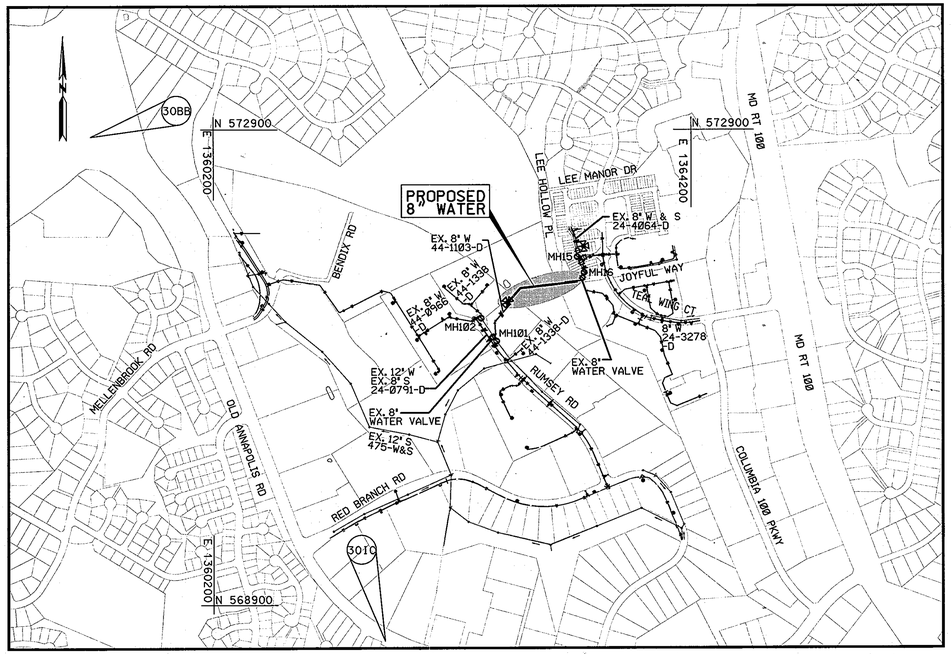
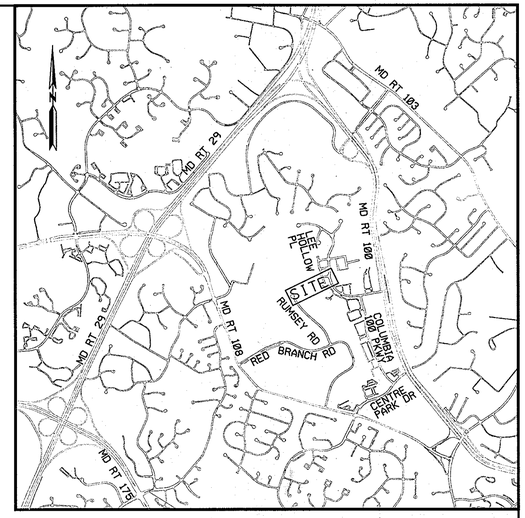
MONT JOY WATER MAIN LOOP
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631

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 EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON JUNE 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. 30IC & 30BB. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE IRON BARS.
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 TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES. ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM 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
   - BG&E (CONSTRUCTION SERVICES).....410-850-4620
   - BG&E (EMERGENCY).....410-685-1400
   - 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
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(a) OF THE HOWARD COUNTY CODE.
12. ALL WATER MAINS SHALL BE DIP OR PVC UNLESS SPECIFIED OTHERWISE.
13. TOPS OF WATER MAIN SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. ALL WATER HOUSE CONNECTIONS SHALL BE FOR AN OUTSIDE METER SETTING UNLESS OTHERWISE SPECIFIED AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
16. 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.
17. 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.
18. THE FOLLOWING NOTE IS ADDED TO HOWARD COUNTY STANDARD DETAIL W2.22. BUTTRESSES AND ANCHORAGE'S 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.
19. EXCEPT AS INDICATED ON THE PLANS AND NOTED ABOVE, WATER MAINS SHALL BE HIGH DENSITY POLYETHYLENE PIPE MEETING THE REQUIREMENTS OF AWWA C906 SDR11. PRESSURE CLASS 160 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.
20. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
21. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
22. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF UTILITIES HOWARD COUNTY, 15 DAYS PRIOR TO WATER MAIN SHUT DOWNS.
23. CONTINUITY TEST STATION SHALL BE PLACED ADJACENT TO EACH FIRE HYDRANT AND OTHER LOCATIONS AS SHOWN ON THE PLAN SHEET. CONTINUITY TST STATIONS SHALL CONFORM TO DETAIL PLATES W-1.15 & G-8.21. ANCHORAGES SHALL BE INSTALLED UNDER WATER VALVES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATION AND DETAILS.
24. WATER MAINS SHALL BE FILLED WITH WATER AND BROUGHT TO 150psi HYDROSTATIC TEST PRESSURE AT THE LOW POINT FOR 2 HOURS.
25. THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES.



LOCATION MAP
SCALE: 1"= 600'



VICINITY MAP
SCALE: 1"= 2000'

TYPE OF BUILDING:	N/A
NUMBER OF WATER HOUSE CONNECTIONS:	N/A
DRAINAGE AREA:	LITTLE PATUXENT
PRESSURE ZONE:	630
WATER TEST GRADIENT	740

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

	NO. 30IC	NO. 30BB
	N 568598.49	N 572837.43
	E 1361633.69	E 1359172.61
	ELEV. 441.44	ELEV. 409.86

LEGEND

- TRAVERSE POINT
- WATER MAIN
- FIRE HYDRANT
- VALVE
- LOD — LIMIT OF DISTURBANCE
- EASEMENT
- CONSTRUCTION STRIP
- WATER HOUSE CONNECTION
- TEST STATION
- DECIDUOUS TREE
- CONIFEROUS TREE
- EXISTING FIRE HYDRANT
- EXISTING VALVE
- W — W — EXISTING WATER MAIN
- G — G — EXISTING GAS MAIN
- OH — OH — EXISTING OVERHEAD ELECTRIC
- E — E — EXISTING UNDERGROUND SERVICE
- WB — WB — BOUNDARY OF WETLAND BUFFER
- BOUNDARY OF WETLAND
- FP — 100 YEAR FLOODPLAIN
- FCE — FOREST CONSERVATION EASEMENT

INDEX OF SHEETS

QUANTITIES

ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
8" W C900 (~~HDPE OR~~ FUSIBLE PVC)	L.F.	674'	230 450	JM EAGLE UNDERGROUND SOLUTIONS
8" ~~W~~ TS&V	EA	1	1	MUELLER CO.
4" BLOW OFF	EA	1	1	KUPFERLE
TEST STATION	EA	4	4	

NAME OF UTILITY CONTRACTOR: WF WILSON & SONS, BELAIR ROAD SUPPLY

AS-BUILT DATE: 2/3/12

RESTORATION SCHEDULE

LOCATION	DISTANCE	TYPE
OAKLAND RIDGE LLC	78'	MACADAM
HOWARD RESEARCH & DEVELOPMENT CORP	596'	MULCH & SEEDING

AS-BUILT
DATE 2/3/2012

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LINCENSE NO. 31363 EXPIRATION DATE: 1/16/2012

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.

KCI TECHNOLOGIES, INC
936 RIDGEBROOK ROAD
SPARKS, MD 21152
5/31/2011 DATE

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.

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
6/13/11 DATE

EP-10-25
THIS DEVELOPMENT PLAN IS APPROVED FOR THE SOIL EROSION & SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED 7/21/11 DATE
HOWARD S.C.D.

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 7/12/11
CHIEF, BUREAU OF ENGINEERING — DATE 6/13/11
CHIEF, BUREAU OF UTILITIES — DATE 6/9/11
CHIEF, UTILITY DESIGN DIVISION — DATE 6/9/11

KCI TECHNOLOGIES
ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
936 RIDGEBROOK ROAD, SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

STATE OF MARYLAND — TIMOTHY WILLIAM — No. 31363 — PROFESSIONAL ENGINEER — 5/31/11

DES: GW				
DRN: CK				
CHK: TW				
DATE: MAR. 2011	LFN	AS BUILT	2-3-12	
	BY	NO. REVISION	DATE	

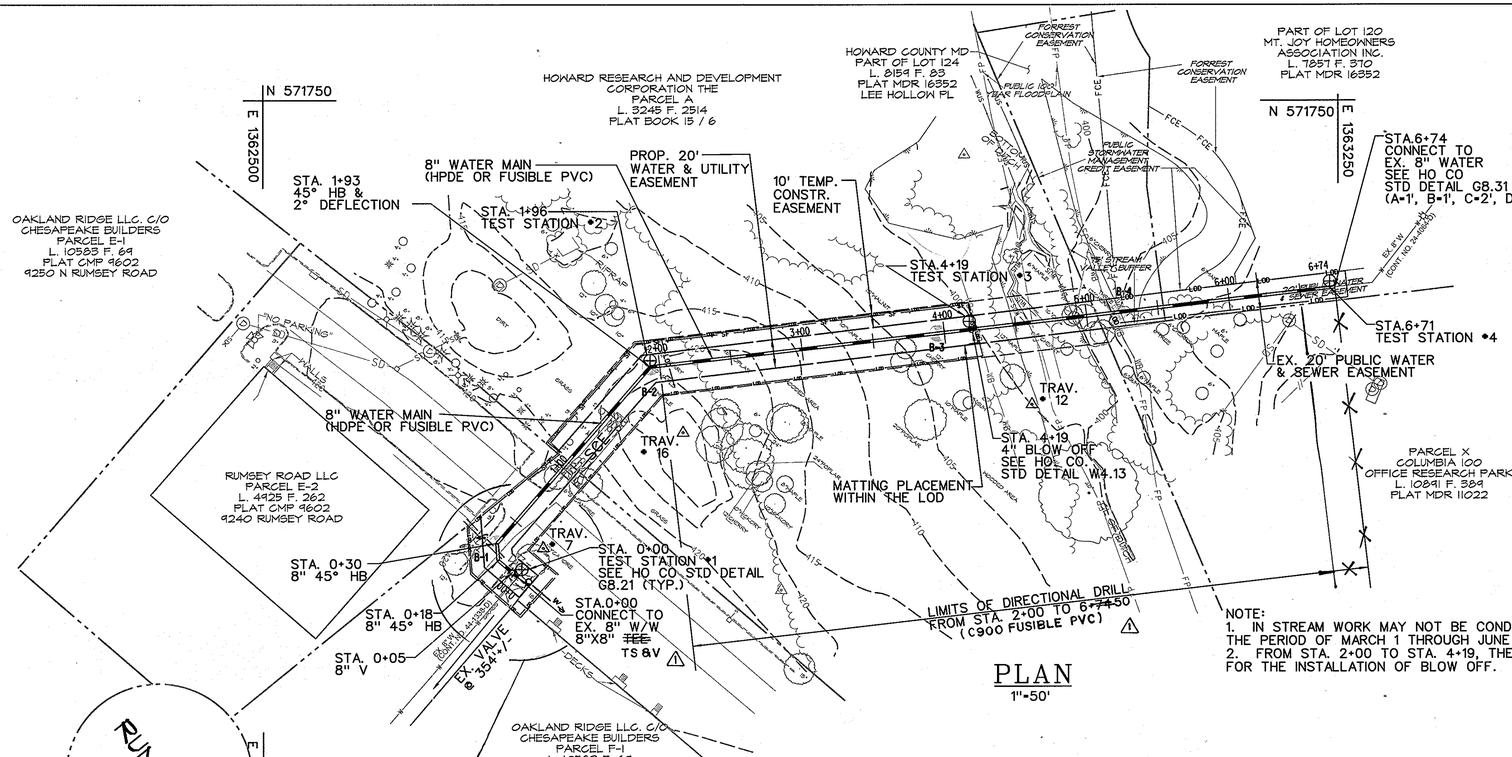
TITLE SHEET

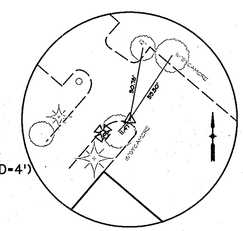
600' SCALE MAP NO. 30 BLOCK NO. 23 & 24

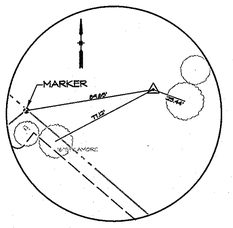
MONT JOY WATER MAIN LOOP
CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

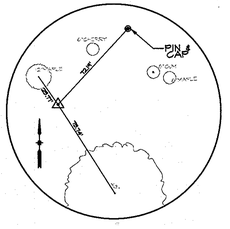
SCALE AS SHOWN
SHEET 1 OF 6

PLOTTED: "12:34 PM on Tuesday, May 31, 2011"
BY: Guihua Wong Division: P042
FILE: M:\2007\07013778.72\drawings\07013782_title Sheet.dgn









TRAVERSE COORDINATE SCHEDULE				
NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
TRAV.#12	P & C	571537.47	1363036.33	400.00
TRAV.#7	P & C	571436.63	1362695.19	418.77
TRAV.#16	P & C	571517.35	1362792.86	432.53

WATER MAIN STAKEOUT COORDINATE SCHEDULE			
STATION	FITTING	NORTHING	EASTING
0+00	8" x 8" TEE	571416.37	1362677.22
0+05	8" V	571419.64	1362673.44
0+18	8" 45° HB	571428.06	1362663.73
0+30	8" 45° HB	571440.03	1362662.88
1+93	8" 45° HB & 2° HD COUPLING (HORIZ.)	571563.60	1362770.01
2+28	PC (VERTICAL)	571567.61	1362804.38
3+34	PT (VERTICAL)	571579.88	1362909.67
3+74	PC (VERTICAL)	571584.51	1362949.40
4+19	4" BLOW OFF	571589.72	1362994.10
4+48	PT (VERTICAL)	571593.08	1363022.90
5+28	PC (VERTICAL)	571602.34	1363102.36
5+97	PT (VERTICAL)	571610.33	1363170.90
6+74	CONNECT TO EX. 8" W	571619.28	1363247.71

⚠ TEST STATION AS BUILT LOCATIONS

TS NO. 1 : SEE AS BUILT CONNECTION DETAIL, THIS SHEET

TS NO. 2 : INSTALLED PER PLAN

TS NO. 3 : INSTALLED PER PLAN, 5' RADIAL FROM B.O.

TS NO. 4 : INSTALLED PER PLAN, 120' FROM EX. GV

AS-BUILT
DATE 2/3/2012

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 31363 EXPIRATION DATE: 1/10/2012

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 7/12/11
CHIEF, BUREAU OF ENGINEERING — DATE 6/13/11
CHIEF, BUREAU OF UTILITIES — DATE 6/28/11
CHIEF, UTILITY DESIGN DIVISION — DATE 6/9/11

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

STATE OF MARYLAND GUIHUA WANG NO. 31363 PROFESSIONAL ENGINEER 2/8/11

DES: GW				
DRN: CK				
CHK: TW				
DATE: MAR. 2011	LFN	⚠	AS BUILT	2-3-12
	BY	NO.	REVISION	DATE

8" WATER
PLAN AND PROFILE

600' SCALE MAP NO. 30 BLOCK NO. 23 & 24

MONT JOY WATER MAIN LOOP

CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631

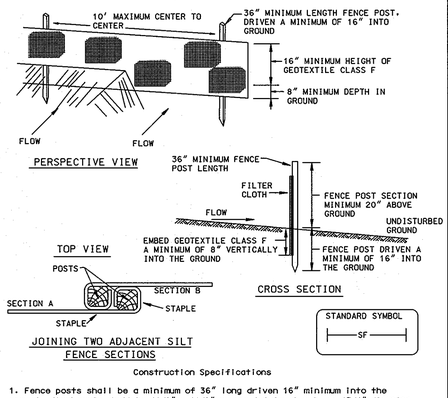
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 6

PLOTTED: "12:35 PM on Tuesday, May 31, 2011"
BY: Guihua Wang Division: P042 W-WW-Solid Waste GMA Emp
FILE: M:\2007\01071378.12\drawings\01071378_CO1.DGN

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

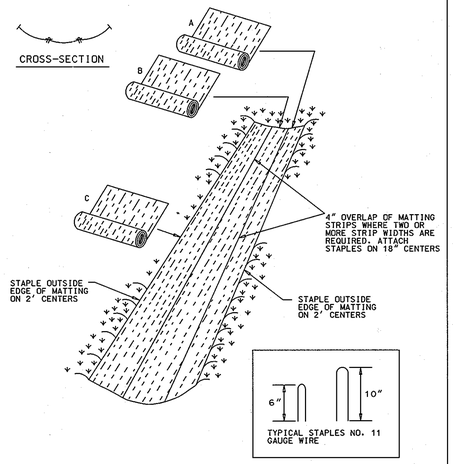
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 - EROSION CONTROL MATTING



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

EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

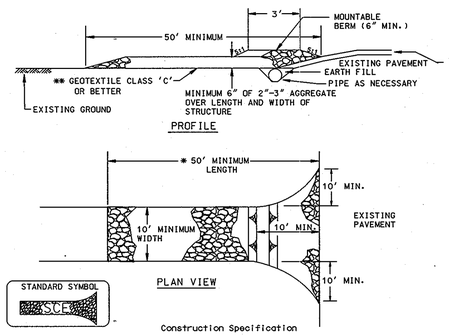
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BEST MANAGEMENT PRACTICE (BMP) NOTES

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
2. 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.
3. 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.
4. 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.
5. 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.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100 YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA 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.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. 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.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAYS.
11. 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.

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 FERTILIZES (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 218 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

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

TEMPORARY SEEDING 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.).

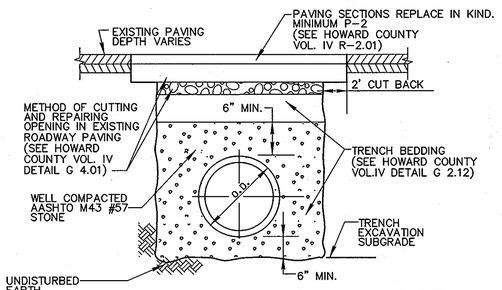
SEEDING: - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28,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

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

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION DIVISION (410-313-1870) PRIOR TO STARTING DATE.
3. INSTALL EROSION AND SEDIMENT CONTROL DEVICES AT THE DIRECTION OF SEDIMENT CONTROL INSPECTOR.
4. EXCAVATE AND INSTALL PROPOSED 8" WATER MAIN. SPOIL FROM THE TRENCHING OPERATION IS TO BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION. TRENCHING IS LIMITED TO THE LENGTH WHICH CAN BE STABLIZED AND BACKFILLED AT THE END OF EACH WORKING DAY. RESTORE EARTH TRENCHES TO THEIR ORIGINAL CONDITION AS PER HOWARD COUNTY STANDARDS. (TOTAL DURATION 45 DAYS)
5. RESTORE ALL DISTURBED AREAS WITH PAVEMENT OR PERMANENT SEEDING (45 DAYS).
6. UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES. (2 DAYS)



*DETAIL: TRENCH FOR PVC PIPE AND HIGH DENSITY POLYETHYLENE PIPE

NO SCALE

*BASED ON HOWARD COUNTY STANDARD DETAIL G2.12

NOTES:
1. UTILITY CONSTRUCTION SECTION 1000
2. BACKFILLING SECTION 1000.03.07

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1855).
2. 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.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   a) 7 CALENDER DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1,
   b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. 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.
5. 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.
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.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	0.54	ACRES
AREA DISTURBED	0.26	ACRES
AREA TO BE ROOFED OR PAVED	0.09	ACRES
AREA TO BE VEGATATIVELY STABILIZED	0.17	ACRES
TOTAL CUT	221	CU. YDS.
TOTAL FILL	221	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF THE DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. 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.
11. 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.
12. CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE ON DOWNHILL SIDE OF TRENCH.

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LINCENSE NO. 31363 EXPIRATION DATE: 1/16/2012

AS-BUILT
DATE 2/3/2012

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE 7/12/11
CHIEF, BUREAU OF ENGINEERING	DATE 6/13/11
CHIEF, BUREAU OF UTILITIES	DATE 6/28/11
CHIEF, UTILITY DESIGN DIVISION	DATE 6/9/11

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

STATE OF MARYLAND — GUIHUA WANG — No. 31363 — PROFESSIONAL ENGINEER — 6/21/11

DES: GW							
DRN: CK							
CHK: TW							
DATE: MAR. 2011	LFN		AS BUILT		23-12	DATE	
	BY	NO.	REVISION				

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

600' SCALE MAP NO. 30 BLOCK NO. 23 & 24

MONT JOY WATER MAIN LOOP

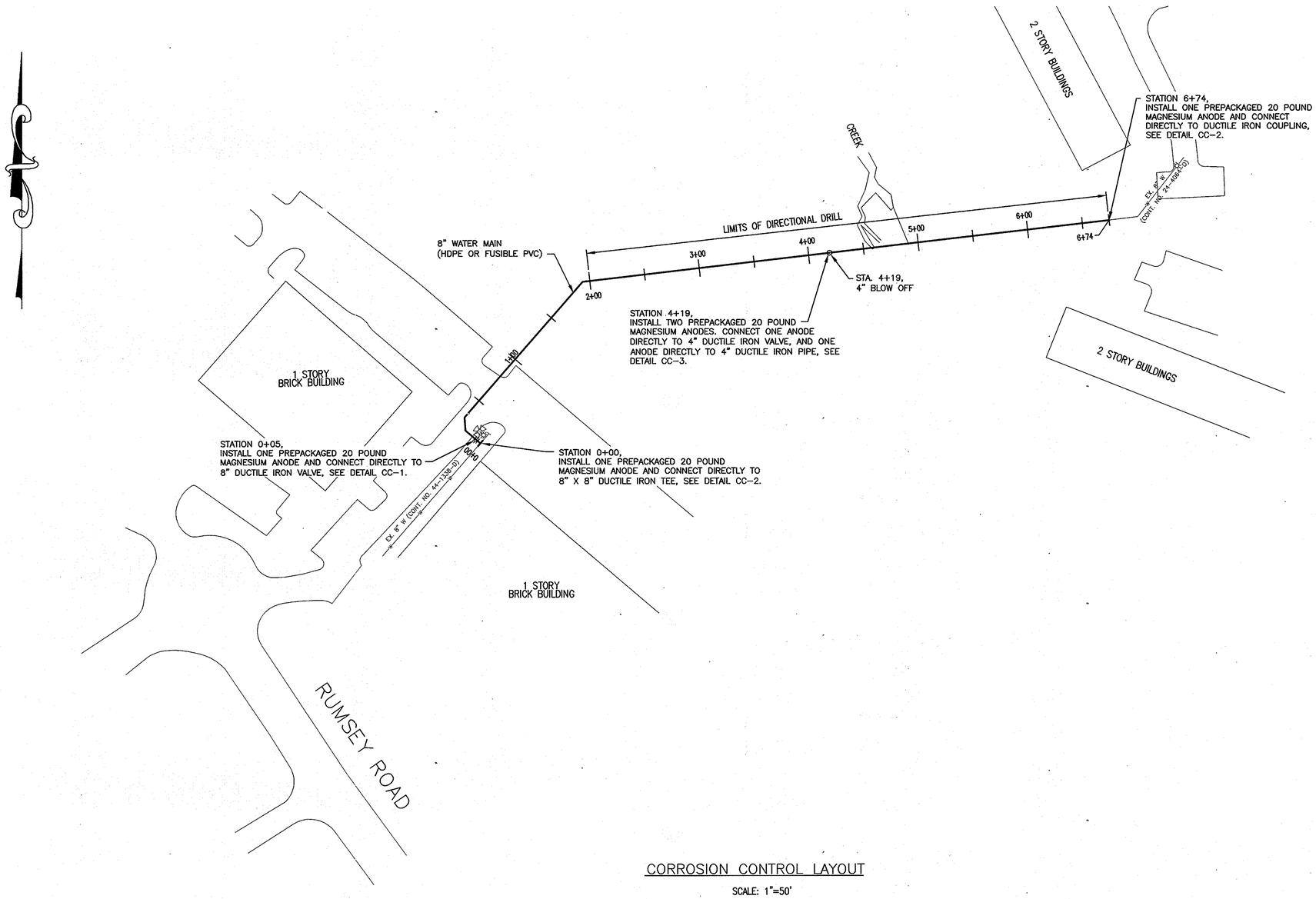
CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631

ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 6

PLOTTED: "12:40 PM on Tuesday, May 31, 2011"
BY: Guihua Wang Division P042 W-WW-Solid Waste GNA Engr
FILE: M:\2007\10171378.12\drawings\10171378_12_ES Sheet.dgn



CORROSION CONTROL LAYOUT

SCALE: 1"=50'

LEGEND:

- NEW WATER MAIN
- EXISTING WATER MAIN
- EXISTING FIRE HYDRANT

NOTES:

1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON BENDS ALONG THE PVC WATER MAINS ARE TO BE PROVIDED WITH CORROSION PROTECTION (DUCTILE IRON TEES AND BENDS NOT SHOWN ON THIS DRAWING), SEE DETAIL CC-2.
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-6. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
3. DO NOT THERMITE WELD TO PVC PIPE.

AS-BUILT
DATE 2/3/2012

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 2/12/11
CHIEF, BUREAU OF ENGINEERING — DATE 6/13/11
CHIEF, BUREAU OF UTILITIES — DATE 6/28/11
CHIEF, UTILITY DESIGN DIVISION — DATE 6/9/11

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 9/27/2012

STATE OF MARYLAND — MICHAEL J. SELIGA — NO. 17083 — PROFESSIONAL ENGINEER

DES: MJS
DRN: DJD
CHK: MJS
DATE: JUNE 2011

BY	NO.	REVISION	DATE
LFN		AS BUILT	2-3-12

CORROSION CONTROL LAYOUT

600' SCALE MAP NO. 30 BLOCK NO. 23 & 24

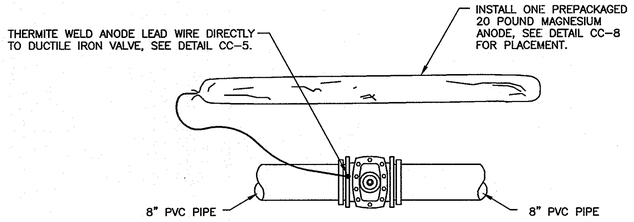
MONT JOY WATER MAIN LOOP

CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631

ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 6

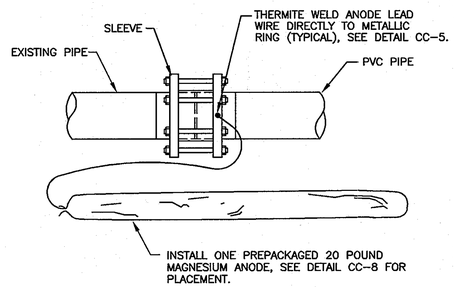


NOTES:

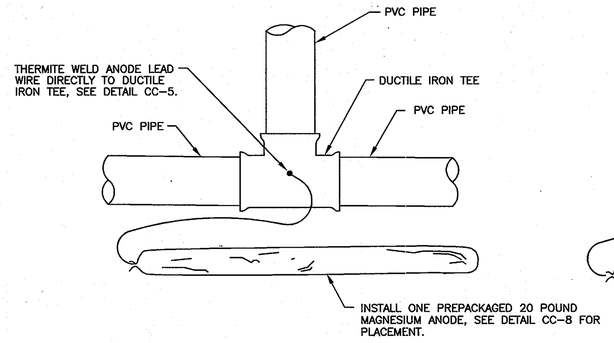
1. ANODE PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-8.
2. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-1: CORROSION PROTECTION OF DUCTILE IRON VALVE

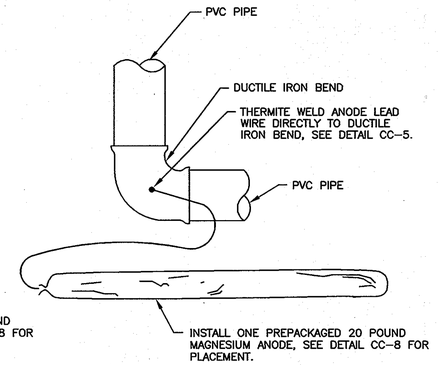
SCALE: NONE



COUPLING



TEE



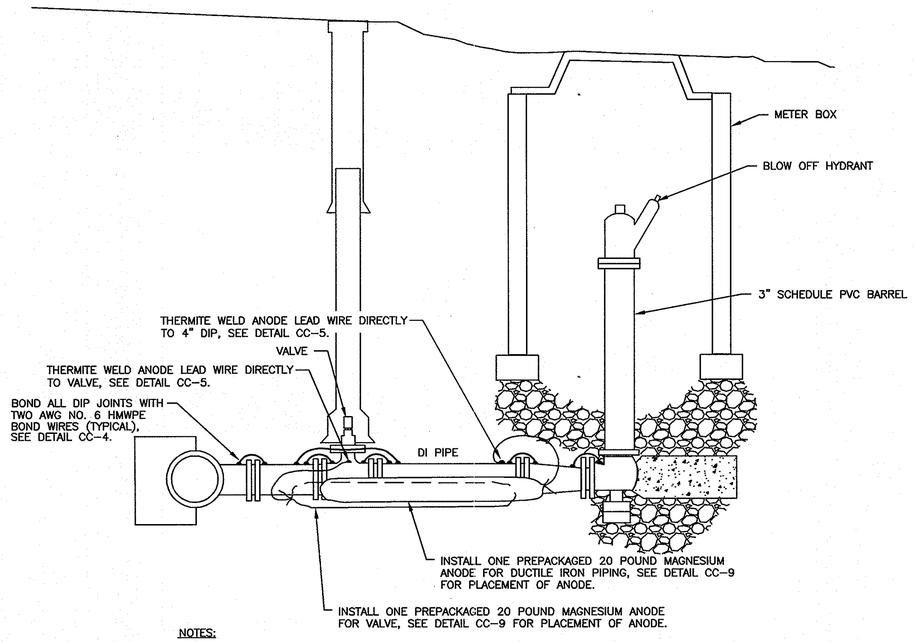
BEND

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-8.
3. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-2: CORROSION PROTECTION OF DUCTILE IRON FITTINGS

SCALE: NONE

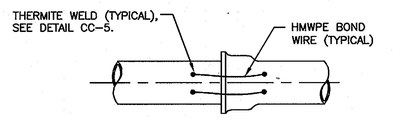


NOTES:

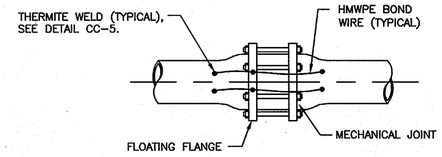
1. BOND ALL DUCTILE IRON COMPONENTS TOGETHER WITH AWG NO. 6 HMWPE CABLES. INSTALL A MINIMUM OF TWO BOND CABLES ACROSS EACH DUCTILE IRON PIPE JOINT.
2. INSTALL BOND WIRES ON TOP OF DUCTILE IRON PIPE OR DUCTILE IRON FITTING WHERE POSSIBLE.
3. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12 INCHES FROM EDGE OF PIPE, SEE DETAIL CC-9.
4. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-3: CORROSION PROTECTION AT BLOW OFF

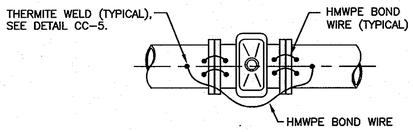
NOT TO SCALE



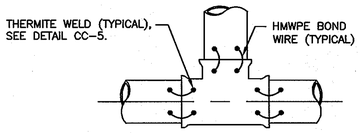
TYPICAL PIPE JOINT BOND



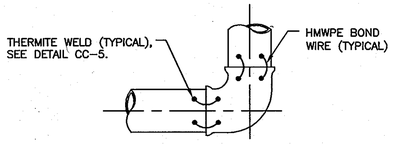
TYPICAL MECHANICAL COUPLING BOND



TYPICAL BONDING OF VALVE



TYPICAL BONDING OF TEE



TYPICAL BONDING OF BEND, REDUCER OR SOLID SLEEVE

NOTES:

1. BOND ALL DUCTILE IRON PIPE JOINTS, INCLUDING THOSE ON PIPE, FITTINGS, VALVES, ETC.
2. THERMITE WELD BONDING WIRES TO TOP OF PIPE OR FITTING, SEE DETAIL CC-5.
3. WIRE SIZE FOR BONDING JOINTS SHALL BE AWG NO. 6.
4. DO NOT THERMITE WELD TO PVC PIPE.

DETAIL CC-4: BONDING OF DUCTILE IRON PIPE/FITTINGS

SCALE: NONE

AS-BUILT
DATE 2/3/2012

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 7/12/11
CHIEF, BUREAU OF ENGINEERING — DATE 6/13/11
CHIEF, BUREAU OF UTILITIES — DATE 6/28/11
CHIEF, UTILITY DESIGN DIVISION — DATE 6/9/11

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 9/27/2012

STATE OF MARYLAND — MICHAEL J. SLATER — 17083 — PROFESSIONAL ENGINEER

DES: MJS
DRN: DJD
CHK: MJS
DATE: JUNE 2011

NO.	REVISION	DATE
LFN	AS BUILT	2-3-12

CORROSION CONTROL DETAILS – 1

600' SCALE MAP NO. 30 BLOCK NO. 23 & 24

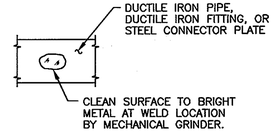
MONT JOY WATER MAIN LOOP

CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631

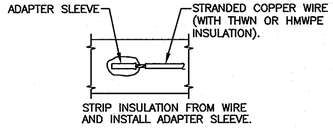
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

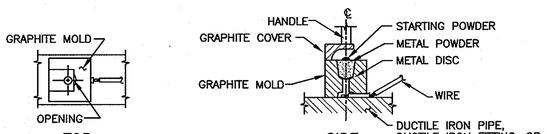
SHEET 5 OF 6



STEP 1

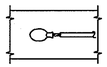


STEP 2

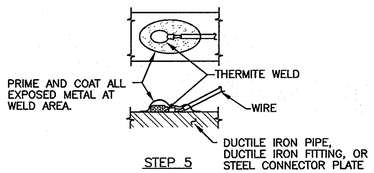


HOLD GRAPHITE MOLD FIRMLY OVER ADAPTER SLEEVE WITH OPENING AWAY FROM OPERATOR – IGNITE STARTING POWDER.

STEP 3



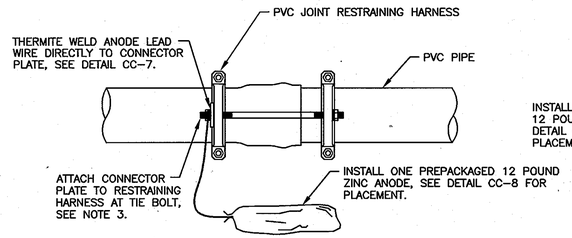
STEP 4



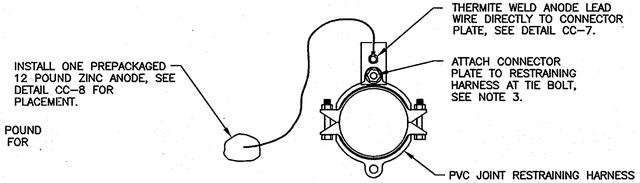
STEP 5

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.

DETAIL CC–5: TYPICAL THERMITE WELD
SCALE: NONE



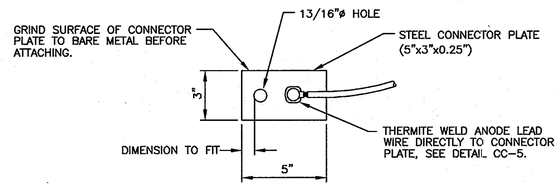
PLAN VIEW



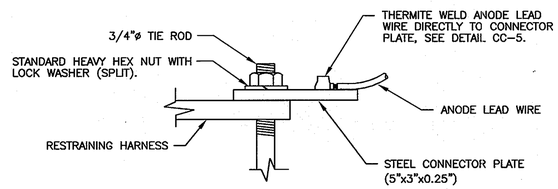
SECTION VIEW

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–8.
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–6: CORROSION PROTECTION OF RESTRAINING HARNESS
SCALE: NONE



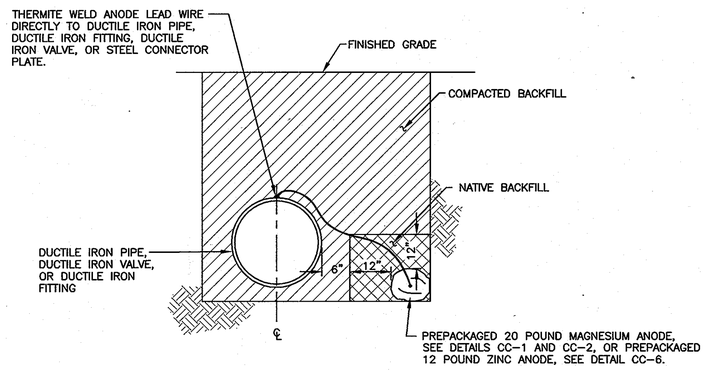
PLAN VIEW



SIDE VIEW

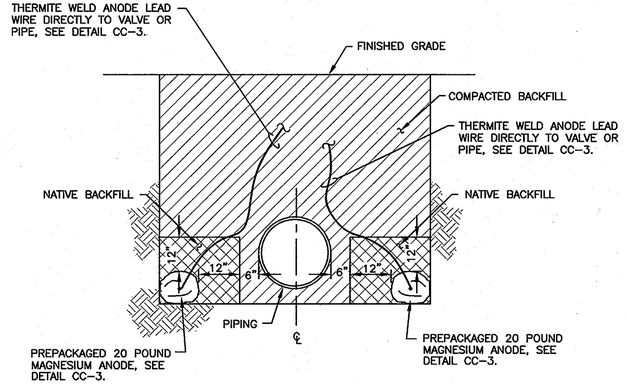
NOTES:
1. CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS.
2. THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY–CAP OR APPROVED EQUAL.

DETAIL CC–7: CONNECTION PLATE DETAIL
SCALE: NONE



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

DETAIL CC–8: 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–9: DOUBLE ANODE PLACEMENT
SCALE: NONE

AS-BUILT
DATE 2/3/2012

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 7/12/11
CHIEF, BUREAU OF ENGINEERING — DATE 6/13/11
CHIEF, BUREAU OF UTILITIES — DATE 6/28/11
CHIEF, UTILITY DESIGN DIVISION — DATE 6/9/11

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 9/27/2012

STATE OF MARYLAND — MICHAEL J. SCHMIDT — No. 17083 — PROFESSIONAL ENGINEER

DES: MJS					
DRN: DJD					
CHK: MJS					
DATE: JUNE 2011	LFN		AS BUILT	2-3-12	
	BY	NO.	REVISION	DATE	

CORROSION CONTROL DETAILS – 2

600' SCALE MAP NO. 30 BLOCK NO. 23 & 24

MONT JOY WATER MAIN LOOP

CAPITAL PROJECT No. W-8294
CONTRACT No. 44-4631

ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 6