

GLEN OAKS LANE WATER MAIN LOOP

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. W-8295
CONTRACT No. 44-4660

GENERAL NOTES

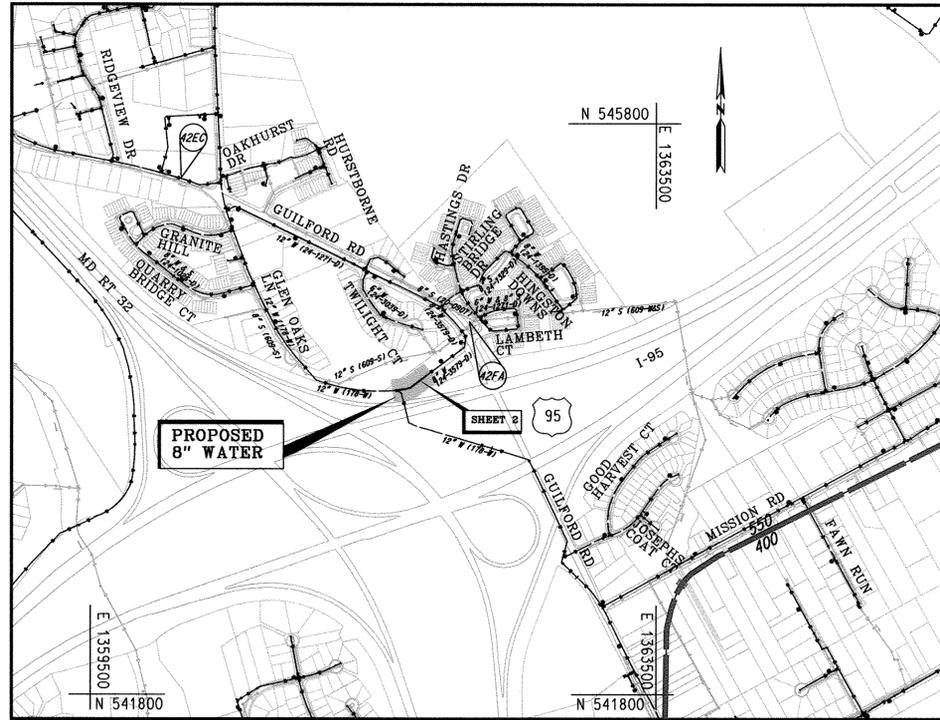
1. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED SEPTEMBER 2009 BY KCI TECHNOLOGIES, INC.
3. 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. 42FA AND 42EC. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE REBAR & CAP AND NAILS.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. 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.
6. 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.
7. 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.
8. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T.....	1-800-252-1133
BGA&E (CONSTRUCTION SERVICES).....	410-850-4620
BGA&E (EMERGENCY).....	410-685-0123
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
9. 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.
10. 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.
11. 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.
12. EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, ALL PUBLIC WATER MAINS SHALL BE POLYVINYLCHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF ANWA C900 DR18, PRESSURE CLASS 150 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.
13. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF UTILITIES HOWARD COUNTY, 15 DAYS PRIOR TO WATER MAIN SHUT DOWNS.
14. THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES.
15. THE CONTRACTOR SHALL PROVIDE STAGING/STORAGE AREA.

WATER MAIN NOTES

1. TOPS OF WATER MAIN SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
2. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
3. 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.
4. 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.
5. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
7. INSTALL ONE CONTINUITY TEST STATION ADJACENT TO VALVE AT STATION 0+00, AND ONE CONTINUITY TEST STATION ADJACENT TO CONNECTION AT STATION 2+34. CONTINUITY TEST STATIONS SHALL CONFORM TO HOWARD COUNTY STANDARD DETAILS W-1.15 AND G-8.21.
8. WATER MAINS SHALL BE FILLED WITH WATER AND BROUGHT TO 150 PSI HYDROSTATIC TEST PRESSURE AT THE LOW POINT FOR 2 HOURS.
9. EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, ALL PUBLIC WATER MAINS SHALL BE POLYVINYLCHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF ANWA C900 DR18, PRESSURE CLASS 150 AND HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.

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



VICINITY MAP

SCALE: 1" = 600'

TYPE OF BUILDING:	RESIDENTIAL
NUMBER OF PARCELS:	0
NUMBER OF SEWER HOUSE CONNECTIONS:	0
NUMBER OF WATER HOUSE CONNECTIONS:	0
DRAINAGE AREA:	LITTLE PATUXENT
PRESSURE ZONE:	550
WATER TEST GRADIENT:	650

HORIZONTAL AND VERTICAL CONTROL BASED ON MARYLAND NAD83(91) (HORIZONTAL) AND NAVD88 (VERTICAL) DATUM.
HOWARD COUNTY GEODETIC SURVEY CONTROL NUMBERS:

42FA	42EC
N 544412.82	N 545417.01
E 1362179.34	E 1360140.35
ELEV. 341.778	ELEV. 365.348

LEGEND

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

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: 1/10/2012

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.

Paul J. Sapon 3/22/10
BUREAU OF ENGINEERING DATE
DEPARTMENT OF PUBLIC WORKS

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

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

John R. Klutner 4/6/10
APPROVED DATE
HOWARD SOIL CONSERVATION DISTRICT

INDEX OF SHEETS

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	GLEN OAK DRIVE 8" WATER MAIN PLAN AND PROFILE
3	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
4	CORROSION CONTROL LAYOUT AND DETAILS
5	CORROSION CONTROL DETAILS - 2
6	CORROSION CONTROL DETAILS - 3

QUANTITIES

ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
8" WATER (PVC)	L.F.	234	234	J.M. Eagle
8" V	EA	1	1	Mueller

NAME OF UTILITY CONTRACTOR: _____

CHECKBOX _____

AS-BUILT DATE: _____

SURVEY AND DRAFTING DIVISION _____

RESTORATION SCHEDULE

LOCATION	DISTANCE	TYPE
EASEMENT AREA	234'	MULCH & SEEDING

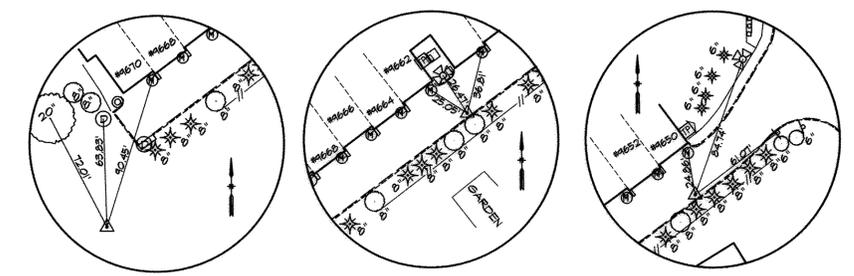
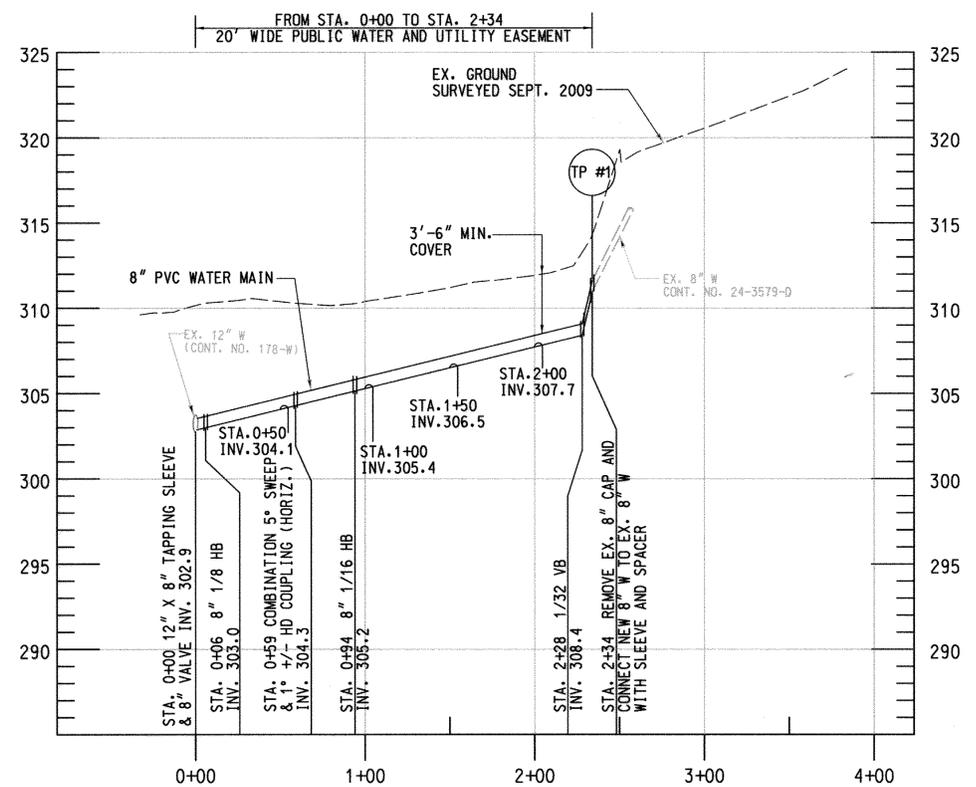
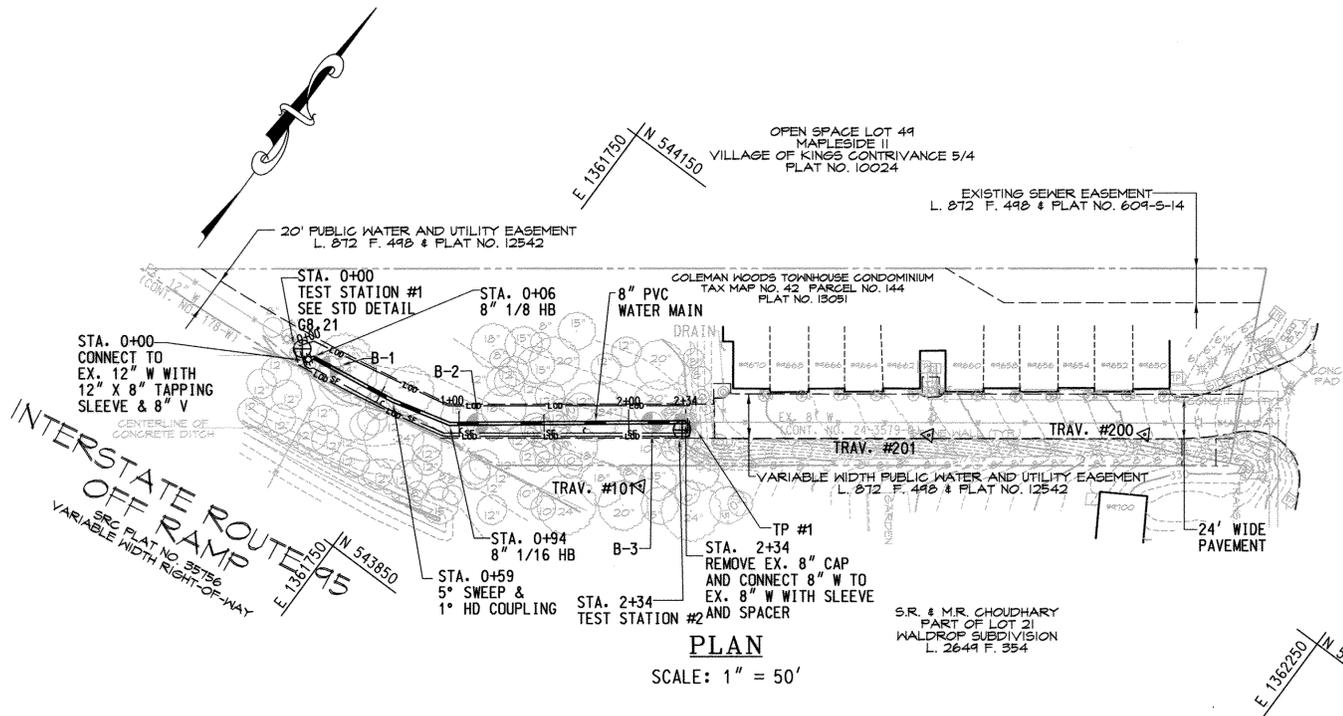
ENGINEER'S CERTIFICATION

"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.

Guihua Wang 3/11/2010
GUIHUA WANG DATE
KCI TECHNOLOGIES
936 RIDGEBROOK RD.
SPARKS, MD 21152

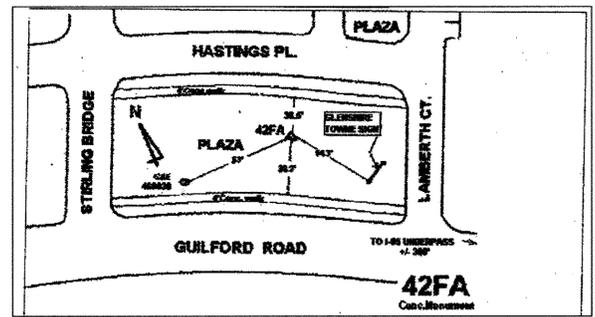
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>John G. ...</i> 4/5/10 DIRECTOR OF PUBLIC WORKS DATE <i>Paul J. Sapon</i> 3/22/10 CHIEF, BUREAU OF ENGINEERING DATE <i>John R. Klutner</i> 4/6/10 CHIEF, UTILITY DESIGN DIVISION DATE	 ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 10 NORTH PARK DRIVE HUNT VALLEY, MD 21030 PHONE (410) 316-7800 FAX (410) 316-7817 www.kci.com	 STATE OF MARYLAND GUIHUA WANG PROFESSIONAL ENGINEER NO. 31363 EXPIRES 1/10/2012	DES: MRD DRN: MRD CHK: TW DATE: SEPT 09 BY NO. REVISION DATE	<h2 style="margin: 0;">TITLE SHEET</h2>	GLEN OAKS LANE WATER MAIN LOOP CAPITAL PROJECT No. W-8295 CONTRACT No. 44-4660 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 1 OF 6
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TRAVERSE COORDINATE SCHEDULE				
NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
HO CO CONTROL 42FA	CONCRETE MONUMENT	544412.82	1362179.34	341.78
TRAV.#101	PIN & CAP	543986.35	1361874.60	310.78
TRAV.#200	PIN & CAP	544188.07	1362095.21	330.73
TRAV.#201	PIN & CAP	544111.71	1361993.29	323.37

TEST PITS			
NUMBER	PIPE SIZE	PIPE MATERIAL	COVER
TP #1	8"	DUCTILE IRON	2.68'



WATER MAIN STAKEOUT COORDINATE SCHEDULE			
STATION	FITTING	NORTHING	EASTING
0+00	12" x 8" TS & 8" V	543926.67	1361672.58
0+06	8" 1/8 HB	543932.05	1361675.24
0+59	5" SWEEP & 1" HD COUPLING (HORIZ.)	543939.41	1361728.21
0+94	8" 1/16 HB	543948.30	1361762.72
2+28	1/32 VB	544028.97	1361869.36
2+34	TIE-IN	544032.18	1361873.92

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. 31263, EXPIRATION DATE: 1/16/2012

January 2011
As-Built

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 4/5/10
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 3/22/10
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 3/22/10
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
GUILFORD WANG
PROFESSIONAL ENGINEER
No. 31395

DES: MRD				
DRN: MRD				
CHK: TW				
DATE: SEPT 09				
BY	NO.	REVISION	DATE	

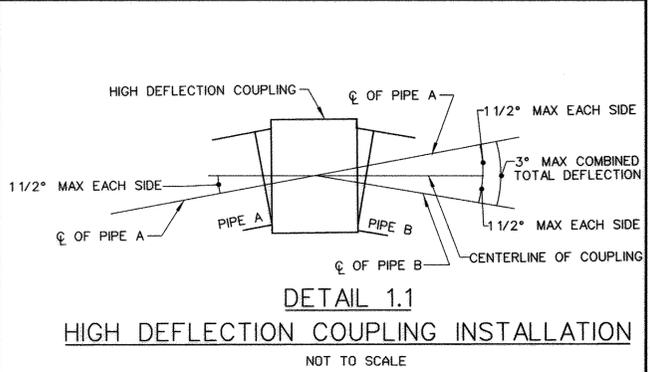
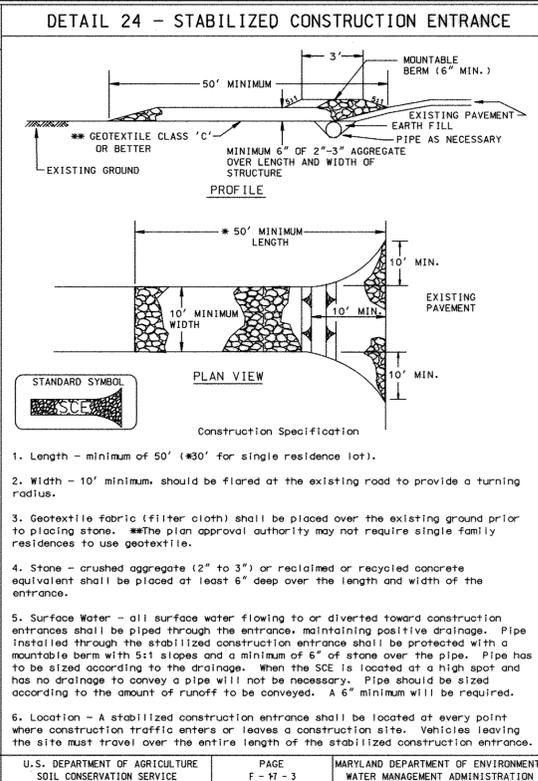
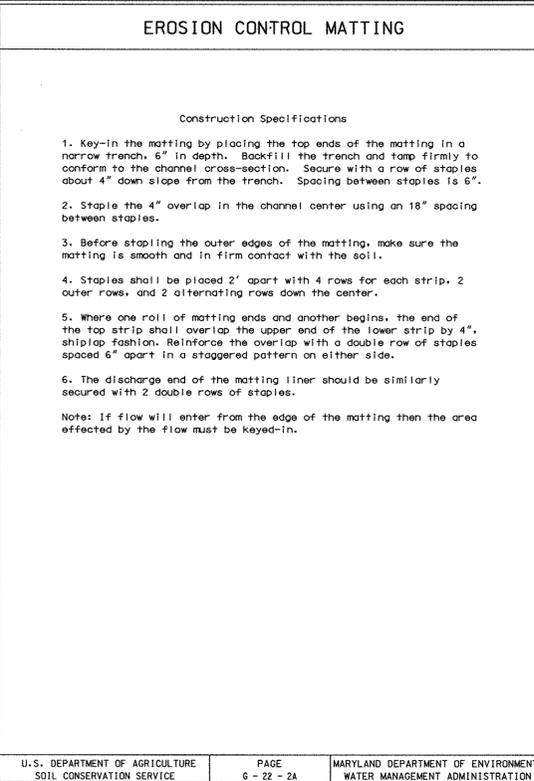
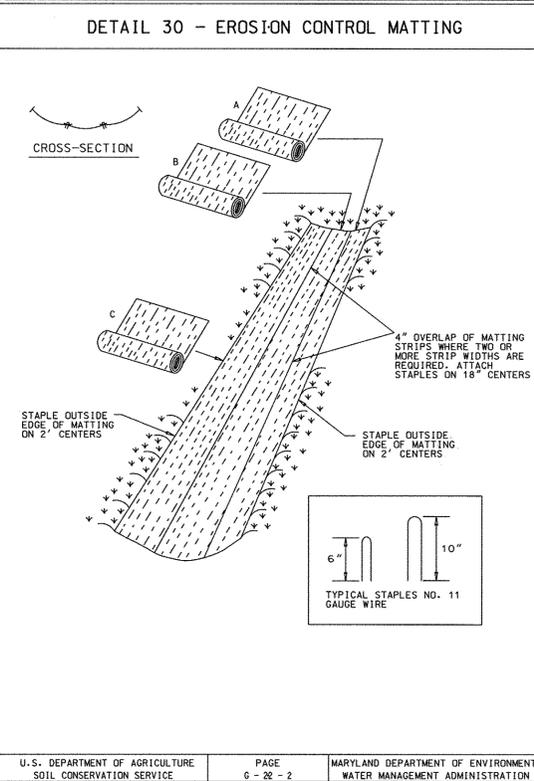
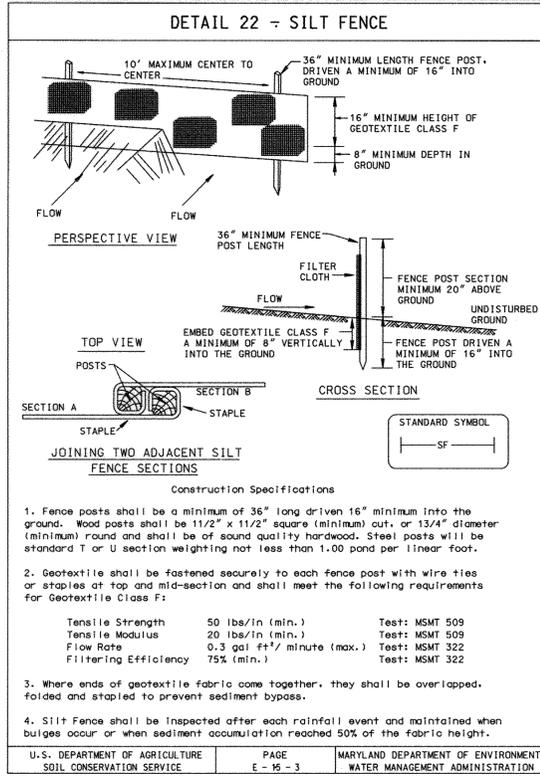
GLEN OAK DRIVE
8" WATER MAIN
PLAN & PROFILE

600' SCALE MAP NO. 42 BLOCK NO. 17

GLEN OAKS LANE
WATER MAIN LOOP
CAPITAL PROJECT No. W-8295
CONTRACT No. 44-4660

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 6



SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION DIVISION (410-313-1870) PRIOR TO STARTING DATE.
- LAYOUT ALIGNMENT AT SITE. (1 DAY)
- INSTALL SEDIMENT CONTROL DEVICES AS SHOWN ON PLAN (2 DAYS).
- EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE, INSTALL 8" WATER MAIN AND STABILIZE OR BACKFILL TRENCH AND RESURFACE WITH BITUMINOUS PAVING AS APPROPRIATE (30 DAYS). TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO 25' OF PIPE LENGTH OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CLEAN UP CONSTRUCTION SITE. (1 DAY)
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR. (1 DAY)

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:

- 1) 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.).
- 2) ACCEPTABLE -** APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT.) BEFORE SEEDING. HARROW OF 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 210 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

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

TEMPORARY SEEDING NOTES

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

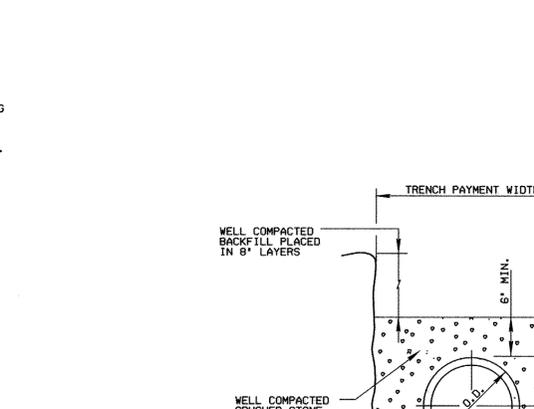
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

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

SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 210 GAL PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G-22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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 VEGETIVE 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 CALENDAR 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. 1, 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 DISTURBED	0.10	ACRES	
AREA TO BE ROOFED OR PAVED	N/A	ACRES	
AREA TO BE VEGETATIVELY STABILIZED	0.10	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.

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 WETLAND 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), BARLEY (HORDEUM SP.), OATS (UNIOLOA SP.) AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REGENERATION 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 I WATERS* 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.

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. 21363 EXPIRATION DATE: 1/18/2012

As-Built

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John G. De... 4/16/10
DIRECTOR OF PUBLIC WORKS DATE

Robert De... 3/22/10
CHIEF, BUREAU OF ENGINEERING DATE

... 4/16/10
CHIEF, BUREAU OF UTILITIES DATE

... 3/22/10
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
GUILIUMA WANG
No. 31393
PROFESSIONAL ENGINEER

DES: MRD				
DRN: MRD				
CHK: TW				
DATE: SEPT 09				
BY NO.				
REVISION				
DATE				

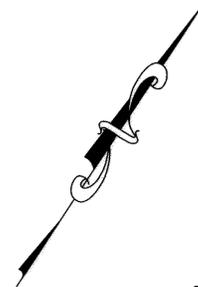
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

600' SCALE MAP NO. 42 BLOCK NO. 17

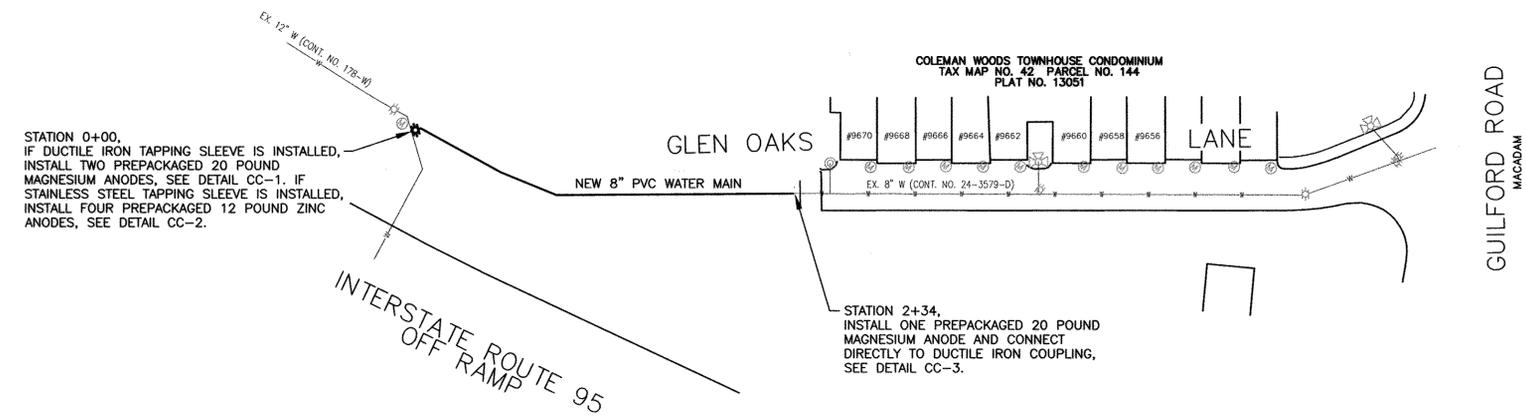
GLEN OAKS LANE
WATER MAIN LOOP
CAPITAL PROJECT No. W-8295
CONTRACT No. 44-4660

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 6

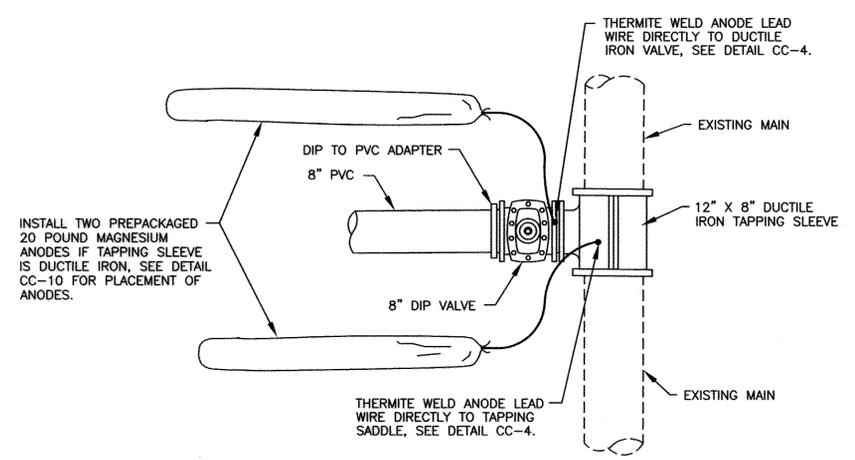


LEGEND:
 — NEW WATER MAIN
 - - - EXISTING WATER MAIN



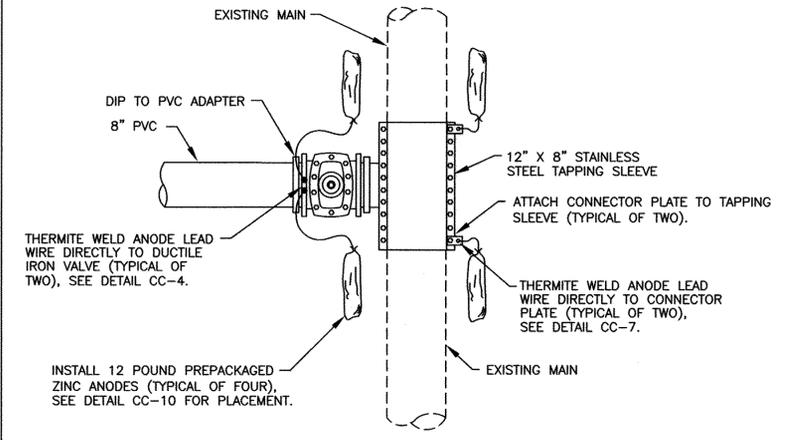
- NOTES:**
1. ALL NEW DUCTILE IRON BENDS ALONG THE PVC WATER MAIN ARE TO BE PROVIDED WITH CORROSION PROTECTION (DUCTILE IRON BENDS NOT SHOWN ON THIS DRAWING), SEE DETAIL CC-3.
 2. ALL PVC PIPE DESIGNATED AS BEING "RESTRAINED JOINT" SHALL HAVE ONE PREPACKAGED 12 POUND ZINC ANODE CONNECTED TO EACH METALLIC RESTRAINING HARNESS, SEE DETAIL CC-5. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
 3. ALL WATER SERVICE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES (IF ANY) SHALL HAVE ONE PREPACKAGED 12 POUND ZINC ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-6), AND AN INSULATING CORPORATION INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE FROM THE SERVICE SADDLE (SEE DETAIL CC-8). WATER SERVICES NOT SHOWN ON THIS DRAWING.
 4. DO NOT THERMITE WELD TO PVC PIPE.

CORROSION CONTROL LAYOUT
 SCALE: 1"=50'



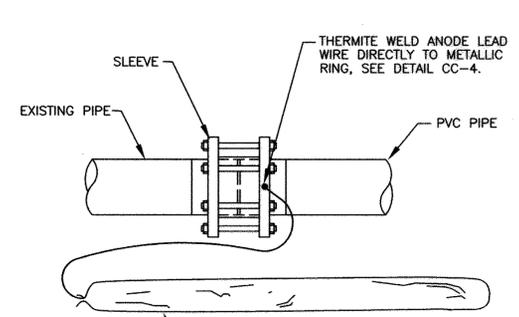
- NOTES:**
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-10.
 2. DO NOT THERMITE WELD TO PVC PIPE.

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



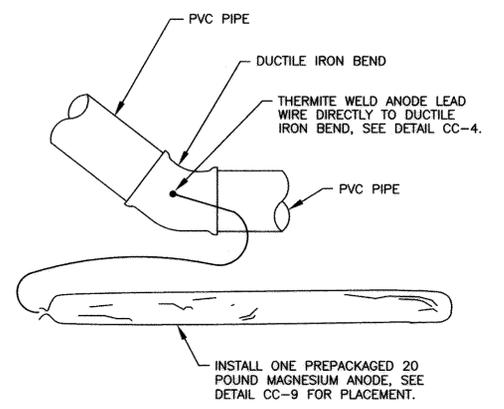
- NOTES:**
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-10.
 2. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-2: CORROSION PROTECTION OF STAINLESS STEEL TAPPING SLEEVE AND VALVE
 SCALE: NONE



- NOTES:**
1. ANODES REQUIRED ONLY IF TEE, OR BEND 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 DETAIL CC-9.
 3. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-3: CORROSION PROTECTION OF DUCTILE IRON FITTINGS
 SCALE: NONE



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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

4/5/10
 DATE

3/22/10
 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 9/27/2010

DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: MARCH 2010					
BY NO.					
REVISION					
DATE					

CORROSION CONTROL LAYOUT AND DETAILS

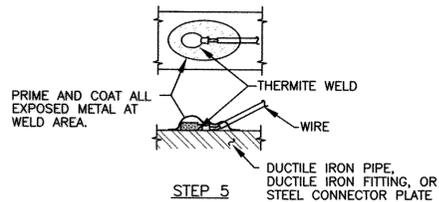
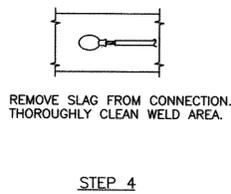
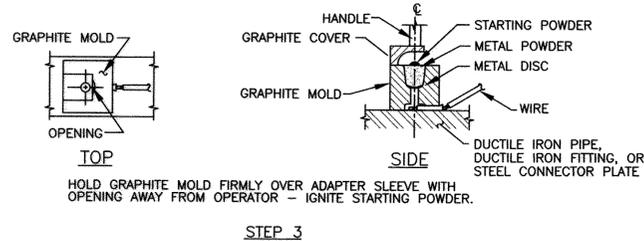
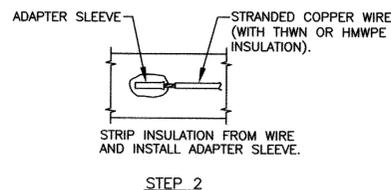
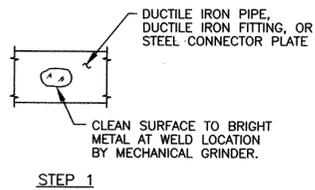
600' SCALE MAP NO. 42 BLOCK NO. 17

GLEN OAKS LANE WATER MAIN LOOP
 CAPITAL PROJECT No. W-8295
 CONTRACT No. 44-4660

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

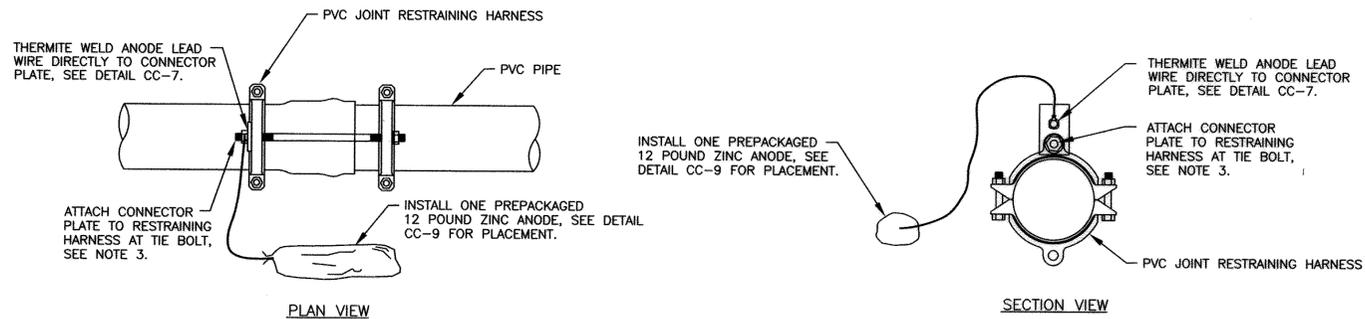
SCALE AS SHOWN
 SHEET 4 OF 6

January 2011
As-Built



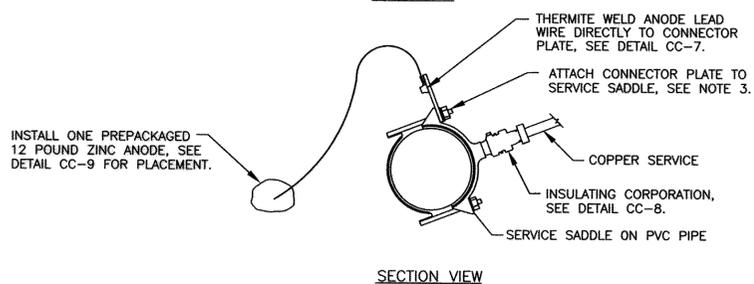
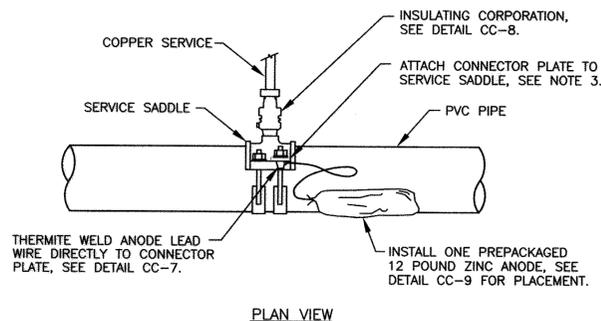
DETAIL CC-4: TYPICAL THERMITE WELD
SCALE: NONE

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



- 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-9.
 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.

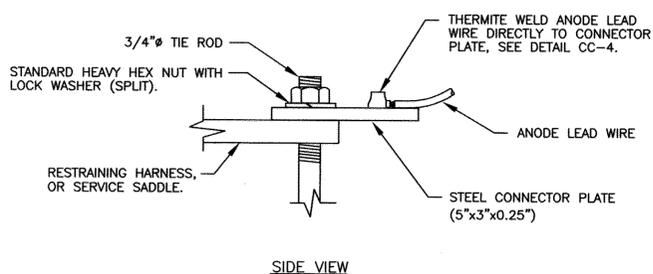
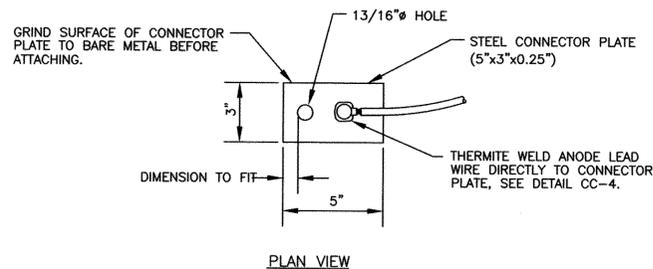
DETAIL CC-5: CORROSION PROTECTION OF RESTRAINING HARNESS
SCALE: NONE



- 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-9.
 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.

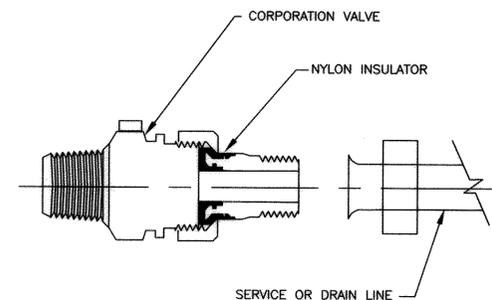
DETAIL CC-6: CORROSION PROTECTION OF SERVICE SADDLE
SCALE: NONE

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

DETAIL CC-7: CONNECTION PLATE DETAIL
SCALE: NONE



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

DETAIL CC-8: INSULATING CORPORATION
SCALE: NONE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ray A. 4/5/10
DIRECTOR OF PUBLIC WORKS DATE
Steve Green 4/1/10
CHIEF, BUREAU OF UTILITIES DATE

David L. Seaman 3/22/10
CHIEF, BUREAU OF ENGINEERING DATE
Ol. On Tena 3/22/10
CHIEF, UTILITY DESIGN DIVISION 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 9/27/2010

DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: MARCH 2010	BY: NO.	REVISION	DATE	600' SCALE MAP NO. 42	BLOCK NO. 17

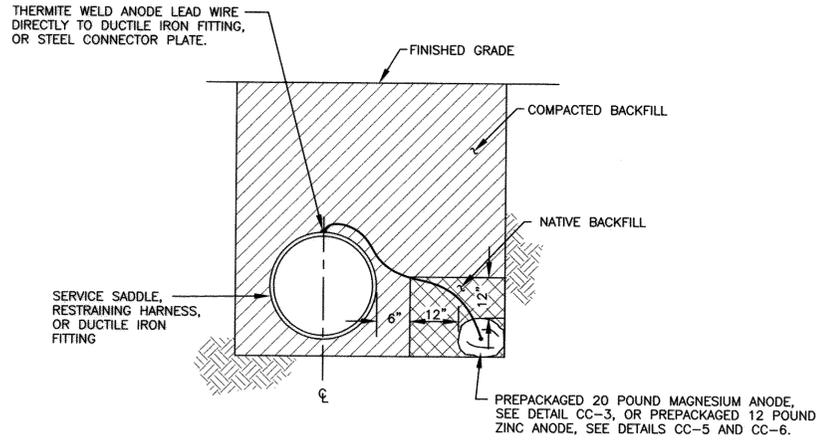
CORROSION CONTROL DETAILS - 2

GLEN OAKS LANE WATER MAIN LOOP
CAPITAL PROJECT No. W-8295
CONTRACT No. 44-4660

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

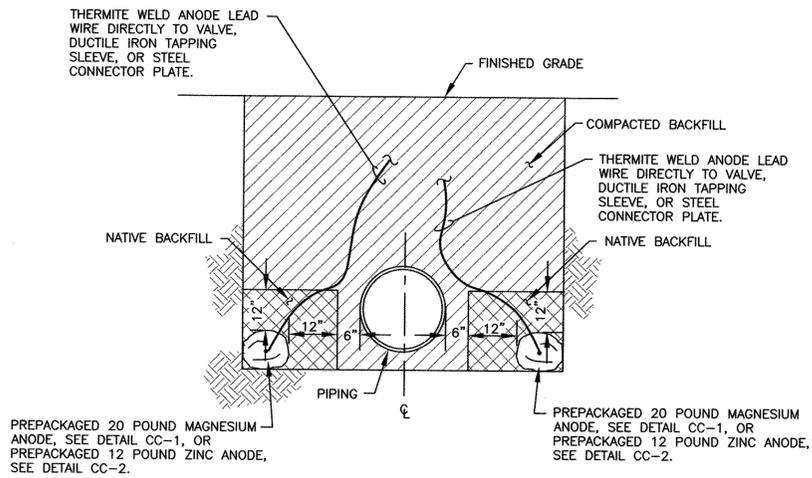
SCALE AS SHOWN
SHEET 5 OF 6

January 2011
As-Built



- NOTES:
1. INSTALL ANODE IN NATIVE SOIL. DO NOT BACKFILL ANODE WITH SAND OR STONE.
 2. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-9: SINGLE ANODE PLACEMENT
SCALE: NONE



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

DETAIL CC-10: DOUBLE ANODE PLACEMENT
SCALE: NONE

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John A. ... 4/5/10
DIRECTOR OF PUBLIC WORKS DATE
Shelem 4/1/10
CHIEF, BUREAU OF UTILITIES DATE

William ... 3/22/10
CHIEF, BUREAU OF ENGINEERING DATE
Op ... 3/22/10
CHIEF, UTILITY DESIGN DIVISION 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. 17053, EXPIRATION DATE 9/27/2010



DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: MARCH 2010	BY	NO.	REVISION	DATE	

CORROSION CONTROL
DETAILS - 3

GLEN OAKS LANE
WATER MAIN LOOP
CAPITAL PROJECT No. W-8295
CONTRACT No. 44-4660

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 6 OF 6

January 2011
As-Built