

OLD MONTGOMERY ROAD WATER MAIN RELOCATION



CAPITAL PROJECT NO. W-8248
CONTRACT NO. 44-4622
HOWARD COUNTY, MARYLAND

NO.	INDEX OF SHEETS
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LEGEND

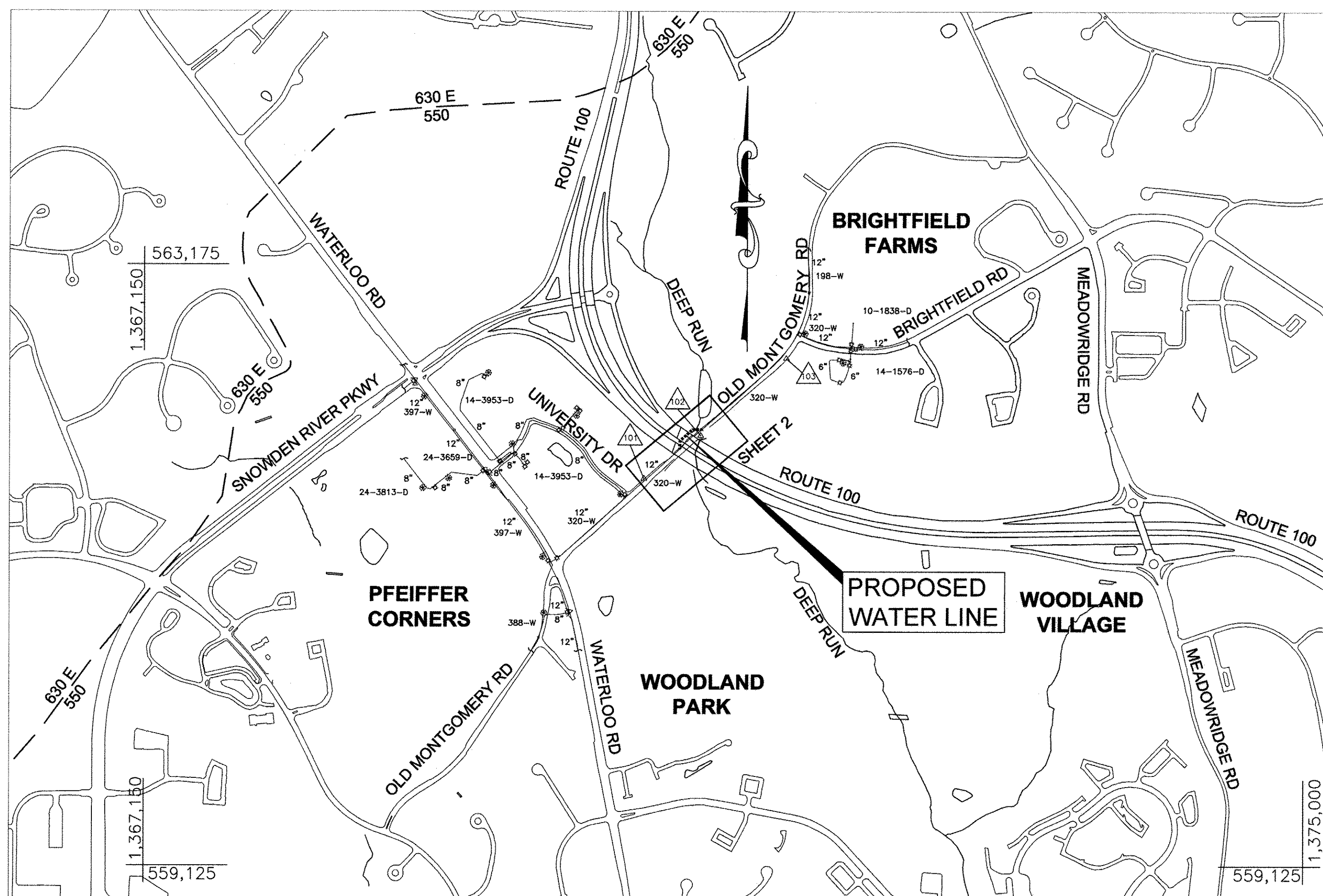
	EXIST. WATER MAIN / VALVE VAULT
	PROP. WATER MAIN
	EXIST. WATER MAIN TO BE ABANDONED
	EXIST. SEWER MAIN / MANHOLE
	PROP. SEWER MAIN / MANHOLE
	EXIST. STORM DRAIN
	EXIST. GAS
	EXIST. ELECTRIC (UNDERGROUND)
	EXIST. ELECTRIC (ABOVE GROUND)
	EXIST. CABLE TV
	RIGHT OF WAY
	10 YEAR FLOOD PLAIN
	100 YEAR FLOOD PLAIN
	GUARDRAIL
	FENCE (CHAINLINK)
	PROPERTY LINE
	SILT FENCE
	SUPER SILT FENCE
	LIMITS OF DISTURBANCE
	ROAD CENTERLINE
	TRAVERSE
	STREAM / WATERWAY EDGE
	WATER ZONE BOUNDARY
	SHRUB
	VALVE
	FIRE HYDRANT
	BGE POLE
	BORING LOCATION
	CONTINUITY TEST STATION
	SAN. MANHOLE IDENTIFICATION

Traverse Coordinate Schedule

Point	Northing	Easting	Elevation	Feature
101	561733.1630	1370535.3540	359.6400	MAG NAIL
102	562023.1220	1370918.9950	345.9200	R&C
103	562544.6700	1371496.7720	393.3300	MAG NAIL

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER /SUPPLIER
12" Water Pipe	252 ft.			
12" - 1/8 HB	4			
Fire Hydrants	1			
12" X 6" Tees	1			
6" Hydrant Shut-off Valves	1			



VICINITY MAP
SCALE: 1" = 600'

HORIZONTAL AND VERTICAL CONTROL BASED ON MARYLAND NAD83 (91) (HORIZONTAL) AND NAVD88 (VERTICAL) DATUM.

HOWARD COUNTY GEODETIC SURVEY CONTROL NUMBERS:
NO. BASE 2 / PID A18507
N 556,281.93
E 1,374,650.30
ELEV. 253.606

TYPE OF BUILDINGS: N.A.
NUMBER OF PARCELS: N.A.
NO. OF WATER CONNECTIONS: 0
DRAINAGE AREA: FATAPSCO
PRESSURE ZONE: 550
TEST GRADIENT: 790 FEET (200 PSI)

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 on March 2009 by J.A.Rice, Inc.
- 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. BASE 2 / PID A18507.
- All vertical controls are based on NAVD'88. Vertical controls provided on the drawings are J 109 MDSRC / SURVEY DISK SET IN TOP OF CONCRETE MONUMENT (see Traverse Coordinate Schedule).
- 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 drawing, 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 Company	410-795-1390
Miss Utility	1-800-257-7777
State Highway Administration	410-531-5533
Verizon	1-800-743-0033 / 410-224-9210
- 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.

GENERAL NOTES - WATER CONSTRUCTION

- All water mains to be PVC C900 unless otherwise noted.
- Tops of all water mains to 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 restrained and buttressed with concrete in accordance with the 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.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jay K. Elolo 8/10/09
DIRECTOR OF PUBLIC WORKS DATE

Paul J. Johnson 8/10/09
CHIEF, BUREAU OF ENGINEERING DATE

Blanca O'Donnell 8/10/09
CHIEF, BUREAU OF UTILITIES DATE

Paul J. Johnson 8/10/09
CHIEF, UTILITY DESIGN DIVISION DATE

URS

MONTGOMERY PARK BUSINESS CENTER
1800 WASHINGTON BOULEVARD, SUITE 410
BALTIMORE, MARYLAND 21230
(410) 468-0875

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. 32597, Expiration Date: 01/15/10

Pedro R. Ramirez
PEDRO R. RAMIREZ

DESIGN: CSP					
DRAWN: BJW					
CHK: PRR					
DATE: 07/24/09	NO.	REVISION	DATE	BY	

TITLE SHEET

600' SCALE MAP NO. 37 BLOCK NO. 2

OLD MONTGOMERY ROAD
WATER MAIN RELOCATION
CAPITAL PROJECT NO. W-8248
CONTRACT NO. 44-4622
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET 1 OF 6

WATER MAIN STAKE-OUT SCHEDULE			
STATION	FITTING	EASTING / NORTHING	INVERT
0+00	1/8 DIP HB	E = 1370775.42 N = 561933.23	342.65
0+57.73	1/8 DIP HB	E = 1370778.68 N = 561990.87	329.76
1+74.97	1/8 DIP HB	E = 1370866.14 N = 562068.94	329.76
2+33.78	1/8 DIP HB	E = 1370924.81 N = 562064.91	341.17
2+52.00	12"X6" TEE / FIRE HYDRANT	E = 1370938.53 N = 562076.90	341.72

Sequence of Construction

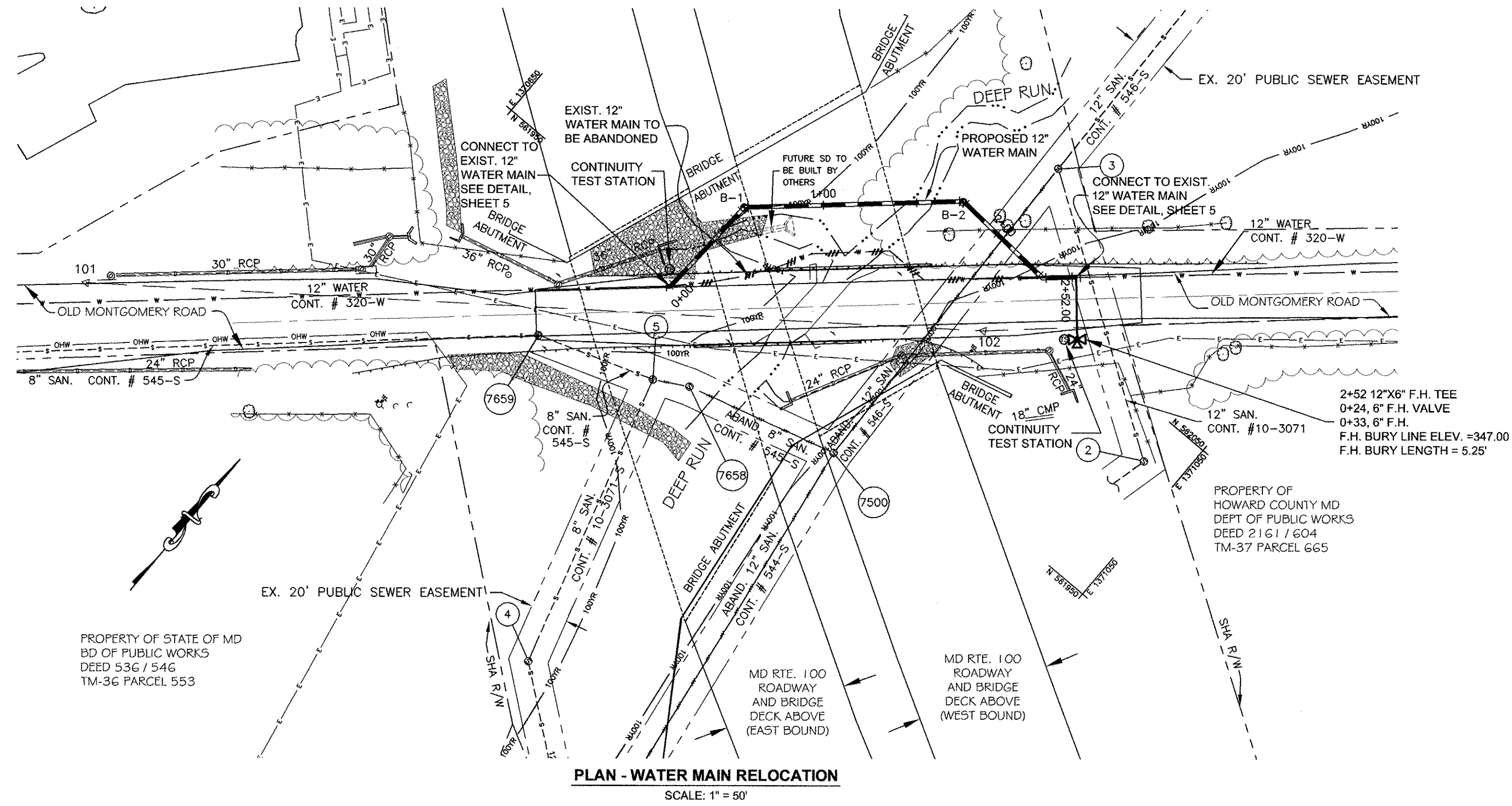
- Obtain all required permits and approvals from appropriate agencies. Obtain grading permit prior to starting construction.
- Notify Howard County Construction Inspection Division - Sediment Control (410) 313 - 1855 seven days prior to starting construction.
- Notify MDE Inspection and Compliance (410) 537 - 3510 seven days prior to starting construction.
- Install all Sediment Control devices, including installation guidelines from the Maryland's Waterway Construction Guidelines for Utility Crossing from the Maryland Department of the Environment (MDE).
- Establish traffic control devices as needed.
- Install new thrust block on existing water main as shown. See detail, sheet 5.
- Allow a minimum of 7 days for thrust block concrete mix to cure.
- Dewater construction area. All dewatering discharges shall be diverted to a dewatering basin before re-entering stream.
- Install proposed 12" water main.
- Install 12" 45° fittings and approaches that will connect to existing water main.
- Perform Hydrostatic Pressure and Leak Tests on installed water main as per the latest edition of the Howard County Design Volume IV.
- Remove stream diversion
- Chlorinate and disinfect new water main as per the latest edition of the Howard County Design Volume IV.
- Flush new main to prepare for connection.
- Contact Howard County Bureau of Utilities (410) 313-4900 to coordinate closing of valve upstream and downstream of relocation area. Contractor must coordinate closing of valve a minimum of 72 hours in advance.
- Dewater isolated section of 12" to be relocated after County personnel has completed shut down and isolation procedures.
- Shut down of water service shall not be in excess of 6 hours.
- Connect proposed approach 12" water main pipes to existing 12" water main as shown on the contract drawings. The contractor shall supply the necessary crews to simultaneously make the upstream and downstream connections within the time frame stated above.
- Reestablish water flow through newly installed 12" water main.
- Check connections for leaks.
- Abandon old water main as per county standards.
- Remove traffic control devices.
- Remove E&S control devices upon approval from Sediment Control Inspector.
- Restore all disturbed areas to conditions prior to construction.

General Notes

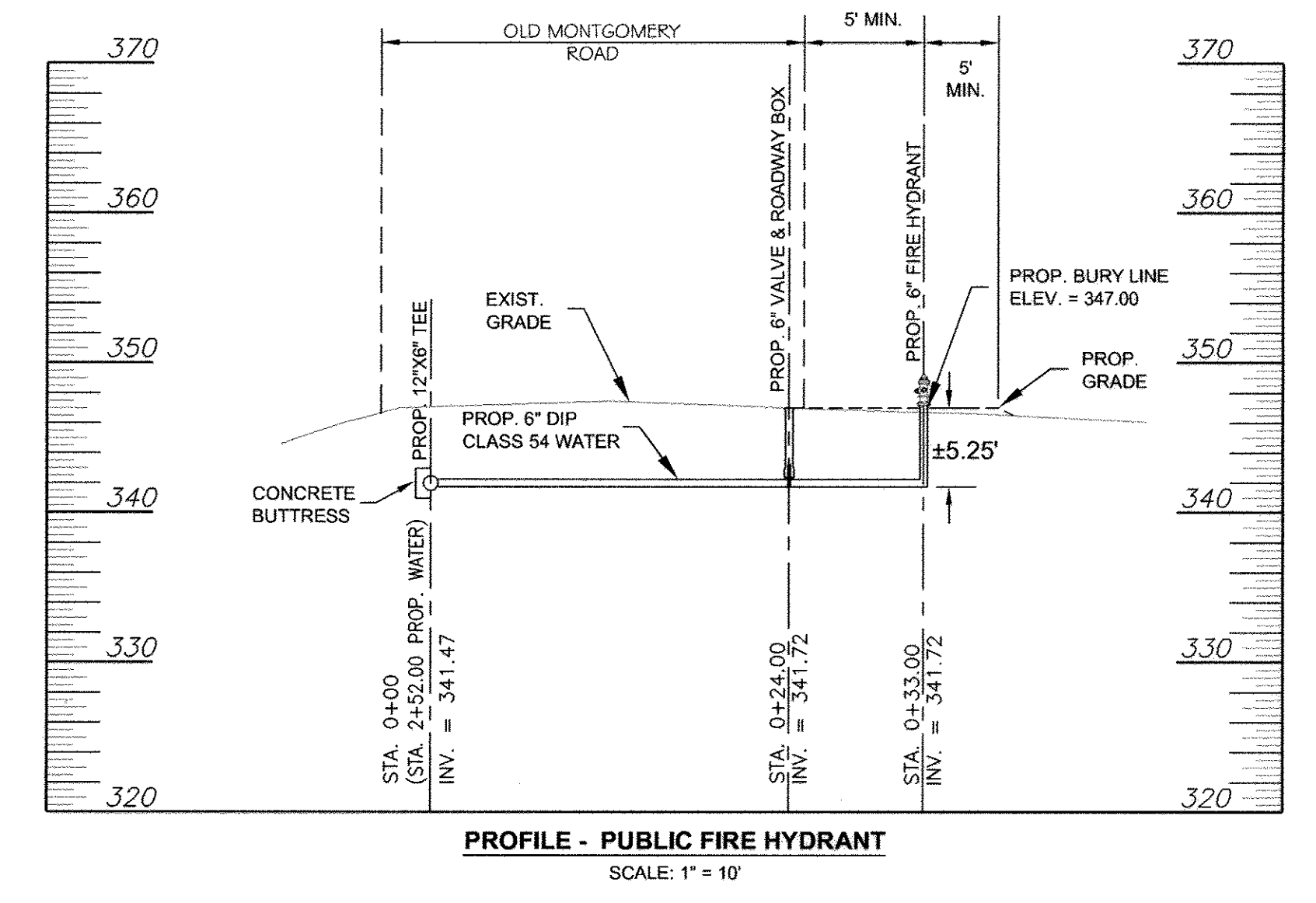
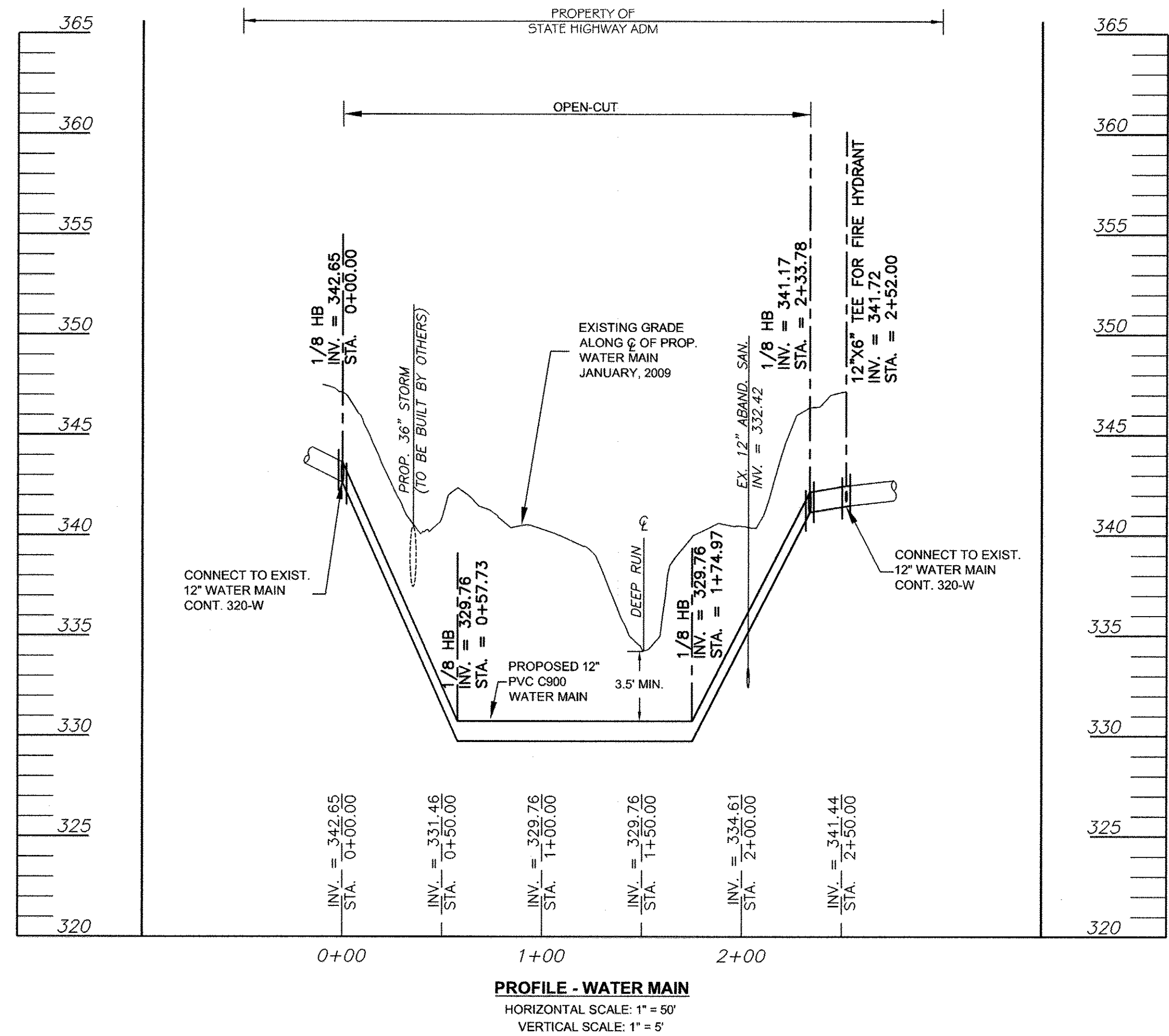
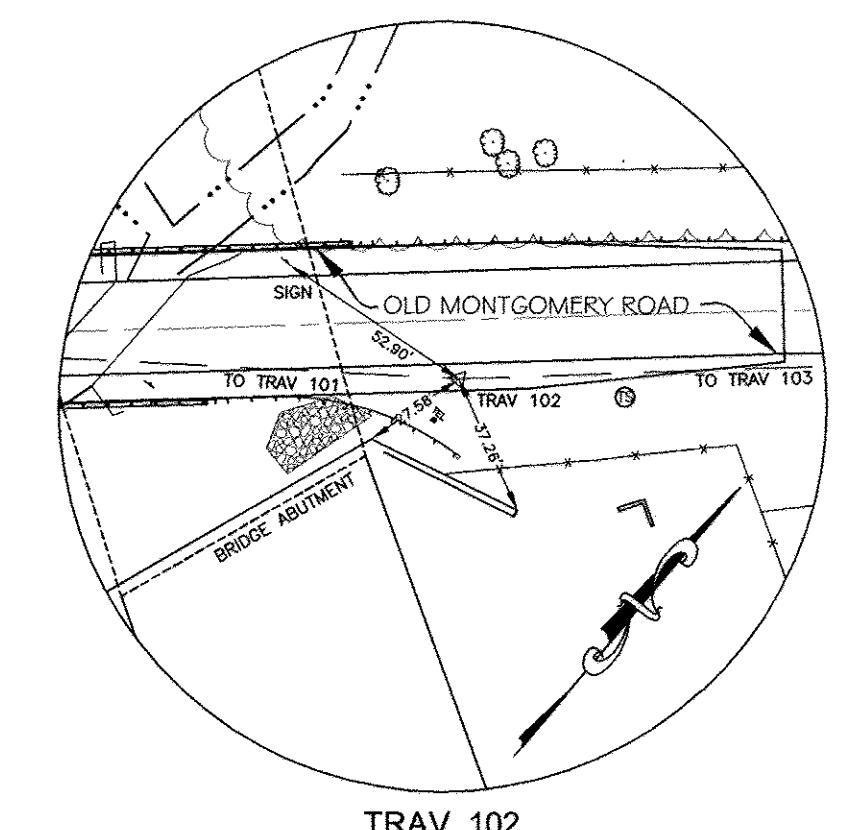
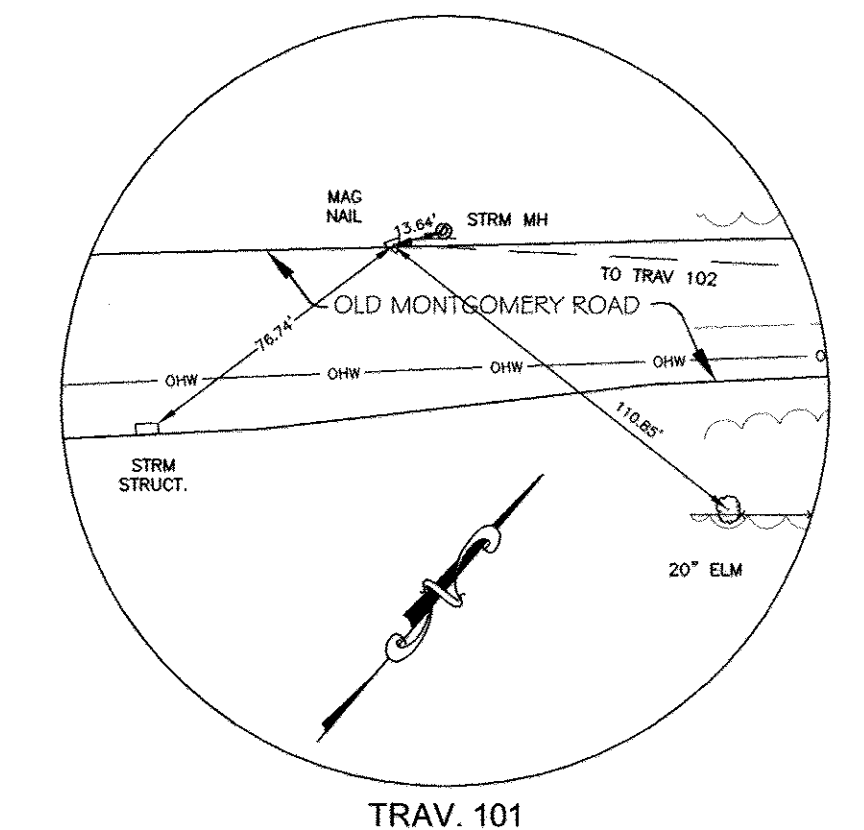
Stockpile and maintain separately the top 6"-12" of topsoil material, to be used as top layer of backfilled material

Remove excess fill or construction material or debris to an upland area. Any unused fill must be promptly removed to a proper disposal site.

Contractor to verify location and pipe material of existing pipe.



Traverse Coordinate Schedule				
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103	562544.6700	1371496.7720	393.3300	MAG NAIL



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 8/10/09
 Chief, Bureau of Engineering: *[Signature]* DATE: 8/10/09
 Chief, Bureau of Utilities: *[Signature]* DATE: 8/10/09
 Chief, Utility Design Division: *[Signature]* DATE: 8/10/09

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 (410) 468-0875

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. 32597, Expiration Date: 01/15/10

[Signature]
 PEDRO R. RAMIREZ

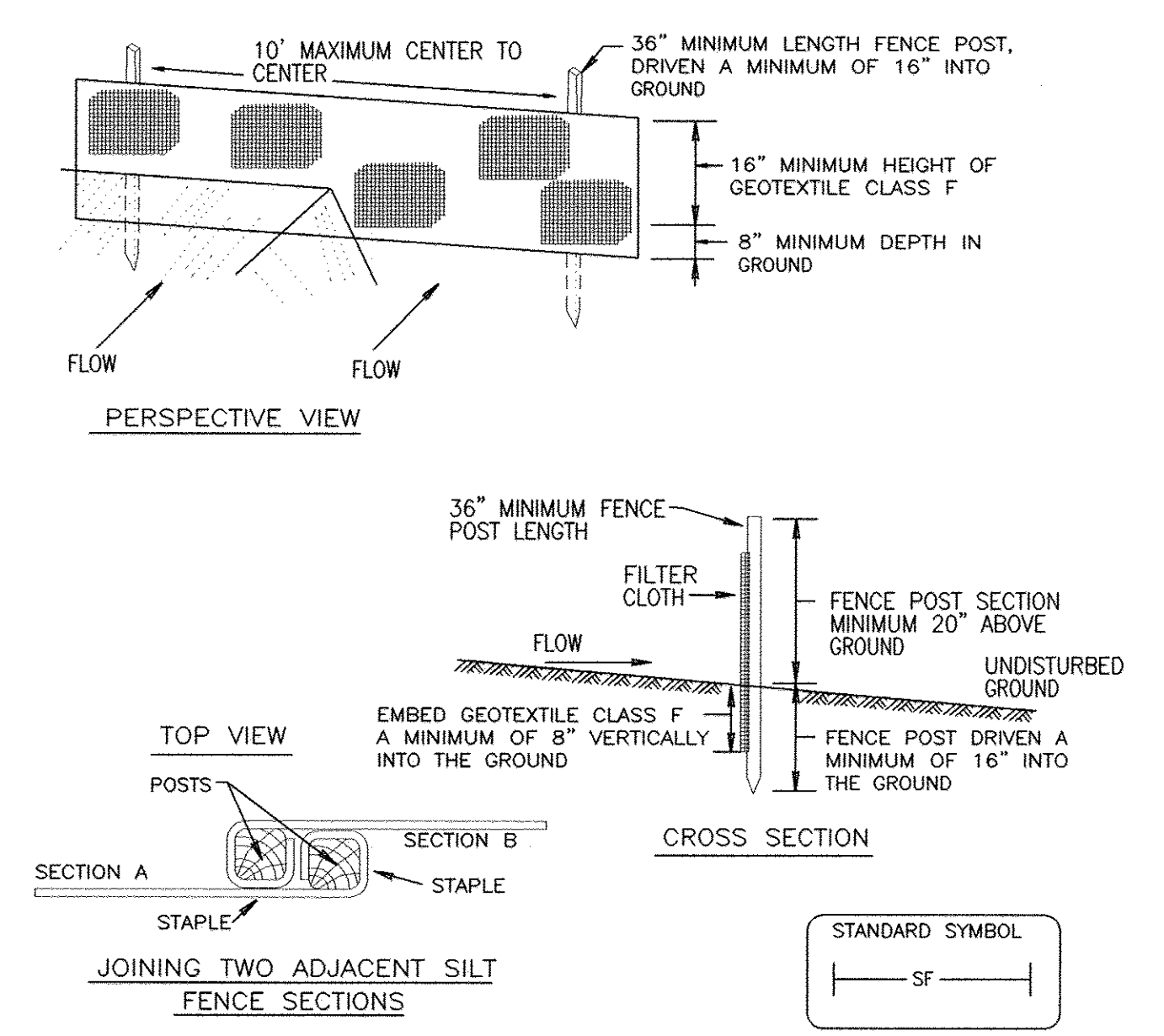
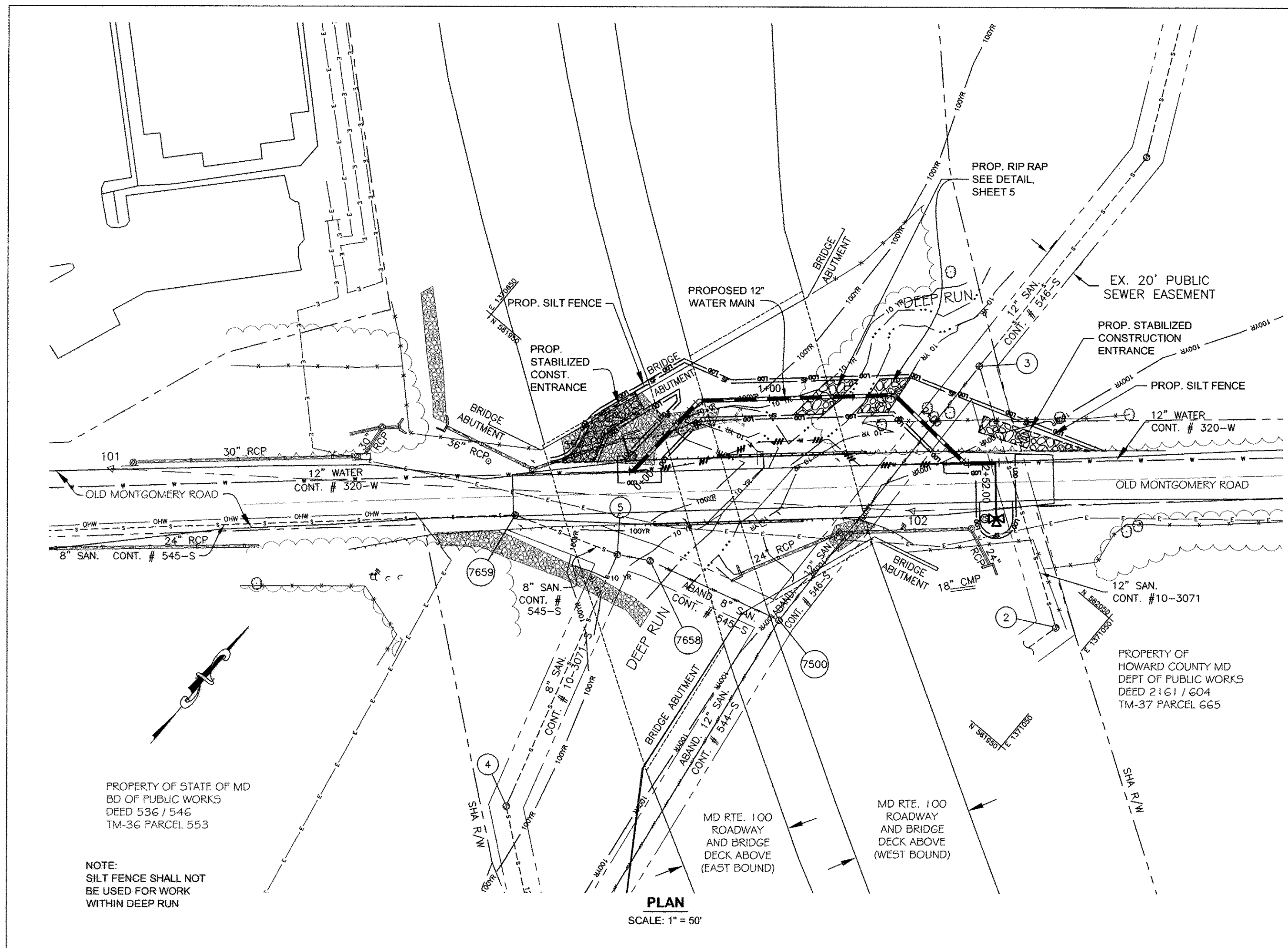
DATE	NO.	REVISION	DATE	BY
07/24/09				

PLAN AND PROFILE

60' SCALE MAP NO. 37 BLOCK NO. 2

OLD MONTGOMERY ROAD
 WATER MAIN RELOCATION
 CAPITAL PROJECT NO. W - 8248
 CONTRACT NO. 44-4622
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

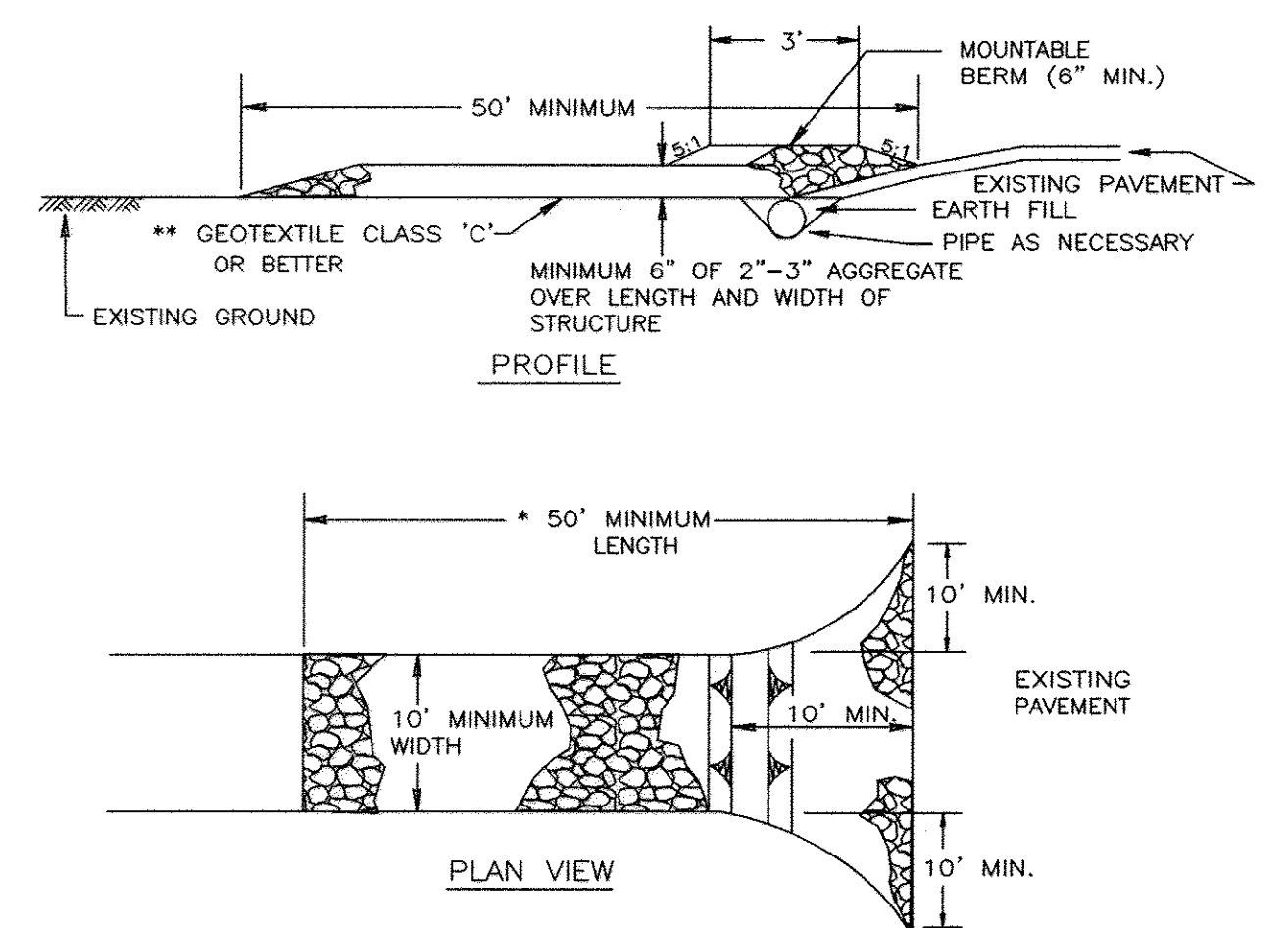
SCALE: AS SHOWN
 SHEET 2 OF 6



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" 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.
- 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. ft./minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.



- Construction Specification**
- Length - minimum of 50' (*30' for single residence lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - 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.
 - 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.
 - 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.
 - 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.

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

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

Approved: *[Signature]* 8/10/09
Howard S.C.D. Date

STABILIZED CONSTRUCTION ENTRANCE

SILT FENCE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 8/10/09
Chief, Bureau of Engineering: *[Signature]* 8/10/09

Chief, Bureau of Utilities: *[Signature]* 8/10/09
Chief, Utility Design Division: *[Signature]* 8/10/09

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PEDRO R. RAMIREZ

DESIGN: CSP					
DRAWN: BJW					
CHK: PRR					
DATE: 07/24/08	NO.	REVISION	DATE	BY	

EROSION AND SEDIMENT CONTROL / DETAILS

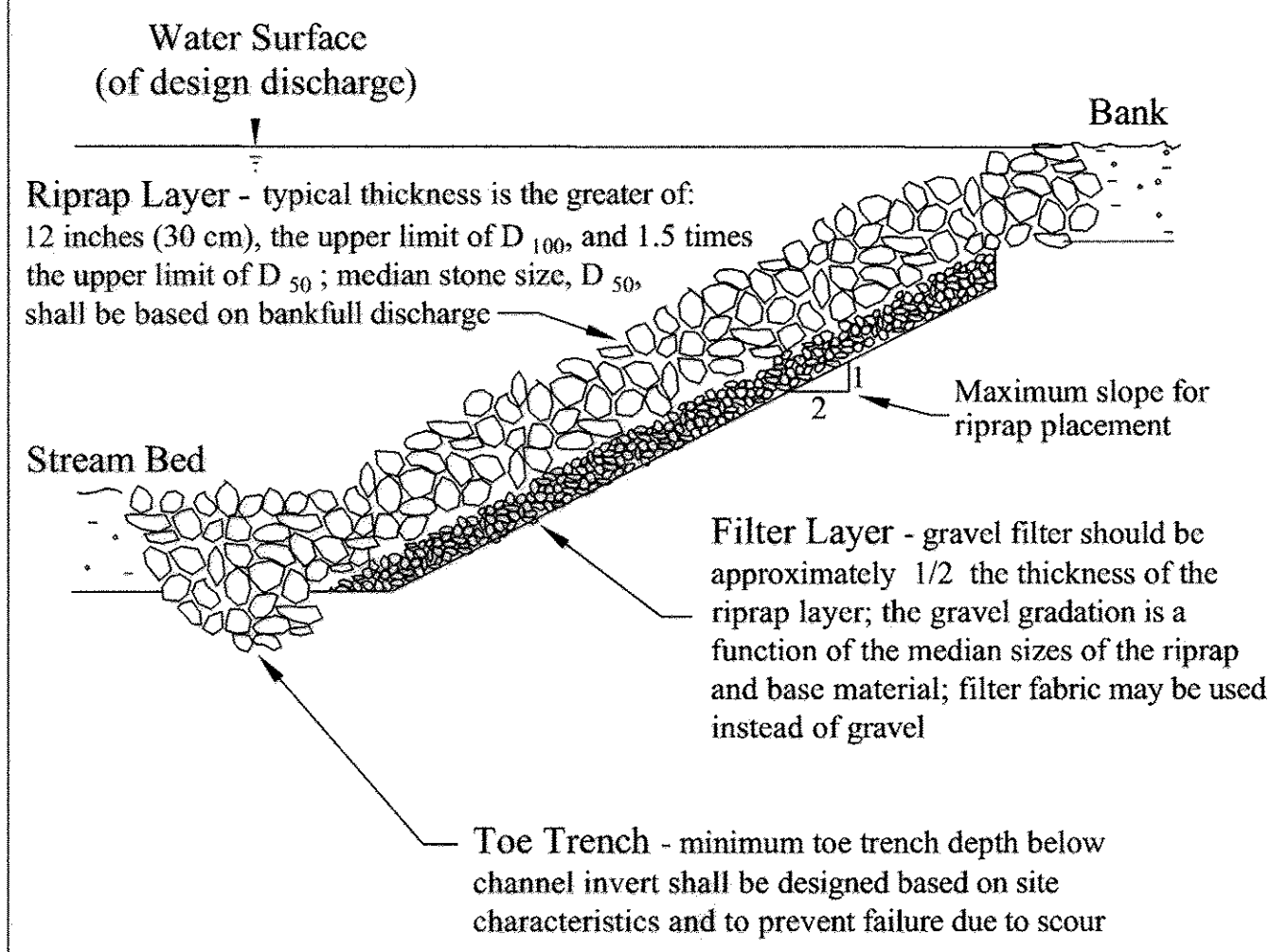
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SCALE: AS SHOWN
SHEET 3 OF 6

Maryland's Guidelines To Waterway Construction
Detail 2.1: RipRap

SECTION VIEW:



SLOPE PROTECTION AND STABILIZATION TECHNIQUES PAGE 2.1-4 MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PIPE DIA. (IN)	TRENCH WIDTH (IN)
4	28
6	36
8	44
10	52
12	60

ALL DIMENSIONS IN INCHES

NOTES:

- THE "W" DIMENSION SHALL BE USED TO CALCULATE MAXIMUM TRENCH PAY WIDTH.
- FOR TRENCHES WHERE TRENCH BOX OR TRENCH SHEETING IS NOT REQUIRED, MEASUREMENT FOR CONTINGENT BORROW MATERIALS WILL BE BASED ON THE TRENCH WIDTH SHOWN.
- FOR TRENCHES WHERE TRENCH BOX OR TRENCH SHEETING IS REQUIRED, MEASUREMENT FOR CONTINGENT BORROW MATERIALS WILL BE BASED ON THE TRENCH WIDTH SHOWN PLUS 24 INCHES.
- FOR COPPER, PVC AND HDPE PIPE, 3 INCHES OR SMALLER, PIPE EMBEDMENT ZONE MATERIAL IS FINE AGGREGATE (SAND). "W" DIMENSION IS 6 INCHES MINIMUM AND BEDDING THICKNESS UNDER PIPE IS 4" MINIMUM. FOR TRENCHES IN ROCK, MINIMUM BEDDING THICKNESS IS 6 INCHES.
- SPECIAL DESIGN IS REQUIRED AND SHALL BE SPECIFIED OR DETAILED IN THE CONTRACT DOCUMENTS FOR THE FOLLOWING PIPES:
PVC ANMA C-905 LARGER THAN 12 INCHES
PVC GRANITE SANITARY SEWERS LARGER THAN 12 INCHES
HDPE CORRUGATED DRAIN PIPE
STREAM CROSSINGS SEE DETAILS S-3.11 AND S-3.12

Howard County, Maryland Department of Public Works
Pipe Trench Plastic & Copper
Detail G-2.12

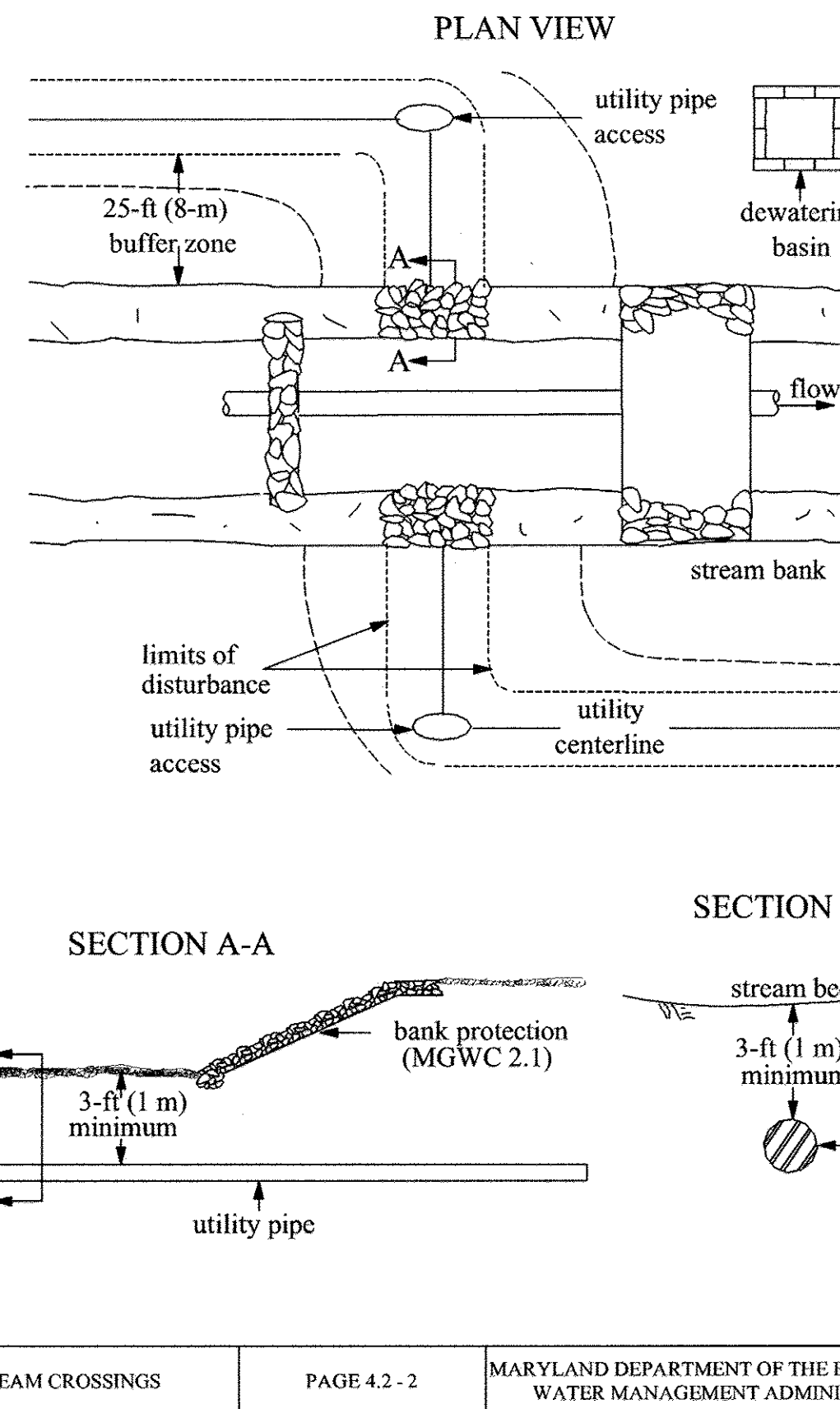
PIPE DIA. (IN)	T	H	L
12	1'-4"	5'-0"	5'-0"

QUICK HARNESSSED CONNECTION TO THRUST BLOCKING FOR C.I.P. OR D.I.P. PIPE
N.T.S.

NOTES:

- ALL CONCRETE SHALL BE $f'_c=4000$ PSI @ 28 DAYS. PIPELINE SHALL NOT BE PRESSURIZED UNTIL CONCRETE STRENGTH REACHES 4000 PSI AND TRENCH HAS BEEN BACKFILLED.
- ALL REBARS SHALL BE ASTM A615 GRADE 60.
- STEEL PLATES SHALL BE ASTM A36.
- MAINTAIN 2" CLEAR BETWEEN ALL REBARS AND PIPE.
- COAT ALL EXPOSED STEEL WITH FIELD APPLIED COATING.
- BOLT CIRCLE FOR 3/4" TIE RODS @ THRUST COLLAR EQUAL BOLT CIRCLE @ THE BOLTS.
- THE RODS SHALL BE PARALLEL TO AXIS OF PIPE.
- THE COUPLING, IF NECESSARY, SHALL BE STAR NATIONAL PRODUCTS SUPER STAR THE COUPLING NO. SS10.
- DEPTH OF FINISHED GRADE TO TOP OF PIPE ASSUMED TO EQUAL 4'-0". IF SHALLOWER, SPECIAL BLOCK DESIGN IS REQUIRED.
- ELEVATION OF GROUNDWATER TABLE ASSUMED TO BE BELOW BOTTOM OF BLOCK. IF GROUNDWATER IS ABOVE BOTTOM OF BLOCK, SPECIAL BLOCK DESIGN IS REQUIRED.
- SOFT OR ORGANIC SOIL CONDITIONS REQUIRE SPECIAL BLOCK DESIGN.
- REPLACE ALL DISTURBED SOIL BETWEEN NEW FITTING AND CONCRETE COLLAR WITH CRUSHED STONE COMPACTED AS STRUCTURAL FILL.

Maryland's Guidelines To Waterway Construction
Detail 4.2(a): UTILITY CROSSING



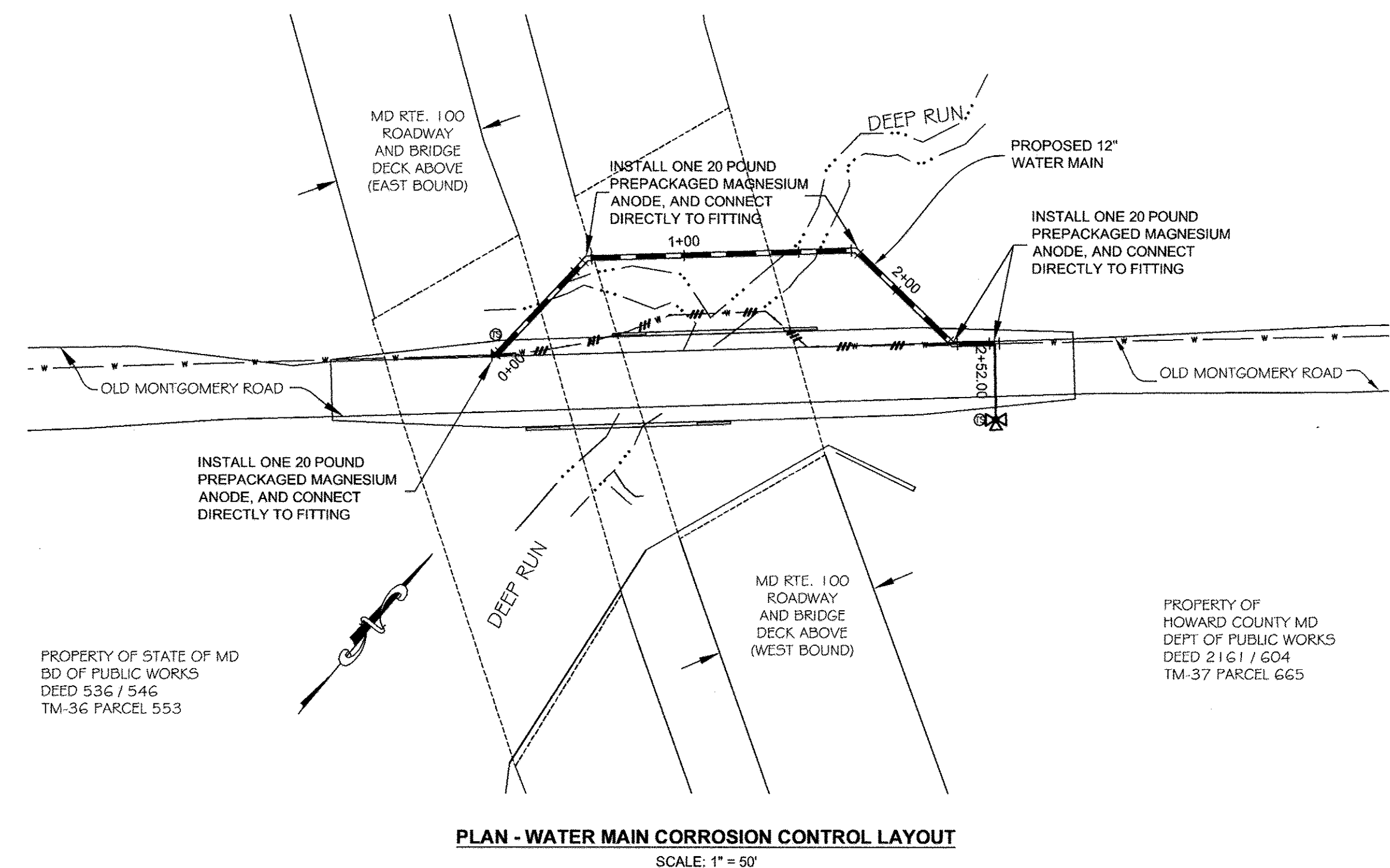
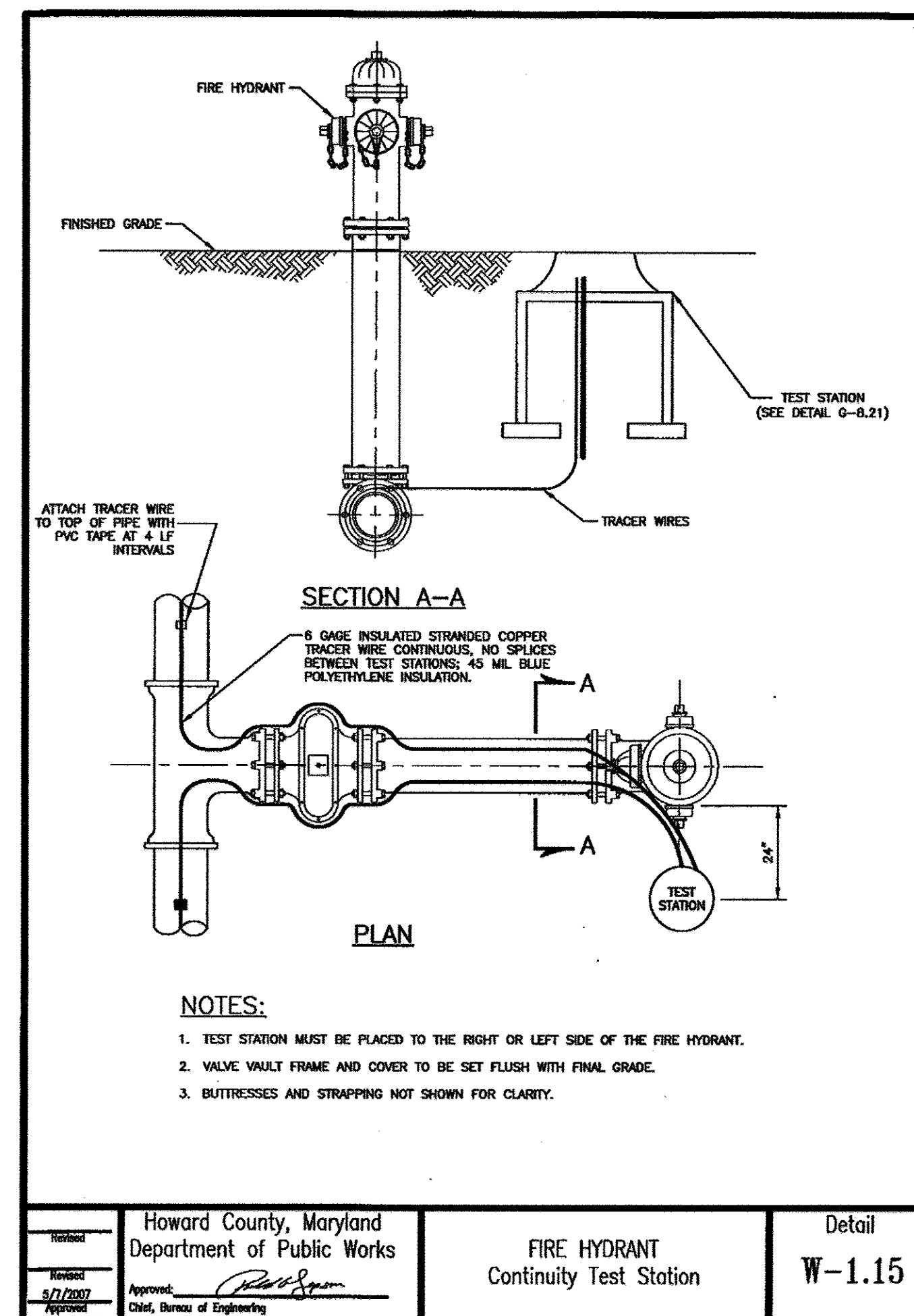
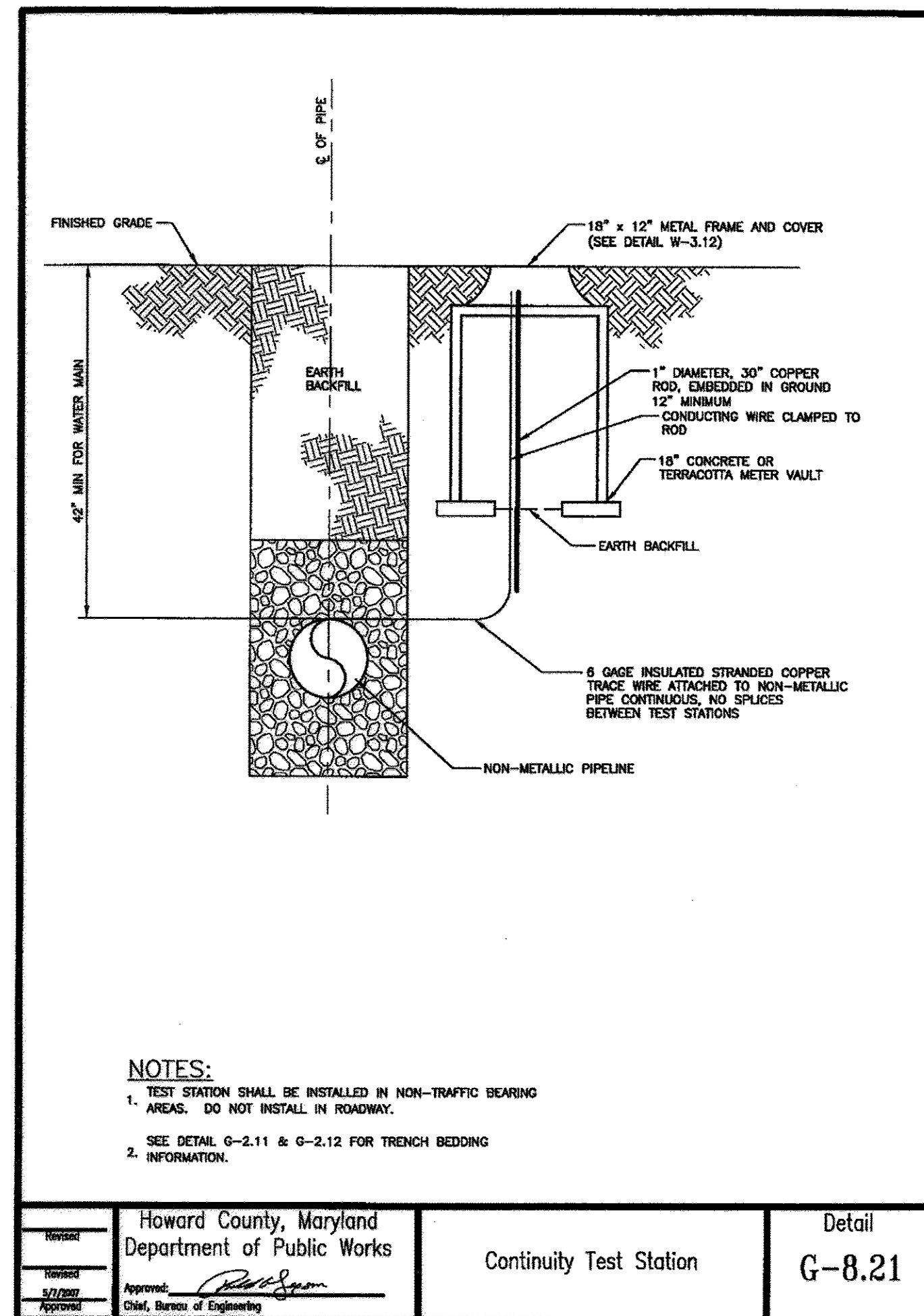
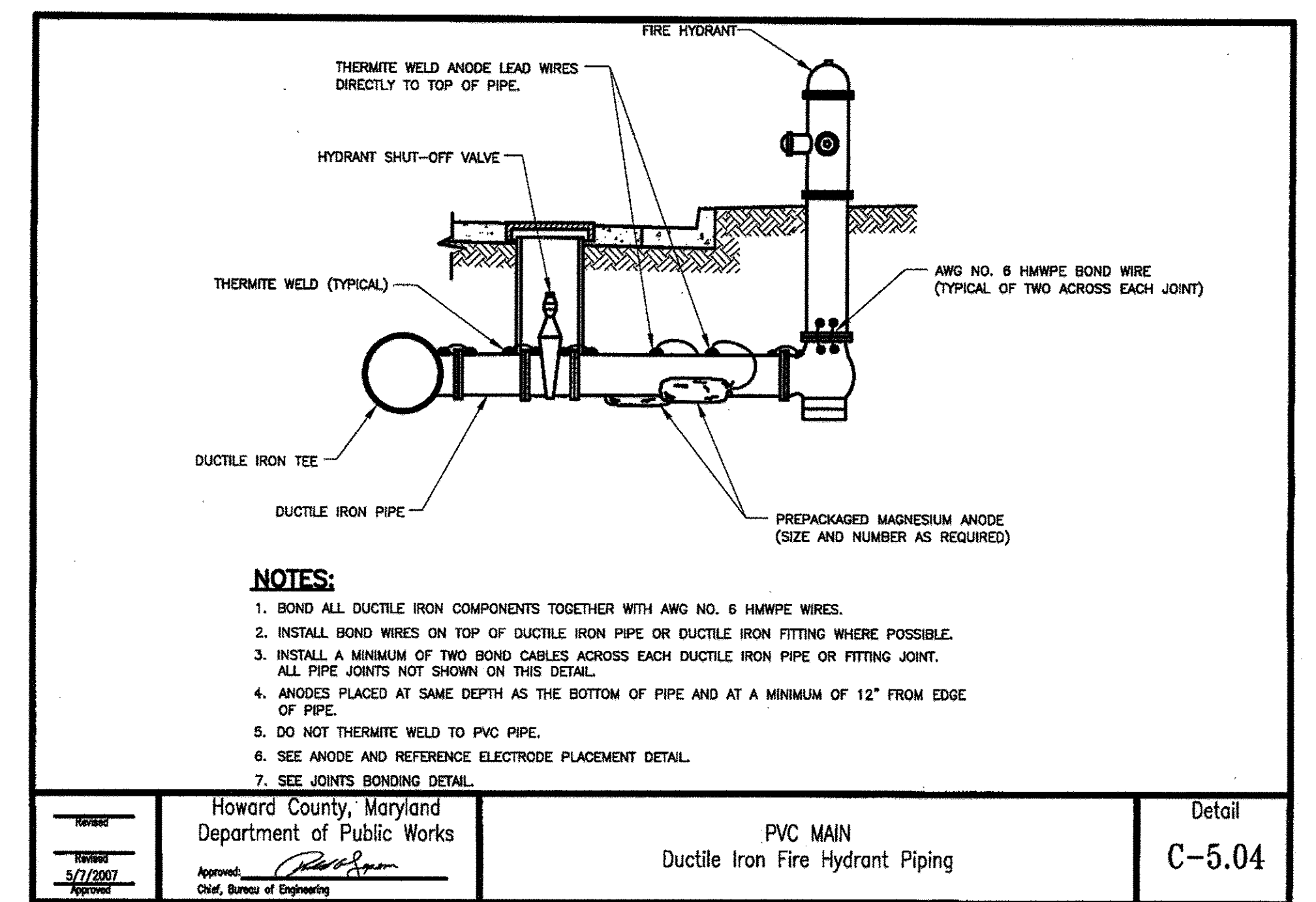
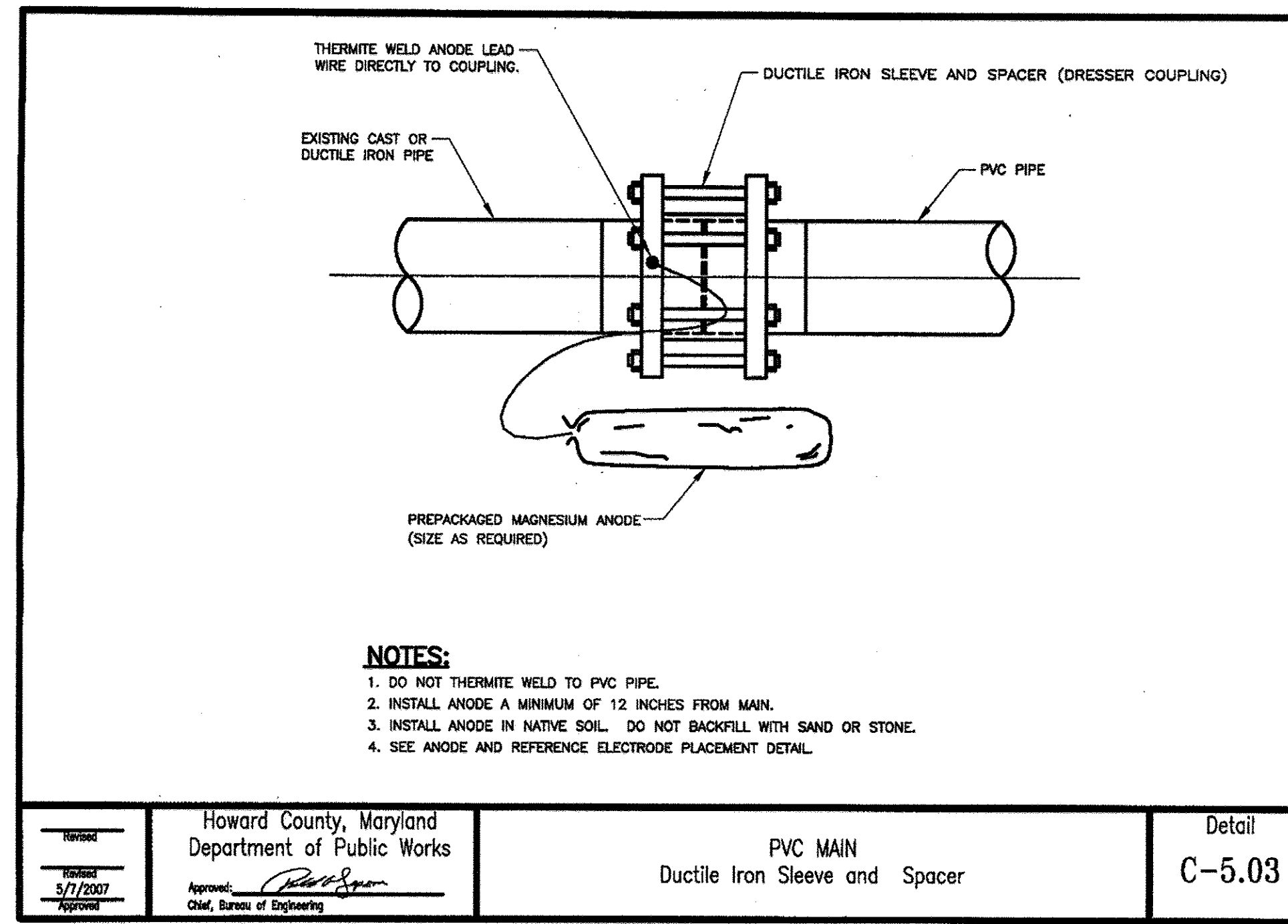
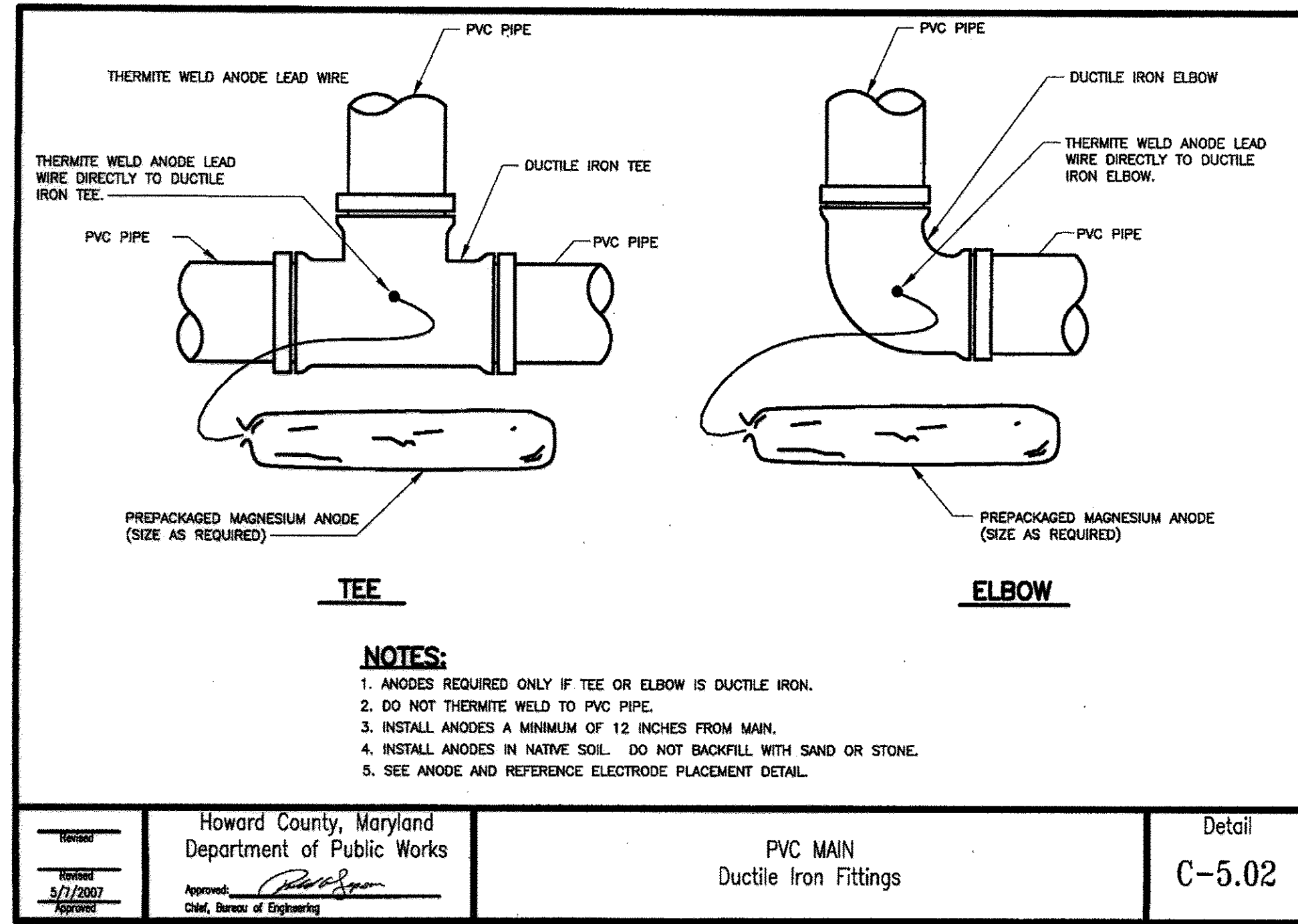
NOTE: UTILITY CROSSING DEPTH MUST BE 3.5 FT. MINIMUM AS PER COUNTY STANDARDS. THIS REQUIREMENT SUPERCEEDS DEPTH REQUIRED BY "DETAIL 4.2(a) UTILITY CROSSING" BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION.

ROADS WITH CONCRETE BASE AND HOT MIX ASPHALT SURFACE

NOTES:

- WHEREVER A TRENCH CROSSES A CONCRETE ROADWAY THAT HAS JOINT INSTALLATIONS THE ENTIRE SLAB BETWEEN THE EDGE OF THE TRENCH AND THE NEAREST JOINT SHALL BE REMOVED IF THE DISTANCE IS LESS THAN 10 FEET.
- CLEAN AND WET EDGES OF CUT AND SUBGRADE BEFORE PLACING CONCRETE.
- AGGREGATE SUB-BASE WIDTH SHALL BE 6 FT MINIMUM OR ACTUAL TRENCH WIDTH, WHICHEVER IS GREATER.
- HOT MIX ASPHALT PAVEMENT PATCH THICKNESS SHALL BE EQUAL TO THE EXISTING PAVING SECTION OR AS APPROVED BY DPW. THE MINIMUM PAVING PATCH SHALL CONSIST OF 2" HMA SURFACE COURSE OVER 4" HMA BASE COURSE. GRADED AGGREGATE BASE SHALL BE PLACED AND COMPACTED IN 6" MAXIMUM COMPACTED THICKNESS LAYERS.
- CLEAN EXPOSED VERTICAL SURFACE OF ADJACENT PAVEMENT AND PLACE TACK COAT ON ALL VERTICAL SURFACES PRIOR TO PLACING HMA.
- IF THE REMAINING EXISTING PAVEMENT IS LESS THAN 4' WIDE, THE RESIDUAL PAVEMENT SHALL BE REMOVED IN ITS ENTIRETY AND REPLACED.
- CONCRETE REPLACEMENT SHALL BE 10" MINIMUM MIX NO. 6.
- SAW CUT FULL DEPTH ALL JOINTS OF EXISTING CONCRETE, BITUMINOUS AND BASE PAVEMENTS.
- REINFORCEMENT OF CONCRETE PAVING SHALL BE ACCOMPLISHED BY DOWELING. DOWELS SHALL BE CENTERED IN PAVEMENT THICKNESS. NEW REINFORCING SHALL BE TIED TO DOWELS.
- TOTAL REPAIR WIDTH SHALL BE EQUAL TO THE LANE WIDTH IN ACCORDANCE WITH THE SPECIFICATIONS

UTILITY TRENCH ROADWAY REPAVING
N.T.S.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *John K. Shalob* DATE: 8/10/09
 Chief, Bureau of Engineering: *Paul J. Spason* DATE: 8/10/09
 Chief, Bureau of Utilities: *John C. Lee* DATE: 8/10/09
 Chief, Utility Design Division: *Paul J. Spason* DATE: 8/10/09

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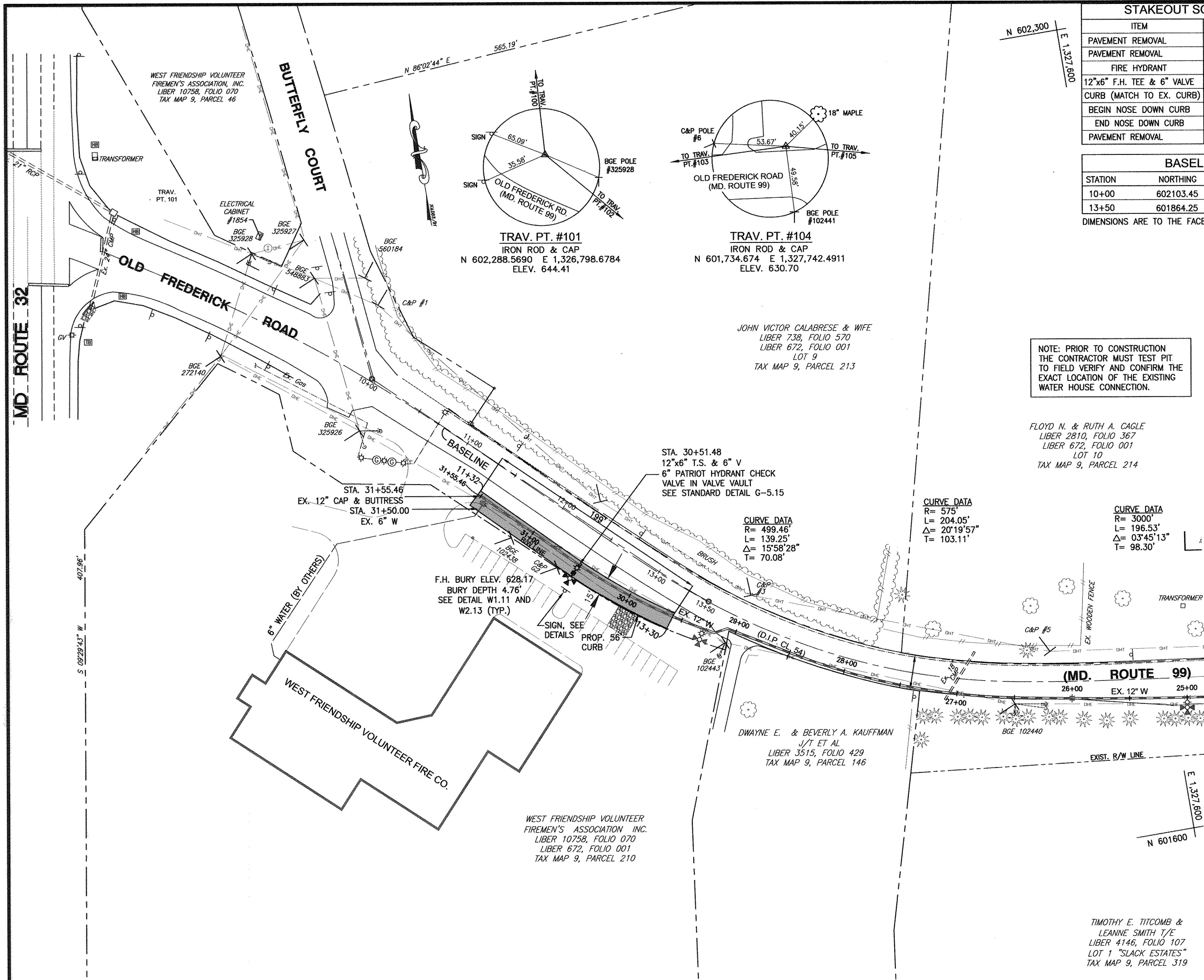
MISCELLANEOUS DETAILS /
CORROSION CONTROL LAYOUT

600' SCALE MAP NO. 37
BLOCK NO. 2

OLD MONTGOMERY ROAD
WATER MAIN RELOCATION
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6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE:
AS
SHOWN

SHEET
6 OF 6



STAKEOUT SCHEDULE FOR TRUCK PULLOVER

ITEM	BASELINE STA.	DISTANCE	NORTHING	EASTING
PAVEMENT REMOVAL	11+32	28' RT.	601992.07	1327038.99
PAVEMENT REMOVAL	11+32	43' RT.	601981.44	1327027.80
FIRE HYDRANT	11+50	46' RT.	601966.65	1327039.63
12"x6" F.H. TEE & 6" VALVE	11+50	32' RT.	601976.70	1327049.53
CURB (MATCH TO EX. CURB)	12+78	44' RT.		
BEGIN NOSE DOWN CURB	13+27	39' RT.	601849.49	1327175.12
END NOSE DOWN CURB	13+32	38' RT.	601846.74	1327179.30
PAVEMENT REMOVAL	13+30	23' RT.	601859.46	1327187.24

BASELINE DATA

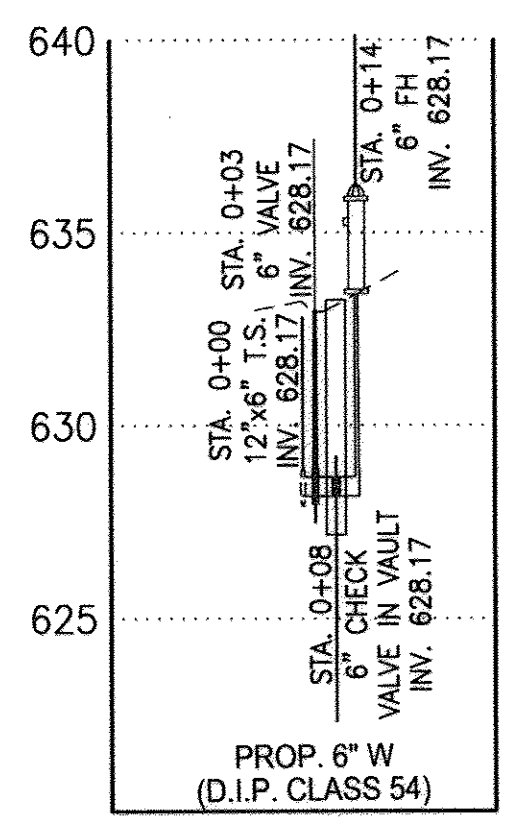
STATION	NORTHING	EASTING
10+00	602103.45	1326962.35
13+50	601864.25	1327217.98

DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED

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 survey was performed in August 2008 by Dewberry.
- 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. 09H2 and No. 09H1. All vertical controls are based on NAVD '88. Vertical controls provided on the drawings are iron rod and cap (Engineering / Survey firm shall provide description of vertical control points, i.e., iron bars, cross cuts on concrete structures, etc.
- 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 drawing, 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 π 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	800-252-1133
BGE (Contractor Services)	410-850-4620
BGE (Underground Damage Control)	410-787-9068
Bureau of Utilities	410-313-4900
Colonial Pipeline Co	410-795-1390
Miss Utility	800-257-7777
State Highway Administration	410-531-5533
Verizon	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 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.
- All water mains shall be D.I.P. Class 54 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 Standard Details unless otherwise provided for on the drawings.
- Fire hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be installed in accordance with Standard Details. The soil around the fire hydrant shall be compacted in accordance with Section 1000 and Section 1005 of the Standard Specifications.
- The contractor shall not operate any water main valves on the existing water system.



6" WATER PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

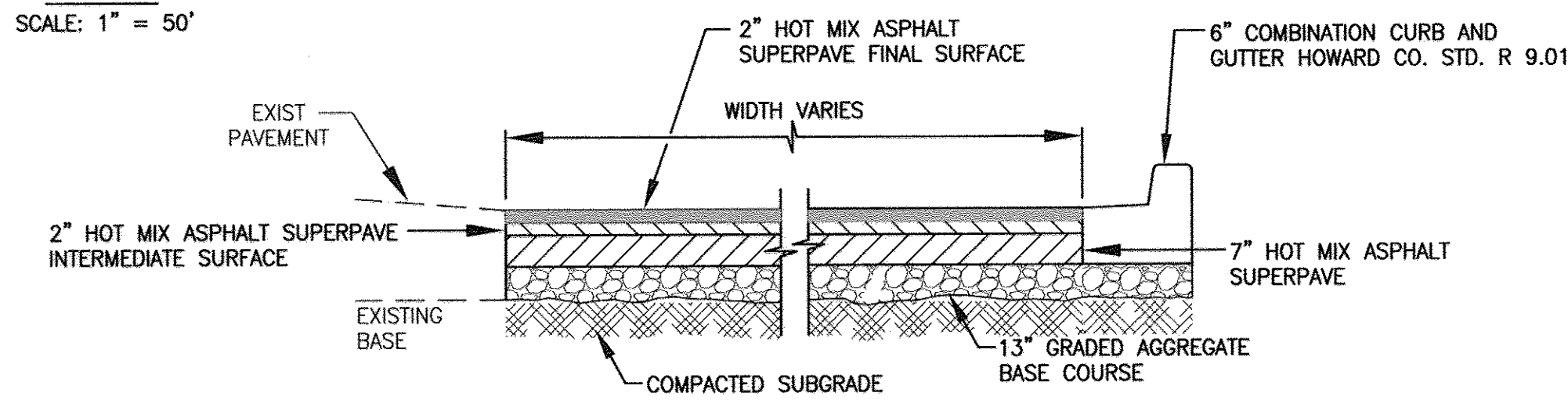
NOTE: PRIOR TO CONSTRUCTION THE CONTRACTOR MUST TEST PIT TO FIELD VERIFY AND CONFIRM THE EXACT LOCATION OF THE EXISTING WATER HOUSE CONNECTION.

FLOYD N. & RUTH A. CAGLE
LIBER 2810, FOLIO 367
LIBER 672, FOLIO 001
LOT 10
TAX MAP 9, PARCEL 214

CURVE DATA
R= 575'
L= 204.05'
Δ= 20°19'57"
T= 103.11'

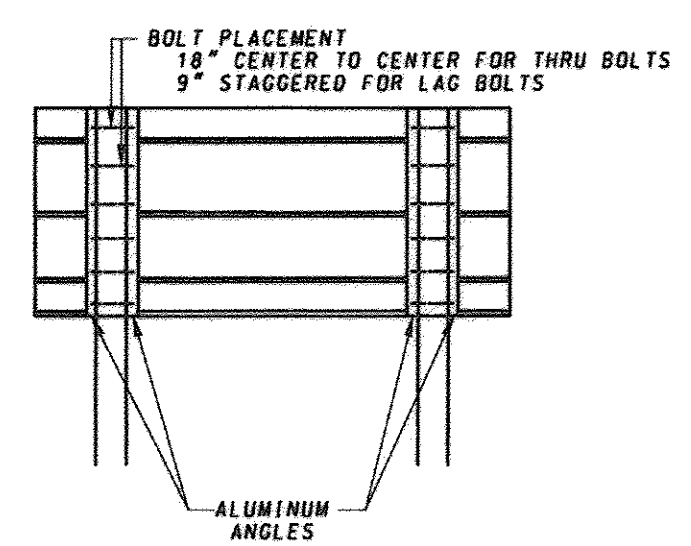
CURVE DATA
R= 3000'
L= 196.53'
Δ= 03°45'13"
T= 98.30'

PLAN
SCALE: 1" = 50'

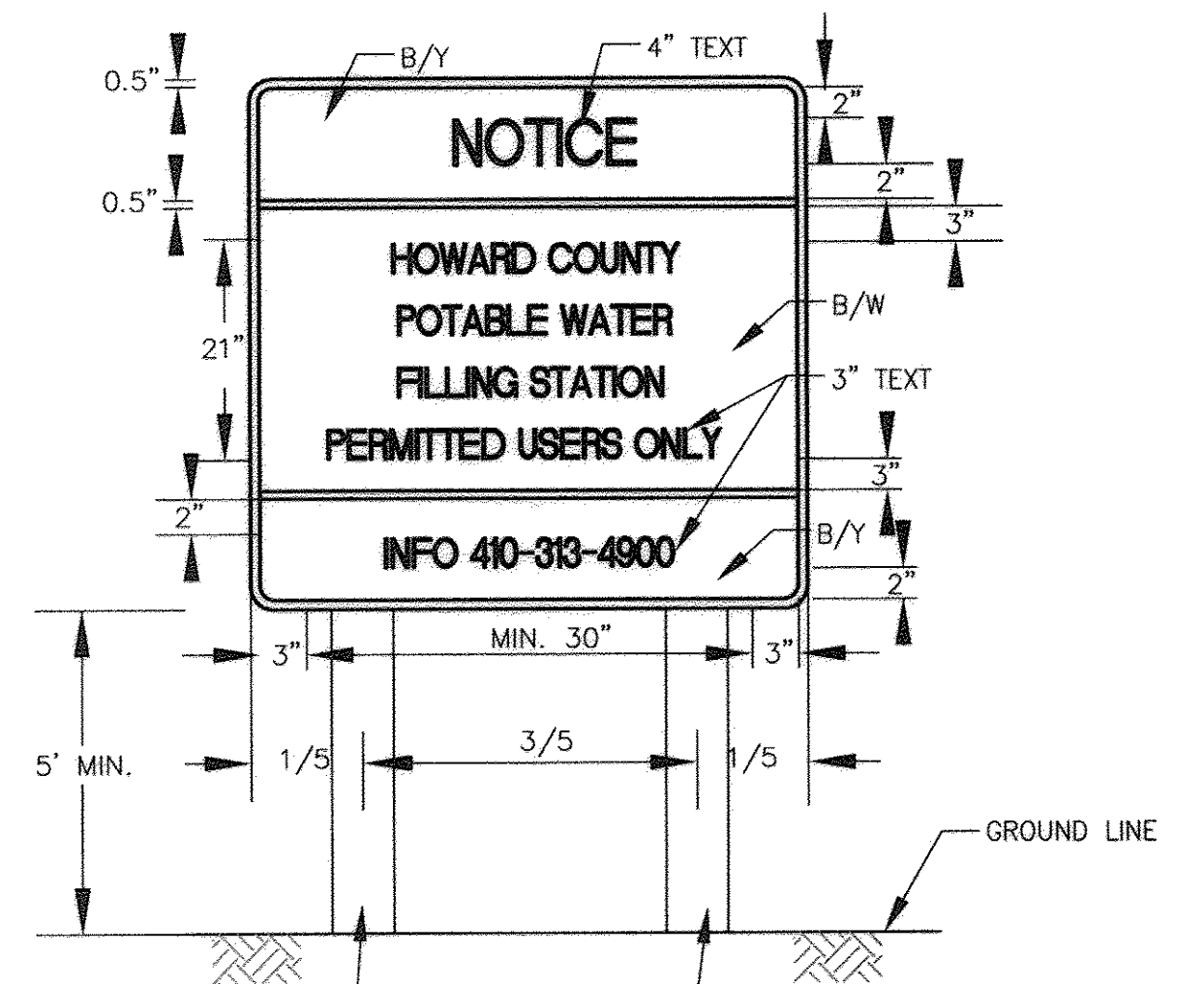


PULLOVER PAVEMENT SECTION
PER HOWARD COUNTY DETAIL R-2.02 "PAVING SECTIONS" NUMBER P-6
NOT TO SCALE

- NOTES**
- ALL BOLTS SHALL BE 3/8" F593 (18-8 TYPE 303-304) STAINLESS STEEL OR ANODIZED ALUMINUM HEX HEAD BOLT WITH WASHERS AND NUTS SPACED AT 12" MAXIMUM.
 - S.S. 3/8" MIN. LAG BOLTS MAY BE SUBSTITUTED FOR HEX HEAD BOLTS. LAG BOLTS MUST BE STAGGERED AT 9" INTERVALS.
 - ALL ALUMINUM ANGLES ARE 3 1/2" x 2 1/2" x 1/4".



SIGN INSTALLATION DETAIL
NOT TO SCALE



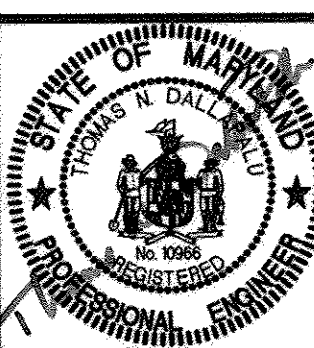
SIGN DETAILS
NOT TO SCALE

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. 10966 EXPIRATION DATE: MAY 31, 2012
Thomas N. D... 4/29/10
Signature of Engineer Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signatures]
DIRECTOR OF PUBLIC WORKS DATE: 4/29/10
CHIEF, BUREAU OF UTILITIES DATE: 4/29/10
ARCHIEF, UTILITY DESIGN DIVISION PSD DATE: 4/29/10

Dewberry
Dewberry & Davis LLC
3108 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MD 21244-2662
410.265.9500
FAX: 410.265.8875



DES:	LAL				
DRN:	RLI				
CHK:	TND				
DATE:	04/28/10				
BY:	NO.	LL	ADD VEHICLE PULLOVER AND FH	6/19/09	
		NO.	REVISIONS	DATE	

VEHICLE PULL OVER
600' SCALE MAP NO. 16
BLOCK NO. 23

FIRE SUPPRESSION LINE
VOLUNTEER FIRE STATION 3
CAPITAL PROJECT W-8284
CONTRACT 44-4529
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET 11 OF 11

Plotted by: (name) on: (date) Apr 28, 2010 - 4:30pm
 Title: (name) (sheet) SHEET 3 OF 11
 User: (name) Apr 28, 2010 4:30pm
 Plot Path: (path)