

HICKORY GLEN DRIVE WATER MAIN LOOP

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654

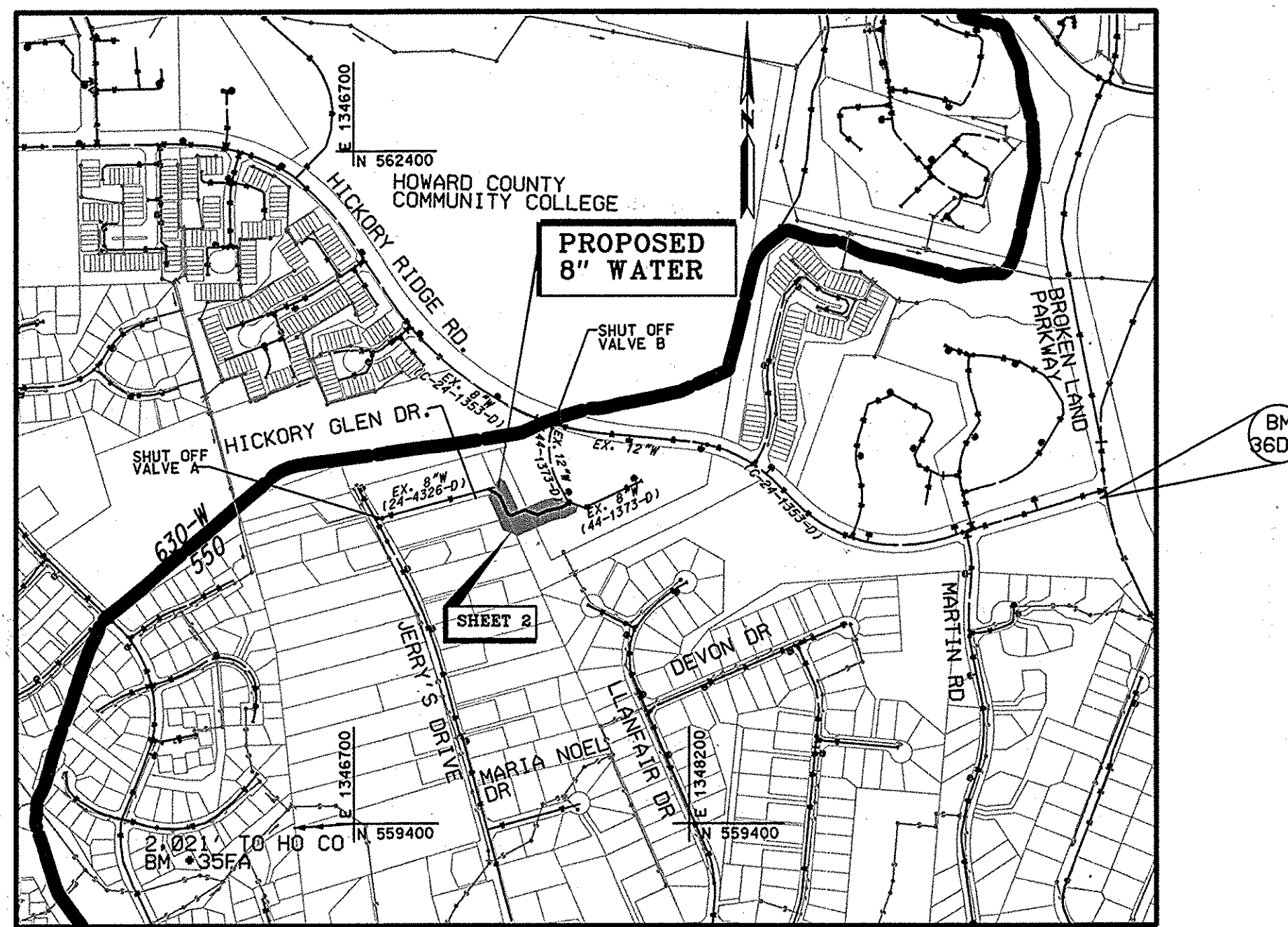
GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES 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 SEPTEMBER 2008 BY KCI TECHNOLOGIES, INC.
- 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. 3512 AND BACO DJ886. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE REBAR & CAP AND NAILS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNELS REQUIRED. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES AS SHOWN ON THE DRAWINGS, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

ATAF.....	1-800-252-1133
BOAE (CONSTRUCTION SERVICES).....	410-850-4620
BOAE (EMERGENCY).....	410-895-1400
BUREAU OF UTILITIES (DPW).....	410-313-4900
COLONIAL PIPELINE CO.	410-795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON.....	1-800-743-0033 / 410-224-9210
- 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.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(g) OF THE HOWARD COUNTY CODE.
- EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, ALL PUBLIC WATER MAINS SHALL BE POLYVINYLCHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA C900 DR18, PRESSURE CLASS 150 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF UTILITIES HOWARD COUNTY, 15 DAYS PRIOR TO WATER MAIN SHUT DOWNS.
- THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES.
- THE CONTRACTOR SHALL PROVIDE STAGING/STORAGE AREA.
- IN ACCORDANCE WITH HOWARD COUNTY CODE 16.1202 (b)(1)(iv), THIS PROJECT IS EXEMPT FROM THE HOWARD COUNTY FOREST CONSERVATION ACT.

WATER MAIN NOTES

- TOPS OF WATER MAIN SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- ALL WATER MAINS CONSTRUCTED IN FILL AREAS SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE FOLLOWING NOTE IS ADDED TO HOWARD COUNTY STANDARD DETAIL W 2.22. BUTTRESS AND ANCHORAGE FOR VERTICAL BENDS. WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH THE PIPE SURFACE SHALL BE 1-INCH WIDE BY 1/4-INCH THICK STEEL. THE REMAINING PORTION OF THE STRAP SHALL BE REINFORCING BAR SIZED IN ACCORDANCE WITH THE PERTINENT CHART SHOWN ON THE DETAIL.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- CONTINUITY TEST STATION SHALL BE PLACED ADJACENT TO EACH FIRE HYDRANT AND ANCHORAGES SHALL BE INSTALLED UNDER WATER VALVES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATION AND DETAILS.
- WATER MAINS SHALL BE FILLED WITH WATER AND BROUGHT TO 150 PSI HYDROSTATIC TEST PRESSURE AT THE LOW POINT FOR 2 HOURS.
- 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 DETAIL. ALL FIRE HYDRANT LEADS SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA C900 DR18 AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.



VICINITY MAP

SCALE: 1" = 600'

TYPE OF BUILDING:	RESIDENTIAL	HORIZONTAL AND VERTICAL CONTROL BASED ON MARYLAND NAD83(91) (HORIZONTAL) AND NAVD88 (VERTICAL) DATUM.
NUMBER OF PARCELS:	0	HOWARD COUNTY GEODETIC SURVEY CONTROL NUMBERS:
NUMBER OF SEWER HOUSE CONNECTIONS:	0	NO. 35FA
NUMBER OF WATER HOUSE CONNECTIONS:	0	N 559266.13
DRAINAGE AREA:	LITTLE PATUXENT	E 1344682.64
PRESSURE ZONE:	550	ELEV. 410.30
WATER TEST GRADIENT:	760	ELEV. 363.64

LEGEND

	TRAVERSE POINT		DECIDUOUS TREE
	WATER MAIN		CONIFEROUS TREE
	FIRE HYDRANT		EXISTING FIRE HYDRANT
	VALVE		EXISTING VALVE
	WATER HOUSE CONNECTION		EXISTING WATER MAIN
	TEST STATION		EXISTING GAS MAIN
	BORING LOCATION		EXISTING UNDERGROUND ELECTRIC
	LIMIT OF DISTURBANCE		EXISTING SEWER MAIN
	SILT FENCE		EXISTING MANHOLE
	SNOW FENCE		
	EASEMENT		
	TEMPORARY CONSTRUCTION STRIP		

ENGINEER'S CERTIFICATION

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

Guohua Wang
GUOHUA WANG
KCI TECHNOLOGIES, INC
836 RIDGEBROOK ROAD
SPARKS, MD 21152

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

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.

Kim Sileo 3/18/2013
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

AS-BUILT
DATE 12-19-13

INDEX OF SHEETS

SHEET No.	DESCRIPTION
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3	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
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5	8" PVC WATER MAIN CORROSION CONTROL DETAILS - 1
6	8" PVC WATER MAIN CORROSION CONTROL DETAILS - 2

QUANTITIES

ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
8" WATER (PVC)	L.F.	444	444	JM EAGLE NORTH AMERICAN PIPE
8" # TS & V	EA	1	2	AMERICAN FLOW CONTROL

NAME OF UTILITY CONTRACTOR: W.F. WILSON

CHECKBOX

AS-BUILT DATE: 12-13

SURVEY AND DRAFTING DIVISION

RESTORATION SCHEDULE

LOCATION	DISTANCE	TYPE
CA OPEN SPACE	254	MULCH & SEEDING*
PRIVATE ROAD	190	ASPHALT

* REFER TO PERMANENT SEEDING NOTES ON SHEET 3 OF 6

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

HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (SCD).

J.R. Pabst 6/25/13
HOWARD SOIL CONSERVATION DISTRICT DATE

NOTE:
IN ACCORDANCE WITH HOWARD COUNTY CODE 16.1202(b)(1)(iv), THIS PROJECT IS EXEMPT FROM THE HOWARD COUNTY FOREST CONSERVATION ACT.

EP-09-23

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ja. J. Van 3/25/10
DIRECTOR OF PUBLIC WORKS DATE

Moran & Butler 3/18/13
CHIEF, BUREAU OF ENGINEERING DATE

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
KCI
TECHNOLOGIES
10 North Park Drive
HUNT VALLEY, MD 21030
PHONE (410) 316-7800
FAX (410) 316-7817
www.kci.com

STATE OF MARYLAND
GUOHUA WANG
KCI TECHNOLOGIES, INC
PROFESSIONAL ENGINEER
3/13

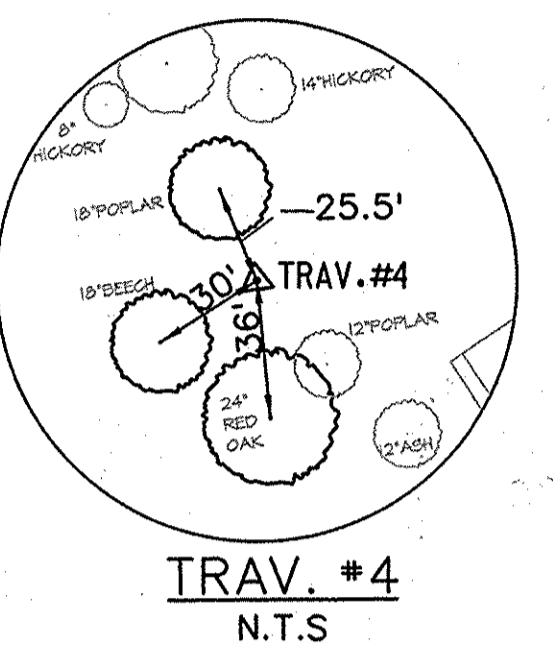
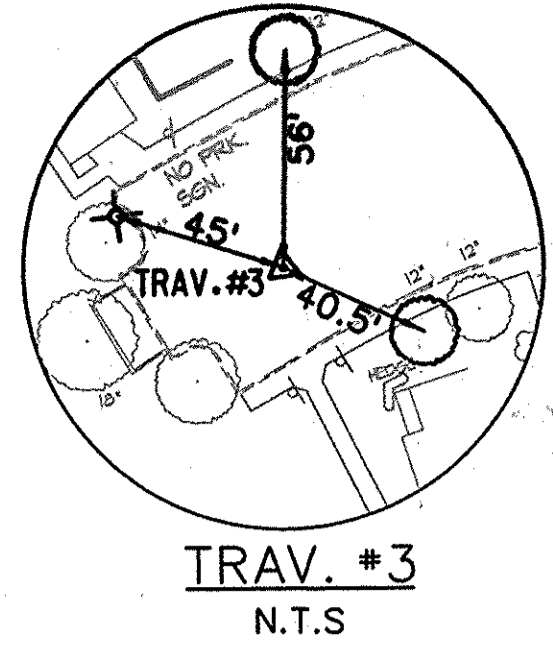
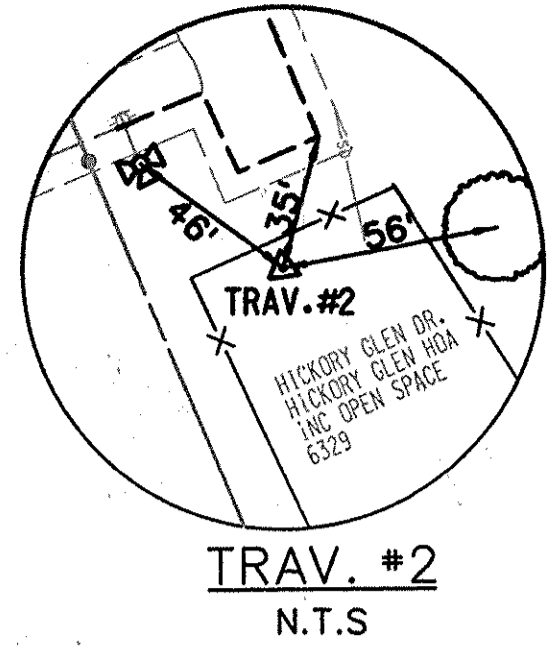
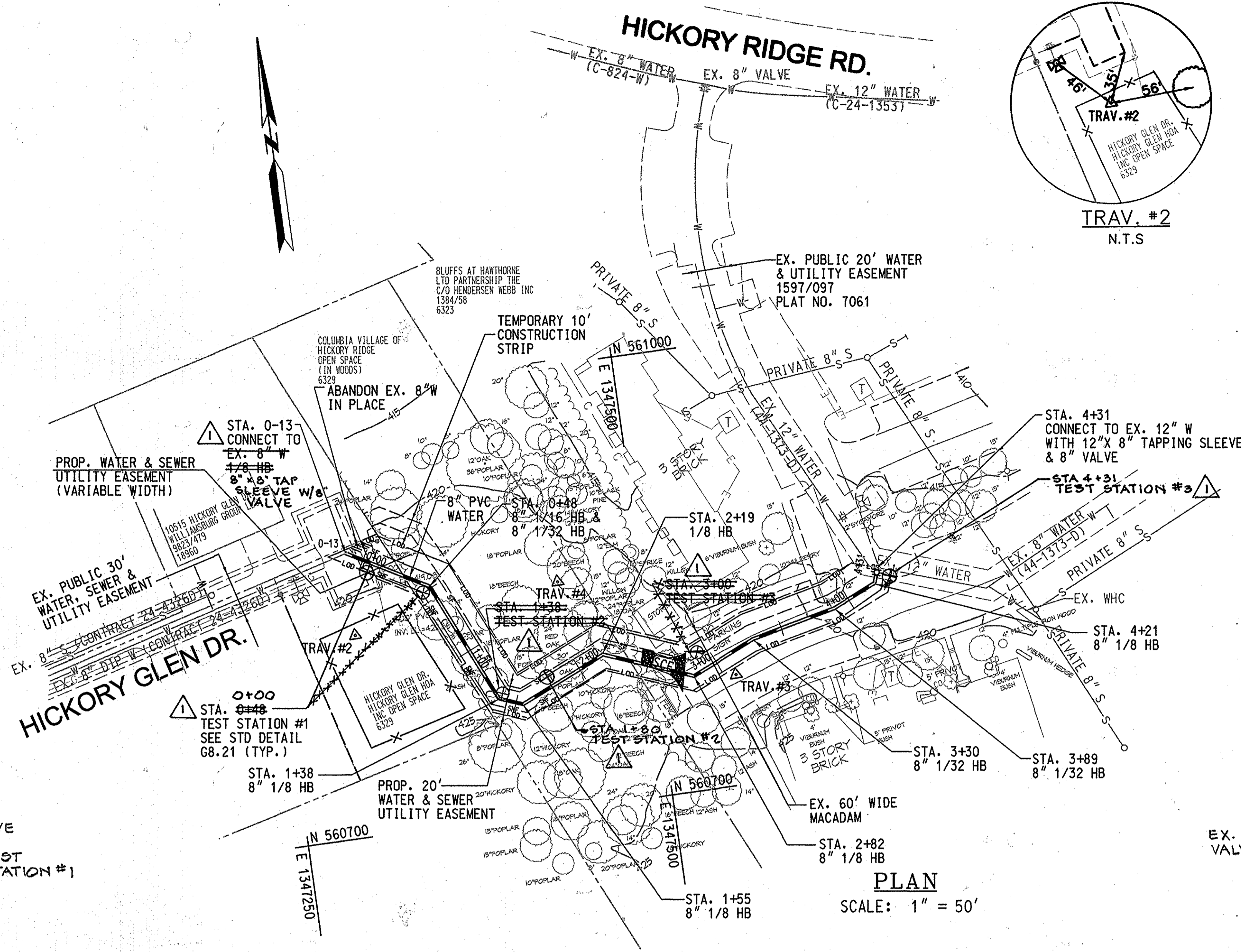
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DRN: CK			
CHK: TW			
DATE: MARCH 13	65	1	AS-BUILT
BY NO.			
REVISION			
DATE	12-13		

TITLE SHEET

HICKORY GLEN DRIVE
WATER MAIN LOOP
CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654

SCALE
AS SHOWN
SHEET

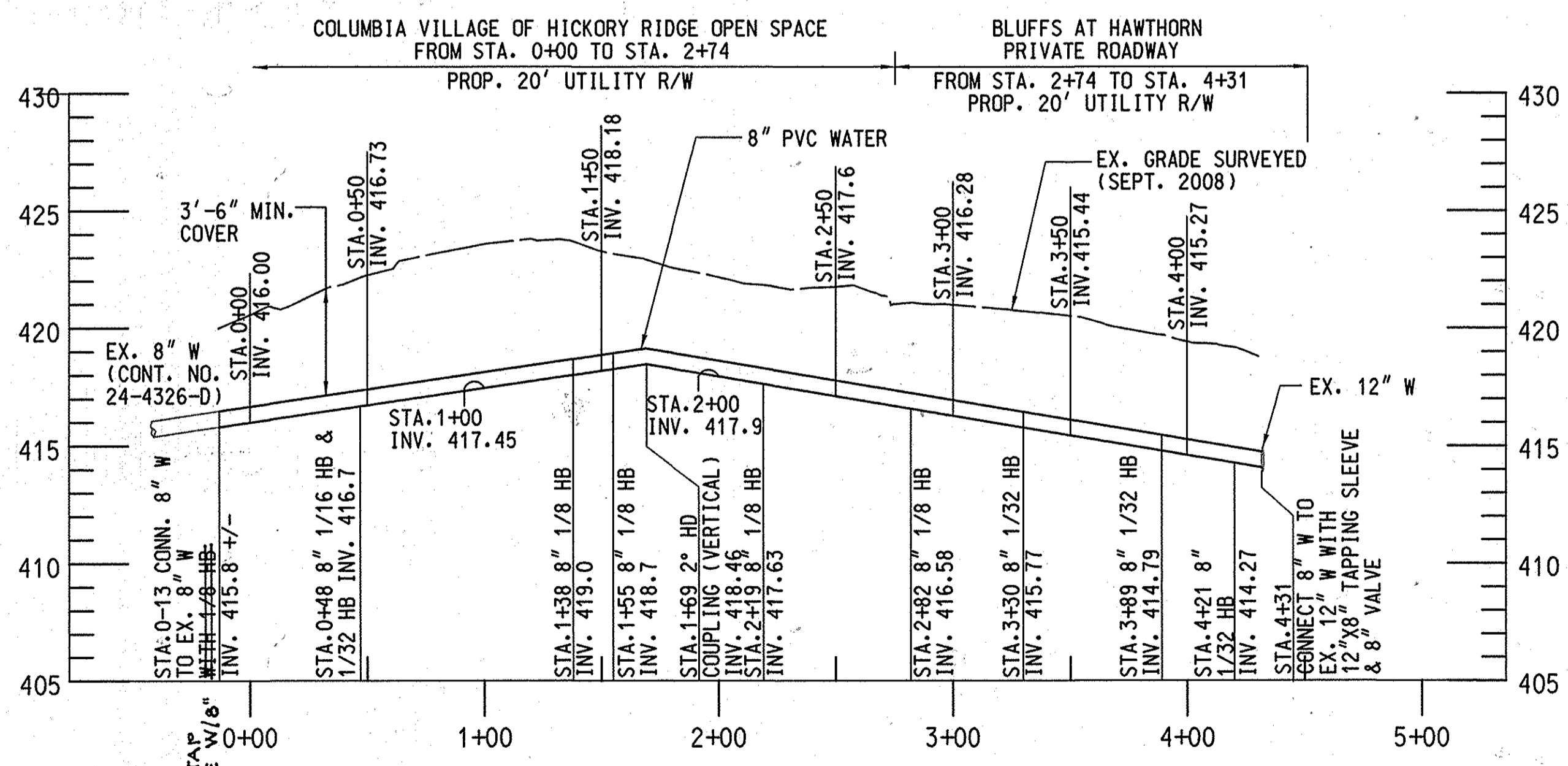
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND 1 OF 6



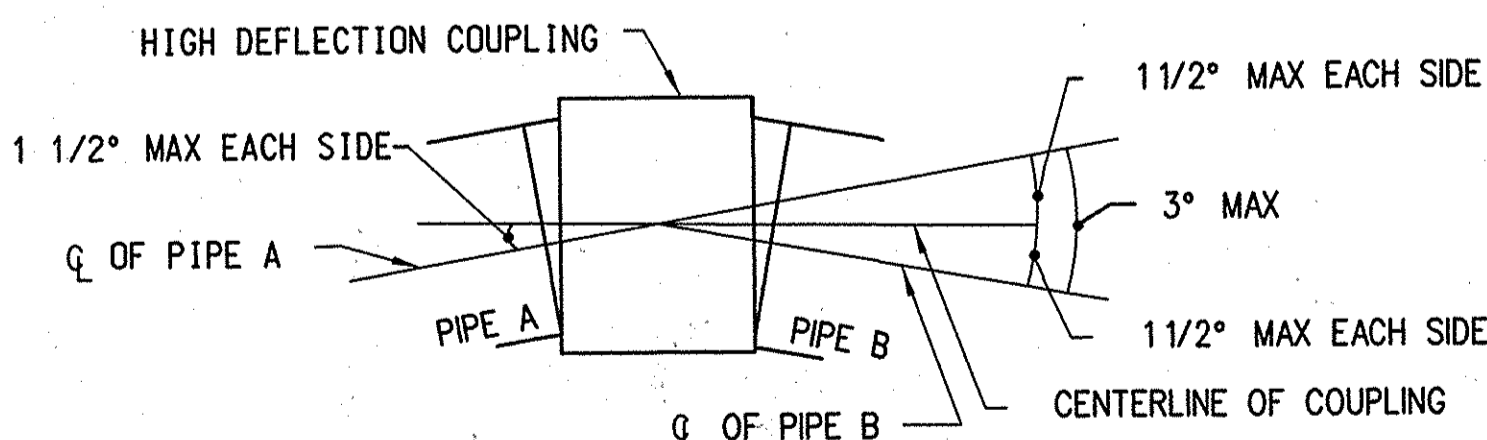
TRAVERSE COORDINATE SCHEDULE				
NUMBER	DISCRIPTION	NORTHING	EASTING	ELEVATION
TRAV. #2	REBAR & CAP	560837.14	1347301.73	422.91
TRAV. #3	MAG. NAIL	560774.80	1347554.38	421.07
TRAV. #4	REBAR & CAP	560854.12	1347442.83	421.07

WATER STAKEOUT COORDINATES SCHEDULE				
STATION	FITTING	NORTHING	EASTING	
0-13	8" 1/8 HB	560893.12	1347303.06	
0+48	8" 1/16 & 1/32 HB	560863.05	1347356.34	
1+38	8" 1/8 HB	560781.25	1347392.44	
1+55	8" 1/8 HB	560775.17	1347408.09	
1+69	2" HD COUPLING (V)	560780.89	1347421.05	
2+19	8" 1/8 HB	560801.00	1347466.61	
2+82	8" 1/8 HB	560777.98	1347525.99	
3+30	8" 1/32 HB	560797.04	1347569.29	
3+89	8" 1/32 HB	560809.87	1347626.88	
4+21	8" 1/8 HB	560822.92	1347656.46	
4+31	TAPPING SLEEVE & VALVE	560832.85	1347659.78	

PLAN
SCALE: 1" = 50'



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



DETAIL 1.1
HIGH DEFLECTION COUPLING INSTALLATION
FOR HORIZONTAL AND VERTICAL DEFLECTION
NOT TO SCALE
NOTE: THE MAXIMUM ALLOWED DEFLECTION AT THE HIGH DEFLECTION COUPLING IS 3" WITH 1.5" ON EACH SIDE

AS-BUILT
DATE: 12-19-13

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. _____ EXPIRATION DATE: _____

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ja. J. Chen 3/25/13
DIRECTOR OF PUBLIC WORKS DATE

Thomas R. Butler 3/18/13
CHIEF, BUREAU OF ENGINEERING DATE

Ch. O. Liu 3/18/13
CHIEF, UTILITY DESIGN DIVISION DATE

KCI TECHNOLOGIES
10 NORTH PARK DRIVE
HUNT VALLEY, MD 21030
PHONE: (410) 316-7800
FAX: (410) 316-7817
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ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

STATE OF MARYLAND
Professional Engineer
No. 31383
3/13

DES: GW					
DRN: CK					
CHK: TW					
DATE: MARCH 13	65	1	AS-BUILT		12-13
BY NO.			REVISION		DATE

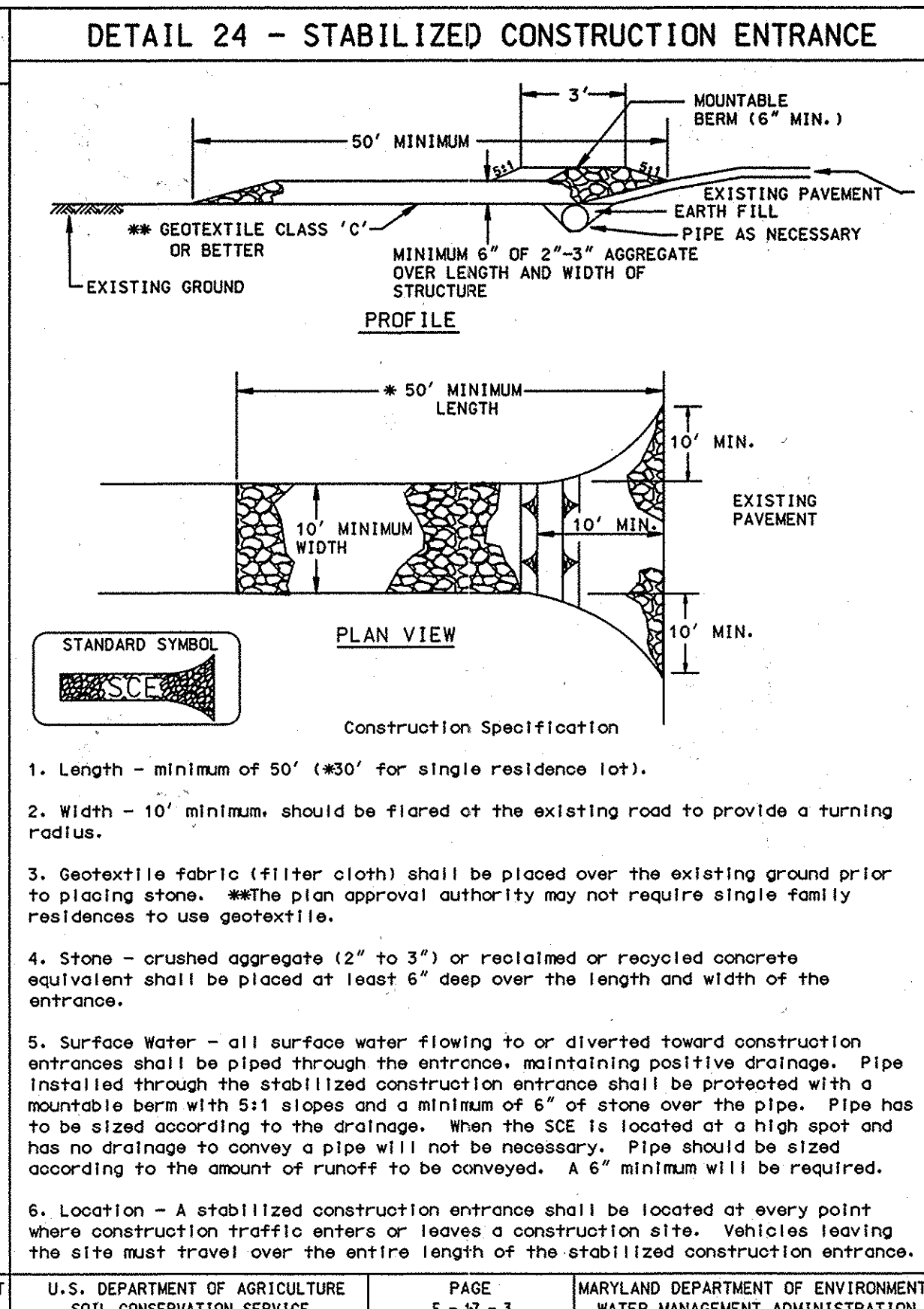
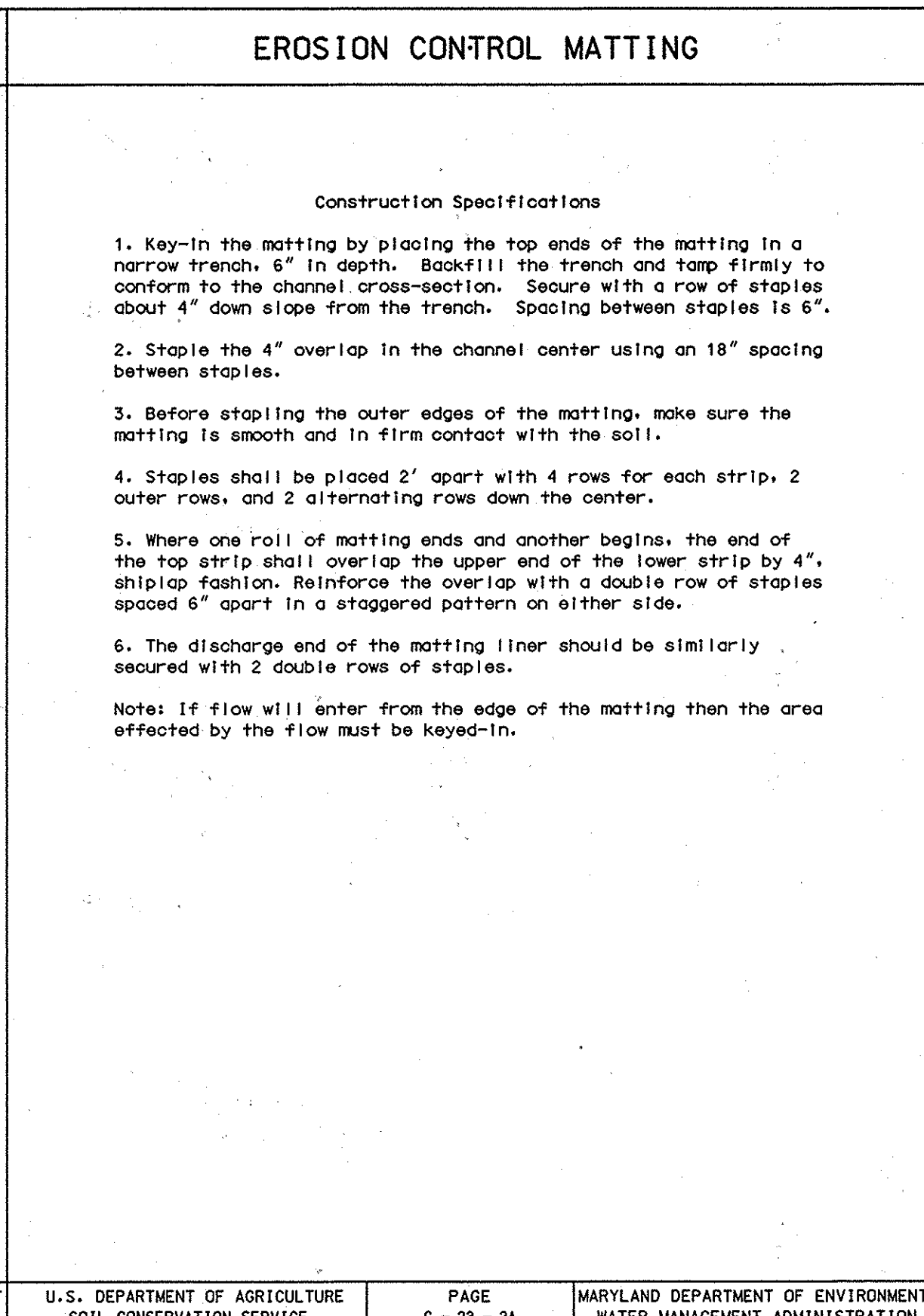
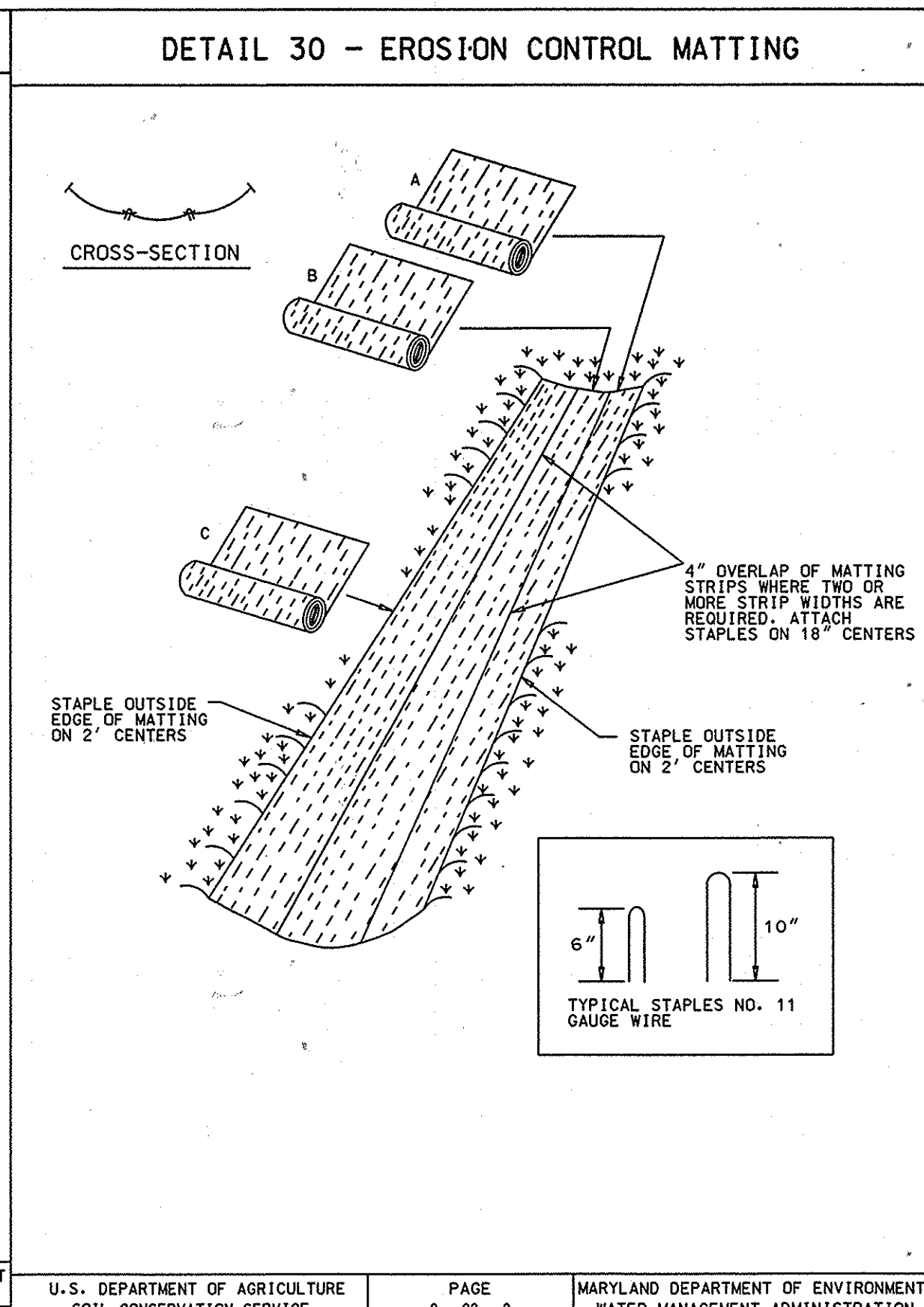
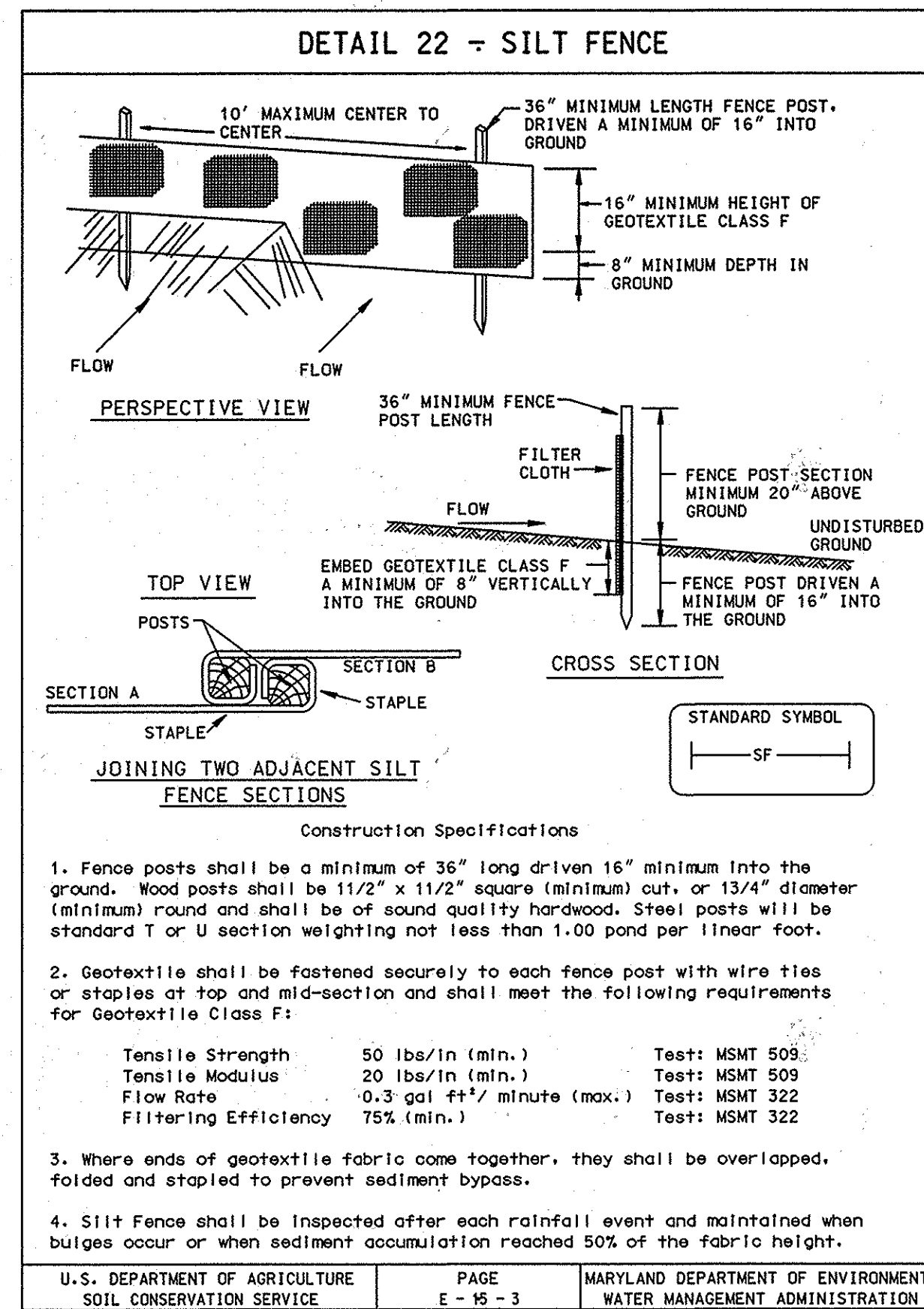
**HICKORY GLEN DRIVE
8" WATER
PLAN AND PROFILE**

**HICKORY GLEN DRIVE
WATER MAIN LOOP**
CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 6

PLOTTED: 08:11 AM on Friday, March 08, 2013
 BY: Guihua Wang, Division: P042, Water-Ww, Emp
 FILE: W-8293\01071313\8.05\GHW-01W.dgn



PERMANENT SEEDING NOTES

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

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

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

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

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

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

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

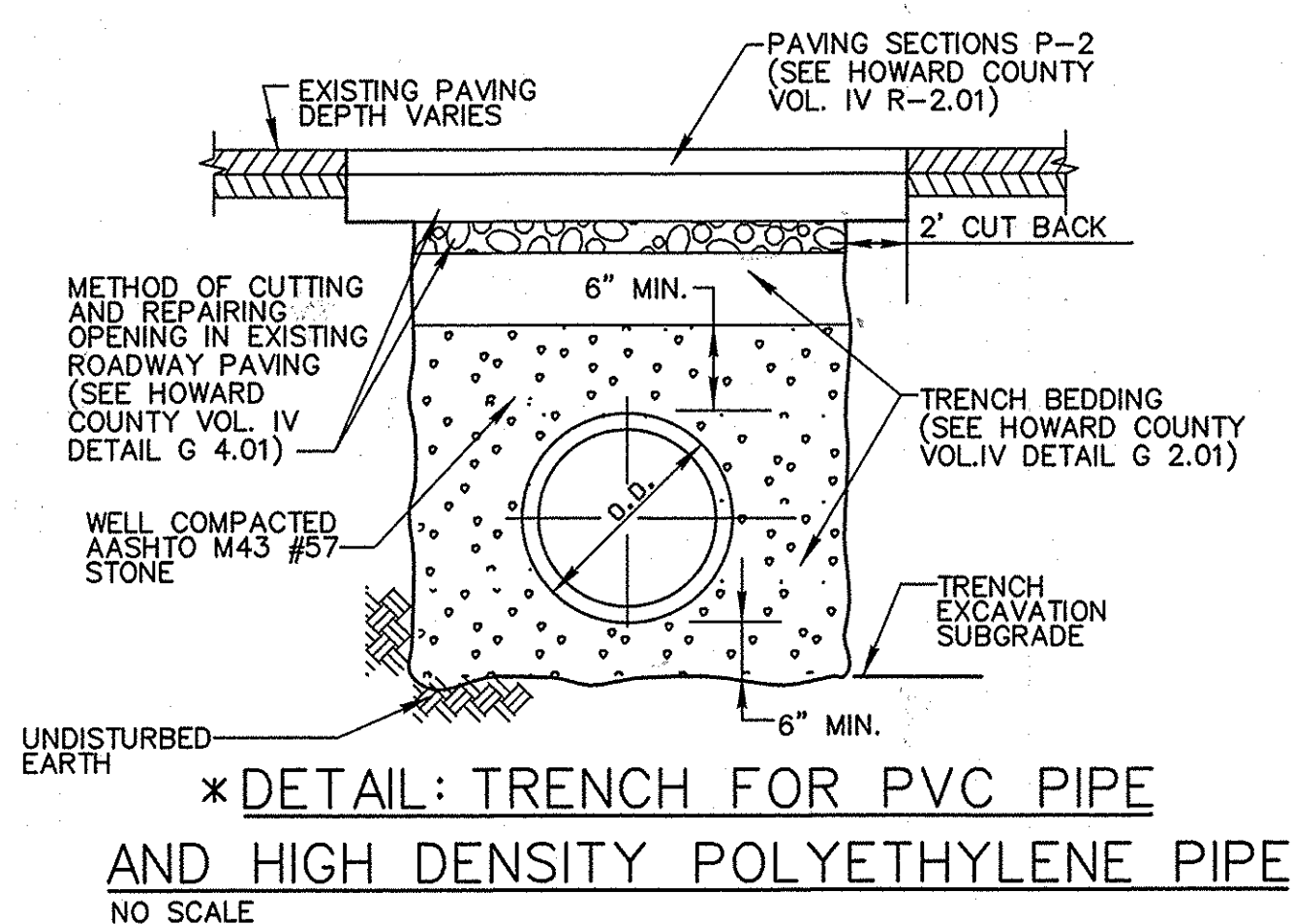
SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT.
- CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION DIVISION (410-313-1870) PRIOR TO STARTING DATE.
- INSTALL EROSION AND SEDIMENT CONTROL DEVICES AT THE DIRECTION OF SEDIMENT CONTROL INSPECTOR.
- EXCAVATE AND INSTALL PROPOSED 8" WATER MAIN. RESTORE EARTH TRENCHES TO THEIR ORIGINAL CONDITION AS PER HOWARD COUNTY STANDARDS. (TRENCH TO BE BACKFILLED AND STABILIZED ON SAME DAY) (TOTAL DURATION 45 DAYS)
- RESTORE ALL DISTURBED AREAS WITH PAVEMENT OR PERMANENT SEEDING (45 DAYS).
- UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES. (2 DAYS)

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 7 CALENDER DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
 - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. I, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (SEC. G20.0) FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING AND MULCHING. TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	N/A	ACRES
AREA TO BE ROOFED OR PAVED	0.1	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.01	ACRES
TOTAL CUT	N/A	CU. YDS.
TOTAL FILL	N/A	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF THE DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE ON DOWNHILL SIDE OF TRENCH.



- NOTES:
- UTILITY CONSTRUCTION SECTION 1000
 - BACKFILLING SECTION 1000.03.19

BEST MANAGEMENT PRACTICE (BMP) NOTES

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT MODIFICATION OF THE 100 YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100 YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL Ryegrass (Lolium multiflorum), Millet (Setaria italica), Brome (Hordeum sp.), Oats (Avena sp.) AND/OR RYE (Secale cereale). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM.

USE 1 WATERB. IN STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAYS.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

AS-BUILT
DATE: 12-19-13

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. _____ EXPIRATION DATE: _____

PLOTTED: 08:13 AM on Friday, March 06, 2013
BY: Gubina Wang, Division P042, Water-WW, Emp
FILE: W-23007-03/07/13/28.05/urawmains-ES-001W.dgn

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Raymond A. ... 3/25/13
DIRECTOR OF PUBLIC WORKS DATE

Thomas F. ... 3/18/13
CHIEF, BUREAU OF ENGINEERING DATE

... 3/18/13
CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI TECHNOLOGIES

10 North Park Drive
Hunt Valley, MD 21030
Phone: (410) 316-7800
Fax: (410) 316-7817
www.kci.com

STATE OF MARYLAND
GUTHRIE W. ...
PROFESSIONAL ENGINEER
No. 31393
3/13

DES: GW					
DRN: CK					
CHK: TW					
DATE: MARCH 13	BY	NO.	REVISION	DATE	600' SCALE MAP NO. 35 BLOCK NO. 12

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

HICKORY GLEN DRIVE
WATER MAIN LOOP
CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 3 OF 6



HICKORY GLEN DRIVE

TO HICKORY RIDGE ROAD

THE BLUFFS AT HAWTHORN
(3 STORY BRICK HOMES)

THE BLUFFS AT HAWTHORN
(3 STORY BRICK HOMES)

STATION 0+13,
INSTALL TWO PREPACKAGED 20 POUND
MAGNESIUM ANODES AND CONNECT
DIRECTLY TO DUCTILE IRON COUPLING,
SEE DETAIL CC-2.

STATION 4+31,
INSTALL ONE PREPACKAGED 20 POUND MAGNESIUM ANODE
AND CONNECT DIRECTLY TO 12" X 8" DUCTILE IRON TAPPING
SADDLE, SEE DETAIL CC-1.

STATION 4+29,
INSTALL ONE PREPACKAGED 20 POUND
MAGNESIUM ANODE AND CONNECT DIRECTLY TO
8" DUCTILE IRON VALVE, SEE DETAIL CC-1.

LEGEND:
—— NEW WATER MAIN
- - - - EXISTING WATER MAIN

- NOTES:
1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON ELBOWS ALONG THE PVC WATER MAIN ARE TO BE PROVIDED WITH CORROSION PROTECTION (ALL DUCTILE IRON TEES AND ELBOWS NOT SHOWN ON THIS DRAWING), SEE DETAIL CC-2.
 2. ALL PVC PIPE DESIGNATED AS BEING "RESTRAINED JOINT" SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO EACH METALLIC RESTRAINING HARNESS, SEE DETAIL CC-3. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
 3. ALL WATER SERVICE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-4), AND AN INSULATING CORPORATION INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE FROM THE SERVICE SADDLE (SEE DETAIL CC-10). WATER SERVICES NOT SHOWN ON THIS DRAWING.
 4. DO NOT THERMITE WELD TO PVC PIPE.

CORROSION CONTROL LAYOUT
SCALE: NONE

AS-BUILT
DATE 12-19-13

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PROJECTS DUE TO VARIABLE CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE DUPLICATED IN ANY WAY FOR OTHER PROJECTS OR MODIFIED IN ANY WAY FOR THIS OR OTHER PROJECTS, EXCEPT BY WRITTEN AGREEMENT WITH RUSSELL CORROSION CONSULTANTS, INC.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John W. ... 3/25/13
DIRECTOR OF PUBLIC WORKS
DATE

Mona E. Butler 3/10/13
CHIEF, BUREAU OF ENGINEERING
DATE

RUSSELL CORROSION CONSULTANTS, INC.
Columbia, Maryland

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 17083, EXPIRATION DATE 9/27/2014



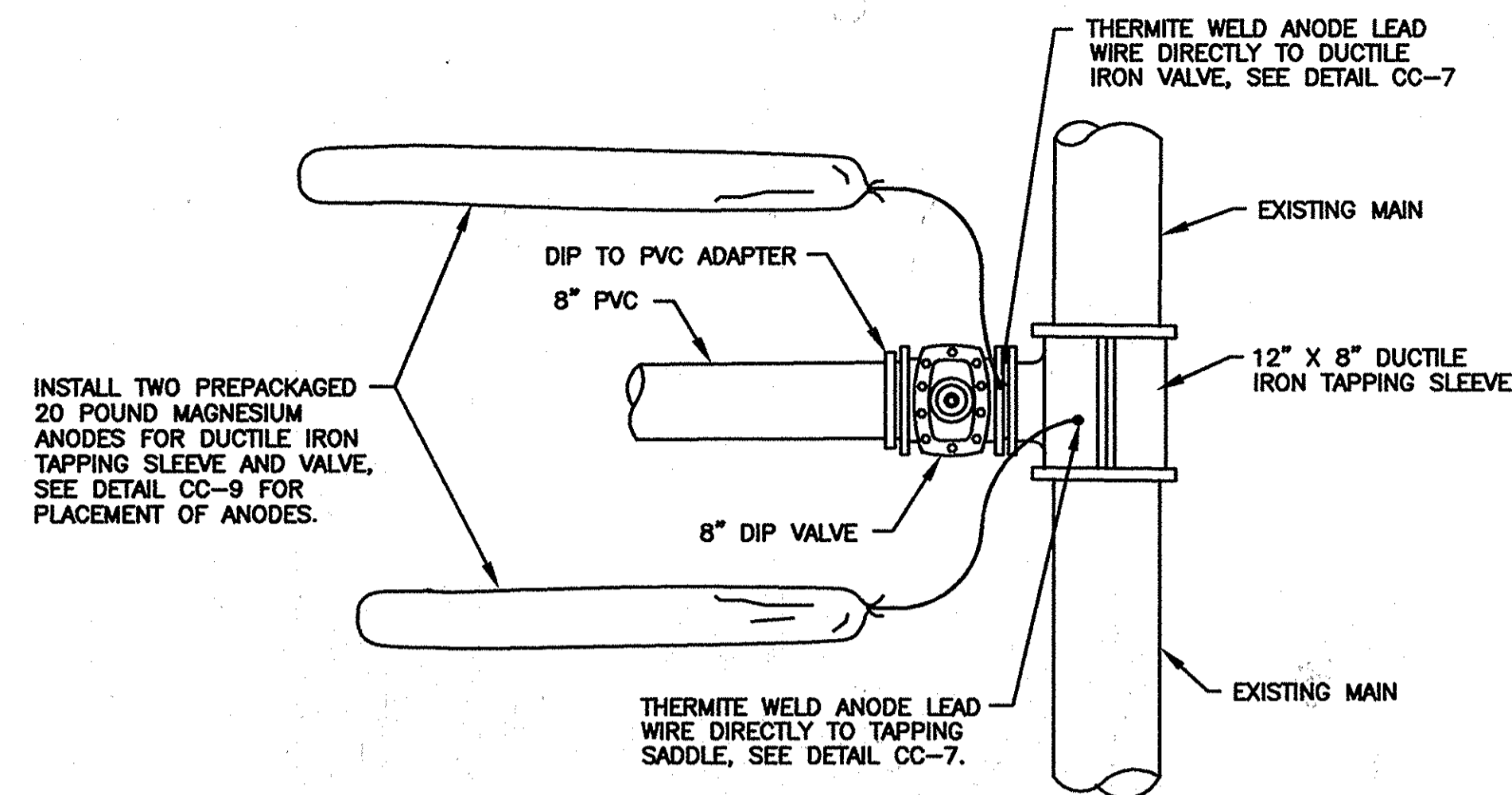
DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: MAR. 2013	BY	NO.	REVISION	DATE	

8" PVC WATER MAIN
CORROSION CONTROL
LAYOUT

HICKORY GLEN DRIVE
WATER MAIN LOOP
CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654

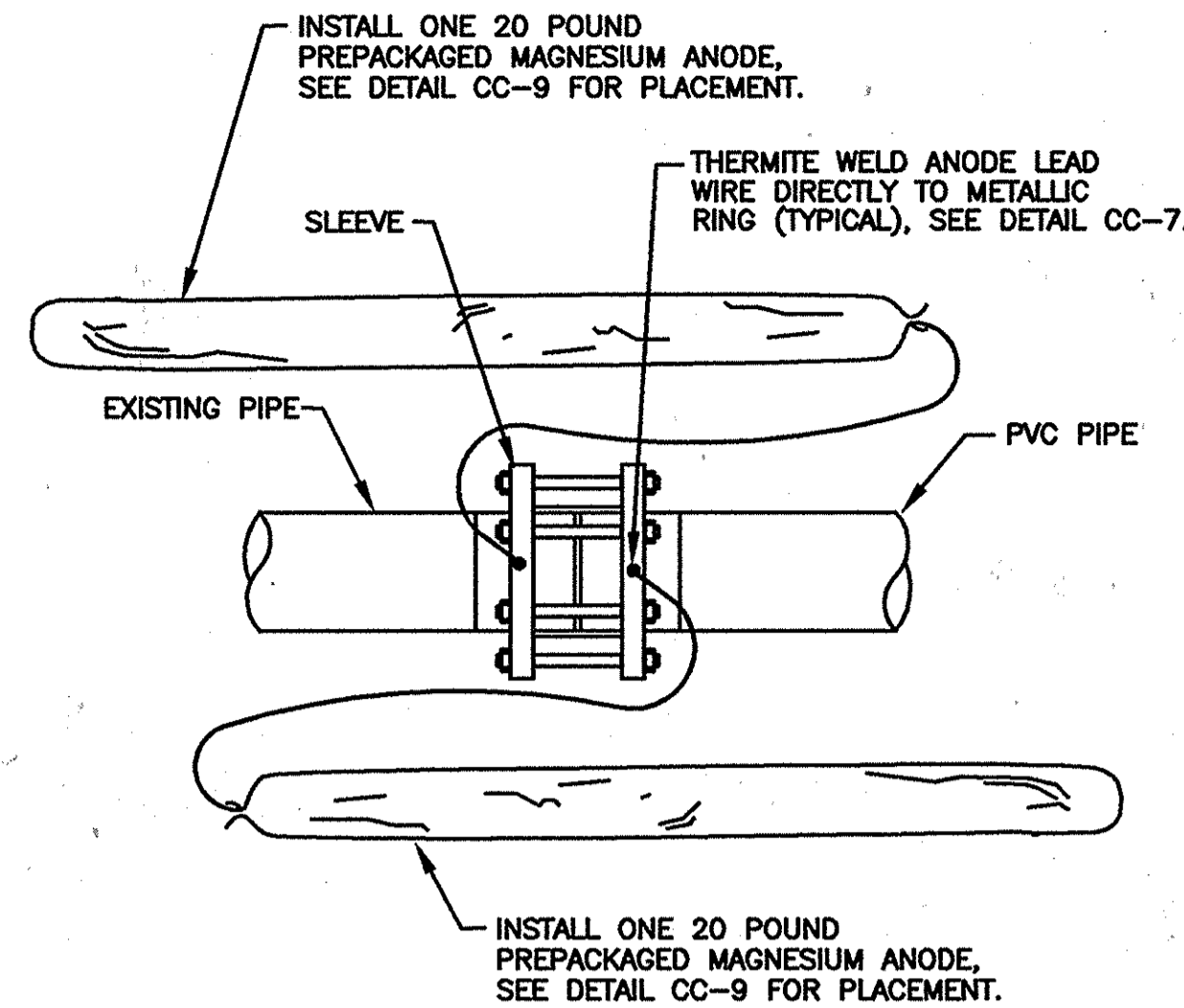
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 6

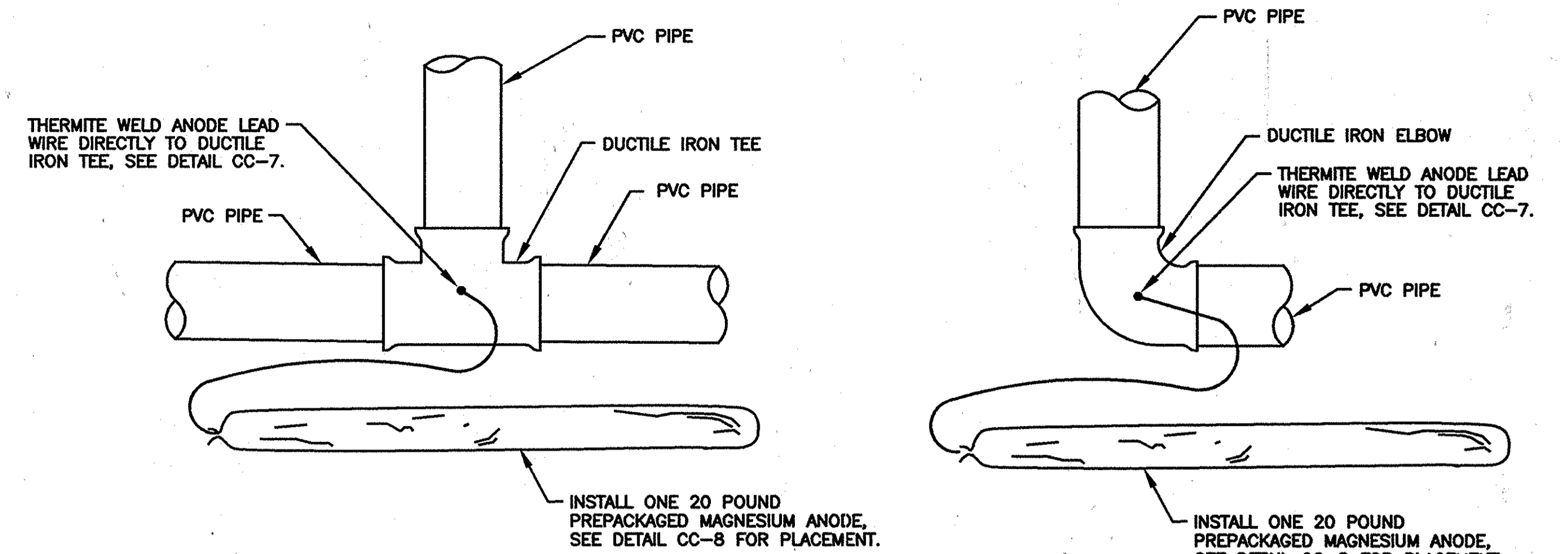


- NOTES:**
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-9.
 2. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-1: CORROSION PROTECTION OF DUCTILE IRON TAPPING SLEEVE AND VALVE
SCALE: NONE

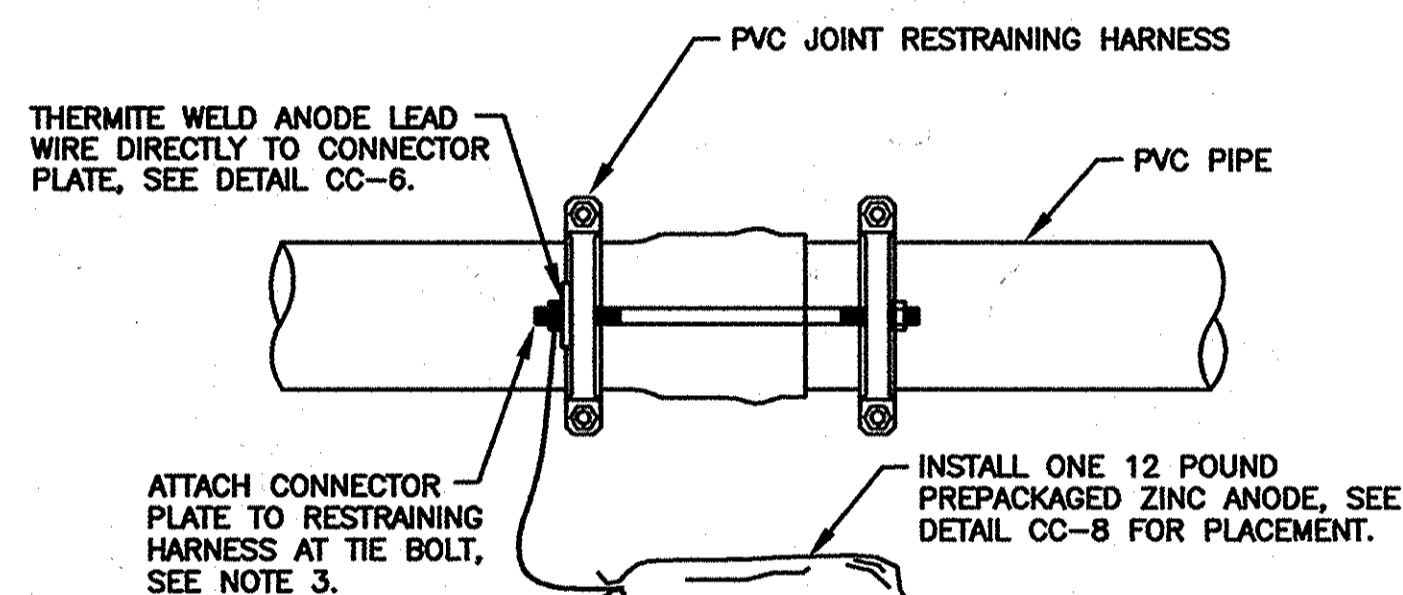


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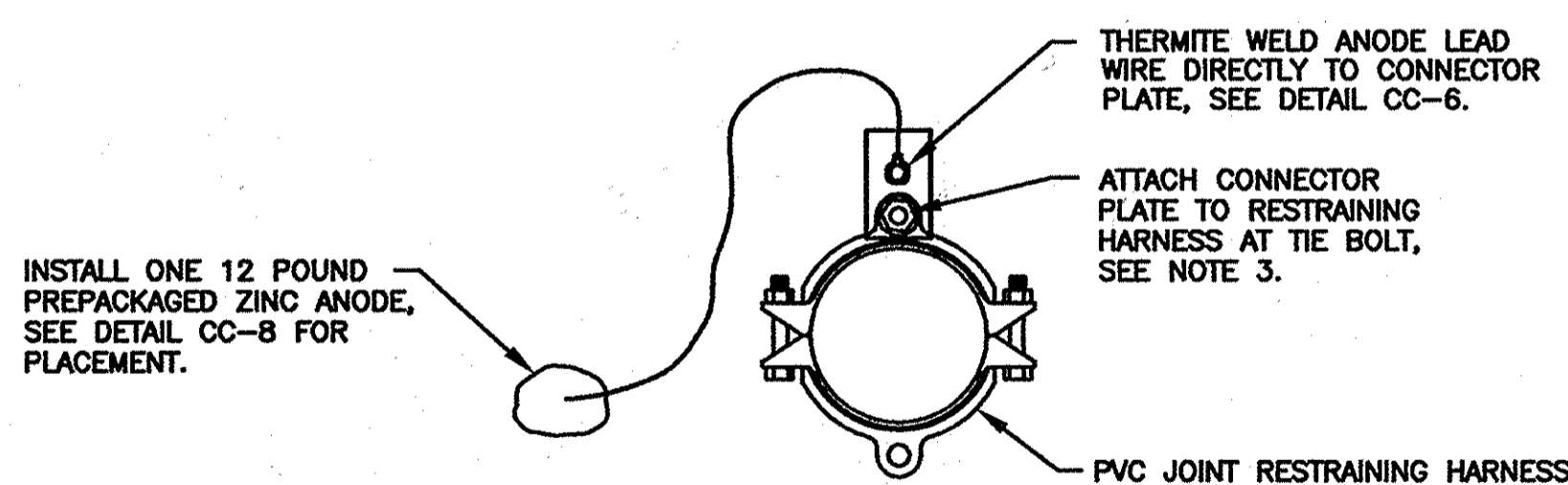


- NOTES:**
1. ANODES REQUIRED ONLY IF TEE, OR ELBOW IS DUCTILE IRON.
 2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAILS CC-8 AND CC-9.
 3. DO NOT THERMITE WELD TO PVC PIPE.

CC-2: CORROSION PROTECTION OF DUCTILE IRON FITTINGS
SCALE: NONE



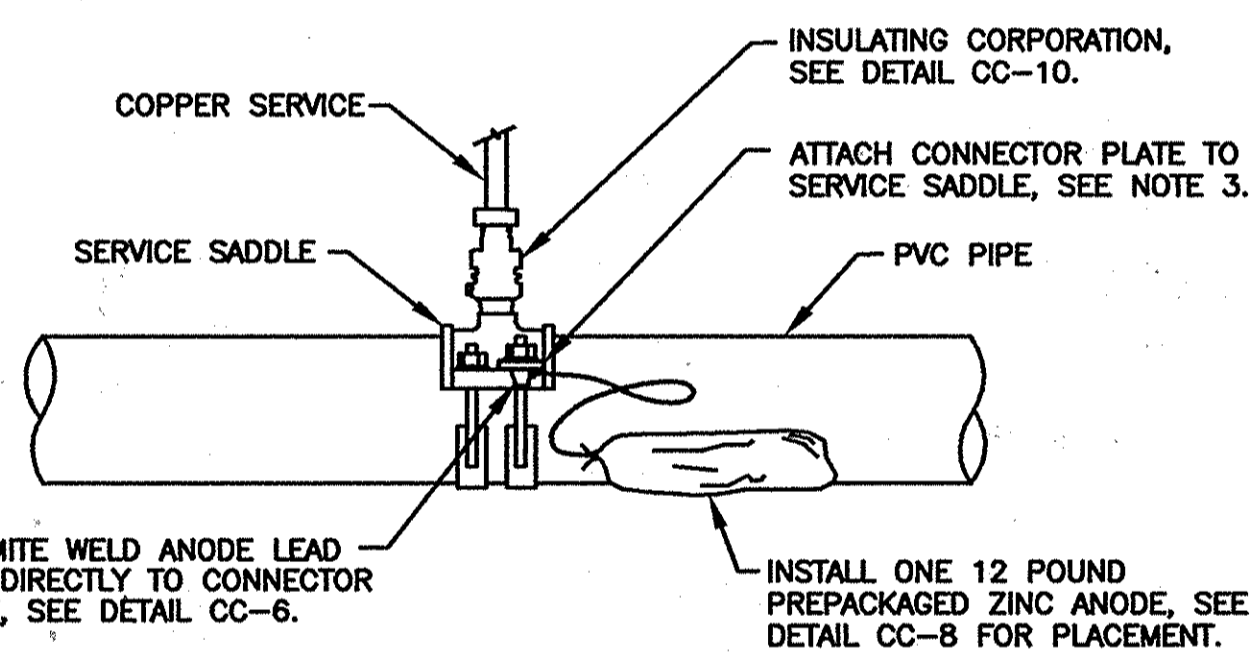
PLAN VIEW



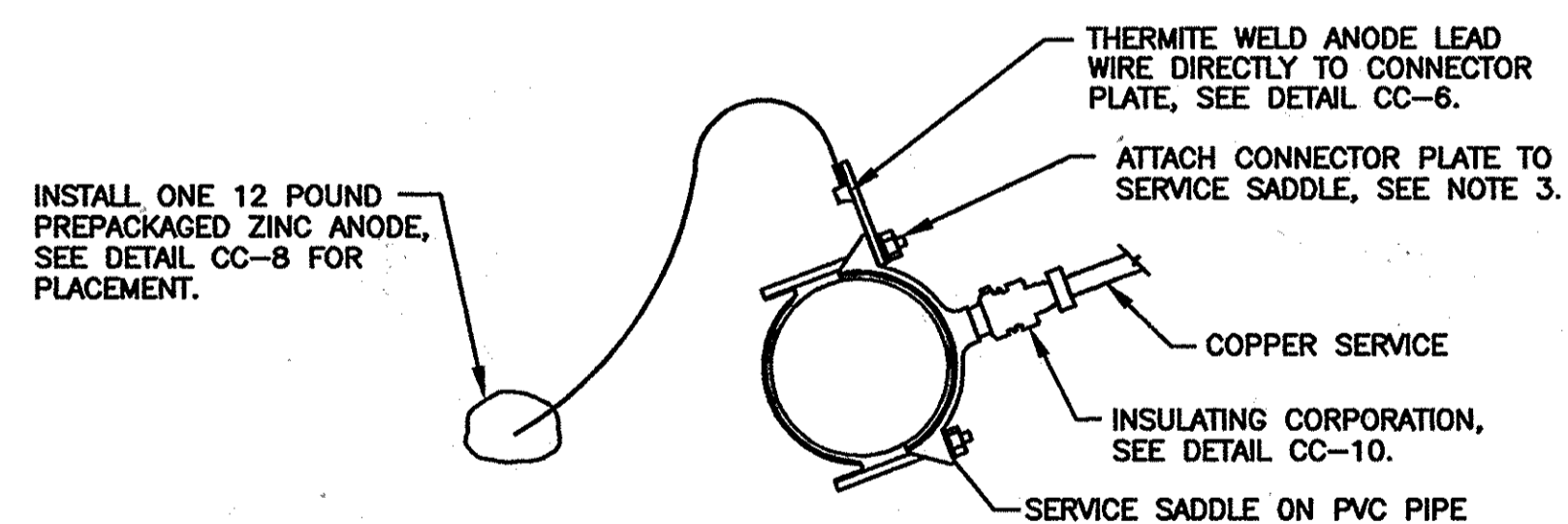
SECTION VIEW

- NOTES:**
1. CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS.
 2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-7.
 3. REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
 4. DO NOT THERMITE WELD TO PVC PIPE.

CC-3: CORROSION PROTECTION OF RESTRAINING HARNESS
SCALE: NONE



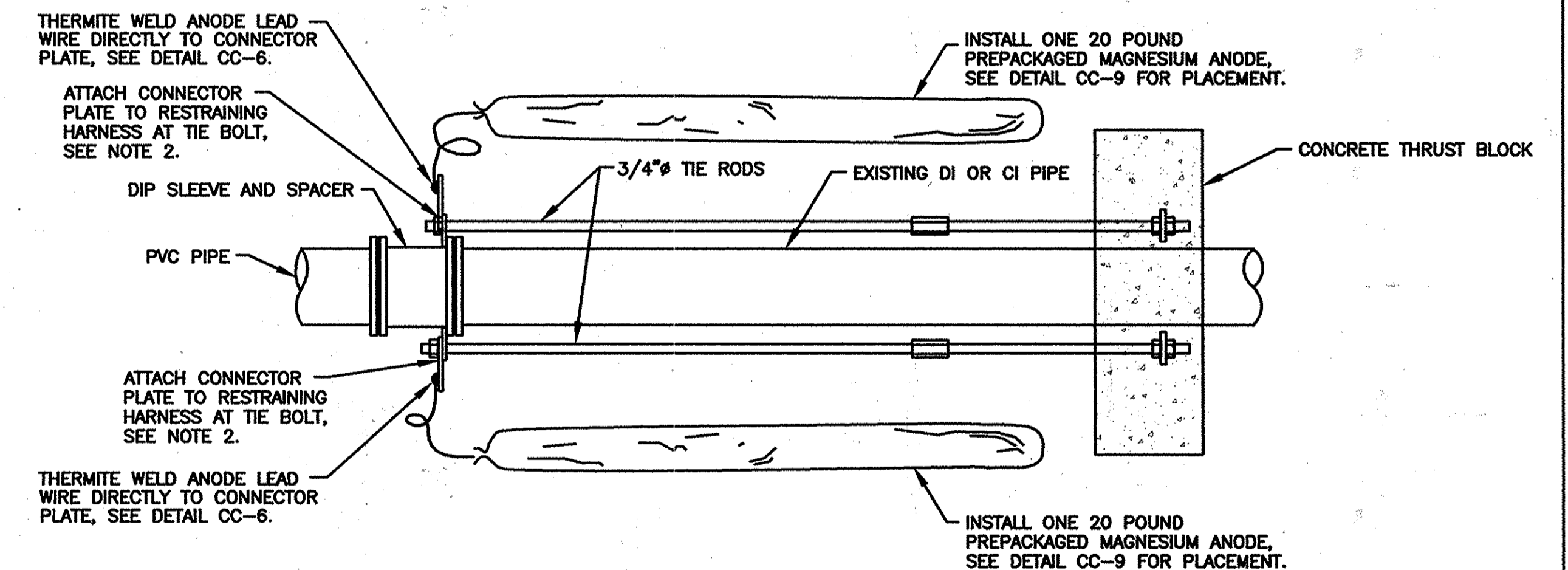
PLAN VIEW



SECTION VIEW

- NOTES:**
1. CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO SERVICE SADDLE.
 2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-8.
 3. REMOVE COATING FROM SERVICE SADDLE WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
 4. DO NOT THERMITE WELD TO PVC PIPE.

CC-4: CORROSION PROTECTION OF SERVICE SADDLE
SCALE: NONE



- NOTES:**
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-9.
 2. REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
 3. DO NOT THERMITE WELD TO PVC PIPE.

CC-5: CORROSION PROTECTION AT IN-LINE THRUST BLOCK
SCALE: NONE

AS-BUILT
DATE 12-19-13

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HOWARD COUNTY, MARYLAND

John W. ... 3/25/13
DIRECTOR OF PUBLIC WORKS DATE

Morgan & Butler 3/10/13
CHIEF, BUREAU OF ENGINEERING DATE

... 3/12/13
CHIEF, BUREAU OF UTILITIES DATE

RUSSELL CORROSION CONSULTANTS, INC.
Columbia, Maryland

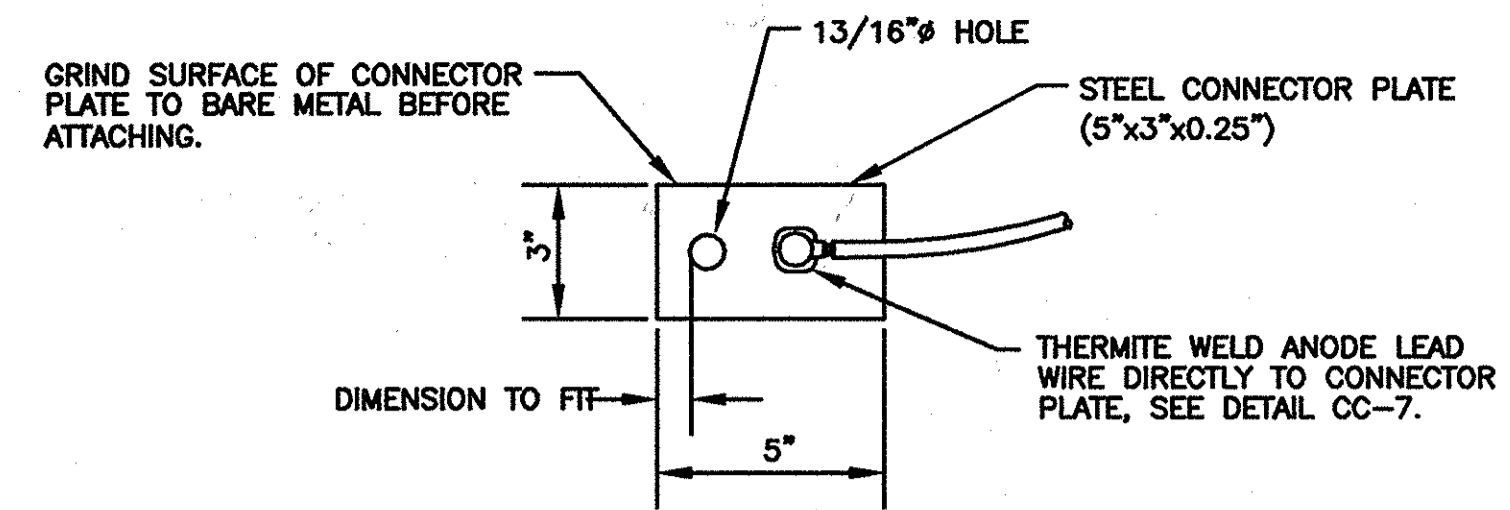
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DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: MAR. 2013	BY	NO.	REVISION	DATE	

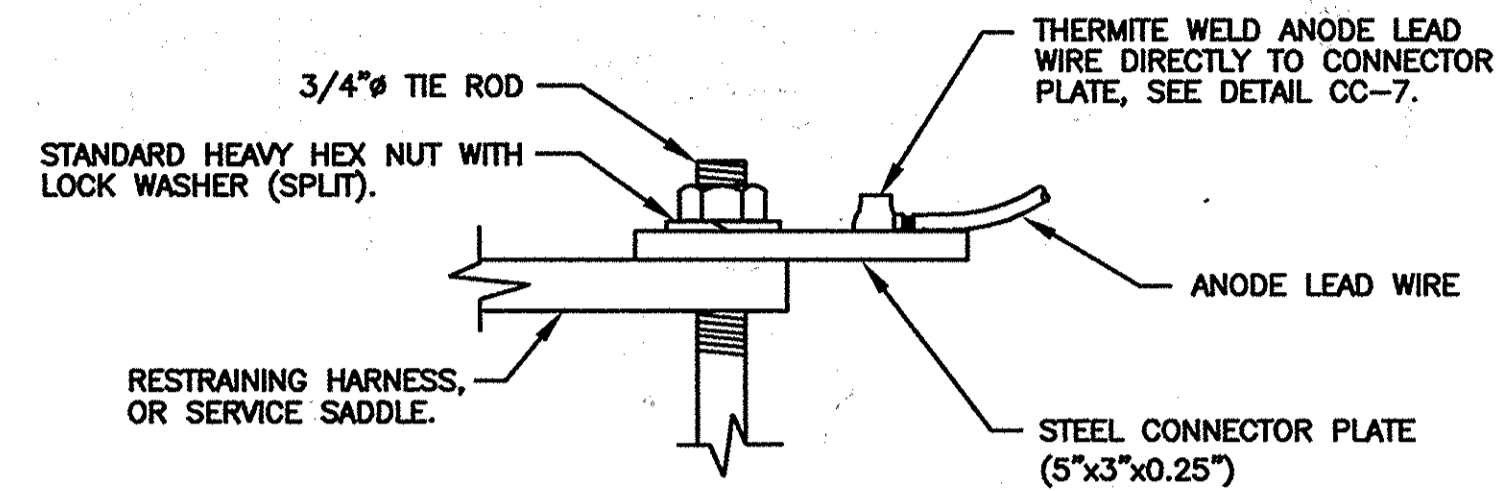
8" PVC WATER MAIN CORROSION CONTROL DETAILS - 1

HICKORY GLEN DRIVE WATER MAIN LOOP
CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 6



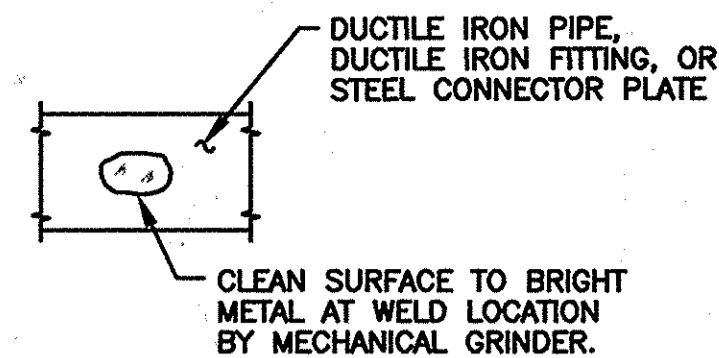
PLAN VIEW



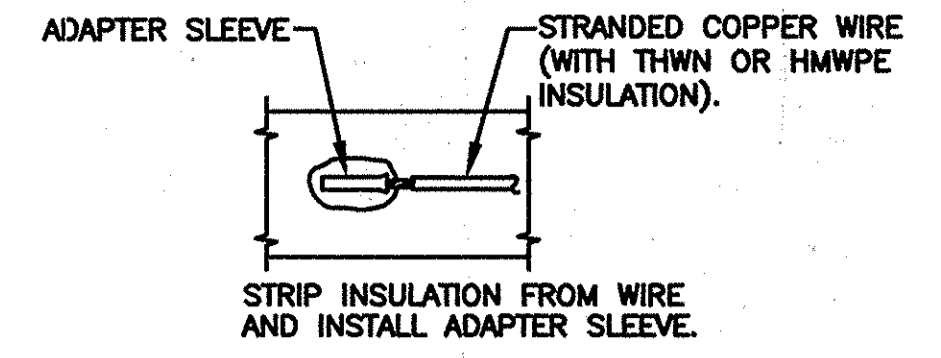
SIDE VIEW

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

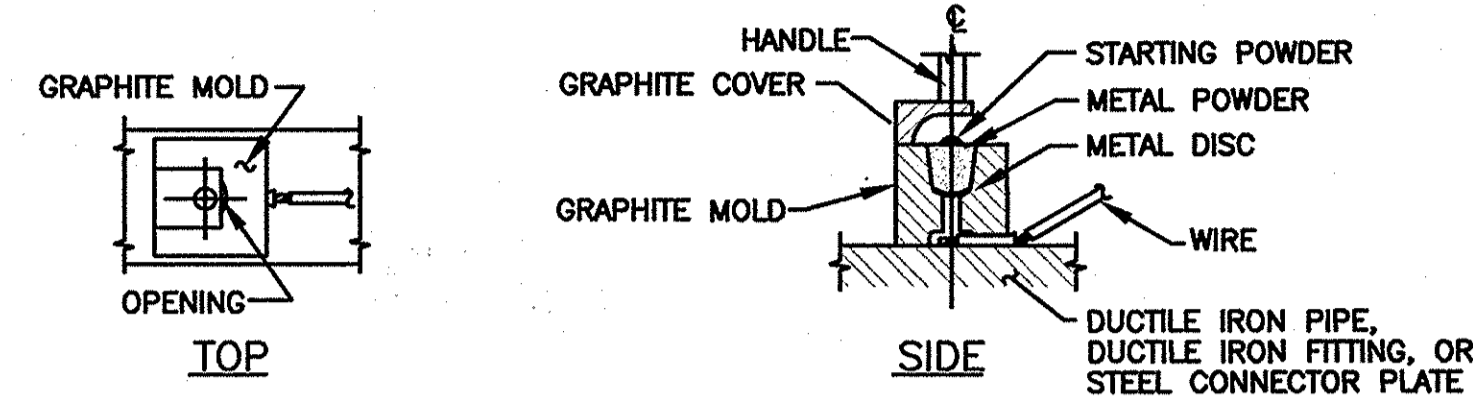
CC-6: CONNECTION PLATE DETAIL
SCALE: NONE



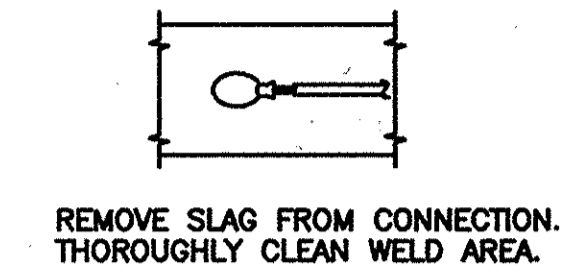
STEP 1



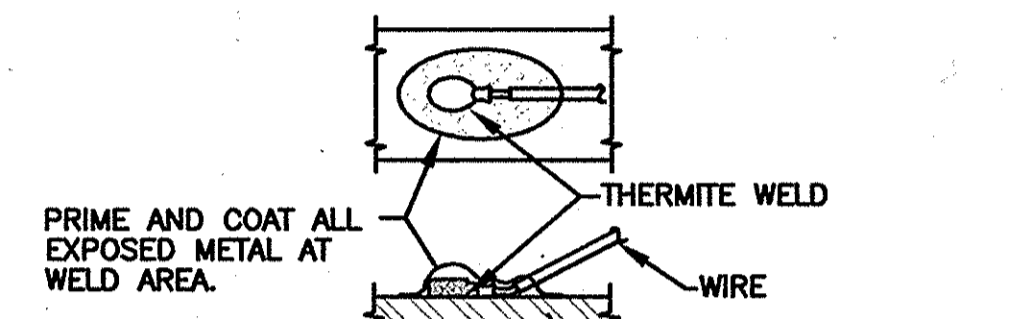
STEP 2



STEP 3



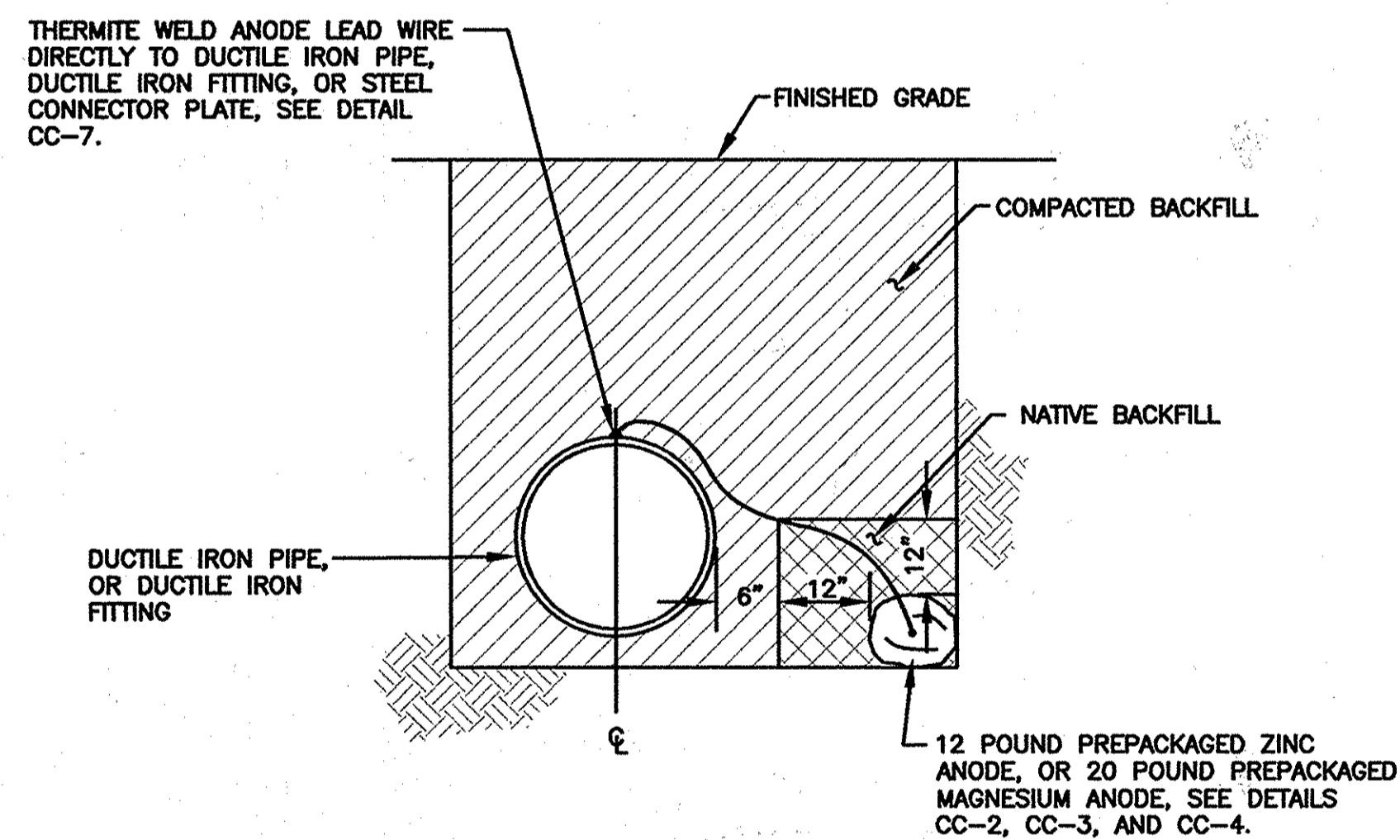
STEP 4



STEP 5

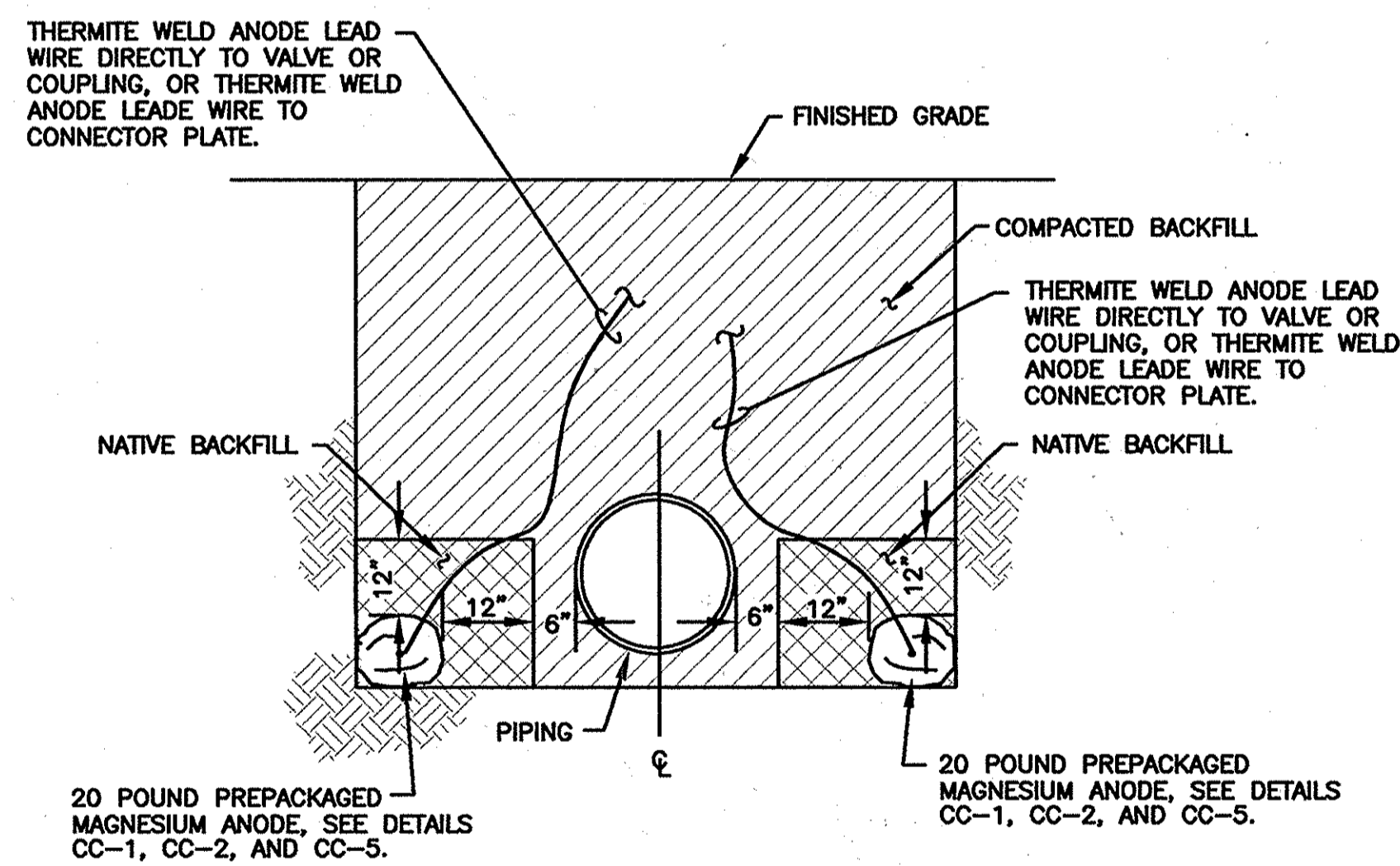
- NOTES:
- THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.
 - DO NOT THERMITE WELD TO PVC PIPE.

CC-7: TYPICAL THERMITE WELD
SCALE: NONE



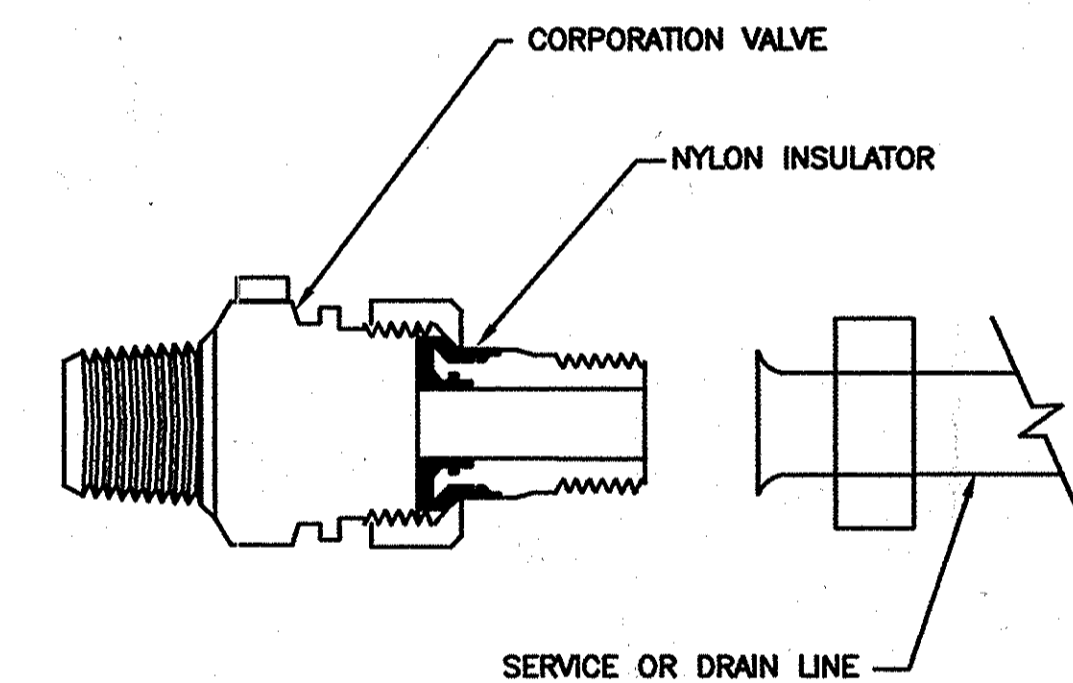
- NOTES:
- INSTALL ANODES A MINIMUM OF 12 INCHES FROM PIPE.
 - BACKFILL ANODES WITH NATIVE SOIL FOR A MINIMUM OF 12 INCHES ON ALL SIDES. DO NOT BACKFILL ANODES WITH SAND OR STONE.
 - DO NOT THERMITE WELD TO PVC PIPE.

CC-8: SINGLE ANODE PLACEMENT
SCALE: NONE



- NOTES:
- INSTALL ANODES A MINIMUM OF 12 INCHES FROM PIPE.
 - BACKFILL ANODES WITH NATIVE SOIL FOR A MINIMUM OF 12 INCHES ON ALL SIDES. DO NOT BACKFILL ANODES WITH SAND OR STONE.
 - DO NOT THERMITE WELD TO PVC PIPE.

CC-9: DOUBLE ANODE PLACEMENT
SCALE: NONE



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

CC-10: INSULATING CORPORATION
SCALE: NONE

AS-BUILT
DATE 12-19-13

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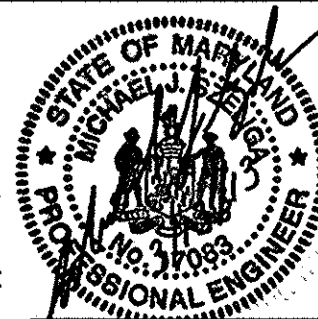
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

La 9 clw 3/25/13
DIRECTOR OF PUBLIC WORKS DATE

Thomas & Buttle 3/10/13
CHIEF, BUREAU OF ENGINEERING DATE

RUSSELL CORROSION CONSULTANTS, INC.
Columbia, Maryland

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DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: MAR. 2013	BY	NO.	REVISION	DATE	600' SCALE MAP NO. 35 BLOCK NO. B

8" PVC WATER MAIN
CORROSION CONTROL
DETAILS - 2

HICKORY GLEN DRIVE
WATER MAIN LOOP

CAPITAL PROJECT No. W-8293
CONTRACT No. 44-4654

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 6 OF 6