

TRAVERSE DATA			
D&D TRAV. PT.	NORTHING	EASTING	ELEV.
DEWBERRY #100 REBAR AND CAP	N 594,696.89	E 1,342,720.04	495.18
DEWBERRY #101 REBAR AND CAP	N 595,078.00	E 1,343,695.71	474.33
DEWBERRY #102 REBAR AND CAP	N 594,573.54	E 1,343,885.33	491.59
DEWBERRY #103 REBAR AND CAP	N 594,340.29	E 1,343,739.91	496.37
DEWBERRY #104 REBAR AND CAP	N 594,237.27	E 1,344,136.97	490.64
DEWBERRY #105 REBAR AND CAP	N 594,205.66	E 1,344,082.88	499.18
DEWBERRY #106 REBAR AND CAP	N 594,145.91	E 1,344,199.43	484.56

NOTE: ELEVATIONS ARE IN NAVD 88 DATUM

SURVEY CONTROL

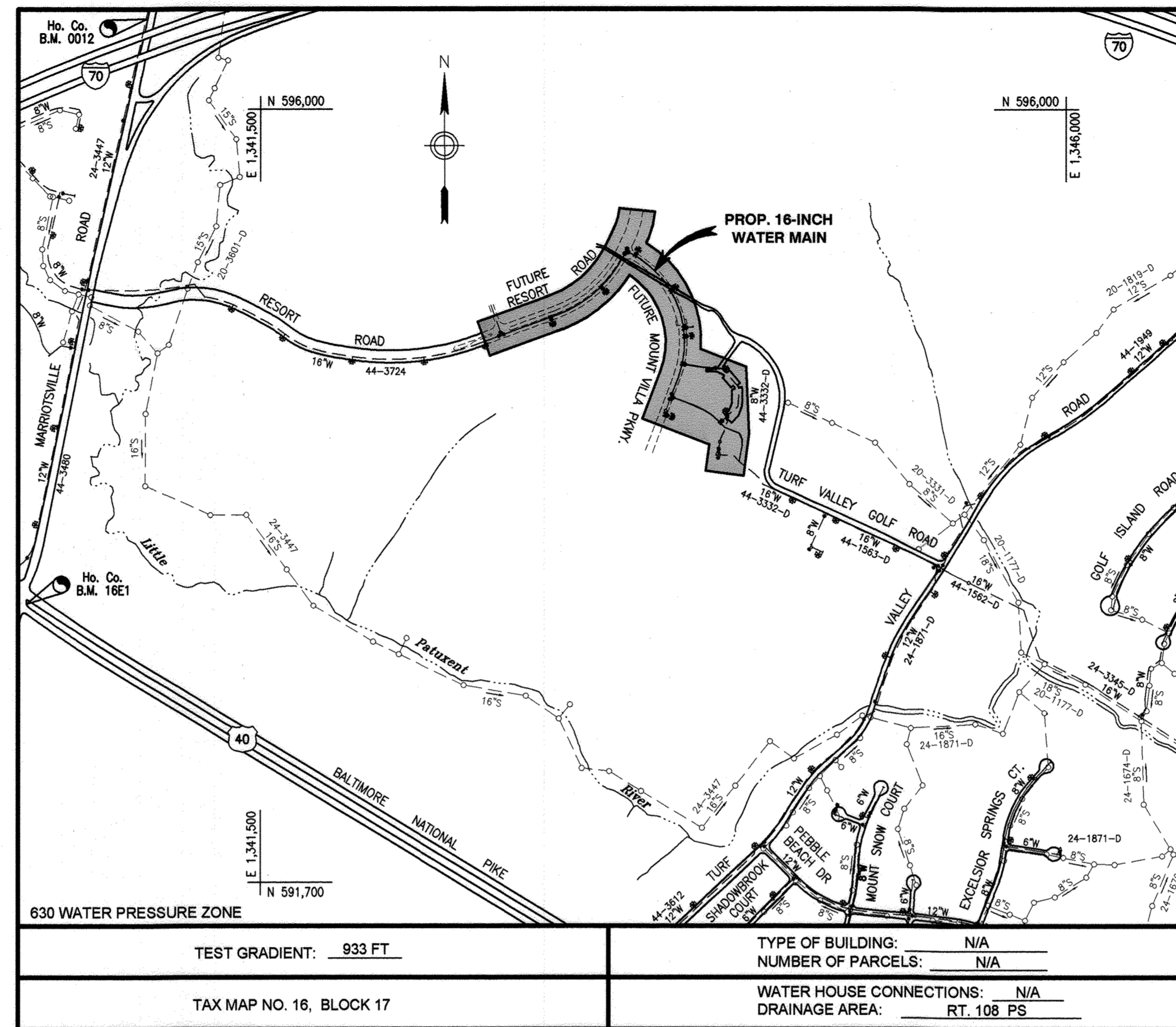
B.M. #1
 HOWARD CO. SURVEY CONTROL STA. NO. 0012
 CONCRETE MONUMENT AT SURFACE 6.84' WEST OF N.W. CORNER OF BRIDGE FOR MARRIOTTVILLE ROAD OVER I-70 NORTH.
 NAD 83 (AdJ 1991): N 596,502.817 E 1,340,864.356
 NAVD 88: EL. 486.119

B.M. #2
 HOWARD CO. SURVEY CONTROL STA. NO. 16E1
 CONCRETE MONUMENT 0.6' BELOW SURFACE AT N.E. CORNER OF INTERSECTION OF MARRIOTTVILLE ROAD AND E.B.L. OF U.S. ROUTE 40.
 NAD 83 (AdJ 1991): N 593,251.002 E 1,340,192.690
 NAVD 88: EL. 463.615

HOWARD COUNTY

DEPARTMENT OF PUBLIC WORKS

ELLCOTT CITY, MARYLAND 21043



TEST GRADIENT: 933 FT	TYPE OF BUILDING: N/A
TAX MAP NO. 16, BLOCK 17	NUMBER OF PARCELS: N/A
	WATER HOUSE CONNECTIONS: N/A
	DRAINAGE AREA: RT. 108 PS

VICINITY MAP
SCALE: 1" = 600'

WATER STAKEOUT TABLE				
ITEM	STATION	NORTHING	EASTING	
FUTURE RESORT ROAD				
CONNECT TO EX. 16" W	0+00	594,775.41	1,342,937.40	
16"x6" FH TEE	1+97	594,842.54	1,343,122.61	
P.C.	2+29.45	594,853.59	1,343,153.17	
16"x6" FH TEE	5+29	595,012.21	1,343,404.29	
16" VALVE	7+68	595,206.36	1,343,541.58	
P.T.	7+69.57	595,208.40	1,343,542.42	
16"x16" TEE	7+73	595,211.12	1,343,543.68	
16" VALVE	7+78	595,215.82	1,343,545.91	
FUTURE MOUNT VILLA PARKWAY				
16" VALVE	0+05	595,208.93	1,343,548.31	
P.C.	0+07.32	595,207.98	1,343,550.29	
16"x6" FH TEE	0+58	595,184.56	1,343,594.79	
16"x6" FH TEE	3+40	594,987.54	1,343,792.67	
P.C.C.	5+40.86	594,800.09	1,343,386.03	
16"x8" TEE	5+59	594,782.34	1,343,864.85	
16"x6" FH TEE	6+06	594,735.80	1,343,869.49	
16"x8" TEE	7+58	594,584.11	1,343,857.38	
P.T.	8+39.45	594,506.37	1,343,834.22	
16" VALVE	9+47	594,406.23	1,343,796.24	
16"x16" TEE	9+52	594,401.55	1,343,794.47	
16" VALVE	9+57	594,396.88	1,343,792.70	
P.C.	9+70.86	594,388.49	1,343,787.62	
4" COMBINATION AIR VALVE	10+50	594,308.60	1,343,762.10	
16"x6" FH TEE	10+57	594,301.47	1,343,760.01	
8" W (BRANCH A)				
8" VALVE	A0+05	594,582.89	1,343,862.66	
P.C.	A0+36.56	594,576.25	1,343,893.08	
P.T.	A1+36.60	594,562.96	1,343,992.12	
16" W (BRANCH B)				
16" VALVE	B0+05	594,399.70	1,343,799.26	
P.C.	B1+48.06	594,349.06	1,343,932.92	
P.T.	B2+96.95	594,269.18	1,344,057.28	
16"x 8" TEE	B3+21	594,252.12	1,344,074.54	
16" 1/16 HB	B3+52	594,230.71	1,344,096.20	
16" 1/8 HB	B4+40	594,197.21	1,344,178.45	
16" 1/16 HB	B4+77	594,163.63	1,344,192.60	
16" 1/16 HB	B5+03	594,137.58	1,344,192.75	
16" 1/32 HB	B5+84	594,058.23	1,344,177.45	

QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	SUPPLIER
16" D.I.P. (CLASS 54)	L.F.	2470	2519	U.S. PIPE
16"x16" TEE	EA.	2	2	Belair Rd. Supply
16" VALVE	EA.	6	6	BRS
16" AIR RELEASE VALVE	EA.	1	1	BRS
16" CAP AND BUTTRESS	EA.	2	2	BRS
16" 1/8 HORIZ. BEND	EA.	2	2	BRS
16" 1/16 HORIZ. BEND	EA.	4	1	BRS
16" 1/32 HORIZ. BEND	EA.	1	3	BRS
16" 1/32 VERT. BEND	EA.	1	1	BRS
8" D.I.P. (CLASS 54)	L.F.	335	337	U.S. PIPE
16"x8" TEE	EA.	4	4	
8" VALVE	EA.	4	4	BRS
8" CAP	EA.	2	2	BRS
FIRE HYDRANT AND 6" VALVE	EA.	6	6	BRS
16"x6" TEE	EA.	6	6	BRS
8" D.I.P. CLASS 54	L.F.	110		
16" 1/16 VERT. BEND	EA.	2	2	BRS

NOTE:
 Quantities in this table are solely for record purposes. Contractor shall not rely on the quantities in the table and shall use his/her own takeoff to establish materials and quantities needed for this project.

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. 10968 EXPIRATION DATE: MAY 31, 2012.
 Signature of Engineer: *Thomas W. Dalton* Date: 5/12/10

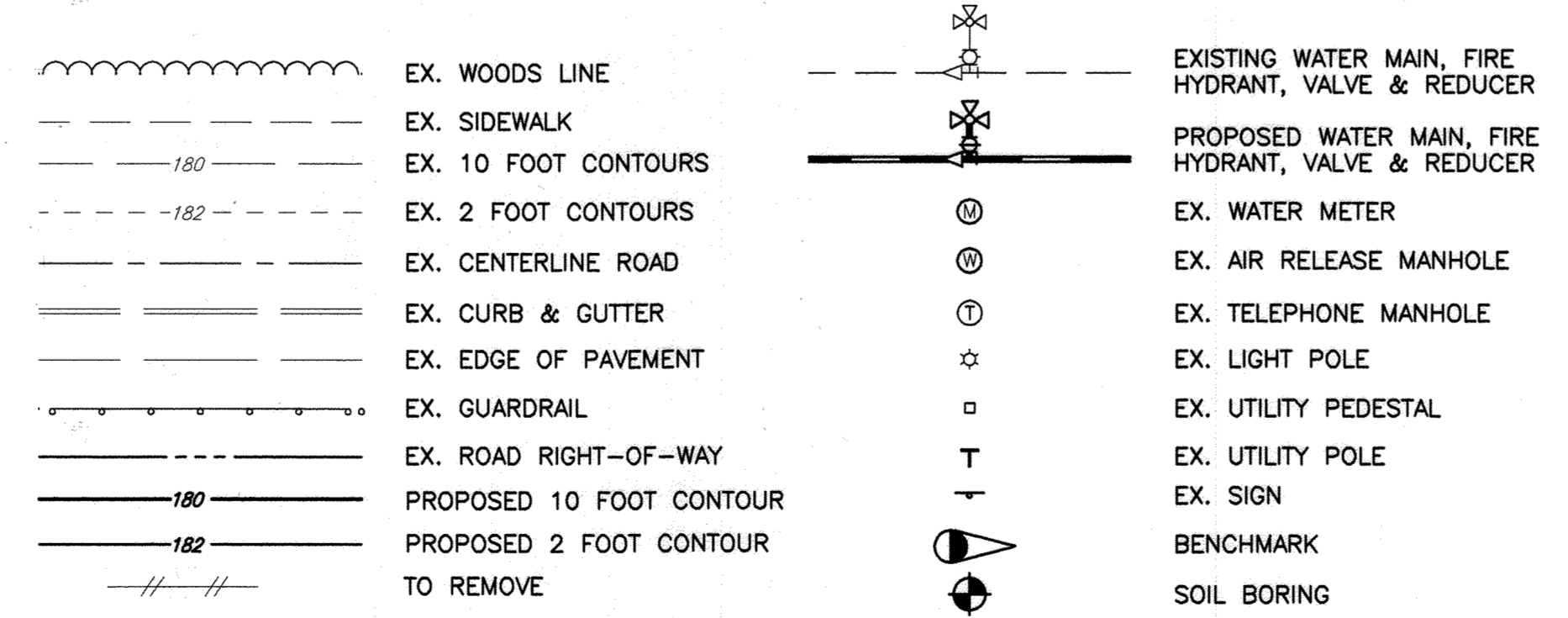
ALBETH HEIGHTS

WATER MAIN EXTENSION - PHASE II

CAPITAL PROJECT W-8195

CONTRACT NO. 44-4480

LEGEND



INDEX OF SHEETS

SHT. NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE
3	PLAN AND PROFILE
4	PROFILE AND DETAILS
5	EROSION AND SEDIMENT CONTROL PLAN
6	EROSION AND SEDIMENT CONTROL DETAILS
7	EROSION AND SEDIMENT CONTROL NOTES

- GENERAL NOTES**
- Approximate location 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 by the Contractor at the Contractor's expense.
 - Topographic field surveys were performed by Dewberry & Davis LLC in April 2007.
 - Horizontal and Vertical Survey Controls:
 The coordinates shown on the drawings are based on the Maryland State Plane Coordinate System (NAD 83/91) as projected by Howard County Geodetic Control Stations Howard Co. B.M. 0012 and B.M. 16E1.
 All vertical controls are based on NAVD 88.
 - All pipe elevations shown are invert elevations unless otherwise noted on the plans.
 - Clear all utilities by a minimum of 12". Clear all poles by 5'-0" minimum or 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.
 - All existing utilities shall be test pitted/located as necessary and in advance of the proposed construction, in order to properly make all required utility crossings and/or connections. Any discrepancies or utility conflicts shall be immediately reported to the Engineer. 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 or specifications. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the Contractor two (2) weeks in advance of construction operations at his own expense.
 - Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:
 AT&T 1-800-252-1133
 BGE - Contractor Services 410-850-4620
 BGE - Emergency 410-685-1400
 State Highway Administration 410-531-5533
 Bureau of Utilities (DPW) 410-313-4900
 Verizon 1-800-743-0033 / 410-224-9210
 Miss Utility 1-800-257-7777
 - Trees and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the Contractor.
 - Contractor shall remove trees, stumps and roots along 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 Howard County Bureau of Highways at (410) 313-7450 at least five (5) working days before any open cut, boring/jacking or trenchless installation operation of any 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.
 - The Contractor is responsible for contacting the various businesses and coordinating his work activities so as not to negatively impact connected customers. The installation of water main shall cause a minimum of disturbance to the existing businesses and notification to the businesses of any "interruptions of service" shall be the responsibility of the Contractor. The County requires that the Contractor notify each business affected, by letter or with door tags, of the impending service interruption at least 48 hours in advance of the planned interruption. In the event of an unplanned interruption, the Contractor will be responsible for notifying the businesses by "door to door" canvassing.
 - The Contractor shall provide all necessary lines, grades and elevations, and cut sheets shall be prepared based on the lines and grades shown on the Contract drawings.

WATER MAIN NOTES

- Tops of water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- Fittings and valves shall be restrained as shown on the drawings. If any of the horizontal or vertical bends shown on the drawings are not specifically identified to be restrained, they must be buttressed or anchored in accordance with the Howard County Standard Specifications and Details for Construction.
- 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. Soil around the fire hydrant shall be compacted in accordance with Section 1000 and Section 1005 of the Howard County Standard Specifications.
- The Contractor shall not operate any water main valves on the existing water system.
- Fire Hydrants to be removed shall be returned to:
 Howard County Bureau of Utilities
 8250 Old Montgomery Road
 Columbia, Md. 21045
 410-313-4900
- The Contractor shall notify the Howard County Bureau of Utilities at least fifteen (15) days prior to any water main shut downs.
- All ductile iron pipes to be used on the public water system shall be class 54. Ductile iron fittings shall meet the requirements of the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction; ~~the pipe's exterior shall be epoxy coated and its interior epoxy lined, in accordance with AWWA C-110.~~
- All water house connections shall be copper meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction.
- All fire hydrant leads including the tee shall be ductile iron class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction.
- 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.
- All water mains within casing pipes shall be restrained ductile iron pipes class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV - Standard Specifications and Details for Construction.

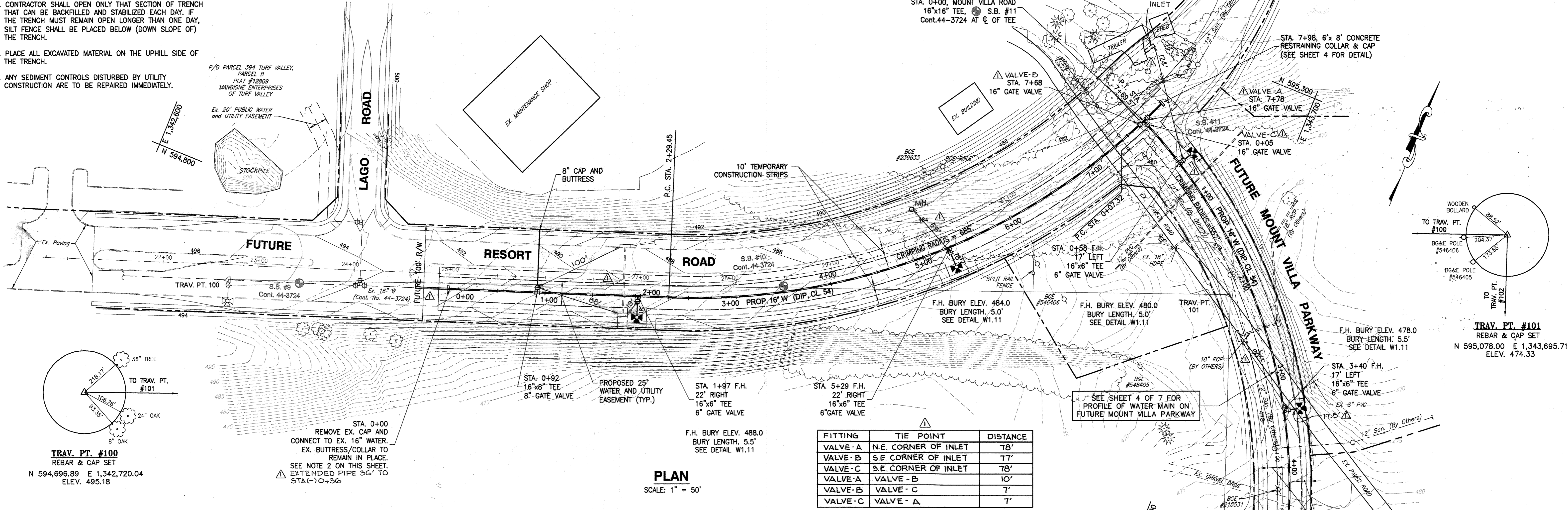
AS BUILT 12-10-2010

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>William J. ...</i> 5/21/10 Chief, Bureau of Utilities: <i>Shirley C. ...</i> 5/21/10		Dewberry & Davis LLC 3106 LORD BALTIMORE DRIVE SUITE 110 BALTIMORE, MD 21244-2662 410.265.9500 FAX: 410.265.8875		DES: RSR DRN: ARW CHK: TND DATE: 3/30/10		CD AS BUILT REVISIONS DATE: 4-5-11		TITLE SHEET 600' SCALE MAP NO. 16 BLOCK NO. 17		ALBETH HEIGHTS WATER MAIN EXTENSION - PHASE II CAPITAL PROJECT W-8195 CONTRACT 44-4480 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND		SCALE: AS SHOWN SHEET 1 OF 7
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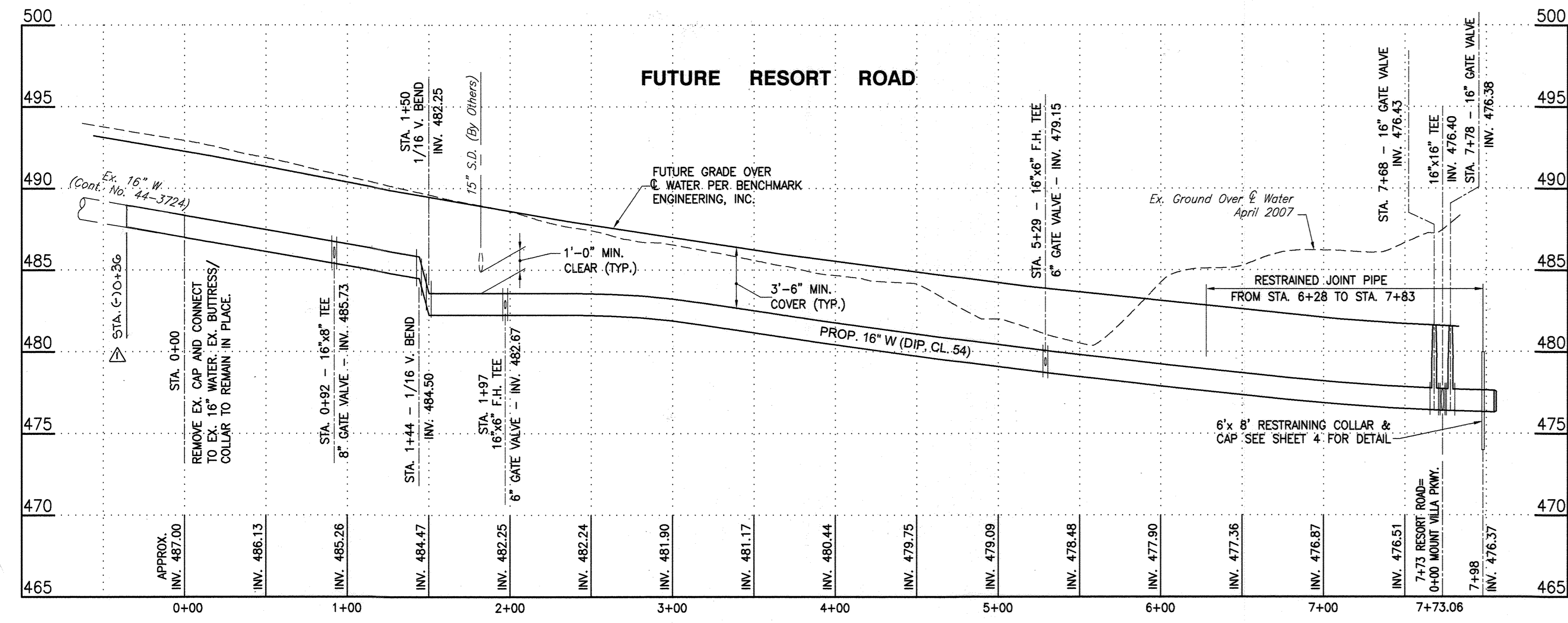
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 Plot Date: May 20, 2010 - 4:29pm
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- UTILITY NOTES:**
- CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF THE TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWN SLOPE OF) THE TRENCH.
 - PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH.
 - ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

STA. 7+73, RESORT ROAD = STA. 0+00, MOUNT VILLA ROAD
 16"x16" TEE, S.B. #11
 Cont. 44-3724 AT Q OF TEE



PLAN
 SCALE: 1" = 50'



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

- SHEET NOTES:**
- ALL THE ELEVATIONS SHOWN HEREON REFER TO NAVD 88 DATUM.
 - THE CONTRACTOR TO TEST PIT AND VERIFY THE DEPTH, ELEVATION AND HORIZONTAL LOCATION OF EXISTING 16" WATER MAIN IN FUTURE RESORT ROAD, PRIOR TO COMMENCING EXCAVATION TO INSTALL THE PROPOSED 16" DIP WATER MAIN.

RESTORATION SCHEDULE			
STATION	TO STATION	DISTANCE	MATERIAL
WATER MAINS			
0+00	7+85	785 L.F.±	EX. NATURAL GRADE (FUTURE RESORT ROAD)
0+00	10+64	1,064 L.F.±	EX. NATURAL GRADE (FUTURE MOUNT VILLA PKWY.)
A0+00	A0+52	52 L.F.±	EX. NATURAL GRADE (FUTURE UNNAMED ROAD)
A0+53	A1+95	142 L.F.±	ASPHALT PAVING/ CURB & GUTTER
C0+00	C0+38	38 L.F.±	EX. NATURAL GRADE
C0+39	C0+54	15 L.F.±	ASPHALT PAVING/ CURB & GUTTER

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 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.
 Signature of Engineer: *Thomas W. DelleA...* Date: 5/12/10

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Michael...* Date: 5/27/10
 Chief, Bureau of Engineering: *Robert...* Date: 5/21/10
 Chief, Bureau of Utilities: *John...* Date: 5/25/10
 Chief, Utility Design Division: *...* Date: 5/18/10

Dewberry
 Dewberry & Davis LLC
 5108 LORD BALTIMORE DRIVE
 SUITE 110
 BALTIMORE, MD 21244-2662
 410.266.8950
 FAX: 410.266.8975



DES:	RSR
DRN:	ARW
CHK:	TND
DATE:	3/30/10
CD	AS BUILT
BY	NO.
REVISIONS	
DATE	4-5-11

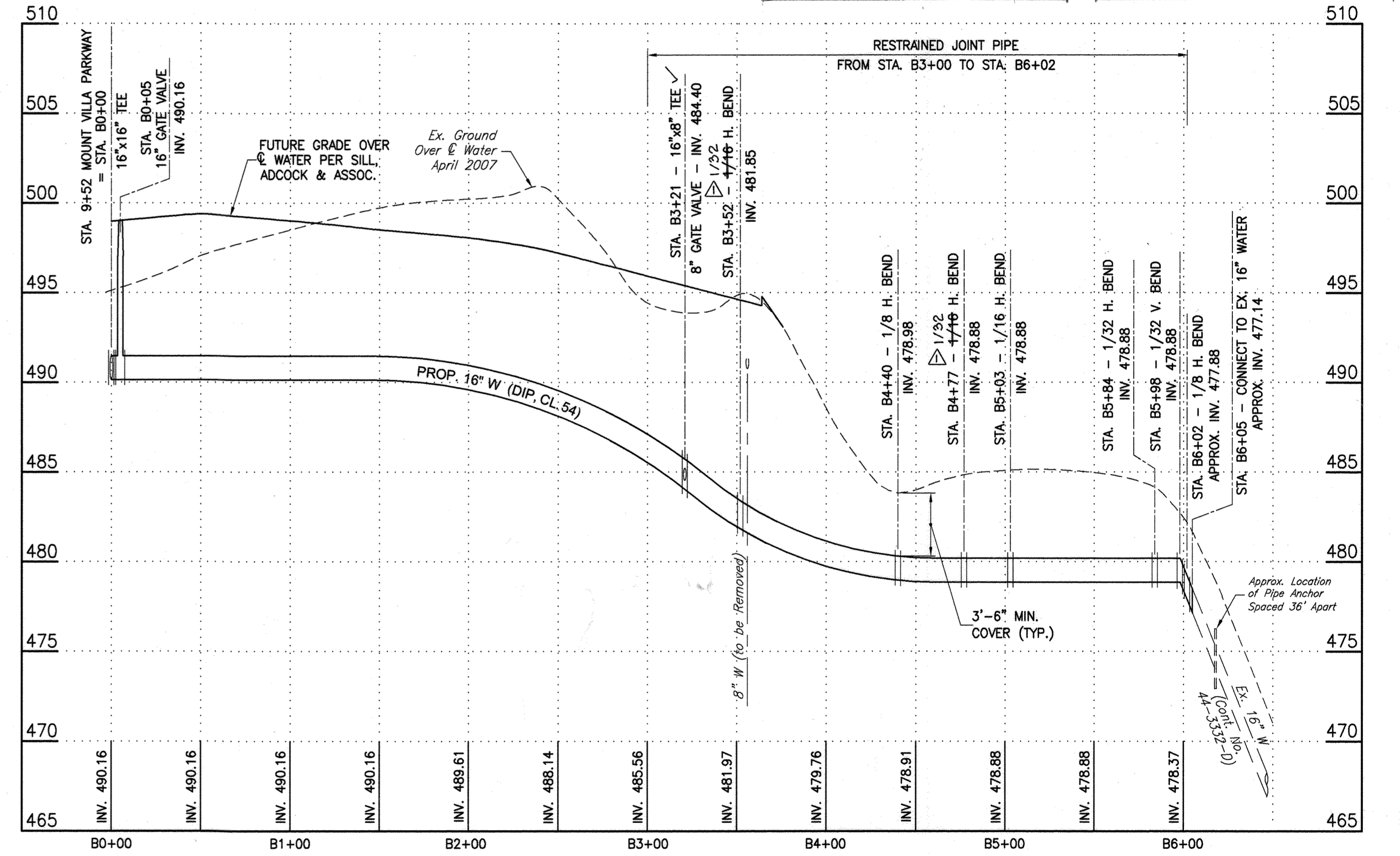
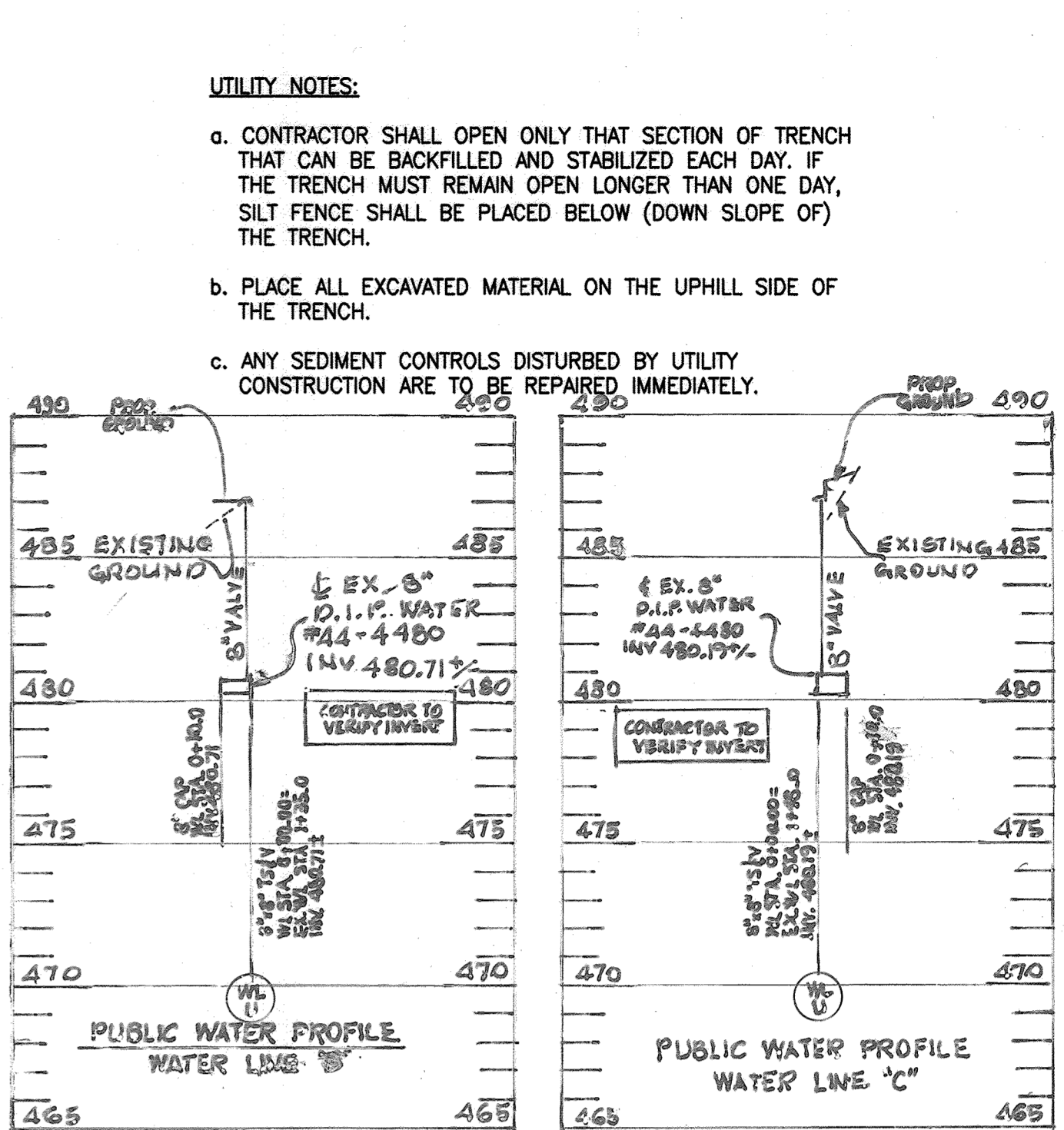
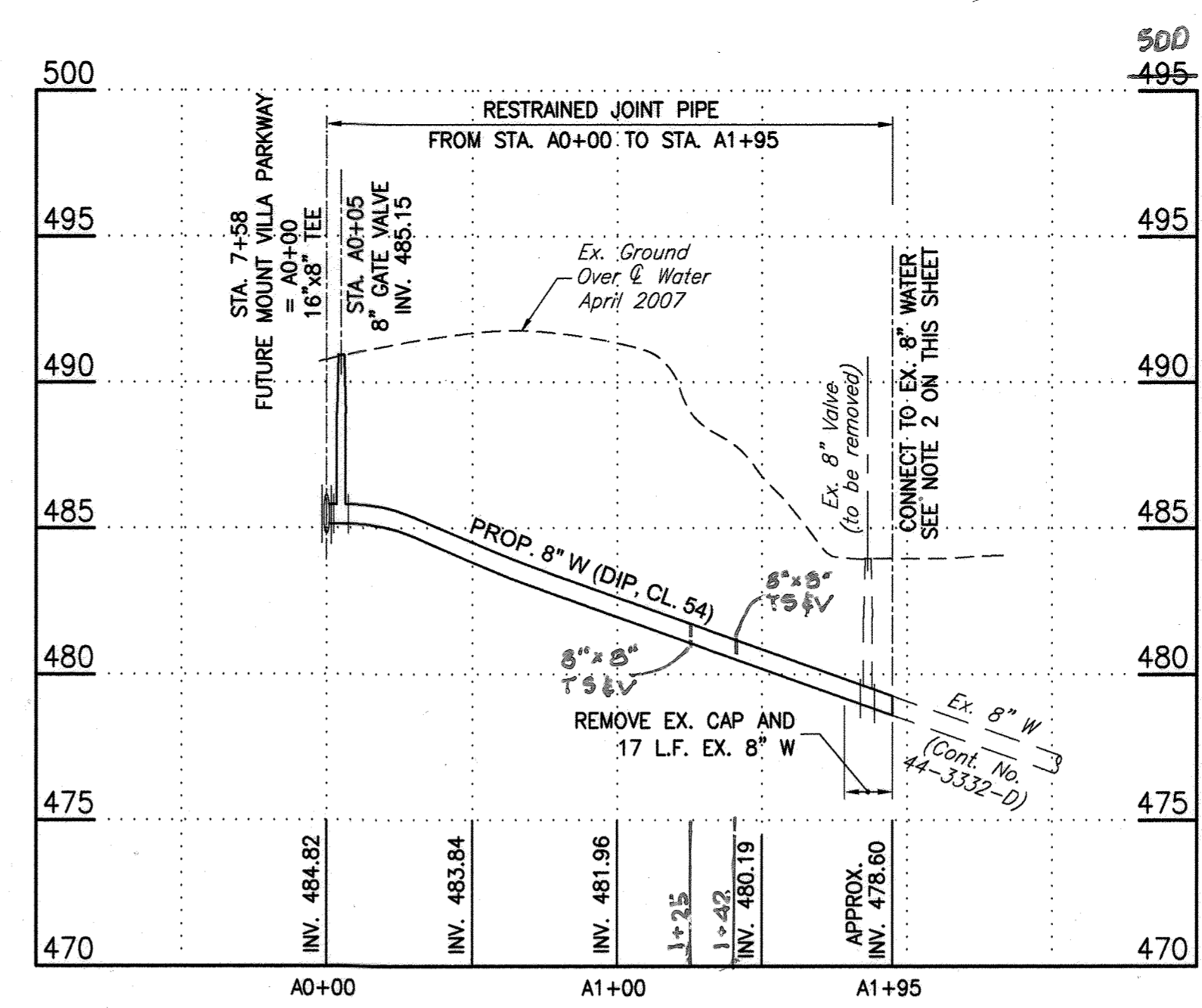
PLAN AND PROFILE
 600' SCALE MAP NO. 16
 BLOCK NO. 17

ALBETH HEIGHTS
WATER MAIN EXTENSION - PHASE II
 CAPITAL PROJECT W-8195
 CONTRACT 44-4480
 ELECTION DISTRICT NO. 3
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
 SHEET 2 OF 7

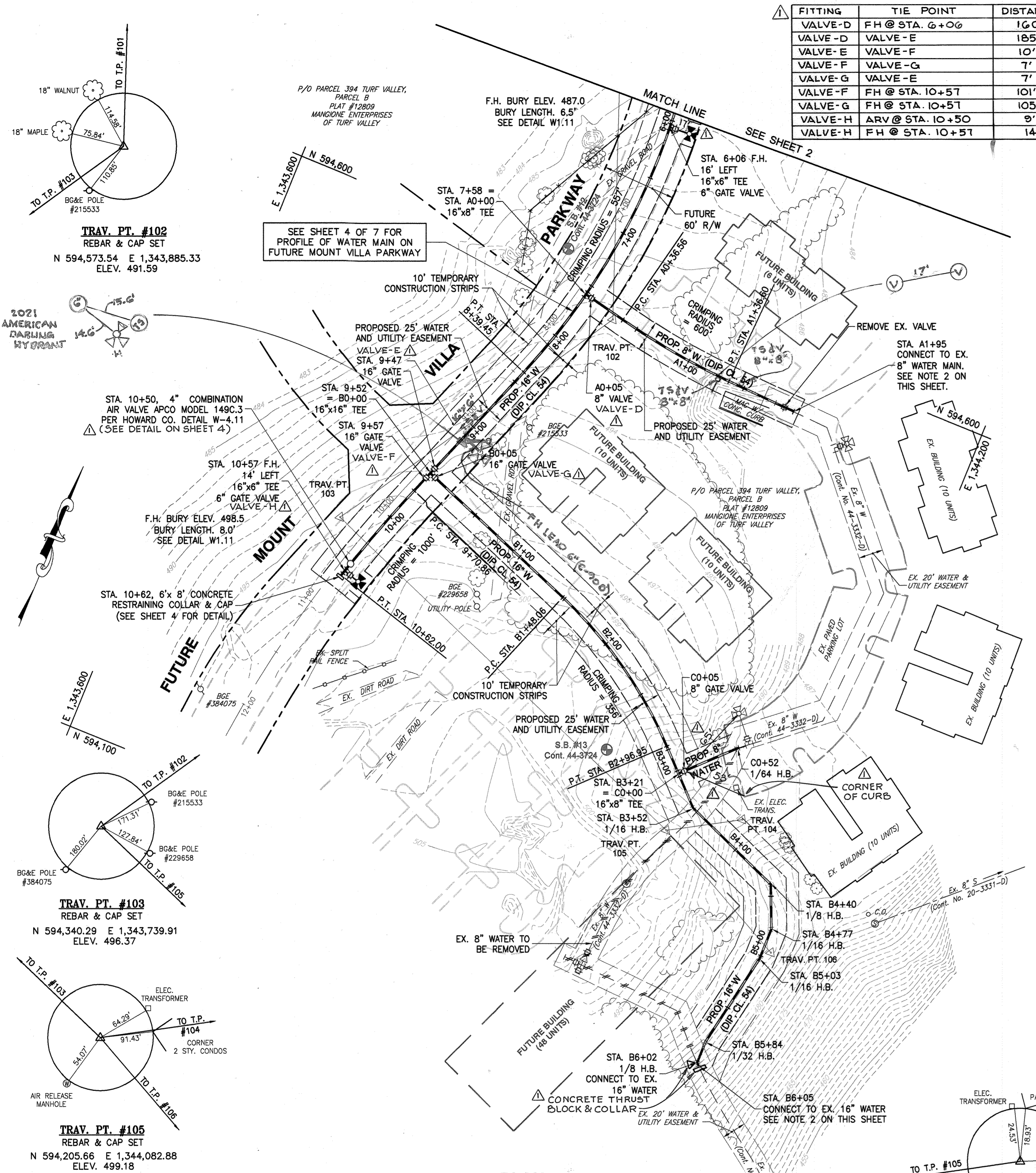
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 Plot Units: Feet
 Plot Orientation: Landscape
 Plot Range: Extents
 Plot Sheet: 2 of 7
 Plot Title: ALBETH HEIGHTS WATER MAIN EXTENSION - PHASE II
 Plot User: (csh)

FITTING	TIE POINT	DISTANCE
VALVE-D	FH @ STA. 6+06	160'
VALVE-D	VALVE-E	185'
VALVE-E	VALVE-F	10'
VALVE-F	VALVE-G	7'
VALVE-G	VALVE-E	7'
VALVE-F	FH @ STA. 10+57	101'
VALVE-G	FH @ STA. 10+57	105'
VALVE-H	ARV @ STA. 10+50	9'
VALVE-H	FH @ STA. 10+57	14'



PROFILES
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

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PLAN
SCALE: 1" = 50'

TRAV. PT. #102
REBAR & CAP SET
N 594,573.54 E 1,343,885.33
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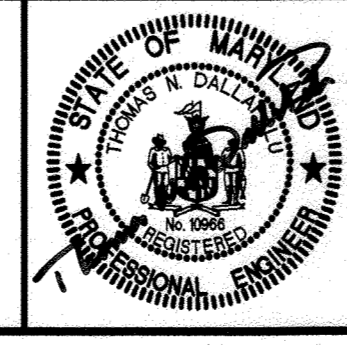
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REBAR & CAP SET
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ELEV. 496.37

TRAV. PT. #105
REBAR & CAP SET
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ELEV. 499.18

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Thomas M. Deltor Jr. 5/12/10
Signature of Engineer Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *Stelio*
Chief, Bureau of Utilities: *Stelio*
Chief, Bureau of Engineering: *5/21/10*
Chief, Utility Design Division: *5/18/10*

Dewberry
Dewberry & Davis LLC
3108 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MD 21244-2662
410.286.9900
FAX: 410.265.6975



DES:	RSR		
DRN:	ARW		
CHK:	TND	WRA: 3 AS BUILT	5-31-10
DATE:	3/30/10	CD: 1 AS BUILT	4-5-11
		BY NO.	

TRAV. PT. #104
REBAR & CAP SET
N 594,237.27 E 1,344,136.97
ELEV. 490.64

TRAV. PT. #106
REBAR & CAP SET
N 594,145.91 E 1,344,199.43
ELEV. 484.56

PLAN AND PROFILE

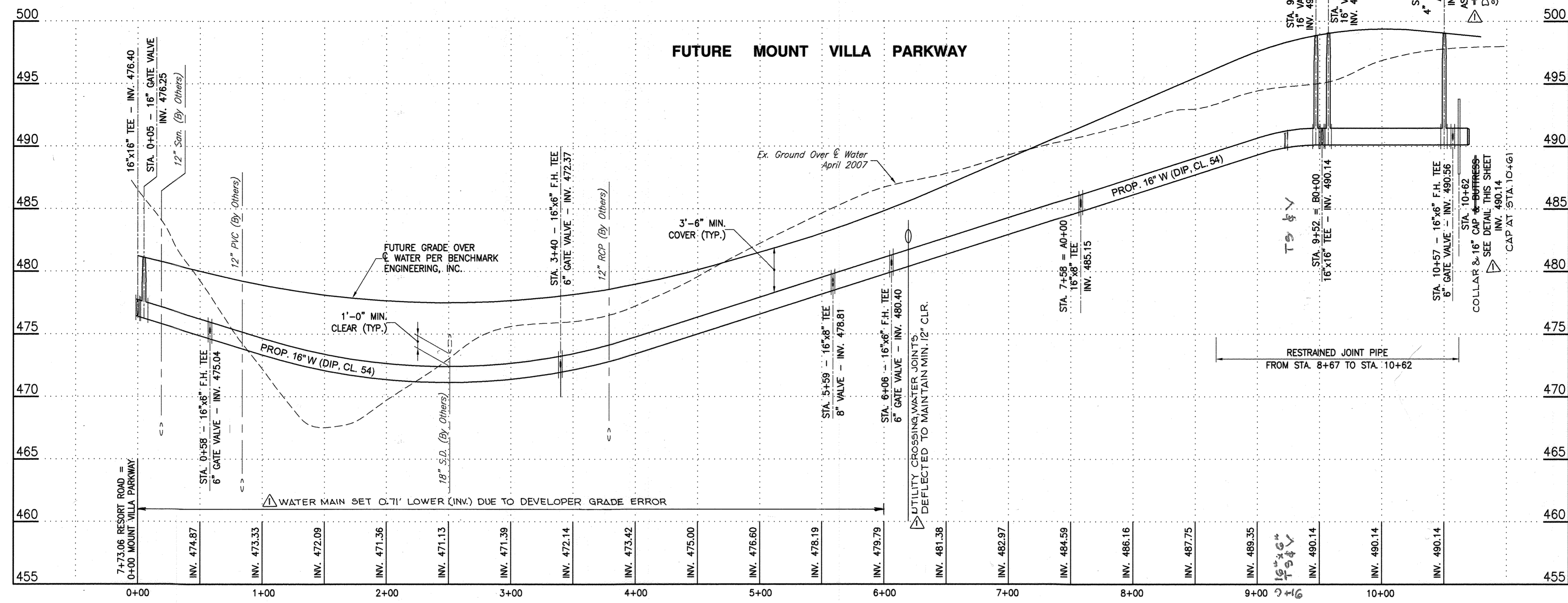
REVISIONS
600' SCALE MAP NO. 16
BLOCK NO. 17

ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND

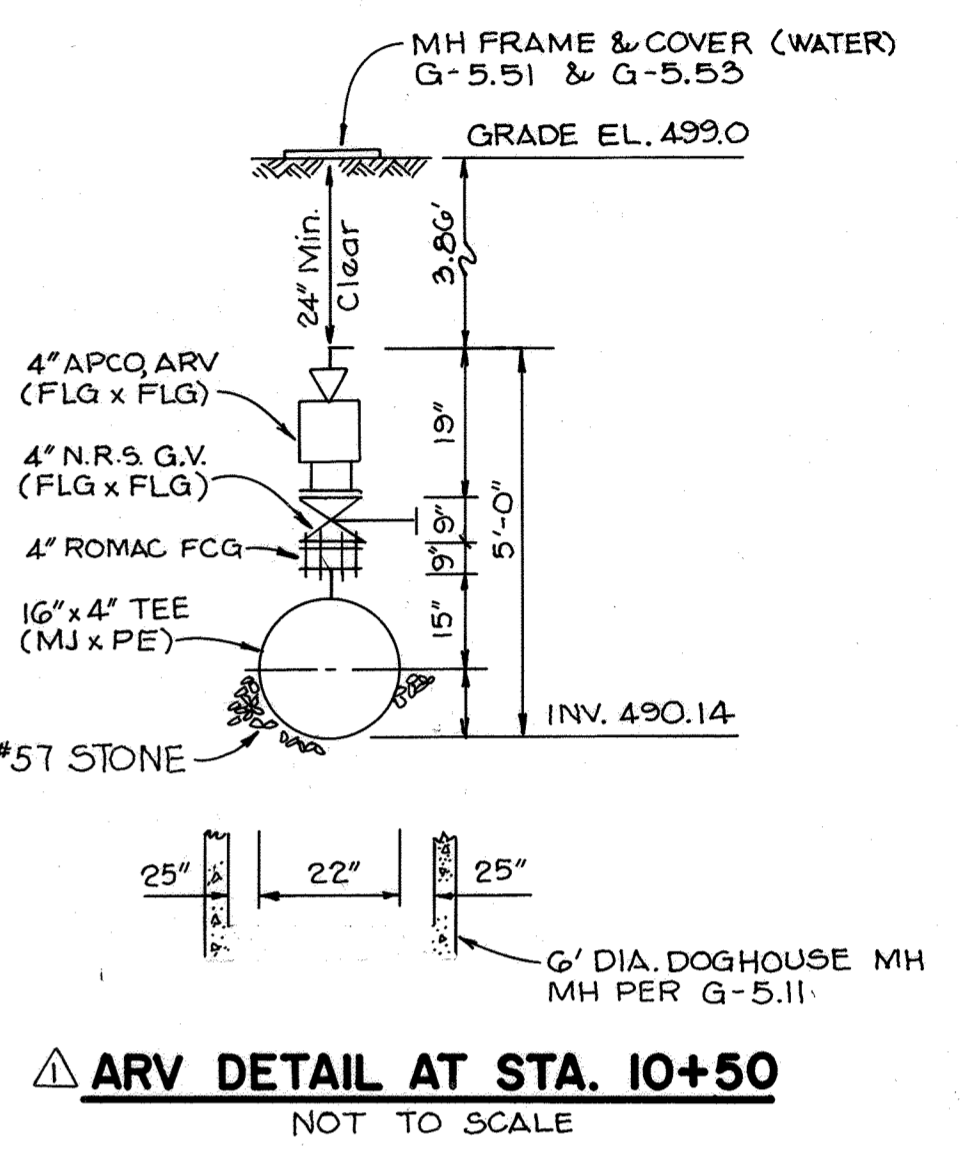
AS BUILT 12-10-2010

ALBETH HEIGHTS
WATER MAIN EXTENSION - PHASE II
CAPITAL PROJECT W-8195
CONTRACT 44-4480

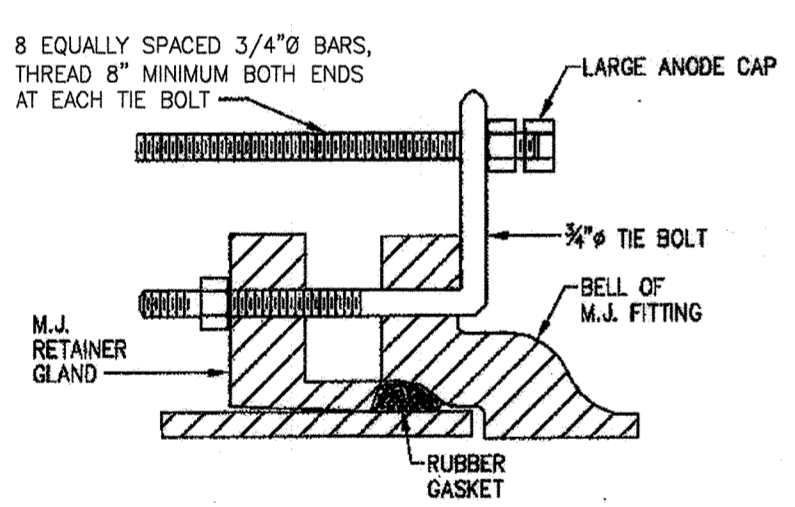
SCALE: AS SHOWN
SHEET 3 OF 7



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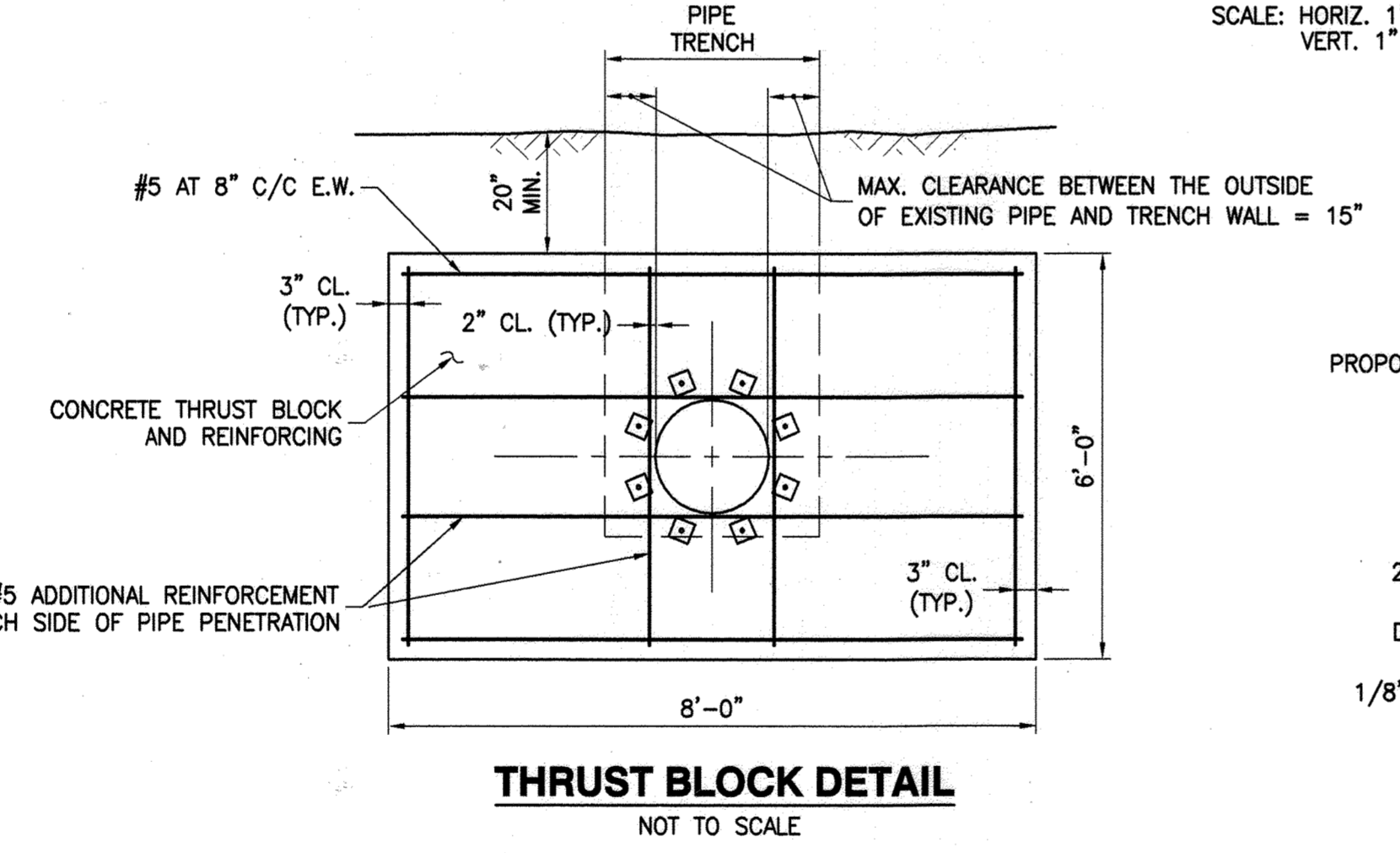


PROFILE
SCALE: HORIZ. 1" = 50'
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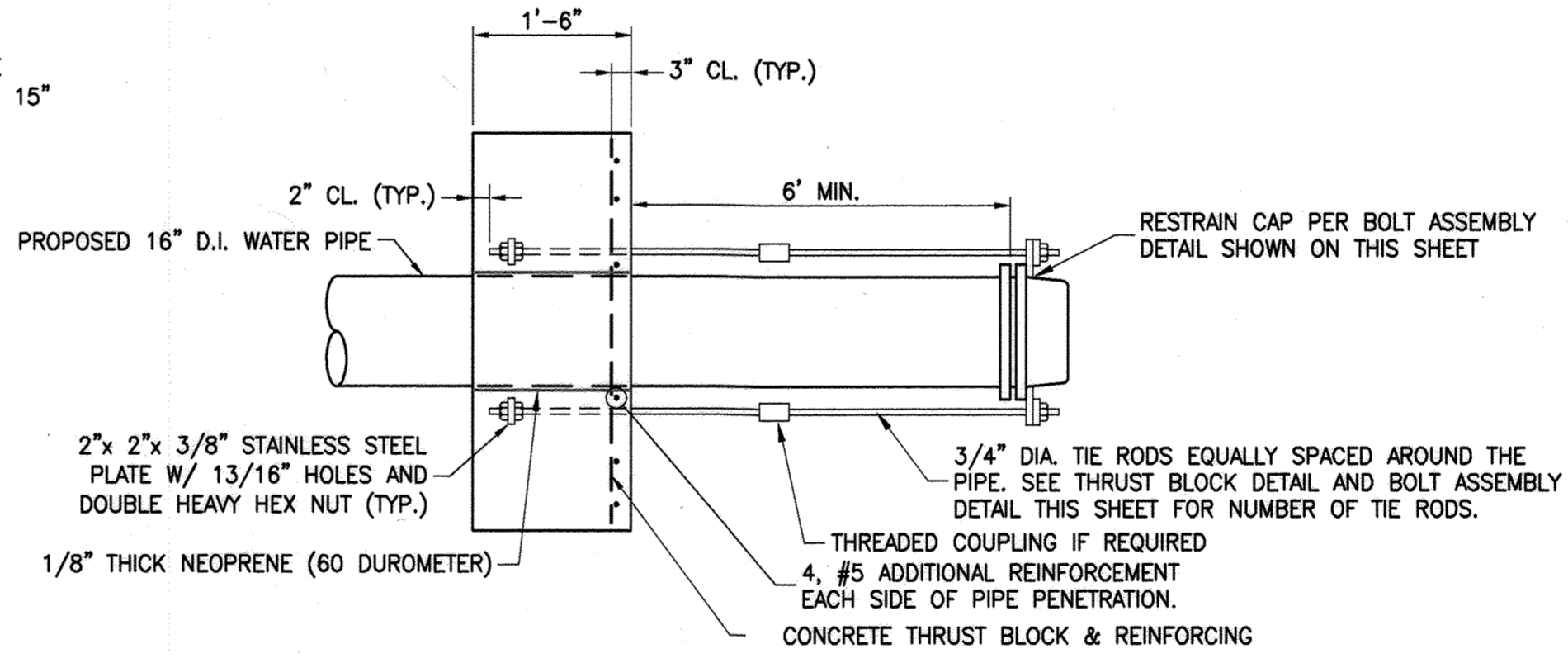


- NOTES:**
- USE MECHANICAL JOINT FITTINGS ONLY.
 - COAT BARS AND APPURTANCES WITH FIELD-APPLIED BITUMINOUS COATING.

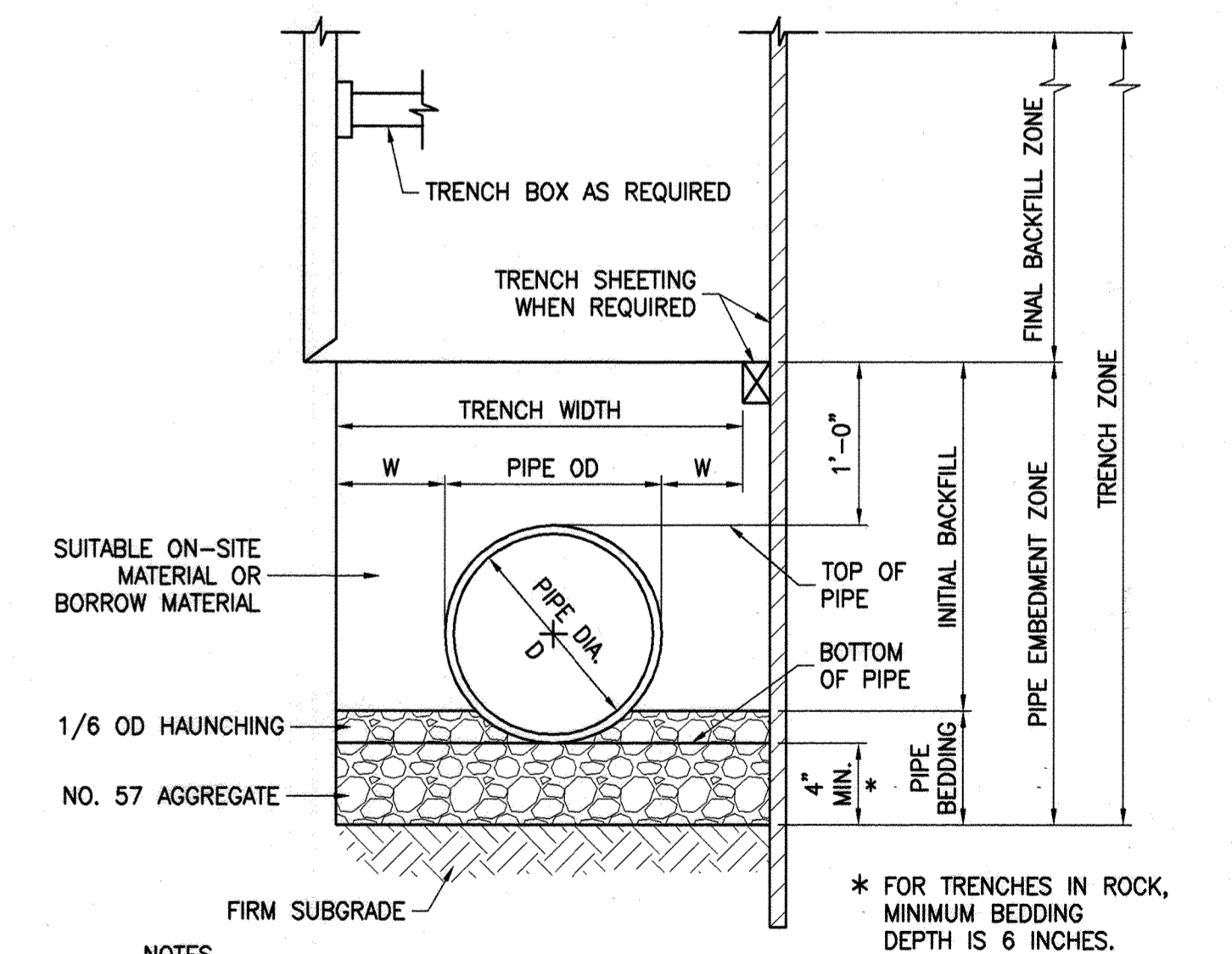
BOLT ASSEMBLY DETAIL
NOT TO SCALE



- THRUST COLLAR 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 around anchor.
 - 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 Carboline Bitumastic 300M coal tar epoxy or equal.
 - Bolt circle for 3/4" tie rods @ thrust collar equals bolt circle @ bolts.
 - Tie rods shall be parallel to axis of pipe.
 - Tie coupling, if necessary, shall be Star National Products Super Star Tie Coupling No. SS10 or equal.
 - Concrete block shall extend perpendicularly each side of trench for dimensions shown. Concrete on bearing face of anchor shall be poured against undisturbed earth.
 - Replace all disturbed soil between new fitting and concrete thrust collar with crushed stone compacted as structural fill.



RESTRAINING COLLAR FOR 16-INCH CAP
NOT TO SCALE



- 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.

PIPE DIA. "D"	"W"	TRENCH PAYMENT WIDTH
4	12	28
6	11	28
8	10	28
16	8	32

PIPE TRENCH DETAIL G-2.11
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. Doherty 5/12/10
Signature of Engineer Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Michael J. ... 5/27/10
DIRECTOR OF PUBLIC WORKS DATE

Paul ... 5/21/10
CHIEF, BUREAU OF ENGINEERING DATE

Steve ... 5/25/10
CHIEF, BUREAU OF UTILITIES DATE

... 5/18/10
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry & Davis LLC
3109 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MD 21244-2882
410.286.9500
FAX: 410.285.8875



DES:	RSR			
DRN:	ARW			
CHK:	TND	WRA	2	AS BUILT
DATE:	3/30/10	CD	1	AS BUILT
BY:		NO.		
		REVISIONS		DATE
				5/20/10
				4-5-11

PROFILE AND DETAILS

600' SCALE MAP NO. 16

BLOCK NO. 17

ALBETH HEIGHTS
WATER MAIN EXTENSION - PHASE II
CAPITAL PROJECT W-8195
CONTRACT 44-4480

ELECTION DISTRICT NO. 3

HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 4 OF 7

Printed by (web) on: 05/12/2010 10:30am
 File Path: C:\Users\m... \Documents\1000\Drawings\Water\Phase II\Sheet 4.dwg
 Title: Capital Project W-8195 - Albeth Heights Water Main Extension
 User: m...
 Plot Device: HP DesignJet 5000 Series
 Plot Date: 5/12/2010 10:30am
 Plot Time: 10:30am

UTILITY NOTES

1. CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF THE TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWN SLOPE OF) THE TRENCH.
2. PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH.
3. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

LEGEND

- PROPOSED WATER MAIN
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED EDGE OF WOODS
- AREA TO BE VEGETATIVELY STABILIZED
- TREE TO BE REMOVED

EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 50'

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. Dallabala 5/12/10
Signature of Engineer Date

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Ronald G. Lepson 5/21/10
Signature of Developer Date
Ronald G. Lepson
Print Name

I 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

Thomas N. Dallabala 5/13/10
Signature of Engineer Date
Thomas N. Dallabala
Print Name

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

John R. Blunt 6/2/10
Signature of District Engineer Date
Howard Soil Conservation District

AS BUILT 12-10-2010

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuca 5/27/10
DIRECTOR OF PUBLIC WORKS DATE

Ronald G. Lepson 5/21/10
CHIEF, BUREAU OF ENGINEERING DATE

Steve Chen 5/18/10
CHIEF, BUREAU OF UTILITIES DATE

John P. ... 5/18/10
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry & Davis LLC

3108 LORD BALTIMORE DRIVE
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BALTIMORE, MD 21244-2682
410.285.9500
FAX: 410.285.8875



DES:	RSR		
DRN:	ARW		
CHK:	TND		
DATE:	3/30/10		
BY:	NO.	AS BUILT	4-5-11
REVISIONS:			

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. 16 BLOCK NO. 17

ALBETH HEIGHTS WATER MAIN EXTENSION - PHASE II

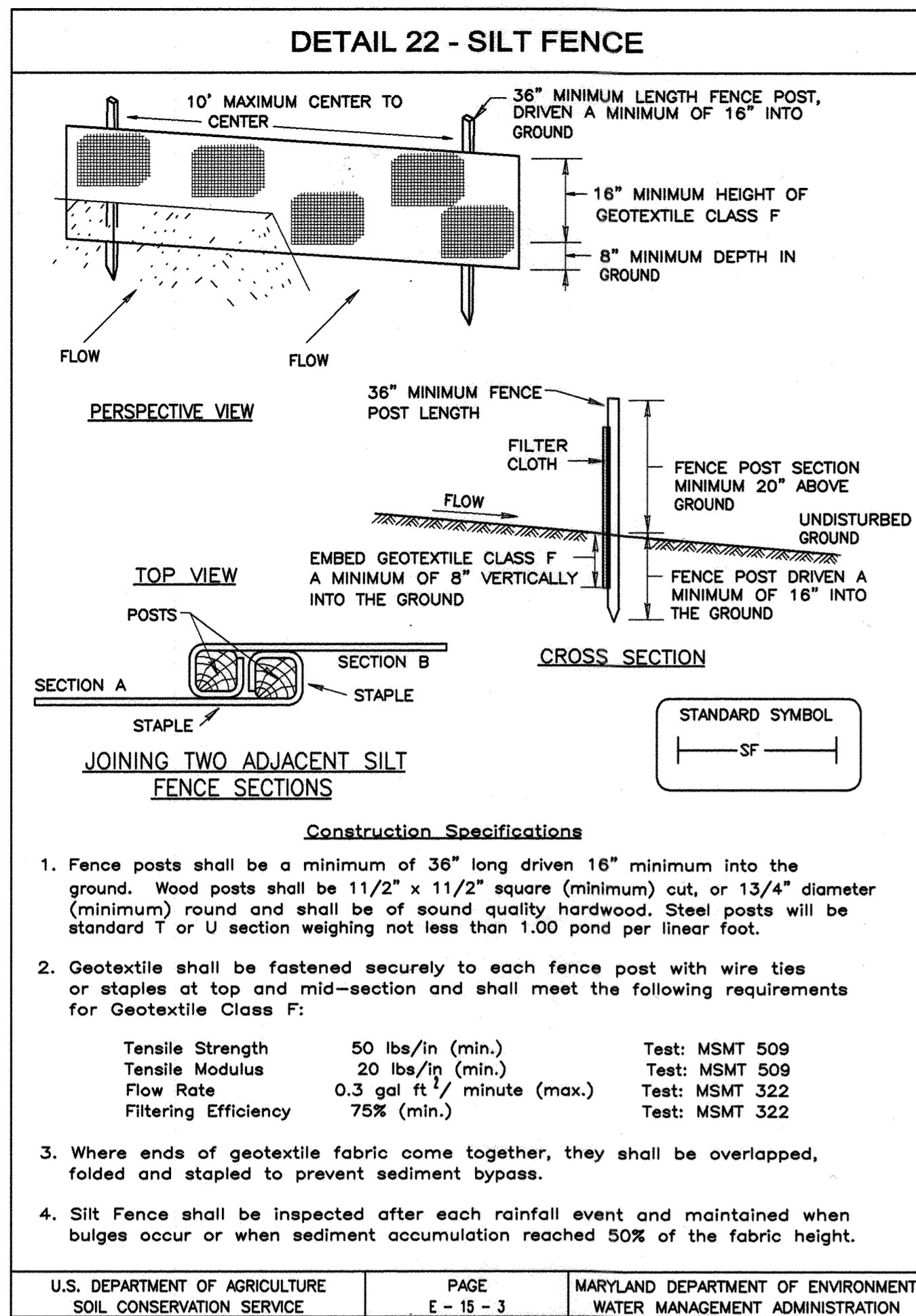
CAPITAL PROJECT W-8195
CONTRACT 44-4480

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET 5 OF 7

Plotted by: (c:\pds) on Plot Date: May 12, 2010 - 10:20am
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 Plot Scale: 1" = 50'
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 Plot Font: Arial
 Plot Line Weight: 0.5
 Plot Line Style: Solid
 Plot Text Style: Standard
 Plot Title: EROSION AND SEDIMENT CONTROL PLAN
 Plot Date: 5/12/10
 Plot User: thomas.dallabala
 Plot Project: W-8195-02
 Plot Path: c:\pds\projects\w-8195-02\plots\w-8195-02.dwg
 Plot Size: 11x17
 Plot Scale: 1" = 50'
 Plot Orientation: Landscape
 Plot Color: Black
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 Plot Title: EROSION AND SEDIMENT CONTROL PLAN
 Plot Date: 5/12/10
 Plot User: thomas.dallabala
 Plot Project: W-8195-02
 Plot Path: c:\pds\projects\w-8195-02\plots\w-8195-02.dwg



SILT FENCE

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.

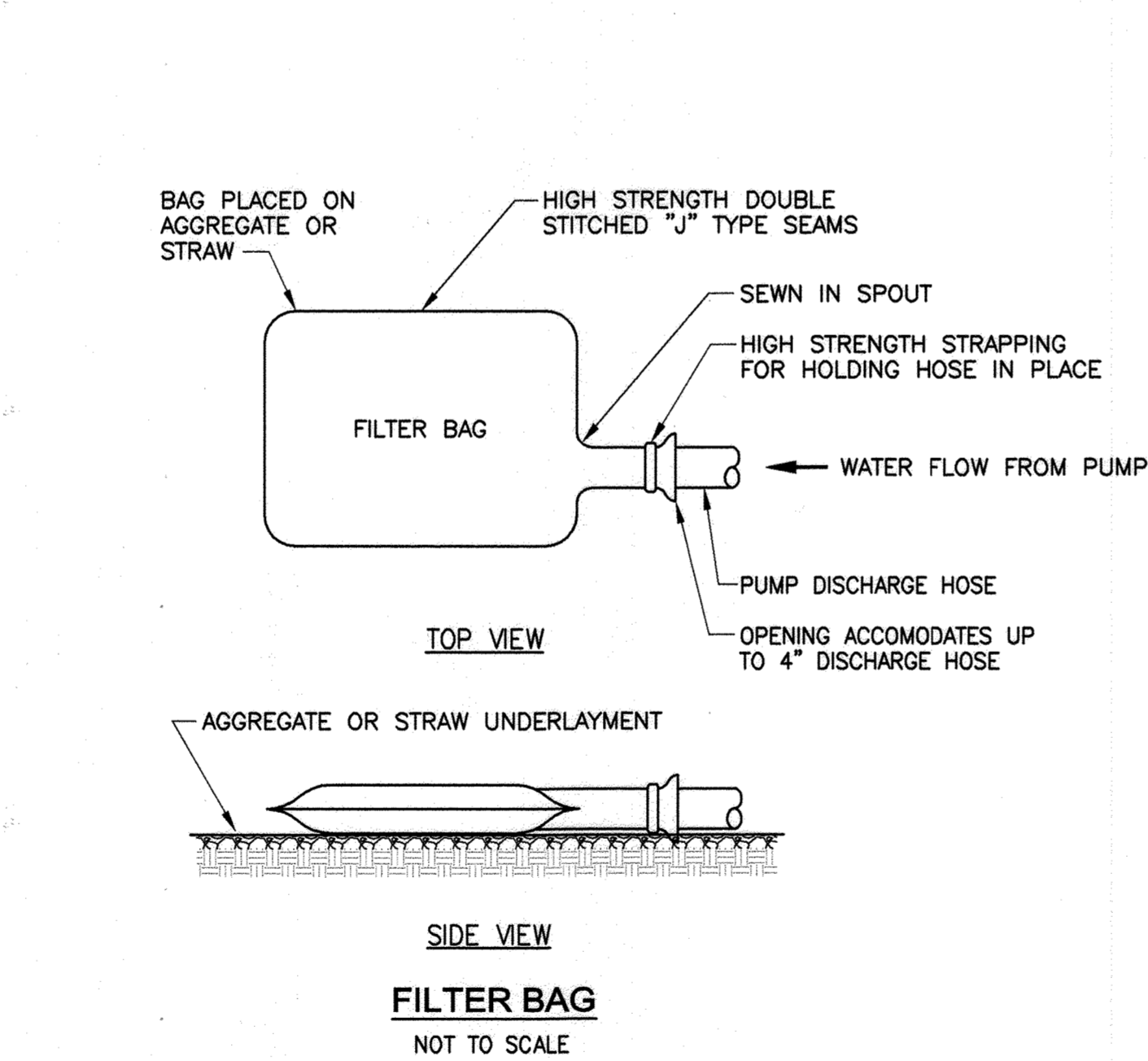
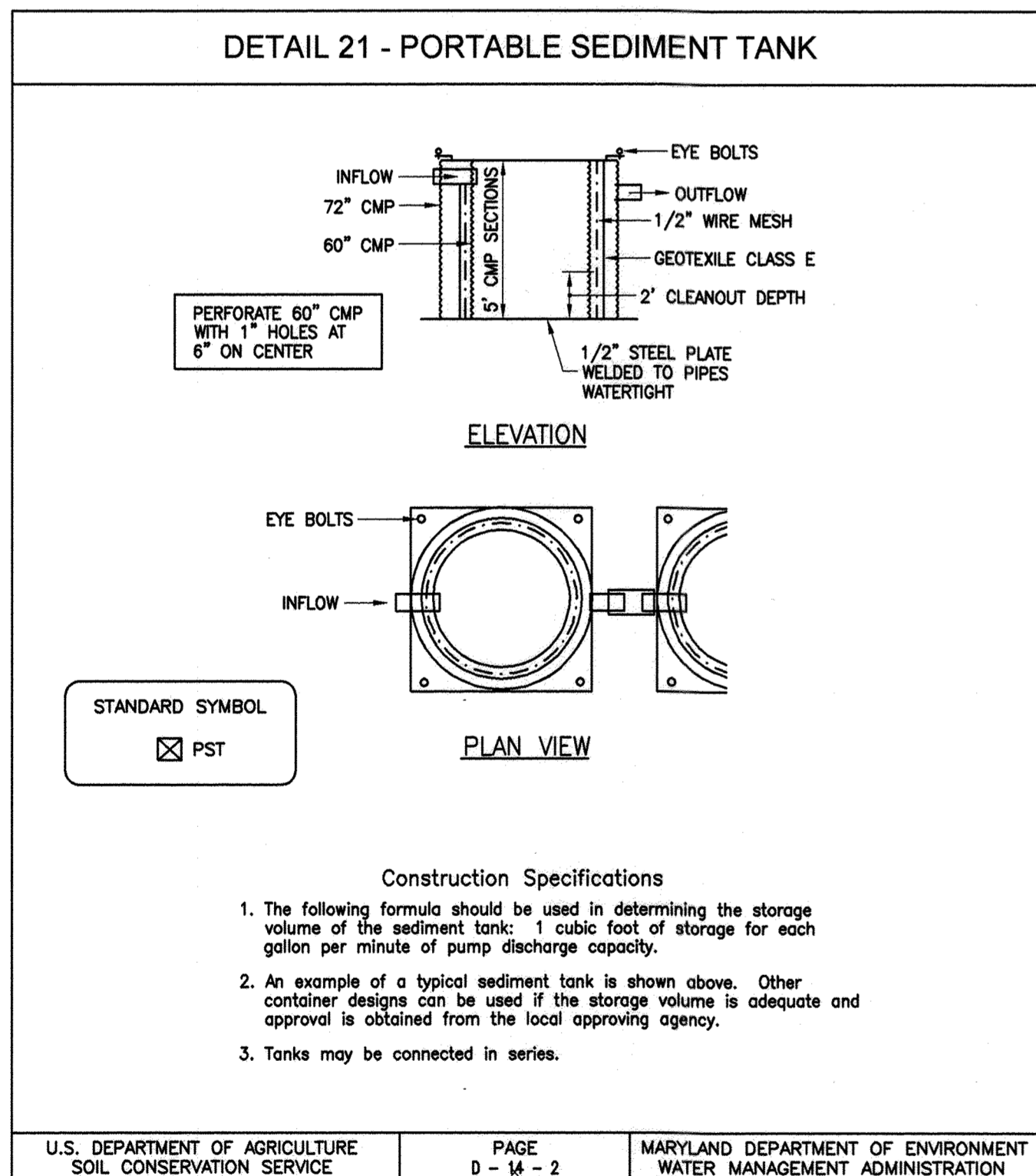
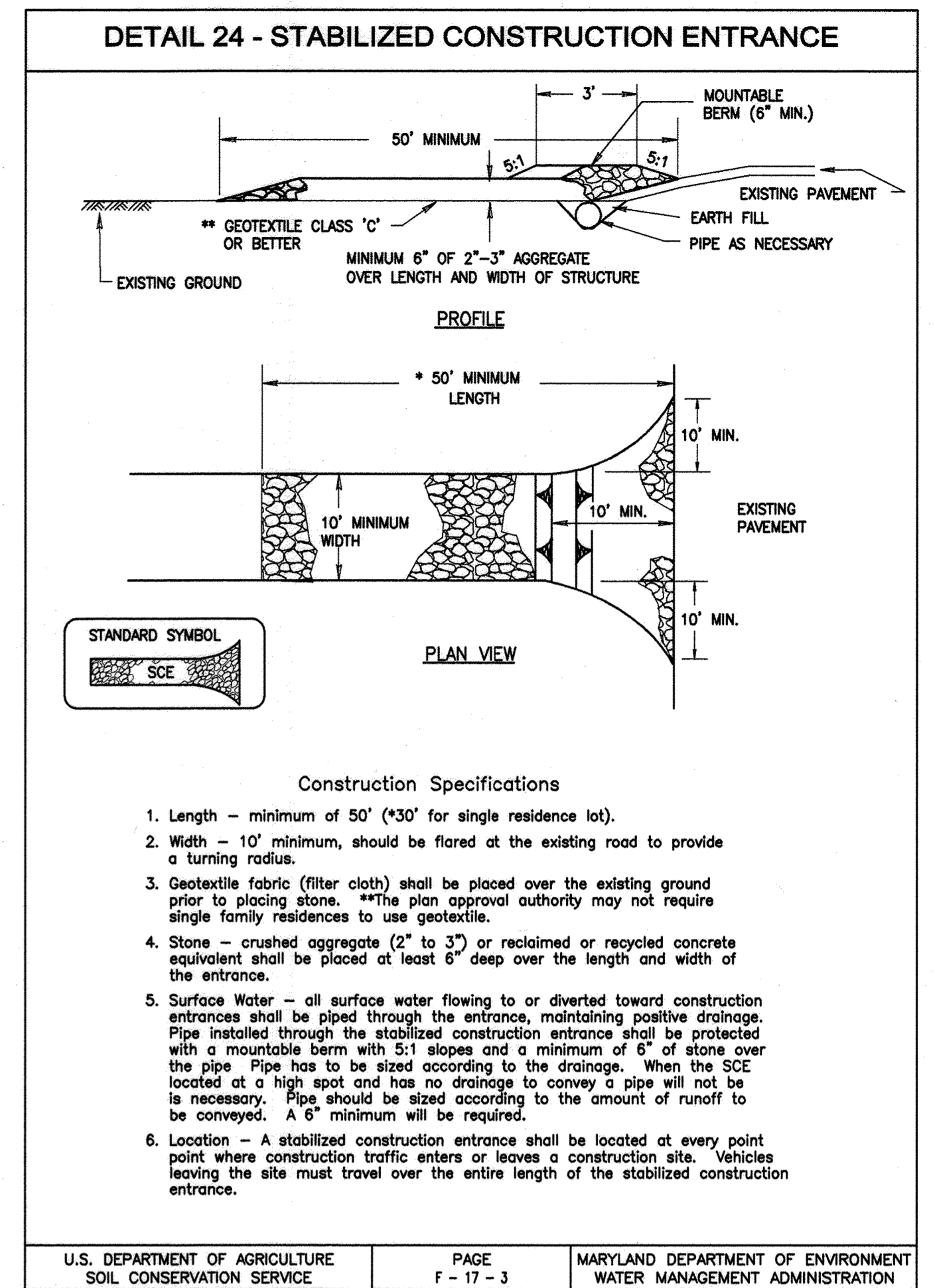
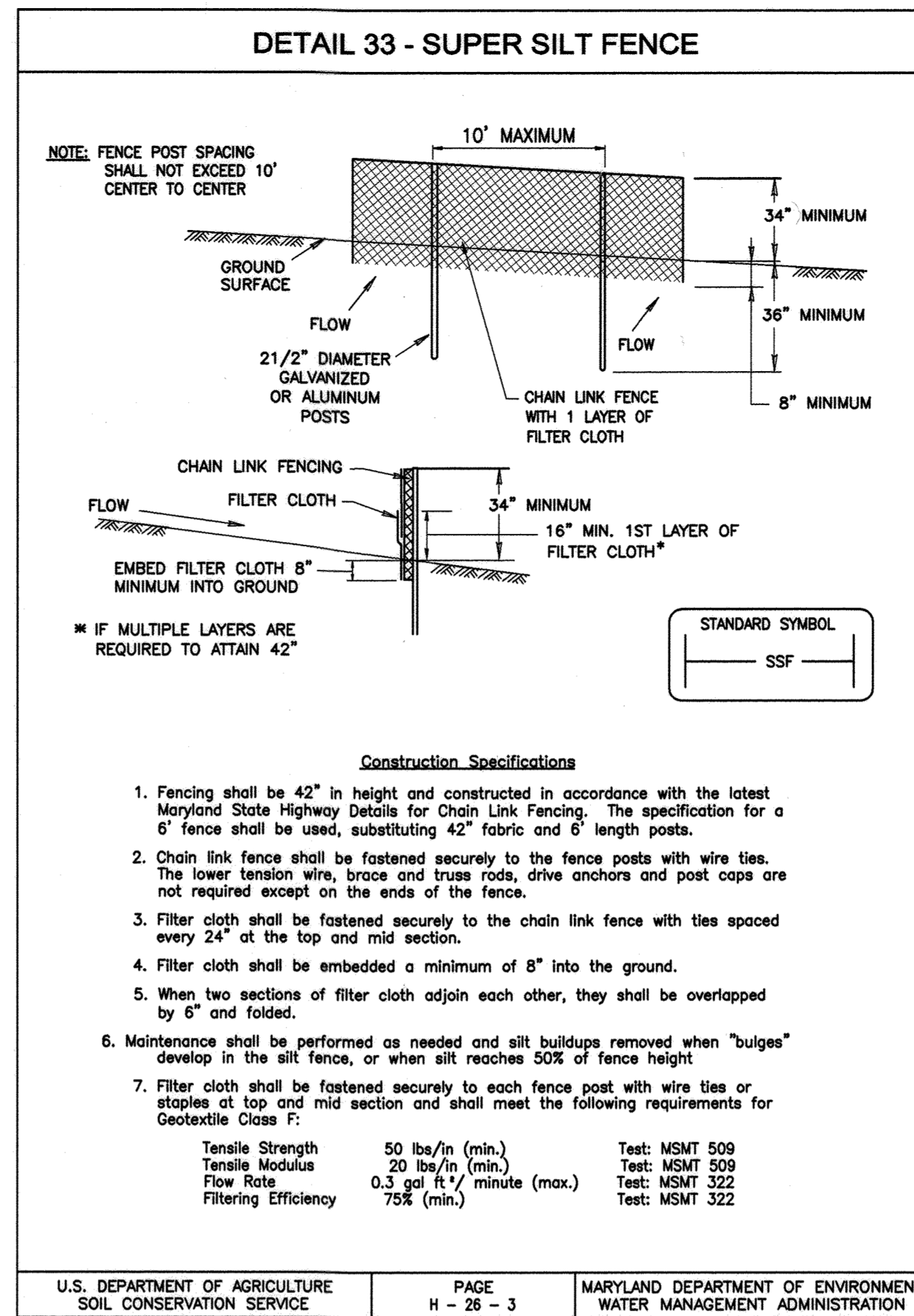
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



SEQUENCE OF OPERATION

- Pre-construction meeting: Notify the Department of Inspections, Licenses and Permits (1-410-313-3800) at least 48 hours before commencing work. Work may not commence until the permittee or the responsible personnel have met on site with the sediment and erosion control inspector to review the approved plans.
- Contractor shall locate and procure all staging and stockpiling areas which shall be approved by project inspector.
- Conduct test pit operations. Present finalized schedule of work to the Engineer and Howard County Inspections, Licenses and Permits Division.
- Clear and grub those areas for installation of sediment and erosion perimeter controls.
- Install sediment control devices as required per the Plans. Obtain approval from the County Sediment and Erosion Control Inspector.
- Perform the following sequence for each day of utility construction operation:
 - Install silt fence downstream of area to be worked on a daily basis.
 - Clear and grub area where pipeline will be installed. Remove and salvage topsoil.
 - Excavate and install water main and appurtenances. Place backfill and compact.
 - Place topsoil, fine grade, seed and apply mulch to disturbed area.
 - Streets are to be swept free of dirt and debris.
- Direct all water pumped during trench dewatering operations to an approved portable sediment tank. Clean out tank when one-third (1/3) is filled with silt. Haul sediment to a County approved site.
- No excavated material shall be placed in an area outside the limits of disturbance shown in the plans. The Contractor shall take precautions to prevent the disturbance of existing vegetated areas to the extent possible. Any existing vegetated areas disturbed as a result of the contractor's work operations shall be stabilized by the end of the work day.
- Stabilize the top of all trenches by the end of each work day. All excess stockpiled soil remaining after refilling of the trench(s) shall be removed from the surface and hauled from the site by the end of the working day. The Contractor shall be responsible for obtaining all permits for his off-site stockpile areas. The Contractor shall also adequately clean all dirt and mud off the roadways by the end of each working day.
- Permanently Stabilize any remaining disturbed areas as required.
- Remove any remaining sediment controls after prior approval from Howard County Inspections, Licenses and Permits Division.

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Ronald G. Lepson 5/21/10
Signature of Developer Date

Ronald G. Lepson
Print Name

I 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.

Thomas N. DallaPalma 5/12/10
Signature of Engineer Date

Thomas N. DallaPalma
Print Name

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

John K. Robertson 6/12/10
Howard Soil Conservation District Date

AS BUILT 12-10-2010

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. DallaPalma 5/12/10
Signature of Engineer Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. Leica 5/21/10
DIRECTOR OF PUBLIC WORKS DATE

Ronald G. Lepson 5/21/10
CHIEF, BUREAU OF ENGINEERING DATE

Silvia C. Lewis 5/21/10
CHIEF, BUREAU OF UTILITIES DATE

Chris J. ... 5/18/10
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry & Davis LLC

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DES:	RSR				
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BY:	NO.				
REVISIONS					
DATE					

EROSION AND SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. 16 BLOCK NO. 17

ALBETH HEIGHTS
WATER MAIN EXTENSION - PHASE II
CAPITAL PROJECT W-8195
CONTRACT 44-4480

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET 6 OF 7

Plotted by: (cwebb) on: Fri, May 12, 2011 10:40am
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