:**

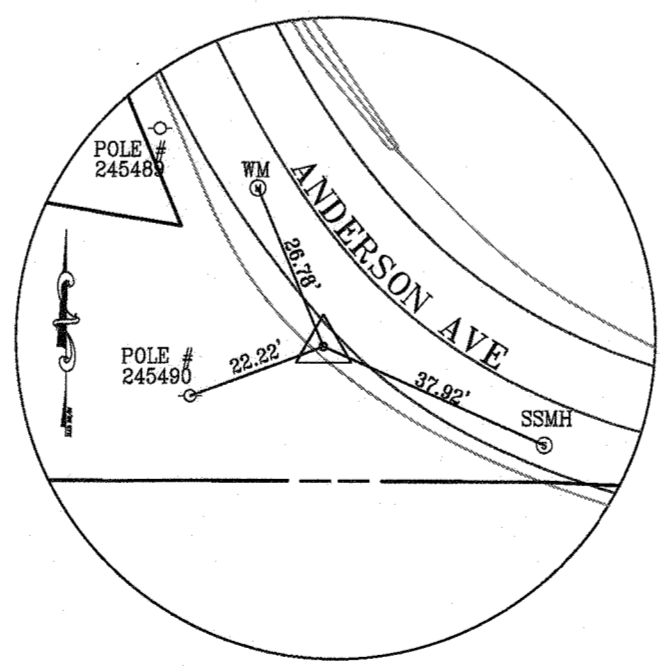
ADDRESS  
OWNER NAME(S)  
MAP-GRID-PARCEL LOT#  
LIBER - FOLIO  
ACREAGE



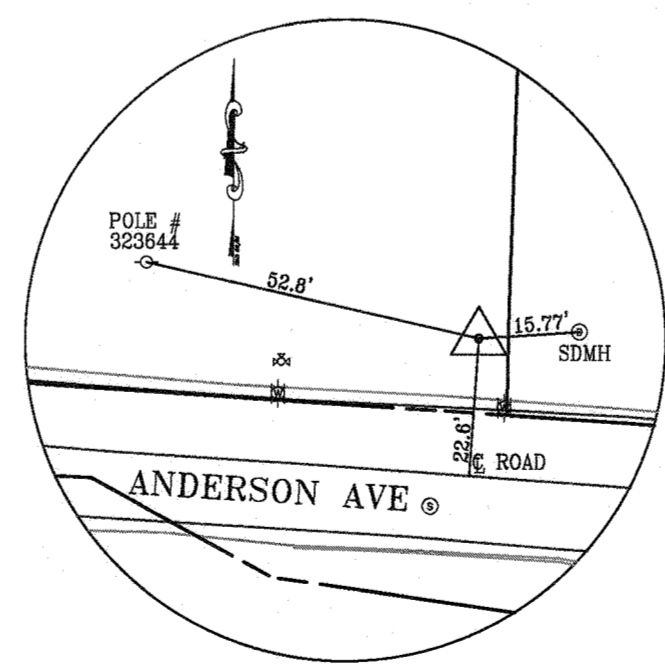
MRC1  
NORTHING: 556,734.537  
EASTING: 1,389,661.651  
ELEVATION: 134.7700



MRC2  
NORTHING: 556,364.585  
EASTING: 1,389,764.403  
ELEVATION: 116.640



MRC3  
NORTHING: 555,899.590  
EASTING: 1,389,968.337  
ELEVATION: 93.8700



38GA  
NORTHING: 555,897.300  
EASTING: 1,390,132.183  
ELEVATION: 80.8620

**LEGEND**

EXISTING	X" S
SANITARY SEWER	X" S
SANITARY SEWERS 12" AND OVER	FM
SANITARY SEWER FORCE MAIN	FM
WATER	W
STORM DRAIN	SD
STORM DRAIN INLET	SD
OVERHEAD ELECTRIC	OH
UNDERGROUND ELECTRIC	E
UNDERGROUND TELEPHONE	T
UNDERGROUND CABLE	C
GAS	G
PROPERTY LINE	---
UTILITY EASEMENT	---
MINOR CONTOURS	492
MAJOR CONTOURS	490
100-YEAR FLOODPLAIN	---
WETLAND BOUNDARY	---
25' WETLAND BUFFER	WB
FENCE	X
RAILROAD TRACKS	---
TREE LINE OR WOODS	---
WATER FIRE HYDRANT	⊕
WATER VALVE	⊕
WATER METER	⊕
WATER CURB STOP	⊕
GAS METER	⊕
ELECTRIC POLE GUY	⊕
ELECTRIC POLE	⊕
UTILITY MARKER	⊕
SIGN	⊕
MAILBOX	⊕
SANITARY SEWER MANHOLE	⊕
STORM DRAIN MANHOLE	⊕
BORING	⊕
TRAVERSE LOCATION	⊕
TEST HOLE LOCATION	⊕

PROPOSED	⊕
WATER MAIN	⊕
WATER VALVE	⊕
WATER METER	⊕
WATER MAIN BLOWOFF/DRAIN	⊕
CONTINUITY TEST STATION	⊕
TEMPORARY BYPASS PIPING (SIZE")	2
TEMPORARY FIRE HYDRANT	⊕
WATER FIRE HYDRANT	⊕
WATER HOUSE CONNECTION	⊕
ABANDON EXISTING	⊕
REMOVE EXISTING	⊕
WATER HOUSE CONNECTION	⊕

QUANTITIES				
ITEM	ESTIMATED QUANTITY		AS-BUILT	SUPPLIER
12" PVC C900 PIPE (DR-14)	1,010	LF	1,018	NAPCO
8" PVC C900 PIPE (DR-14)	20	LF	10	NAPCO
10" DUCTILE IRON PIPE (CL-54)	10	LF	20	
8" DUCTILE IRON PIPE (CL-54)	20	LF	20	
12" GATE VALVE	3	EA	3	VICTAULIC COMPANY
10" GATE VALVE	1	EA	1	VICTAULIC COMPANY
8" GATE VALVE	3	EA	3	VICTAULIC COMPANY
WATER MAIN DRAIN ASSEMBLY	1	EA	1	
6" FIRE HYDRANT ASSEMBLY	1	EA	1	
1-1/2" TAP & CORP STOP-WATER HOUSE SERVICE	4	EA	4	
1" TAP & CORP STOP-WATER HOUSE SERVICE	12	EA	13	
1-1/2" COPPER PIPE - WATER HOUSE SERVICE	29	LF	66	
1" COPPER PIPE - WATER HOUSE SERVICE	307	LF	403	
1" METER SETTING & VAULT	3	EA	3	MUELLER
3/4" METER SETTING & VAULT	12	EA	13	MUELLER
12" DIP	NA		8	
10" HDPE SD	NA		10	

**FITTING SCHEDULE**

STA	OFFSET	ITEM	NORTHING	EASTING
-0+10	0.000	8" INSULATING FLANGE/COUPLING	556369.0372	1389764.1301
-0+06	0.000	8" VALVE	556365.6068	1389765.3528
0+03	0.000	12"x8" REDUCER	556362.0285	1389766.4575
0+00.00	0.000	12"x10" TEE	556356.6126	1389768.2578
0+00.00	6(RT)	10" VALVE	556353.9727	1389760.9160
0+03	0.000	12" VALVE	556353.2082	1389769.6488
0+38	0.000	12"-1.52" HD COUPLING (HB)	556321.4807	1389782.7526
4+12.00	0.000	12"-5.00" SWEEP (HB)	555977.3058	1389929.0076
4+47.00	0.000	12"x6" FIRE HYDRANT TEE	555946.2394	1389945.1284
4+72.00	0.000	12"-11.25" HB	555924.0455	1389956.6370
5+05.64	0.000	12"- 45" HB	555897.8448	1389977.7557
6+44	0.000	12"-2.78" HD COUPLING (HB)	555883.0493	1390115.3223
6+64.62	0.000	12"x8" TEE	555881.8007	1390135.8921
6+64.62	1.5(LT)	8" VALVE	555885.4401	1390136.1095
6+85.63	0.000	12"-5.00" SWEEP (VB)	555880.1093	1390156.8430
7+24.46	0.000	12"-2.29" HD COUPLING (VB)	555877.8356	1390195.6098
8+90.33	0.000	12"-11.25" HB (ROTATED UP)	555868.1244	1390361.1874
9+10.33	0.000	12"-1.60" HD COUPLING (HB)	555870.8693	1390380.9980
9+40.09	0.000	12"-3.60" HD COUPLING (HB)	555875.7738	1390410.3552
9+60.09	0.000	12"-22.5" HB	555879.7582	1390429.9542
10+00	0.000	12" VALVE	555902.8400	1390462.5392
10+02.74	0.000	12"x12" TEE	555904.4670	1390464.5760
10+02.74	2(RT)	12" VALVE	555901.9898	1390466.5894
10+02.74	4(RT)	12" INSULATING FLANGE/COUPLING	555900.0973	1390468.1162
10+02.74	2(LT)	12"x8" REDUCER	555907.0530	1390462.5001
10+02.74	4(LT)	8" VALVE	555910.0553	1390460.1115
10+02.74	4(LT)	8" INSULATING FLANGE/COUPLING	555911.7153	1390458.9690

**AS-BUILT DRAWINGS:**  
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN REVISED TO REFLECT THE AS-BUILT CONDITIONS OF THE CAPITAL PROJECT W8303, ANDERSON AVE/MOUND STREET WATER MAIN RECORDED BY HOWARD COUNTY'S CONTRACTOR AND INSPECTOR.  
*Nizar K. Shal*  
Engineer's Signature - Registration Number 35329 Date 1/10/2022

**AS-BUILT DECEMBER 2021**

RRC21 V815 - \\baldwin01\2021\2021\12\15\154\_jacobi\Draw\11 - Loudon Ave W8303\CAD\Plans\2-pri-1002-10000.dwg May 14, 2020 - 3:46pm ENV:CTB Plot Scale 1=1 Plot Bx: bprasa Tab:0-02

<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND Director: <i>Thomas J. Sullivan</i> 6/1/20 Chief, Bureau of Engineering: <i>Thomas J. Sullivan</i> 6/1/20 Chief, Bureau of Utilities: <i>Thomas J. Sullivan</i> 6/1/20 Chief, Utility Design Division: <i>Thomas J. Sullivan</i> 6/1/20		<b>RK&amp;K</b> P: 410.728.2900 700 East Pratt Street, Suite 500   Baltimore, MD 21202 Engineers   Construction Managers   Planners   Scientists www.rkk.com Responsive People   Creative Solutions		<b>PROFESSIONAL CERTIFICATION:</b> 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. 20586 EXPIRATION DATE: 09/08/2020		DES: WJG DRN: RAD CHK: NKS SIGN DATE: 05-19-2020		REVISION AS-BUILT DATE: 12/7/21		PROJECT NO. W8303 CONTRACT NO. 44-5054 <b>ANDERSON AVE/MOUND STREET WATER MAIN</b> ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND		SCALE: AS SHOWN SHEET NO. 02 OF 13	
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**SUGGESTED SEQUENCE OF CONSTRUCTION**

THE SUGGESTED SEQUENCE OF CONSTRUCTION DOES NOT INCLUDE CONCURRENT SEDIMENT AND EROSION CONTROL MEASURES, AND MAINTENANCE OF TRAFFIC ACTIVITIES, WHICH SHALL ALSO BE FOLLOWED AS DESCRIBED IN THE CONTRACT DOCUMENTS.

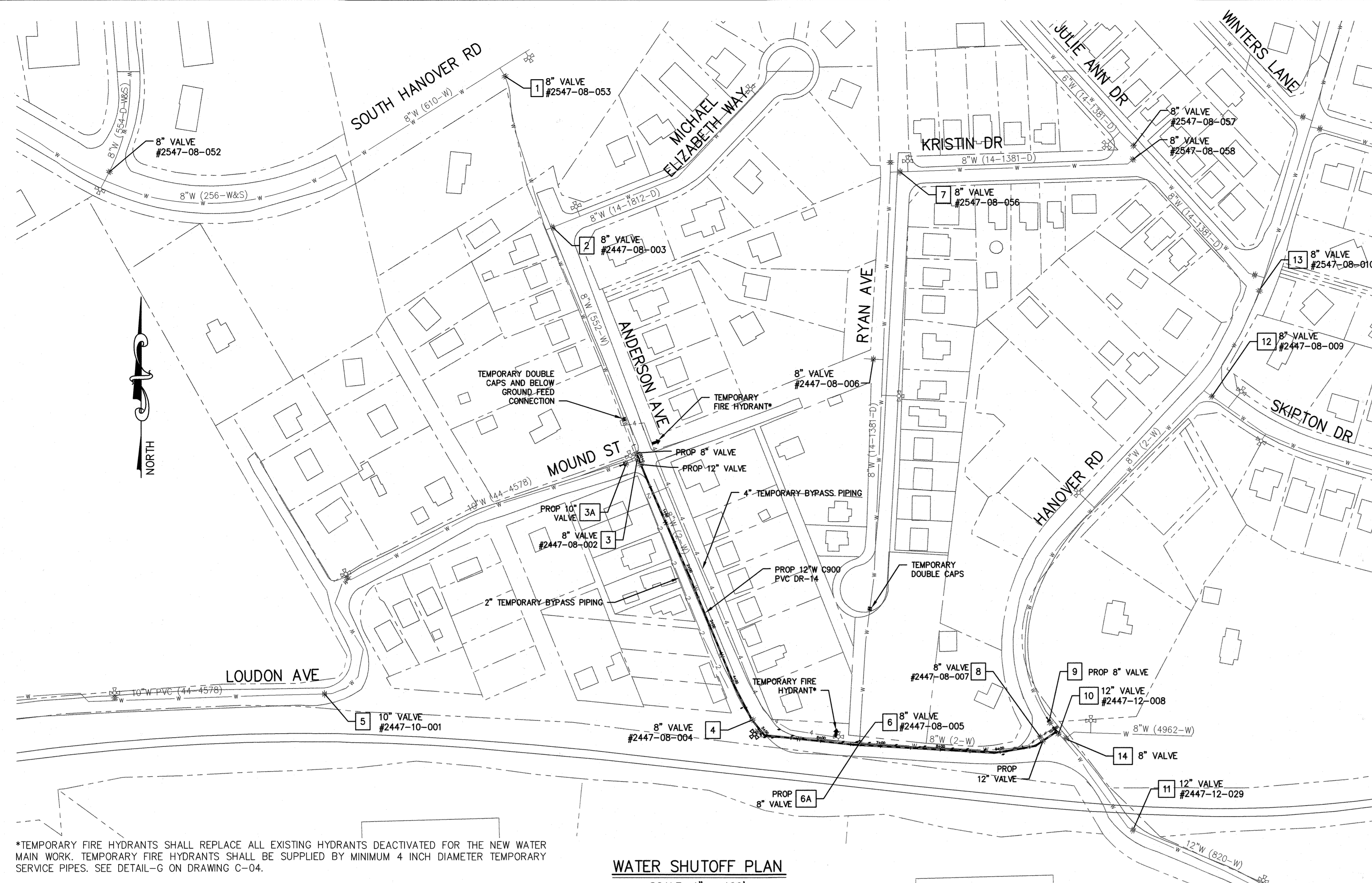
THE CONTRACTOR SHALL VERIFY THAT THE EXISTING WATER MAINS AND VALVES ARE ADEQUATELY RESTRAINED PRIOR TO REMOVAL OF EXISTING WATER MAIN AT THE CONNECTION LOCATIONS. THE CONTRACTOR SHALL PROVIDE TEMPORARY THRUST BLOCKING ON THE EXISTING AND NEW WATER MAINS AS NEEDED TO COMPLETE CONNECTION TO THE NEW WATER MAIN AT NO ADDITIONAL COST TO THE COUNTY.

THE CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS AFFECTED BY THE PROPOSED WATER SHUTDOWN. SUCH NOTIFICATIONS SHALL BE SENT SUFFICIENTLY IN ADVANCE OF ANY PLANNED WATER SHUTDOWN. ALL WATER SHUTDOWNS MUST BE LIMITED TO MAXIMUM OF EIGHT (8) HOURS AND SHALL BE PERFORMED DURING A LOW WATER DEMAND PERIOD IN CONSULTATION WITH THE COUNTY PERSONNEL AND IMPACTED PROPERTY OWNERS.

- INSTALL NEW 4-INCH AND 2-INCH TEMPORARY BYPASS PIPING AND TEMPORARY FIRE HYDRANTS ALONG ANDERSON AVENUE AS SHOWN. OPEN THE 4" BYPASS VALVE ON TEMPORARY BYPASS PIPING, DISINFECT, FLUSH, AND TEST.
- CLOSE VALVES 1, 2, 3 AND 4 INCLUDING 4" BYPASS VALVE. INSTALL 8-INCH TEMPORARY DOUBLE CAPS AND BELOW GROUND FEED CONNECTION ON ANDERSON AVE AS SHOWN. ALL WORK MUST BE COMPLETED WITHIN MAX. 8-HOUR WATER SHUTDOWN. OPEN VALVES 1, 2, 3 AND 4. AFTER BACTERIOLOGICAL TESTING OF THE TEMPORARY BYPASS PIPING IS COMPLETE, CONNECT 4-INCH TEMPORARY BYPASS PIPING TO THE BELOW GROUND FEED CONNECTION.
- CLOSE VALVES 4 AND 5. REPLACE ABOUT 10- FEET OF EXISTING 10-INCH WATER MAIN ON MOUND ST WITH NEW 10-INCH DIP AND NEW 10-INCH VALVE 3A AS SHOWN, WITHIN MAX. 8-HOUR WATER SHUTDOWN. OPEN VALVES 4 AND 5. INSTALL CONCRETE THRUST BLOCK ON NEWLY INSTALLED 10-INCH DIP AND STRAP VALVE 3A TO THE THRUST BLOCK AS PER HOWARD COUNTY STANDARD DETAILS G-8.11 AND G-8.12.
- CLOSE VALVES 8, 11, 12, 13 AND 14. REPLACE ABOUT 10- FEET OF EXISTING 8-INCH WATER MAIN ON HANOVER ROAD WITH NEW 8-INCH DIP AND NEW 8-INCH VALVE 9 AS SHOWN, WITHIN MAX. 8-HOUR WATER SHUTDOWN. OPEN VALVES 8, 11, 12, 13, AND 14. INSTALL CONCRETE THRUST BLOCK ON NEWLY INSTALLED 8-INCH DIP AND STRAP VALVE 9 TO THE THRUST BLOCK AS PER HOWARD COUNTY STANDARD DETAILS G-8.11 AND G-8.12.
- CLOSE VALVES 6 AND 7. INSTALL TEMPORARY DOUBLE CAPS ON RYAN AVENUE AS SHOWN, WITHIN MAX. 8-HOUR WATER SHUTDOWN. OPEN VALVE 7. KEEP VALVE 6 CLOSED.
- SEQUENCE #2 THRU #5 CAN BE PERFORMED IN ANY SEQUENCE OR CAN BE PERFORMED SIMULTANEOUSLY, HOWEVER, ALL WATER MAIN SHUTDOWNS MUST BE LIMITED TO 8-HOURS MAX.
- AFTER DISINFECTION, FLUSHING, AND BACTERIOLOGICAL TESTING OF THE TEMPORARY BYPASS PIPING IS COMPLETE, TRANSFER ALL AFFECTED WATER SERVICES TO THE TEMPORARY BYPASS PIPING.
- PERFORM DEMONSTRATION PERIOD OF TEMPORARY BYPASS WATER SYSTEM IN ACCORDANCE WITH THE SPECIAL PROVISIONS. RELIANCE UPON THE TEMPORARY WATER SYSTEM FOR WATER SUPPLY WITHOUT CONTINUOUS ONSITE CONTRACTOR PERSONNEL IS NOT PERMITTED UNTIL SUCCESSFUL COMPLETION OF THE DEMONSTRATION PERIOD.
- ONCE THE IN-LINE THRUST BLOCKS INSTALLED ON MOUND STREET AND HANOVER ROAD ARE CURED, CLOSE VALVES 3A, 9, 11, AND BEGIN REPLACEMENT/INSTALLATION OF NEW 12-INCH PVC WATER MAIN, FITTINGS AND APPURTENANCES, AS SHOWN. REPLACE WATER SERVICES AND INSTALL NEW OUTSIDE METER SETTINGS AND VAULTS AS REQUIRED AND AS SHOWN ON THE WATER HOUSE CONNECTION TABLE.
- PRESSURE TEST AND DISINFECT, FLUSH AND PERFORM BACTERIOLOGICAL TESTING FOR NEWLY INSTALLED WATER MAINS. OPEN VALVES 3A, 9 AND 11. TRANSFER ALL WATER SERVICES TO THE NEW WATER MAIN.
- CLOSE VALVES 6A AND 7. REMOVE TEMPORARY DOUBLE CAPS ON RYAN AVENUE AS SHOWN, WITHIN MAX. 8-HOUR WATER SHUTDOWN. OPEN VALVES 6A AND 7.
- REPEAT SEQUENCE #2 TO REMOVE TEMPORARY DOUBLE CAPS AND BELOW GROUND FEED CONNECTION. REMOVE TEMPORARY BYPASS PIPING AND RESTORE THE AREA.

**WATER NOTES (CONT'D G-01):**

- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C900 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.
- TEES, CROSSES, CAPS, BENDS, GREATER THAN 5 DEGREES, AND SIMILAR FITTINGS THAT REQUIRE RESTRAINED JOINTS SHALL BE DUCTILE IRON MECHANICAL JOINT FITTINGS IN ACCORDANCE WITH ANSI/AWWA C110/A21.10 OR C153/A21.53, APPROPRIATE FOR PVC C900 PIPE. ALL DUCTILE IRON FITTINGS SHALL BE FUSION BONDED EPOXY COATED INSIDE AND OUTSIDE.
- THE CONTRACTOR SHALL USE RESTRAINED COUPLINGS IN LIEU OF HIGH DEFLECTION COUPLINGS WITHIN THE LIMITS OF RESTRAINED JOINT PVC PIPE. ALL RESTRAINED COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1-1/2 DEGREE ON EITHER END OF THE COUPLING). THE PIPE SHALL BE INSERTED AN EQUAL DEPTH ON BOTH SIDES OF THE COUPLING. CORROSION PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH DETAIL ON SHEET C-04. RESTRAINED COUPLINGS SHALL BE RATED FOR A MINIMUM 305 PSI, DR-14, MEETING THE REQUIREMENTS OF ANSI/AWWA C900 AND SHALL BE SERIES 3800 MEGA-COUPLING, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.
- TEMPORARY BYPASS PIPING SHALL BE YELOMINE DR-17 AS MANUFACTURED BY NORTH AMERICAN PIPE CORPORATION, OR APPROVED EQUAL.
- INSTALLATION OF PROPOSED BYPASS WATER SYSTEM FOR TEMPORARY WATER SERVICE SHALL ONLY BE ALLOWED BETWEEN APRIL 1ST AND NOVEMBER 15TH. NO BYPASS PIPE OR SERVICE CONNECTION SHALL BE INSTALLED DURING FREEZING WEATHER. THE CONTRACTOR MUST NOTIFY PROPERTY OWNERS AT LEAST 72 HOURS PRIOR TO COMMENCING THIS WORK.
- THE STATIC GRADIENT FOR THE WATER MAINS AT THE PROJECT LOCATION IS 400 FEET. HYDROSTATIC AND LEAKAGE TESTING OF NEW WATER MAINS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 1006 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV (LATEST EDITION). THE TEST PRESSURE TO BE INDUCED AT THE LOW POINT OF THE TEST SECTION SHALL BE 250 PSI MINIMUM.



\*TEMPORARY FIRE HYDRANTS SHALL REPLACE ALL EXISTING HYDRANTS DEACTIVATED FOR THE NEW WATER MAIN WORK. TEMPORARY FIRE HYDRANTS SHALL BE SUPPLIED BY MINIMUM 4 INCH DIAMETER TEMPORARY SERVICE PIPES. SEE DETAIL-G ON DRAWING C-04.

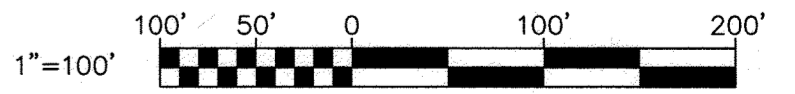
**WATER SHUTOFF PLAN**  
SCALE: 1" = 100'

WATER HOUSE CONNECTIONS										
SERVICE ADDRESS	EX. WHC SIZE	EX. WHC MATERIAL	EX. METER LOCATION	EX. METER SIZE	APPROX. LENGTH OF EX. WHC (LF)	PROP. TAP/WHC SIZE	NEW METER SIZE	APPROX. LENGTH OF PROP. WHC (LF)	STANDARD DETAIL	REMARKS/NOTES
6205 MOUND ST	3/4"	UNKNOWN	INSIDE	5/8"	30.0	1"	3/4"	27.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6449 ANDERSON AVE	3/4"	UNKNOWN	INSIDE	5/8"	29.0	1"	3/4"	28.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6450 ANDERSON AVE	3/4"	COPPER	INSIDE	5/8"	5.5	1"	3/4"	9.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6454 ANDERSON AVE	3/4"	COPPER	INSIDE	5/8"	0.5	1"	3/4"	9.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6457 ANDERSON AVE	3/4"	UNKNOWN	INSIDE	5/8"	31.0	1"	3/4"	38.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6464 ANDERSON AVE	1"	COPPER	INSIDE	3/4"	11.0	1"	3/4"	12.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6465 ANDERSON AVE	3/4"	UNKNOWN	INSIDE	5/8"	28.0	1"	3/4"	39.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6470 ANDERSON AVE	3/4"	UNKNOWN	OUTSIDE	5/8"	10.0	1"	3/4"	8.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6472 ANDERSON AVE	1-1/2"	UNKNOWN	OUTSIDE	1"	10.0	1-1/2"	N/A	10.0	W-3.28	CONNECT TO EXISTING OUTSIDE METER SETTING & VAULT
6473 ANDERSON AVE	3/4"	UNKNOWN	INSIDE	5/8"	20.0	1"	3/4"	37.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6477 ANDERSON AVE	3/4"	UNKNOWN	INSIDE	5/8"	37.0	1"	3/4"	37.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6479 ANDERSON AVE	3/4"	COPPER	OUTSIDE	5/8"	30.0	1"	3/4"	29.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT
6480 - LOT 13 ANDERSON AVE	3/4"	UNKNOWN	OUTSIDE	5/8"	7.5	1-1/2"	1"	7.0	W-3.28	INSTALL NEW OUTSIDE METER SETTING & VAULT
6480 - LOT 14 ANDERSON AVE	-	-	-	-	-	1-1/2"	1"	6.0	W-3.28	INSTALL NEW OUTSIDE METER SETTING & VAULT
6480 - LOT 15 ANDERSON AVE	-	-	-	-	-	1-1/2"	1"	6.0	W-3.28	INSTALL NEW OUTSIDE METER SETTING & VAULT
6485 ANDERSON AVE	3/4"	UNKNOWN	INSIDE	5/8"	34.0	1"	3/4"	34.0	W-3.27	INSTALL NEW OUTSIDE METER SETTING & VAULT

**WATER HOUSE CONNECTION NOTES:**

- THE CONTRACTOR SHALL INSTALL NEW 1" WATER SERVICE TO REPLACE EXISTING 3/4" WATER HOUSE CONNECTION, AND SHALL INSTALL NEW METER VAULT WITH 3/4" METER SETTING, IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL W-3.27.
- THE CONTRACTOR SHALL WRAP WATER SERVICE CONNECTIONS WITH A COLD APPLIED PETROLATUM OR PETROLEUM ANTI-CORROSION WAX TAPE COATING SYSTEM. WAX TAPE COATING SYSTEM SHALL BE THREE-PART, COLD APPLIED CONSISTING OF PRIMER, WAX TAPE, AND TAPE OUTERWRAP IN ACCORDANCE WITH AWWA C217 AND AS DESCRIBED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL NEW OUTSIDE METER VAULT AND SETTING FOR ALL ADDRESSES WHERE EXISTING METER IS LOCATED INSIDE, IN ACCORDANCE WITH THE DETAIL W-3.27. THE NEW METER SETTING AND VAULT SHALL BE INSTALLED AT THE APPROXIMATE LOCATION OF THE EXISTING CURB STOP UNLESS SHOWN OTHERWISE ON THE WATER PLAN.
- 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.
- PERMANENT REPAIR OF TRENCHES FOR WATER HOUSE CONNECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL G-2.11 AND G-4.01. IF THE WATER HOUSE CONNECTION WAS INSTALLED SUCH THAT THE LIMITS OF PAVING ENCR OACH UPON PRIVATE PROPERTY, PERMISSION SHALL BE OBTAINED FROM THE PROPERTY OWNER PRIOR TO WORK.

**AS-BUILT, DEC. 2021**



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Thomas E. Sullivan* 6/19/20  
CHIEF, BUREAU OF ENGINEERING

*Gregory J. ...* 6-21-2020  
CHIEF, BUREAU OF UTILITIES

*...* 6/21/20  
CHIEF, UTILITY DESIGN DIVISION

**RK&K**  
P: 410.728.2900  
700 East Pratt Street, Suite 500 | Baltimore, MD 21202  
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PROFESSIONAL CERTIFICATION:  
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LICENSE NO. 20566  
EXPIRATION DATE: 09/06/2020



DES:	WJG	BY NO.		REVISION		DATE	
DRN:	RAD						
CHK:	NKS						
SIGN DATE:	05-19-2020						

MAY 1, 2020

**WATER SHUTOFF PLAN,  
TEMPORARY BYPASS PLAN,  
AND  
SEQUENCE OF CONSTRUCTION**

600' SCALE MAP NO. 38      BLOCK NO. 14, 15

PROJECT NO. W8303  
CONTRACT NO. 44-5054

**ANDERSON AVE/MOUND STREET WATER MAIN**

ELECTION DISTRICT NO. 2      HOWARD COUNTY, MARYLAND

SCALE  
AS SHOWN

SHEET NO.  
03 OF 13

R0621515 - \\baldwin\p0212\2021\2154\_46c860a\Task 11 - Loudon Ave W8303\030\Plans\3-pull-P001\_Loudon.dwg May 14, 2020 - 3:46pm ENVCIB Plot Scale 1=1 Plot By: bgress Tab: C-01



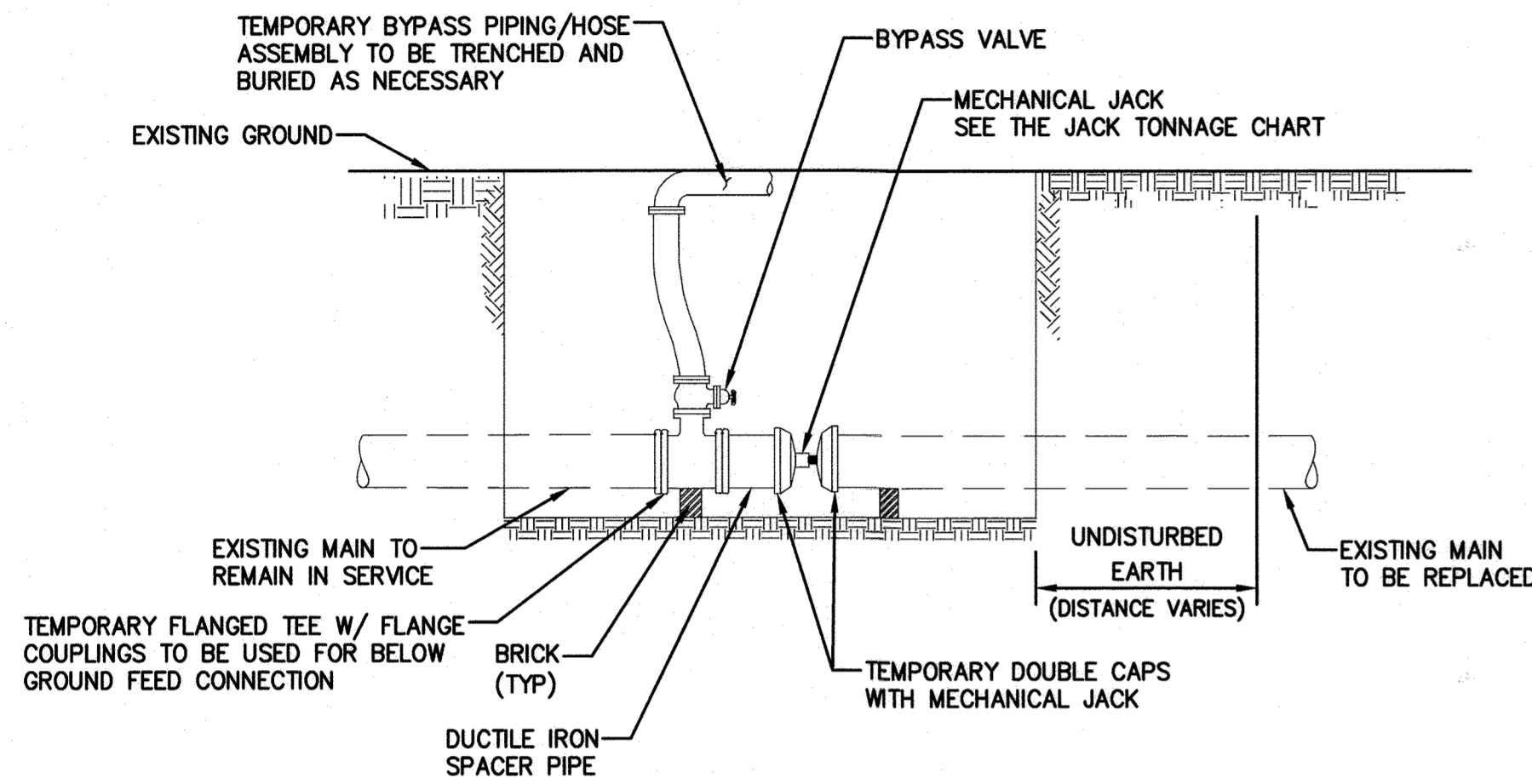


**NOTES:**

1. AFTER THE TEMPORARY BULKHEAD AND BELOW GROUND FEED CONNECTION ARE INSTALLED, THE CONTRACTOR SHALL SECURE THE UTILITY TRENCH WITH THE STEEL PLATE AS PER COUNTY DETAIL G-4.02 UNTIL PROPOSED WATER MAIN WORK IS COMPLETED.
2. TO RETURN THE EXISTING MAIN TO NORMAL SERVICE, THE TEMPORARY BULKHEAD AND BELOW GROUND FEED CONNECTION MUST BE REMOVED AND REPLACED WITH NEW DUCTILE IRON SPOOL PIECE AND TRANSITION COUPLINGS, AS SHOWN HERE AND IN ACCORDANCE WITH THE HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS.

JACK TONNAGE CHART	
JACK TONNAGE @ 150 PSI	OD <sup>2</sup> 16 TONS
JACK TONNAGE @ 200 PSI	OD <sup>2</sup> 12 TONS

OD OF WATER MAIN MEASURED IN INCHES.

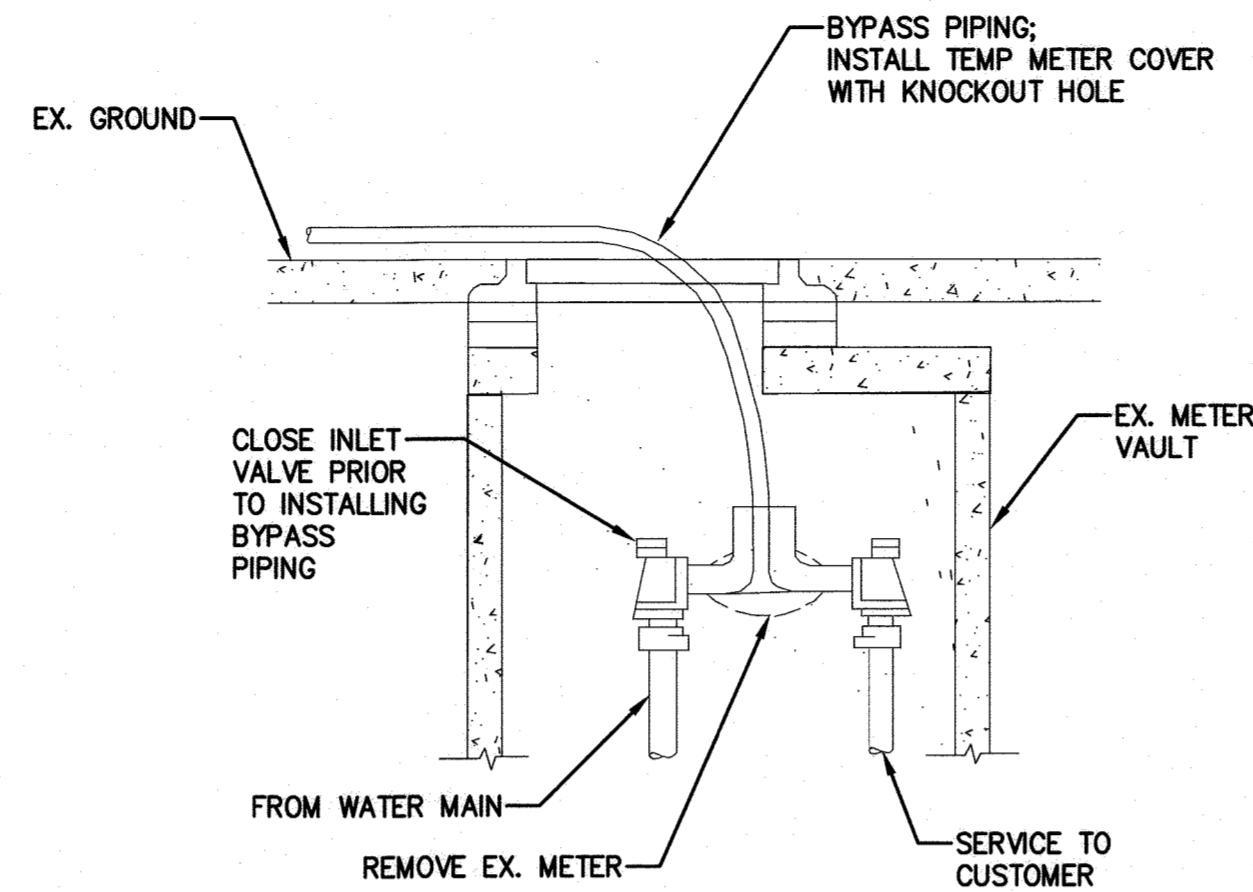


**A. TEMPORARY DOUBLE CAPS/BULKHEAD AND BELOW GROUND FEED CONNECTION**

SCALE: NTS

**NOTE:**

TEMPORARY BYPASS PIPING SYSTEM MUST COMPLY WITH NSF 61.

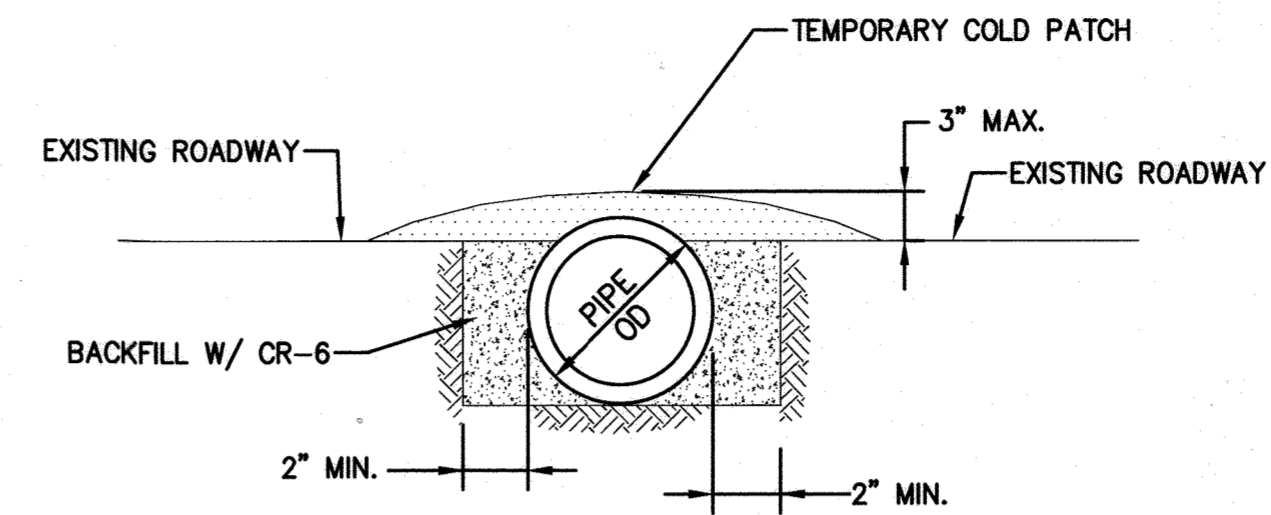


**C. TEMPORARY WATER HOUSE CONNECTION FOR OUTSIDE METER (UP TO 2" WATER SERVICE)**

SCALE: NTS

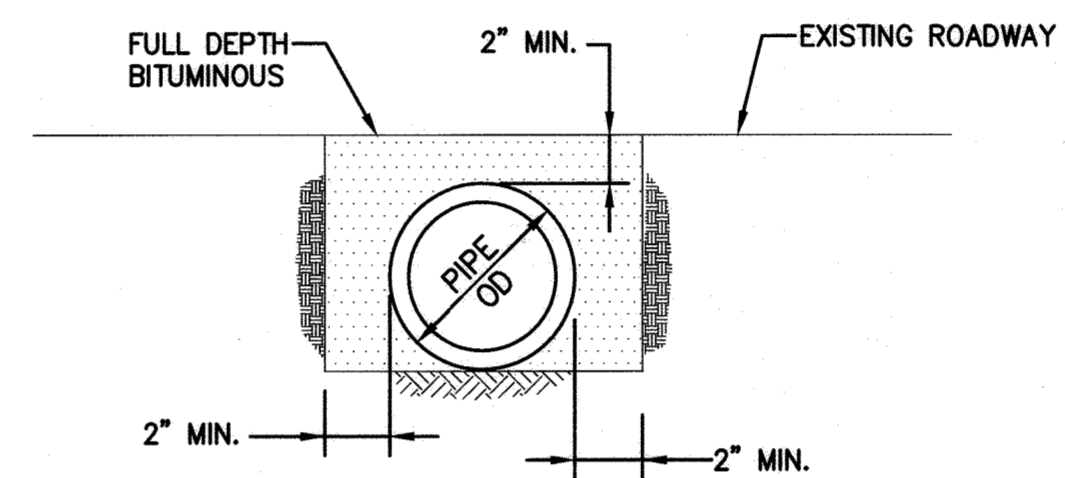
**NOTE:**

1. TRENCH REPAIR AND ROADWAY RESTORATION SHALL BE COMPLETED IN ACCORDANCE WITH THE HOWARD COUNTY STANDARD DETAIL G-2.11 AND G-4.01. IF THE TEMPORARY BYPASS PIPE WAS INSTALLED SUCH THAT THE LIMITS OF PAVING ENCROACH UPON PRIVATE PROPERTY, PERMISSION SHALL BE OBTAINED FROM THE PROPERTY OWNER PRIOR TO WORK.
2. PROTECT EXISTING NON-BITUMINOUS PAVEMENT FROM DISCOLORATION IF USING COLD PATCH METHOD. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ANY STAINING OR DISCOLORATION.
3. RUBBER RAMPS THAT DO NOT CUT THE PAVEMENT ARE ALLOWED ONLY FOR DRIVEWAY CROSSINGS.



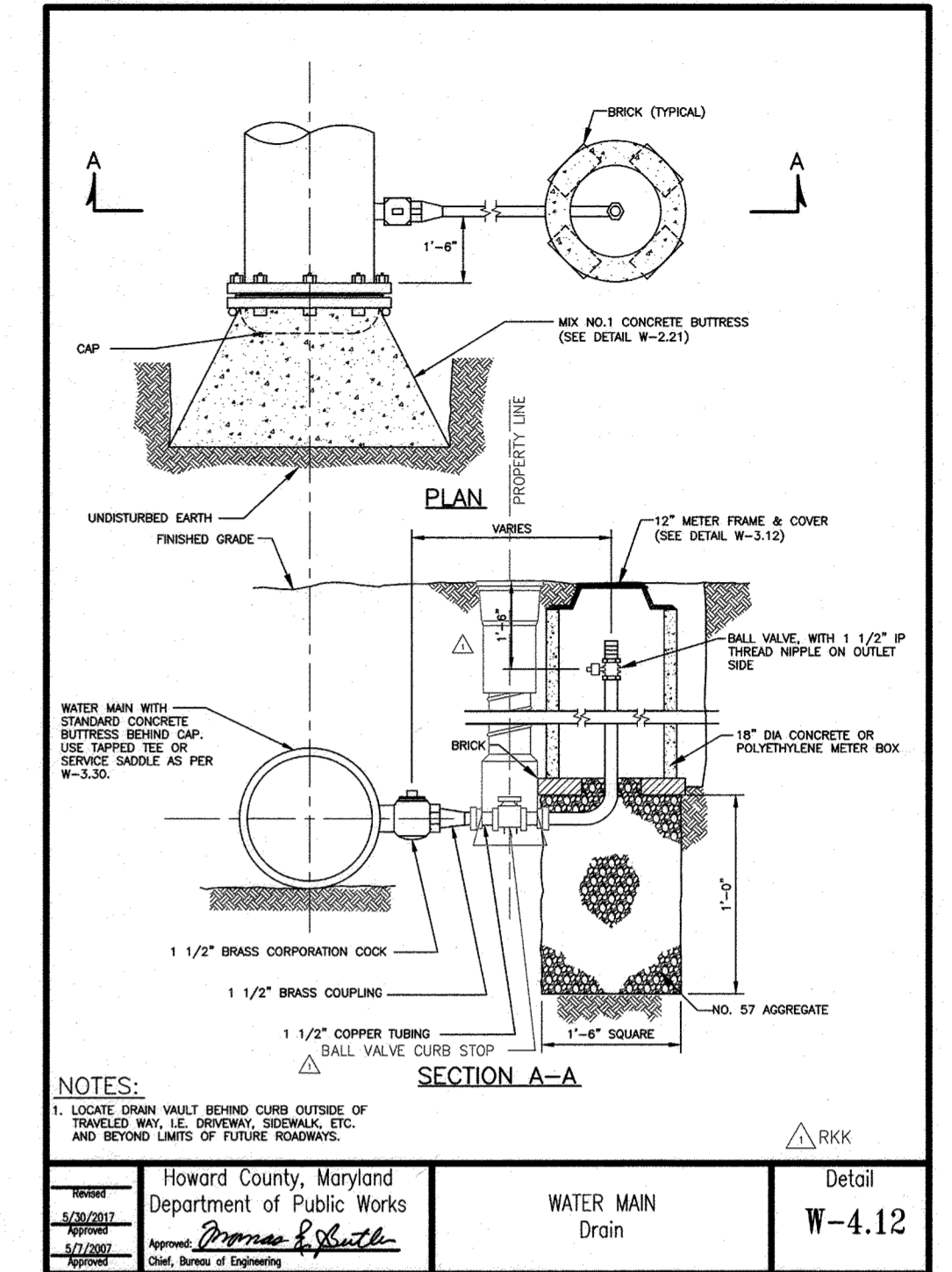
**E. TEMPORARY ROADWAY CROSSING FOR 4" AND SMALLER TEMPORARY BY-PASS PIPING**

SCALE: NTS



**F. TEMPORARY "MAJOR ROADWAY" CROSSING FOR 4" AND SMALLER TEMPORARY BY-PASS PIPING**

SCALE: NTS

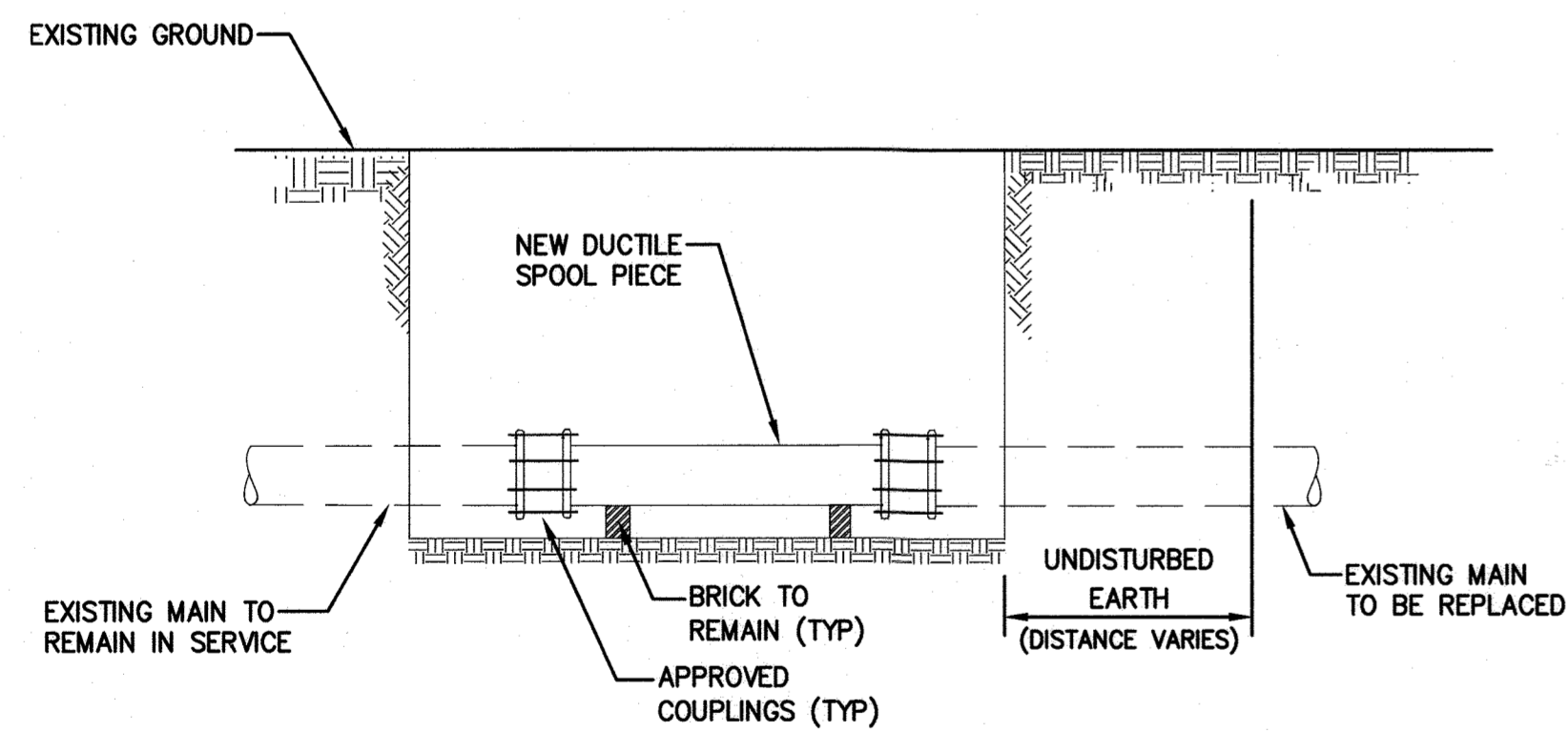


**H. WATER MAIN DRAIN**

SCALE: NTS

**NOTE:**

TRENCH REPAIR AND ROADWAY RESTORATION SHALL BE COMPLETED IN ACCORDANCE WITH THE HOWARD COUNTY STANDARD DETAIL G-2.11 AND G-4.01.

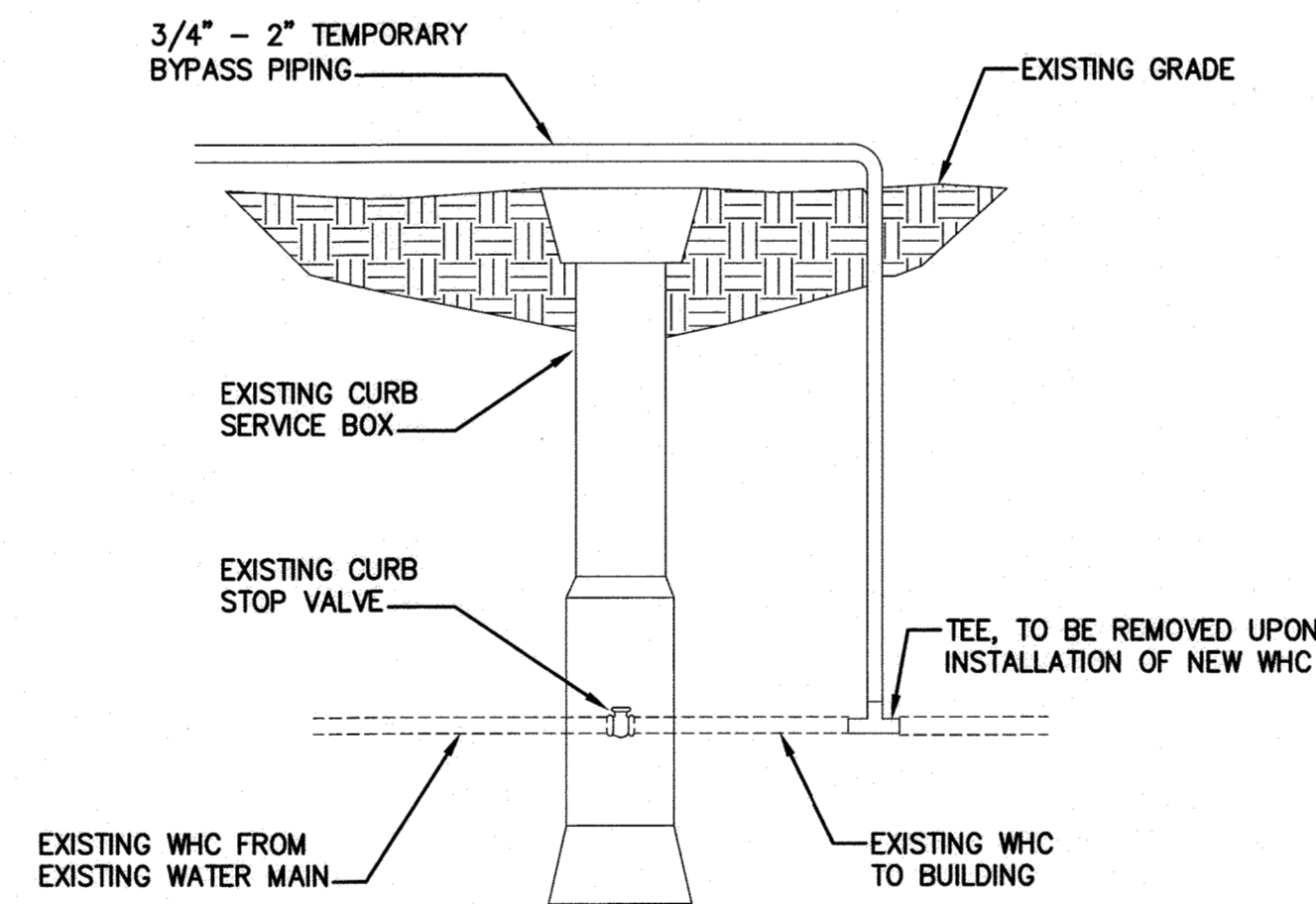


**B. PERMANENT REPAIR TO BELOW GROUND FEED CONNECTION**

SCALE: NTS

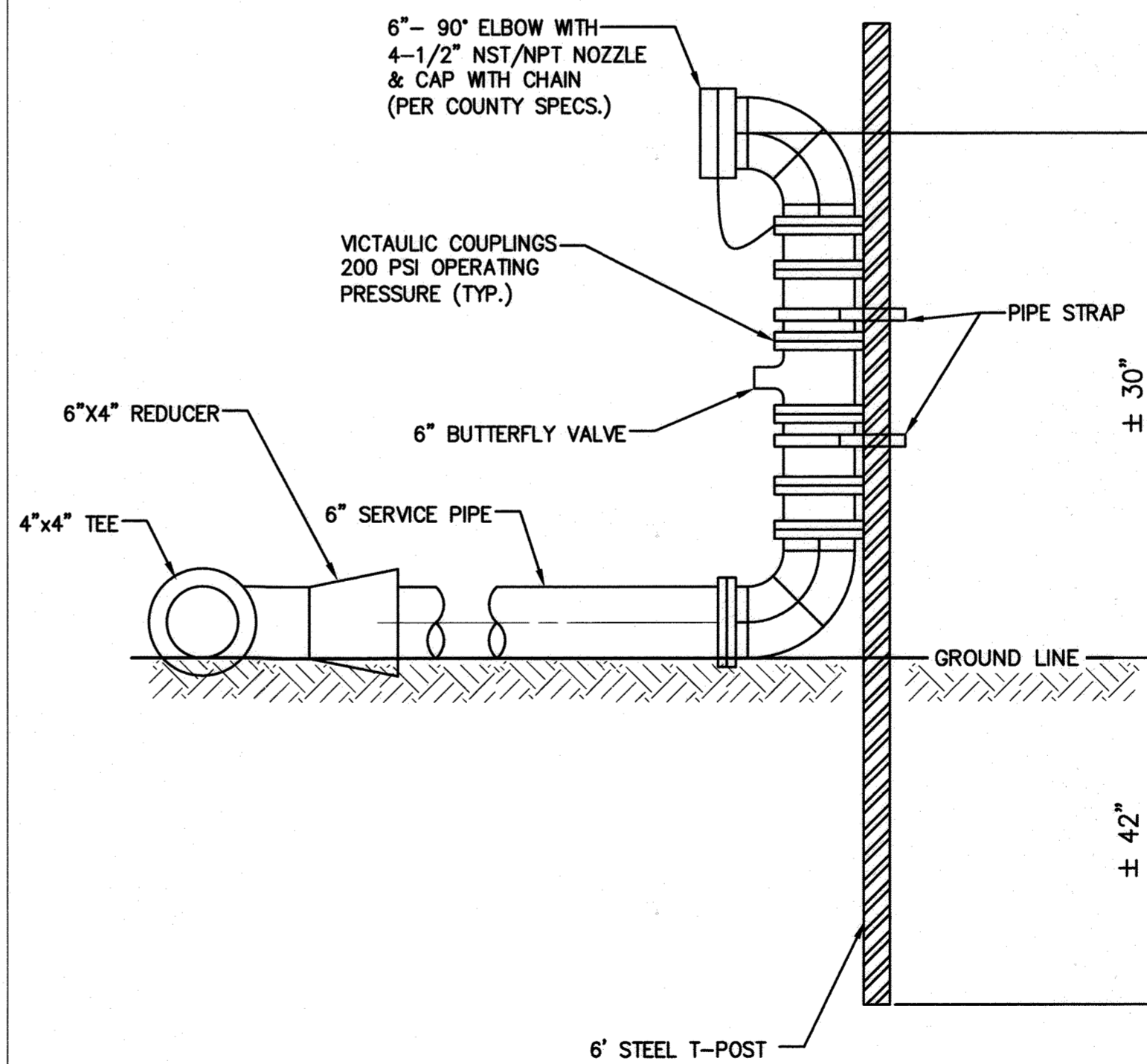
**NOTES:**

1. EXCAVATE TO CONNECT TEMPORARY WATER HOUSE CONNECTION.
2. SHUT-OFF EXISTING CURB STOP VALVE. INSTALL TEE ON BUILDING SIDE OF CURB SERVICE BOX AND CONNECT TEMPORARY WATER LINE TO TEE.
3. BACKFILL EXCAVATION.
4. TEMPORARY BYPASS PIPING SYSTEM MUST COMPLY WITH NSF 61.



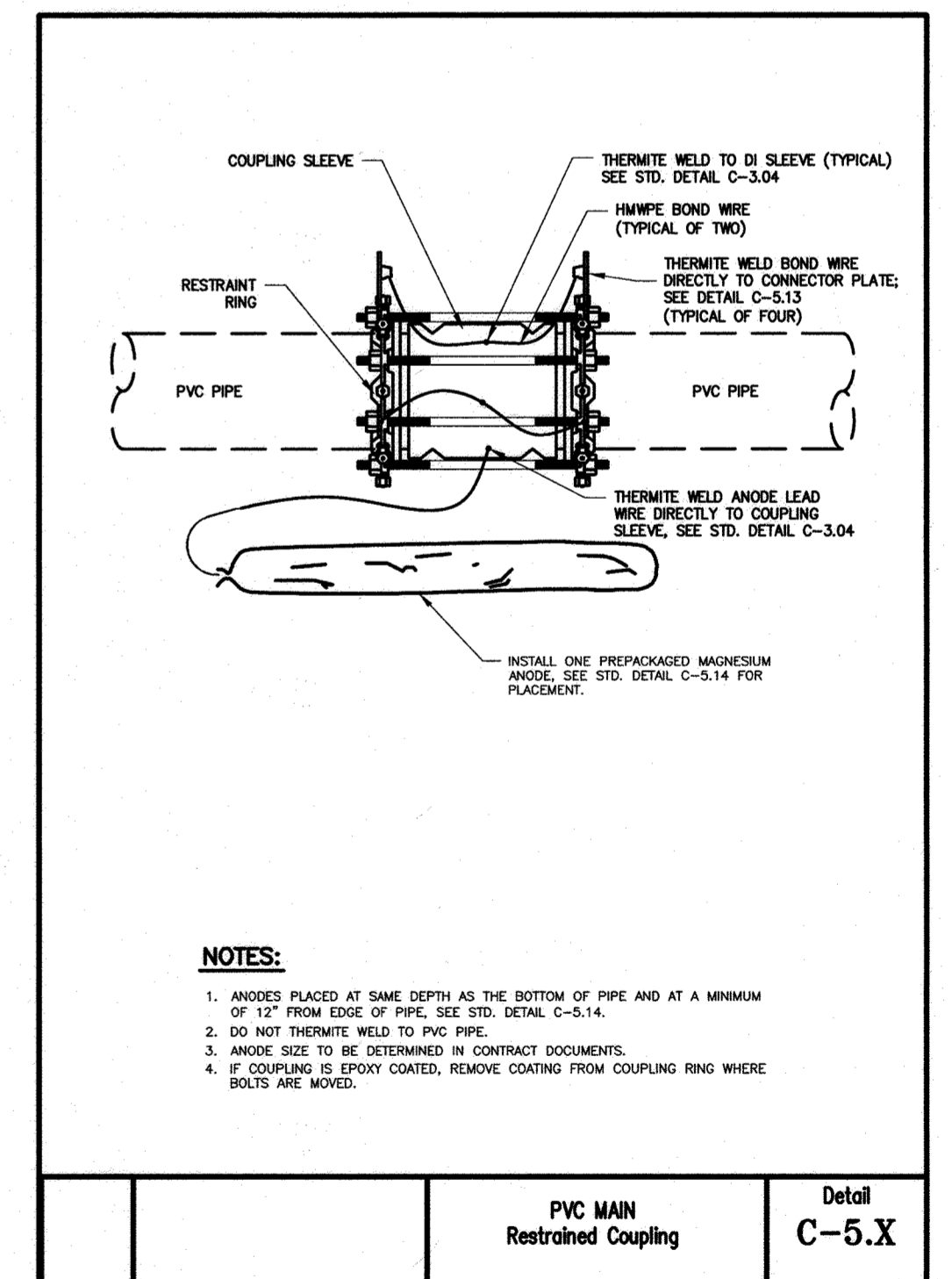
**D. TEMPORARY WATER HOUSE CONNECTION FOR INSIDE METER WITH CURB STOP**

SCALE: NTS



**G. TEMPORARY FIRE HYDRANT ASSEMBLY**

SCALE: NTS



**I. CATHODIC PROTECTION FOR RESTRAINED COUPLING**

SCALE: NTS

**AS-BUILT, DEC. 2021**

R021 1/15 - \\baltimore\01\2012\2012\12154\_Hoc080A\Task 11 - Loudon Ave WM W8303 CAD\DWG\Drawings\1-15-2021\12154\_Hoc080A.dwg May 14, 2020 - 3:49pm BNV/CTB Plot Scale 1=1 Plot By: bgrasm Tab: C-04

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* DIRECTOR OF PUBLIC WORKS  
*[Signature]* CHIEF, BUREAU OF ENGINEERING

*[Signature]* CHIEF, BUREAU OF UTILITIES  
*[Signature]* CHIEF, UTILITY DESIGN DIVISION

DATE: 6-29-2020

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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. 20566, EXPIRATION DATE: 09/06/2020.

STATE OF MARYLAND  
PROFESSIONAL ENGINEER

DES:	BY:	NO.:	REVISION:	DATE:
WJC				
DRN:				
CHK:				
SIGN DATE:				

MAY 1, 2020

**WATER AND MISCELLANEOUS DETAILS**

600' SCALE MAP NO. 38

BLOCK NO. 14, 15

PROJECT NO. W8303  
CONTRACT NO. 44-5054

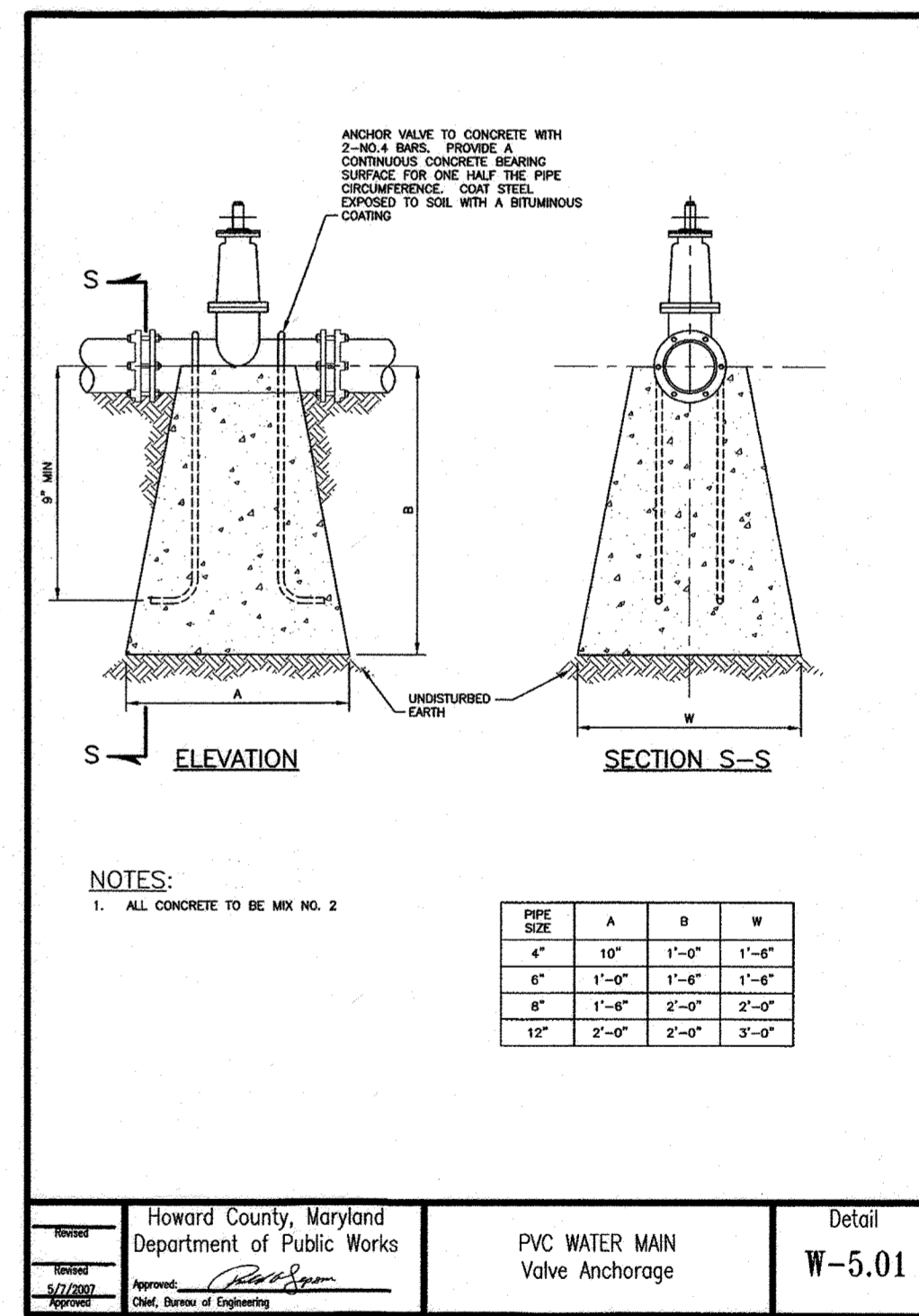
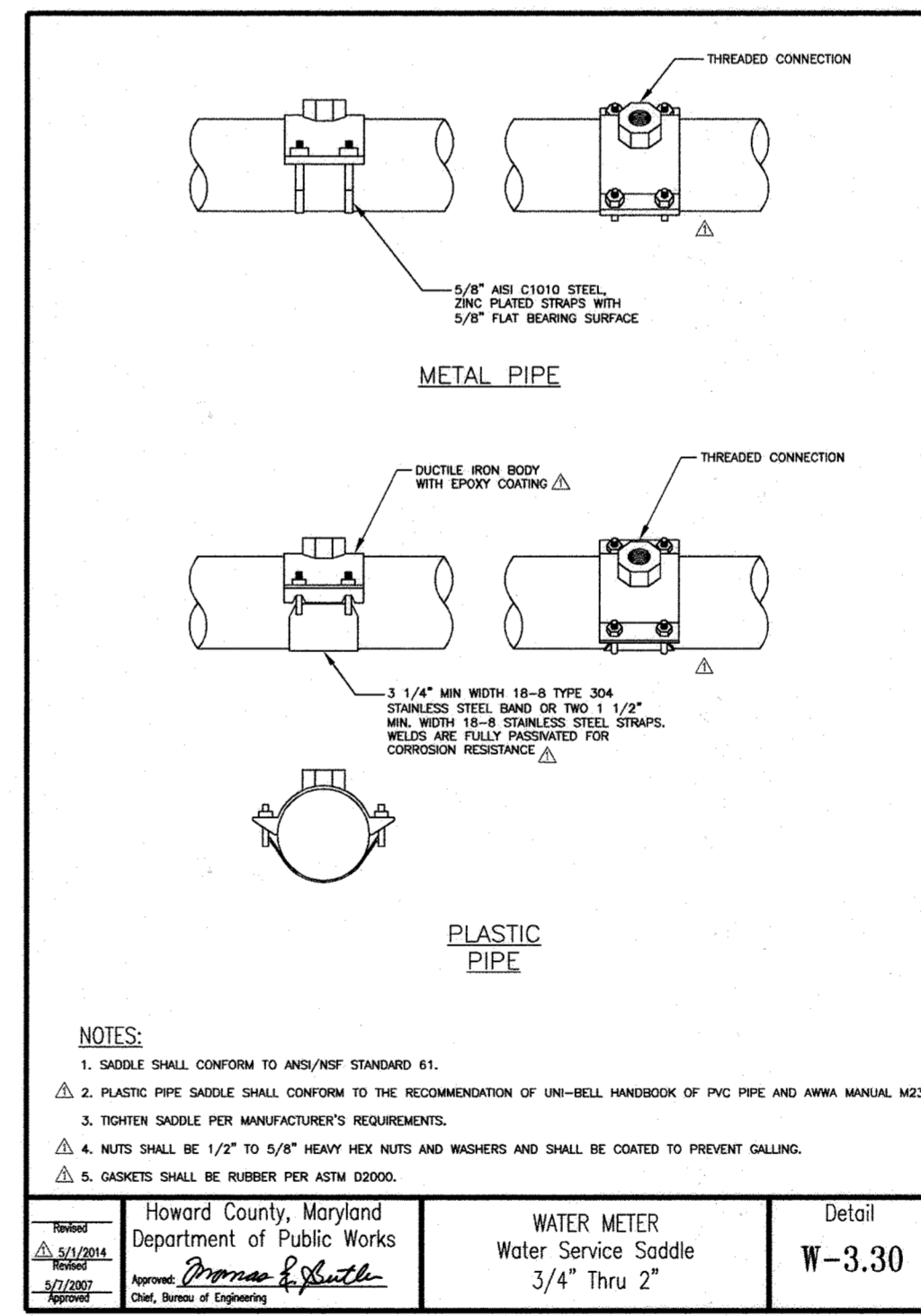
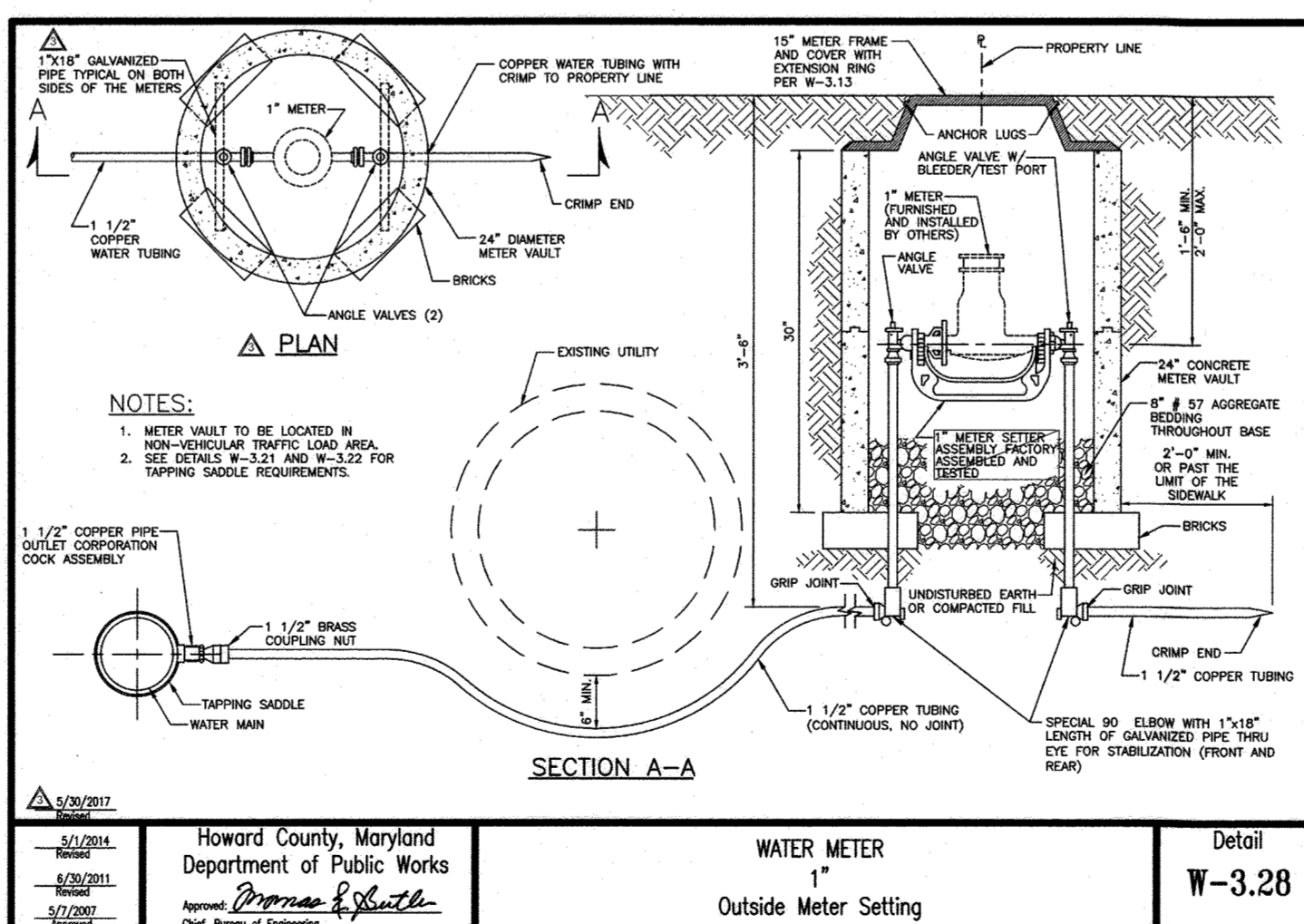
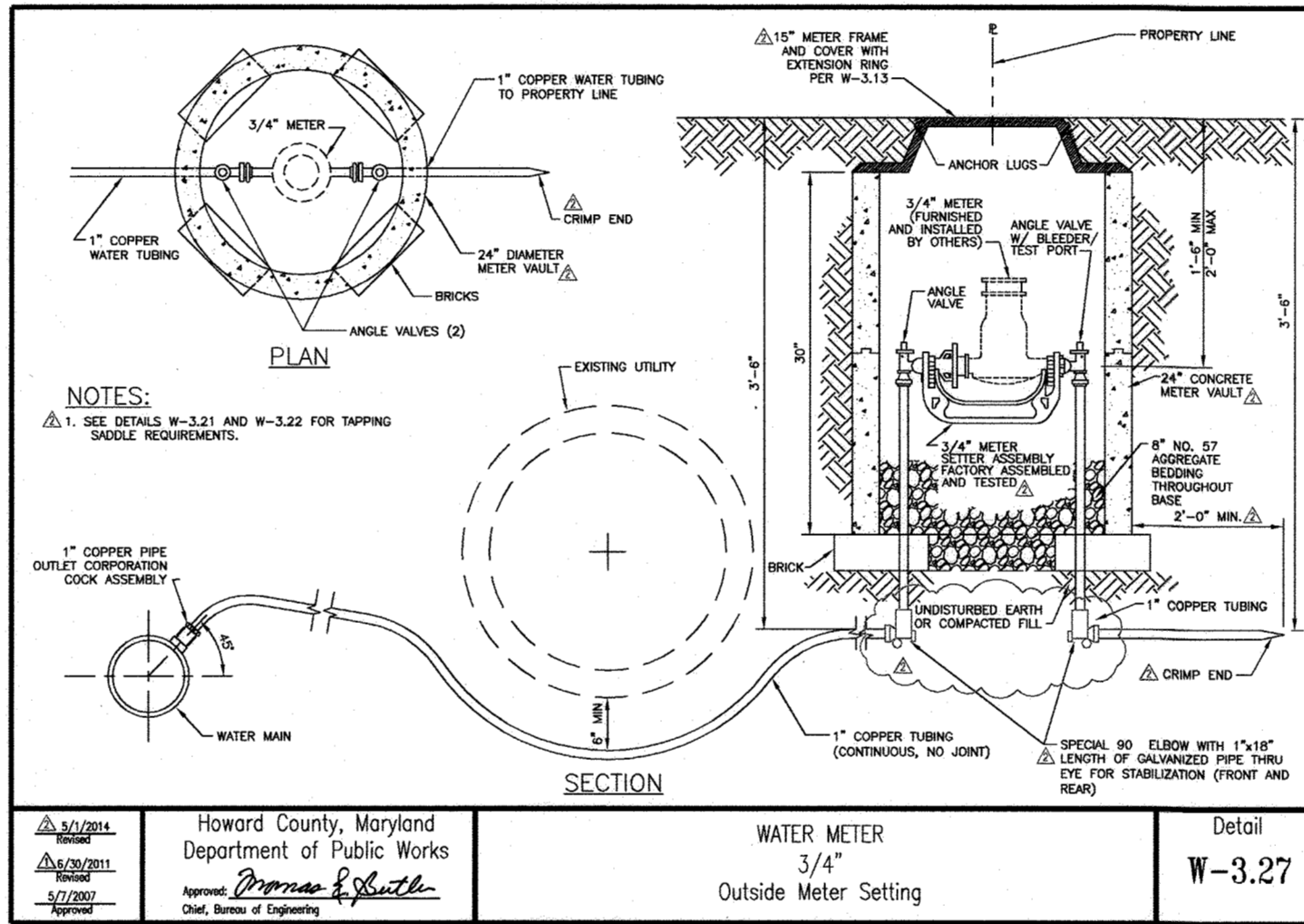
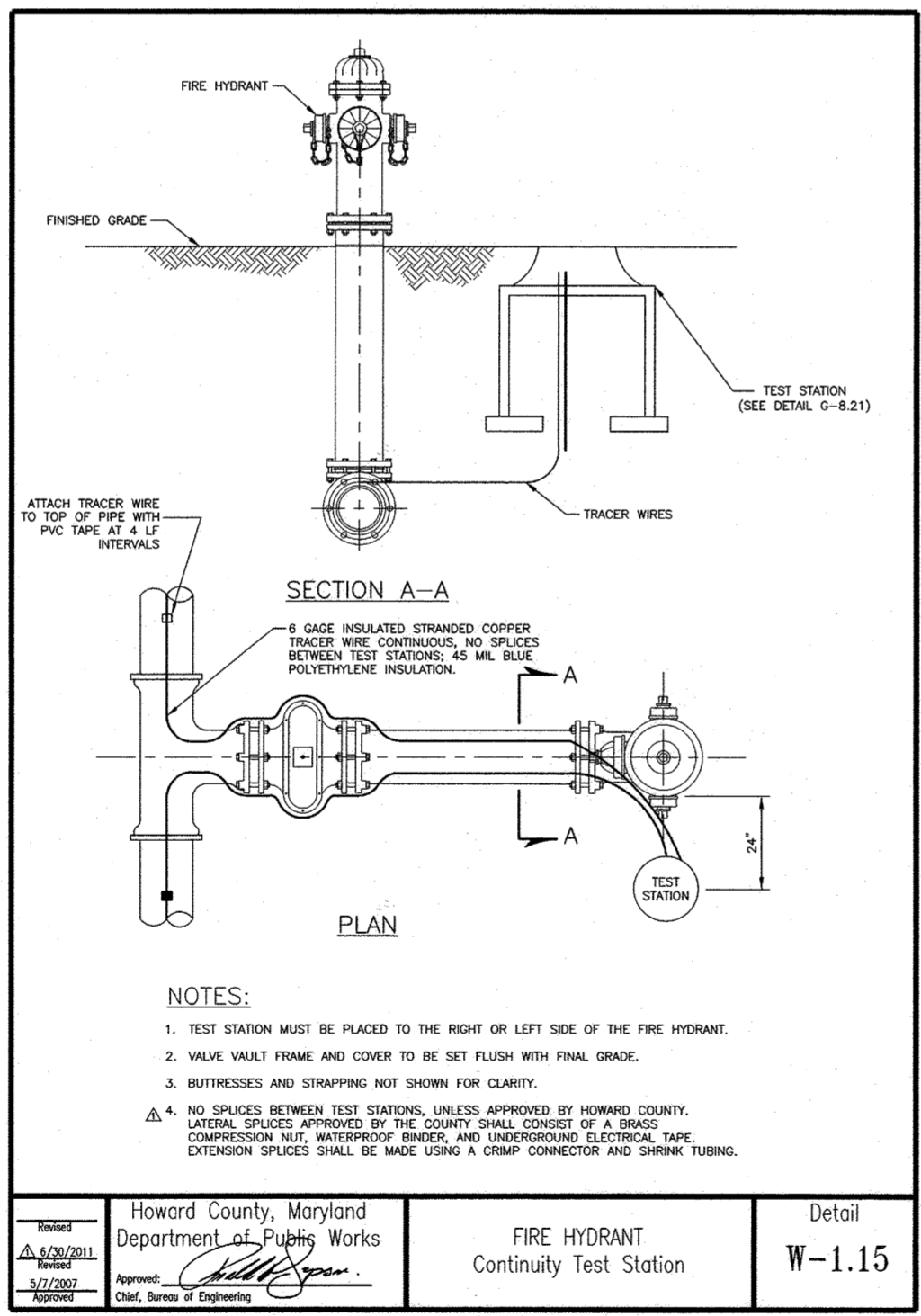
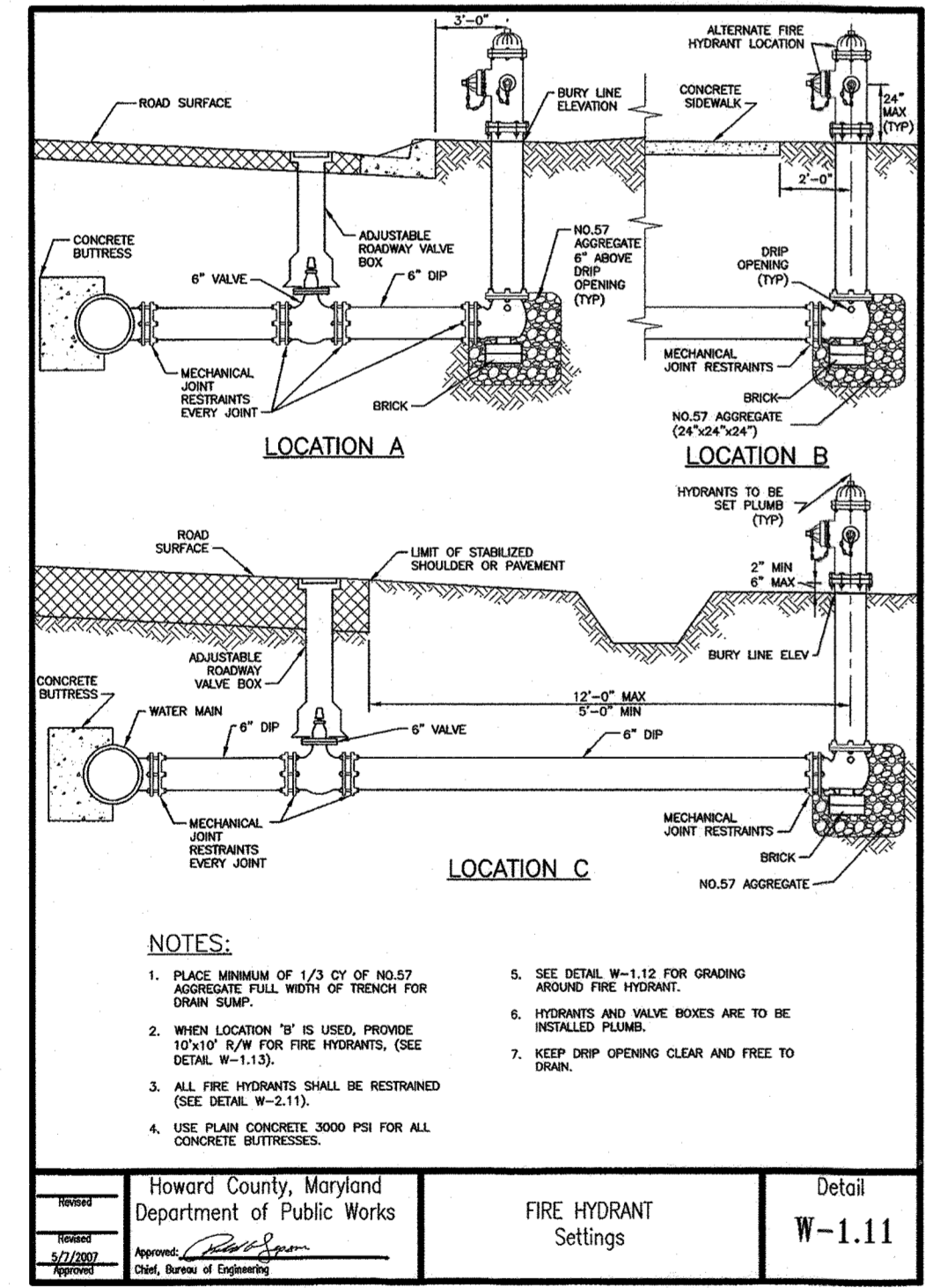
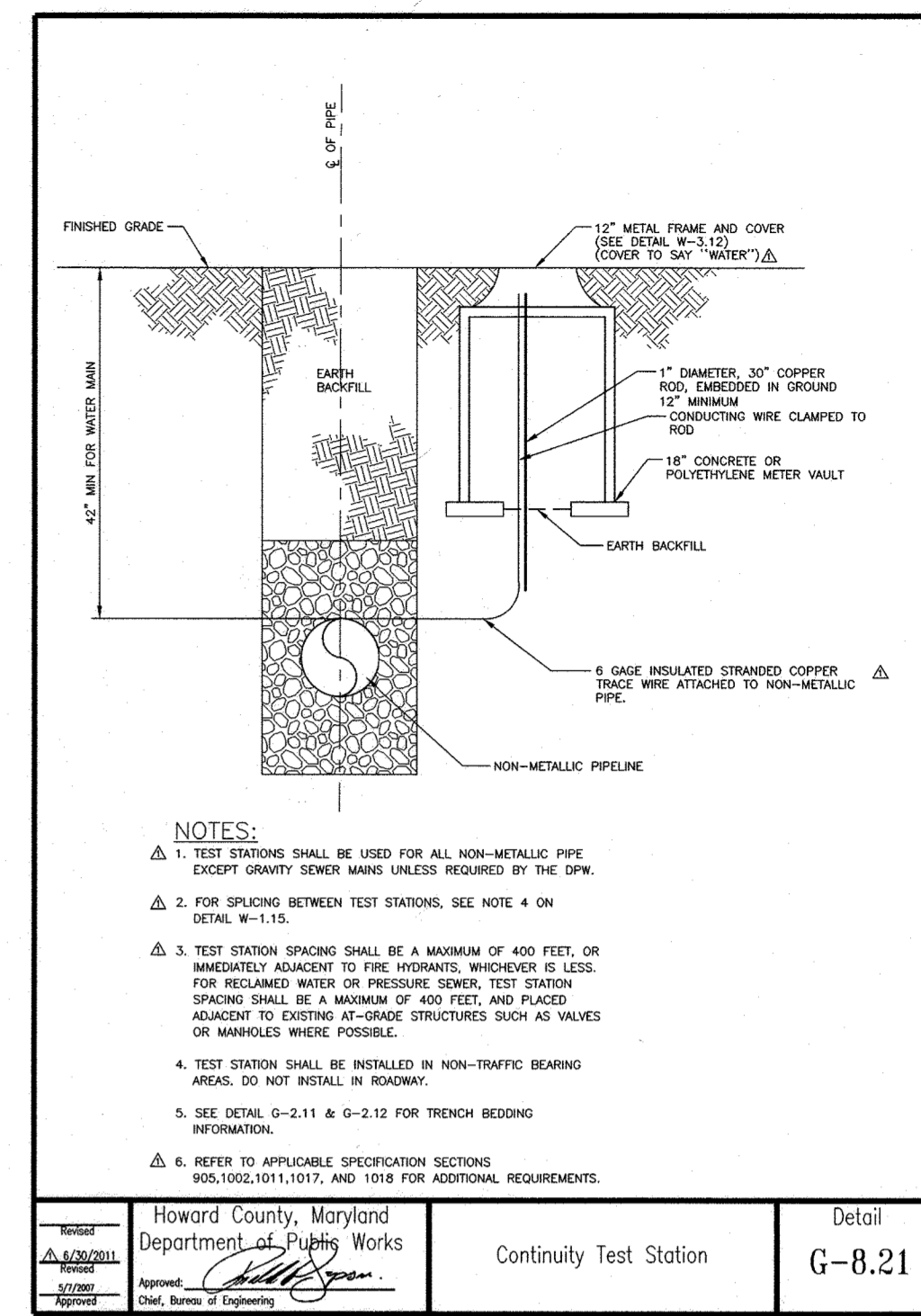
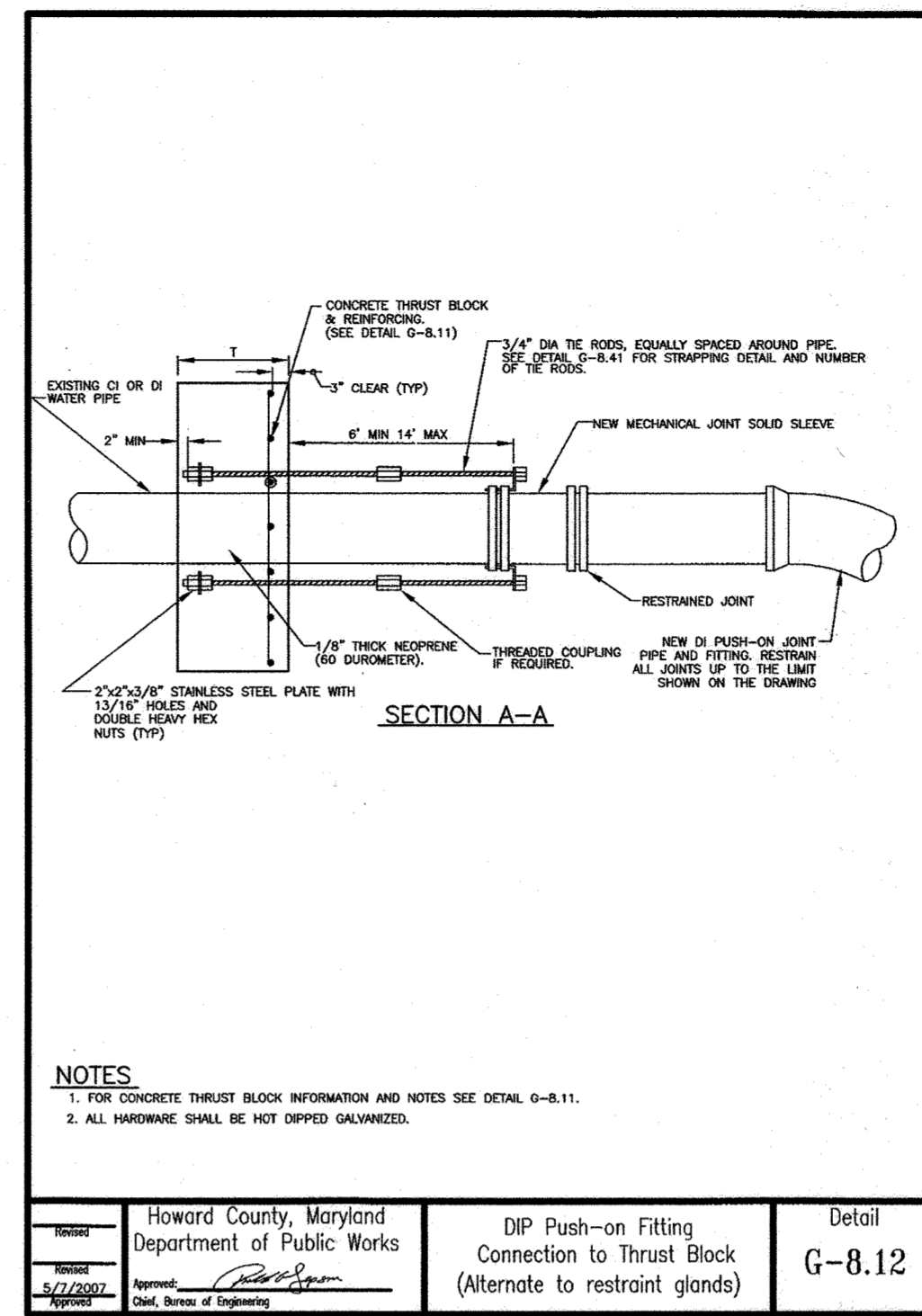
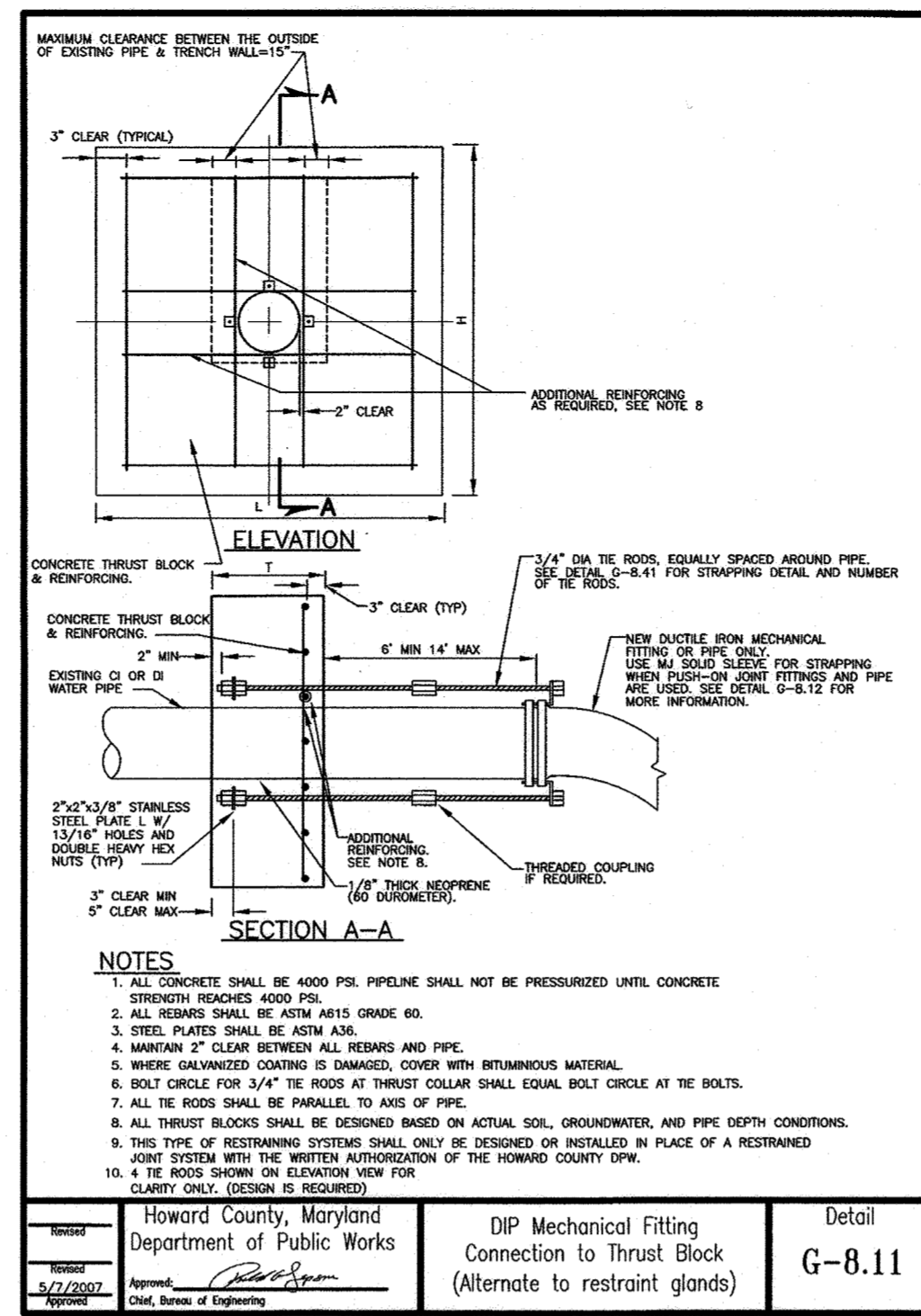
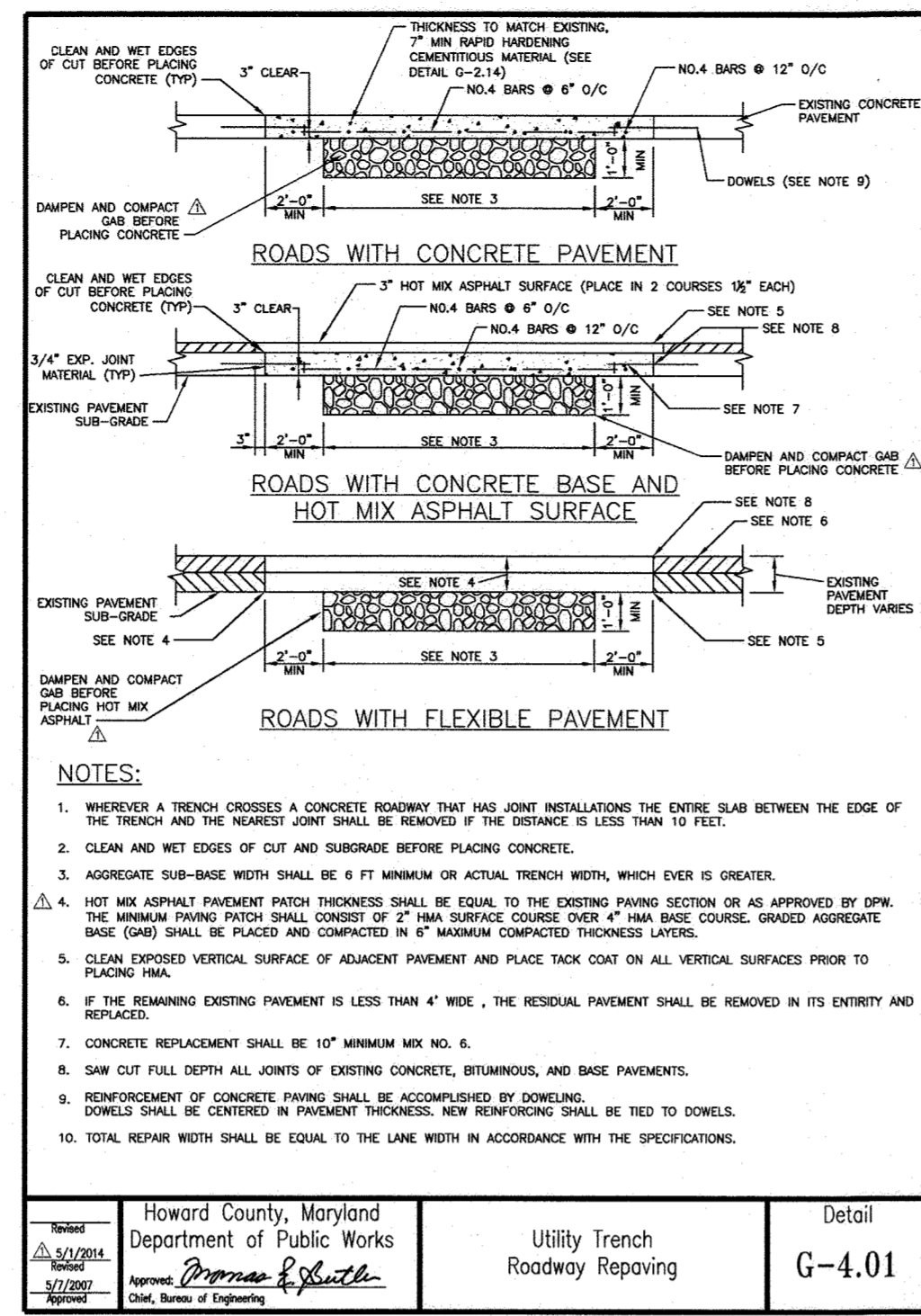
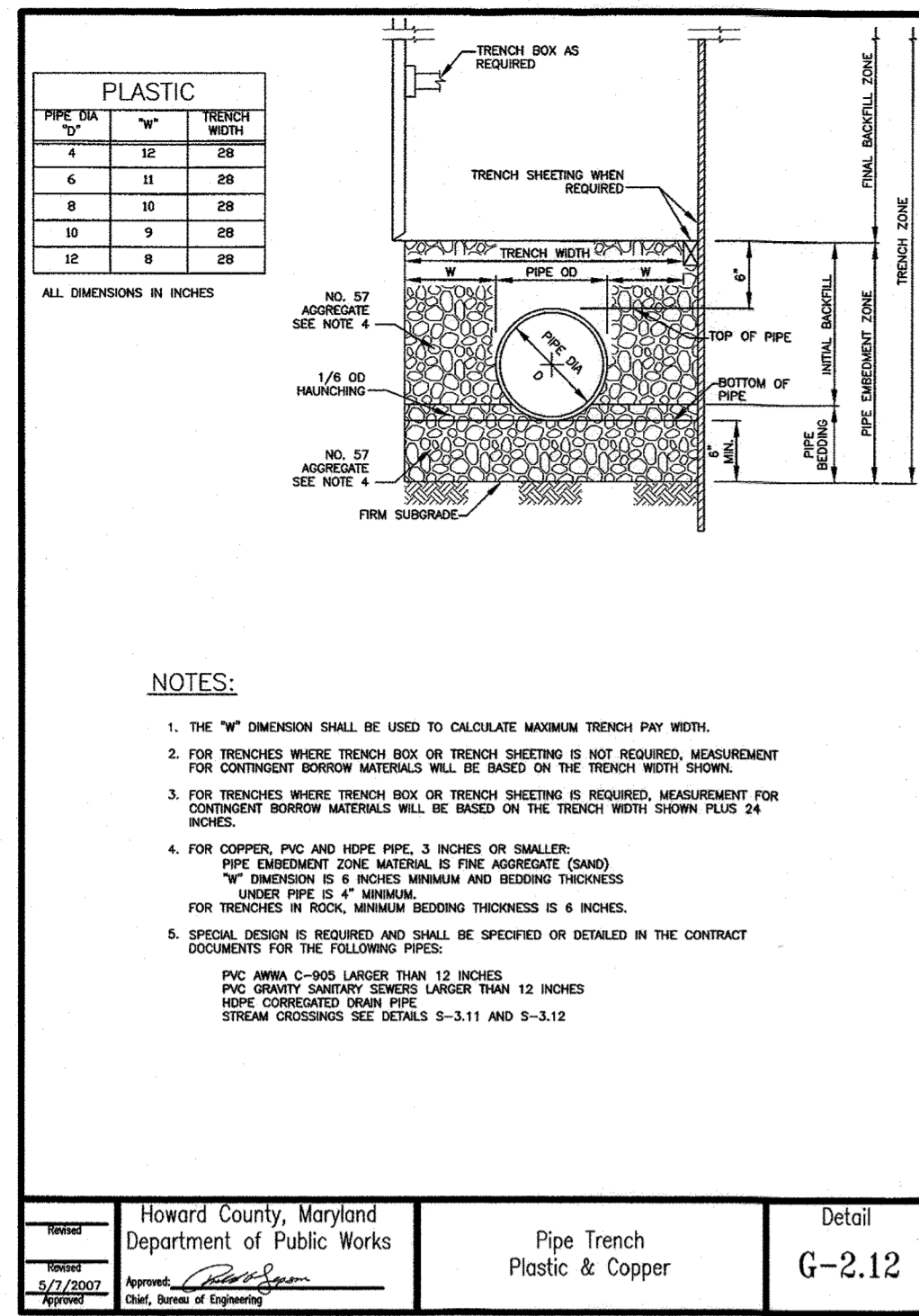
**ANDERSON AVE/MOUND STREET WATER MAIN**

ELECTION DISTRICT NO. 2

HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET NO. 06 OF 13



R021215 - \\bldg01\p021215\2021\2154-146580A\Task 11 - Loudon Ave W8303\CD\Plan\7-101-0022\_LOADON.dwg May 14, 2020 - 3:46pm ENVCIB Plot Scale 1=1 Plot By: bgraves Tab-C-05

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Director* 7/8/2020  
DIRECTOR OF PUBLIC WORKS DATE

*Chief* 6/19/20  
CHIEF, BUREAU OF UTILITIES DATE

*Chief* 6/29/20  
CHIEF, UTILITY DESIGN DIVISION DATE

**RK&K**  
P: 410.728.2900  
700 East Pratt Street, Suite 500 | Baltimore, MD 21202  
www.rkk.com  
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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. 20566, EXPIRATION DATE: 09/06/2020.

DES:	BY:	NO.	REVISION	DATE
WJG				
DRN:	RAD			
CHK:	NKS			
SIGN DATE:	05-19-2020			

MAY 1, 2020

WATER AND MISCELLANEOUS  
DETAILS (CONTINUED)

600' SCALE MAP NO. 38 BLOCK NO. 14, 15

PROJECT NO. W8303  
CONTRACT NO. 44-5054

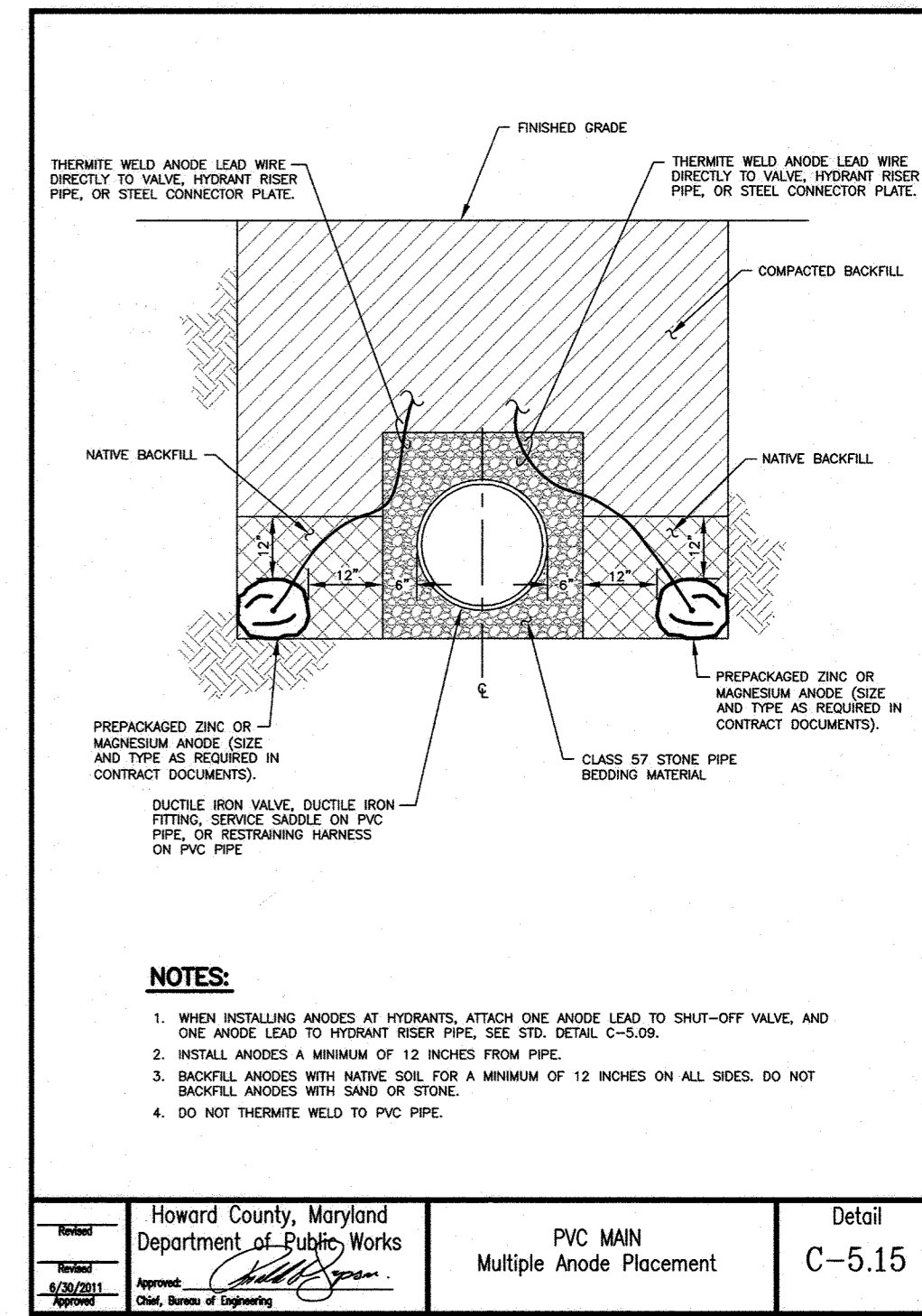
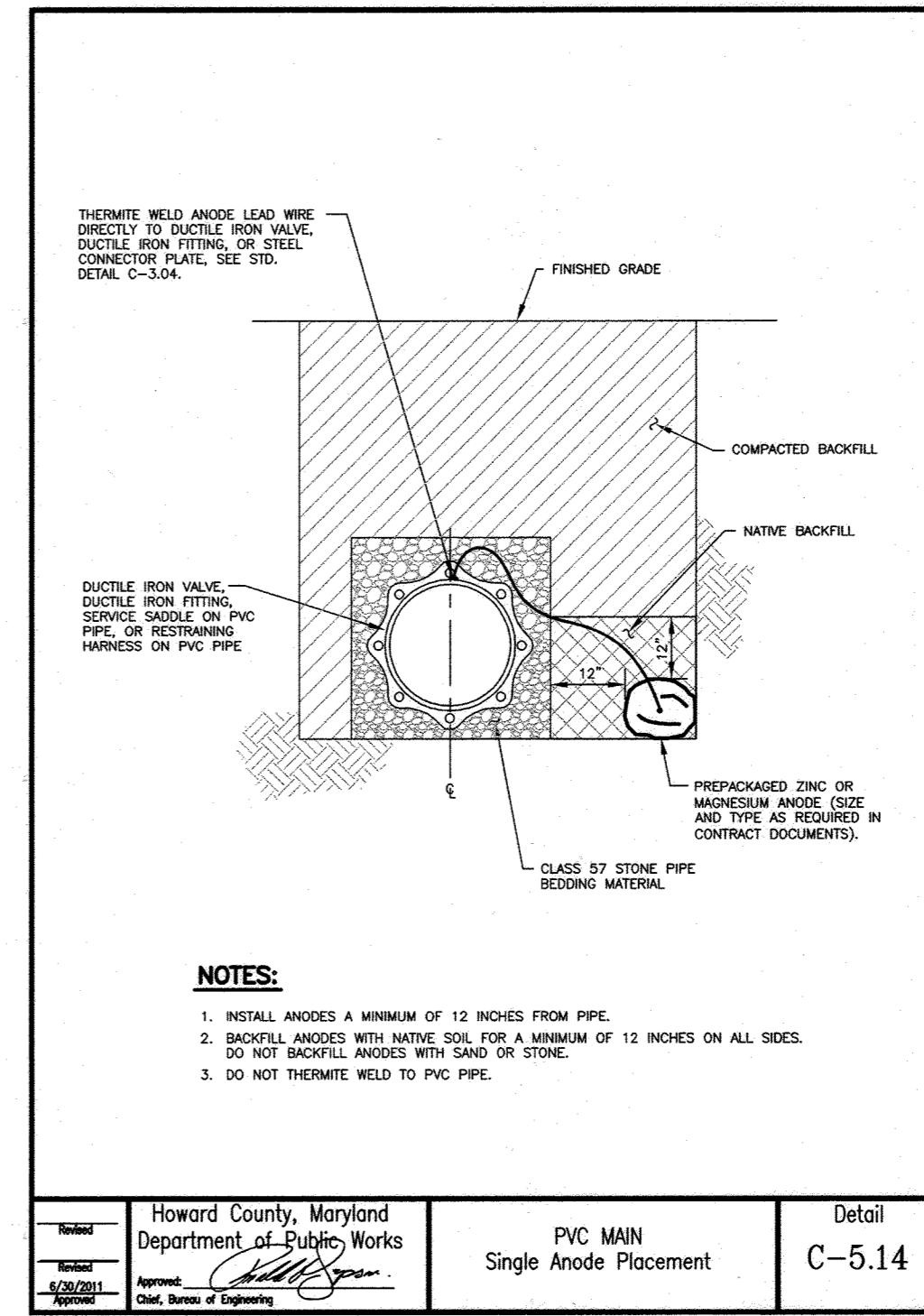
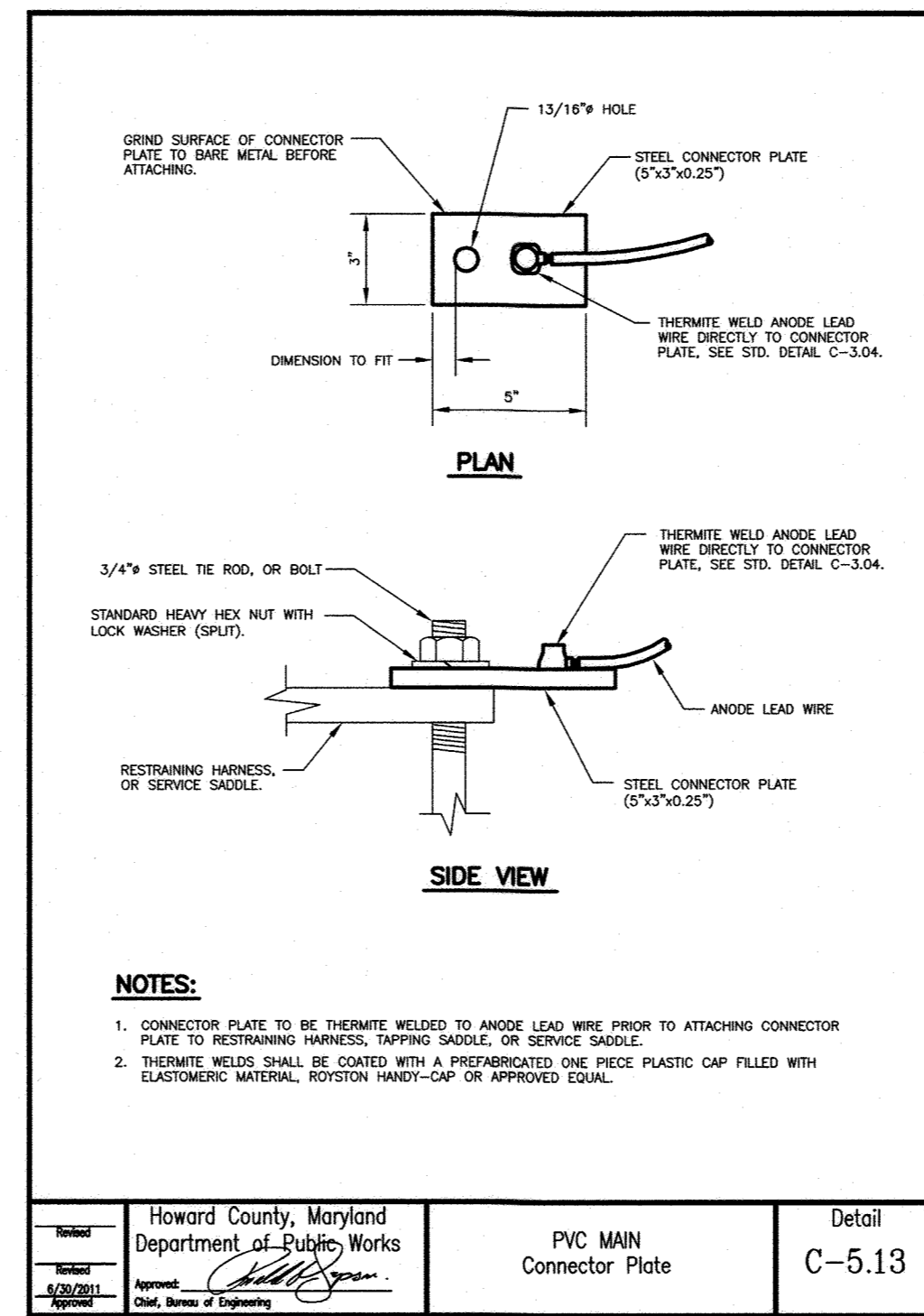
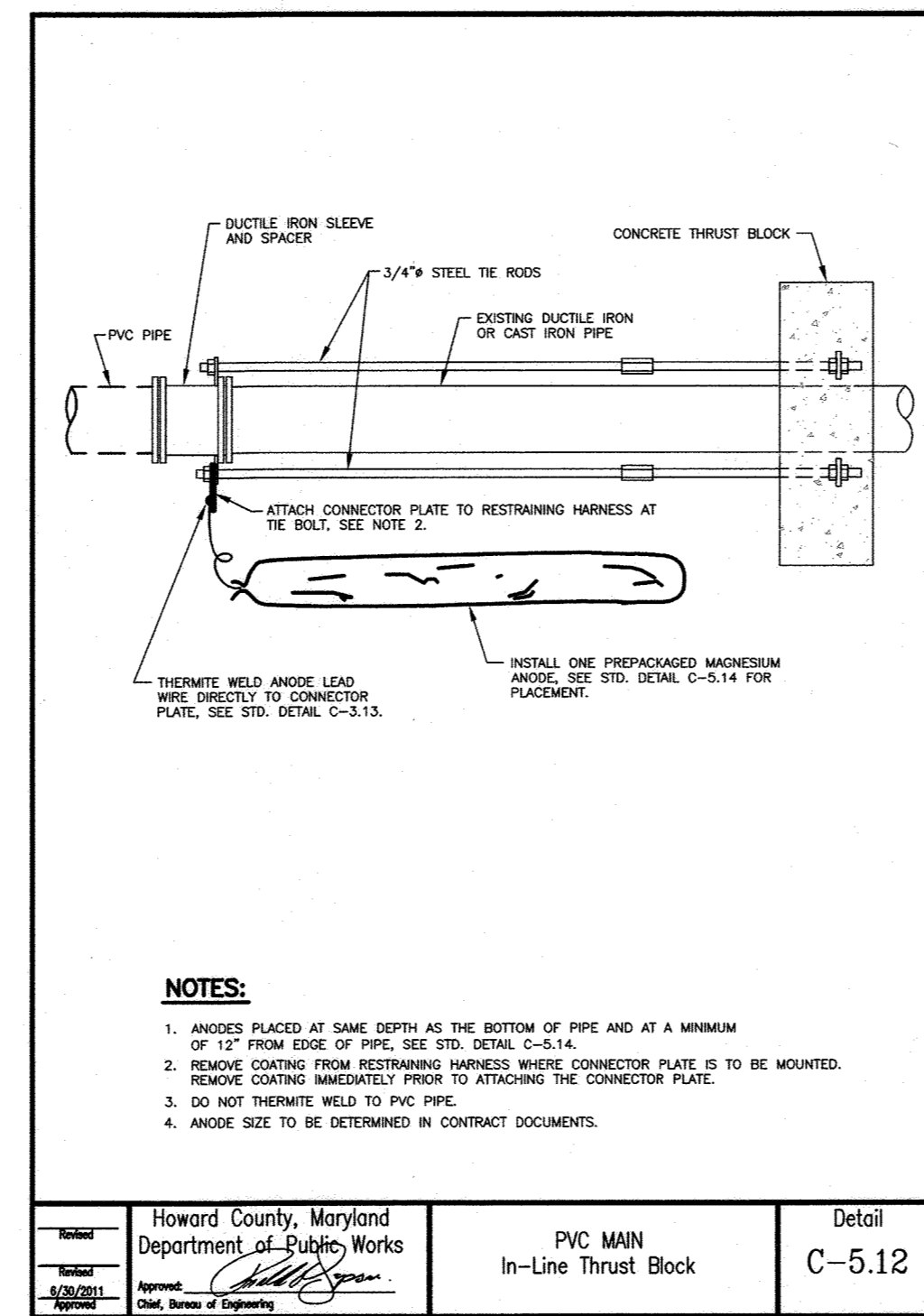
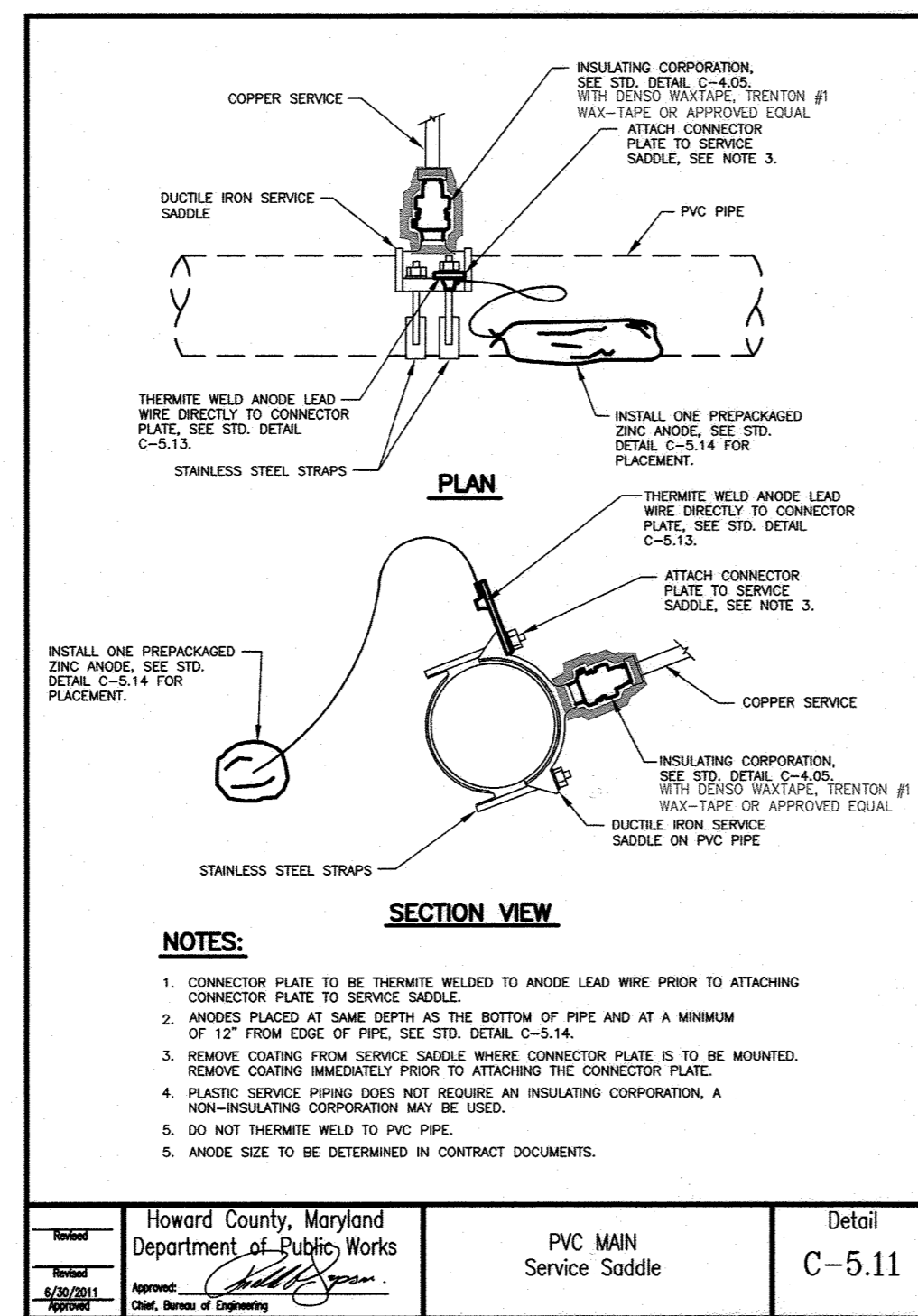
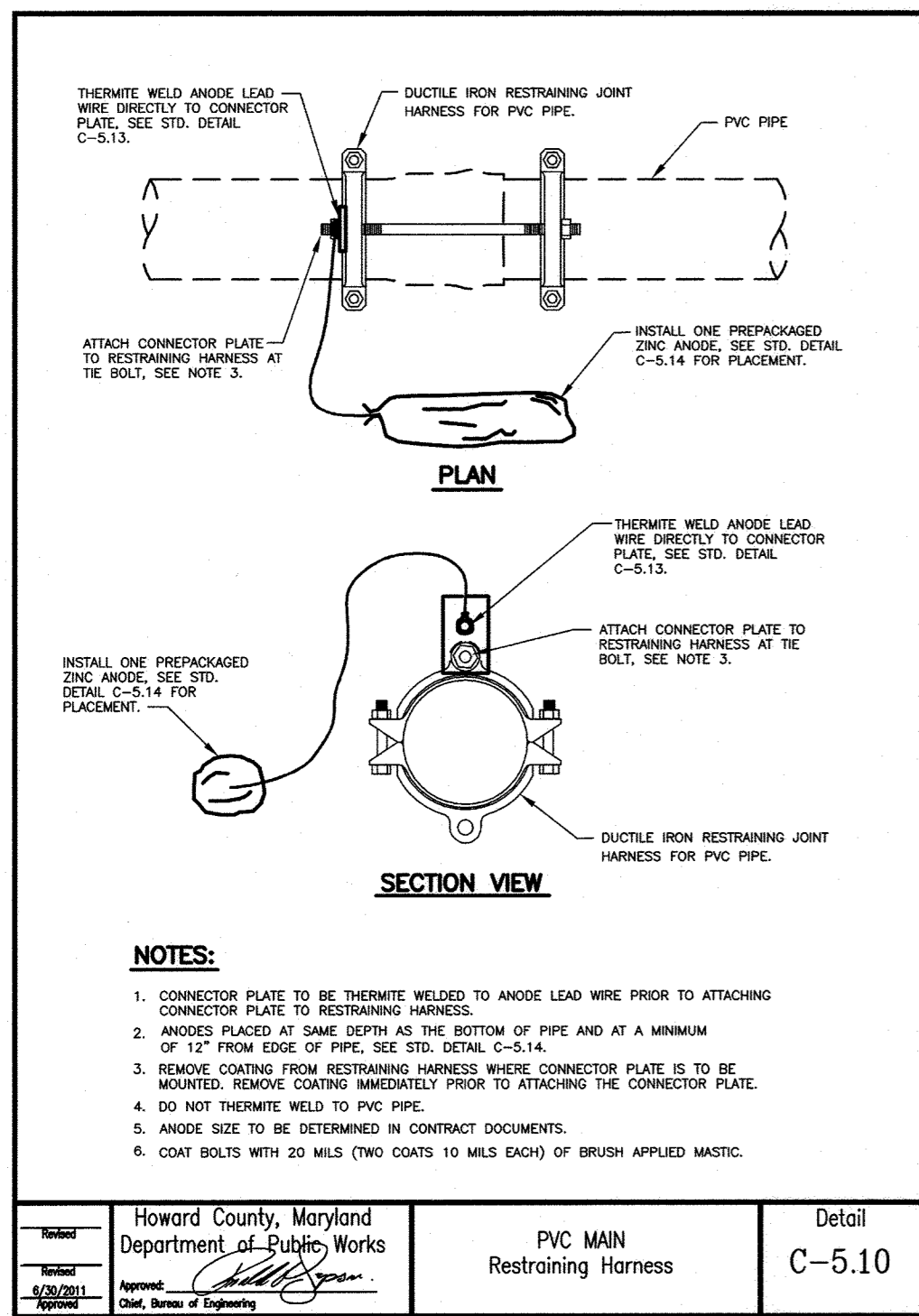
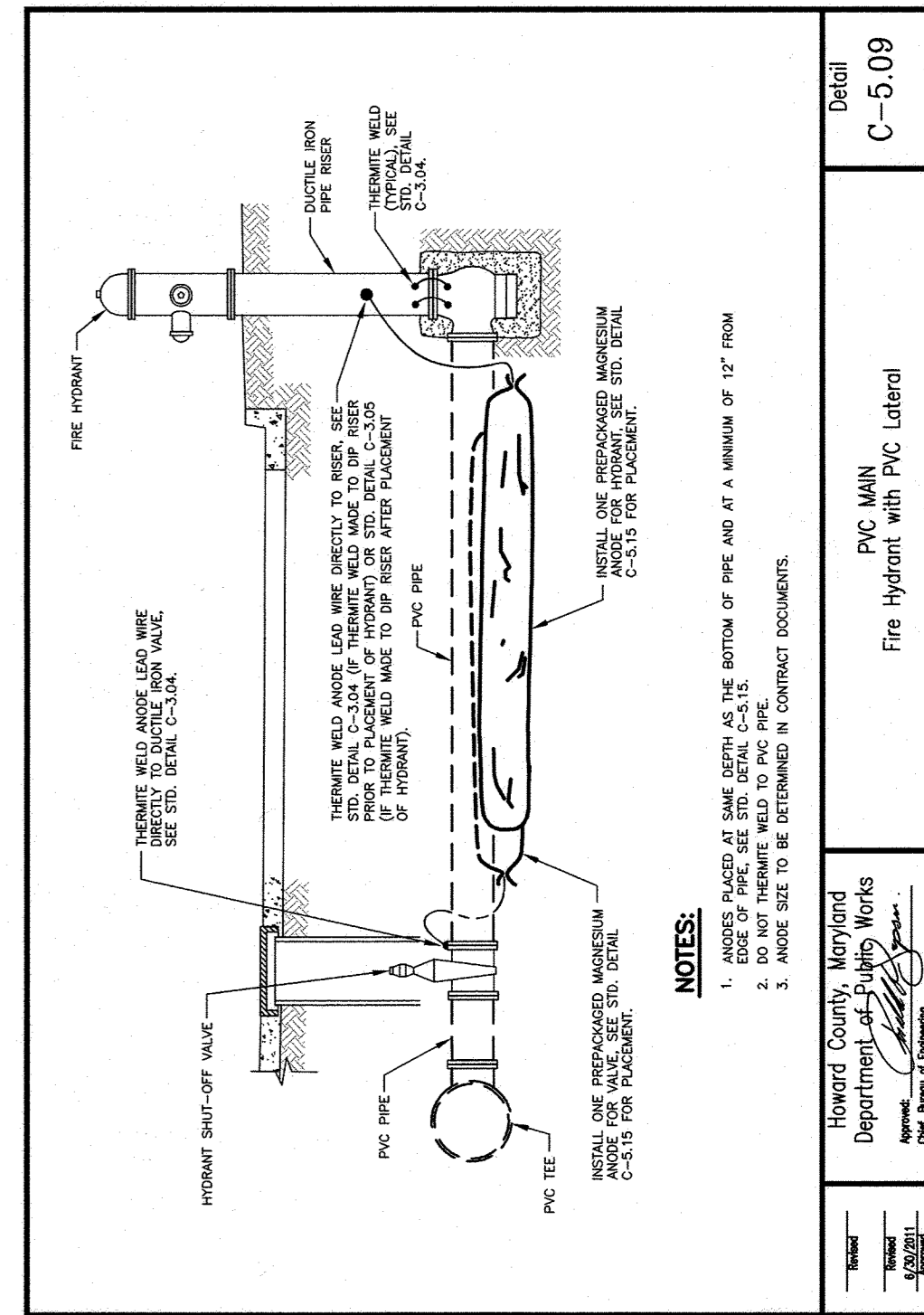
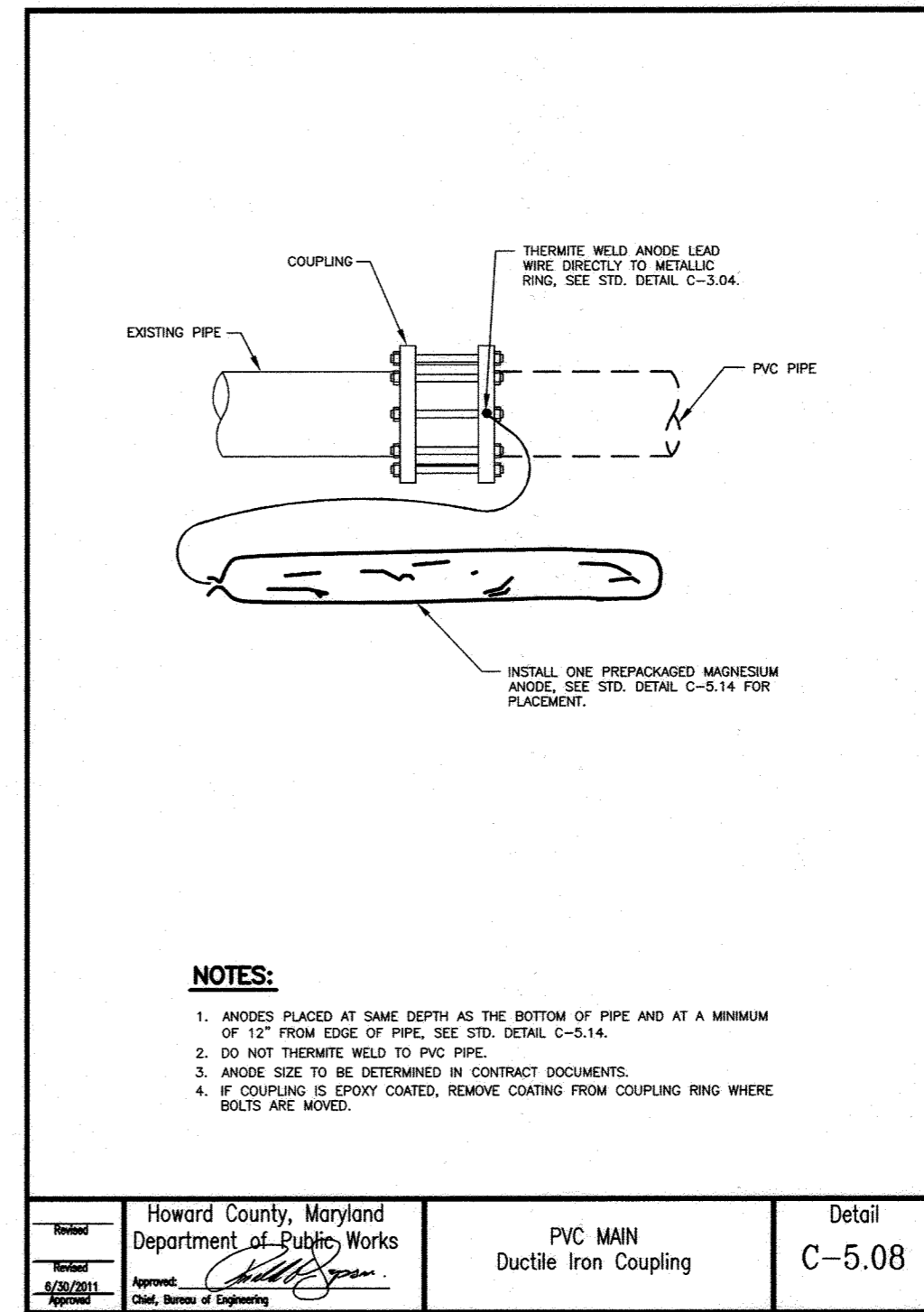
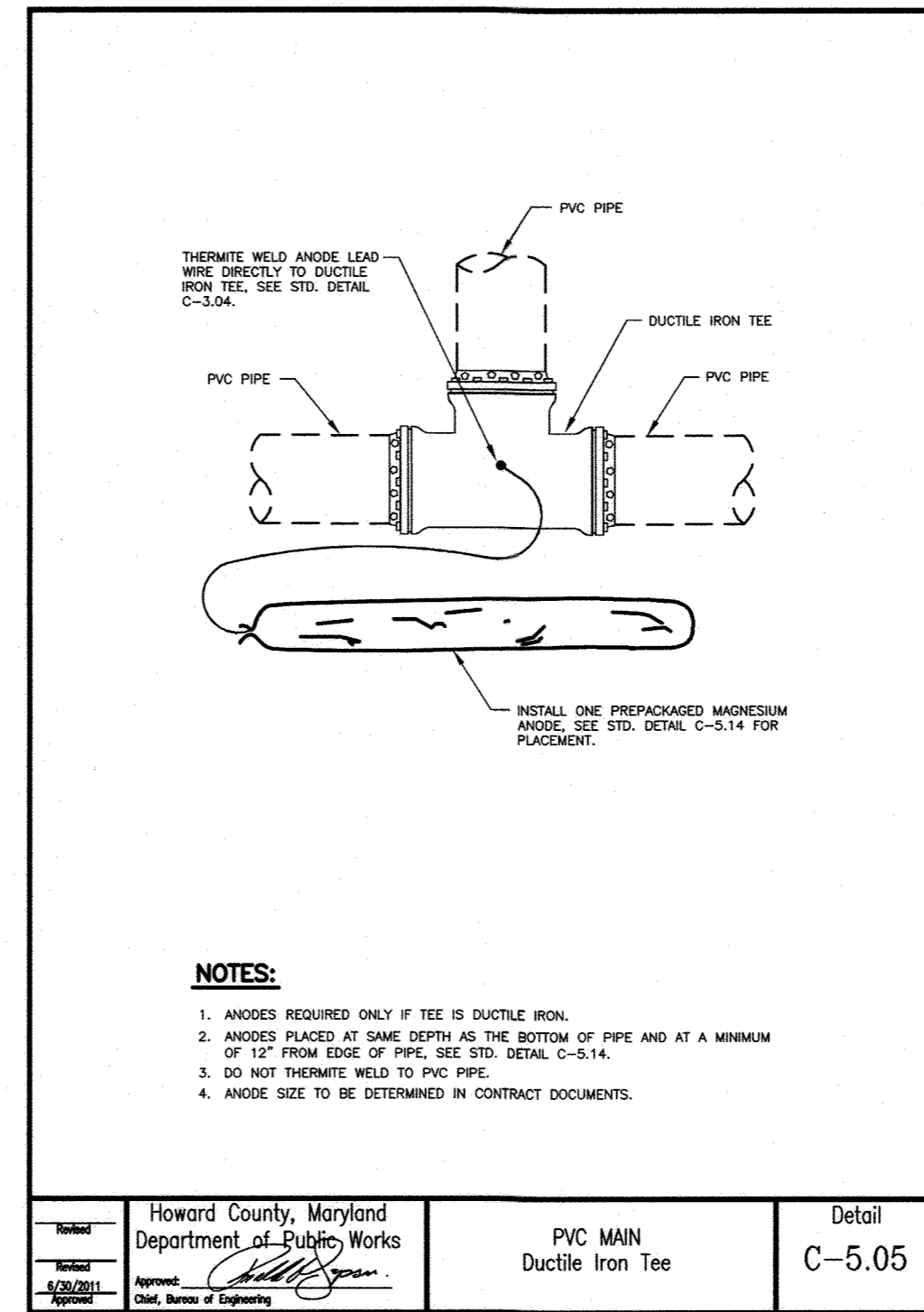
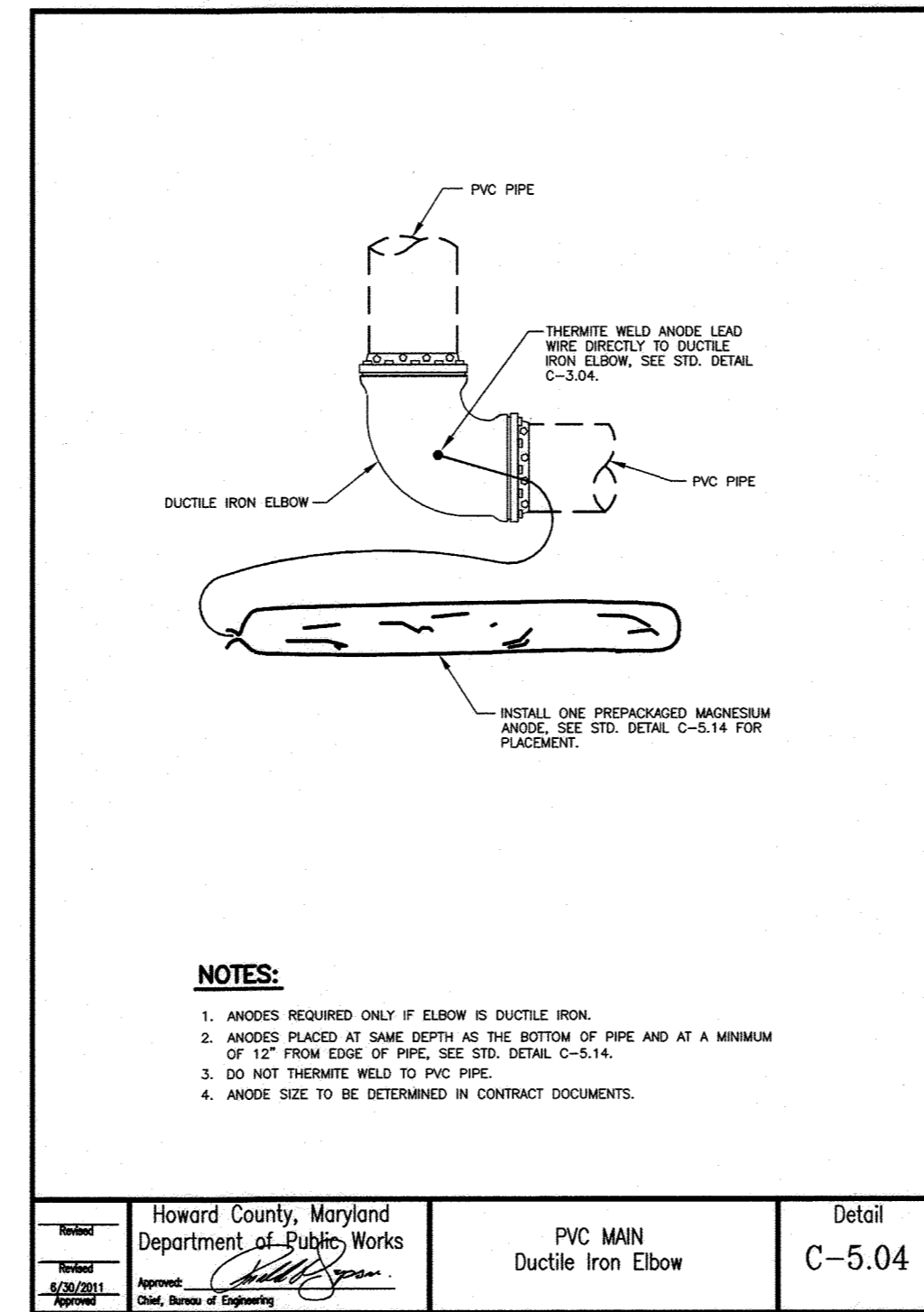
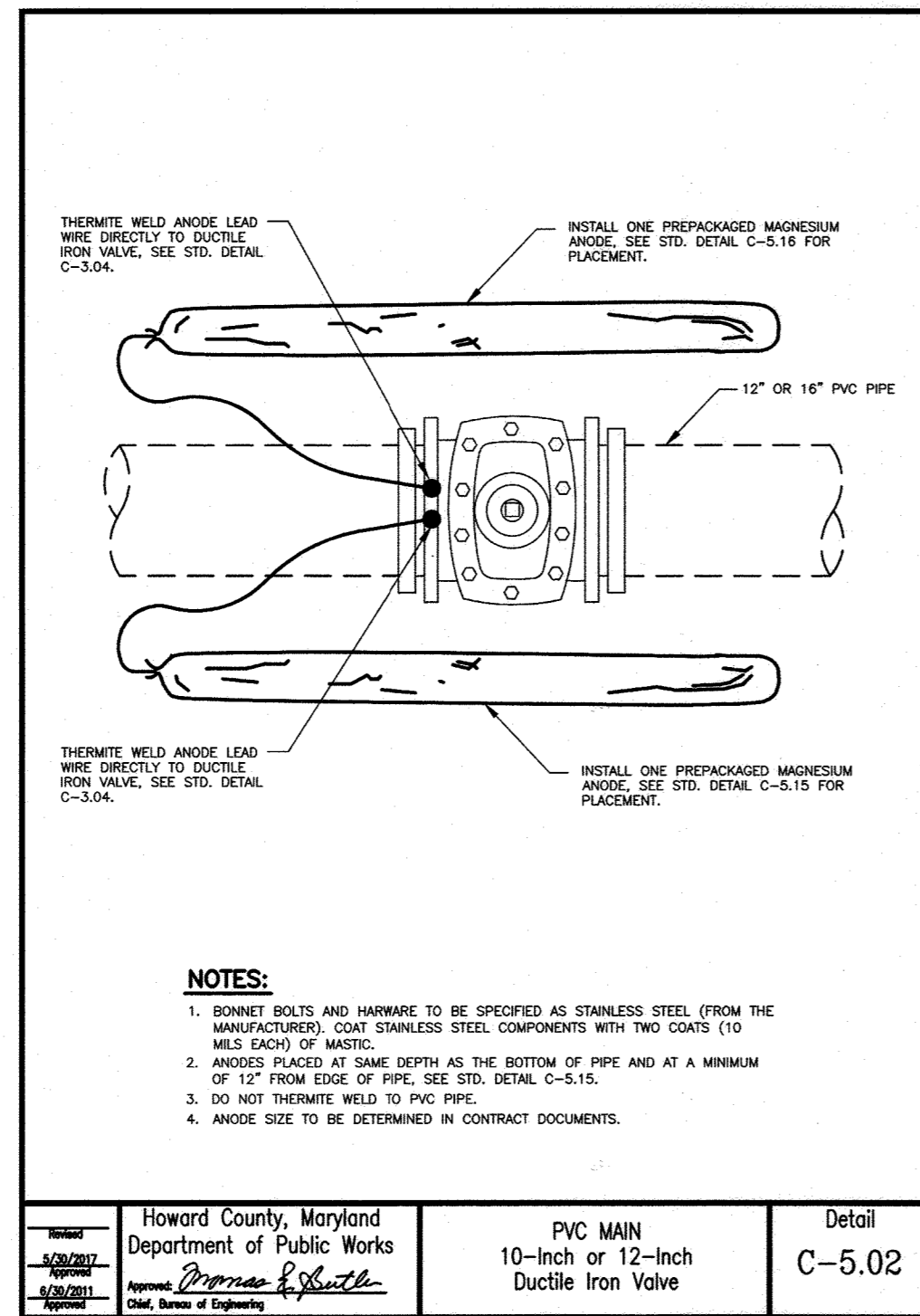
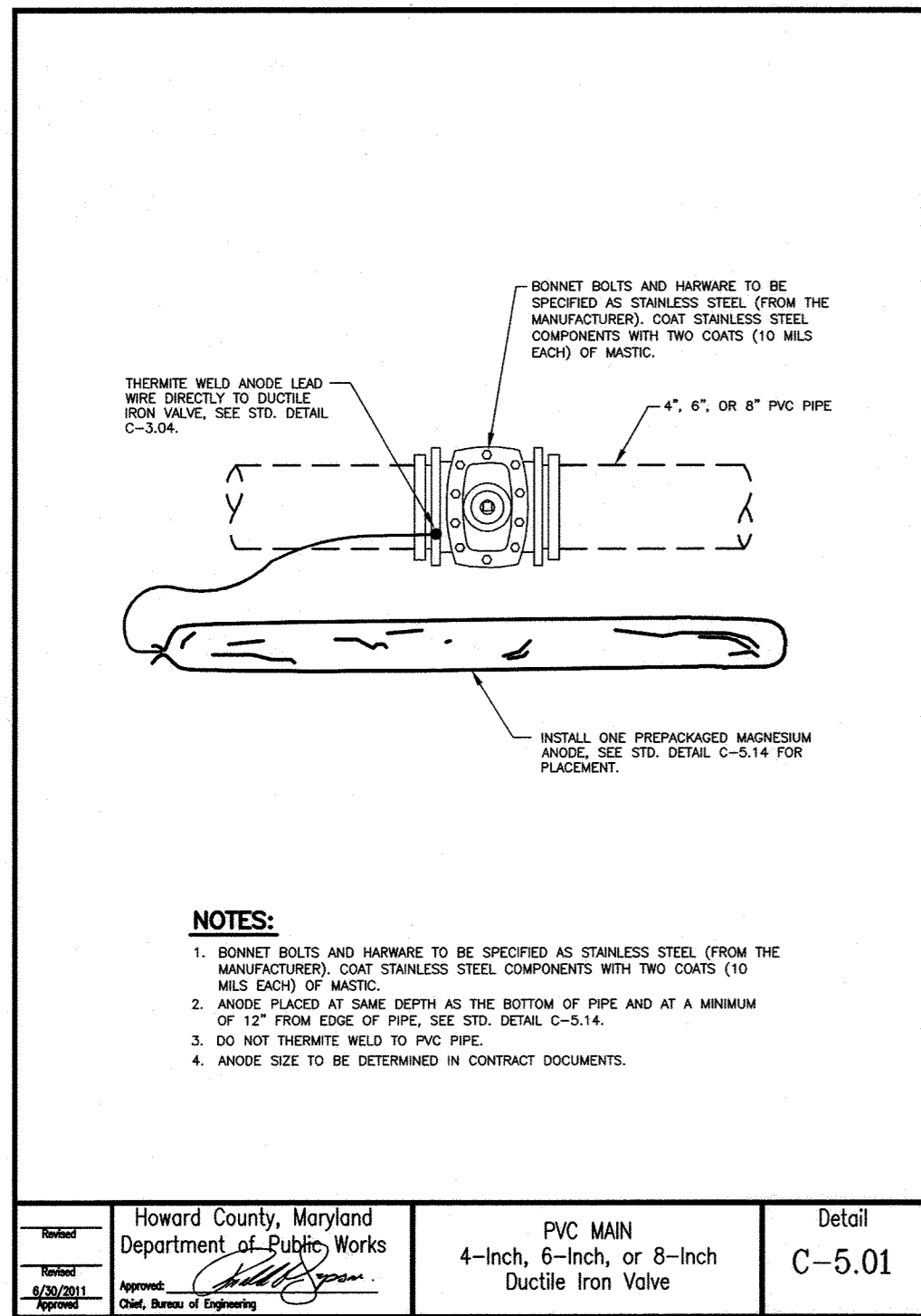
ANDERSON AVE/MOUND STREET WATER MAIN

ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

C-05  
SCALE  
AS SHOWN  
SHEET NO.  
07 OF 13

**AS-BUILT  
DEC. 2021**

R02121515 - \\bldg01\vd2012\2012\12154-146580A\Task 11 - Loudon Ave W8303\CD03\Plans\9-pp-001-LOUDON.dwg May 14, 2020 - 3:50pm ENV/CTB Plot Scale 1=1 Plot By: bgrace Tab: CP-01



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *Thomas P. Reilly* 6/18/20  
 Chief, Bureau of Engineering: *Thomas P. Reilly* 6/18/20  
 Chief, Bureau of Utilities: *Thomas P. Reilly* 6/18/20  
 Chief, Utility Design Division: *Thomas P. Reilly* 6/18/20

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 Engineers | Construction Managers | Planners | Scientists  
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**PROFESSIONAL CERTIFICATION:**  
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 LICENSE NO. 20566  
 EXPIRATION DATE: 09/06/2020



DES:	BY:	NO.:	REVISION:	DATE:
WJG				
DRN:				
CHK:				
SIGN DATE:				

MAY 1, 2020  
 CORROSION CONTROL DETAILS  
 600' SCALE MAP NO. 38  
 BLOCK NO. 14, 15

PROJECT NO. W8303  
 CONTRACT NO. 44-5054  
 ANDERSON AVE/MOUND STREET WATER MAIN  
 ELECTION DISTRICT NO. 2  
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
 SHEET NO.: 08 OF 13

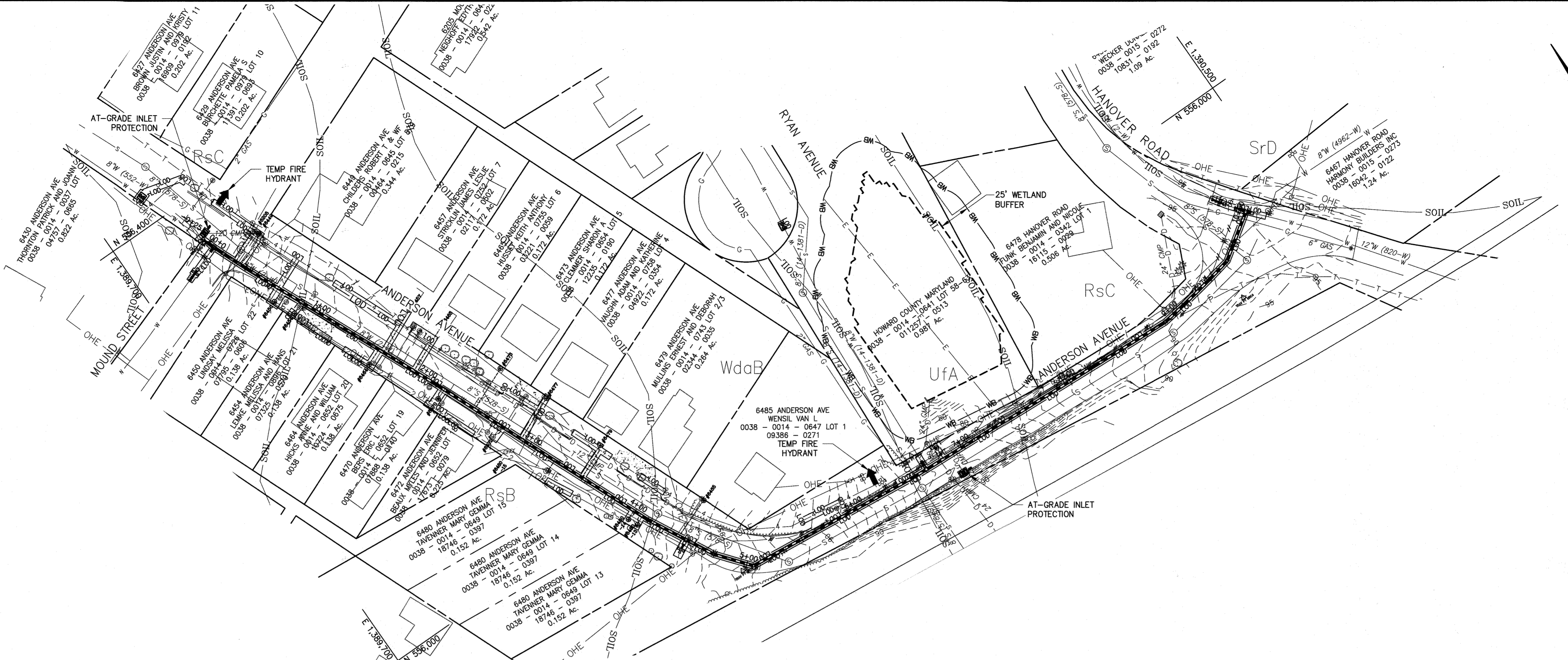
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DEC. 2021

CP-01









PLAN - ANDERSON AVENUE  
SCALE: 1" = 50'

**EROSION AND SEDIMENT CONTROL CONSTRUCTION NOTES**

- IF SO DIRECTED BY THE RESIDENT ENGINEER OR THE EROSION AND SEDIMENT CONTROL INSPECTOR, PROVIDE INLET PROTECTION IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS SHOWN ON THIS DRAWING, SILT FENCE IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.

**UTILITY TRENCH SEDIMENT CONTROL PROCEDURES**

- EXCAVATE TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
- IMMEDIATELY FOLLOWING PIPE INSTALLATION THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. SEE HSCD NOTE #9 ON DWG. ES-02 (SHT 12 OF 13)
- TEMPORARY STEEL PLATES SHALL BE PLACED ON ANY DISTURBED AREA DAILY.

**STANDARD STABILIZATION NOTE**

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1); AND
- SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

**DESIGN NARRATIVE:**

ALONG ANDERSON AVENUE BETWEEN MOUND STREET AND HANOVER ROAD APPROXIMATELY 1,000 FEET OF ANTIQUATED 8-INCH WATER MAIN WILL BE REPLACED WITH A NEW 12-INCH WATER MAIN AND APPROXIMATELY 324 FEET OF 1-INCH WATER HOUSE CONNECTIONS UNDER CONTRACT NO. 44-5054. CONTRACTOR WILL INSTALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH THE DRAWINGS, DETAILS AND SPECIFICATIONS.

**SOIL NOTES**

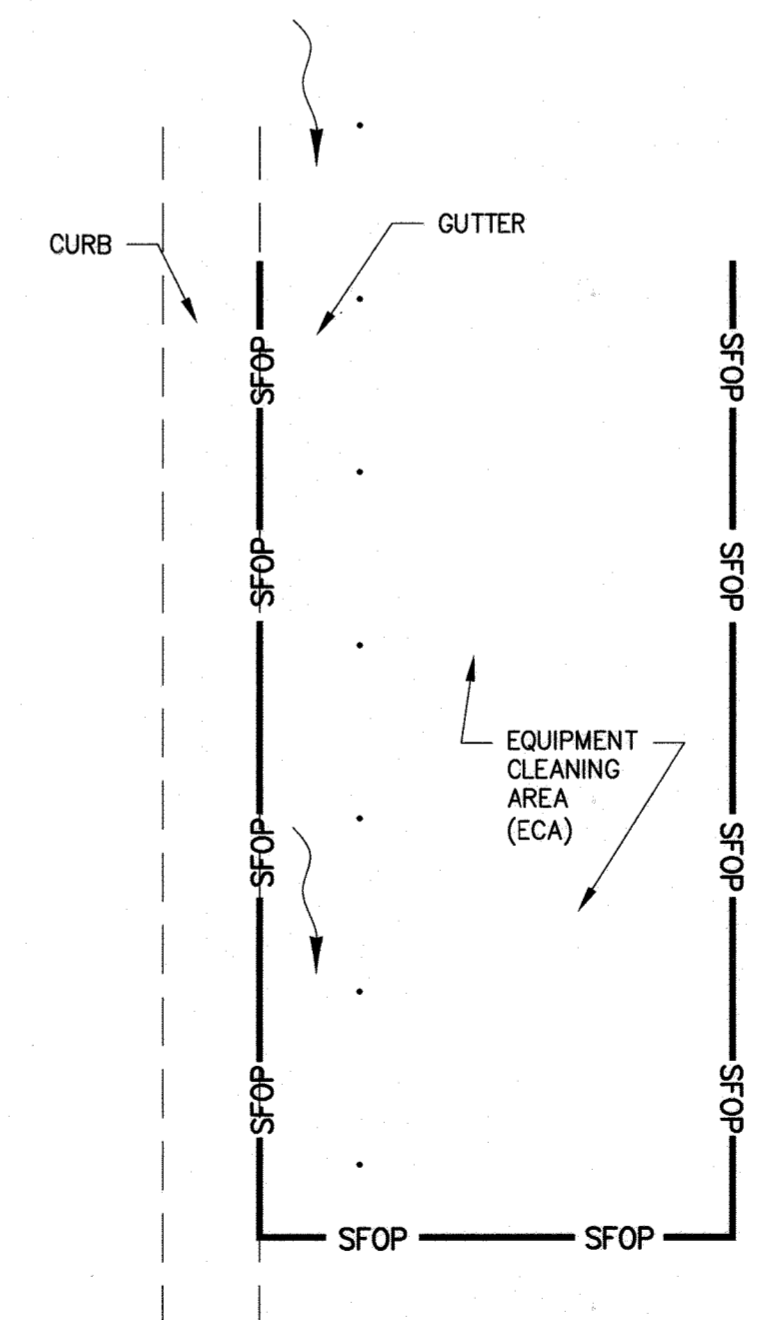
- SOIL DATA IS BASED ON THE WEB SOIL SURVEY WEBSITE BY THE USDA NATURAL RESOURCES CONSERVATION SERVICE:

Rsb RUSSET FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES  
 Rsc RUSSET FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES  
 SrD SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES  
 Ufa URBAN LAND-FALLSINGTON COMPLEX, 0 TO 2 PERCENT SLOPES  
 WdaB WOODSTOWN SANDY LOAM, 2 TO 5 PERCENT SLOPES

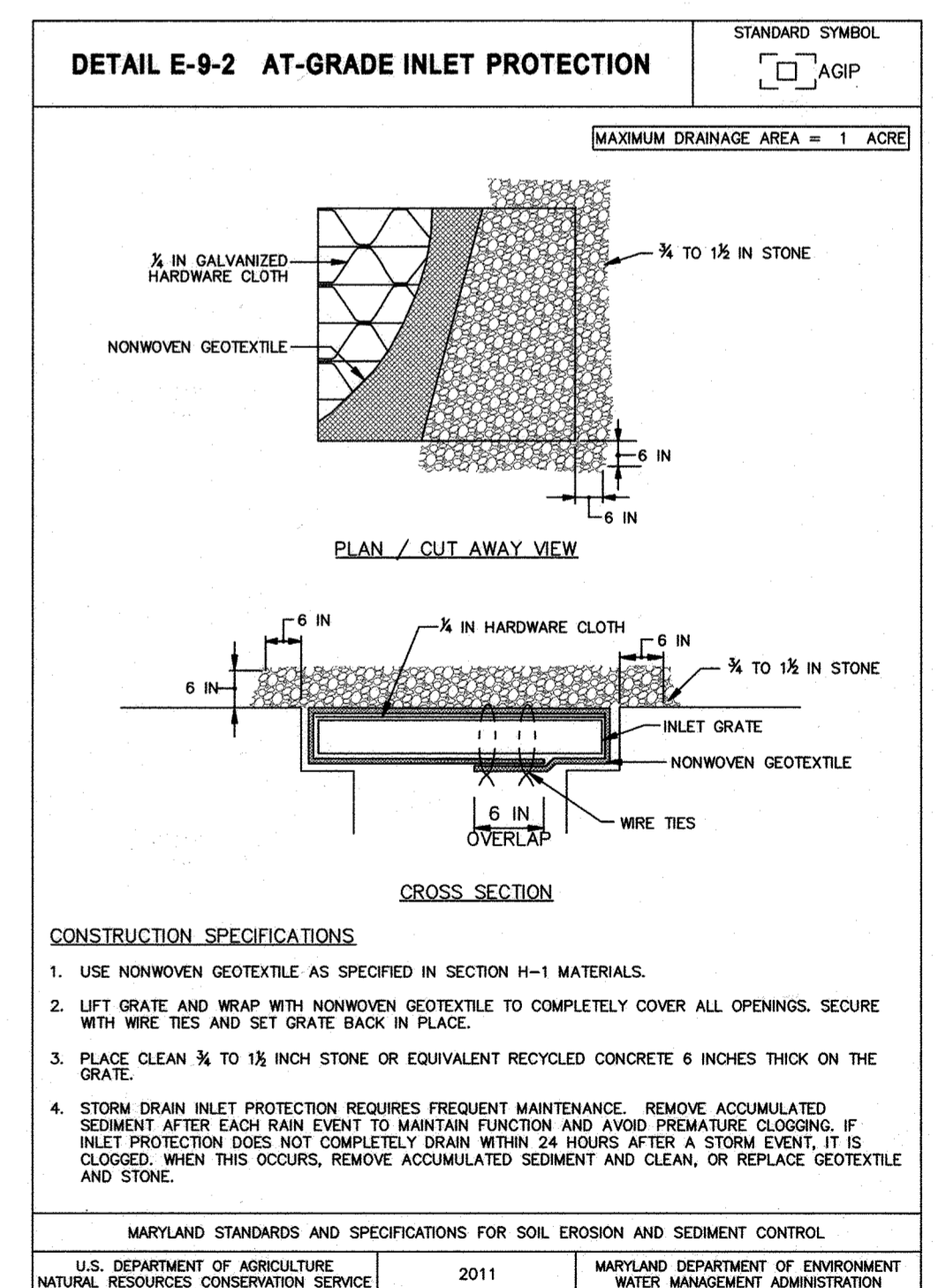
- TOP SOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATIONS OF CONSTRUCTION AND MATERIALS. SECTION 920 - LANDSCAPING MATERIALS.

**SEQUENCE OF CONSTRUCTION**

- THE CONTRACTOR SHALL OBTAIN GRADING PERMIT. WORK SHALL BE CONDUCTED PER SAID PERMIT.
- A PRECONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - PRIOR TO THE START OF EACH DISTURBANCE
  - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING
  - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
  - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- INSTALL PERIMETER CONTROLS AS NECESSARY.... ONE (1) DAY
- CONTACT CID PER 2.b ABOVE.
- COMPLETE WATER MAIN CONSTRUCTION.... TWENTY (20) DAYS
- COMPLETE TIE-INS TO EXISTING WATER MAINS.... THREE (3) DAYS
- RESTORE PAVING AND SURROUNDING AREAS.... FIVE (5) DAYS
- ONCE THE PROJECT SITE IS STABILIZED AND CONTROLS CAN BE REMOVED, CONTACT CID PER 2.d ABOVE.
- REMOVE ANY REMAINING SEDIMENT CONTROLS AND STABILIZE AREAS DISTURBED BY REMOVAL OF SEDIMENT CONTROLS.... ONE (1) DAY



U-SHAPED EQUIPMENT CLEANING AREA



**NOTES**

- SFOP TO MEET DETAIL E-2 AND CONSTRUCTION SPECIFICATIONS THEREOF.
- ECA TO BE PLACED AT LOWEST END OF LOT AND CLEANED DAILY.
- IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING.
- CID MAY WAIVE INSTALLATION OF EAC WHERE INSPECTOR ACCEPTS SAME-DAY STABILIZATION WITH SEED/SSM OR SOD.

**CONSTRUCTION SPECIFICATIONS**

- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
- PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011  
 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, WATER MANAGEMENT ADMINISTRATION

**AS-BUILT, DEC 2021**

1" = 50' 0 50' 100' ES-01

RNC21SYS - \\bldm01\2021\2021\2154\_44-5054\Task 11 - Loudon Ave W8303 CAD\DWG\Plan\11-SES-P01\_LOADON.dwg May 14, 2020 - 3:51pm ENV:CTB Plot Scale: 1"=50' Plot By: bgrasso Tab: ES-01

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> 7/8/2020 Chief, Bureau of Engineering: <i>[Signature]</i> 6/16/20		<b>RK&amp;K</b> P: 410.728.2900 700 East Pratt Street, Suite 500   Baltimore, MD 21202 Engineers   Construction Managers   Planners   Scientists www.rk&k.com Responsive People   Creative Solutions		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. 20566, EXPIRATION DATE: 09/06/2020.		DES: WJG DRN: RAD CHK: NKS SIGN DATE: 05-19-2020		REVISION DATE		MAY 1, 2020		PROJECT NO. W8303 CONTRACT NO. 44-5054		SCALE AS SHOWN	
Chief, Bureau of Utilities: <i>[Signature]</i> 6-27-2020 Chief, Utility Design Division: <i>[Signature]</i> 6/16/20		600' SCALE MAP NO. 38		BLOCK NO. 14, 15		ELECTION DISTRICT NO. 2		HOWARD COUNTY, MARYLAND		SHEET NO. 11 OF 13					

**HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES**

- A PRECONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - PRIOR TO THE START OF EACH DISTURBANCE
  - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING
  - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
  - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- 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 APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH > 15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- 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.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	1.77 ACRES	(LINEAR PUBLIC UTILITY PROJECT WITHIN LOUDON AVENUE)
AREA DISTURBED:	0.20 ACRES	
AREA TO BE ROOFED OR PAVED:	0.52 ACRES	
AREA TO BE VEGETATIVELY STABILIZED:	0.02 ACRES	(MINOR SHOULDER WORK)
TOTAL CUT:	1,208 CU. YDS.	(ALL TRENCH EXCAVATION FOR 12" WATER)
TOTAL FILL:	1,208 CU. YDS.	
OFFSITE WASTE/BORROW AREA LOCATION:	TO BE DETERMINED BY CONTRACTOR	


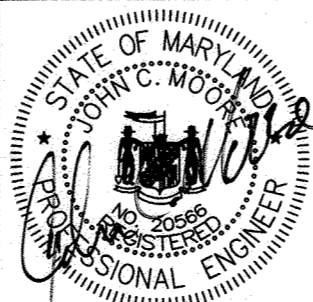
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
  - INSPECTION DATE
  - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
  - EVIDENCE OF SEDIMENT DISCHARGES
  - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
  - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - PHOTOGRAPHS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
  - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORM ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
- 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 WORK DAY, WHICHEVER IS SHORTER.
- ANY MAJOR CHANGES OR REVISIONS ON THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER LIST OF HSCD-APPROVED FIELD CHANGES.
- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOD. 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 CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

**SUPPLEMENTAL EROSION AND SEDIMENT CONTROL NOTES**

- STAGING AND STOCKPILING:
  - NO STAGING OR STOCKPILE AREAS ALLOWED ON-SITE.
- STABILIZED CONSTRUCTION ENTRANCE (SCE) AND EQUIPMENT CLEANING AREA (ECA):
  - THERE ARE NO SCEs INCLUDED IN THIS PROJECT. PROVIDE AN EQUIPMENT CLEANING AREA (ECA) DURING CONSTRUCTION, AS DIRECTED BY ENGINEER. REFER TO ECA DETAIL ON DRAWING SHEET ES-01 (SHEET 11 OF 13). REMOVE ACCUMULATED STONE AND SEDIMENT PRIOR TO DISMANTLING THE ECA.
- STORM DRAIN AND DITCH CONSTRUCTION:
  - STORM DRAIN SYSTEMS AND PERMANENT DITCHES/SWALES SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE ENGINEER.
- COORDINATION WITH MAINTENANCE OF TRAFFIC PLAN:
  - THE SEDIMENT AND EROSION CONTROL SEQUENCES SHALL BE COORDINATED WITH THE MAINTENANCE OF TRAFFIC PLANS TO MAINTAIN CONTINUITY OF THE PRACTICES DURING ALL PHASES OF THE PROPOSED WORK. CONCURRENT CONSTRUCTION WITHIN THE VARIOUS PHASES MAY BE UNDERTAKEN IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC PLAN. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING CONCURRENT WORK. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF THEIR INTENDED FUNCTION. PERMANENT STABILIZATION OF CONTRIBUTORY DRAINAGE AREA AND PRIOR APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. SEDIMENT AND EROSION CONTROL MEASURES NECESSARY FOR SUBSEQUENT PHASE OF THE WORK SHALL BE MAINTAINED AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.
- DEWATERING
  - ANY EFFLUENT FROM DEWATERING FOUNDATIONS, TRENCHES AND OTHER DISTURBED AREAS MUST BE TREATED BY AN APPROVED SEDIMENT CONTROL DEVICE BEFORE BEING DISCHARGED. CONTRACTOR TO USE PORTABLE SEDIMENT TANKS.
- SEQUENCE OF CONSTRUCTION
  - THE SEQUENCE OF CONSTRUCTION INCLUDED IN THESE PLANS IS APPROVED BY HOWARD COUNTY. THIS SEQUENCE OF CONSTRUCTION MAY BE MODIFIED BY THE CONTRACTOR. HOWEVER, THE CONTRACTOR MUST OBTAIN HOWARD COUNTY APPROVAL FOR ANY MODIFICATIONS PRIOR TO IMPLEMENTING A REVISED SEQUENCE OF CONSTRUCTION IN THE FIELD.
  - NO DISTURBED AREAS SHALL BE LEFT UNSTABILIZED OVERNIGHT, UNLESS RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
- CONTRACTOR SHALL REMOVE SPOILS TO A SITE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PERMIT.

**AS-BUILT  
DEC. 2021**

R:\GIS\15 - \Voter\152012\2012\12154\_165680A\Task 11 - Loudon Ave W8303\CD00\Plans\12-pe5-001\_LOUDON.dwg May 14, 2020 - 3:51pm ENVC/BT Plot Scale 1=1 Plot By: bgrasso Tab: ES-02

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>John Mermin</i> 7/8/2020 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Thomas E. Suttler</i> 6/1/20 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>Chris Kelly</i> 6/1/20 CHIEF, BUREAU OF UTILITIES DATE</p> <p><i>[Signature]</i> 6/1/20 CHIEF, UTILITY DESIGN DIVISION DATE</p>	 <p>P: 410.728.2900 700 East Pratt Street, Suite 500   Baltimore, MD 21202 www.rkx.com Responsive People   Creative Solutions</p>	<p>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. 20566 EXPIRATION DATE: 09/06/2020</p> 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DES:</th> <th>BY</th> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>WJG</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRN:</td> <td>RAD</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHK:</td> <td>NKS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SIGN DATE:</td> <td>05-17-2020</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DES:	BY	NO.	REVISION	DATE	WJG					DRN:	RAD				CHK:	NKS				SIGN DATE:	05-17-2020				<p style="text-align: right;">MAY 1, 2020</p> <p style="text-align: center;"><b>EROSION AND SEDIMENT CONTROL NOTES AND DETAILS</b></p> <p>600' SCALE MAP NO. 38      BLOCK NO. 14, 15</p>	<p style="text-align: center;">PROJECT NO. W8303 CONTRACT NO. 44-5054</p> <p style="text-align: center;"><b>ANDERSON AVE/MOUND STREET WATER MAIN</b></p> <p style="text-align: center;">ELECTION DISTRICT NO. 2      HOWARD COUNTY, MARYLAND</p>	<p>ES-02</p> <p>SCALE AS SHOWN</p> <p>SHEET NO. 12 OF 13</p>
DES:	BY	NO.	REVISION	DATE																											
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B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

CRITERIA:

- A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT...

- B. TOPSOILING
1. TOPSOILING IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH...
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS...

- C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE...

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

CRITERIA:

- A. SEEDING
1. APPLICATION
a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS
i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1...

- B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR...

- 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 TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES...

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS

PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA:

- 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW...

TEMPORARY SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20), LIME RATE. Includes rows for Annual Ryegrass, Foxtail Millet, and Oats.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION CRITERIA:

PERMANENT SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, N, P2O5, K2O, LIME RATE. Includes rows for Tall Fescue, Kentucky Bluegrass, and Kentucky Bluegrass.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION CRITERIA:

- A. SEED MIXTURES
1. GENERAL USE
a. 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...

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

- c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

- B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
1. GENERAL SPECIFICATIONS
a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR...

AS-BUILT DEC. 2021

Vertical text on the left margin: R0621575 - \\baldwin\01\2021\12154-146580A\Task 11 - Location Ave Mill W8303\0400\Plans\13-pe55-0002\_L0000N.dwg May 14, 2020 - 3:52pm

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Includes signatures and dates for Director of Public Works and Chief, Bureau of Engineering.

RK&K logo and contact information: P: 410.728.2900, 700 East Pratt Street, Suite 500 | Baltimore, MD 21202

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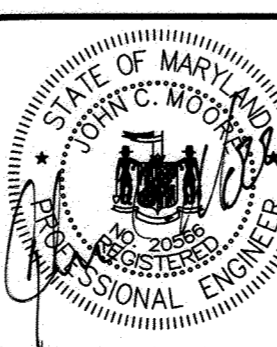


Table with columns: DES, DRN, CHK, SIGN DATE, REVISION, NO., DATE. Includes entries for WJG, RAD, NKS and a sign date of 6-5-19-2020.

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS. 600' SCALE MAP NO. 38. BLOCK NO. 14, 15.

PROJECT NO. W8303 CONTRACT NO. 44-5054 ANDERSON AVE/MOUND STREET WATER MAIN. SHEET NO. 13 OF 13.