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WATER AND SEWER EXTENSION PLAN

SAVAGE MILL HOTELS

PARCEL 93


6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-4499-D

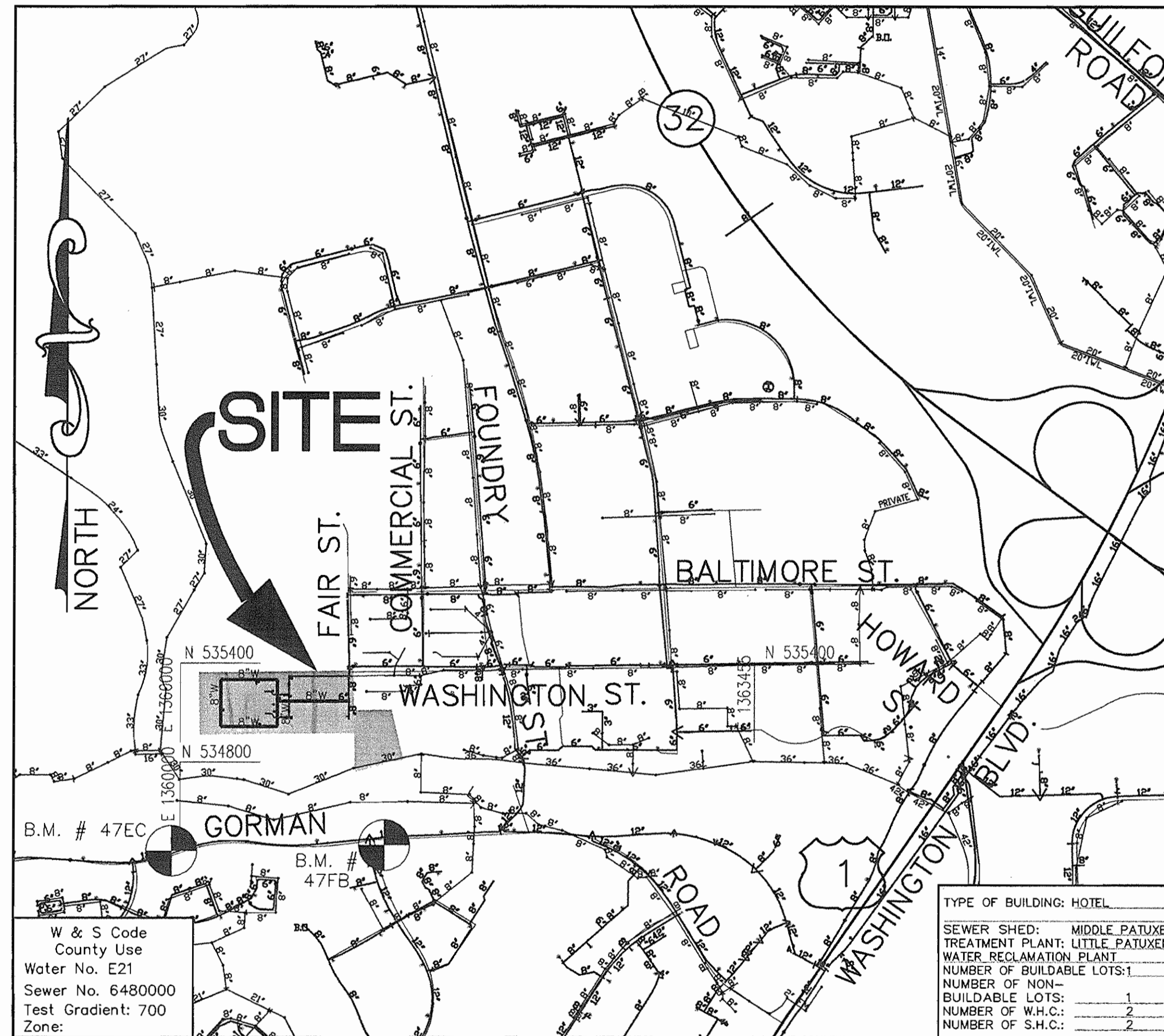
GENERAL NOTES

- Approximate locations of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
- Topographic field surveys were performed in December 2006 by Patton Harris Rust and Associates.
- 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. 430.377 and 407.635 for stations 41EC and 41FA respectively. No. 41EC and No. 41FA
All vertical controls are based on NAVD '88. Vertical Controls on the drawings are
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- Clear all utilities by a minimum of 12 inches. Clear all poles by 5'-0" minimum or tunnel as required unless otherwise noted. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from monies owed 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 locations of the test pits. 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.
- The contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

AT&T	1-800-252-1133
BGE (Construction Services)	410-850-4620
BGE (Emergency)	410-685-1400
Bureau of Utilities	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.
- The contractor shall remove trees, stumps and roots along the line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- The contractor shall notify the Bureau of Highways, Howard County, at 410-313-7450 at least five working days before open cutting or boring/jacking of any County road for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
8" C900 PVC WATER	1664 LF			
6" WHC	68 LF			
6" VALVES	4 EA.			
8" VALVES	4 EA.			
8" 1/8 HB	8 EA.			
8" 1/16 VB	2 EA.			
8" 1/32 VB	3 EA.			
8" PVC COUPLINGS (CERTAINTED PVC HIGH DEFLECTION)	6 EA.			
8"x8" TS&V	1 EA.			
8"x8" TEE	1 EA.			
8"x6" FHT	4 EA.			
FIRE HYDRANT	4 EA.			
8" PVC SDR 35 SEWER	29 LF			
PRECAST MANHOLE	1 EA.			



VICINITY MAP
SCALE: 1"=600'

WATER NOTES

- All water mains shall be C-900 PVC unless otherwise noted.
- Tops of all water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
- Fire hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be installed in accordance with Standard Details. The soil around the fire hydrant shall be compacted in accordance with Section 1000 and 1005 of the Standard Specifications.
- The contractor shall not operate any water main valves on the existing water system.

SEWER NOTES

- All sewer mains shall be PVC conforming to SDR 35 ASTM D3034 Specifications.
- All sewer manholes shall conform to Howard County Standard Detail G-5.11.

BENCH MARK

HOWARD COUNTY SURVEY CONTROL: 47FB
ELEVATION 207.450
N 534295.4166 E 1361228.6547
LOCATION IS 2.5' FROM FACE OF CURB AT GORMAN ROAD

HOWARD COUNTY SURVEY CONTROL: 47EC
ELEVATION 233.710
N 534261.2464 E 1359948.1215
LOCATION IS 12' FROM EDGE OF PAVING AT GORMAN ROAD

NAME OF UTILITY CONTRACTOR:	CHECKBOX
Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on SDP-07-076	AS-BUILT DATE
	SURVEY AND DRAFTING DIVISION

Review for Howard Soil Conservation District and meets technical requirements

NATURAL RESOURCES CONSERVATION SERVICE DATE

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John R. Hunter 4/3/08 DATE
HOWARD SOIL CONSERVATION DISTRICT

DEVELOPER

SUMMIT ASSOCIATES, LLC
ATTN: GENE SINGLETON
2200 SUMMITT PARK LANE SUITE 2000
RALEIGH, NC 27612
(919) 279-3031

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. 33954, EXPIRATION DATE: 01-24-09.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Stacy C. Coon 4/3/08 DATE
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Gene Singleton 4/3/08 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

P-H-R-A

8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

STATE OF MARYLAND
SHERIFF CLARKE
SHERIFF

Sherri C. Mitchell 4/3/08 DATE
SHERRI C. MITCHELL # 33954

DES: HS	
DRN: HS	
CHK: SCM	
DATE: 03/12/08	
BY NO.	REVISION
	DATE

PUBLIC WATER & SEWER COVER SHEET

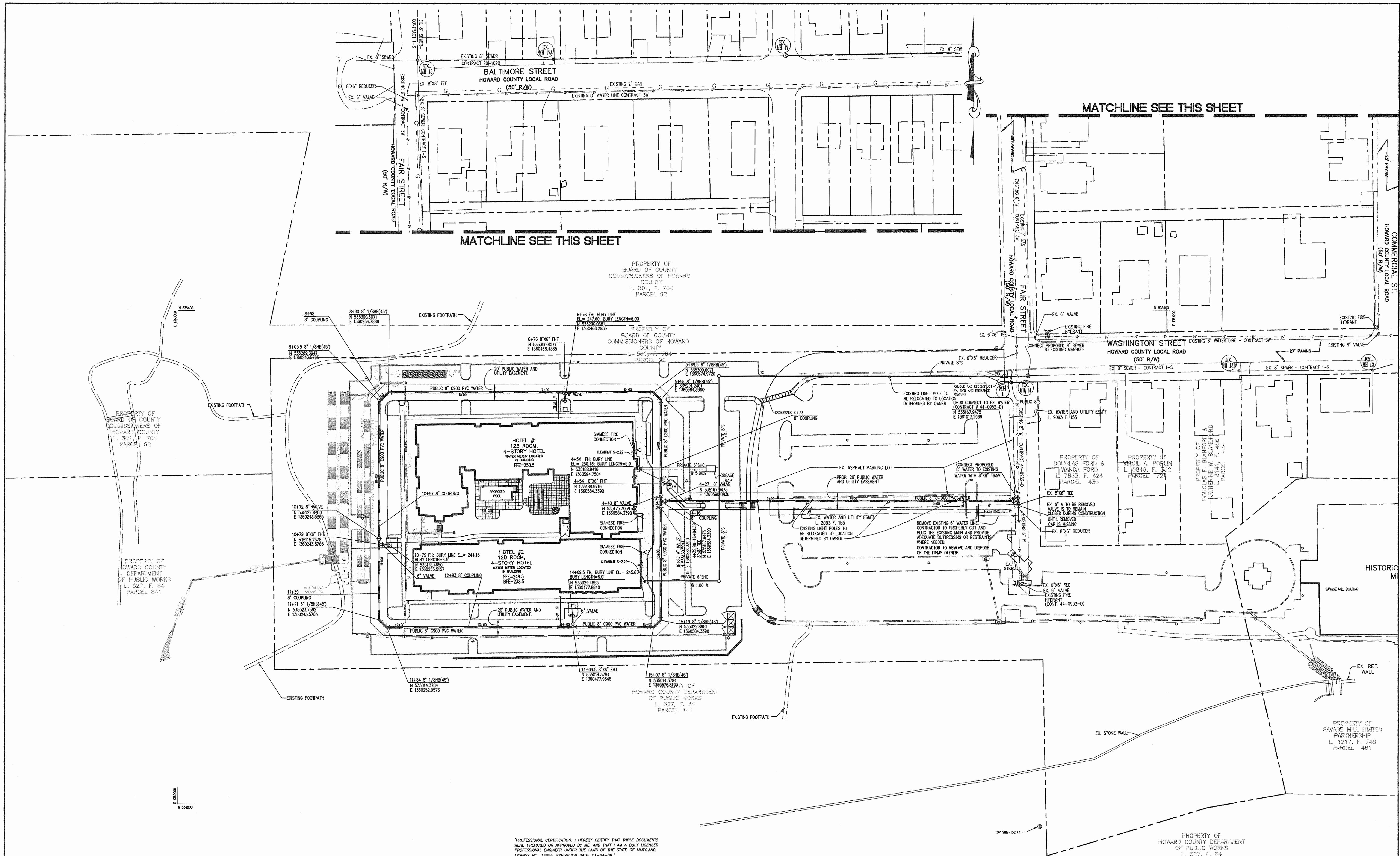
600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS

TAX MAP 47 PARCEL 93 ZONING: B2
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4499-D

SCALE AS SHOWN

SHEET 1 OF 9



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. 33954, EXPIRATION DATE: 01-24-09.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Stella C. Coan
CHIEF, BUREAU OF UTILITIES

4/12/08
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

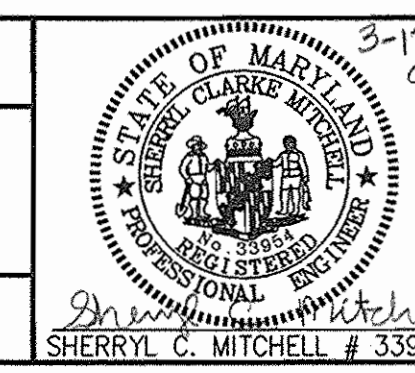
Michael J. Damm
CHIEF, DEVELOPMENT ENGINEERING DIVISION

4/12/08
DATE

Patton Harris Rust & Associates, P.C.
Engineers, Surveyors, Planners, Landscape Architects.

P.H.R.A.

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DES: HS	DATE: 03/12/08
DRN: HS/DJK	BY: NO.
CHK: SCM	REVISION
	DATE

PLAN OF WATER & SEWER MAINS

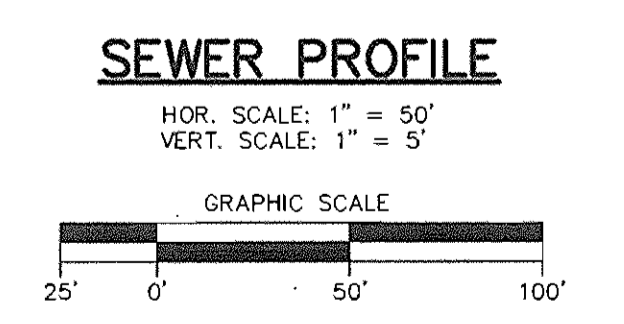
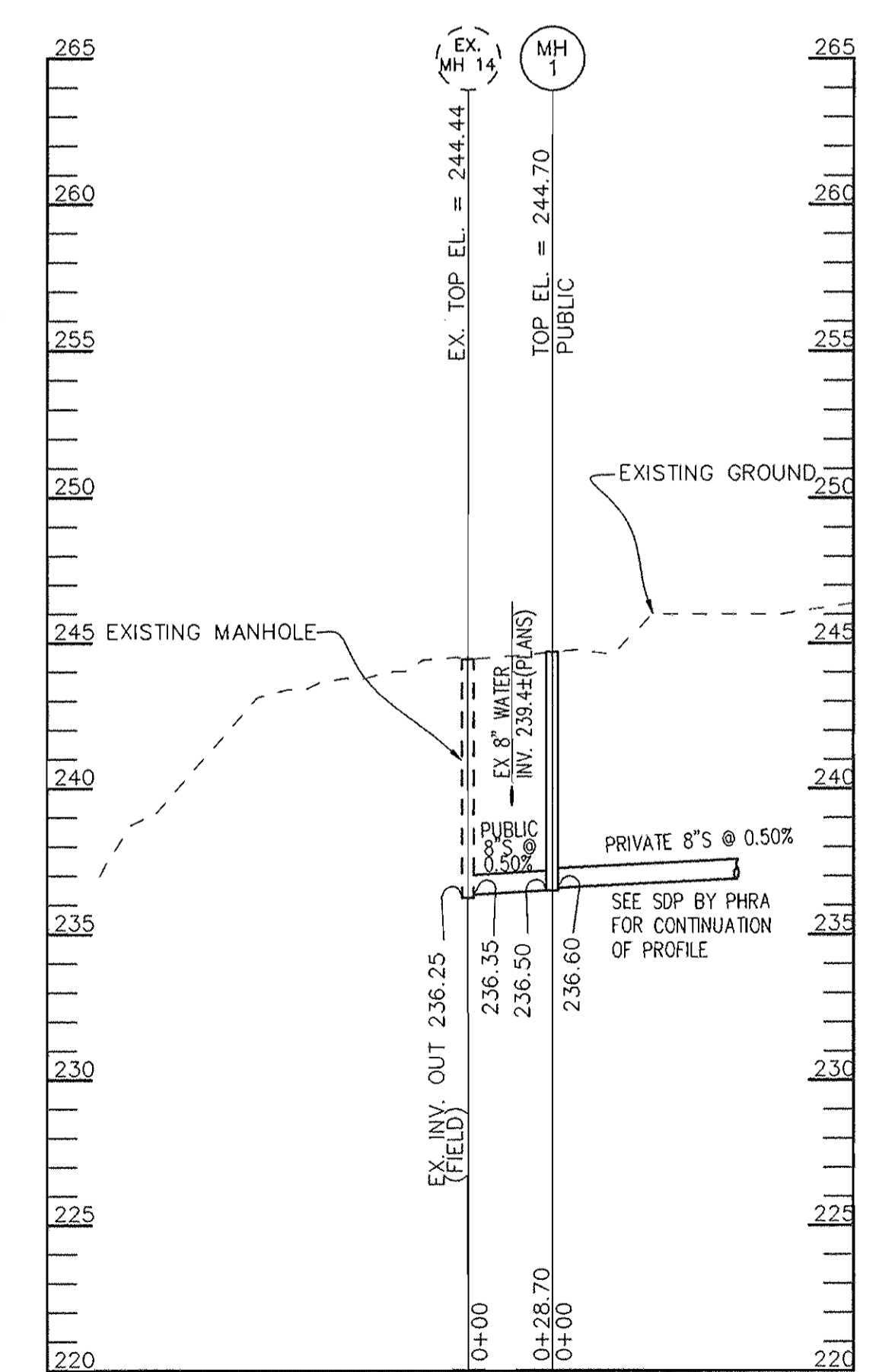
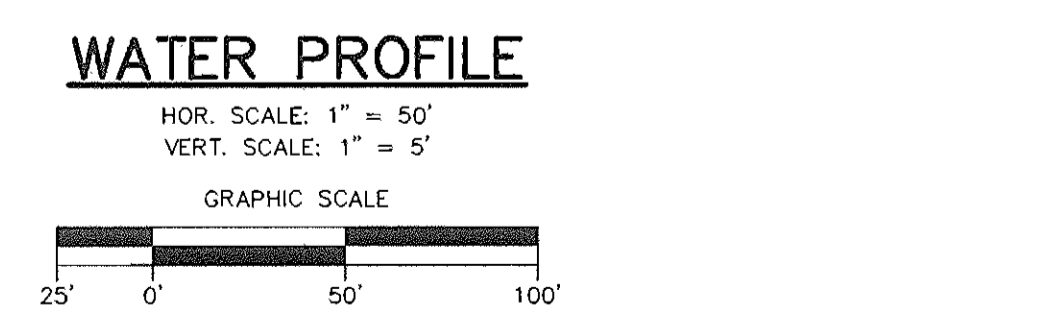
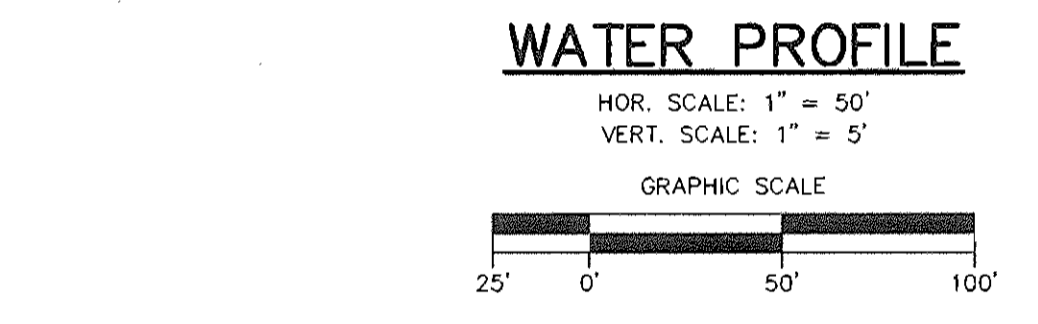
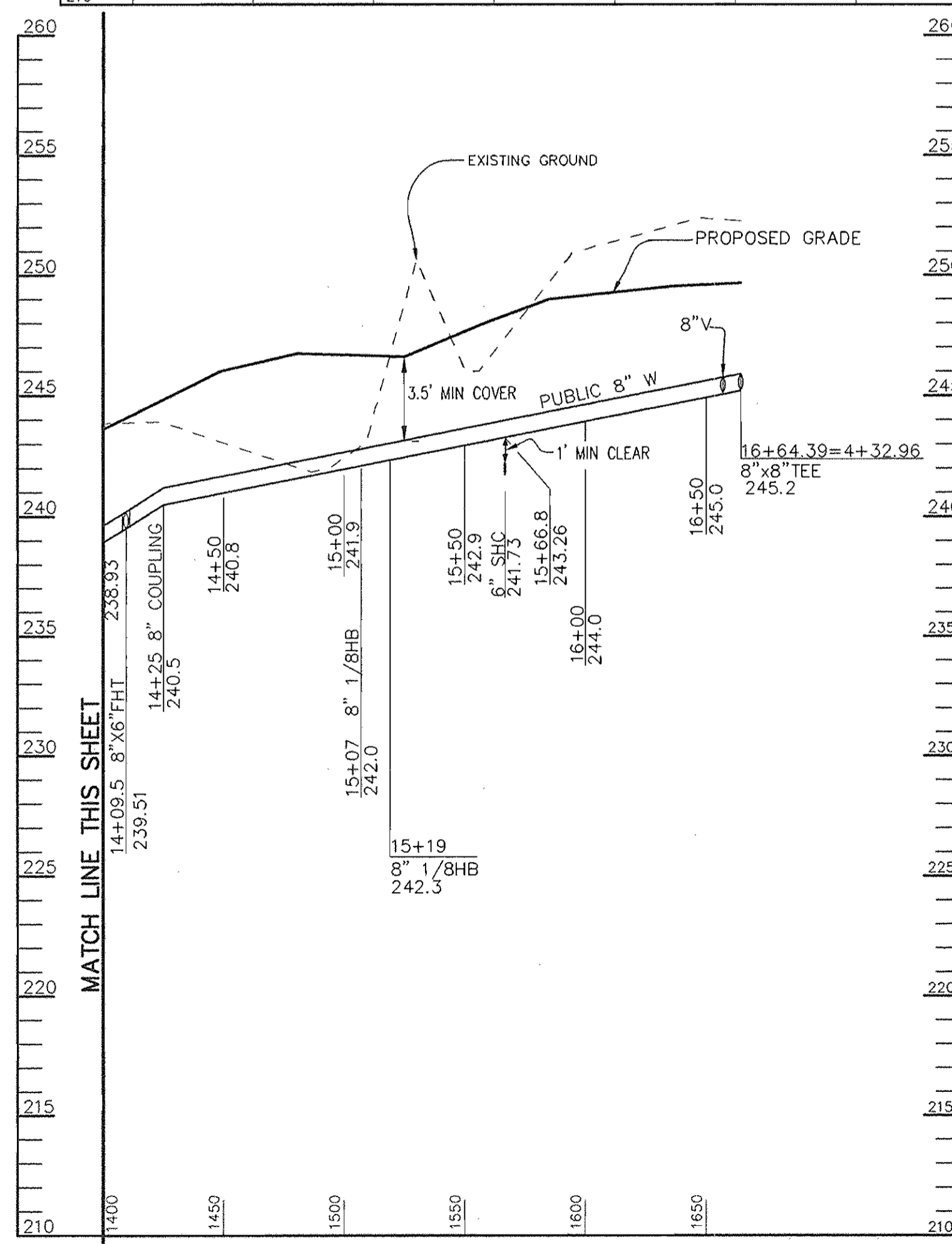
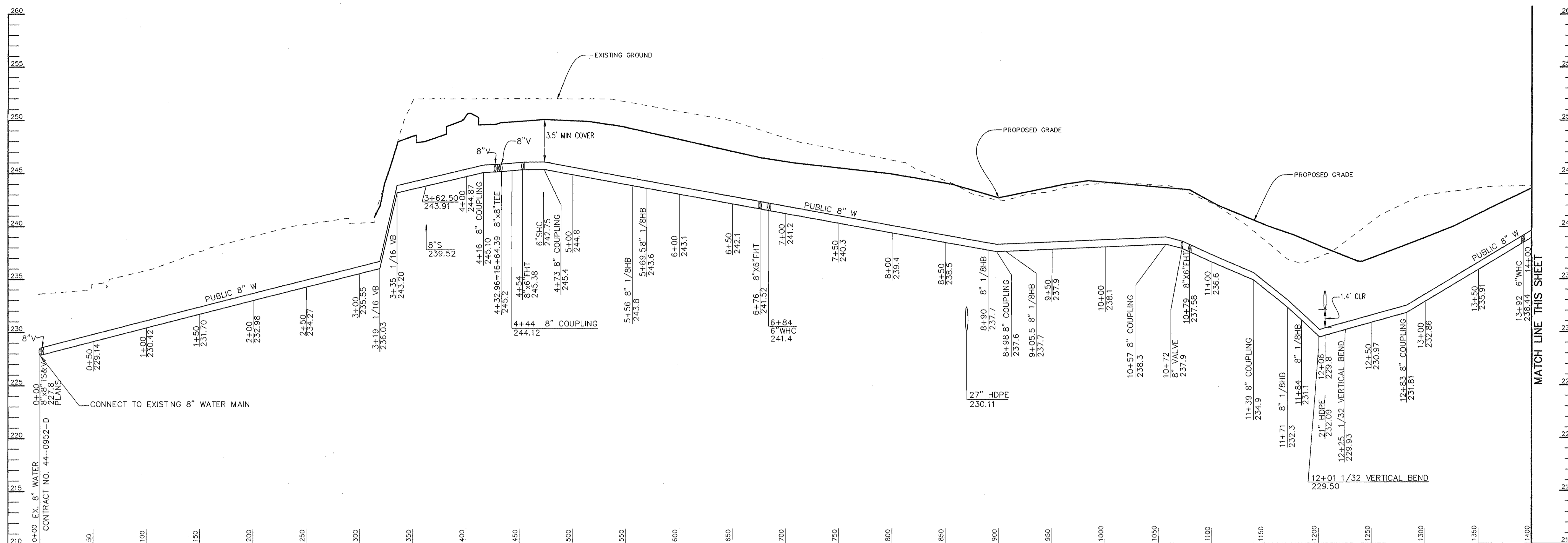
600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS

TAX MAP 47 PARCEL 93 ZONING: B2
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4499-D

SCALE
1"=50'

SHEET
2 OF 9

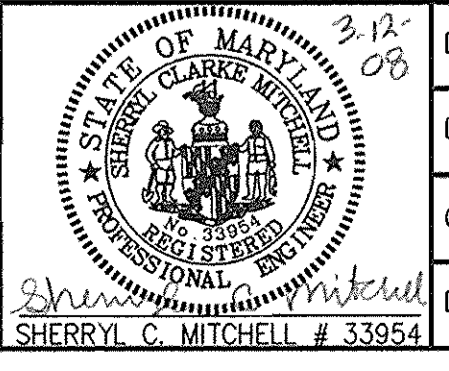


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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
4/13/08
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
4/23/08
DATE

Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
PHRA
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DES:	HS
DRN:	HS
CHK:	SCM
DATE:	03/12/08
BY:	NO.
REVISION:	
DATE:	

PROFILE OF WATER & SEWER MAINS
600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS
TAX MAP 47 PARCEL 93 ZONING: B2
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4499-D

SCALE
1"=50'
SHEET
3 OF 9

SPECIFICATIONS

AMENDMENT TO THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION

EXCEPT AS INDICATED HEREIN, ALL WORK SHALL BE IN ACCORDANCE WITH THE PERTINENT SECTIONS OF HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. CATEGORY 900, SECTIONS 905.01 (POLYVINYL CHLORIDE (PVC) PIPE OF THE HOWARD COUNTY STANDARD SPECIFICATIONS IS AMENDED TO INCLUDE THE FOLLOWING REQUIREMENTS.

GENERAL

- POLYVINYL CHLORIDE (PVC) PIPE AND COUPLINGS SHALL BE HOMOGENOUS THROUGHOUT AND FREE FROM VISIBLE CRACKS, BUBBLES, BLISTERS, HOLES, FOREIGN INCLUSIONS, CUTS, OR SCRAPES ON INSIDE OR OUTSIDE SURFACES, OR OTHER IMPERFECTIONS, WHICH MAY IMPAIR THE PERFORMANCE OR LIFE OF THE PIPE. EACH PIPE SHALL BE STRAIGHT TO WITHIN 1/4 INCH PER 20-FOOT LENGTH OF PIPE WHEN UNIFORMLY SUPPORTED ALONG ITS ENTIRE LENGTH, AND SHALL HAVE A TRUE CIRCULAR CROSS-SECTION TO WITHIN ± 1/64 INCH.
- PVC PIPE MANUFACTURED MORE THAN SIX MONTHS PRIOR TO WORK SITE INSPECTION WILL NOT BE ACCEPTED.
- LOADING, UNLOADING, HANDLING, INSPECTION, AND STORAGE OF PVC PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH AWWA C605. PVC PIPE SHALL BE STORED SUCH THAT IT DOES NOT DEFORM OR BEND.
- SUBMITTALS: THE FOLLOWING ITEMS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. MATERIALS NOT APPROVED WILL NOT BE ACCEPTED.
 - PVC PIPE: SUBMIT MANUFACTURER'S LITERATURE AND CERTIFICATE OF COMPLIANCE FOR PVC PIPE ALONG WITH THE MANUFACTURER'S IDENTIFICATION CODES FOR NORMAL SIZE, DIMENSION RATIO, PRESSURE CLASS, PRODUCTION RECORD CODE, AND DATE OF MANUFACTURE. SUBMIT MANUFACTURER'S WRITTEN TRANSCRIPT OF TEST RESULTS, FOR SUSTAINED PRESSURE, PIPE DIMENSION, BURST PRESSURE, FLATTENING RESISTANCE, AND EXTRUSION QUALITY TEST. FREQUENCY OF PERFORMING TESTS AND THE METHODS OF SELECTING TEST SPECIMENS SHALL BE IN ACCORDANCE WITH AWWA C900.
 - PVC PIPE FITTINGS: SUBMIT MANUFACTURER'S LITERATURE AND CERTIFICATES OF COMPLIANCE FOR PVC PIPE FITTINGS ALONG WITH THE MANUFACTURER'S IDENTIFICATION CODES FOR NORMAL SIZE, PRESSURE CLASS, PRODUCTION RECORD CODE, AND DATE OF MANUFACTURE. SUBMIT MANUFACTURER'S WRITTEN TRANSCRIPT OF TEST RESULTS, FOR ACCELERATED-REGRESSION TEST, BURST PRESSURE AND HEAT-REVERSION TEST IN ACCORDANCE WITH AWWA C907.
 - MISCELLANEOUS FOR PVC WATER PIPE: SUBMIT MANUFACTURER'S LITERATURE AND CERTIFICATES OF COMPLIANCE, FOR JOINT RESTRAINT DEVICES, PIPE COUPLINGS, WIRE CONNECTOR SPLICE KITS, SERVICE SADDLES, AND MANUFACTURER'S INSTRUCTIONS FOR TAPPING PIPE.

- PVC PIPE: SUBMIT MANUFACTURER'S LITERATURE AND CERTIFICATE OF COMPLIANCE FOR PVC PIPE ALONG WITH THE MANUFACTURER'S IDENTIFICATION CODES FOR NORMAL SIZE, DIMENSION RATIO, PRESSURE CLASS, PRODUCTION RECORD CODE, AND DATE OF MANUFACTURE. SUBMIT MANUFACTURER'S WRITTEN TRANSCRIPT OF TEST RESULTS, FOR SUSTAINED PRESSURE, PIPE DIMENSION, BURST PRESSURE, FLATTENING RESISTANCE, AND EXTRUSION QUALITY TEST. FREQUENCY OF PERFORMING TESTS AND THE METHODS OF SELECTING TEST SPECIMENS SHALL BE IN ACCORDANCE WITH AWWA C900.
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MATERIALS

THE ENGINEER WILL INSPECT ALL MATERIALS BEFORE, DURING, AND AFTER INSTALLATION TO ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS. WHEN SPECIFIC TESTS OF MATERIALS ARE CALLED FOR IN THE REFERENCED STANDARDS AND SPECIFICATIONS, THE ENGINEER HAS THE OPTION OF REQUIRING THAT ANY OR ALL OF THESE TESTS BE PERFORMED FOR THE SPECIFIED MATERIALS.

- PVC PIPE AND FITTINGS:
 - PVC PIPE 4 INCHES THROUGH 12 INCHES IN DIAMETER SHALL BE MANUFACTURED IN 20-FOOT LENGTHS IN ACCORDANCE WITH AWWA C900 WITH CAST/DUCTILE IRON PIPE EQUIVALENT OUTSIDE DIAMETERS. PIPE SHALL HAVE A DIMENSION RATION (DR) OF 18 PRESSURE CLASS OF 150 PSI, AND SHALL UTILIZE ELASTOMERIC-GASKETED PUSH-ON JOINTS FOR JOINING PIPES IN ACCORDANCE WITH AWWA C900. PIPE GASKETS AND GASKET LUBRICANT SHALL BE SUITABLE FOR POTABLE WATER SYSTEMS AND SHALL MEET NSF 61. ALL PVC PIPE SHALL BE FACTORY MARKED ON THE SPIGOT END FOR DEPTH OF INSERTION INTO THE BELL AND FACTORY TEST IN ACCORDANCE WITH AWWA C900. PVC PIPE SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING:
 - UPONOR ETI
 - J-M PIPE
 - DIAMOND PLASTICS CORP
 - NATIONAL PIPE AND PLASTICS, INC.
 - FITTINGS FOR USE WITH PVC WATER MAINS SHALL BE DUCTILE IRON IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OR PVC FITTINGS. PVC FITTINGS SHALL HAVE PUSH-ON RUBBER GASKETED JOINTS, BE INJECTION-MOLDED MEETING AWWA C907, PRESSURE CLASS 150; OR FABRICATED MEETING AWWA C900, CLASS 200. PVC FITTINGS SHALL BE MANUFACTURED TO THE HARRINGTON CORPORATION (HARCO) OR APPROVED EQUAL. PIPE JOINTS SHALL BE IN ACCORDANCE WITH THE STANDARDS SPECIFIED FOR THE PIPE FITTING.

JOINT RESTRAINING MATERIALS FOR PVC PIPE:
HORIZONTAL AND VERTICAL BENDS, TEES, CAPS, AND FITTINGS SHALL BE BUTTRESSED OR ANCHORED IN ACCORDANCE WITH THE PLANS, THE STANDARD SPECIFICATIONS, AND DETAILS FOR CONSTRUCTION, OR AS DIRECTED BY THE ENGINEER. VALVES, WHEN CONNECTED TO PVC PIPE, SHALL BE IRON BODY RESILIENT SEAT GATE VALVES AND ANCHORED IN ACCORDANCE WITH THE DETAIL SHOWN ON THE PLANS AND SHALL HAVE ONE FULL LENGTH OF PIPE ON EACH SIDE OF THE VALVE.

- JOINTS FOR HARNESSING JOINTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS BELOW:
- ALL JOINT RESTRAINT DEVICES SHALL BE FACTORY MUTUAL APPROVED.
 - IN RESTRAINED JOINTS, PVC PIPE SHALL NOT BE DEFLECTED. IF DEFLECTION IS REQUIRED IN A RESTRAINED JOINT, USE DUCTILE IRON PIPE OR FITTINGS.
 - WHERE A RESTRAINED JOINT IS REQUIRED BETWEEN PVC PIPE AND FITTING, THE FITTING SHALL BE DUCTILE IRON MECHANICAL JOINT. JOINT RESTRAINT FOR THIS JOINT SHALL MEET ASTM F1674 AND SHALL BE UNIFLANGE SERIES 1500, EBAA IRON SERIES 2000PV OR APPROVED EQUAL.
 - WHERE A RESTRAINED JOINT IS REQUIRED FOR PVC PUSH-ON JOINT, JOINT RESTRAINT SHALL BE UNI-B-13, ICM 620 SUR-GRIP, EBAA IRON SERIES 1600, UNIFLANGE SERIES 1390-C, OR APPROVED EQUAL.

- TRACER WIRE FOR NON-METALLIC PIPELINES:
TRACER WIRE SHALL BE 6-GAGE, 7-STRAND CONTINUOUS COPPER WIRE WITH 45-MIL POLYETHYLENE INSULATION. THE WIRE SHALL BE BLUE, HAVE "UL" MARKINGS AND SUITABLE FOR DIRECT BURY APPLICATIONS.
- CONTINUITY TEST STATION:
CONTINUITY TEST STATIONS SHALL BE LOCATED ADJACENT TO EACH FIRE HYDRANT WITHIN THE PUBLIC EASEMENT FOR LOCATING PVC WATER MAINS. THE TEST STATION SHALL BE HOUSED IN A STANDARD HOWARD COUNTY 18-INCH DIAMETER METER VAULT WITH AN 18" X 12" METAL FRAME AND COVER AS SHOWN ON THE DETAILS ON THE PLANS. A 1-INCH DIAMETER BY 30-INCH LONG COPPER GROUNDING ROD IMBEDDED A MINIMUM OF 12 INCHES INTO THE GROUND SHALL BE USED FOR THE ATTACHMENT OF THE TRACER WIRE. THE TRACER WIRE SHALL BE FASTENED TO THE COPPER ROD USING TWO COPPER CLAMPS.

- DETECTION TAPE:
VISUAL DETECTION TAPE SHALL BE 3 INCHES WIDE (MINIMUM) METALLIC BLUE PLASTIC TAPE LETTERED "WATER" IN BLACK GRAPHICS.
- CONNECTION TO PVC WATERLINES:
 - CONNECTIONS TO PVC WATERLINES SHALL BE BY USING FITTINGS, SUCH AS TEES, INDICATED ON THE PLANS.
 - SADDLES MAY BE USED FOR 2-INCH AND SMALLER CONNECTIONS TO PVC WATERLINES. SADDLES WITH CLAMS SHALL PROVIDE FULL SUPPORT AROUND THE CIRCUMFERENCE OF THE PIPE AND SHALL NOT DISTORT, SCRATCH, OR DAMAGE THE PIPE WHEN TIGHTENED. ONLY TAPPING SADDLES MANUFACTURED SPECIFICALLY FOR AWWA C900 PVC PIPE SHALL BE USED. SADDLE AND CLAMPS/STRAPS SHALL BE FORCED TO MEET THE CURVATURE OF THE PIPE. SADDLES WITH CLAMPS SHALL BE MANUFACTURED FOR UNDERGROUND SERVICE. SHALL BE RATED FOR A MINIMUM SERVICE OF 150 PSI AND SHALL BE BRASS OR BRONZE ALLOY MEETING ASTM B62 OR B584 AND AWWA C800 OR DUCTILE IRON SADDLES MEETING ASTM A536 OR A5395 WITH TWO 1/8-8 STAINLESS STEEL STRAPS AND SHALL BE EPOXY OR NYLON COATED. SADDLES SHALL HAVE WATERTIGHT GASKETS OF BUNA-N RUBBER MEETING ASTM D2000 OR NITRITE AROUND THE TAP HOLE. SADDLES SHALL BE ONE OF THE FOLLOWING:
 - FORD FC-202
 - MUELLER SERIES DR2S
 - ROMAC 202N
 - SMITH BLAIR 317 NYLON COATED JCM 406

EXECUTION

ALL CONSTRUCTION METHODS AND DETAILS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND THE FOLLOWING CRITERIA:

- INSTALLATION OF PVC WATER MAINS:
 - PVC PIPE AND FITTING SHALL BE HANDLED IN ACCORDANCE WITH AWWA C605.
 - BEDDING:
PROVIDE 6 INCHES OF STONE BEDDING UNDER THE PIPE IN ACCORDANCE WITH STANDARD DETAIL G2.01 AND THE DETAIL SHOWN ON THE PLANS FOR TRENCH OR PVC PIPE USING AASHTO M 43, SIZE NUMBER 57 AGGREGATE. THE STONE BEDDING SHALL BE INSTALLED TO GRADE PRIOR TO LAYING PIPE. EXCAVATE BELL HOLES ON BEDDING AT EACH JOINT TO ASSEMBLE THE JOINT AND TO INSURE THAT THE ENTIRE LENGTH OF EACH PIPE BARREL, FITTING, AND VALVE IS SUPPORTED ON FIRM BEDDING.
 - INSTALL PVC AWWA C900 PRESSURE PIPE:
INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS EXCEPT AS MODIFIED HEREIN. CHANGES IN HORIZONTAL AND VERTICAL ALIGNMENT AND CURVED ALIGNMENTS SHOWN ON THE PLANS SHALL BE MADE BY USING FITTINGS. DEFLECTING PVC JOINTS OR BENDING PVC PIPE WILL NOT BE PERMITTED.

WHENEVER A PIPE REQUIRES CUTTING, THE WORK SHALL BE DONE IN A MANNER THAT LEAVES A SMOOTH, SQUARE END. CUT PVC PIPE ENDS SHALL HAVE BURRS REMOVED AND THE END BEVELED TO MATCH FACTORY BEVEL. TO ENSURE THE PROPER LENGTH OF INSERTION OF THE SPIGOT INTO THE BELL, PVC PIPE CUT IN THE FIELD SHALL BE BEVELED AND MARKED ON THE SPIGOT END TO THE DIMENSIONS SPECIFIED BY THE MANUFACTURER PRIOR TO ASSEMBLY.

PRIOR TO MAKING GASKETED JOINTS, BOTH MATING PIPE ENDS AND THE GASKET SHALL BE CLEANED OF ALL FOREIGN MATERIAL. THE RUBBER GASKET SHALL THEN BE INSERTED IN OR STRETCHED OVER THE CLEAN GASKET SEAT AND LUBRICANT APPLIED TO THE GASKET AND MAKING PIPE END. THE METHOD FOR INSERTING THE SPIGOT INTO THE BELL SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE COUNTY. THE PIPE ENDS SHALL BE CAREFULLY ALIGNED AND PUSHED TOGETHER TO MEET THE REQUIRED MANUFACTURER'S INSERTION DEPTH. INSERTION OF THE SPIGOT END OF THE PIPE SHALL BE MADE TO A POINT WHERE THE FACTORY MARK IS EVEN WITH THE FACE OF THE BELL.

TRACER WIRES:
INSTALL TRACER WIRES WITH THE PIPE. TAPE WIRE TO THE TOP OF THE PIPE WITH MINIMUM 2-INCH WIDE 1/4-PIPE-CIRCUMFERENCE LONG PVC TAPE EVERY 4 FEET ALONG THE PIPE. THE COPPER WIRE SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE PIPELINE INCLUDING ALL FIRE HYDRANT LEADS AND SHALL TERMINATE AT CONTINUITY TEST STATIONS. CONTINUITY TEST STATIONS SHALL BE LOCATED ADJACENT TO ALL FIRE HYDRANTS. ALL SPLICING SHALL BE DONE AT TEST STATION, NO DIRECT BURY SPLICING SHALL BE ALLOWED.

CONNECTIONS TO CONTINUITY TEST STATIONS SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THE PLANS.

AFTER BACKFILLING, THE CONTRACTOR SHALL TEST THE TRACER WIRE IN THE PRESENCE OF THE COUNTY TO DEMONSTRATE ELECTRICAL CONTINUITY BETWEEN TEST STATIONS THROUGH THE LENGTH OF THE PVC PIPELINE INSTALLED. THE CONTRACTOR SHALL NOTIFY THE COUNTY 48 HOURS IN ADVANCE OF THE TESTS. ANY DISCONTINUITY SHALL BE LOCATED, REPAIRED, AND RETESTED AT THE CONTRACTOR'S EXPENSE UNTIL CONTINUITY IS ACHIEVED.

BACKFILL:
BACKFILL OVER THE PVC PIPE IN ACCORDANCE WITH THE STANDARD DETAIL G2.01 AND THE DETAIL SHOWN ON THE PLANS FOR TRENCH FOR PVC PIPE USING WELL-COMPACTED AASHTO M43, SIZE NUMBER 57 AGGREGATE TO MINIMUM OF 6 INCHES OVER THE CROWN OF THE PIPE. TRENCH BACKFILL SHALL PROCEED THEREAFTER IN 8-INCH LAYERS. CONTRACTOR SHALL PROVIDE FULL TRENCH COMPACTION DENSITY OF 95% AS DETERMINED BY AASHTO T-180-A.

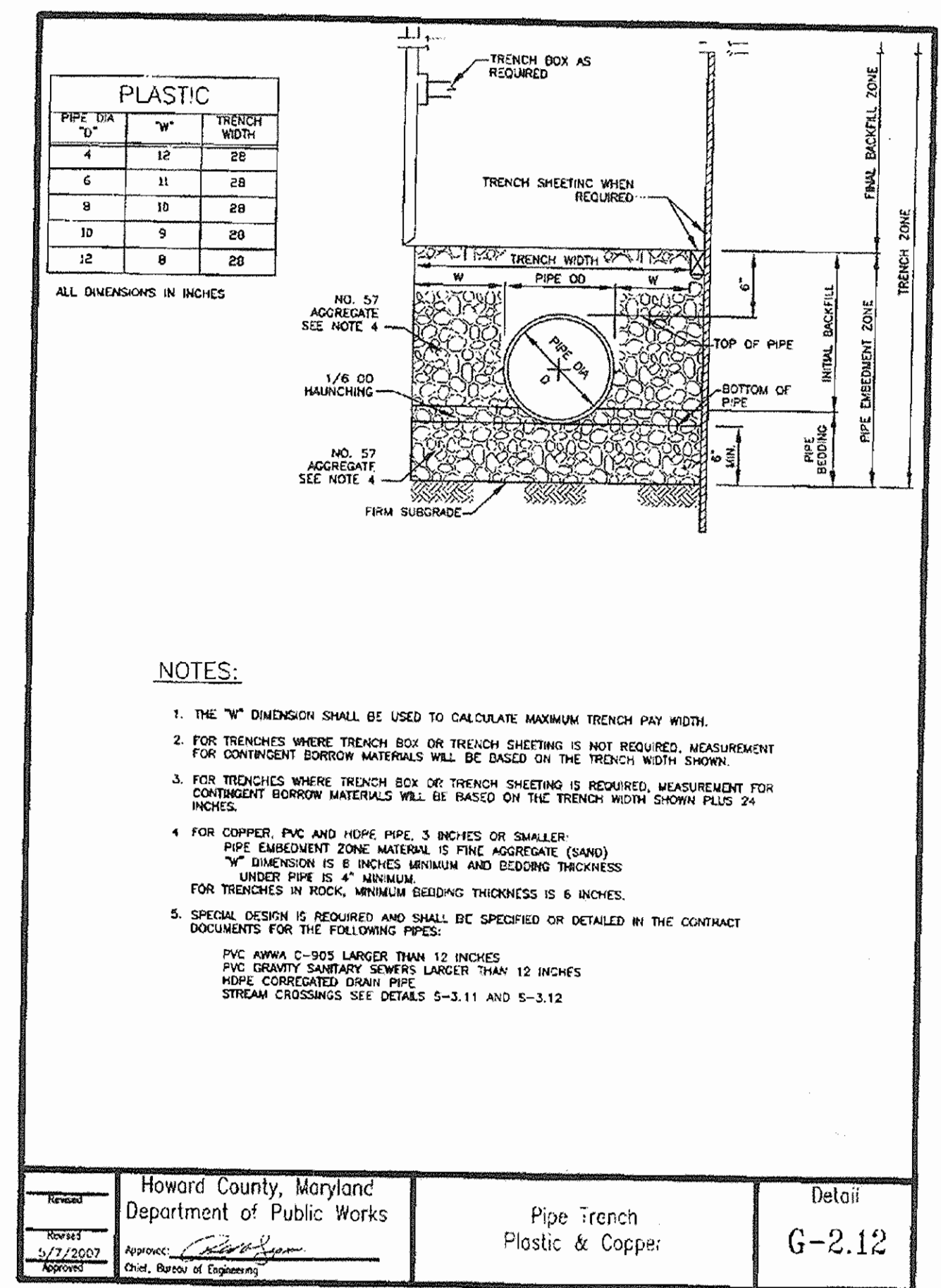
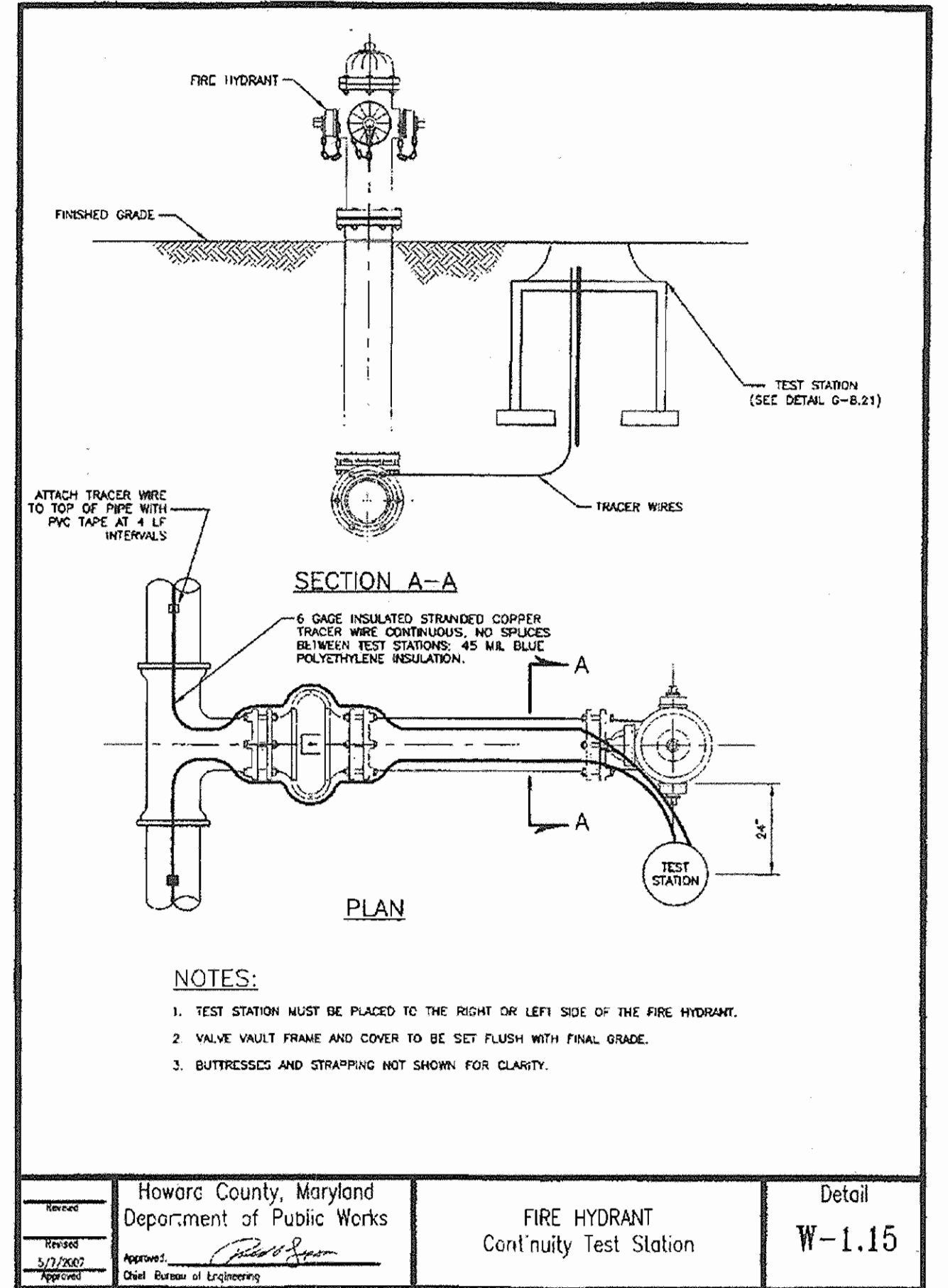
DETECTION TAPE:
INSTALL DETECTION TAPE DIRECTLY OVER THE CENTERLINE OF THE WATER MAIN SON COMPACTED BACKFILL NOT LESS THAN 18 INCHES OR MORE THAN 24 INCHES BELOW FINISHED SURFACE. TAPE SHALL BE INSTALLED WITH MINIMAL SPLICES. SPLICES SHALL OVERLAP A MINIMUM OF 6 INCHES.

- JOINTS:
 - MECHANICAL JOINTS:
FOR PVC PLAIN-END TO BE CONNECTED TO DUCTILE MECHANICAL JOINT BELL, ASSEMBLE THE JOINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AS MODIFIED IN AWWA C605, THE PIPE MANUFACTURER'S RECOMMENDATIONS AND AS SPECIFIED HEREIN. FOR PVC PIPE PLAIN ENDS TO BE INSERTED INTO MECHANICAL JOINT BELLS, CUT OFF THE BEVEL SO THE PLAIN-END IS SQUARE CUT. DO NOT DEFLECT PVC PIPE AT CONNECTION TO CAST OR DUCTILE IRON PIPE OR FITTINGS.
 - PUSH-ON JOINTS:
FOR PVC PLAIN ENDS TO BE INSERTED IN DUCTILE IRON OR CAST IRON PUSH-ON BELL, THE SPIGOT TAPER SHALL BE CUT TO 1/4-INCH LONG. PLACE AN IDENTIFYING MARK ON THE PIPE THAT IS NOT FINISHED WITH THE DEPTH MARK ON THE PLAIN END TO SHOW THE DEPTH OF THE SOCKET AND TO VERIFY THAT PIPE IS PROPERLY SET IN THE BELL. ASSEMBLY OF THE PLAIN END INTO THE BELL SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. INSTALL PUSH-ON RESTRAINED JOINT IN ACCORDANCE WITH AWWA C600 AND C605, THE MANUFACTURER'S RECOMMENDATIONS, AS SPECIFIED HEREIN.

DO NOT DEFLECT PVC PIPE AT CONNECTION TO CAST OR DUCTILE IRON PIPE OR FITTINGS. THE CONTRACTOR SHALL ACHIEVE CHANGE IN ALIGNMENT AS INDICATED ELSEWHERE HEREIN. ASSEMBLY OF THE PLAIN END INTO THE BELL SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. INSTALL PUSH-ON RESTRAINED JOINT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

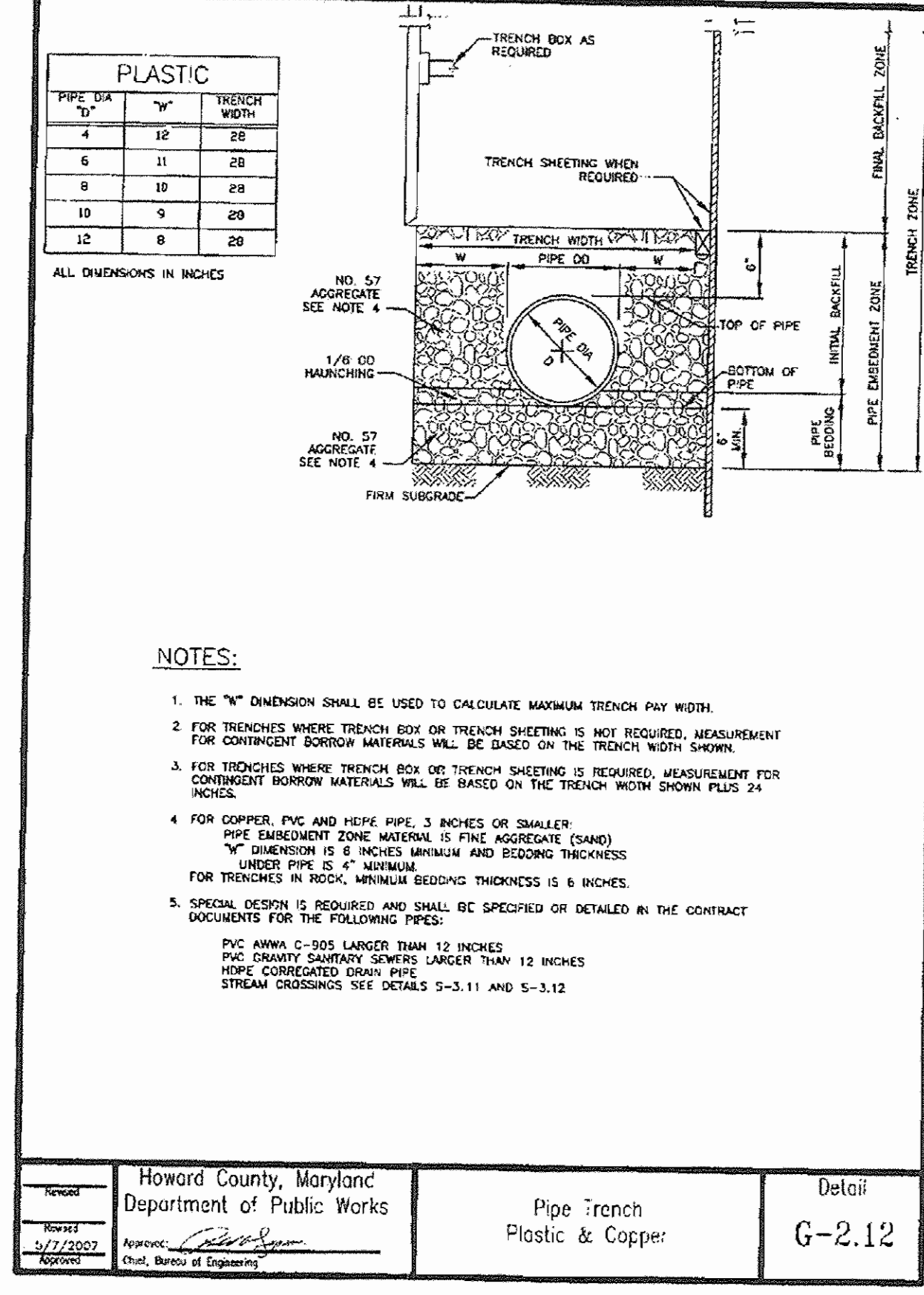
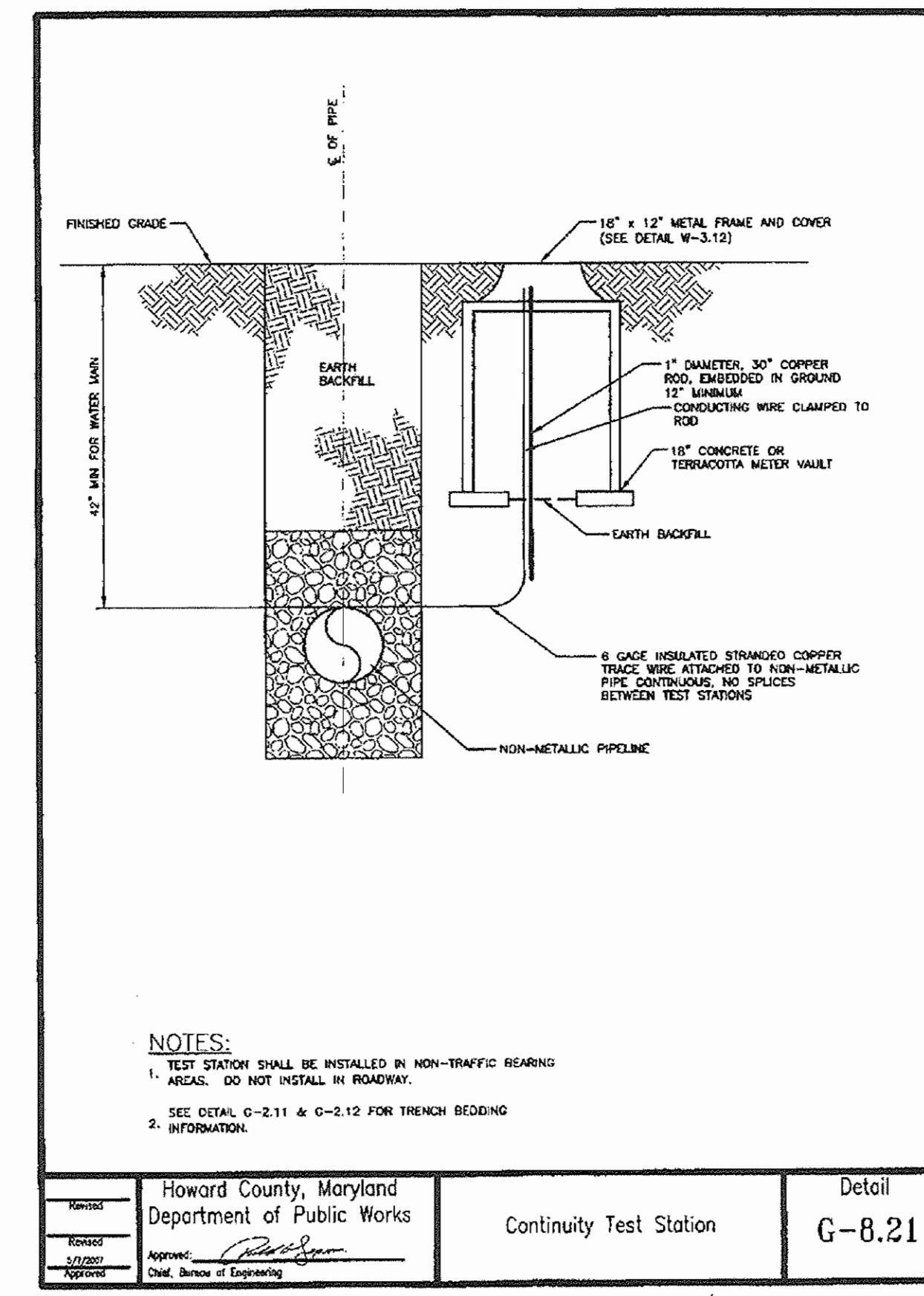
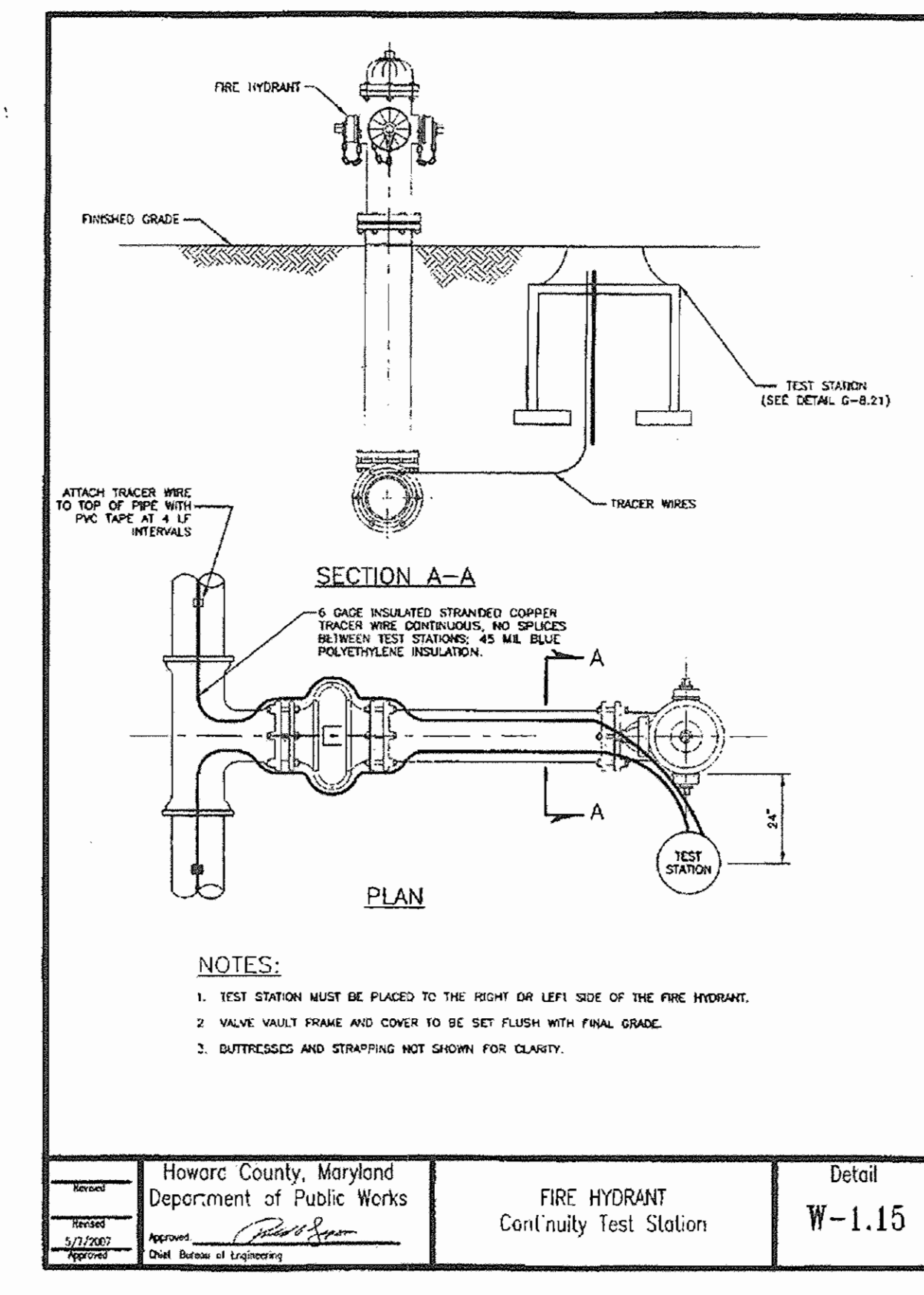
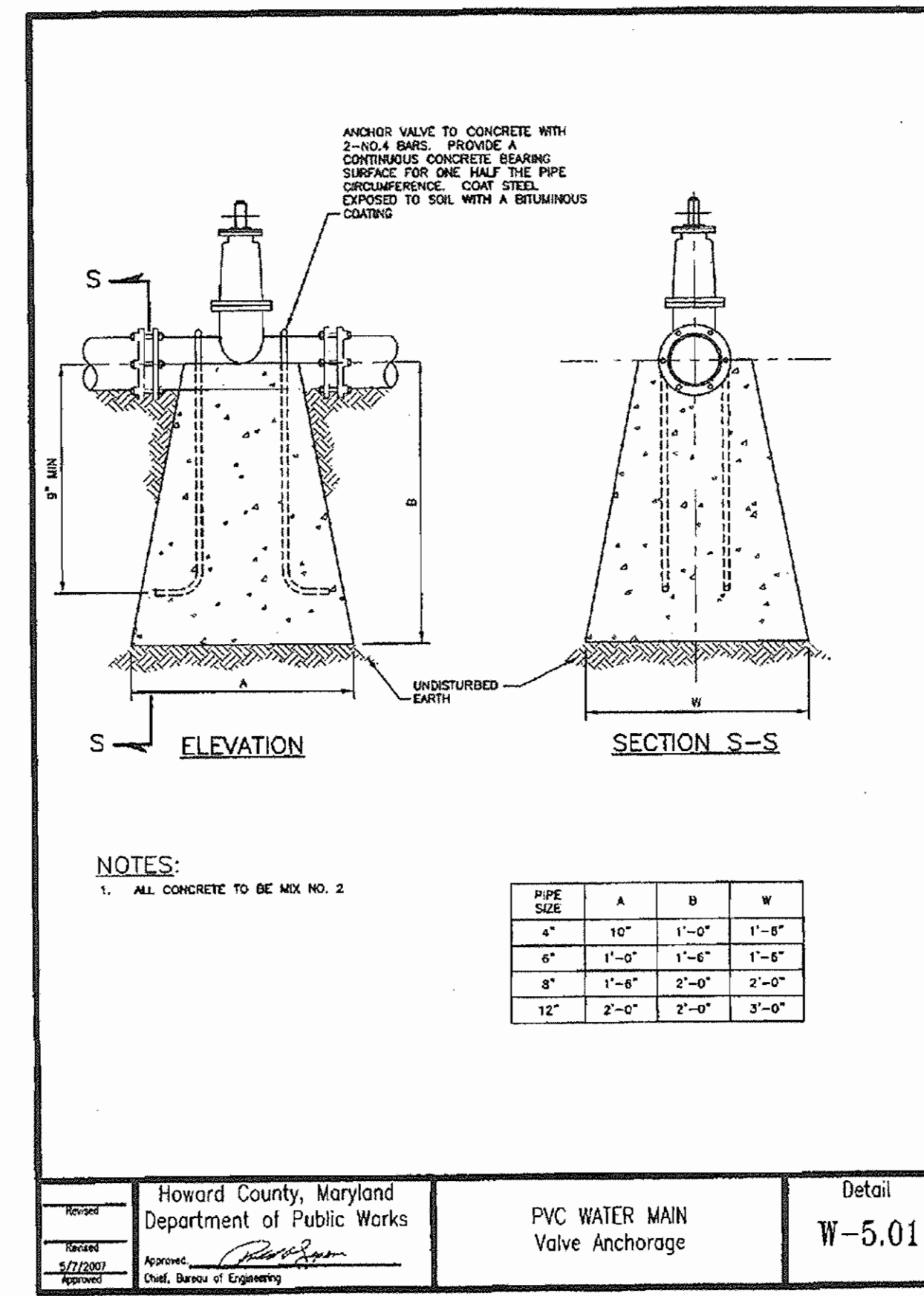
RESTRAINED JOINT:
IN A RESTRAINED JOINT, PVC PIPE SHALL NOT BE DEFLECTED. IF DEFLECTION IS REQUIRED IN A RESTRAINED JOINT, USE RESTRAINED DUCTILE IRON PIPE.

- WHERE THE CONTRACTOR CHOOSES TO USE PVC FITTINGS, THE PRESSURE CLASS OF THE FITTING SHALL BE THE SAME AS, OR GREATER THAN, THE PRESSURE CLASS OF THE PIPE TO WHICH IT CONNECTS. IF THE PRESSURE CLASS IS NOT AVAILABLE, THE CONTRACTOR SHALL USE A DUCTILE IRON FITTING. WHERE A FITTING WITH RESTRAINED JOINTS IS REQUIRED, A DUCTILE IRON MECHANICAL JOINT SHALL BE USED.
- FIRE HYDRANT LEAD, INCLUDING MAINLINE TEE, SHALL BE DUCTILE IRON ONLY.
- CONNECTIONS TO PVC FOR WATER HOUSE CONNECTIONS:
 - PERFORM TAPS ON PVC PIPE IN ACCORDANCE WITH AWWA C605, THE PIPE MANUFACTURER'S RECOMMENDATIONS, AND AS INDICATED HEREIN.
 - INSTALL A SERVICE SADDLE WHEN TAPPING A PVC WATER MAIN. MAINTAIN A MINIMUM OF 24 INCHES BETWEEN TAPS AND PVC PIPE BELLS.
 - FOR PVC WATER PIPE, USE ONLY CUTTING/TAPPING TOOLS AND MACHINES MADE SPECIFICALLY FOR CUTTING AWWA C900 PIPE AND AS DESCRIBED IN AWWA C605. THE CUTTING/TAPPING MACHINE SHALL BE INSTALLED SO THAT IT DOES NOT DISTORT THE PIPE. WHEN TAPPING PVC PIPE, FOLLOW THE MANUFACTURER'S SAFETY PRECAUTIONS AND THE SAFETY PRECAUTIONS CITED IN AWWA C605.
 - MULTIPLE TAPS IN A SINGLE PIPE SHALL BE STAGGERED AROUND THE PIPE CIRCUMFERENCE SO THEY ARE NOT ON A COMMON LINE PARALLEL TO THE LONGITUDINAL AXIS OF THE PIPE AND BE AT LEAST 18 INCHES APART WHEN MEASURED LONGITUDINALLY.



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. 33954, EXPIRATION DATE: 01-24-09.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND [Signature] 4/15/08 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND [Signature] 4/15/08 CHIEF, DEVELOPMENT ENGINEERING DIVISION	Patton Harris Rust & Associates, PC Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	DES: HS DRN: HS CHK: SCM DATE: 03/12/08 BY: NO. REVISION DATE: 600' SCALE MAP NO. 47 BLOCK NO. 17	NOTES AND DETAILS	SAVAGE MILL HOTELS TAX MAP 47 PARCEL 93 ZONING: B2 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 24-4499-D	SCALE NTS SHEET 4 OF 9
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"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33954, EXPIRATION DATE: 01-24-09."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
PHRA
8818 Centre Park Drive
Columbia, MD 21045
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F 410.997.9282

Sherryl C. Mitchell
CHIEF, BUREAU OF UTILITIES
DATE 4/26/09

Sherryl C. Mitchell
CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE 4/26/09

DES: HS
DRN: HS
CHK: SCM
DATE: 03/12/09
BY NO. REVISION DATE

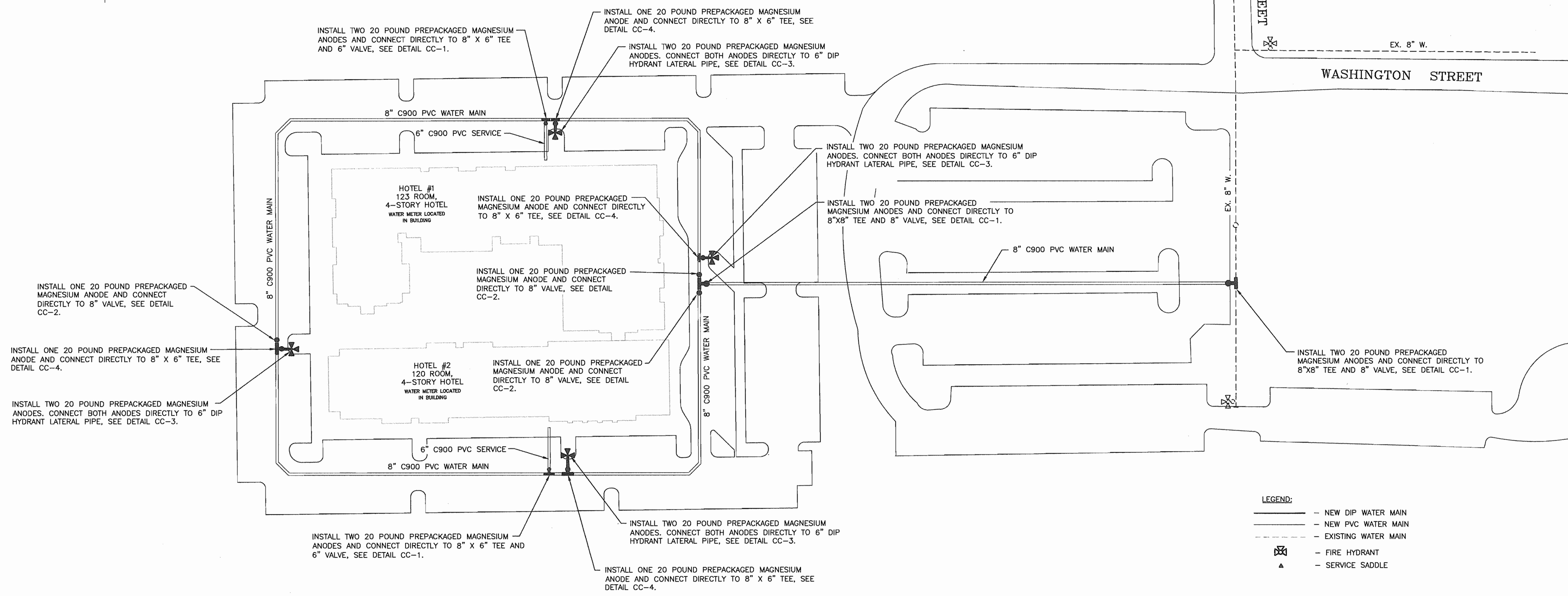
SHERRYL C. MITCHELL # 33954

DETAILS

600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS
TAX MAP 47 PARCEL 93 ZONING: B2
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4499-D

SCALE
NTS
SHEET
5 OF 9



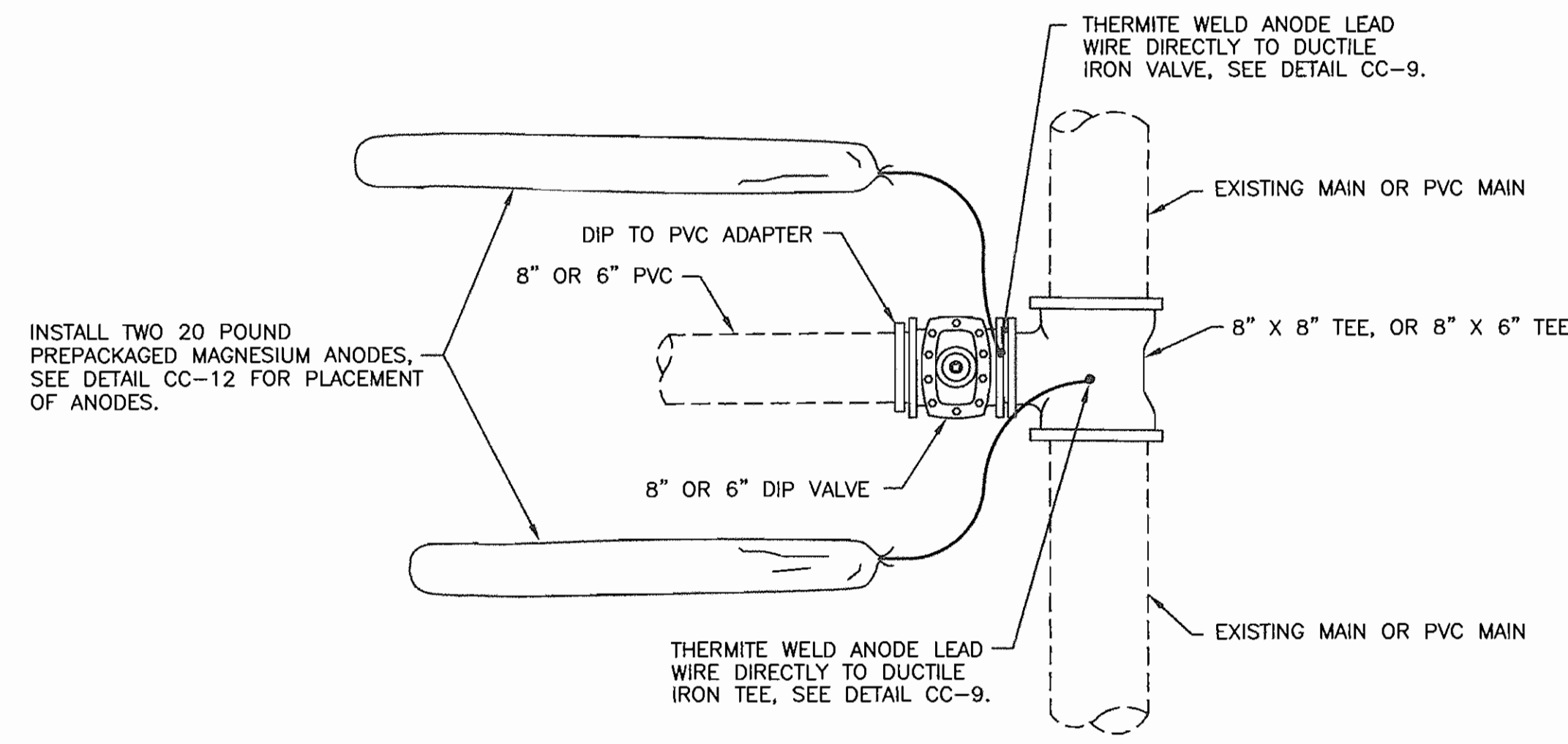
CORROSION CONTROL LAYOUT

SCALE: NONE

- NOTES:**
1. ALL NEW DUCTILE IRON TEES AND DUCTILE IRON ELBOWS ALONG THE PVC WATER MAINS SHALL BE PROVIDED WITH CORROSION PROTECTION (ALL DUCTILE IRON TEES AND ELBOWS MAY NOT BE SHOWN ON THIS DRAWING). SEE DETAIL CC-4.
 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-6. RESTRAINED JOINT PIPE NOT SHOWN ON THIS DRAWING.
 3. ALL WATER SERVICE AND DRAIN LINE CONNECTIONS UTILIZING METALLIC SERVICE SADDLES SHALL HAVE ONE 12 POUND PREPACKAGED ZINC ANODE CONNECTED TO THE SERVICE SADDLE (SEE DETAIL CC-7), AND AN INSULATING CORPORATION VALVE INSTALLED TO ELECTRICALLY ISOLATE THE COPPER SERVICE AND/OR METALLIC DRAIN LINE FROM THE SERVICE SADDLE (SEE DETAIL CC-10). ALL WATER SERVICES AND DRAIN LINES MAY NOT BE SHOWN ON THIS DRAWING.
 4. ALL IN-LINE THRUST BLOCKS ALONG THE PVC WATER MAINS SHALL BE PROVIDED WITH CORROSION PROTECTION (IN-LINE THRUST BLOCKS NOT SHOWN ON THIS DRAWING). SEE DETAIL CC-5.
 5. DO NOT THERMITE WELD TO PVC PIPE.

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROTECTIVE FOR OTHER PRODUCTS DUE TO VARIATIONS IN CONDITIONS AT OTHER SITES. NEITHER THIS DESIGN NOR ANY PART THEREOF MAY BE REPRODUCED IN ANY WAY FOR OTHER PRODUCTS OR PROJECTS WITHOUT THE WRITTEN CONSENT OF RUSSELL CORROSION CONSULTANTS, INC.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <small>CHIEF, BUREAU OF UTILITIES</small>	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <small>CHIEF, DEVELOPMENT ENGINEERING DIVISION</small>	Patton Harris Rust & Associates, PC <small>Engineers, Surveyors, Planners, Landscape Architects.</small> 8818 Center Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 Columbia, Maryland	 DES: MJS DRN: DJD CHK: MJS DATE: 3/08	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>BY</th> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	BY	NO.	REVISION	DATE					8" WATER MAIN CORROSION CONTROL LAYOUT	SAVAGE MILL HOTELS TAX MAP 47 PARCEL 93 ZONING: B2 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 24-4499-D	SCALE SHEET 6 OF 9
BY	NO.	REVISION	DATE												

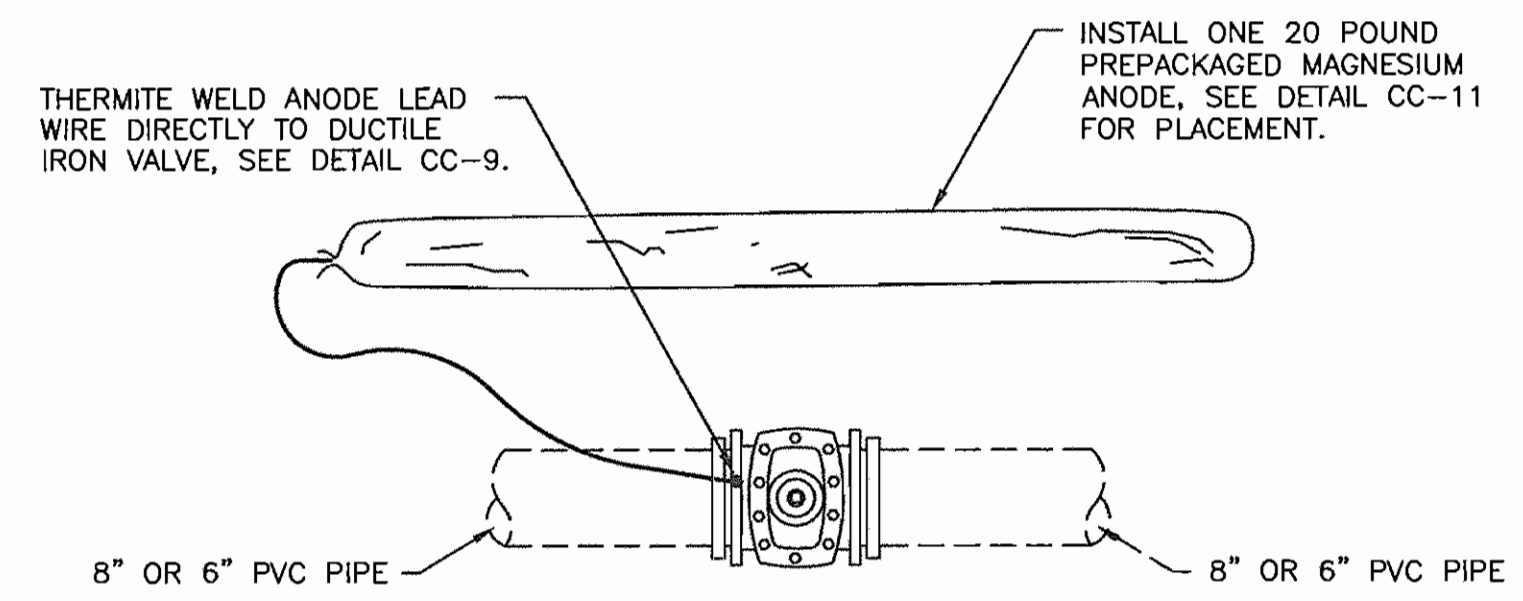


INSTALL TWO 20 POUND PREPACKAGED MAGNESIUM ANODES, SEE DETAIL CC-12 FOR PLACEMENT OF ANODES.

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-12.
2. DO NOT THERMITE WELD TO PVC PIPE.

CC-1: CORROSION PROTECTION OF DUCTILE IRON VALVE AND TEE (8" AND 6")
SCALE: NONE



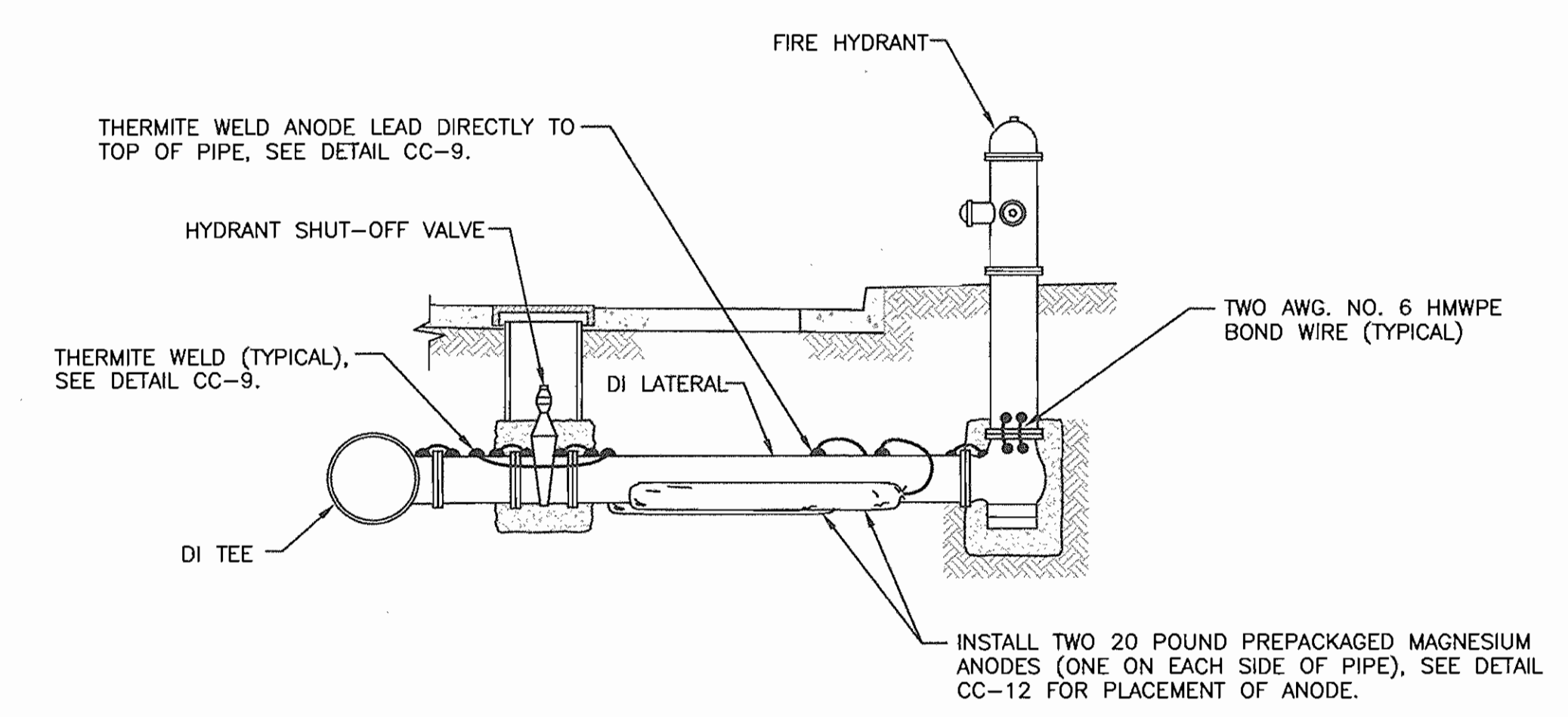
THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON VALVE, SEE DETAIL CC-9.

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-11 FOR PLACEMENT.

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-11
2. DO NOT THERMITE WELD TO PVC PIPE.

CC-2: CORROSION PROTECTION OF DUCTILE IRON VALVE (8" AND 6")
SCALE: NONE



THERMITE WELD ANODE LEAD DIRECTLY TO TOP OF PIPE, SEE DETAIL CC-9.

HYDRANT SHUT-OFF VALVE

THERMITE WELD (TYPICAL), SEE DETAIL CC-9.

DI LATERAL

DI TEE

FIRE HYDRANT

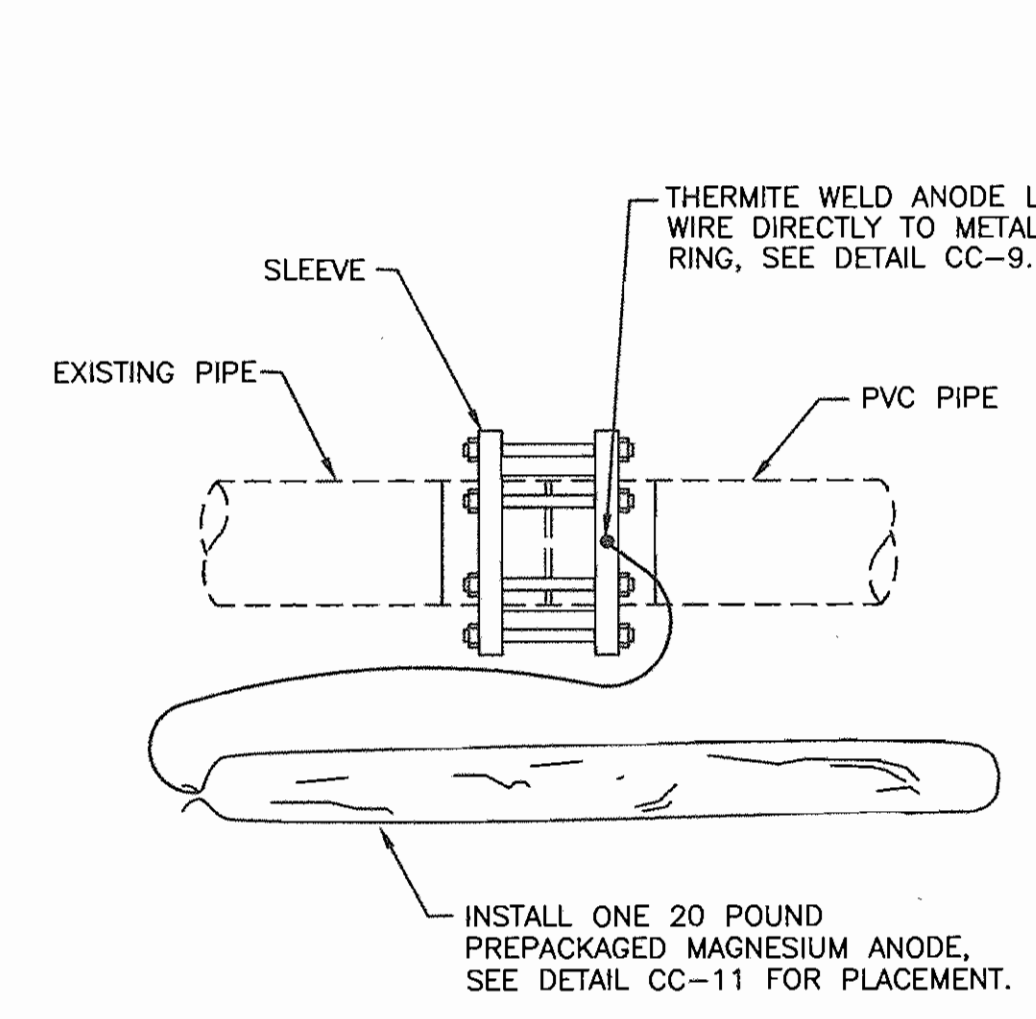
TWO AWG. NO. 6 HMWPE BOND WIRE (TYPICAL)

INSTALL TWO 20 POUND PREPACKAGED MAGNESIUM ANODES (ONE ON EACH SIDE OF PIPE), SEE DETAIL CC-12 FOR PLACEMENT OF ANODE.

NOTES:

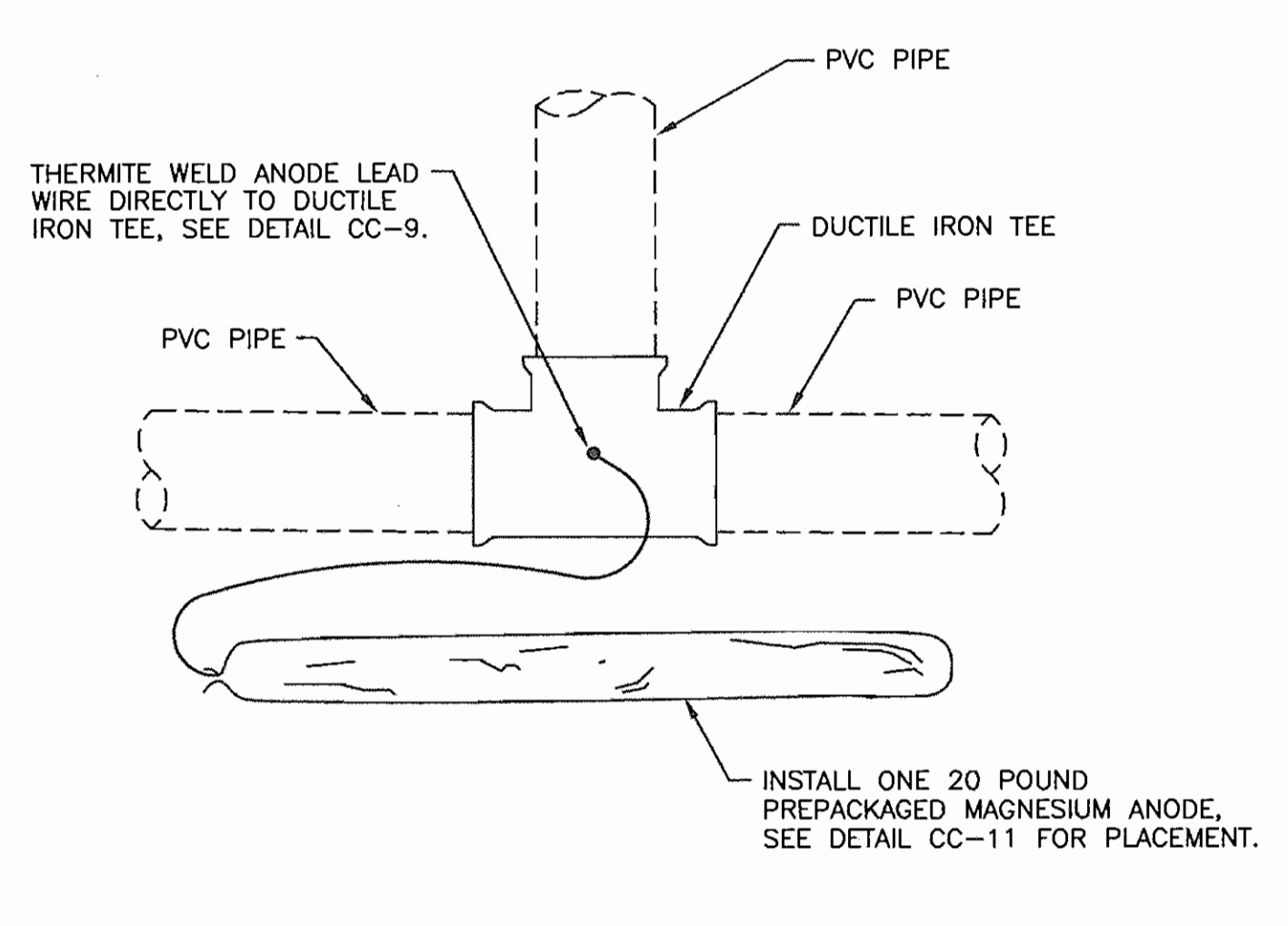
1. BOND ALL DUCTILE IRON COMPONENTS TOGETHER WITH AWG NO. 6 HMWPE WIRES, INSTALL A MINIMUM OF TWO BOND CABLES ACROSS EACH DUCTILE IRON PIPE JOINT.
2. INSTALL BOND WIRES ON TOP OF DUCTILE IRON PIPE OR DUCTILE IRON FITTING WHERE POSSIBLE.
3. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM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

CC-3: CORROSION PROTECTION OF FIRE HYDRANT AND VALVE
SCALE: NONE



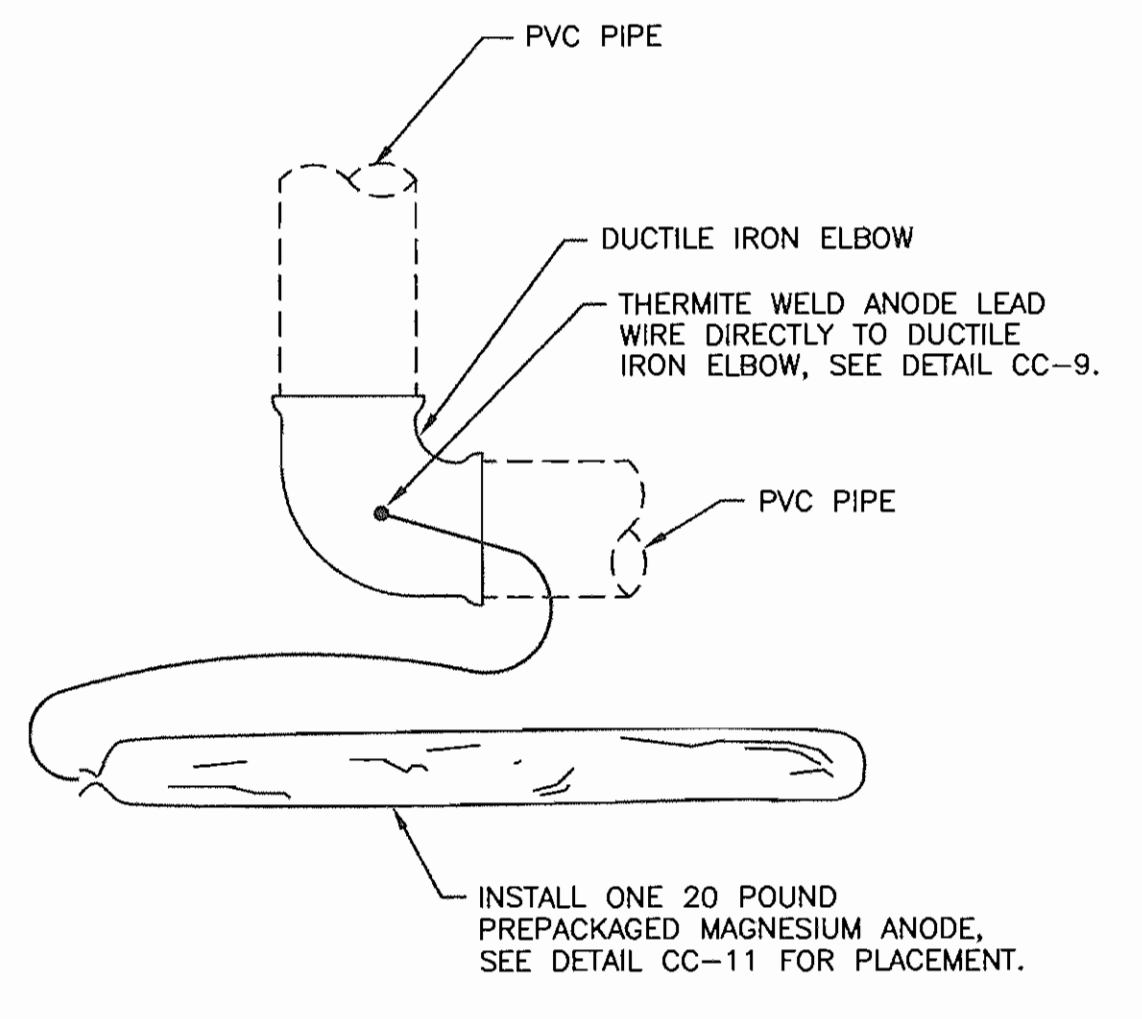
THERMITE WELD ANODE LEAD WIRE DIRECTLY TO METALLIC RING, SEE DETAIL CC-9.

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-11 FOR PLACEMENT.



THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON TEE, SEE DETAIL CC-9.

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-11 FOR PLACEMENT.



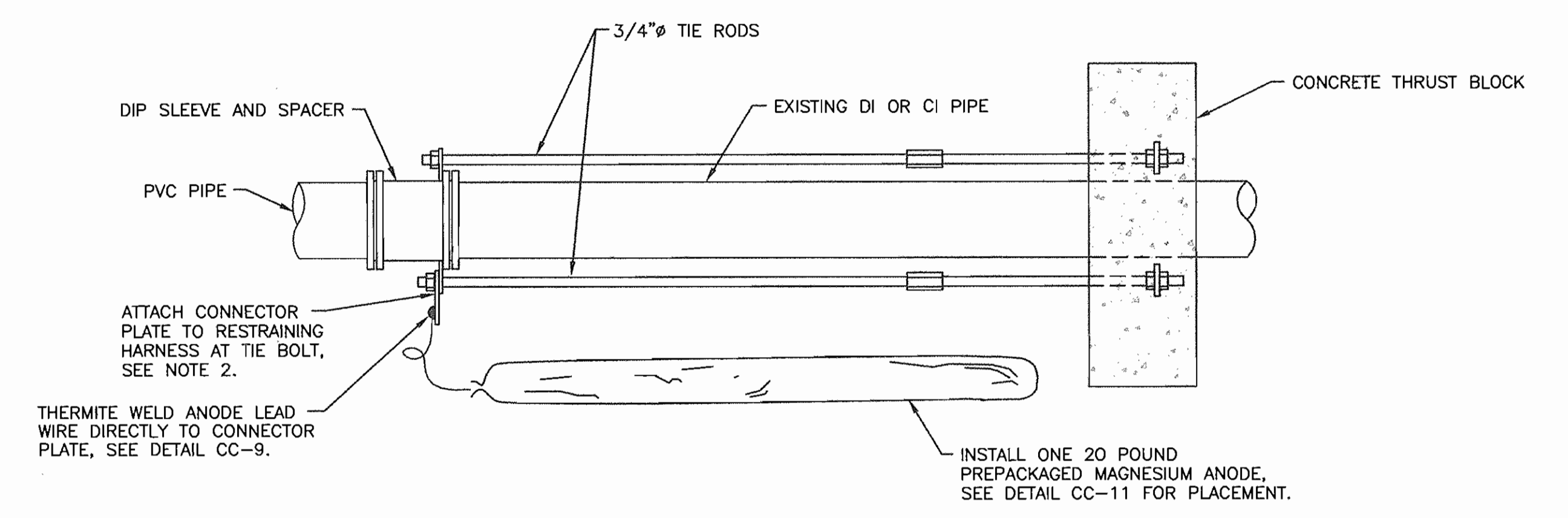
THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON ELBOW, SEE DETAIL CC-9.

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-11 FOR PLACEMENT.

NOTES:

1. ANODES REQUIRED ONLY IF TEE, SLEEVE, 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 DETAIL CC-11.
3. DO NOT THERMITE WELD TO PVC PIPE.

CC-4: CORROSION PROTECTION OF DUCTILE IRON FITTINGS
SCALE: NONE



DIP SLEEVE AND SPACER

PVC PIPE

ATTACH CONNECTOR PLATE TO RESTRAINING HARNESS AT THE BOLT, SEE NOTE 2.

THERMITE WELD ANODE LEAD WIRE DIRECTLY TO CONNECTOR PLATE, SEE DETAIL CC-9.

3/4" TIE RODS

EXISTING DI OR CI PIPE

CONCRETE THRUST BLOCK

INSTALL ONE 20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CC-11 FOR PLACEMENT.

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-11.
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.

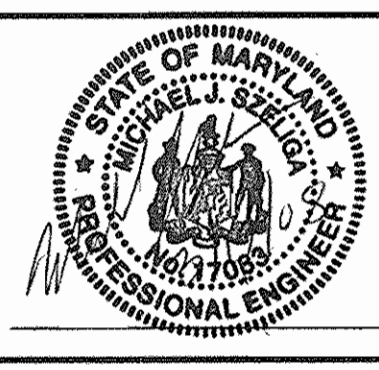
CC-5: CORROSION PROTECTION AT IN-LINE THRUST BLOCK
SCALE: NONE

THIS DRAWING IS NOT APPLICABLE FOR USE AS STANDARD CORROSION CONTROL PROCEDURES FOR OTHER PRODUCTS DUE TO VARIATIONS IN MATERIALS. CONSULT WITH DESIGNER FOR ANY CHANGES THAT MAY BE NECESSARY TO ANY WAY FOR OTHER PRODUCTS OR MODIFIED IN ANY WAY FOR THIS OR OTHER PRODUCTS, EXCEPT BY WRITTEN AGREEMENT WITH RUSSELL CORROSION CONSULTANTS, INC.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Stalin C. Coen</i> CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>William J. ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION
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 Columbia, MD 21045
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 F 410.997.9282

RUSSELL CORROSION CONSULTANTS, INC.
 Columbia, Maryland



DES:	MJS			
DRN:	DJD			
CHK:	MJS			
DATE:	3/08			
BY:		NO.	REVISION	DATE

CORROSION CONTROL DETAILS 1

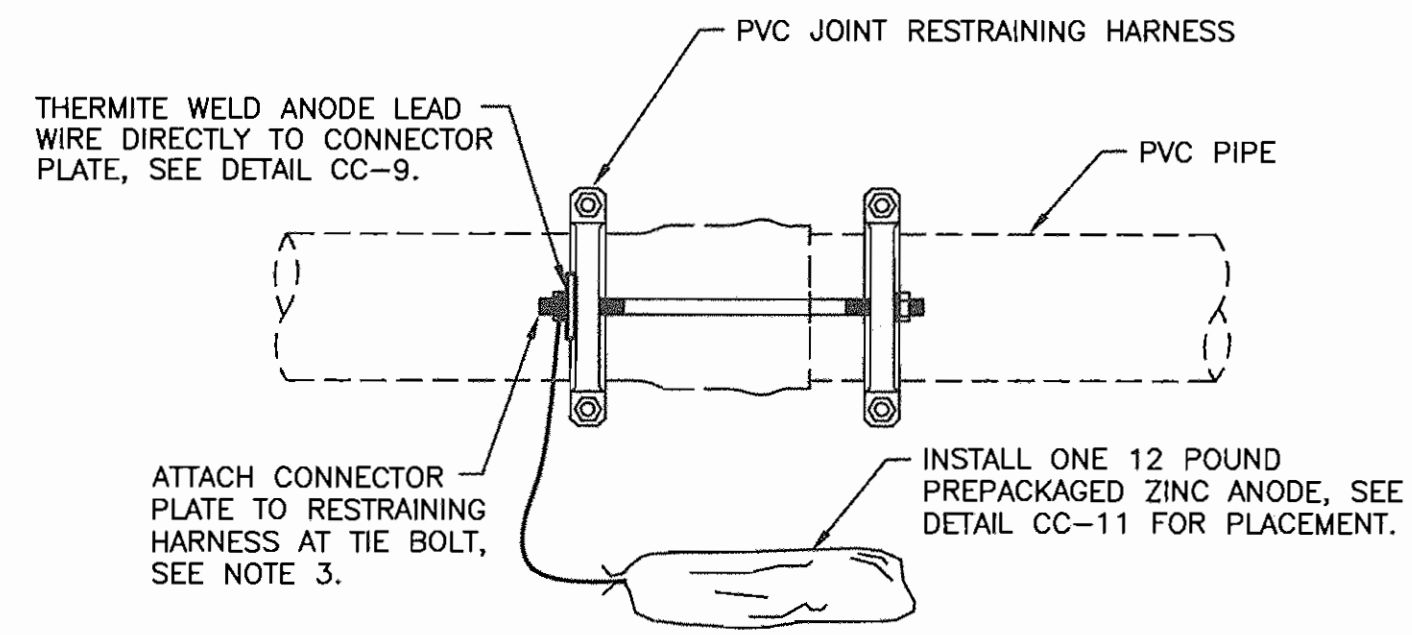
600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS

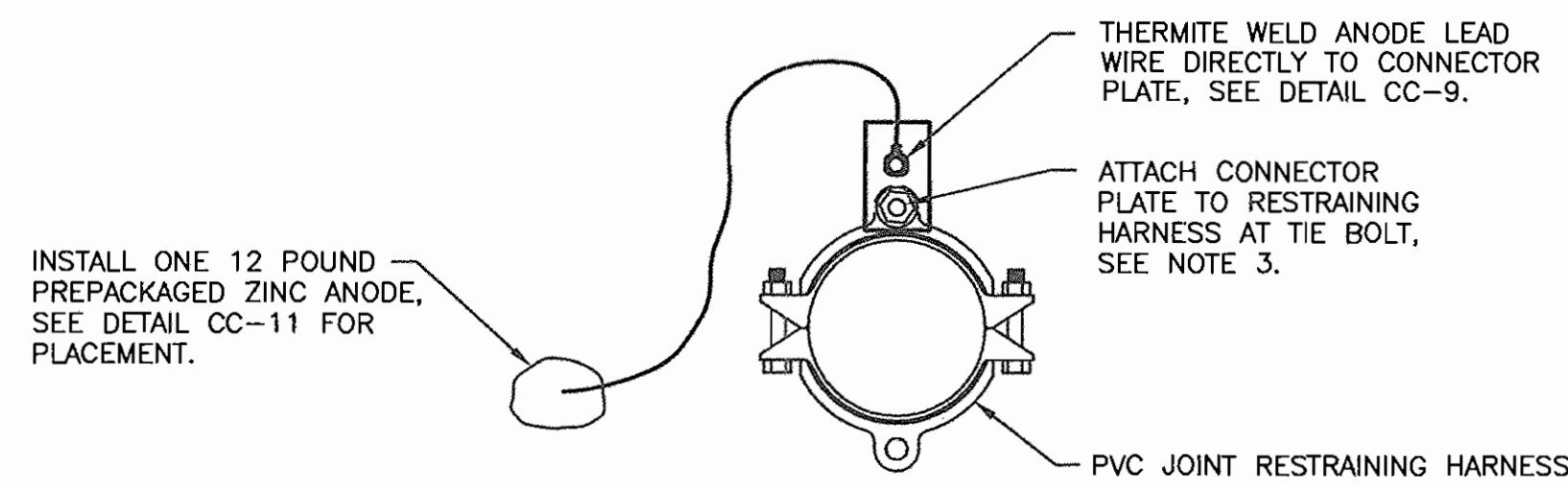
TAX MAP 47 PARCEL 93 ZONING: B2
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 24-4499-D

SCALE

SHEET 7 OF 9



PLAN VIEW



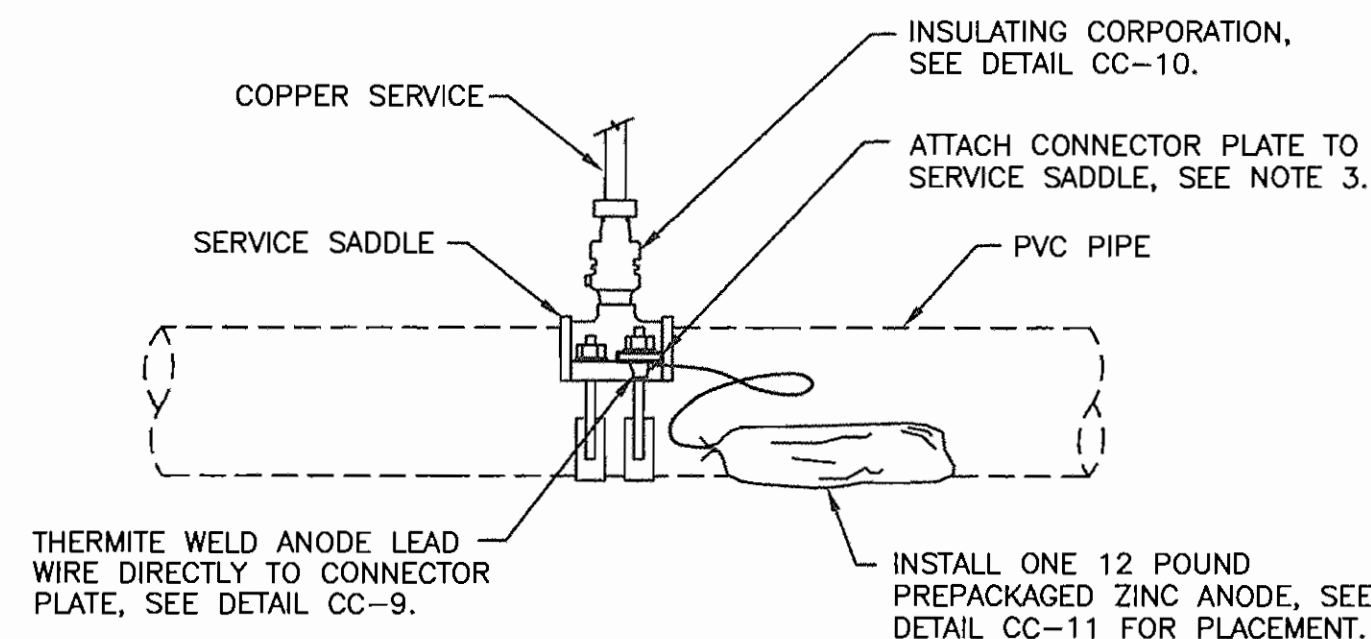
SECTION VIEW

NOTES:

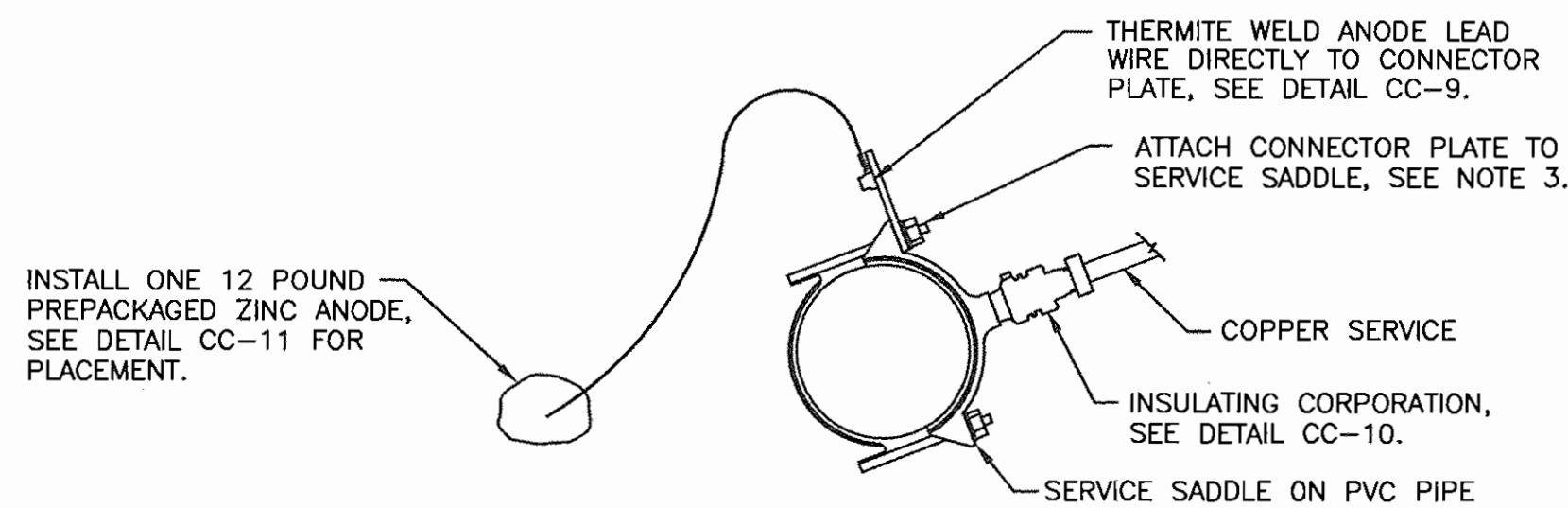
- CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS.
- ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
- REMOVE COATING FROM RESTRAINING HARNESS WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
- DO NOT THERMITE WELD TO PVC PIPE.

CC-6: CORROSION PROTECTION OF RESTRAINING HARNESS

SCALE: NONE



PLAN VIEW



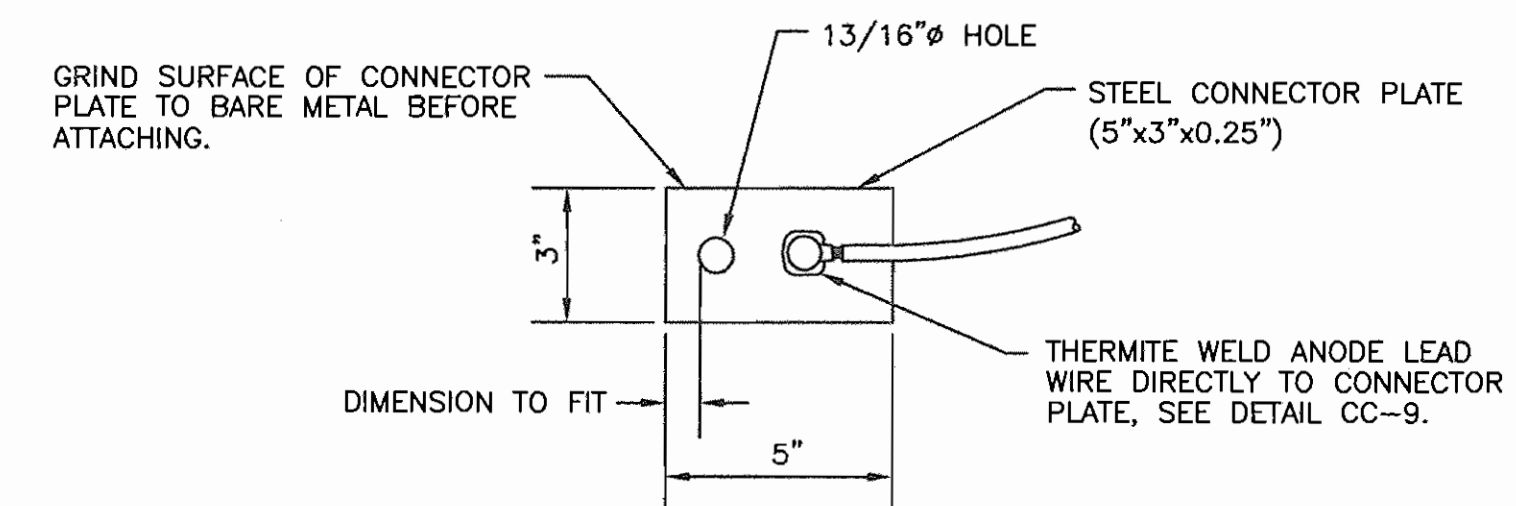
SECTION VIEW

NOTES:

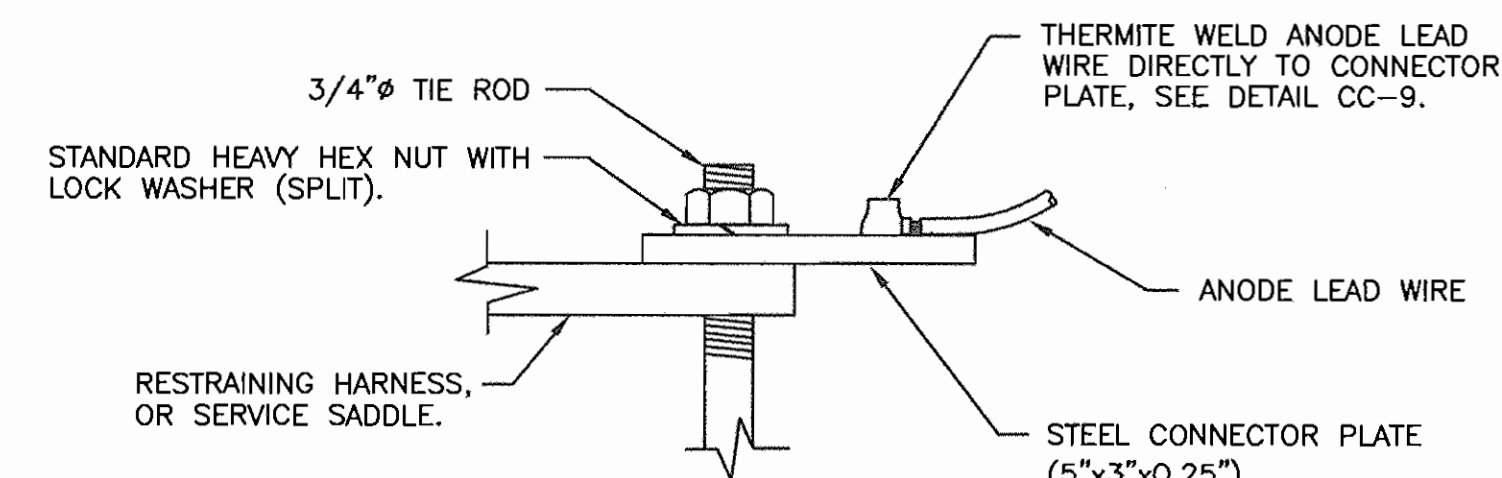
- CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO SERVICE SADDLE.
- ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE DETAIL CC-11.
- REMOVE COATING FROM SERVICE SADDLE WHERE CONNECTOR PLATE IS TO BE MOUNTED. REMOVE COATING IMMEDIATELY PRIOR TO ATTACHING THE CONNECTOR PLATE.
- DO NOT THERMITE WELD TO PVC PIPE.

CC-7: CORROSION PROTECTION OF SERVICE SADDLE

SCALE: NONE



PLAN VIEW



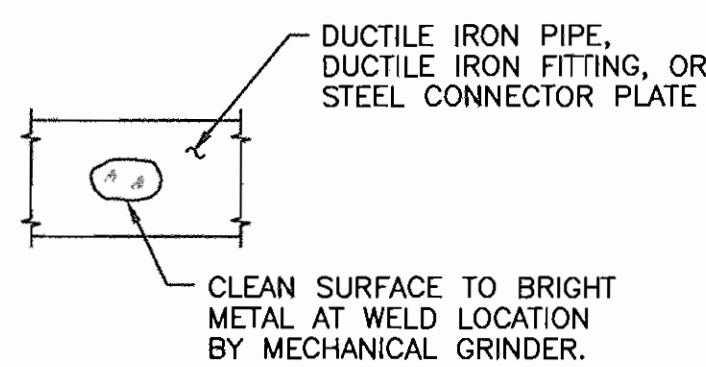
SIDE VIEW

NOTES:

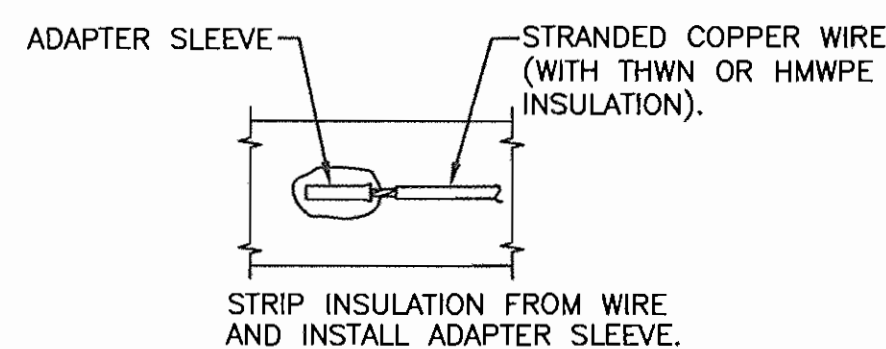
- CONNECTOR PLATE TO BE THERMITE WELDED TO ANODE LEAD WIRE PRIOR TO ATTACHING CONNECTOR PLATE TO RESTRAINING HARNESS, OR SERVICE SADDLE.
- THERMITE WELDS SHALL BE COATED WITH A PREFABRICATED ONE PIECE PLASTIC CAP FILLED WITH ELASTOMERIC MATERIAL, ROYSTON HANDY-CAP OR APPROVED EQUAL.

CC-8: CONNECTION PLATE DETAIL

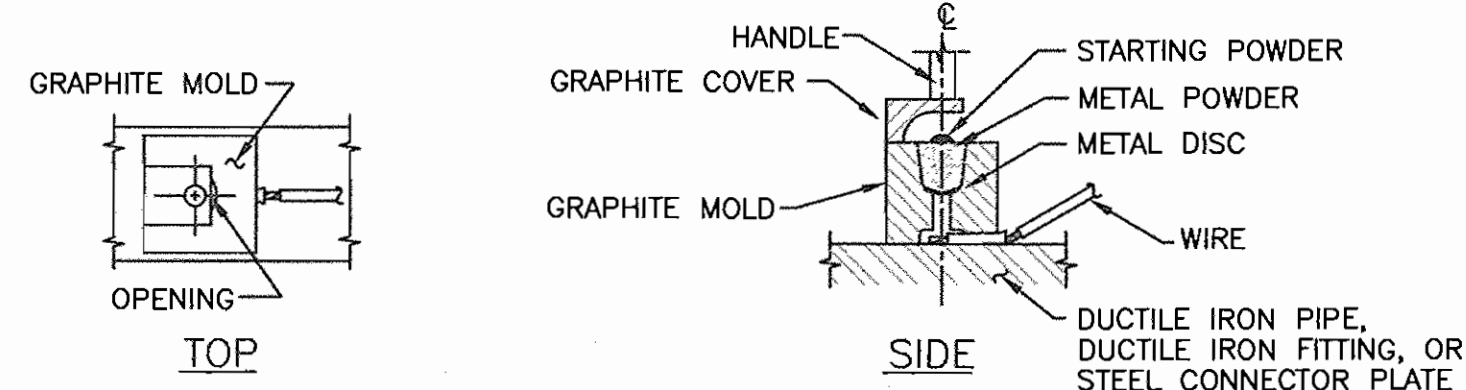
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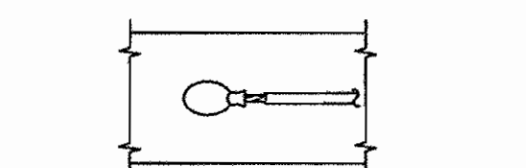
STEP 1



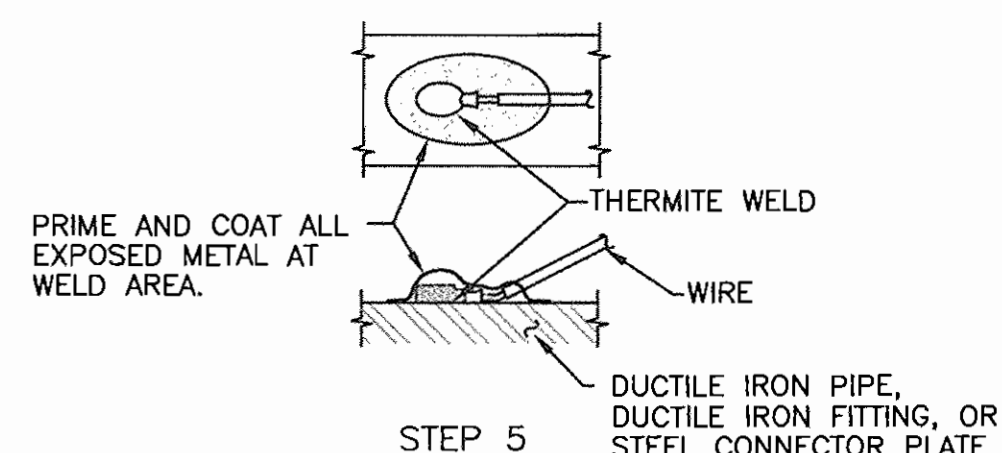
STEP 2



STEP 3



STEP 4



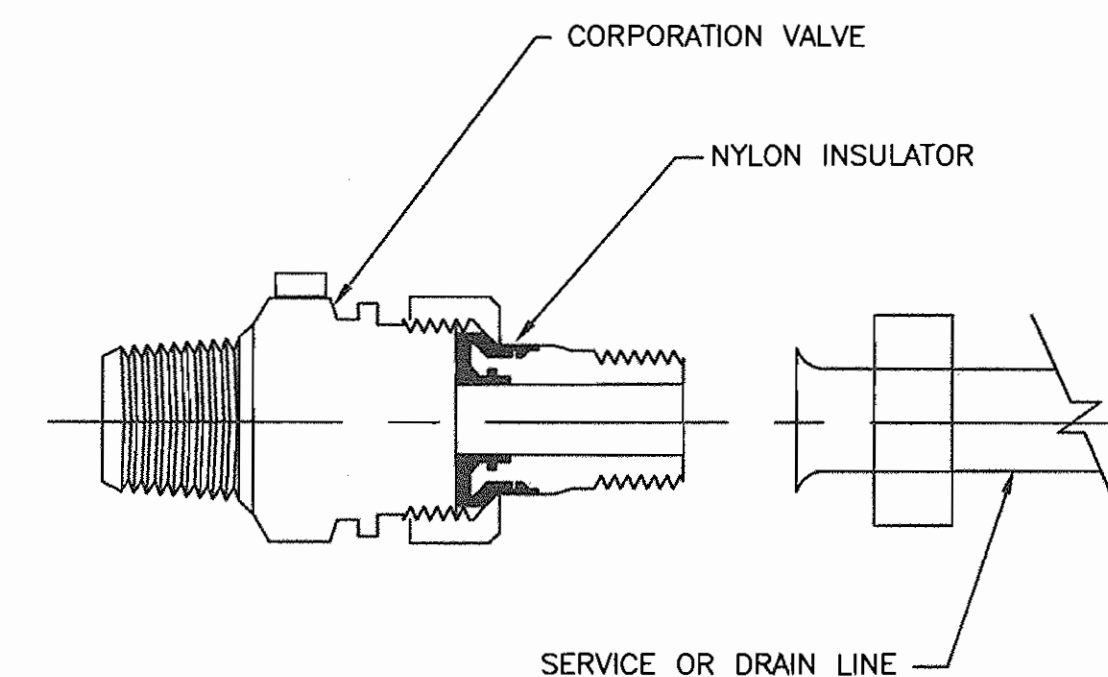
STEP 5

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-9: TYPICAL THERMITE WELD

SCALE: NONE



NOTES:

- INSTALL ELECTRICAL ISOLATION ON ALL METALLIC WATER SERVICE AND DRAIN LINE CONNECTIONS TO MAIN.
- COAT EXTERIOR OF CORPORATION VALVE, AND METALLIC SERVICE PIPING AND/OR DRAIN LINE FOR A DISTANCE OF 12 INCHES WITH MASTIC COATING (ROYSTON ROSKOTE R2B). MASTIC COATING TO BE MINIMUM OF 20 MILS IN THICKNESS.
- INSULATED CORPORATION NOT REQUIRED FOR PLASTIC SERVICES.

CC-10: INSULATING CORPORATION

SCALE: NONE

THIS DRAWING IS NOT APPLICABLE TO THE USE OF CHANGING CONNECTIONS FOR OTHER PRODUCTS. SEE THE MANUFACTURER'S INSTRUCTIONS FOR ALL PARTS. THESE PARTS ARE NOT TO BE USED IN ANY OTHER PROJECTS OR MODIFIED IN ANY WAY FOR THIS OR OTHER PROJECTS, EXCEPT BY WRITTEN AGREEMENT WITH RUSSELL CORROSION CONTROL SYSTEMS, INC.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

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F 410.997.9282

RUSSELL CORROSION CONTROL SYSTEMS, INC.
Columbia, Maryland



DES: MJS

DRN: DJD

CHK: MJS

DATE: 3/08

BY NO. REVISION DATE

CORROSION CONTROL DETAILS 2

600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS

TAX MAP 47 PARCEL 93 ZONING: B2
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4499-D

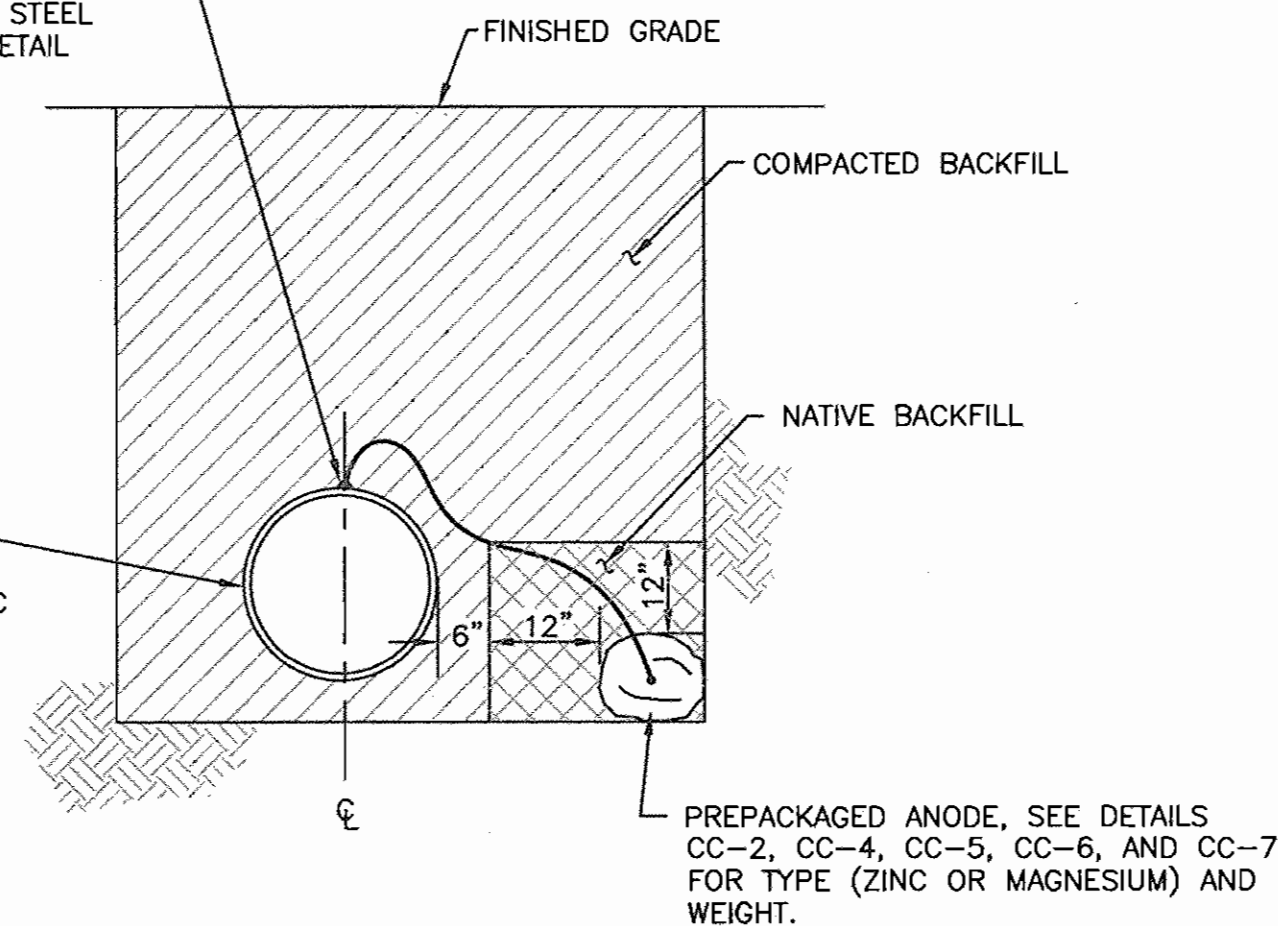
SCALE

SHEET 8 OF 9

Shirley C. Coan
CHIEF, BUREAU OF UTILITIES
DATE 4/2/08

Chief Development Engineering Division
DATE 4/2/08

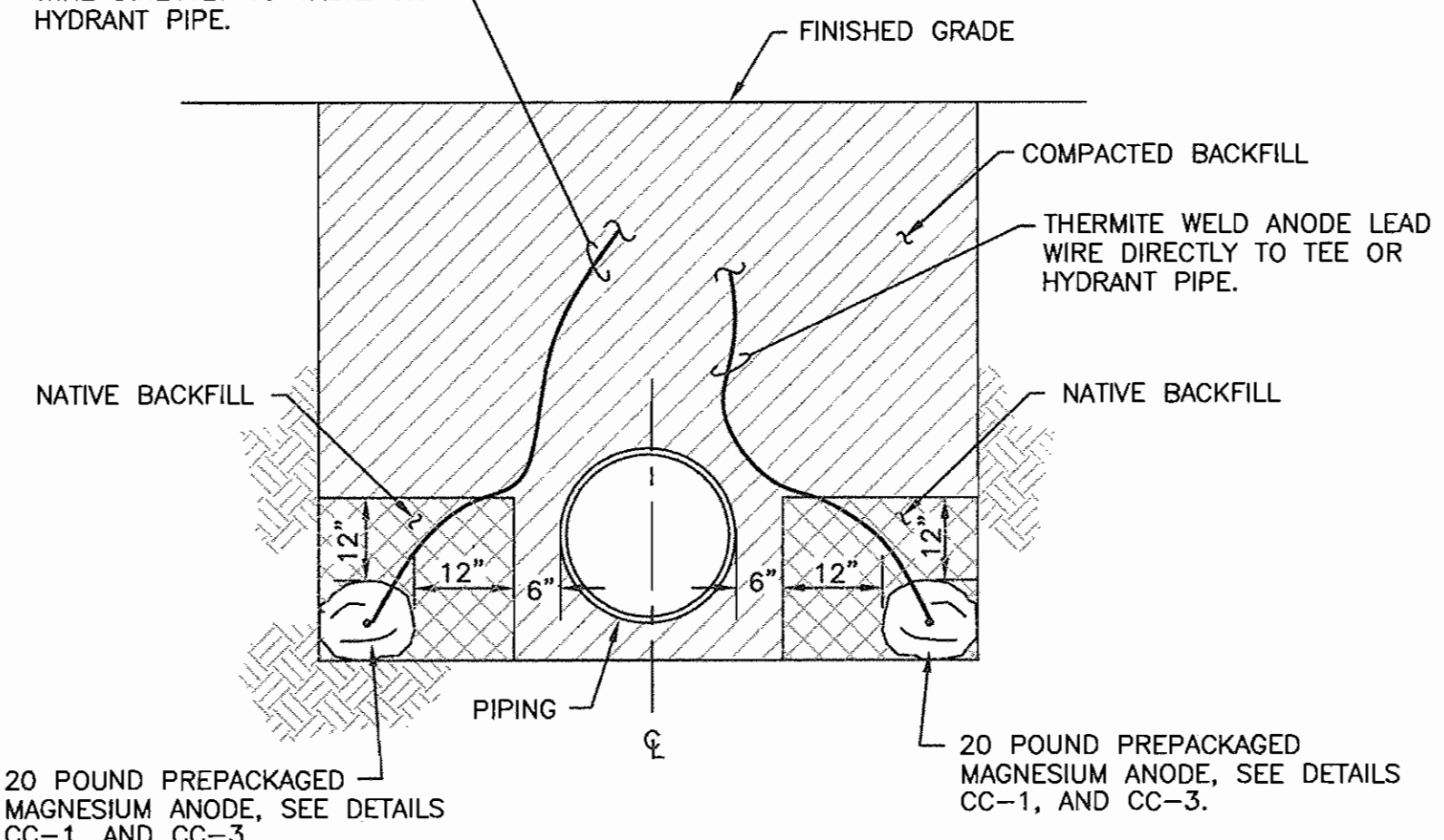
THERMITE WELD ANODE LEAD WIRE DIRECTLY TO DUCTILE IRON VALVE, DUCTILE IRON FITTING, OR STEEL CONNECTOR PLATE, SEE DETAIL CC-9.



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

CC-11: SINGLE ANODE PLACEMENT
SCALE: NONE

THERMITE WELD ANODE LEAD WIRE DIRECTLY TO VALVE OR HYDRANT PIPE.



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

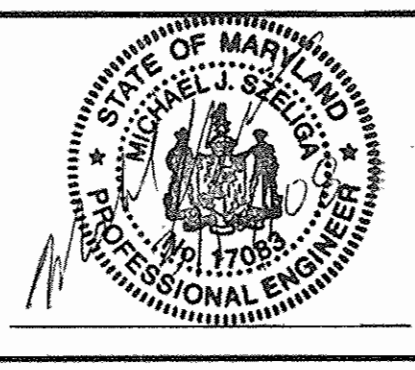
CC-12: DOUBLE ANODE PLACEMENT
SCALE: NONE

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Stephen C. Green
CHIEF, BUREAU OF UTILITIES DATE: 4/2/08

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
John D. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 4/2/08

Patton Harris Rust & Associates, pc
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Columbia, Maryland



DES:	MJS				
DRN:	DJD				
CHK:	MJS				
DATE:	3/08				
BY	NO.	REVISION	DATE		

**CORROSION CONTROL
DETAILS 3**
600' SCALE MAP NO. 47 BLOCK NO. 17

SAVAGE MILL HOTELS
TAX MAP 47 PARCEL 93 ZONING: B2
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4499-D

SCALE
SHEET 9 OF 9