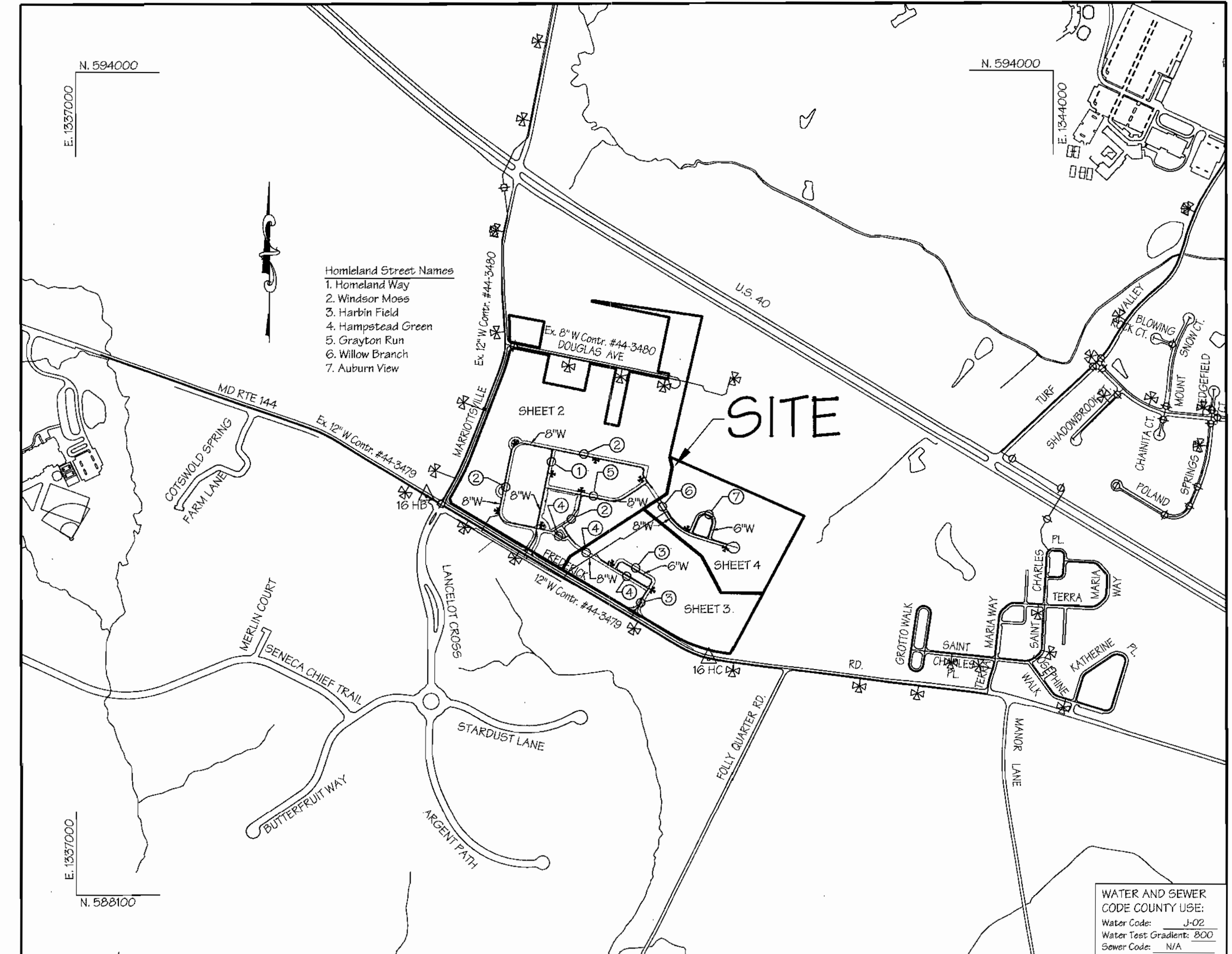


Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Maryland Route 144	8" Valve	50+86.09	19.39' LT	0+02
Maryland Route 144	8" Valve	47+55	20.95' LT	0+02
Homeland Way	8" 1/2 Bend	1+22.11	4.02' LT	1+42
Homeland Way	8" Valve	1+62.81	7.11	2+00
Homeland Way	8" x 8" Tee	2+02.85	7.11	2+20
Homeland Way	8" Valve	2+19	7.11	2+30
Homeland Way	8" x 8" FHT	2+30	7.11	2+47
Homeland Way	8" Valve	2+30	3' RT	2+47
Homeland Way	8" FHT	2+30	16.19' RT	2+47
Homeland Way	8" x 8" Tee	3+04.01	7.11	3+18
Homeland Way	8" x 8" FHT	3+04.35	7.11	3+23
Homeland Way	8" Valve	3+04.35	3' RT	3+23
Homeland Way	8" FHT	3+04.35	16' RT	3+23
Homeland Way	8" Valve	7+68	7.11	7+85
Homeland Way	8" x 8" Tee	7+81	7.11	7+88
Windsor Moss	8" x 8" Tee	0+07	7.11	0+00
Windsor Moss	8" Valve	0+17	7.11	0+10
Windsor Moss	8" 1/2 Bend	1+08.90	7.11	1+02
Windsor Moss	8" 1/2 Bend	2+02.89	3.92' RT	1+84
Windsor Moss	8" x 8" Tee	2+41.15	7.11	2+39
Windsor Moss	8" x 8" Tee	3+45.28	4.69' RT	3+28
Windsor Moss	8" 1/2 Bend	3+49.78	0.33' RT	3+30
Windsor Moss	8" Valve	4+00.33	7' RT	4+00
Windsor Moss	8" Valve	4+00.33	7' RT	4+00
Windsor Moss	8" 1/2 Bend	7+06.32	0.87' LT	6+95
Windsor Moss	8" 1/2 Bend	7+32.52	5.36' LT	7+25
Windsor Moss	8" 1/2 Bend	7+46.18	8.19' LT	7+36
Windsor Moss	8" x 8" Tee	7+69.85	8.81' LT	1+95.78
Windsor Moss	8" Valve	**	**	1+90
Windsor Moss	8" 1/2 Bend	**	**	1+16
Windsor Moss	8" 1/2 Bend	7+89	9.69' LT	7+84
Windsor Moss	8" 1/2 Bend	12+44.54	8.93' LT	12+49
Windsor Moss	8" x 8" FHT	7+94.80	8.39' LT	7+80.70
Windsor Moss	8" Valve	7+94.80	12.89' LT	7+80.70
Windsor Moss	8" FHT	7+94.80	16.39' LT	7+80.70
Windsor Moss	8" 1/2 Bend	12+43.07	9.69' LT	12+42
Windsor Moss	8" 1/2 Bend	12+44.54	8.93' LT	12+49
Windsor Moss	8" x 8" FHT	12+48.20	4.63' LT	12+49
Windsor Moss	8" Valve	12+48.20	10.63' LT	12+49
Windsor Moss	8" FHT	12+48.20	16.11' LT	12+49
Windsor Moss	8" 1/2 Bend	13+01.33	8.21' LT	13+06
Windsor Moss	8" 1/2 Bend	13+23.50	1.73' LT	13+29

Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Windsor Moss	8" Valve	10+43.14	7' RT	10+43
Windsor Moss	8" Valve	15+75.37	7' RT	15+78
Windsor Moss	8" x 8" FHT	19+70.33	7' RT	19+75
Windsor Moss	8" Valve	19+70.33	10' RT	19+75
Windsor Moss	8" FHT	19+70.33	16' RT	19+75
Windsor Moss	8" 1/2 Bend	22+00.85	7' RT	22+06.8
Graydon Run	8" 1/2 Bend	0+27.33	17' RT	22+34.30
Graydon Run	8" 1/2 Bend	0+54.32	17' RT	22+61.78
Graydon Run	8" x 8" FHT	0+72.34	0.62' LT	22+86.43
Graydon Run	8" Valve	0+82.44	9.66' RT	22+86.43
Graydon Run	8" FHT	0+88.67	16.00' RT	22+86.43
Graydon Run	8" Valve	0+86.50	25.83' LT	23+22
Graydon Run	8" FHT	1+04.82	25.90' LT	7+75
Graydon Run	8" 1/2 Bend	3+04.04	7.42' LT	3+63
Graydon Run	8" 1/2 Bend	3+76.09	7.42' LT	4+86
Graydon Run	8" x 8" FHT	6+04.09	7.11	2+89
Graydon Run	8" Valve	6+04.09	3' RT	2+89
Graydon Run	8" FHT	6+04.09	16' RT	2+89
Graydon Run	8" Valve	8+33.09	7.11	0+30
Willow Branch	8" x 8" Tee	0+27.61	16.57' LT	23+29
Willow Branch	8" Valve	0+61.89	7.44' LT	23+68
Willow Branch	8" Cap & Butt.	0+72.51	7.00' LT	23+79
Hampstead Green	8" Valve	5+87.18	7' RT	0+20
Hampstead Green	8" x 8" Tee	7+02.04	7' RT	0+87
Hampstead Green	8" Valve	8+09.95	7' RT	1+00
Hampstead Green	8" 1/2 Bend	6+79.40	6.67' RT	1+10
Hampstead Green	8" Cap & Butt.	6+17.67	8.36' RT	1+70
Hampstead Green	8" Valve	7+79.75	9.84' LT	0+10
Hampstead Green	8" 1/2 Bend	7+82.81	9.94' LT	0+37
Hampstead Green	8" 1/2 Bend	7+25.30	46.70' LT	0+89
Hampstead Green	8" 1/2 Bend	7+06.24	25.37' LT	0+89
Hampstead Green	8" 1/2 Bend	7+02.84	31.67' LT	0+84

* Offset from Existing Centerline of Road - If Test Pit Required
 ** Refer to plan view for Coordinates.



Type of Building:	143 Condominium Units
Number of Lots/Parcels:	4
Number of W.H.C.'s:	141 Proposed / 2 Existing
Number of S.H.C.'s:	0
Drainage Area:	Little Patuxent River
Treatment Plant:	Alpha Ridge LPWWTP

Vicinity Map
 Scale: 1"=600'

BENCHMARKS

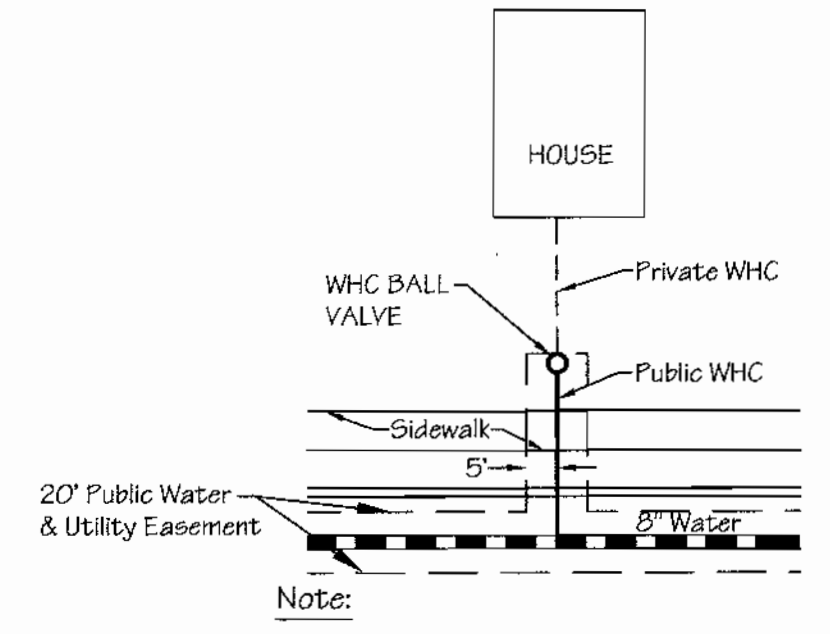
HOWARD COUNTY GEODETIC CONTROL: 16HC
 Elevation: 449.451
 Station is a standard stamped disc set on top of concrete monument. Located on the southern boundary of Maryland Route 144, 0.1 Mile west of Folly Quarter Road.

HOWARD COUNTY GEODETIC CONTROL: 16HB
 Elevation: 540.658
 Station is a standard stamped disc set on top of concrete monument. Located 21.9' south of centerline - Maryland Route 144, 147.5' west of Marriottville Road. Station is flush with surface.

INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET
2	PLAN SHEET
3	PLAN SHEET
4	PLAN SHEET
5	PLAN SHEET
6	PROFILE SHEET
7	PROFILE SHEET
8	PROFILE SHEET
9	PROFILE SHEET
10	PROFILE & DETAILS SHEET

GENERAL NOTES

- PART I: GENERAL**
- 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 at the Contractor's expense.
 - All horizontal controls are based on Maryland State Coordinates, NAD 83/91.
 - 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 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 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, if required.
 - 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 location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawing. 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.
 - Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:
 - a. AT&T: (800) 252-1133
 - b. BGE (Contractor Services): (410) 850-4620
 - c. BGE (Underground damage control): (410) 787-9068
 - d. Bureau of Utilities: (410) 313-4900
 - e. Columbia Gas Transmission Corporation: (301) 762-6308
 - f. Colonial Pipeline Co.: (410) 795-1390
 - g. Miss Utility: 1-800-257-7777
 - h. State Highway Administration: (410) 531-5533
 - i. Verizon: 1-800-743-0033 / 410-224-9210
 - j. Construction Inspection Division (410-313-1800)
 - Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs within the construction area are not to be removed or damaged by the Contractor.
 - Contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- PART II: WATER**
- All water main materials shall be as specified and approved by the Howard County Department of Public Works.
 - Tops of all water mains shall have a minimum of 3 1/2' cover unless otherwise noted.
 - Valves adjacent to the tees shall be strapped to the 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. 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.
 - All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
 - For sprinkler system for all townhomes or multi-family dwelling units should have a minimum of 1 1/2" connection with a 1" meter. (model 70)
 - Water house connection ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 - In addition to the Approved Plans:
 - The 10 drawings contained herein constitute the Approved Water Plans for the Homeland Development, however water main construction materials, methods and details shall be approved by the Department of Public Works and added to these Approved Water Plans as Additional Plan Sheets prior to installation of the water mains. The contractor shall install the water mains in accordance with the Approved Water Plans, the Additional Plan Sheets, the Special Provisions and the Howard County Standard Specifications.
 - A 10' Public Easement exists centered on each Public Water House Connection up to and including the water house connection ball valve.
 - If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. To accomplish vertical deflections, the horizontal bends shall be rotated.
 - Attached tees 1-28, 58-73, and 93-120 require 1 1/2" water house connections with 1" meters. (model 70) All meter settings shall be inside.
 - Mechanical joints shall be required in all fill areas.
 - The "Record Plat" (E03-194) records the metes and bounds of the typical 10' public water house connection easement as detailed herein.



WATER CONSTRUCTION PLANS

HOMELAND

3rd Election District - Howard County, Maryland

Contract No. 44-4143-D

NOTE:
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

NOTE TO CONTRACTORS:
 THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.

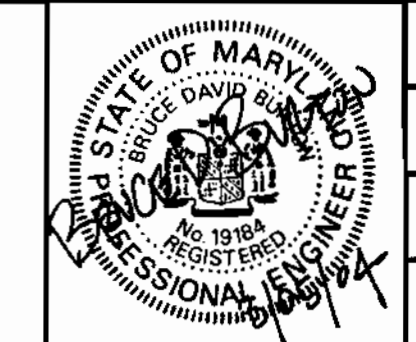
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Jim M. Jones 3/11/04
 SOIL CONSERVATION DISTRICT

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
 Heather W. Schminig 3/11/04
 HOWARD COUNTY SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS
 R. B. Bumpus 3-9-04
 CHIEF-BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
 LDE Inc.
 Engineers, Surveyors, Planners
 9250 Ramsey Road, Suite 100 Columbia, Maryland - 21045
 (410)715-1070 - (301)596-3424 - FAX(410)715-9340
 3/19/04



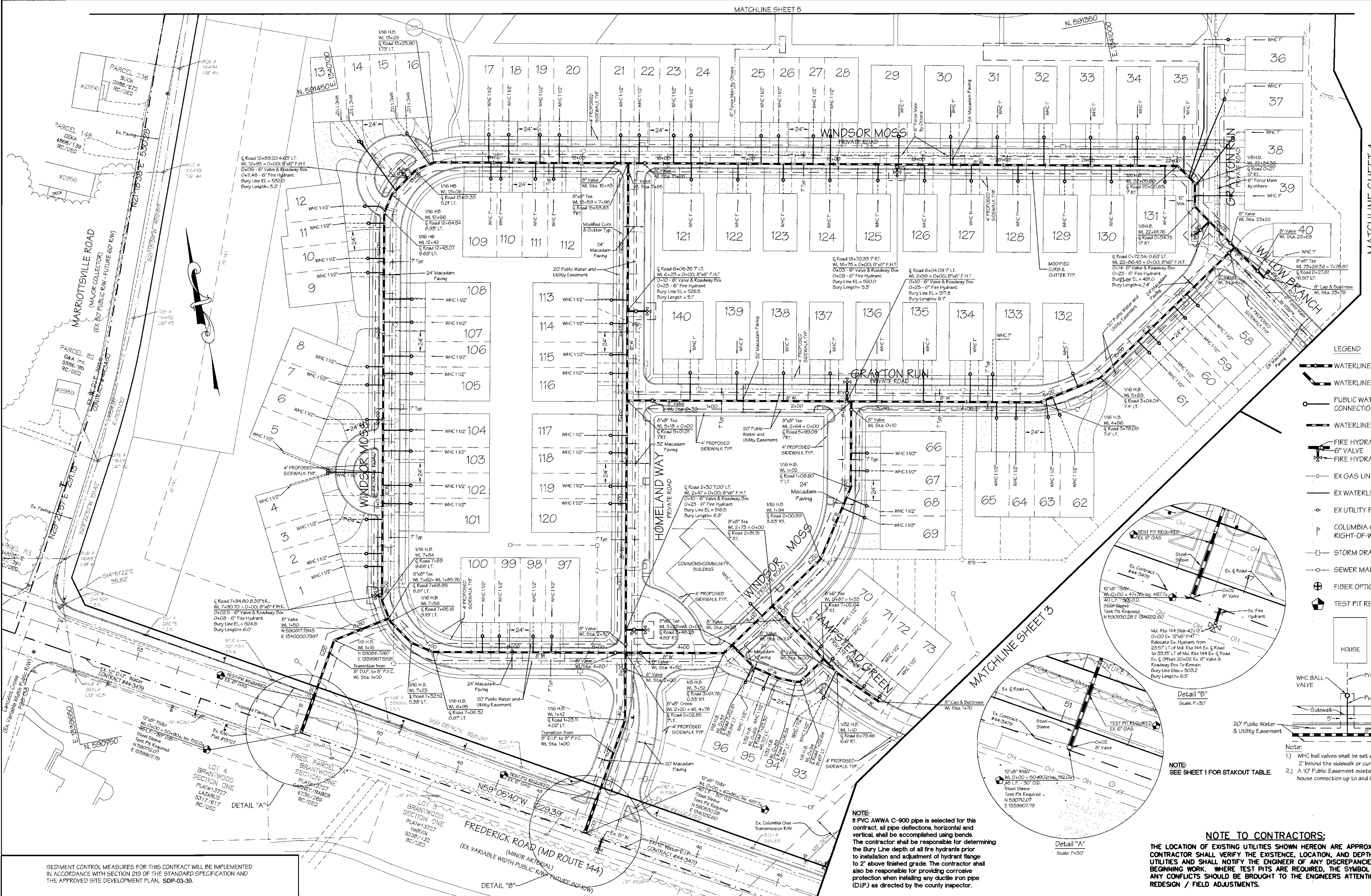
DESIGNED	EDS		
DRAWN	JLM / JDR		
CHECKED	BDB		
DATE	3/20/04		
BY	NO.	REVISION	DATE

TITLE SHEET
 600 SCALE MAP NO. 16
 BLOCK 16 & 22

HOMELAND
 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 CONTRACT NO. 44-4143-D
 SCALE AS SHOWN
 SHEET 1 OF 10

ITEM	QUANTITIES ESTIMATED	QUANTITIES AS BUILT		MANUFACTURER/SUPPLIER
		QUANTITIES	TYPE	
12" x 8" TAPPING TEE (Ea.)	4			
8" WATER (L.F.)	7559			
8" VALVE (Ea.)	16			
8" x 8" TEE (Ea.)	8			
8" x 8" CROSS (Ea.)	1			
8" CAP & BUTTRESS (Ea.)	2			
8" x 6" REDUCER (Ea.)	2			
8" x 6" FIRE HYDRANT TEE (Ea.)	9			
8" x 8" x 6" TEE (Ea.)	3			
8" - 1/2 BEND (Ea.)	8			
8" - 1/2 BEND (Ea.)	20			
6" WATER (L.F.)	1200			
6" VALVE (Ea.)	16			
6" x 6" TEE (Ea.)	2			
6" CAP & BUTTRESS (Ea.)	1			
6" - 1/2 BEND (Ea.)	8			
6" - 1/2 BEND (Ea.)	1			
6" - 1/2 BEND (Ea.)	4			
6" FIRE HYDRANT (Ea.)	13			
6" x 6" FIRE HYDRANT TEE (Ea.)	2			
1" WHC (L.F.)	3926			
1-1/2" WHC (L.F.)	243			
2" WHC (L.F.)	285			

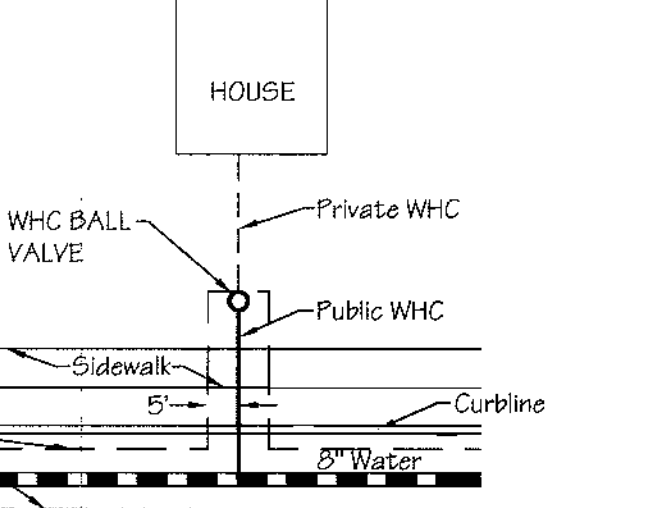
NAME OF UTILITY CONTRACTOR: _____ CHECK BOX: Survey & Drafting Division As Built Date: _____



MATCHLINE SHEET 4

MATCHLINE SHEET 3

- LEGEND**
- WATERLINE VALVE
 - WATERLINE BEND
 - PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
 - WATERLINE
 - FIRE HYDRANT TEE (FHT)
 - FIRE HYDRANT
 - EX GAS LINE
 - EX WATERLINE
 - EX UTILITY POLE
 - COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
 - STORM DRAIN (SDP-03-30)
 - SEWER MAIN (SDP-03-30)
 - FIBER OPTIC CABLE MARKER
 - TEST PIT REQUIRED



Note:
1) WHC ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
2) A 10' Public Easement exists centered on each public house connection up to and including the ball valve.

NOTE TO CONTRACTORS:
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NOTE:
If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosion protection when installing any ductile iron pipe (DIP) as directed by the county inspector.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS CHIEF-BUREAU OF UTILITIES DATE 3-9-04	DEPARTMENT OF PLANNING & ZONING CHIEF DEVELOPMENT ENGINEERING DIVISION DATE 3/19/04	LDE Inc. Engineers, Surveyors, Planners 9230 Ramsey Road, Suite 106 Columbia, Maryland - 21043 (410)715-1070 - (301)596-3424 - FAX(410)715-9540	 DESIGNED: J.D.R. DRAWN: J.D.R. CHECKED: BDB DATE: 3/2/004	SCALE 1" = 50' SHEET 2 of 10	HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D	PLAN SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22

LEGEND

- WATERLINE VALVE
- WATERLINE BEND
- PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
- WATERLINE
- FIRE HYDRANT TEE (FHT)
- 6" VALVE
- FIRE HYDRANT
- EX GAS LINE
- EX WATERLINE
- EX UTILITY POLE
- COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
- STORM DRAIN (SDP-03-30)
- SEWER MAIN (SDP-03-30)
- FIBER OPTIC CABLE MARKER
- TEST PIT REQUIRED

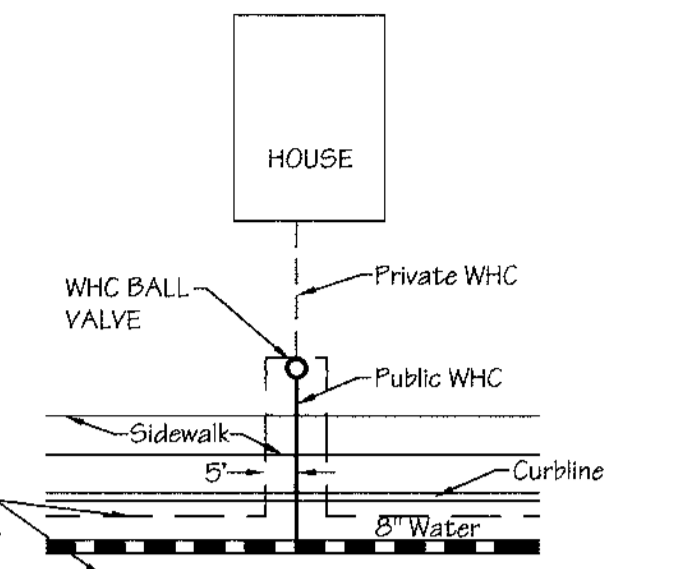
WATER MAIN STAKEOUT TABLE

Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Maryland Route 144	12" x 8" TS	38+50	20' LT	0+00
Maryland Route 144	8" Valve	38+00	18'8" LT	0+02
Maryland Route 144	12" x 8" TS	44+07	20' LT	0+00
Maryland Route 144	8" Valve	44+07	18'11" LT	0+00
Maryland Route 144	8" WIG Bend	44+07	37'9" RT	0+57
Harbin Field	8" x 6" Tee	2+27.87	7' LT	2+49.83
Harbin Field	8" x 6" FHT	2+31.80	7' LT	2+52
Harbin Field	8" Valve	2+31.60	9' RT	2+92
Harbin Field	6" FHT	2+31.60	18' RT	2+92
Harbin Field	8" x 6" Reducer	2+42.01	7' LT	2+62
Harbin Field	6" Valve	2+52.34	7' LT	2+73
Harbin Field	6" - 1/8" Bend	2+73.33	7' LT	2+88.88
Harbin Field	6" - 1/8" Bend	3+19.68	7' LT	3+25.21
Harbin Field	6" - 1/8" Bend	3+57.64	7' LT	3+64.17
Harbin Field	6" - 1/8" Bend	5+77.90	7' LT	5+80.33
Harbin Field	6" Valve	6+37.58	7' LT	6+30
Harbin Field	8" x 6" Tee	6+48.41	7' LT	6+40.83
Hampstead Green	8" x 8" Tee	4+57.13	30'3" RT	0+00
Hampstead Green	8" Valve	4+52.70	39'3" RT	3+09.96
Hampstead Green	8" Valve	4+23.87	18'8" RT	0+36
Hampstead Green	8" WIG Bend	4+00.66	7' RT	0+61.13
Hampstead Green	8" x 6" FHT	3+21	16'17" RT	1+40
Hampstead Green	6" FHT	3+21	8'5" RT	1+40
Hampstead Green	6" FHT	3+21	18' RT	1+40
Hampstead Green	8" Valve	0+16.68	7' RT	4+65
Hampstead Green	8" - 1/8" Bend	**	**	5+05.83
Hampstead Green	8" - 1/8" Bend	**	**	5+32.12

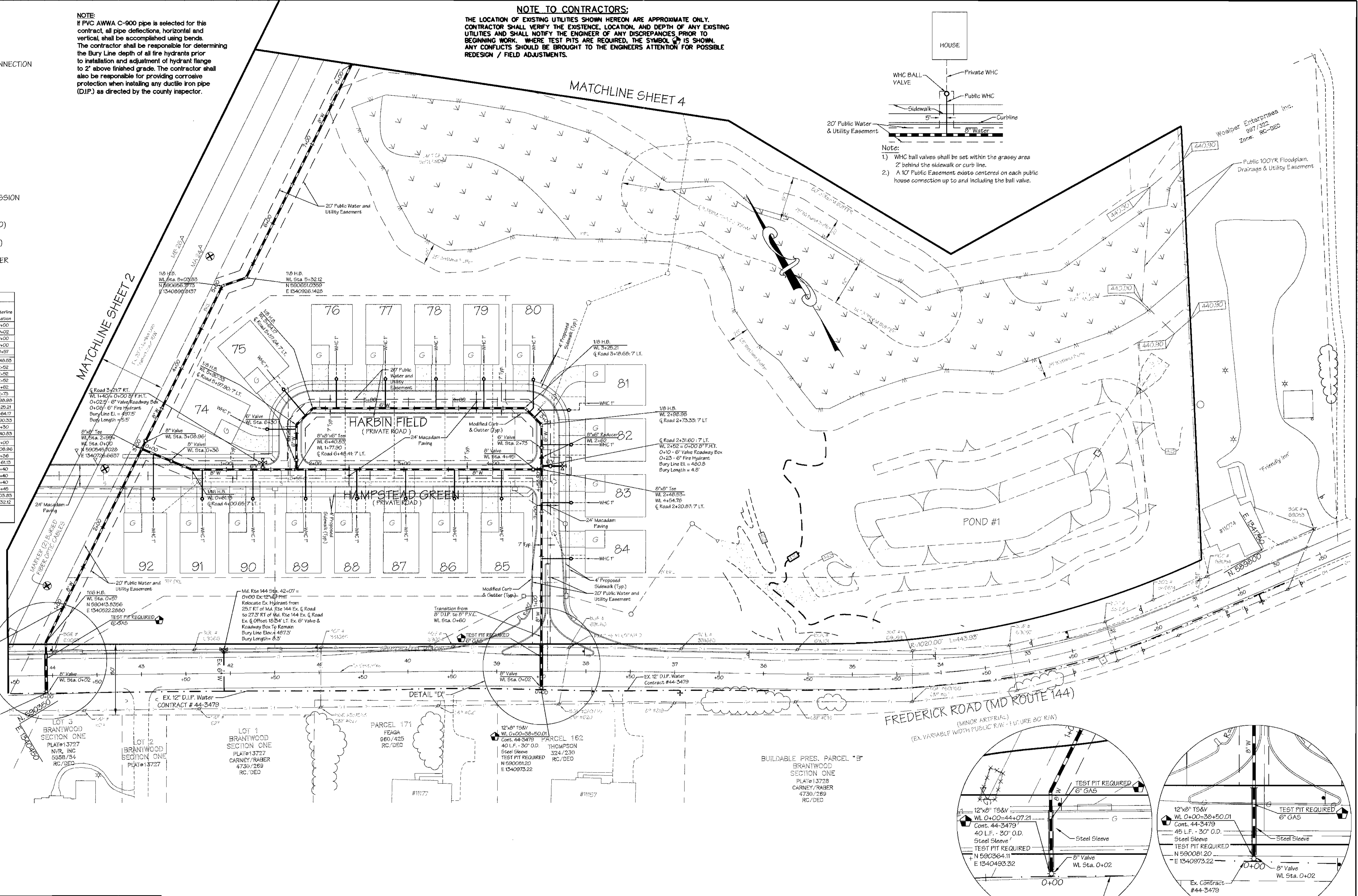
* Offset from Existing Centerline of Road +/-
 ** See coordinate values on plan sheet.

NOTE:
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2' above finished grade. The contractor shall also be responsible for providing corrosion protection when installing any ductile iron pipe (DIP) as directed by the county inspector.

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Note:
 1) WHC ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 2) A 10' Public Easement exists centered on each public house connection up to and including the ball valve.



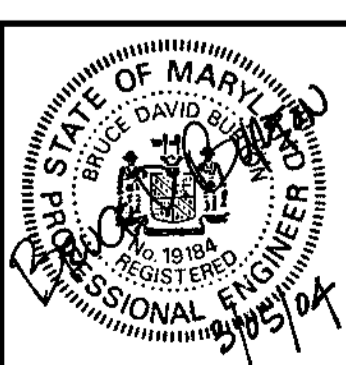
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS
 DEPARTMENT OF PLANNING & ZONING

R. J. Bennett 3-9-04
 CHIEF-BUREAU OF UTILITIES DATE

W. J. [Signature] 3/19/04
 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

LDE Inc.
 Engineers, Surveyors, Planners
 9230 Ramsey Road, Suite 108 Columbia, Maryland - 21045
 (410)715-1070 - (801)596-3424 - FAX(410)715-9340



DESIGNED	EDS				
DRAWN	J.D.R.				
CHECKED	B.D.B.				
DATE	3/20/04				
BY	NO.	REVISION	DATE		

PLAN SHEET

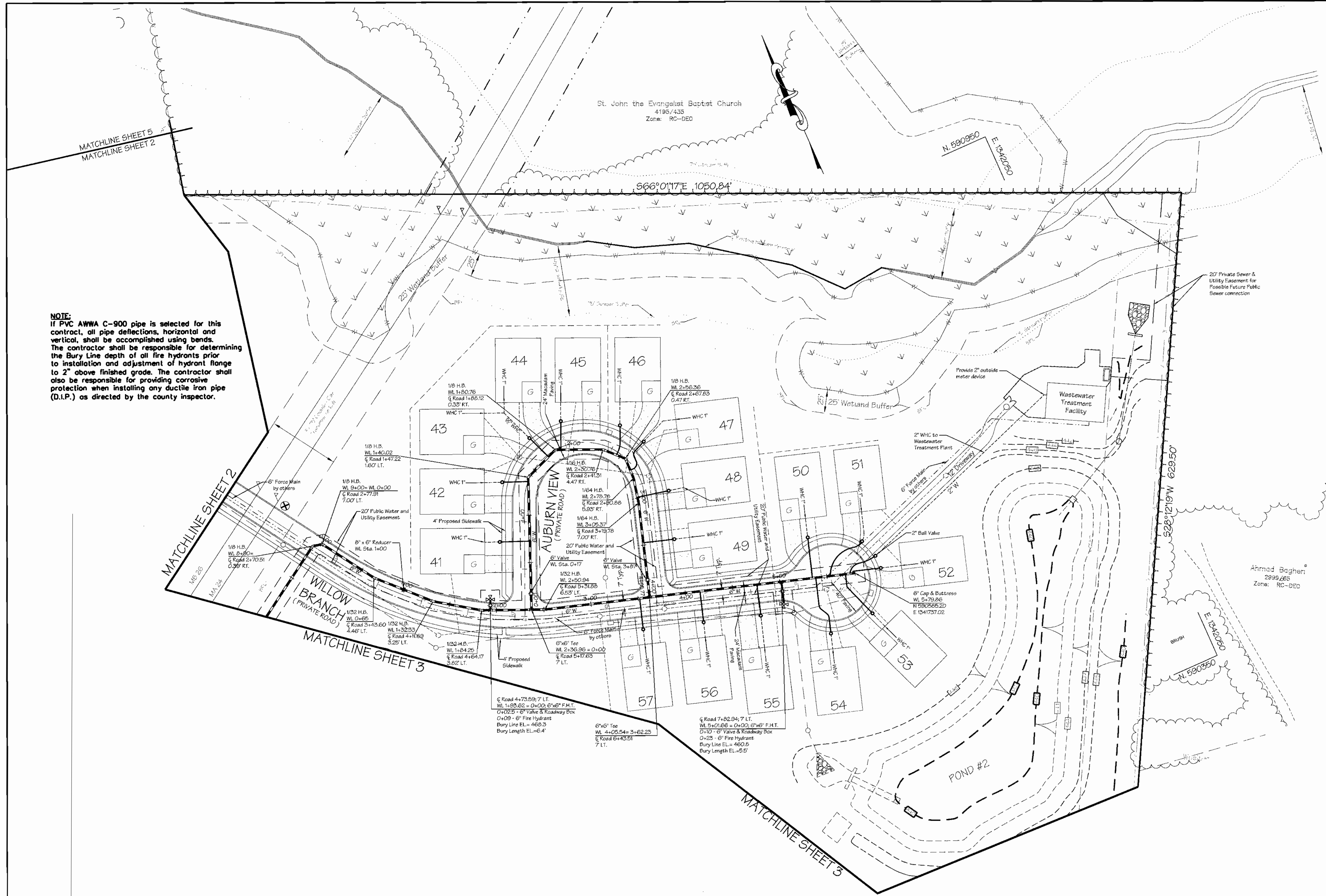
600 SCALE MAP NO. 16
 BLOCK 16 & 22

HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 CONTRACT NO. 44-4143-D

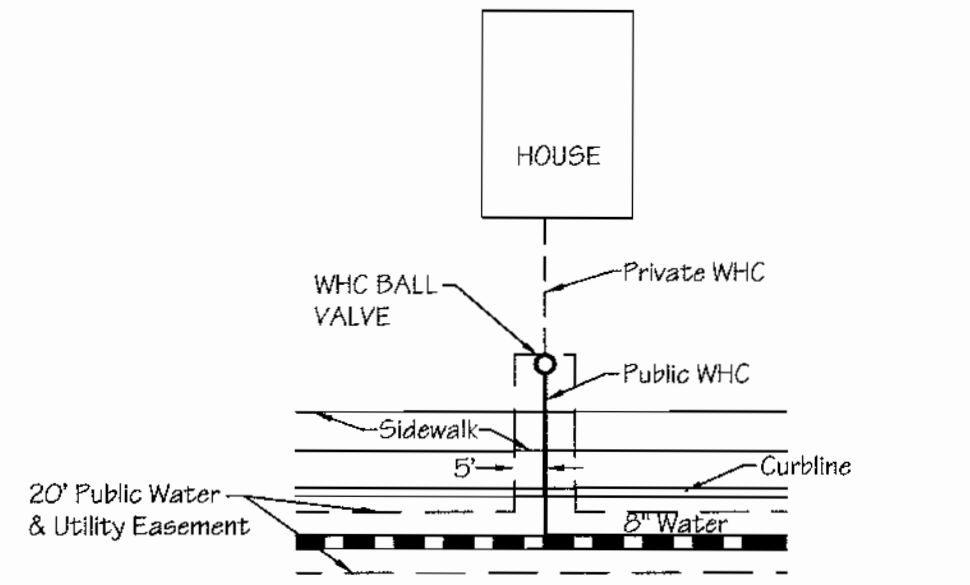
SCALE
 1" = 50'

SHEET
 3 of 10



NOTE:
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosion protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

- LEGEND**
- WATERLINE VALVE
 - WATERLINE BEND
 - PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
 - WATERLINE
 - FIRE HYDRANT TEE (FHT)
 - 6" VALVE
 - FIRE HYDRANT
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 - EX WATERLINE
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 - COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
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 - SEWER MAIN (SDP-03-30)
 - FIBER OPTIC CABLE MARKER
 - TEST PIT REQUIRED



- NOTE:**
- 1) WHC ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 - 2) A 10' Public Easement exists centered on each public house connection up to and including the ball valve.

WATER MAIN STAKEOUT TABLE

Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Willow Branch	8" - 1/8 Bend	2+70.50	0.30' RT	8+90
Willow Branch	8" - 1/8 Bend	2+72.91	7.00' LT	0+00
Willow Branch	8" - 1/2 Bend	3+43.60	4.46' LT	0+00
Willow Branch	8" x 6" Reducer	3+79.03	5.42' LT	1+00
Willow Branch	6" - 1/2 H.B.	4+11.69	3.25' LT	1+32.35
Willow Branch	6" - 1/2 H.B.	4+54.77	3.62' LT	1+44.28
Willow Branch	6" x 6" FHT	4+79.59	7' LT	1+93.62
Willow Branch	6" Valve	4+79.59	8.9' LT	1+93.62
Willow Branch	6" FH	4+79.59	16.10' LT	1+93.62
Willow Branch	6" x 6" Tee	5+11.69	7' LT	2+35.96
Willow Branch	6" - 1/2 H.B.	5+31.66	6.55' LT	2+40.94
Willow Branch	6" x 6" Tee	6+43.51	7' LT	3+62.23
Willow Branch	6" x 6" FHT	7+82.94	7' LT	5+01.66
Willow Branch	6" Valve	7+82.94	8' RT	5+01.66
Willow Branch	6" FH	7+82.94	16.79' RT	5+01.66
Willow Branch	6" Cap & Buss.	5+79.86
Auburn View	6" Valve	0+24.07	6.66' E	0+47
Auburn View	6" - 1/8 Bend	1+47.22	1.60' LT	1+40.02
Auburn View	6" - 1/8 Bend	1+88.12	0.33' RT	1+80.76
Auburn View	6" - 1/8 Bend	2+41.31	4.47' RT	2+30.76
Auburn View	6" - 1/8 Bend	2+67.55	0.47' RT	2+56.26
Auburn View	6" - 1/4 Bend	2+69.82	1.32' E	2+78.78
Auburn View	6" - 1/4 Bend	3+26.14	7' RT	3+05.37
Auburn View	6" Valve	4+04.94	7' RT	3+87

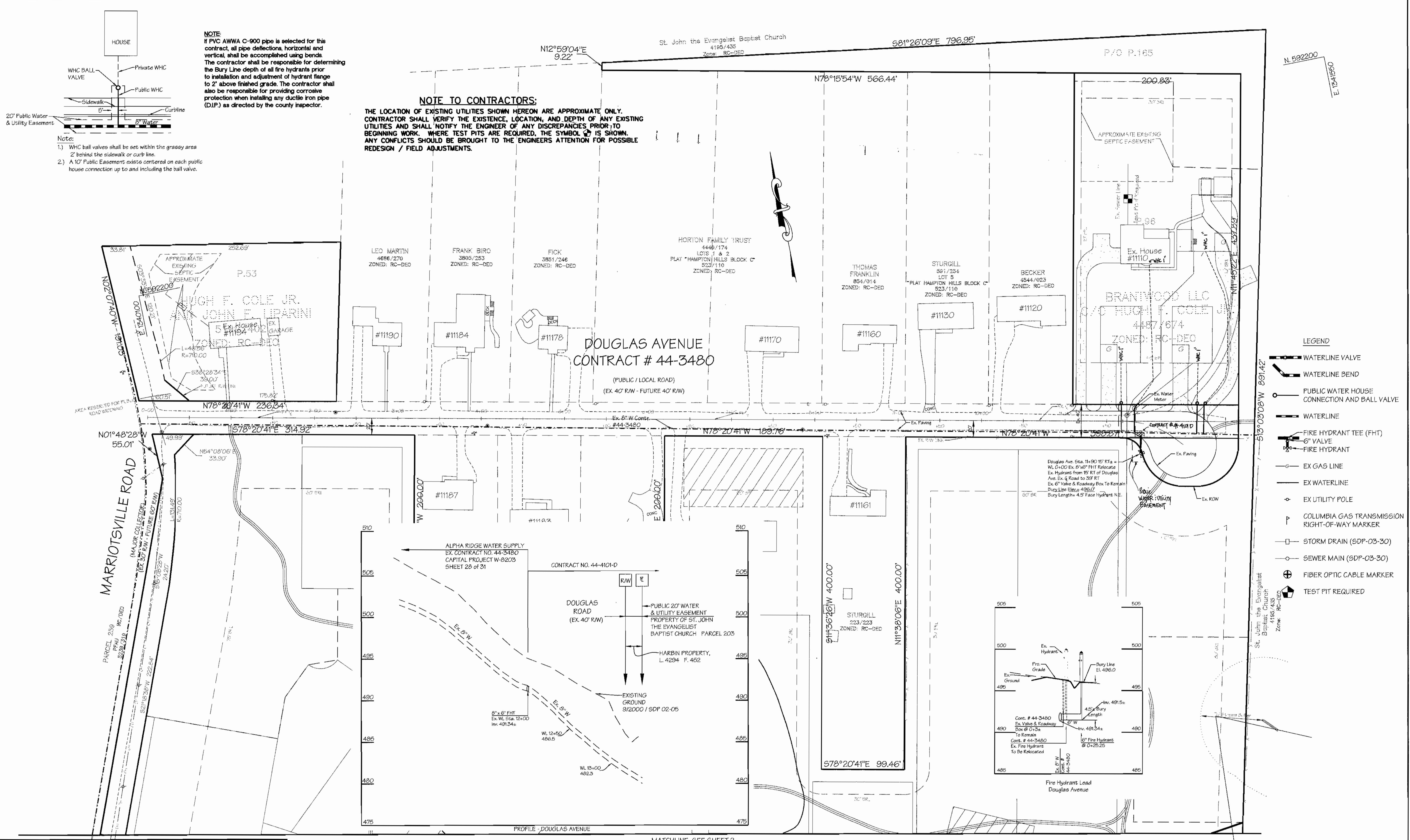
** See coordinate values on plan sheet.

NOTE TO CONTRACTORS:
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SEDMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

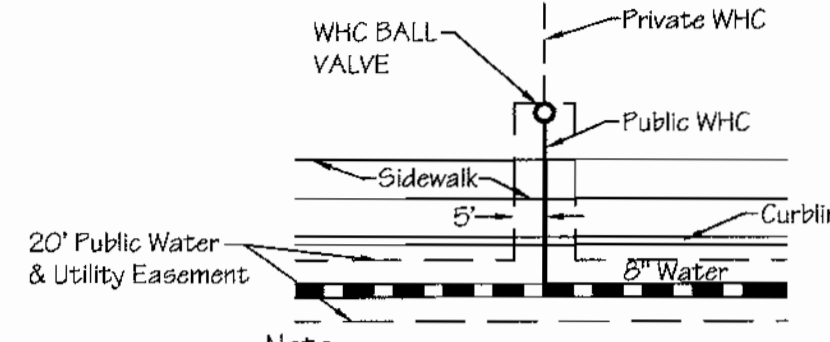
DEPARTMENT OF PUBLIC WORKS <i>R. J. ...</i> CHIEF-BUREAU OF UTILITIES DATE: 3-9-04	DEPARTMENT OF PLANNING & ZONING <i>M. ...</i> CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE: 3/19/04	LDE Inc. Engineers, Surveyors, Planners 9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9540		DESIGNED: EDG DRAWN: J.D.R. CHECKED: BDB DATE: 3/20/04	PLAN SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22	HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D	SCALE: 1" = 50' SHEET: 4 of 10
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File Name: Project#2214\FB\BND\DWG\WATER.dwg, WPL1, 3/9/2004, 4:28:57 PM



NOTE
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

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- Note:**
- 1) WHC ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 - 2) A 10' Public Easement exists centered on each public house connection up to and including the ball valve.

N. 592200
 E. 1341950

- LEGEND**
- WATERLINE VALVE
 - WATERLINE BEND
 - PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
 - WATERLINE
 - FIRE HYDRANT TEE (FHT)
 - 6" VALVE
 - FIRE HYDRANT
 - EX GAS LINE
 - EX WATERLINE
 - EX UTILITY POLE
 - COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
 - STORM DRAIN (SDP-03-30)
 - SEWER MAIN (SDP-03-30)
 - FIBER OPTIC CABLE MARKER
 - TEST PIT REQUIRED

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF PLANNING & ZONING
 CHIEF-BUREAU OF UTILITIES	 CHIEF-DEVELOPMENT ENGINEERING DIVISION
3-9-04 DATE	3/19/04 DATE

LDE Inc.
 Engineers, Surveyors, Planners
 9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045
 (410)715-1070 - (301)596-3424 - FAX (410)715-9540



DESIGNED	EDS				
DRAWN	J.D.R.				
CHECKED	BDB				
DATE	3/2004	BY	NO.	REVISION	DATE

PLAN SHEET

600 SCALE MAP NO. 16 BLOCK 16 & 22

HOMELAND


3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

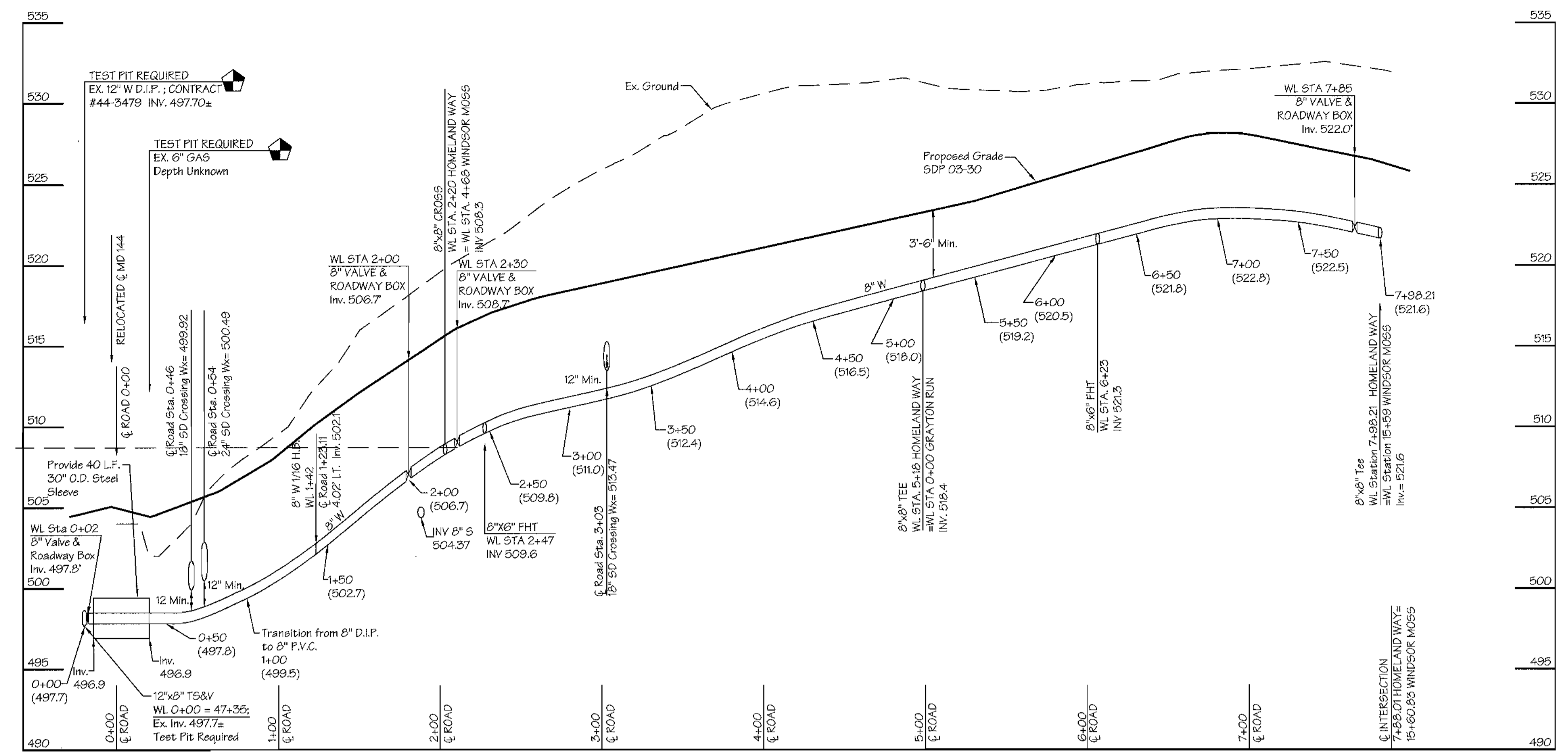
CONTRACT NO. 44-4143-D

SCALE	1" = 50'
SHEET	5 of 10

File Path: Projects\2004\HOWARD\WATER\3/9/2004-40143.DWG

NOTE TO CONTRACTORS:

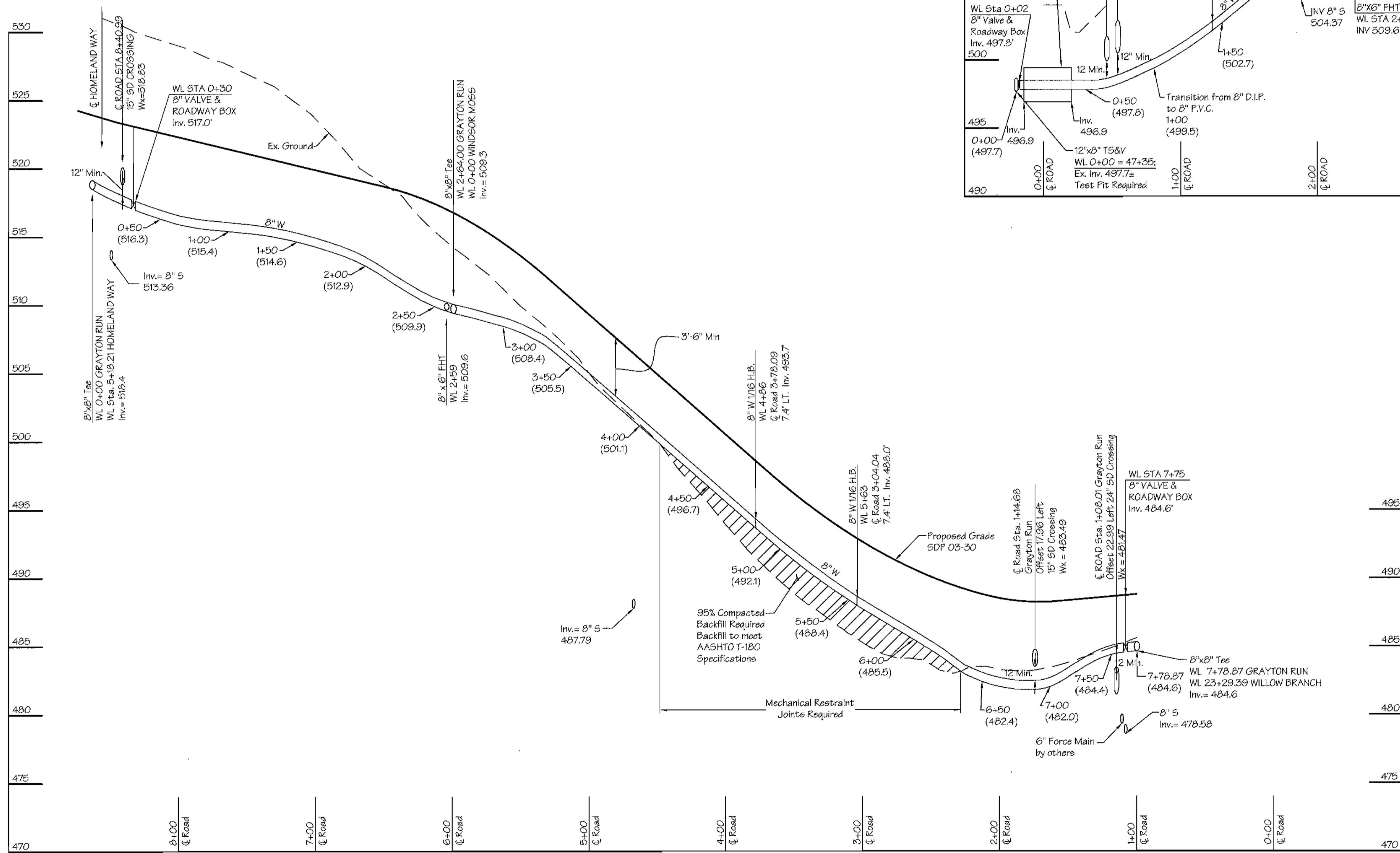
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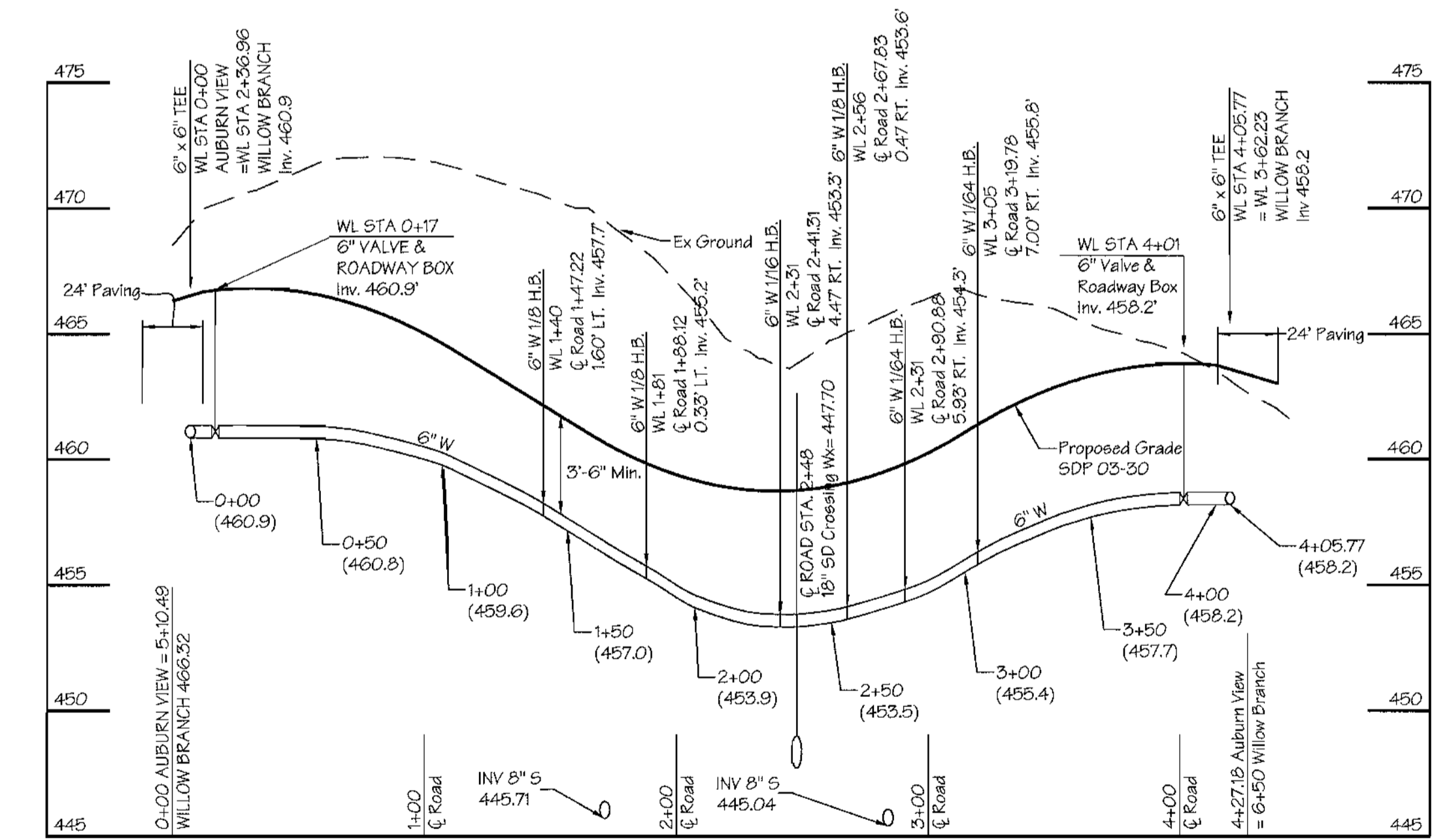
PROFILE - HOMELAND WAY

NOTE:
If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation or adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

NOTE:
- If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends.
- To accomplish vertical deflections, rotate horizontal bends.



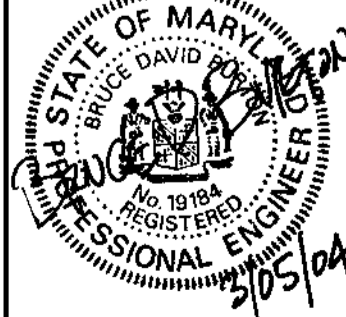


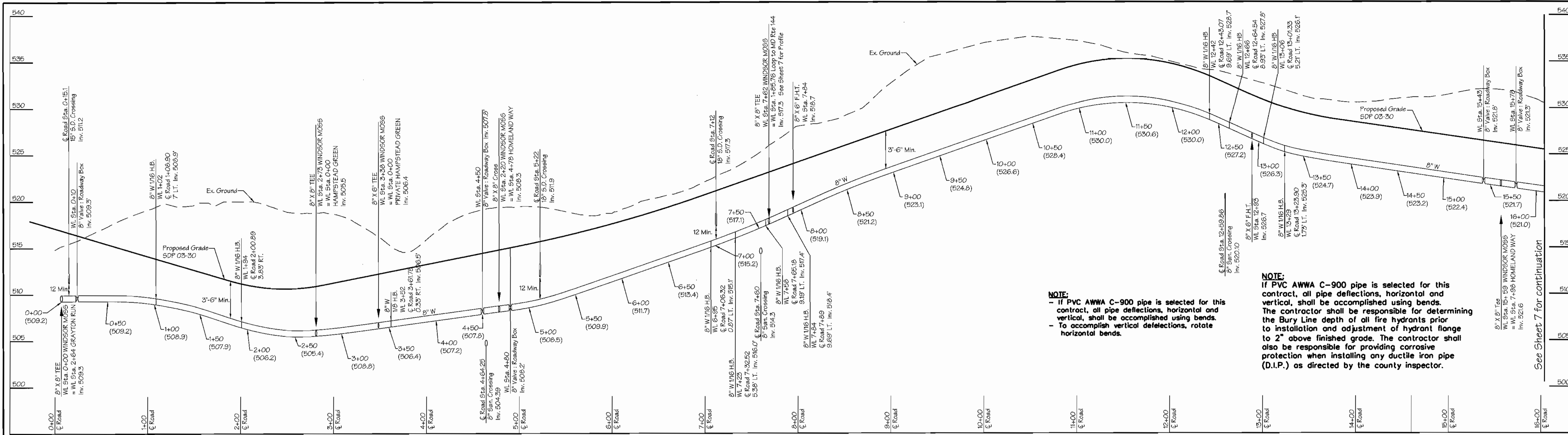
PROFILE - GRAYTON RUN



PROFILE - AUBURN VIEW

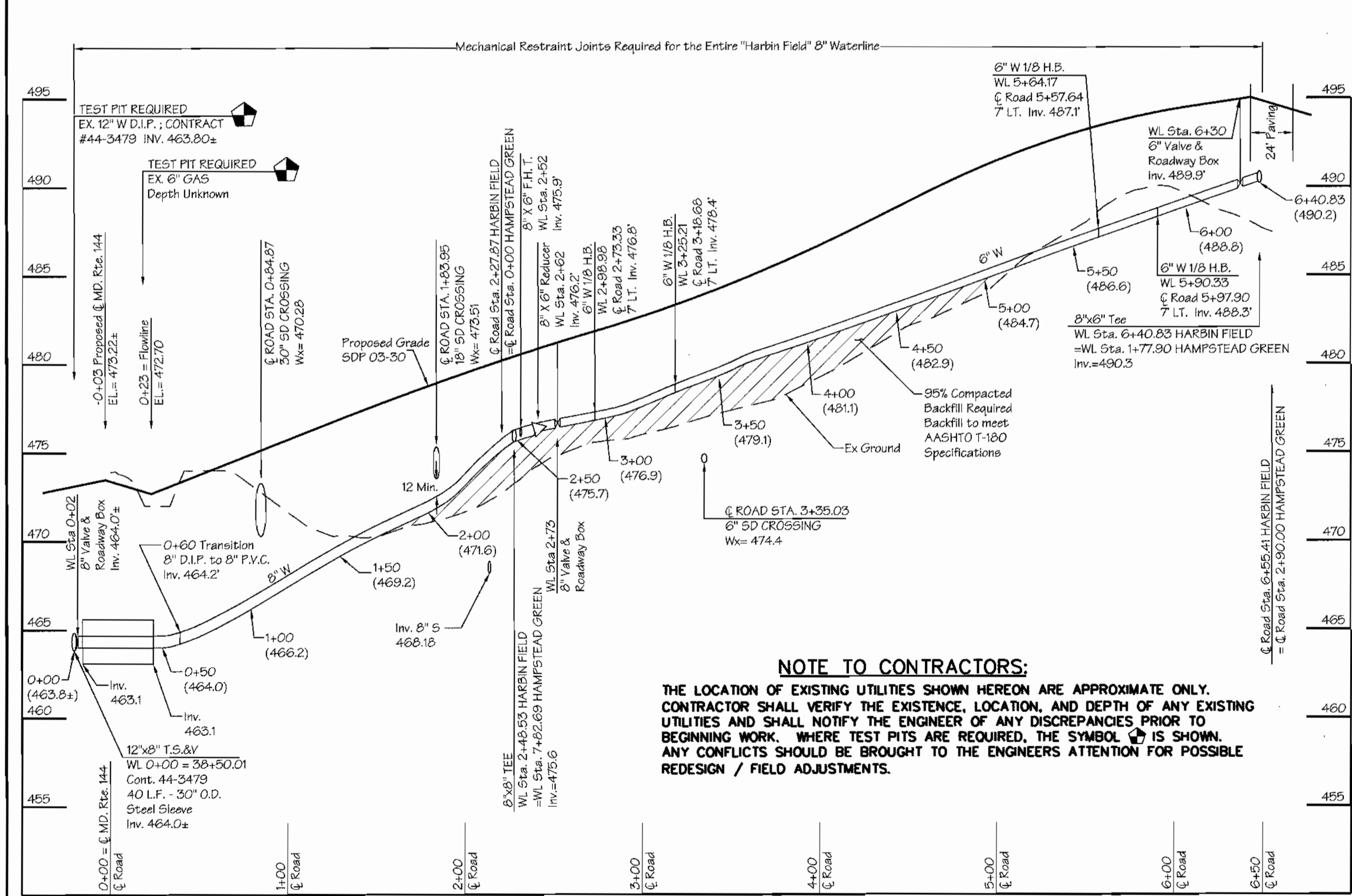
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS  3-9-04 CHIEF-BUREAU OF UTILITIES DATE		DEPARTMENT OF PLANNING & ZONING  3/19/04 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE		LDE Inc. Engineers, Surveyors, Planners 9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9340				DESIGNED: EDS DRAWN: J.D.R. CHECKED: BDB DATE: 3/2/004		BY: NO. REVISION DATE		PROFILE SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22		HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D		SCALE: 1" = 5' V, 1" = 50' H SHEET: 6 of 10	
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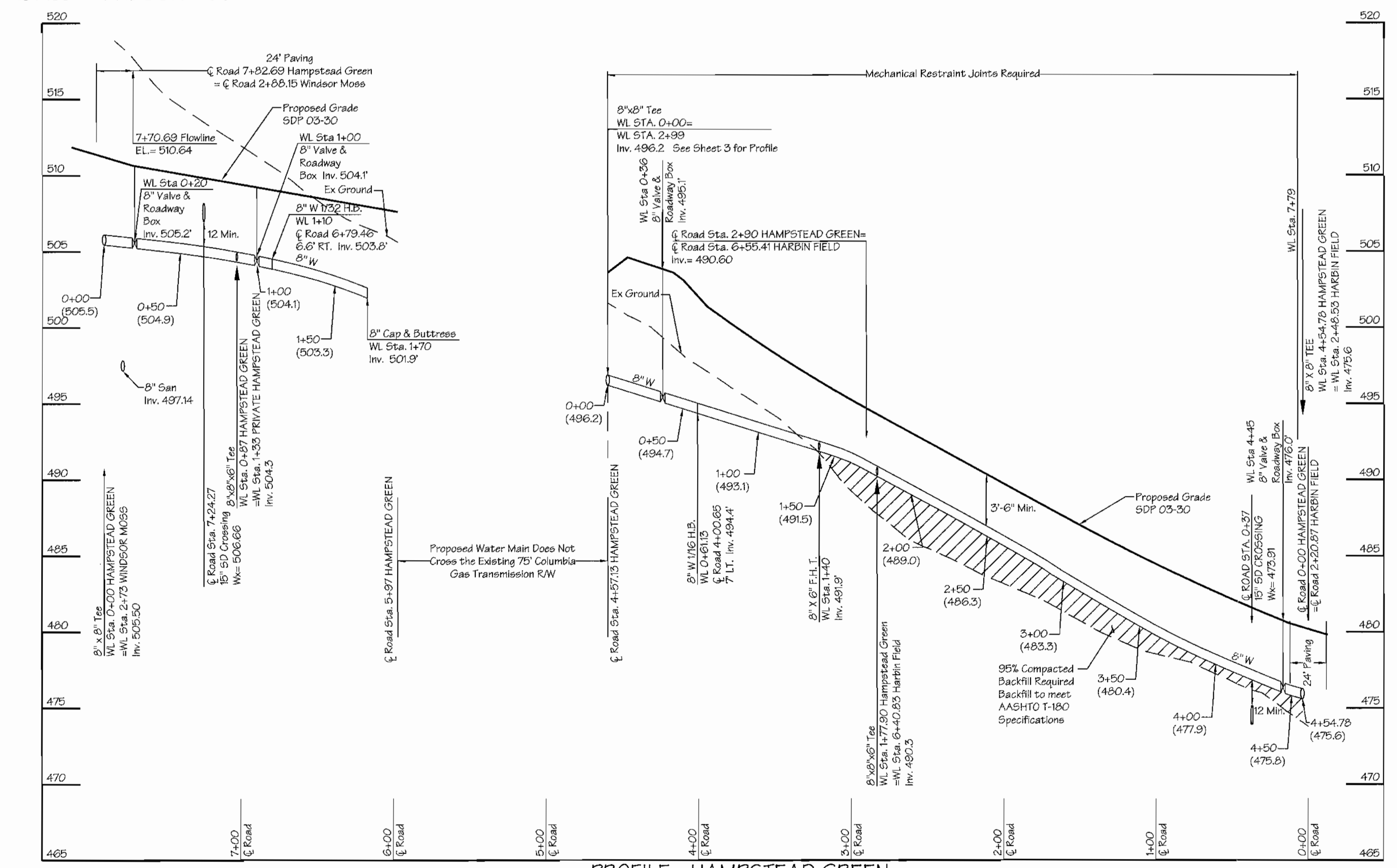


NOTE:
 - If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bands.
 - To accomplish vertical deflections, rotate horizontal bends.

NOTE:
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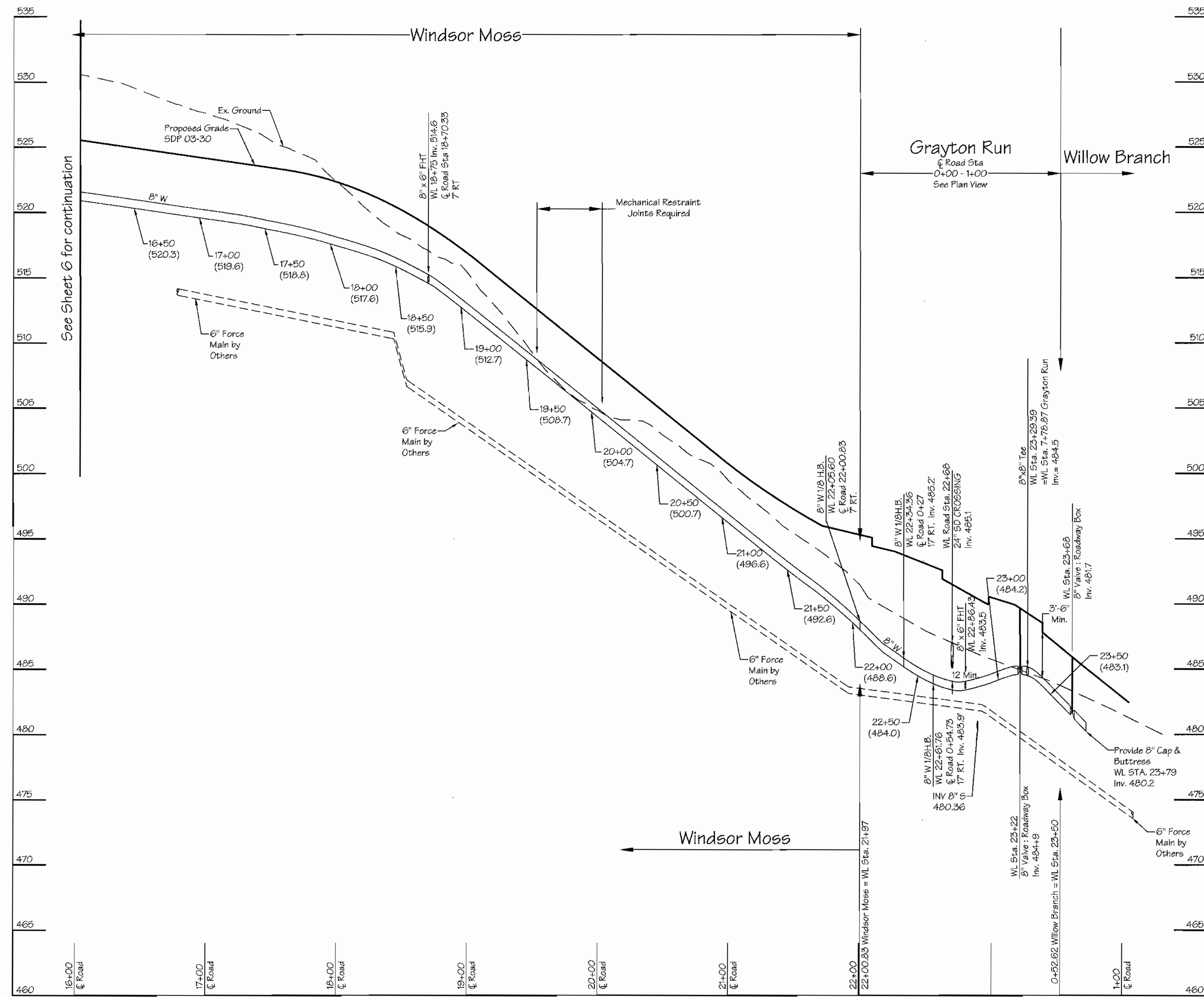
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DEPARTMENT OF PUBLIC WORKS 3-9-04 CHIEF-BUREAU OF UTILITIES		DEPARTMENT OF PLANNING & ZONING 3/9/04 CHIEF-DEVELOPMENT ENGINEERING DIVISION		LDE Inc. Engineers, Surveyors, Planners 9230 Rumsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9340				DESIGNED: EDS DRAWN: J.D.R. CHECKED: SDB DATE: 3/2004		PROFILE SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22		HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D		SCALE 1" = 5' V 1" = 50' H SHEET 7 of 10
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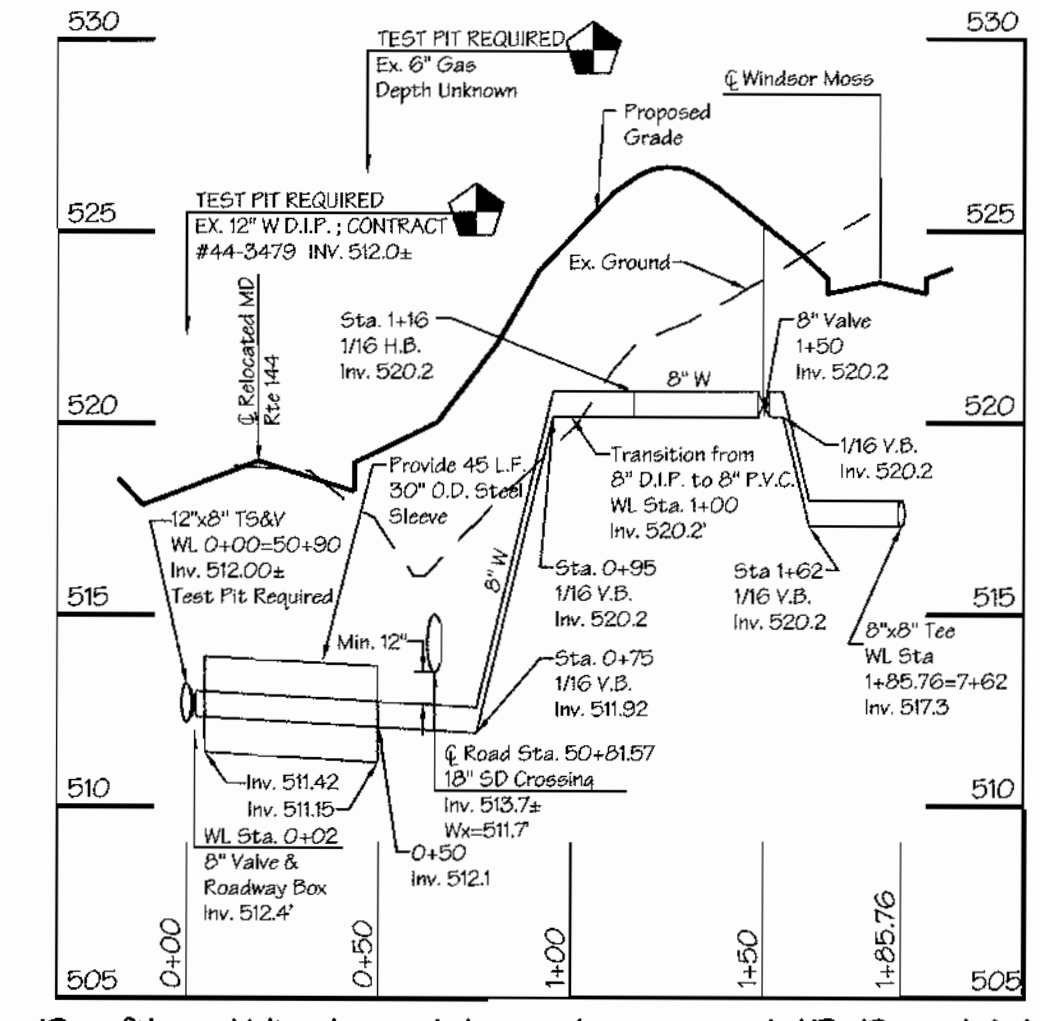
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PROFILE - WINDSOR MOSS


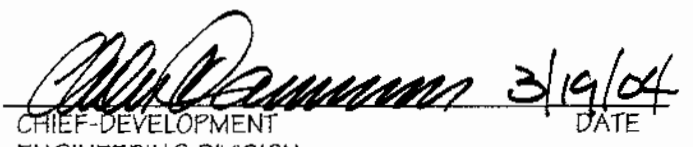

NOTE:
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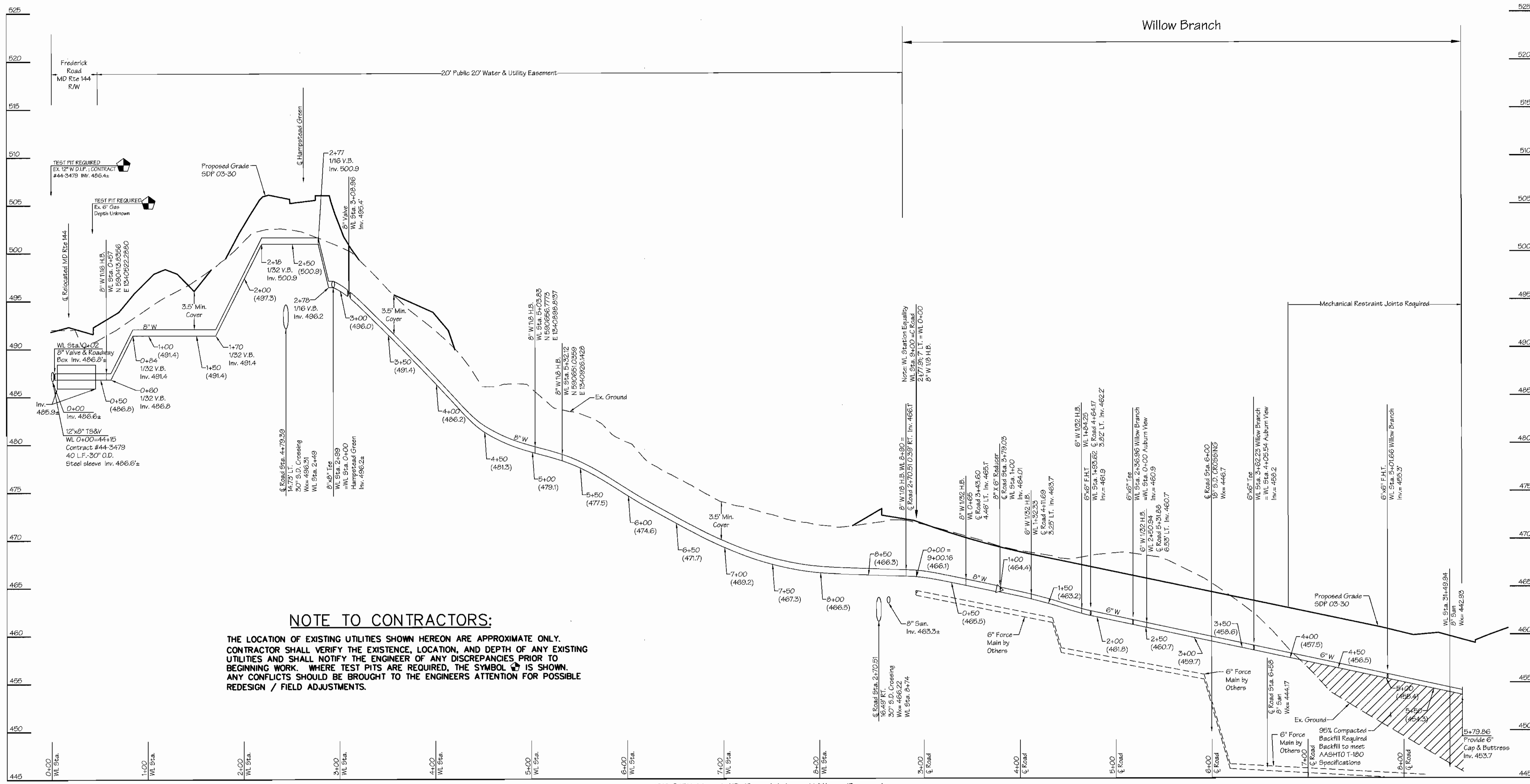


Profile - Windsor Moss Loop to MD Rte 144


SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS  3-9-04 CHIEF-BUREAU OF UTILITIES DATE		DEPARTMENT OF PLANNING & ZONING  3/19/04 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE		LDE Inc. Engineers, Surveyors, Planners 9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9340				DESIGNED: EDS DRAWN: J.D.R. CHECKED: BDB DATE: 3/2004		REVISION:		DATE:		PROFILE SHEET		HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D		SCALE: 1" = 5' V 1" = 50' H SHEET: 8 of 10	
600 SCALE MAP NO. 16												BLOCK 16 & 22							

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NOTE TO CONTRACTORS:

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PROFILE - MD Rte 144 to Willow Branch

NOTE:
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DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PLANNING & ZONING

LDE Inc.
Engineers, Surveyors, Planners
9230 Ramsey Road, Suite 106 Columbia, Maryland - 21045
(410)713-1070 - (301)596-3424 - FAX:(410)713-9540



DESIGNED	EDS				
DRAWN	J.D.R.				
CHECKED	BDB				
DATE	3/2/04				
BY	NO.	REVISION	DATE		

PROFILE SHEET

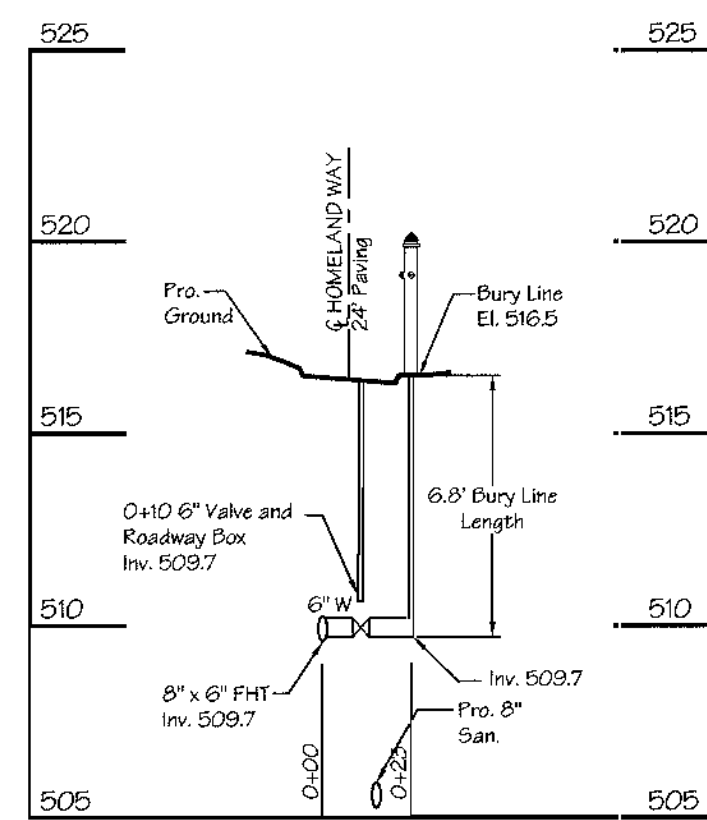
HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
CONTRACT NO. 44-4143-D

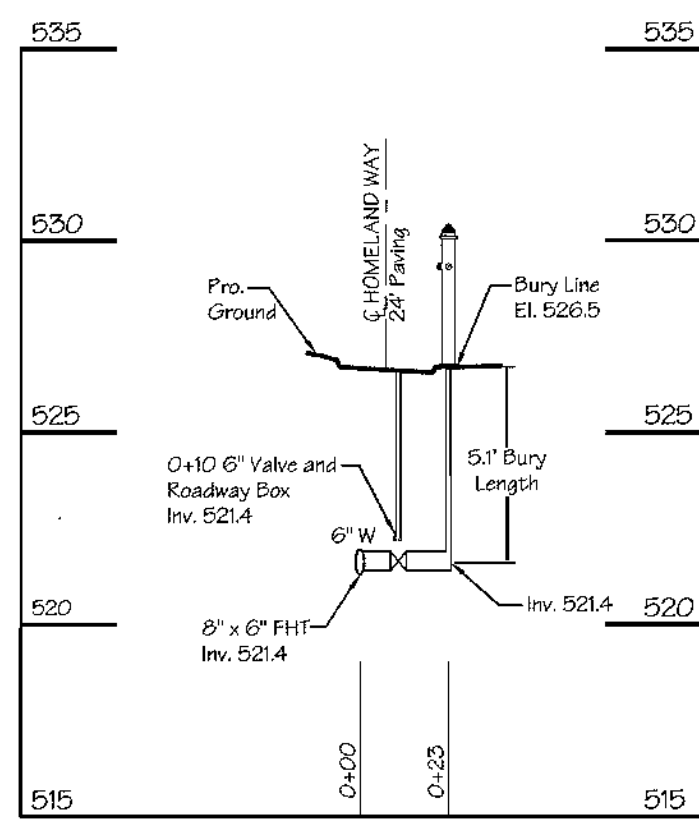
SCALE
1" = 5' V
1" = 50' H
SHEET
9 of 10

Ruth Berman 3-9-04
CHIEF-BUREAU OF UTILITIES DATE

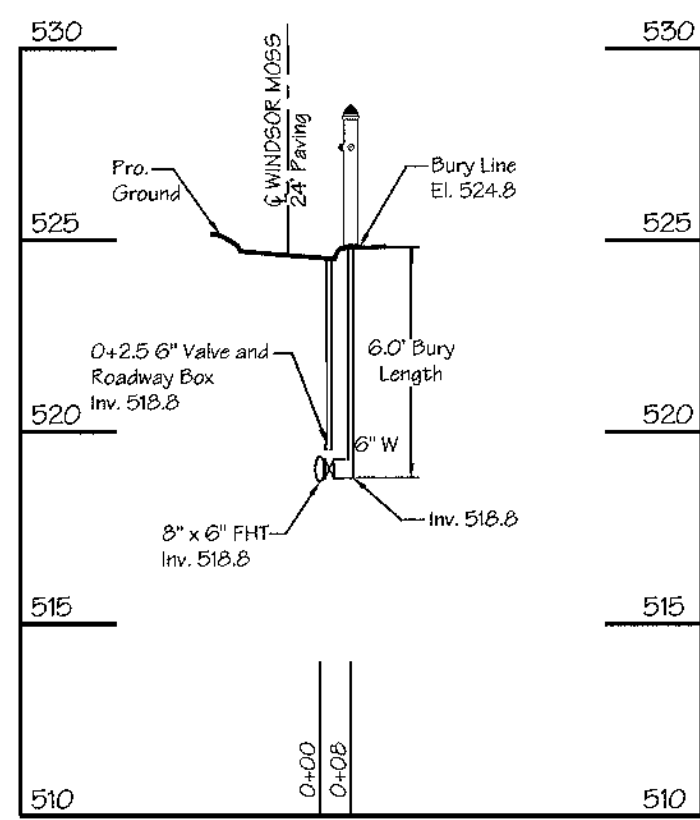
David Berman 3/10/04
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE



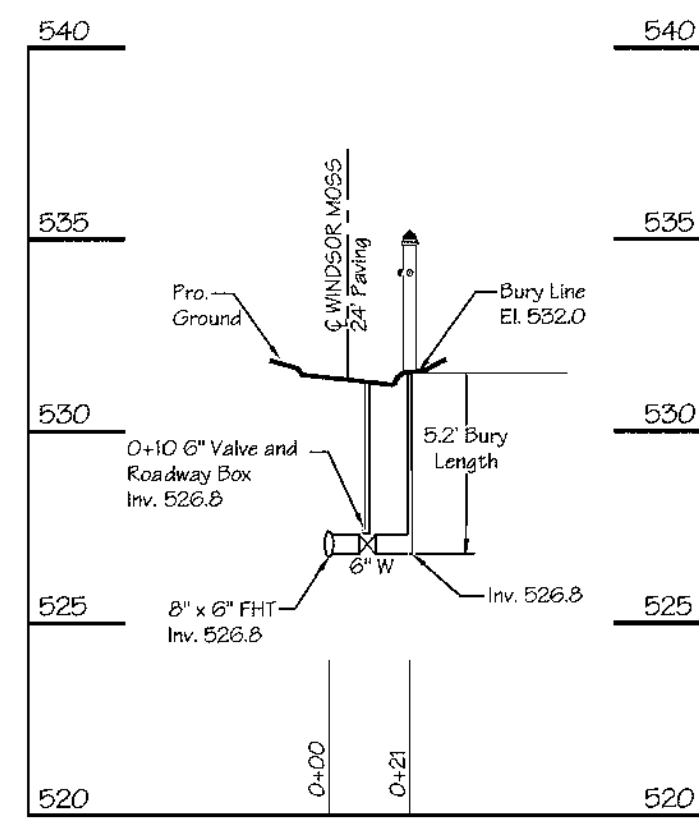
Fire Hydrant Lead
Homelands Way Sta. 2+30
= Water Line Sta. 2+47



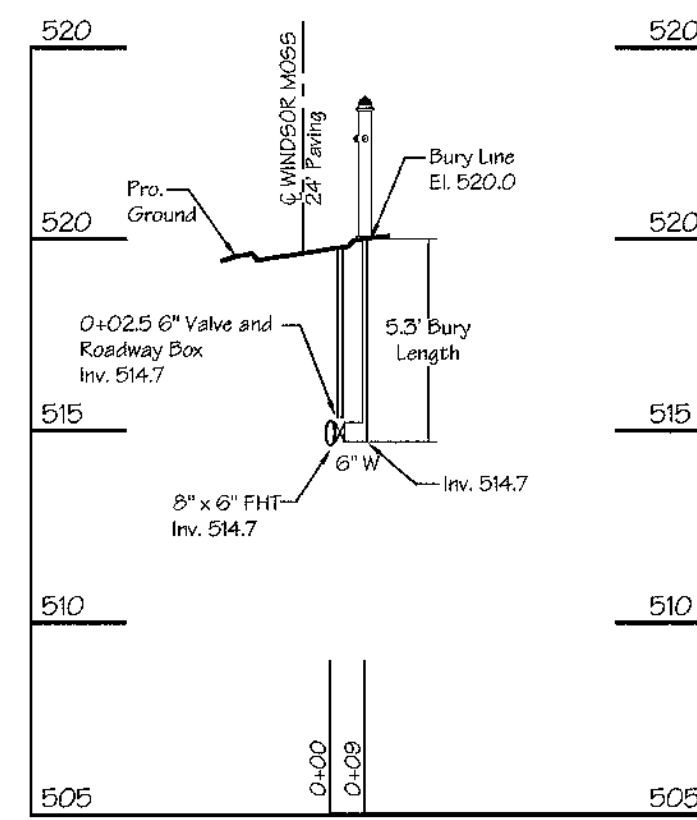
Fire Hydrant Lead
Homelands Way Sta. 6+06.35
= Water Line Sta. 6+25



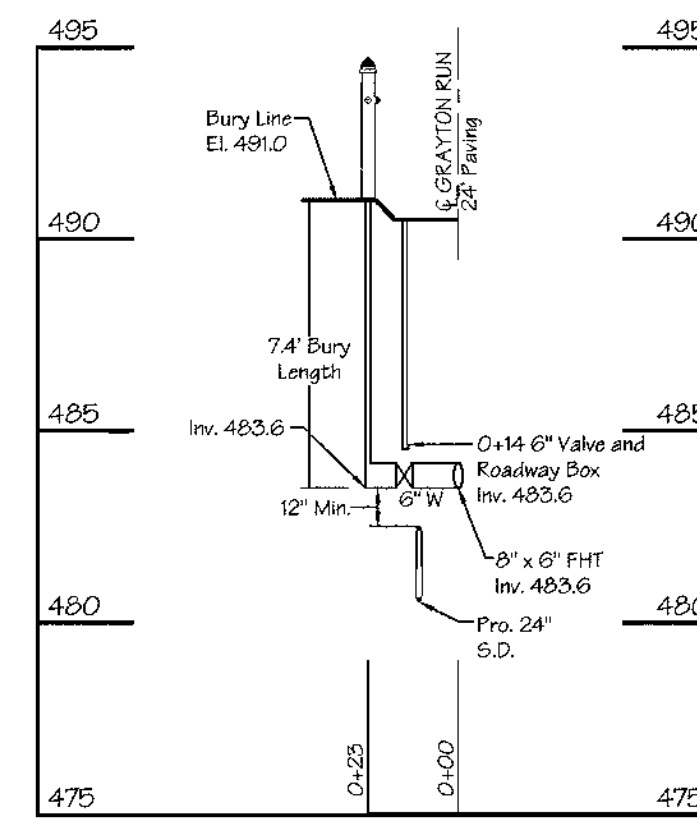
Fire Hydrant Lead
Windsor Moss Sta. 7+94.80
= Water Line Sta. 7+90.70



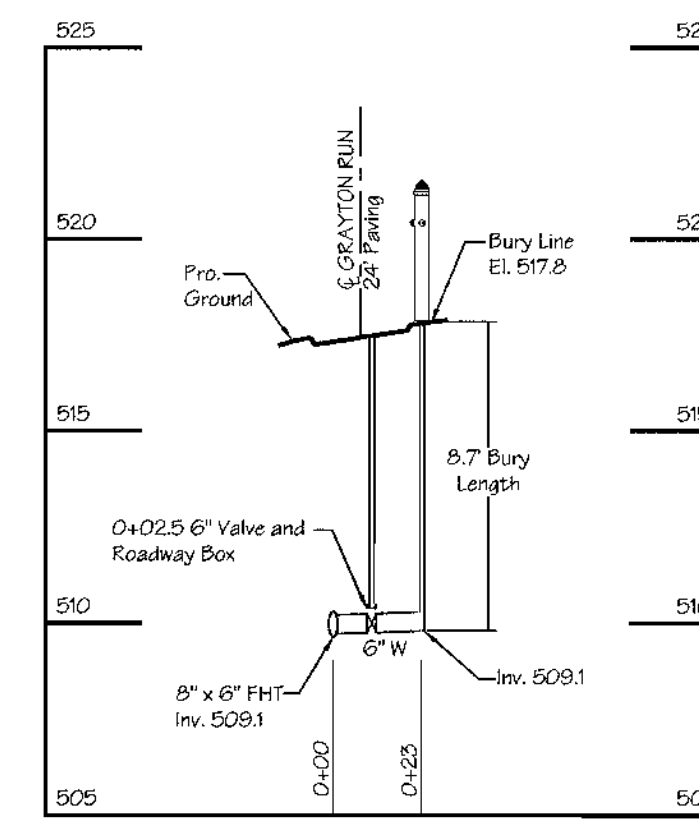
Fire Hydrant Lead
Windsor Moss Sta. 12+89.20
= Water Line Sta. 12+93



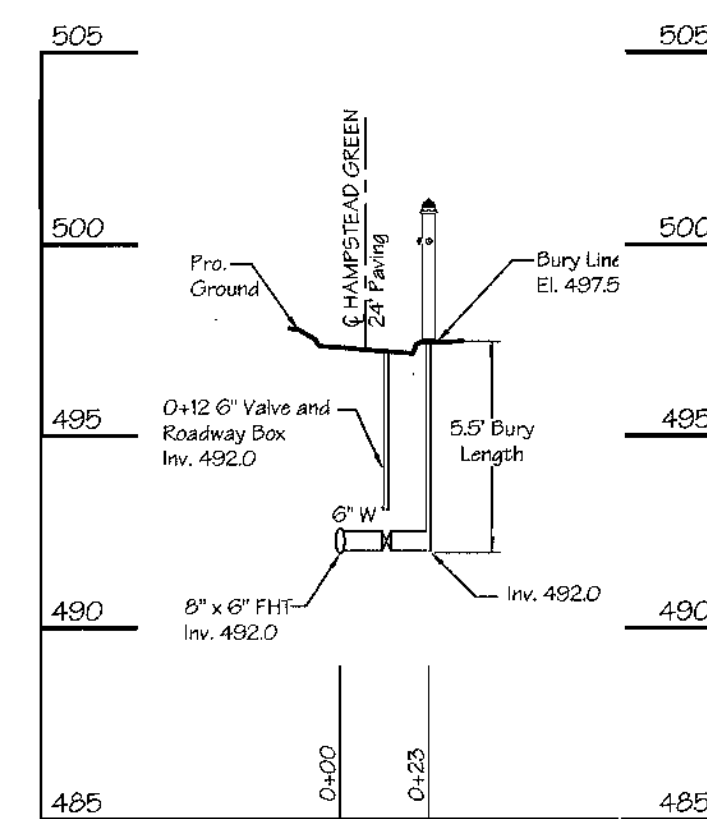
Fire Hydrant Lead
Windsor Moss Sta. 18+70.33
= Water Line Sta. 18+75



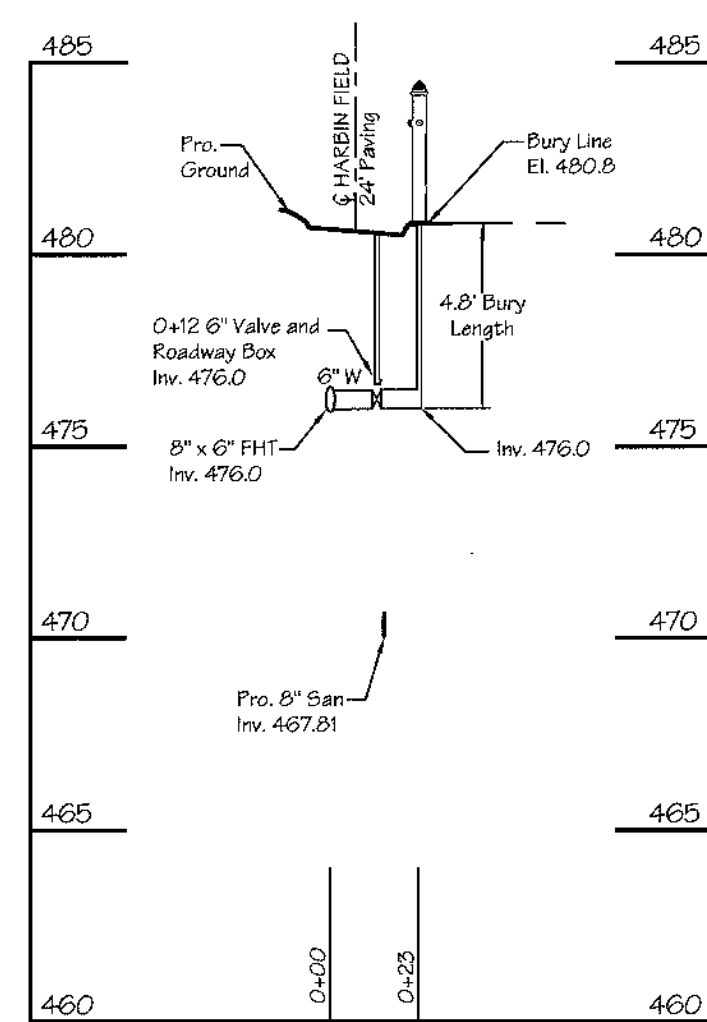
Fire Hydrant Lead
Grayton Run Sta. 0+82.20
= Water Line Sta. 22+86.43



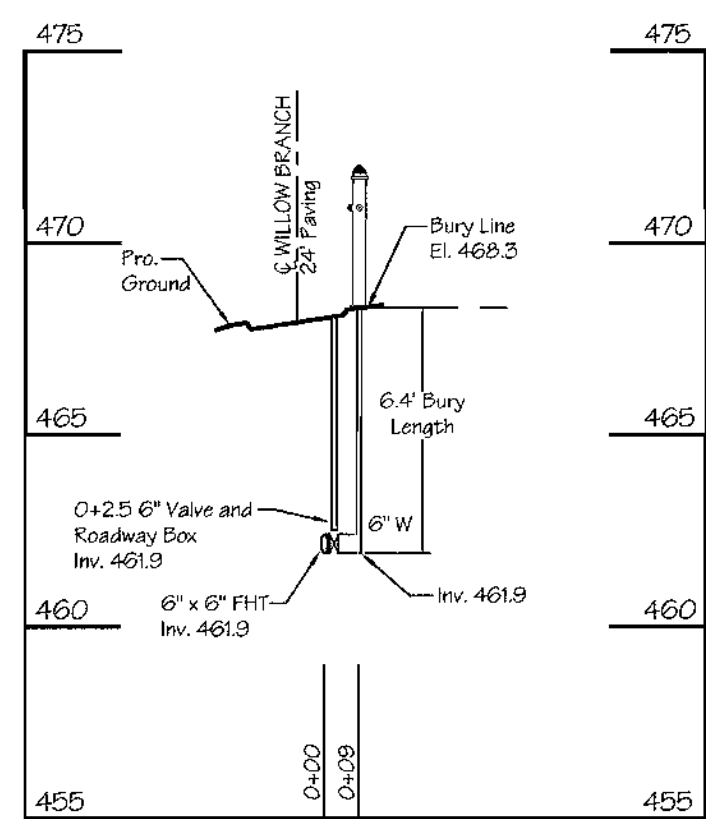
Fire Hydrant Lead
Grayton Run Sta. 6+04.09
= Water Line Sta. 22+59.8



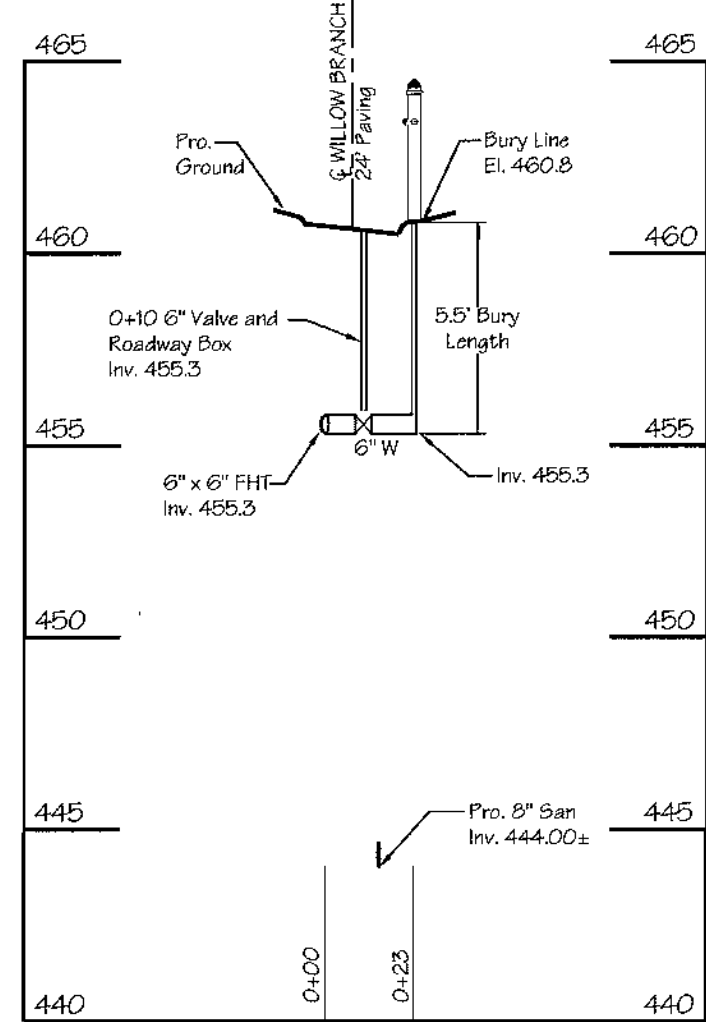
Fire Hydrant Lead
Hampstead Green Sta. 3+21
= Water Line Sta. 1+40



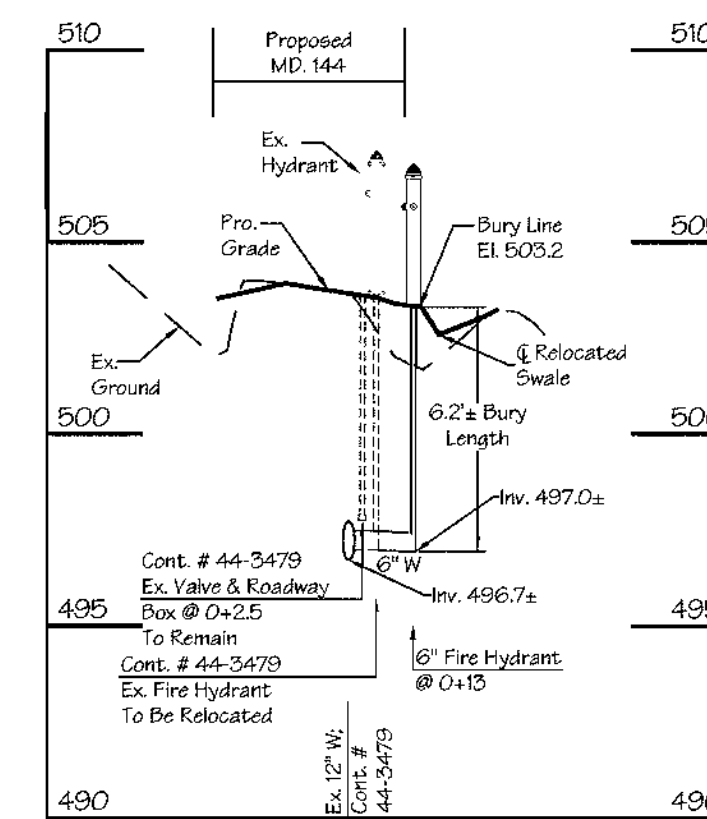
Fire Hydrant Lead
Harbin Field Sta. 2+31.60
= Water Line Sta. 2+52



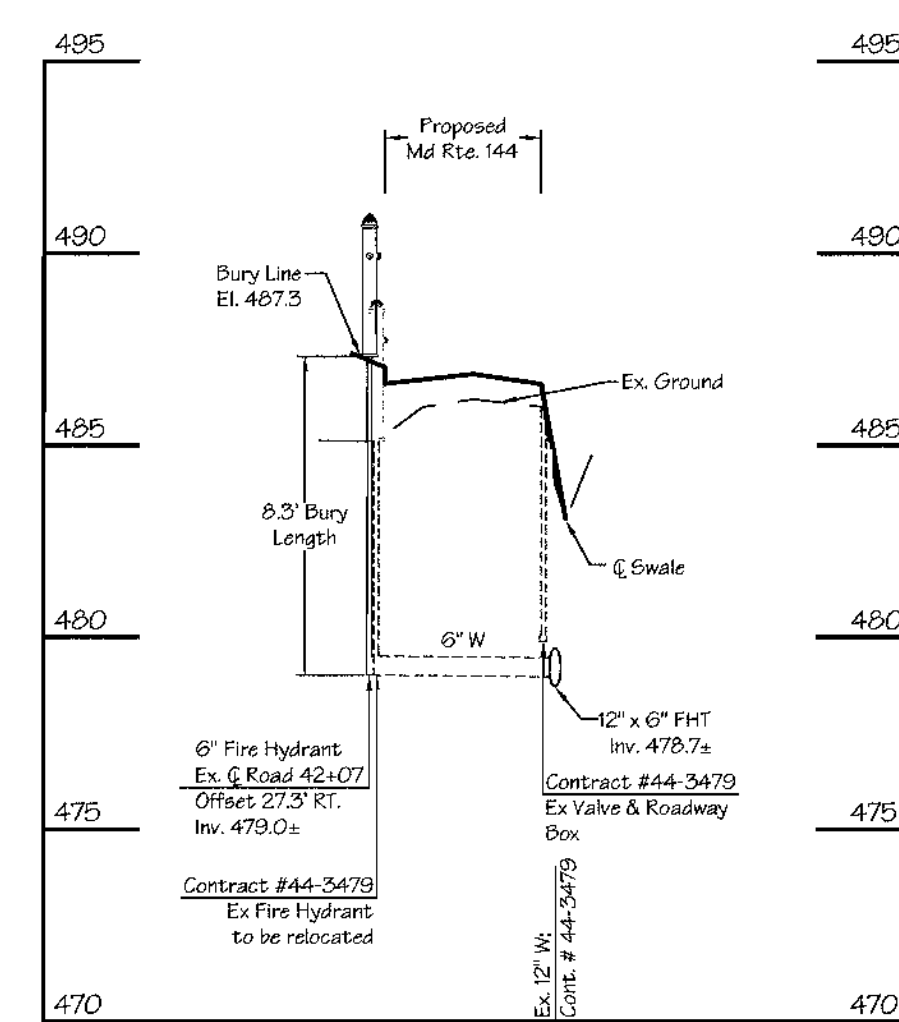
Fire Hydrant Lead
Willow Branch Sta. 4+73.59
= Water Line Sta. 1+30.62



Fire Hydrant Lead
Willow Branch Sta. 7+82.94
= Water Line Sta. 5+01.66



Fire Hydrant Lead
MD. Route 144 - Frederick Road
Ex. Water Line Station 47+16±




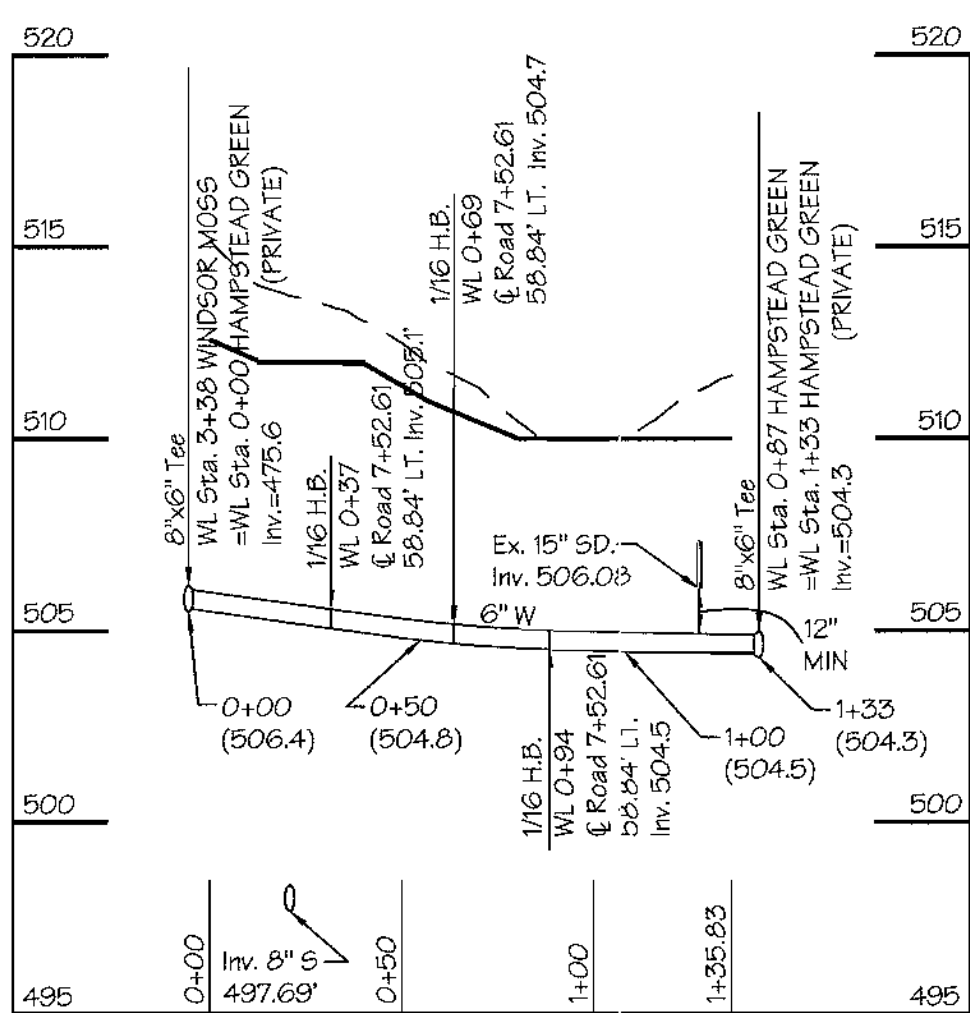
Fire Hydrant Lead
MD. Route 144 - Frederick Road
Ex. Water Line Station 42+07±

NOTE:
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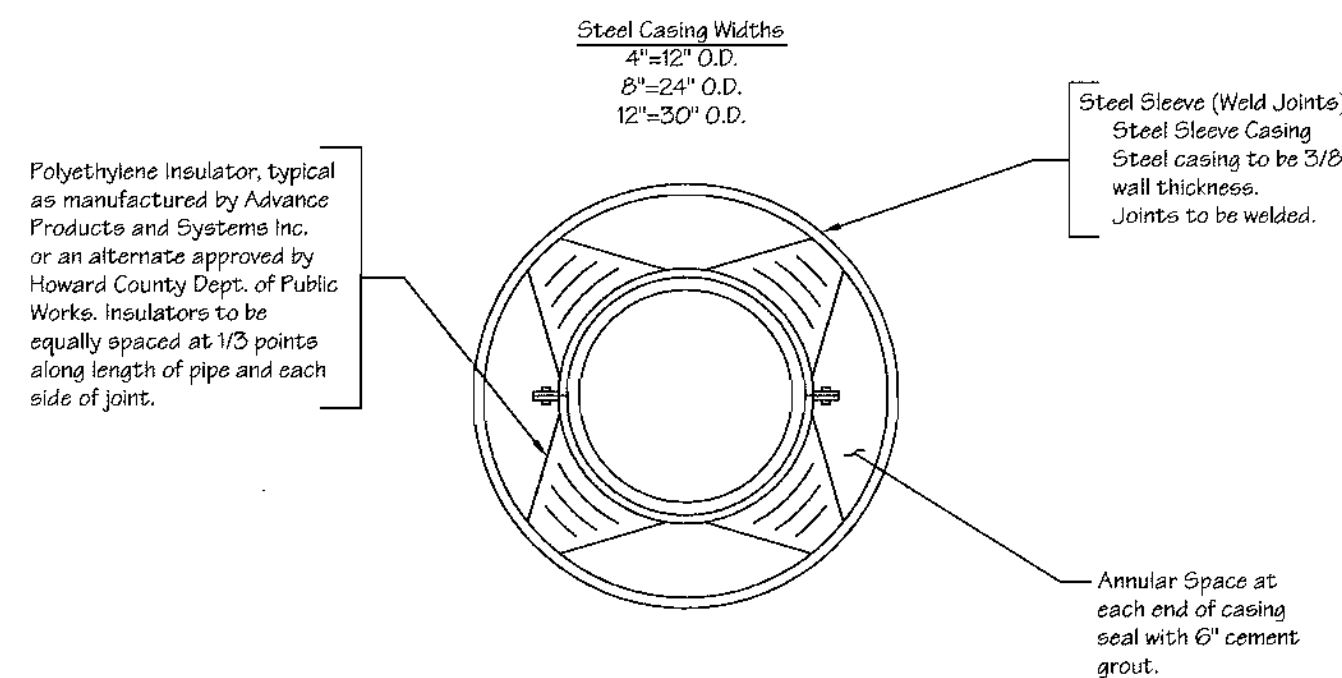
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NOTE TO CONTRACTORS:

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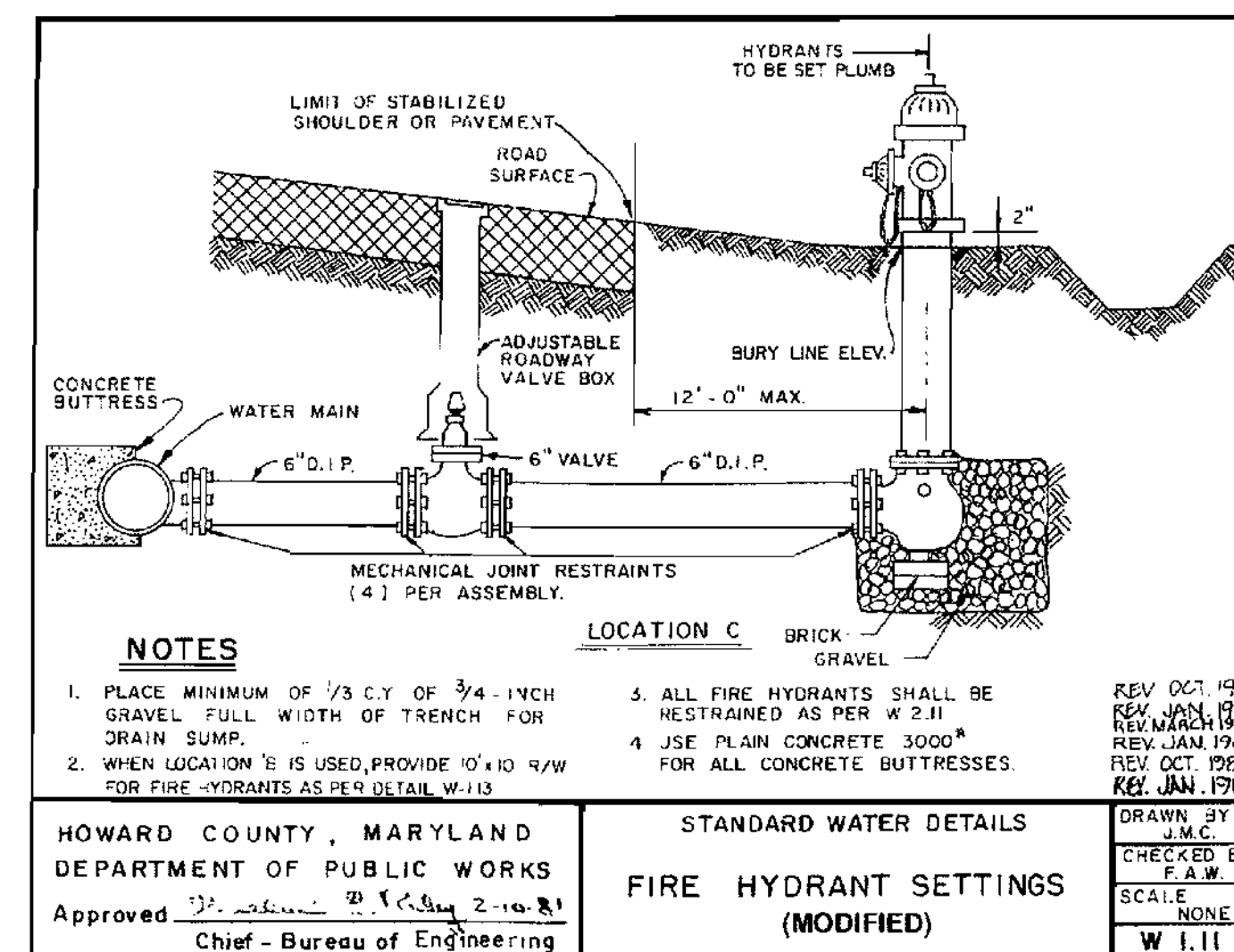


PROFILE - HAMPSTEAD GREEN (PRIVATE)

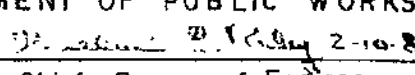


Casing Pipe Detail
Not to Scale

Casing Pipe to be installed by Jack & Boring or Open Trench Excavations



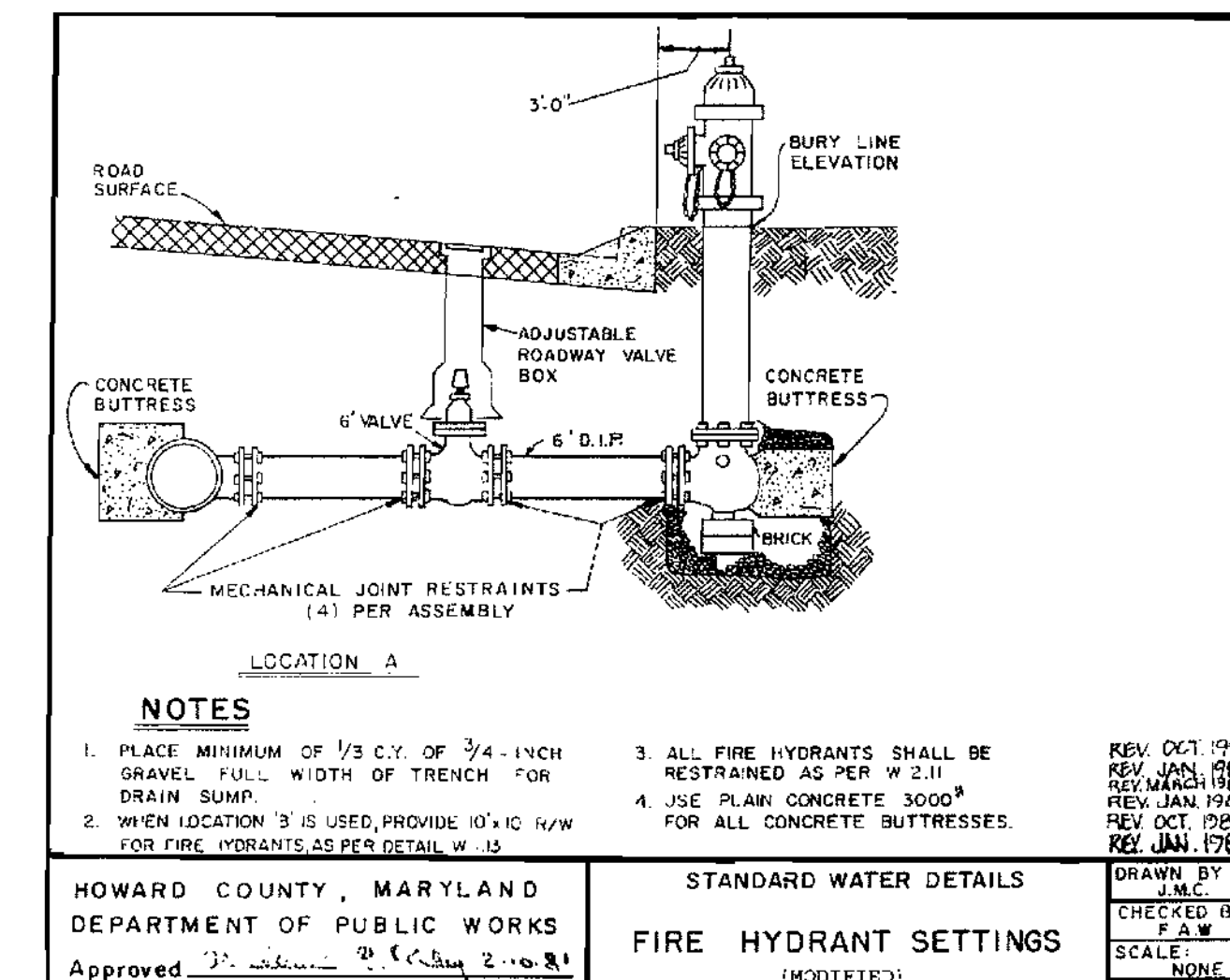
NOTES
1. PLACE MINIMUM OF 1/3 C.Y. OF 3/4" INCH GRAVEL FULL WIDTH OF TRENCH FOR DRAIN SUMP.
2. WHEN LOCATION 'B' IS USED, PROVIDE 10" x 10" 4"W FOR FIRE HYDRANTS AS PER DETAIL W-113.
3. ALL FIRE HYDRANTS SHALL BE RESTRAINED AS PER W-211.
4. USE PLAN CONCRETE 3000# FOR ALL CONCRETE BUTTRESSES.
5. ALL FIRE HYDRANTS SHALL BE RESTRAINED AS PER W-211.
6. USE PLAN CONCRETE 3000# FOR ALL CONCRETE BUTTRESSES.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved:  Chief - Bureau of Engineering

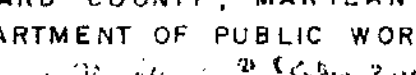
STANDARD WATER DETAILS
FIRE HYDRANT SETTINGS
(MODIFIED)

DRAWN BY: J.M.C.
CHECKED BY: F.A.W.
SCALE: NONE
W 1.11

REV. OCT. 1990
REV. JAN. 1992
REV. MAR. 1992
REV. OCT. 1992
REV. JAN. 1993



NOTES
1. PLACE MINIMUM OF 1/3 C.Y. OF 3/4" INCH GRAVEL FULL WIDTH OF TRENCH FOR DRAIN SUMP.
2. WHEN LOCATION 'B' IS USED, PROVIDE 10" x 10" 4"W FOR FIRE HYDRANTS AS PER DETAIL W-113.
3. ALL FIRE HYDRANTS SHALL BE RESTRAINED AS PER W-211.
4. USE PLAN CONCRETE 3000# FOR ALL CONCRETE BUTTRESSES.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved:  Chief - Bureau of Engineering

STANDARD WATER DETAILS
FIRE HYDRANT SETTINGS
(MODIFIED)

DRAWN BY: J.M.C.
CHECKED BY: F.A.W.
SCALE: NONE
W 1.11

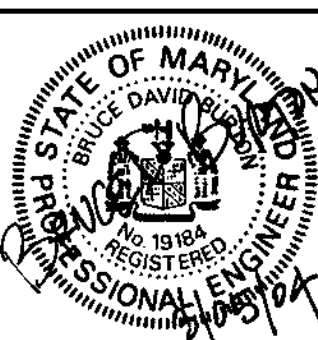
REV. OCT. 1990
REV. JAN. 1992
REV. MAR. 1992
REV. OCT. 1992
REV. JAN. 1993

Cont. # 44-3479 Frederick Road Ex. WL Sta. 47+16

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PLANNING & ZONING

LDE Inc.
Engineers, Surveyors, Planners
9250 Ramsay Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540



DESIGNED	EDS				
DRAWN	J.D.R.				
CHECKED	BDB				
DATE	3/2004				
BY	NO.	REVISION	DATE		

PROFILE & DETAIL SHEET

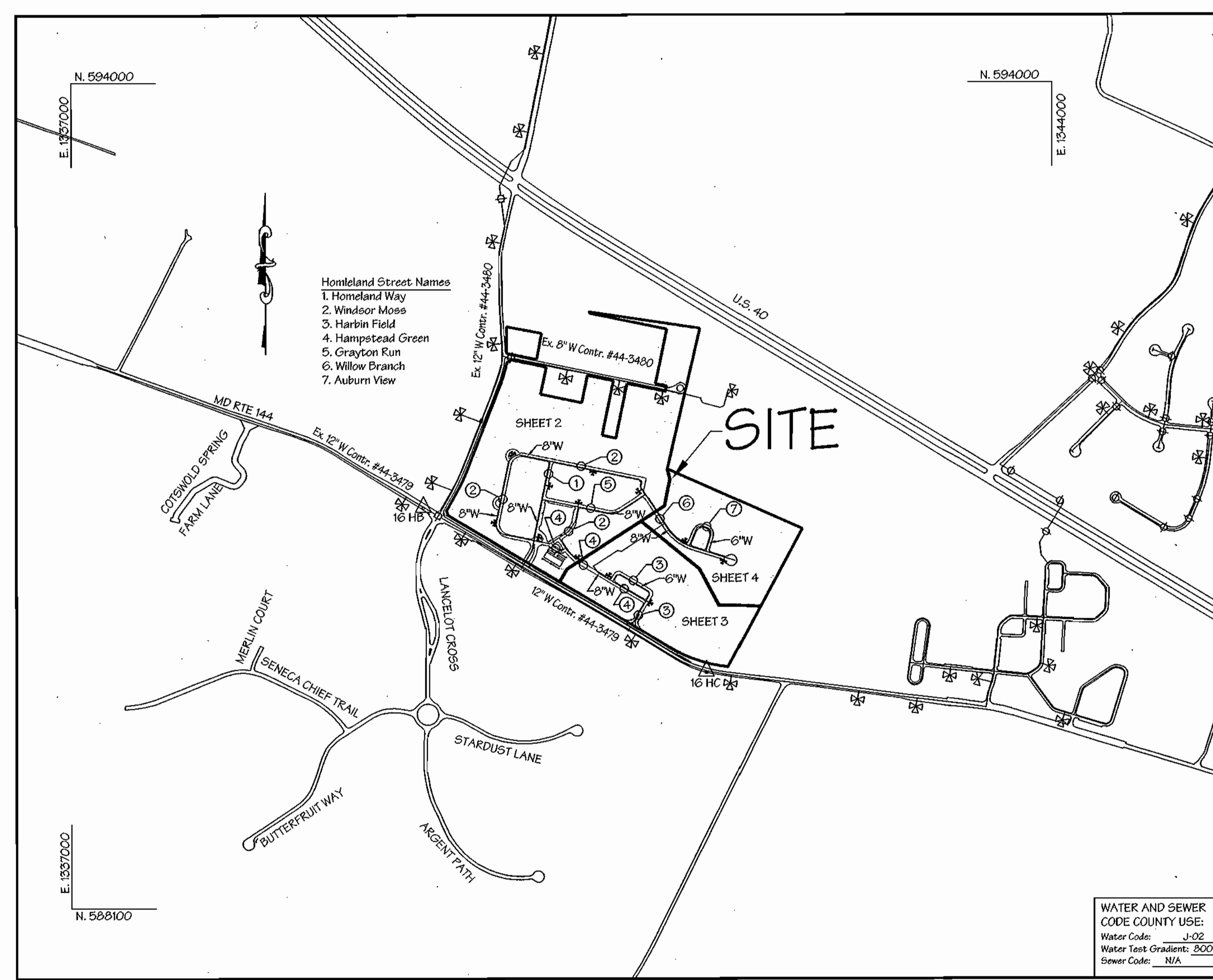
600 SCALE MAP NO. 16 BLOCK 16 & 22

HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
CONTRACT NO. 44-4143-D

SCALE
1" = 5' V
1" = 50' H
SHEET
10 of 10

WATER MAIN STAKEOUT TABLE - Sheet 2				WATER MAIN STAKEOUT TABLE - Sheet 2					
Road Name	Description	Centerline Road Sta.	Waterline Station	Road Name	Description	Centerline Road Sta.	Waterline Station		
Maryland Route 144	8" Valve	10+88.00	19+59' LT	0+02	Windsor Moss	8" Valve	15+43.14	7 RT	15+43
Maryland Route 144	8" Valve	47.55	20+51' LT	0+02	Windsor Moss	8" Valve	15+33.27	7 RT	15+33
Homeland Way	8" x 8" FHT	1+23.11	4+02' LT	1+42	Windsor Moss	8" x 8" FHT	18+70.53	7 RT	18+70
Homeland Way	8" x 8" FHT	1+82.01	7 LT	2+00	Windsor Moss	8" Valve	18+70.53	10 RT	18+70
Homeland Way	8" x 8" Cross	2+02.05	7 LT	2+20	Windsor Moss	8" - 1/2 Bend	22+00.63	7 RT	22+00.6
Homeland Way	8" Valve	2+15	7 LT	2+30	Graydon Run	8" - 1/2 Bend	22+73.33	17 RT	22+73.36
Homeland Way	8" x 8" FHT	2+50	7 LT	2+67	Graydon Run	8" - 1/2 Bend	22+54.32	17 RT	22+54.36
Homeland Way	8" Valve	2+50	9 RT	2+67	Graydon Run	8" x 8" FHT	22+34.14	16 RT	22+34.18
Homeland Way	8" x 8" FHT	2+50	16.19 RT	2+67	Graydon Run	8" Valve	22+44.44	9.66 RT	22+44.48
Homeland Way	8" x 8" Tee	5+04.01	7 LT	5+16	Graydon Run	8" FHT	22+88.67	16.07 RT	22+88.71
Homeland Way	8" x 8" FHT	6+06.55	7 LT	6+23	Graydon Run	8" Valve	22+88.67	25.87 LT	22+88.71
Homeland Way	8" Valve	6+06.55	9 RT	6+23	Graydon Run	8" Valve	22+88.67	25.87 LT	22+88.71
Homeland Way	8" FHT	6+06.55	10 RT	6+23	Graydon Run	8" - 1/2 Bend	22+88.67	25.87 LT	22+88.71
Homeland Way	8" Valve	7+60	7 LT	7+76	Graydon Run	8" - 1/2 Bend	22+88.67	25.87 LT	22+88.71
Homeland Way	8" x 8" Tee	7+81	7 LT	7+98	Graydon Run	8" Valve	22+88.67	25.87 LT	22+88.71
Windsor Moss	8" x 8" Tee	0+07	7 LT	0+20	Graydon Run	8" FHT	22+88.67	25.87 LT	22+88.71
Windsor Moss	8" Valve	0+17	7 LT	0+30	Graydon Run	8" Valve	22+88.67	25.87 LT	22+88.71
Windsor Moss	8" - 1/2 Bend	3+01.76	0.55 RT	3+02	Willsow Branch	8" x 8" Tee	0+07.61	16.15 LT	23+29.39
Windsor Moss	8" - 1/2 Bend	2+00.99	3.05 RT	1+94	Willsow Branch	8" Valve	0+07.61	7.45 LT	23+29.39
Windsor Moss	8" x 8" Tee	2+81.15	7 RT	2+75	Willsow Branch	8" Valve	0+07.61	7.45 LT	23+29.39
Windsor Moss	8" x 8" Tee	3+48.28	4.89 RT	3+38	Hampstead Green	8" Valve	6+09.55	7 RT	1+00
Windsor Moss	8" - 1/2 Bend	3+01.76	0.55 RT	3+02	Hampstead Green	8" Valve	6+09.55	7 RT	1+00
Windsor Moss	8" Valve	4+60.33	7 RT	4+50	Hampstead Green	8" x 8" Tee	7+02.64	7 RT	0+67
Windsor Moss	8" Valve	4+80.33	7 RT	4+80	Hampstead Green	8" Valve	6+09.55	7 RT	1+00
Windsor Moss	8" - 1/2 Bend	7+06.32	0.67 LT	6+95	Hampstead Green	8" - 1/2 Bend	6+79.48	6.6 RT	1+07
Windsor Moss	8" - 1/2 Bend	7+32.52	3.38 LT	7+25	Hampstead Green	8" x 8" FHT	5+80.15	9.89 RT	1+97
Windsor Moss	8" - 1/2 Bend	7+06.19	9.19 LT	7+00	Hampstead Green	8" Valve	5+80.15	9.89 RT	1+97
Windsor Moss	8" - 1/2 Bend	7+09	9.89 LT	7+04	Hampstead Green	8" FHT	5+80.15	9.89 RT	1+97
Windsor Moss	8" x 8" FHT	7+84.80	8.39 LT	7+90.70	Hampstead Green	8" Cap & Nuts	5+80.15	7.67 RT	1+99
Windsor Moss	8" Valve	7+94.00	10.89 LT	7+90.70	Hampstead Green	8" Valve	7+79.75	56.84 LT	0+10
Windsor Moss	8" FHT	7+94.00	10.89 LT	7+90.70	Hampstead Green	8" - 1/2 Bend	7+02.61	58.84 LT	0+27
Windsor Moss	8" - 1/2 Bend	12+45.07	9.89 LT	12+42	Hampstead Green	8" - 1/2 Bend	7+23.30	46.37 LT	0+09
Windsor Moss	8" - 1/2 Bend	12+64.54	8.85 LT	12+65	Hampstead Green	8" - 1/2 Bend	7+06.54	35.37 LT	0+88
Windsor Moss	8" x 8" FHT	12+89.20	4.63 LT	12+85	Hampstead Green	8" - 1/2 Bend	7+02.64	31.67 LT	0+84
Windsor Moss	8" Valve	12+89.20	4.63 LT	12+85					
Windsor Moss	8" FHT	12+89.20	4.63 LT	12+85					
Windsor Moss	8" - 1/2 Bend	13+01.33	5.21 LT	13+06					
Windsor Moss	8" - 1/2 Bend	13+23.90	1.79 LT	13+29					



BENCHMARKS

HOWARD COUNTY GEODETIC CONTROL: 16HC
Elevation: 449.451
Station is a standard stamped disc set on top of concrete monument. Located on the southern boundary of Maryland Route 144, 0.1 Mile west of Folly Quarter Road.

HOWARD COUNTY GEODETIC CONTROL: 16HB
Elevation: 540.658
Station is a standard stamped disc set on top of concrete monument. Located 21.9' south of centerline - Maryland Route 144, 147.5' west of Marriotteville Road. Station is flush with surface.

INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET
2	PLAN SHEET
3	PLAN SHEET
4	PLAN SHEET
5	PLAN SHEET
6	PROFILE SHEET
7	PROFILE SHEET
8	PROFILE SHEET
9	PROFILE SHEET
10	PROFILE & DETAILS SHEET
11	PVC C-900 SPECIFICATIONS

GENERAL NOTES

- PART I: GENERAL**
- 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 at the Contractor's expense.
 - All horizontal controls are based on Maryland State Coordinates, NAD 83/91.
 - 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 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 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, if required.
 - 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 location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawing. 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.
 - Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:
 - a. AT&T: (800) 252-1133
 - b. BGE (Contractor Services): (410) 850-4620
 - c. BGE (Underground damage control): (410) 787-9068
 - d. Bureau of Utilities: (410) 313-4900
 - e. Columbia Gas Transmission Corporation: (301) 762-6306
 - f. Colonial Pipeline Co.: (410) 795-1390
 - g. Miss Utility: 1-800-257-7777
 - h. State Highway Administration: (410) 531-5533
 - i. Verizon: 1-800-743-0033 / 410-224-9210
 - j. Construction Inspection Division (410-313-1880)
 - Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs within the construction area are not to be removed or damaged by the Contractor.
 - Contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- PART II: WATER**
- All water main materials shall be as specified and approved by the Howard County Department of Public Works.
 - Tops of all water mains to have a minimum of 3' 1/2" cover unless otherwise noted.
 - Valves adjacent to the toes shall be strapped to the toes.
 - 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. 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.
 - All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
 - For sprinkler system for all townhomes or multi-family dwelling units should have a minimum of 1/2" connection with a 1" meter. (model 70)
 - Water house connection ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 - Addition to the Approved Plans:
 - The 10 drawings contained herein constitute the Approved Water Plans for the Homeland Development, however water main construction materials, methods and details shall be approved by the Department of Public Works and added to these Approved Water Plans as Additional Plan Sheets prior to installation of the water mains. The contractor shall install the water mains in accordance with the Approved Water Plans, the Additional Plan Sheets, the Special Provisions and the Howard County Standard Specifications.
 - 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 and shall be exterior epoxy coated in accordance with AWWA C116.
 - 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 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.
 - The following note is added to Howard County Standard Detail W2.22, Buttrresses and Anchors for Vertical Bends. "When anchoring PVC pipe, the strapping in contact with the pipe surface shall be 1-inch wide by 1/4-inch thick steel. The remaining portion of the strap shall be reinforcing bar sized in accordance with the pertinent chart shown on the detail."
 - Except as indicated on the Plans and noted above, all public water mains shall be polyvinylchloride (PVC) pipe meeting the requirements of AWWA C900 DR15, pressure Class 150 and the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and all subsequent amendments thereto.

QUANTITIES				
ITEM	QUANTITIES ESTIMATED	AS BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
12" x 8" TAPPING TEE (Ea.)	2			
8" WATER (L.F.)	7299			
8" VALVE (Ea.)	17			
8" x 8" TEE (Ea.)	9			
8" x 8" CROSS (Ea.)	1			
8" CAP & BUTTRESS (Ea.)	3			
8" x 8" REDUCER (Ea.)	2			
8" x 8" FIRE HYDRANT TEE (Ea.)	10			
8" x 8" x 8" TEE (Ea.)	3			
8" - 1/2 BEND (Ea.)	5			
8" - 1/6 BEND (Ea.)	19			
8" WATER (L.F.)	1210			
8" VALVE (Ea.)	17			
8" x 8" TEE (Ea.)	2			
8" CAP & BUTTRESS (Ea.)	1			
8" - 1/2 BEND (Ea.)	8			
8" - 1/6 BEND (Ea.)	1			
8" - 1/2 BEND (Ea.)	4			
8" FIRE HYDRANT (Ea.)	14			
8" x 8" FIRE HYDRANT TEE (Ea.)	2			
1" WHC (L.F.)	3926			
1-1/2" WHC (L.F.)	243			
2" WHC (L.F.)	285			

Type of Building: 143 Condominium Units
 Number of Lots/Parcels: 4
 Number of W.H.C.'S: 141 Proposed / 2 Existing
 Number of S.H.C.'S: 0
 Drainage Area: Little Patuxent River
 Treatment Plant: Alpha Ridge LPWWTP

Vicinity Map
 Scale: 1"=600'

WATER CONSTRUCTION PLANS HOMELAND

3rd Election District - Howard County, Maryland
 Contract No. 44-4143-D

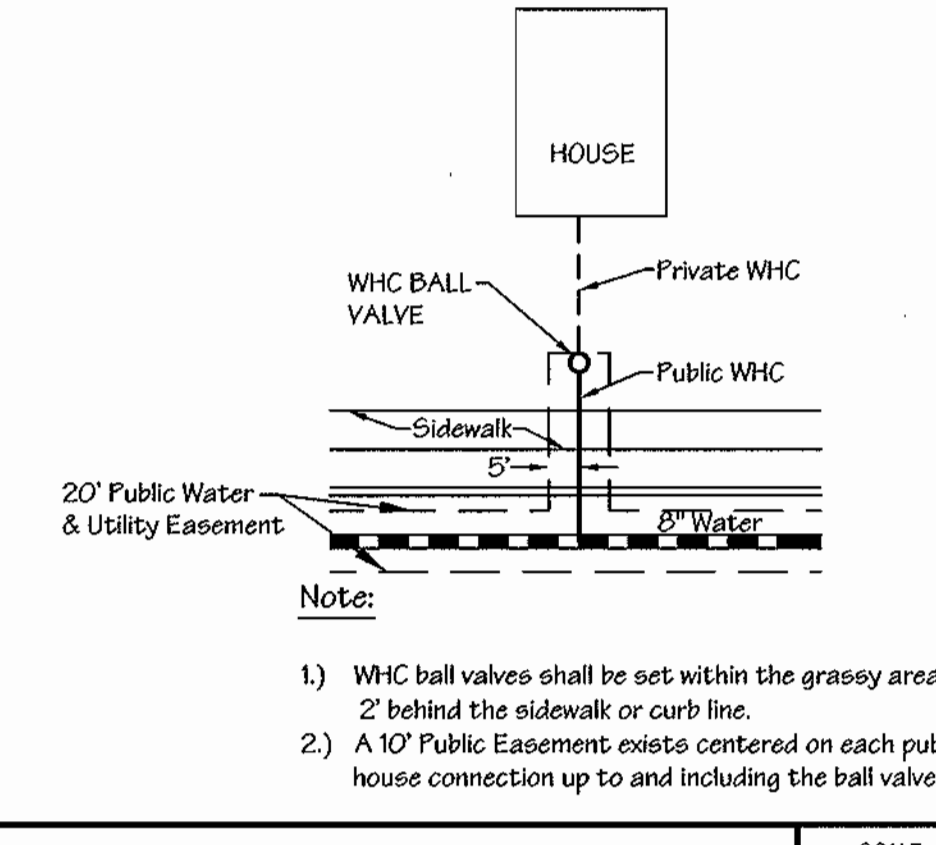
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jim Meyer 9/17/04
 NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
John R. Robertson 9/17/04
 HOWARD COUNTY SOIL CONSERVATION DISTRICT

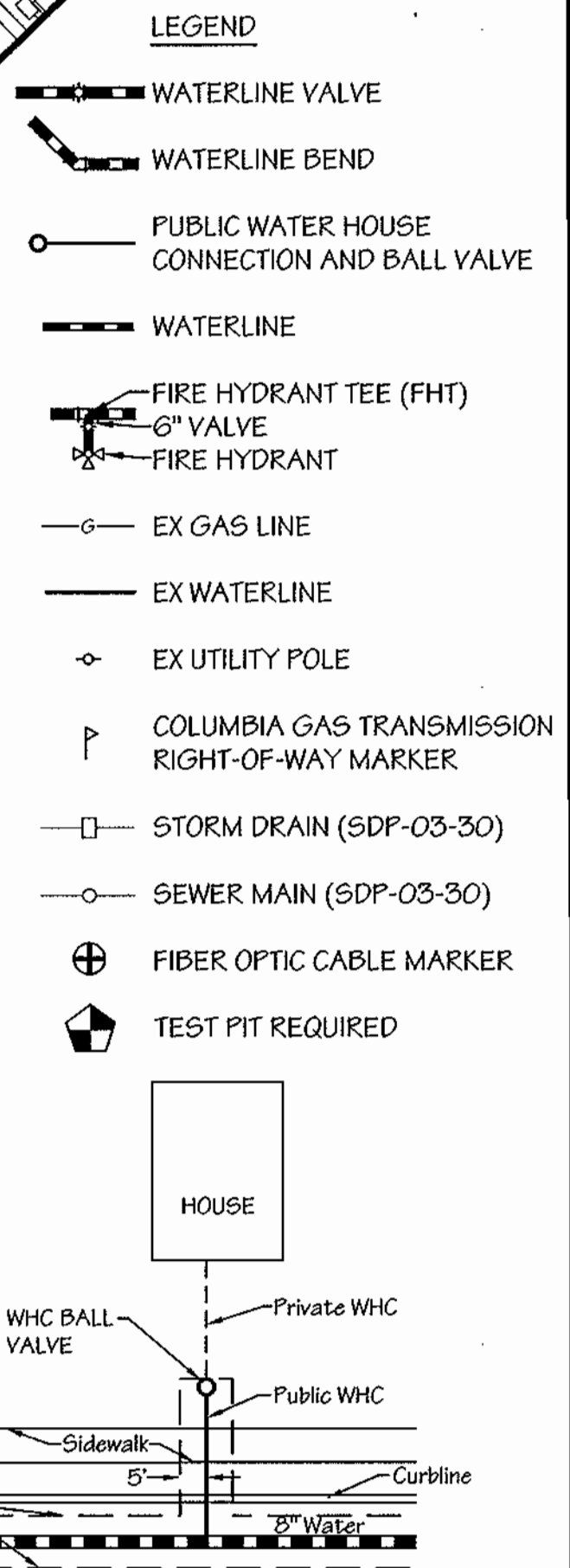
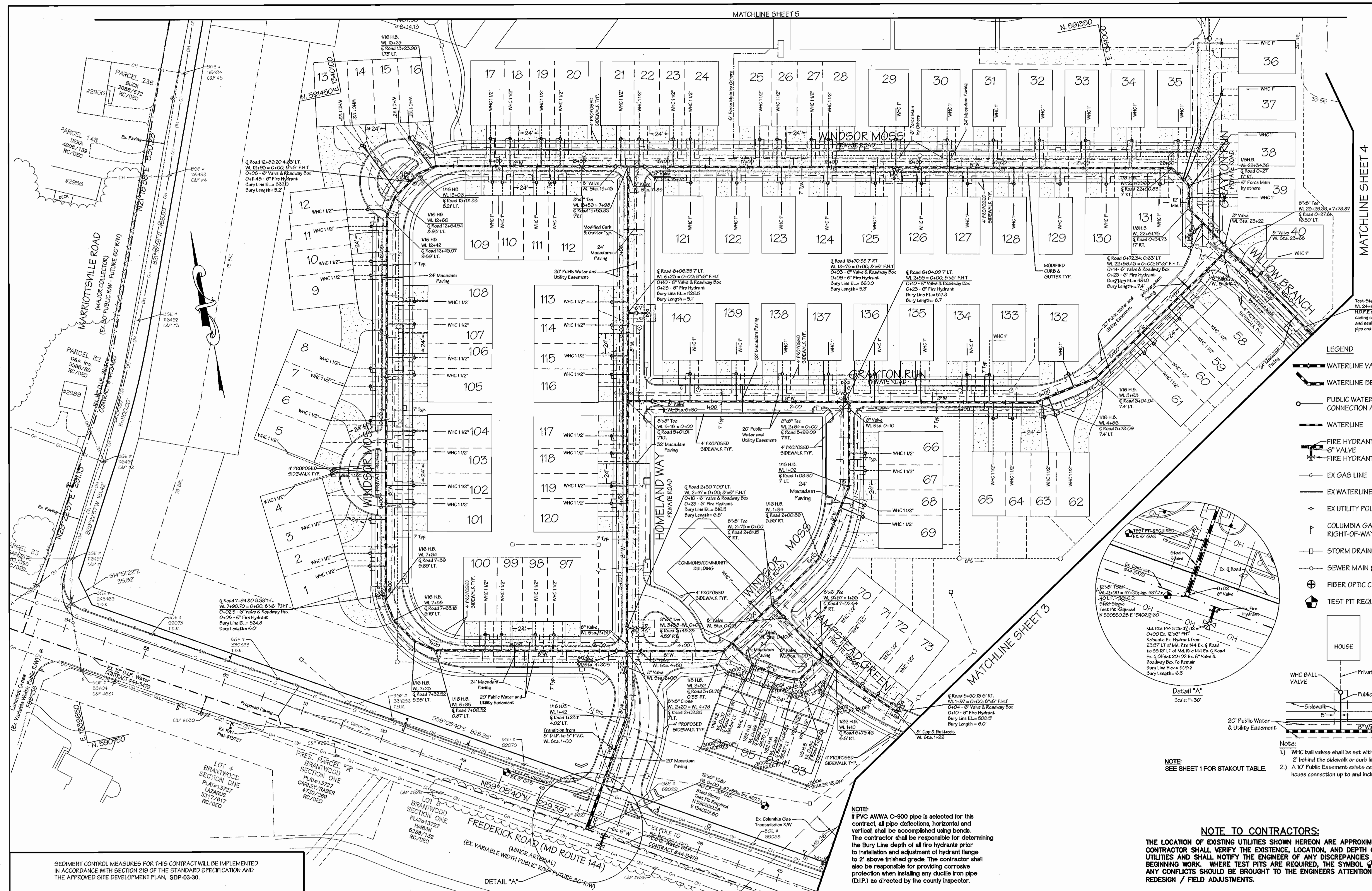
NOTE:
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

NOTE TO CONTRACTORS:
 THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL [] IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.



DEPARTMENT OF PUBLIC WORKS <i>R. L. ...</i> 8-27-04 CHIEF-BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING <i>...</i> 9/16/04 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE	LDE Inc. Engineers, Surveyors, Planners 9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX (410)715-9540	DESIGNED: EDS DRAWN: JLM / JDR CHECKED: BDB DATE: 7/2004	REVISE STAKEOUT TABLES, VICINITY MAP, SHT #S, QUANTITIES BY: LDE NO: 7/2004 DATE: 7/2004	HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D	SCALE: AS SHOWN SHEET: 1 OF 11
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NOTE:
SEE SHEET 1 FOR STAKOUT TABLE.

Notes:
1) WHC ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
2) A 10' Public Easement exists centered on each public house connection up to and including the ball valve.

NOTE TO CONTRACTORS:
THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.

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DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF PLANNING & ZONING
<i>John B. ...</i> 8-27-04 CHIEF-BUREAU OF UTILITIES	<i>John B. ...</i> 9/1/04 CHIEF-DEVELOPMENT ENGINEERING DIVISION

LDE Inc.
Engineers, Surveyors, Planners
9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED: EDS
DRAWN: J.D.R.
CHECKED: BDB
DATE: 7/2004

REVISION: REVISE HORIZONTAL LAYOUT, SHT #'S, QUANTITIES
DATE: 7/2004

DATE	BY	NO.	REVISION
7/2004	LDE	1	REVISE HORIZONTAL LAYOUT, SHT #'S, QUANTITIES

PLAN SHEET

600 SCALE MAP NO. 16
BLOCK 16 & 22

HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-4143-D

SCALE: 1" = 50'

SHEET: 2 of 11

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LEGEND

- WATERLINE VALVE
- WATERLINE BEND
- PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
- WATERLINE
- FIRE HYDRANT TEE (FHT)
- 6" VALVE
- FIRE HYDRANT
- EX GAS LINE
- EX WATERLINE
- EX UTILITY POLE
- COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
- STORM DRAIN (SDP-03-30)
- SEWER MAIN (SDP-03-30)
- FIBER OPTIC CABLE MARKER
- TEST PIT REQUIRED

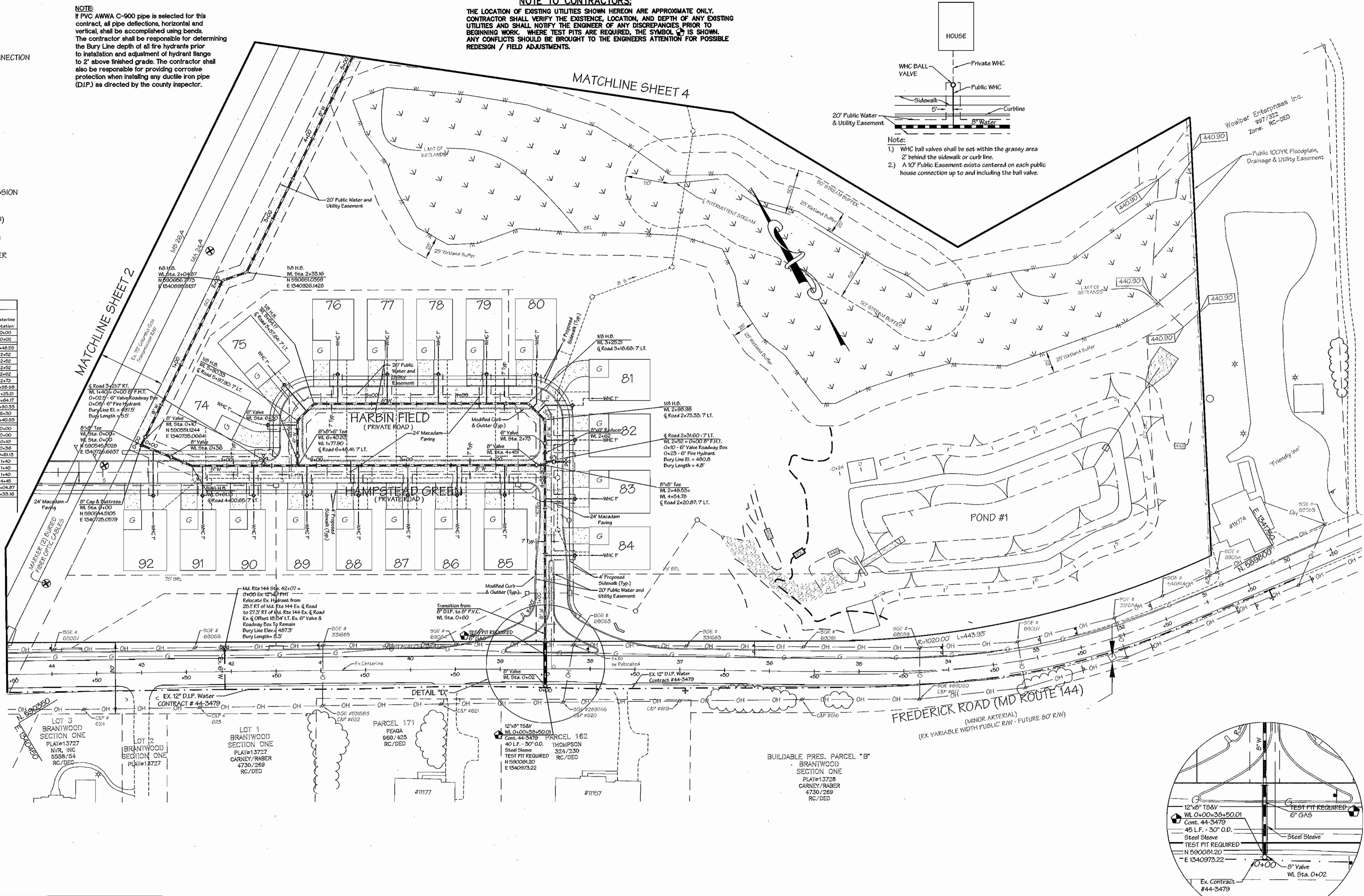
NOTE:
If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (DIP) as directed by the county inspector.

NOTE TO CONTRACTORS:

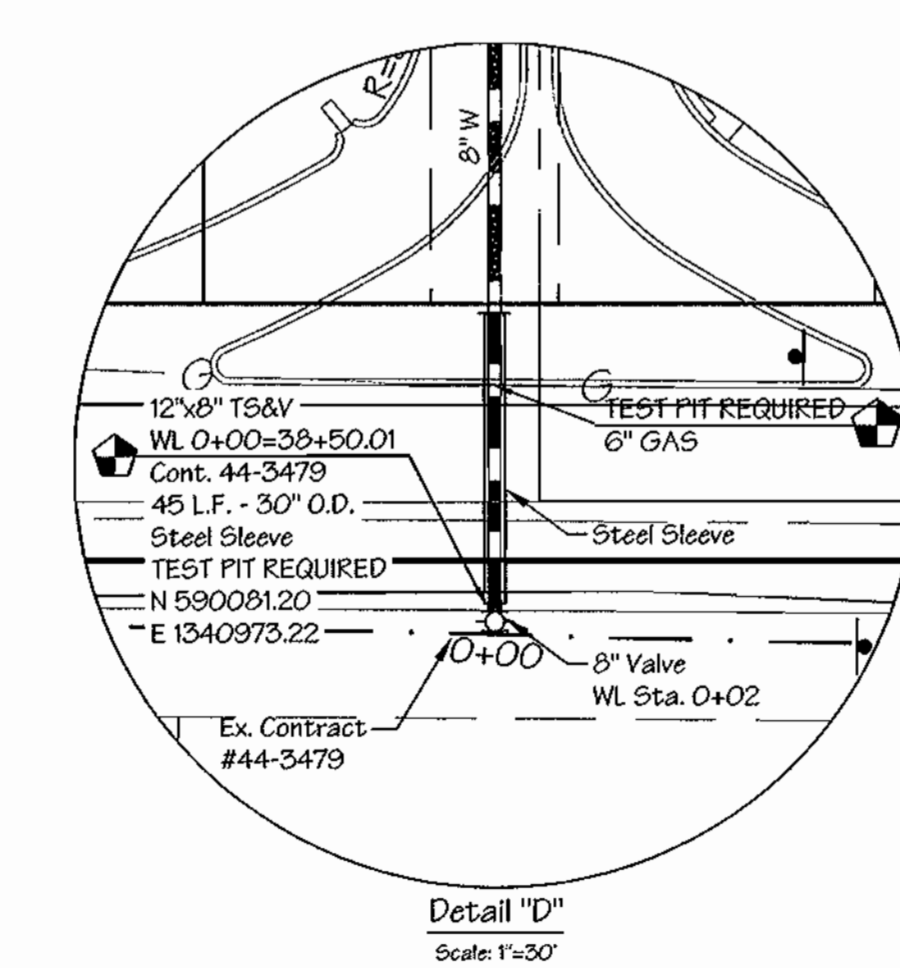
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Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Maryland Route 144	12" x 8" TS	38+50	20' LT	0+00
Maryland Route 144	8" Valve	38+50	18'6" LT	0+02
Harbin Field	8" x 8" Tee	2+27.87	7 LT	2+48.85
Harbin Field	8" x 8" FHT	2+31.60	7 LT	2+52
Harbin Field	8" Valve	2+31.60	3' RT	2+52
Harbin Field	8" FHT	2+31.60	10' RT	2+52
Harbin Field	8" x 8" Reducer	2+42.81	7 LT	2+62
Harbin Field	8" Valve	2+52.24	7 LT	2+72
Harbin Field	8" x 10" Bend	2+75.33	7 LT	2+88.88
Harbin Field	8" x 8" Reducer	3+18.88	7 LT	3+25.21
Harbin Field	8" x 10" Bend	5+27.84	7 LT	5+64.72
Harbin Field	8" x 10" Bend	5+27.80	7 LT	5+20.33
Harbin Field	8" Valve	6+37.58	7 LT	6+30
Harbin Field	8" x 8" Tee	6+48.41	7 LT	6+40.85
Hampstead Green	8" x 8" Tee	**	**	0+00
Hampstead Green	8" x 8" Tee	**	**	0+00
Hampstead Green	8" Valve	**	**	0+00
Hampstead Green	8" Valve	4+23.87	18'6" RT	0+36
Hampstead Green	8" x 10" Bend	4+00.65	7 RT	0+11.2
Hampstead Green	8" x 8" FHT	3+21	15' RT	1+40
Hampstead Green	8" Valve	3+21	9' RT	1+40
Hampstead Green	8" FHT	3+21	15' RT	1+40
Hampstead Green	8" Valve	0+18.48	7 RT	4+45
Hampstead Green	8" x 10" Bend	**	**	2+04.87
Hampstead Green	8" x 10" Bend	**	**	2+35.18

* Offset from Existing Centerline of Road +/-
** See coordinate values on plan sheet.



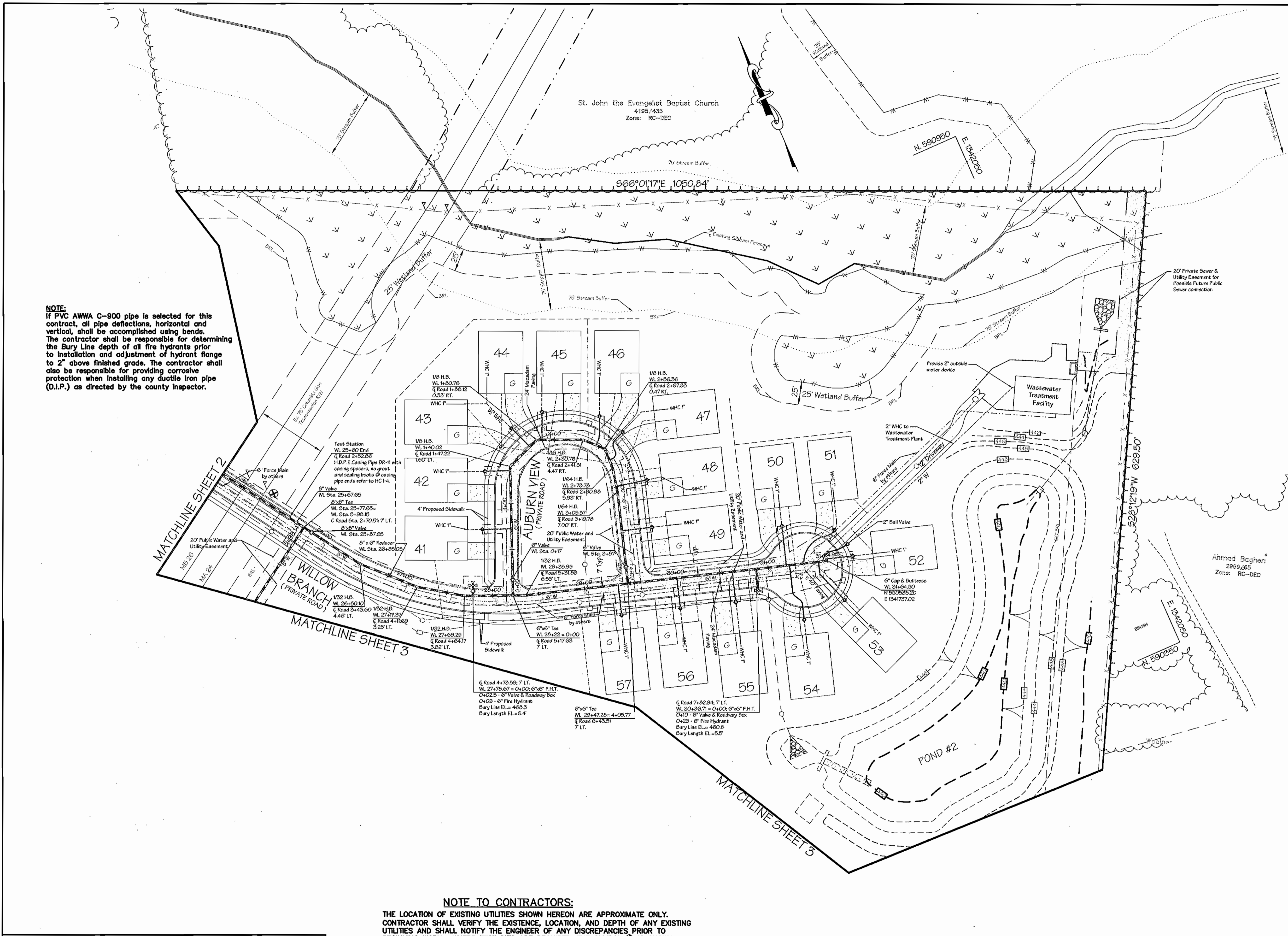
FREDERICK ROAD (MD ROUTE 144)
(MINOR ARTERIAL)
(EX VARIABLE WIDTH PUBLIC R/W - FUTURE 80' R/W)



SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS CHIEF-BUREAU OF UTILITIES DATE: 8-27-04	DEPARTMENT OF PLANNING & ZONING CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE: 9/1/04	LDE Inc. Engineers, Surveyors, Planners 9230 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX (410)715-9540	 PROFESSIONAL ENGINEER NO. 19184	DESIGNED: ED.S DRAWN: J.D.R. CHECKED: B.D.B. DATE: 7/20/04	HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D PLAN SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22	SCALE: 1" = 50' SHEET: 3 of 11
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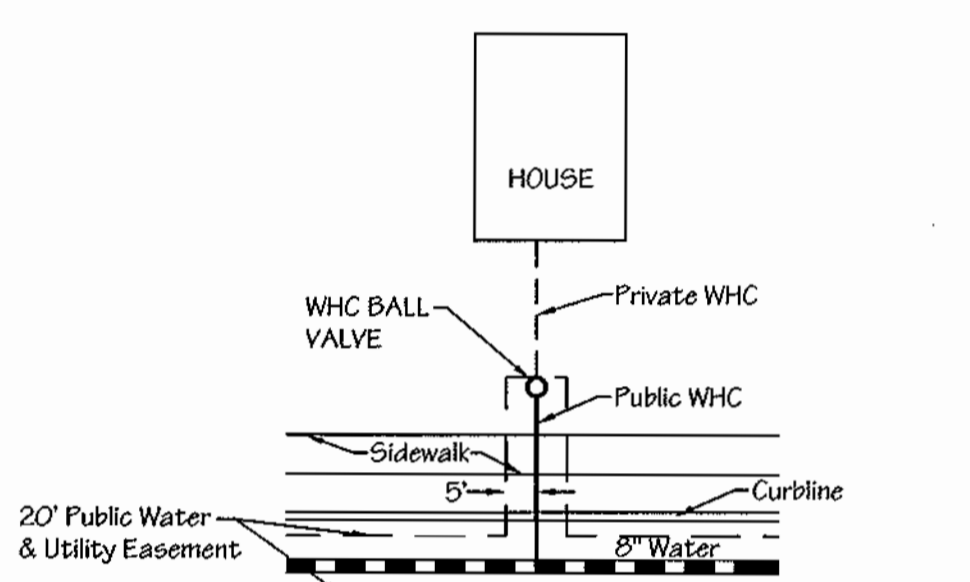
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NOTE:
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosion protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

LEGEND

- WATERLINE VALVE
- WATERLINE BEND
- PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
- WATERLINE
- FIRE HYDRANT TEE (FHT)
- 6" VALVE
- FIRE HYDRANT
- EX GAS LINE
- EX WATERLINE
- EX UTILITY POLE
- COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
- STORM DRAIN (SDP-03-30)
- SEWER MAIN (SDP-03-30)
- FIBER OPTIC CABLE MARKER
- TEST PIT REQUIRED



NOTE:
 1) WHC ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 2) A 10' Public Easement exists centered on each public house connection up to and including the ball valve.

WATER MAIN STAKEOUT TABLE

Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Willow Branch	Flow/Valve Station	2+82.86	7.00' LT	25+80
Willow Branch	8" Valve	2+80.51	7.00' LT	25+87.65
Willow Branch	8" x 6" Tee	2+70.51	7.00' LT	25+77.65
Willow Branch	8" Valve	2+80.51	7.00' LT	25+87.65
Willow Branch	8" x 1/2" H.B.	3+45.60	4.46' LT	26+50.10
Willow Branch	8" x 6" Reducer	3+70.03	0.42' LT	26+85.05
Willow Branch	8" x 1/2" H.B.	4+11.69	3.25' LT	27+17.37
Willow Branch	8" x 1/2" H.B.	4+54.17	3.82' LT	27+60.29
Willow Branch	8" x 6" FHT	4+23.59	7.1' LT	27+78.67
Willow Branch	8" Valve	4+75.59	9.9' LT	27+78.67
Willow Branch	8" FHT	4+75.59	18.19' LT	27+78.67
Willow Branch	8" x 6" Tee	5+17.55	7.1' LT	28+22
Willow Branch	8" x 1/2" H.B.	5+31.83	6.55' LT	28+25.89
Willow Branch	8" x 6" Tee	6+43.51	7.1' LT	29+47.25
Willow Branch	8" x 6" FHT	7+82.94	7.1' LT	30+58.71
Willow Branch	8" Valve	7+82.94	9' RT	30+58.71
Willow Branch	8" FHT	7+82.94	16.75' RT	30+58.71
Willow Branch	8" Cap & Bust.	**	**	31+54.30
Auburn View	8" Valve	0+24.07	8.66' E	0+17
Auburn View	8" x 1/2" Bend	1+47.22	1.60' LT	1+40.02
Auburn View	8" x 1/2" Bend	1+88.12	0.33' RT	1+80.76
Auburn View	8" x 1/2" Bend	2+41.25	4.47' RT	2+30.78
Auburn View	8" x 1/2" Bend	2+87.83	0.47' RT	2+85.35
Auburn View	8" x 1/2" Bend	2+89.82	1.32' E	2+78.75
Auburn View	8" x 1/2" Bend	3+36.14	7' RT	3+05.37
Auburn View	8" Valve	4+01.64	7' RT	3+87

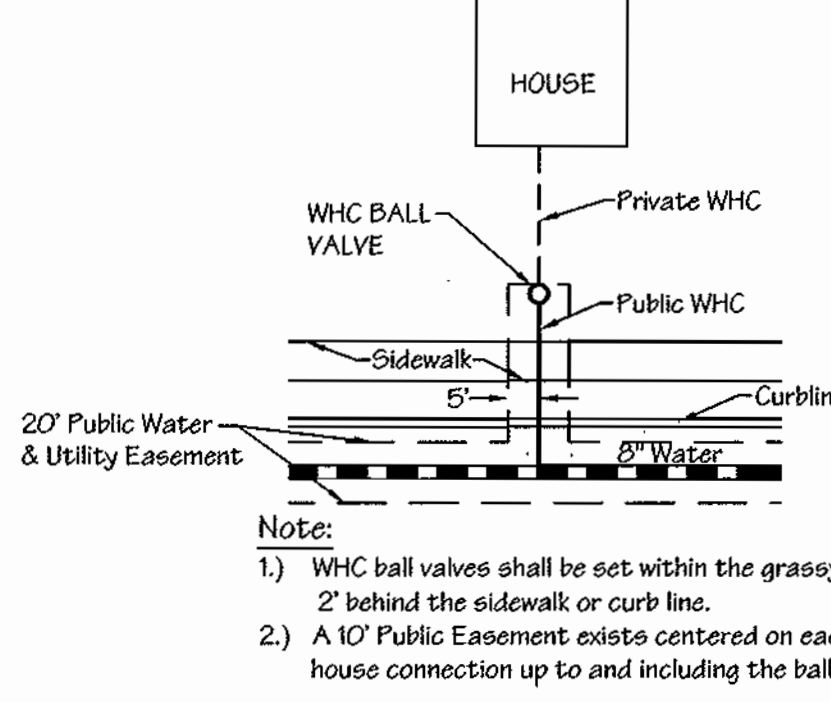
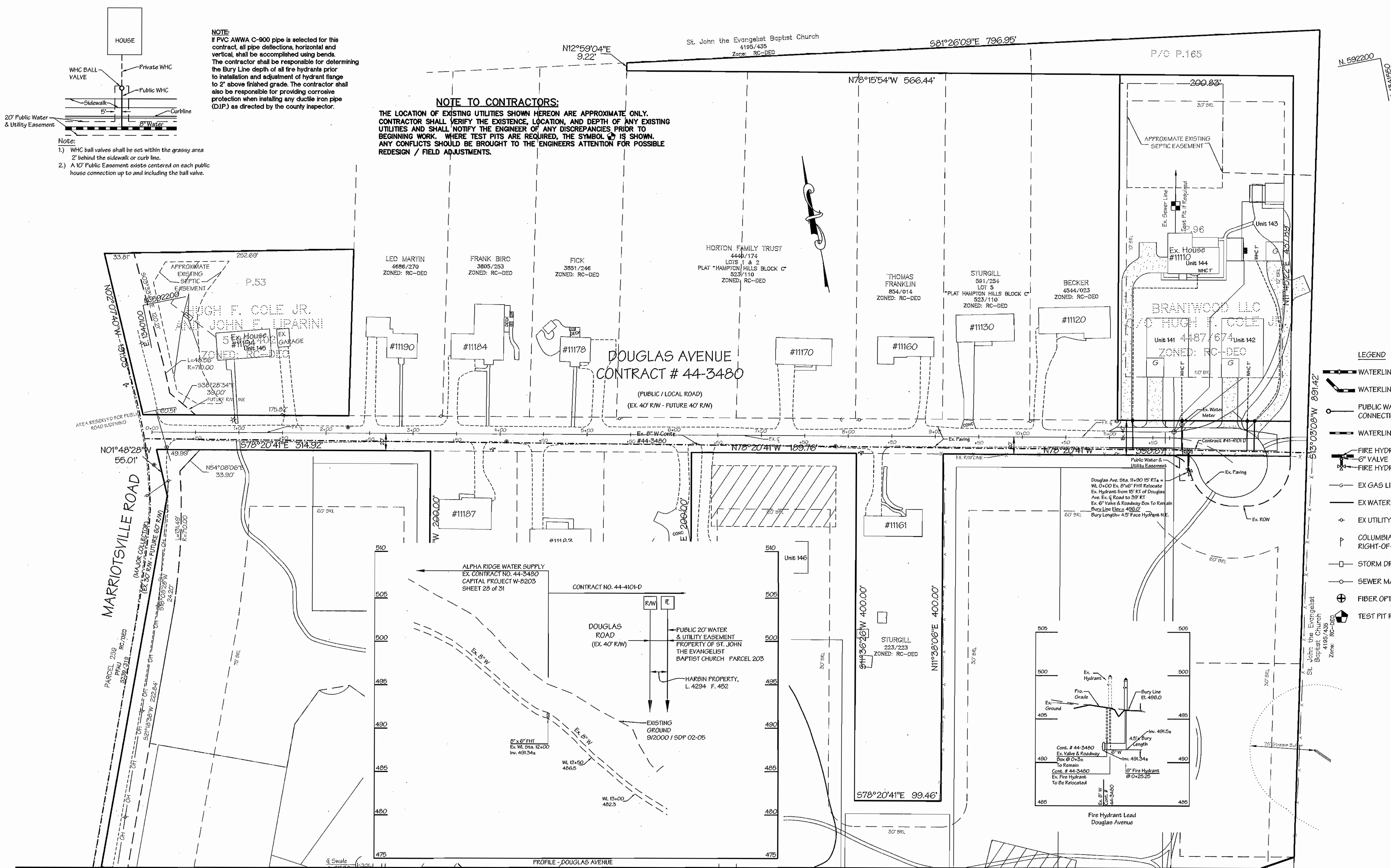
* See coordinate values on plan sheet.

NOTE TO CONTRACTORS:
 THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS CHIEF-BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING CHIEF-DEVELOPMENT ENGINEERING DIVISION	LDE Inc. Engineers, Surveyors, Planners 9250 Runney Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9540		DESIGNED: EDS DRAWN: J.D.R. CHECKED: BDB DATE: 7/2004	PLAN SHEET	HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D	SCALE 1" = 50' SHEET 4 of 11
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NOTE:
 If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2' above finished grade. The contractor shall also be responsible for providing corrosion protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

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- LEGEND**
- WATERLINE VALVE
 - WATERLINE BEND
 - PUBLIC WATER HOUSE CONNECTION AND BALL VALVE
 - WATERLINE
 - FIRE HYDRANT TEE (FHT) 6" VALVE
 - FIRE HYDRANT
 - EX GAS LINE
 - EX WATERLINE
 - EX UTILITY POLE
 - COLUMBIA GAS TRANSMISSION RIGHT-OF-WAY MARKER
 - STORM DRAIN (SDP-03-30)
 - SEWER MAIN (SDP-03-30)
 - FIBER OPTIC CABLE MARKER
 - TEST PIT REQUIRED

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DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF PLANNING & ZONING
CHIEF-BUREAU OF UTILITIES	CHIEF-DEVELOPMENT ENGINEERING DIVISION
DATE: 8-27-04	DATE: 9/24/04

LDE Inc.
 Engineers, Surveyors, Planners
 9250 Runney Road, Suite 106 Columbia, Maryland - 21045
 (410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED	EDS
DRAWN	J.D.R.
CHECKED	BDB
DATE	7/20/04
BY	LDE
NO.	1
REVISION	REMOVE HAND DRAFTING, ADD UNIT NUMBERS, REVISE SHEET NUMBERS
DATE	7/20/04


PLAN SHEET
 600 SCALE MAP NO. 16
 BLOCK 16 & 22

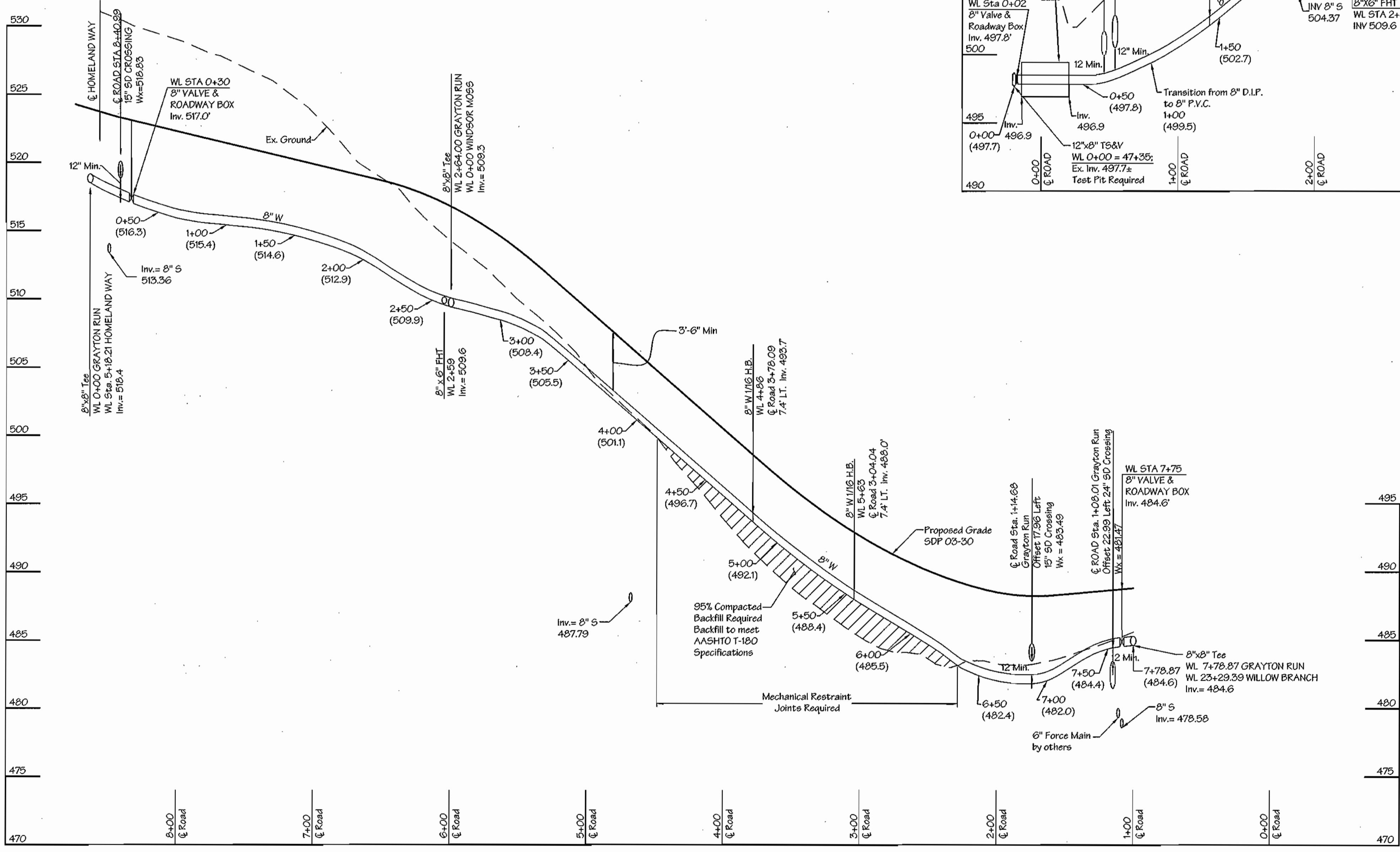
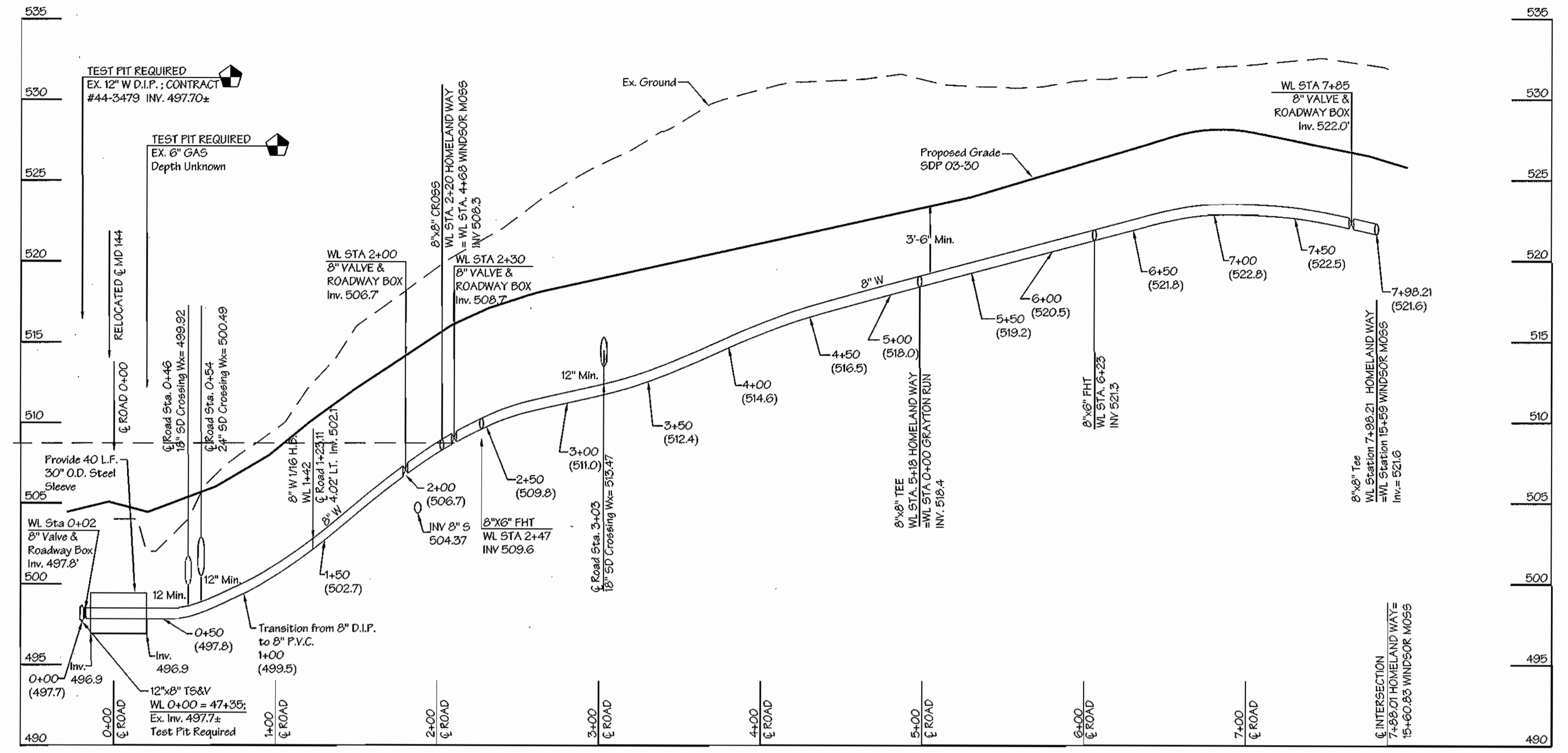
HOMELAND
 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 CONTRACT NO. 44-4143-D

SCALE: 1" = 600'
 SHEET: 5 of 11

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NOTE TO CONTRACTORS:

THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL  IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.

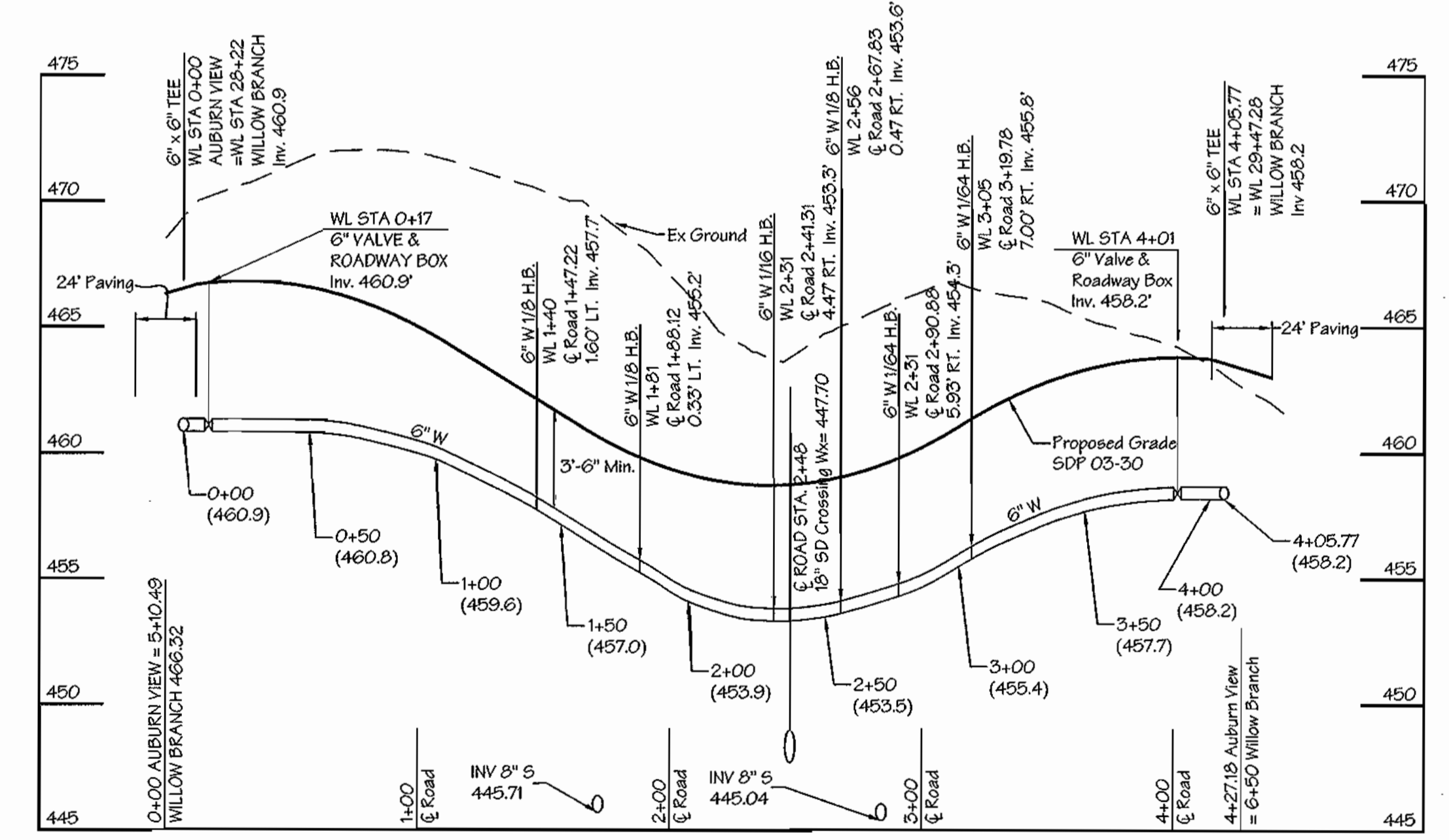


PROFILE - HOMELAND WAY

PROFILE - GRAYTON RUN

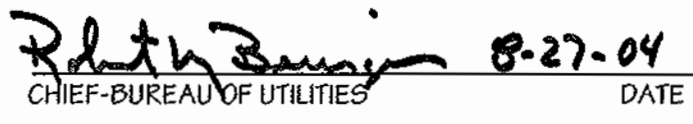
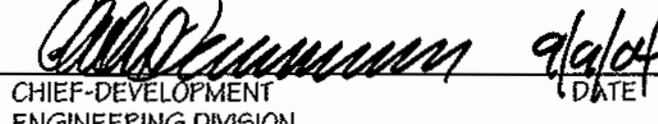

NOTE:
 - If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends.
 - To accomplish vertical deflections, rotate horizontal bends.

NOTE:
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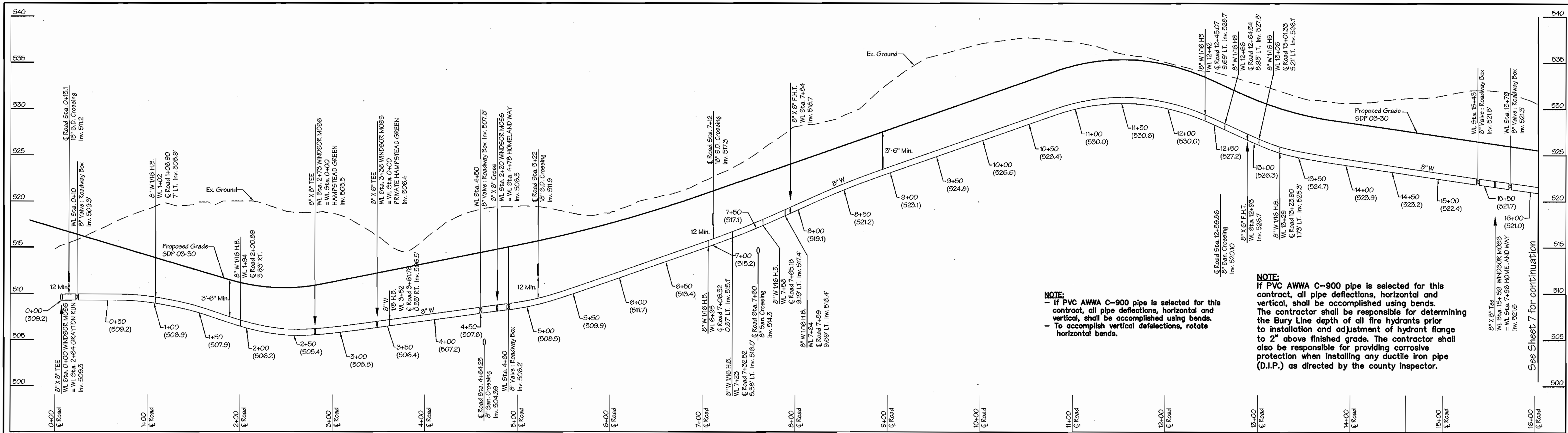


PROFILE - AUBURN VIEW

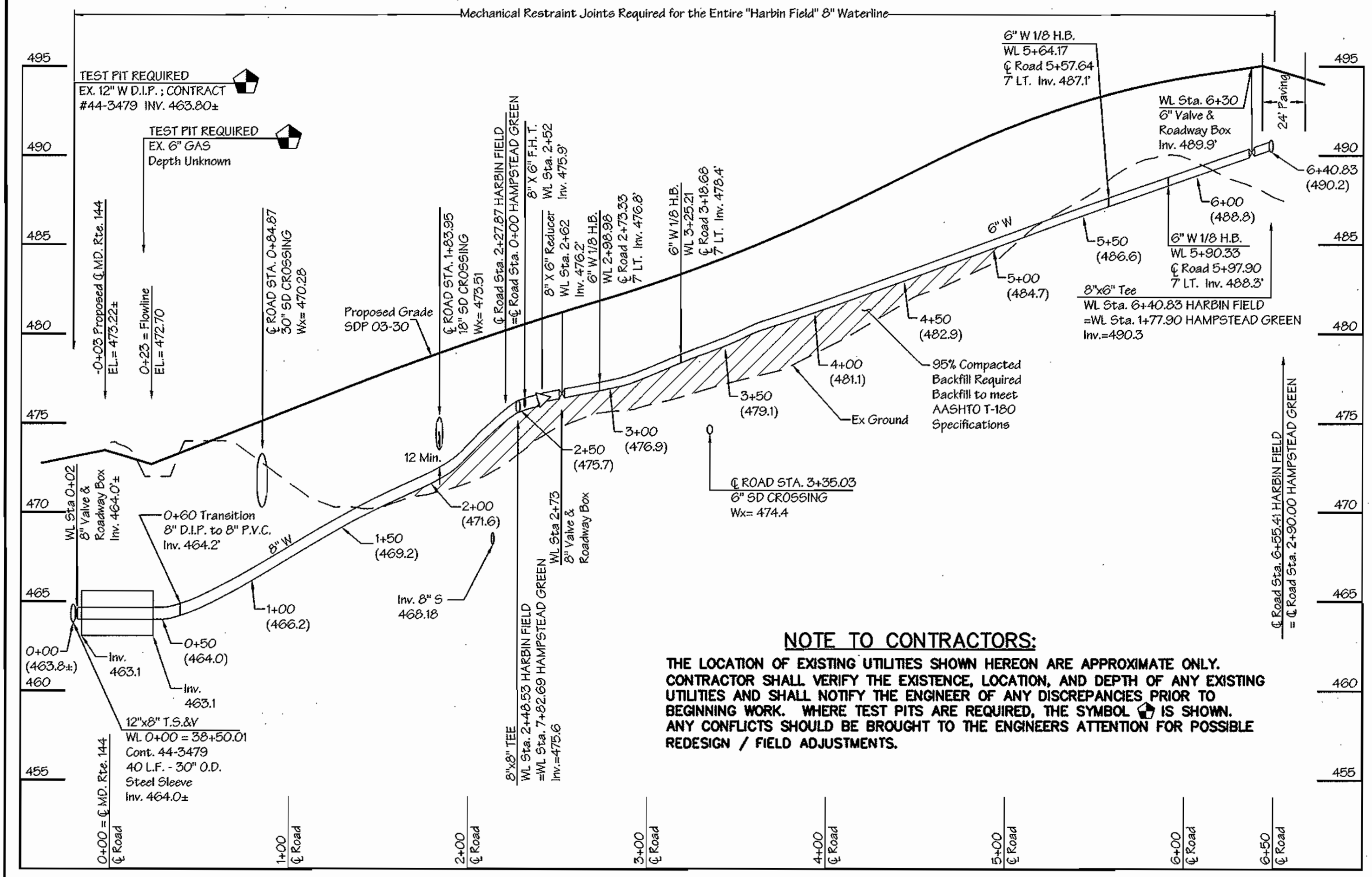
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS  CHIEF-BUREAU OF UTILITIES DATE		DEPARTMENT OF PLANNING & ZONING  CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE		LDE Inc. Engineers, Surveyors, Planners 9330 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX (410)715-9540				DESIGNED EDG DRAWN J.D.R. CHECKED BDB DATE 7/2004		REVISION AUBURN VIEW PROFILE, SHEET NUMBERS DATE 7/2004		PROFILE SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22		HOMETLAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D		SCALE 1"=5' V 1"=50' H SHEET 6 of 11	
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PROFILE - WINDSOR MOSS



PROFILE - HARBIN FIELD

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

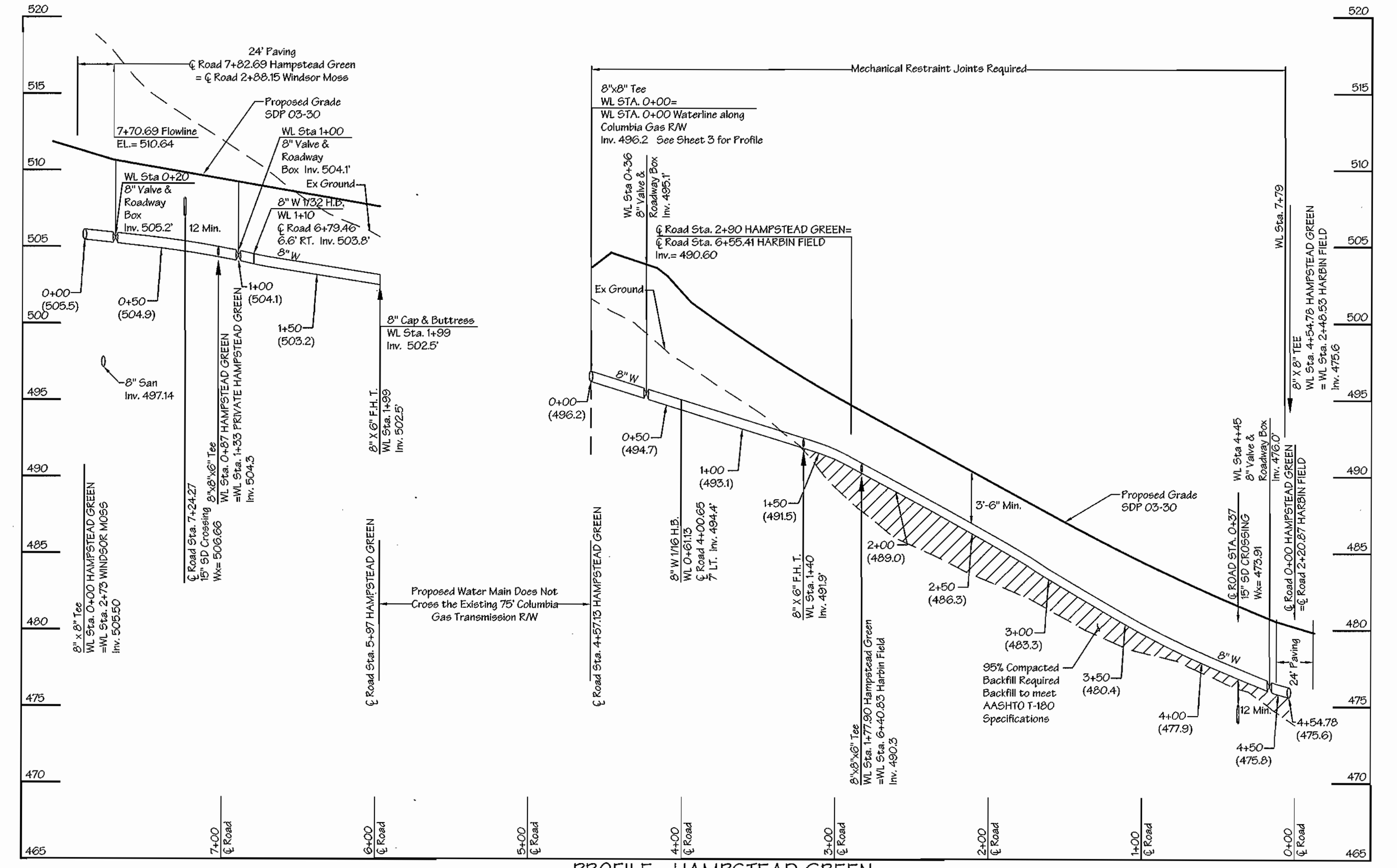
DEPARTMENT OF PUBLIC WORKS
 DEPARTMENT OF PLANNING & ZONING
 Chief-Bureau of Utilities: *[Signature]* 8-27-04
 Chief-Development Engineering Division: *[Signature]* 9/1/04

LDE Inc.
 Engineers, Surveyors, Planners
 9250 Rumney Road, Suite 1106 Columbia, Maryland - 21045
 (410)715-1070 - (301)596-3424 - FAX (410)715-9340

DESIGNED: EDS
 DRAWN: J.D.R.
 CHECKED: BDB
 DATE: 7/2004

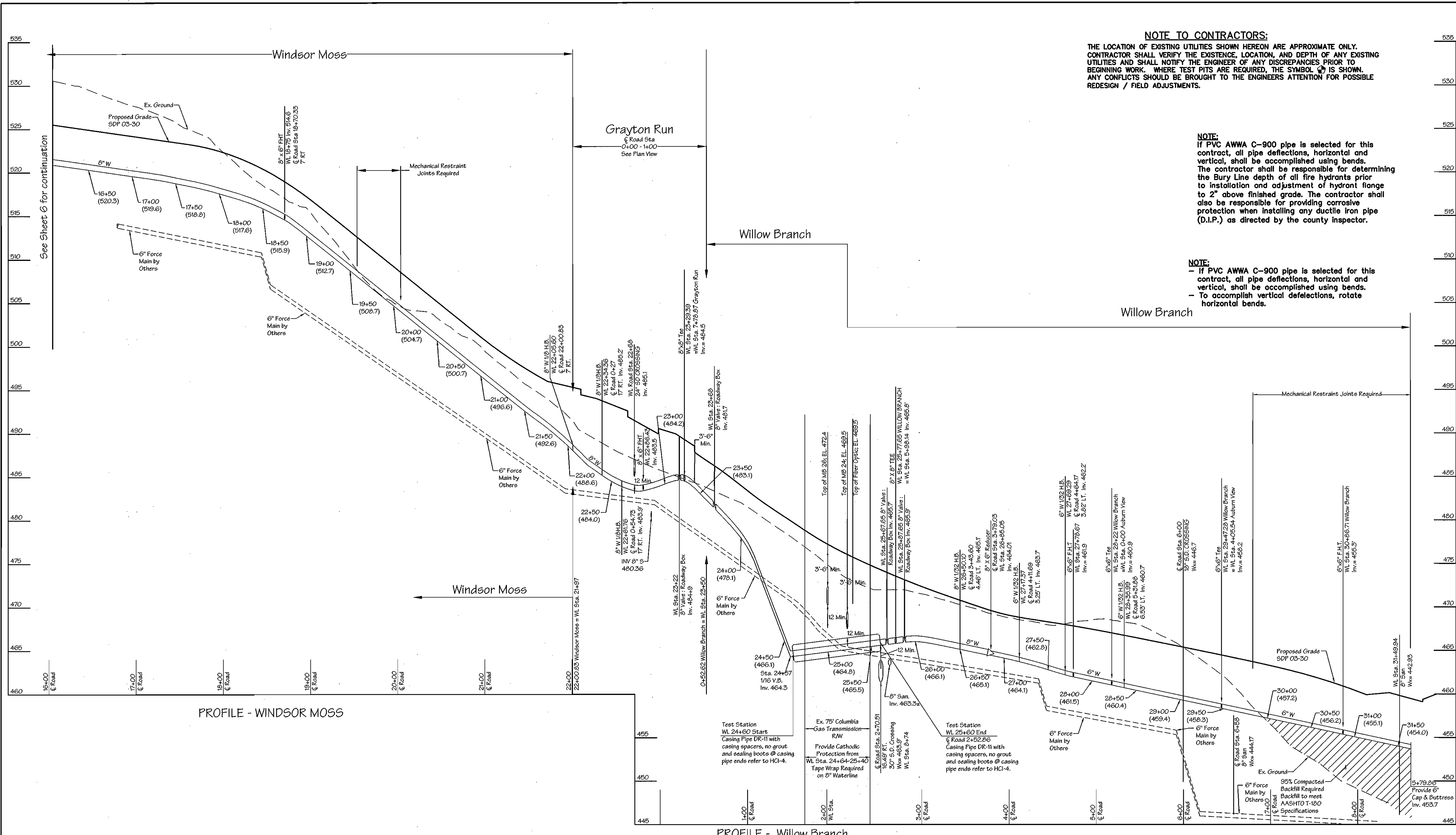
REVISIONS:
 NO. 1: REVISE WINDSOR MOSS & HAMPSTEAD GREEN PROFILE
 DATE: 7/2004


HOMELAND
 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 CONTRACT NO. 44-4143-D
 SCALE: 1"=5' V, 1"=50' H
 SHEET: 7 of 11



PROFILE - HAMPSTEAD GREEN

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NOTE TO CONTRACTORS:
 THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL  IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.


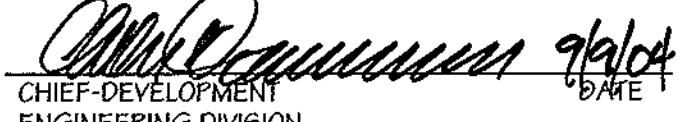

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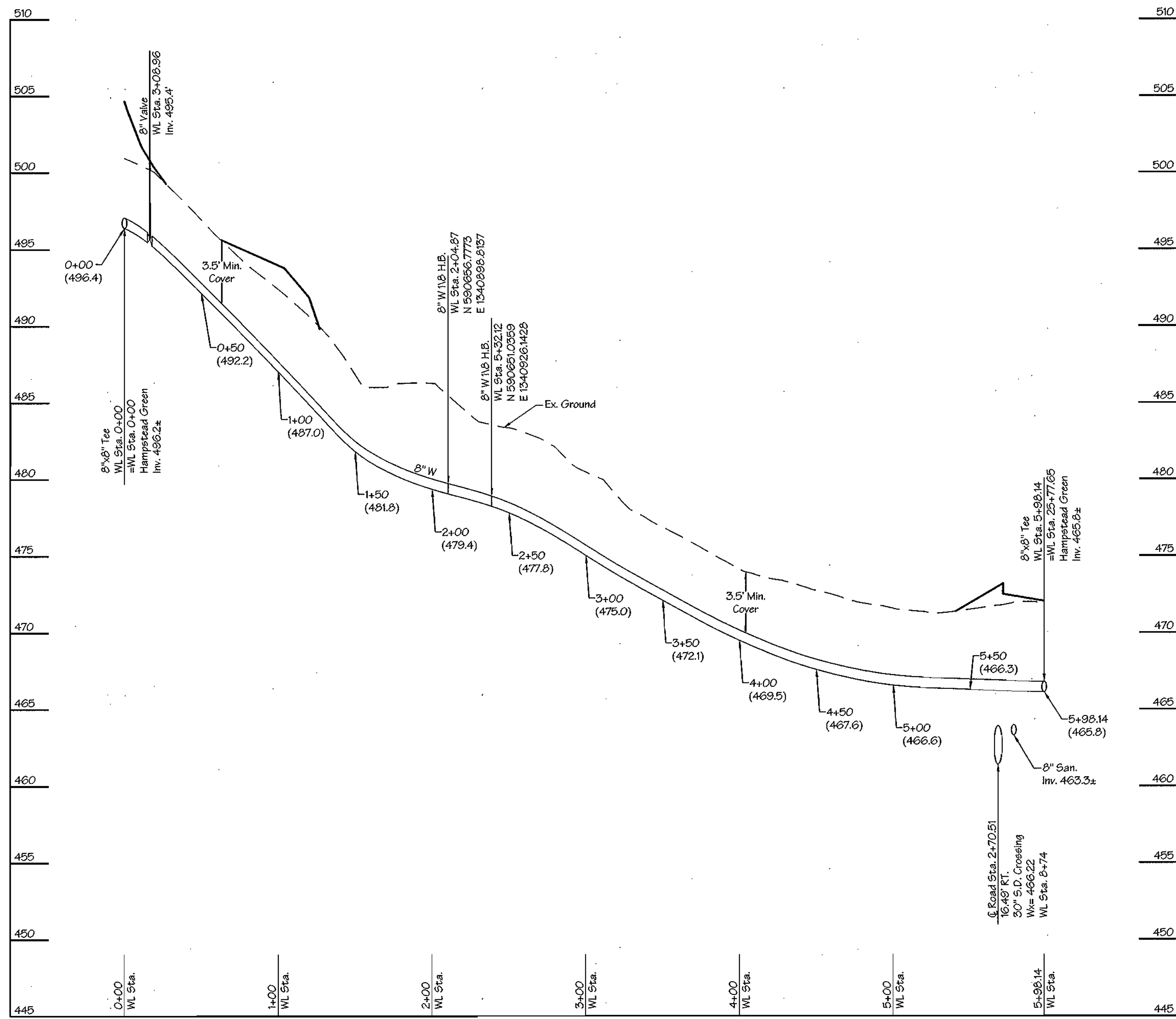
PROFILE - WINDSOR MOSS

PROFILE - Willow Branch

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.


DEPARTMENT OF PUBLIC WORKS  CHIEF-BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING  CHIEF-DEVELOPMENT ENGINEERING DIVISION	LDE Inc. Engineers, Surveyors, Planners 2930 Ramsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9540		DESIGNED EDS	DRAWN J.D.R.	PROFILE SHEET	HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D	SCALE 1"=5' V 1"=50' H SHEET 8 of 11
				CHECKED BDB	DATE 7/2004			

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PROFILE - Hampstead Green to Willow Branch

NOTE TO CONTRACTORS:

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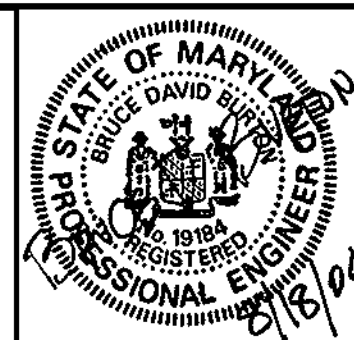
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PLANNING & ZONING

LDE Inc.
 Engineers, Surveyors, Planners

9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
 (410)715-1070 - (301)596-3424 - FAX(410)715-9540



DESIGNED	EDS			
DRAWN	J.D.R.			
CHECKED	BDB			
DATE	7/2004	REVISION	REVISION	DATE
BY	LDE	NO.	1	7/2004

PROFILE SHEET

HOMELAND

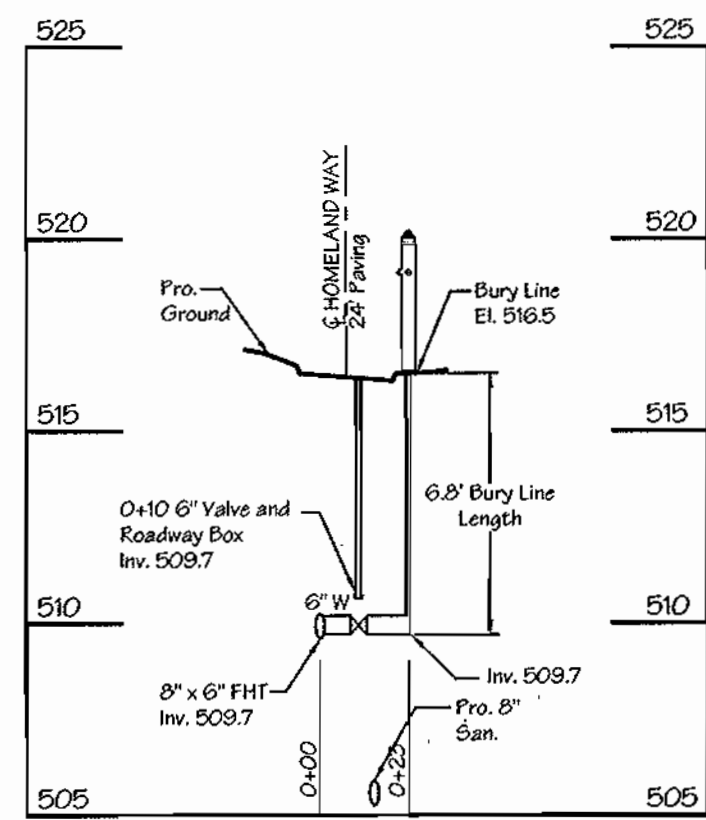
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-4143-D

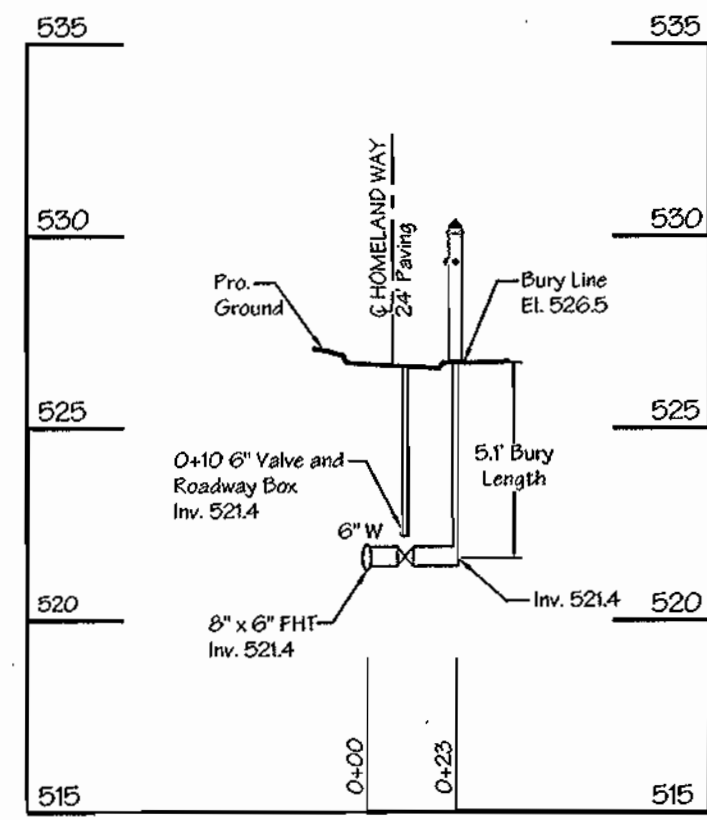
SCALE
 1"=5' V
 1"=50' H
 SHEET
 9 of 11

NOTE TO CONTRACTORS:

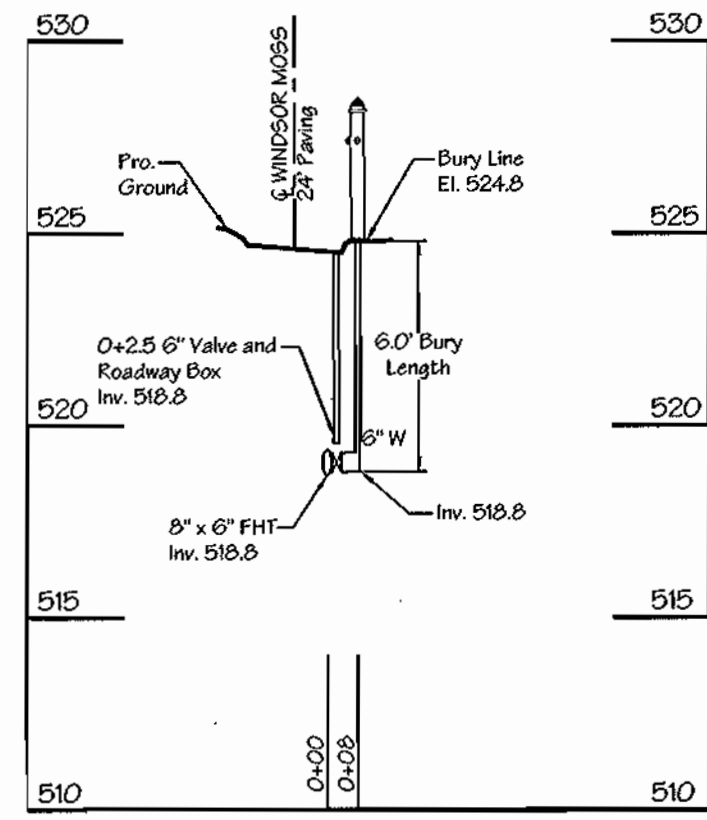
Contractor shall hold bury line elevation at finished grade established in field and adjust fire hydrant invert to conform with height of hydrant stand pipe.



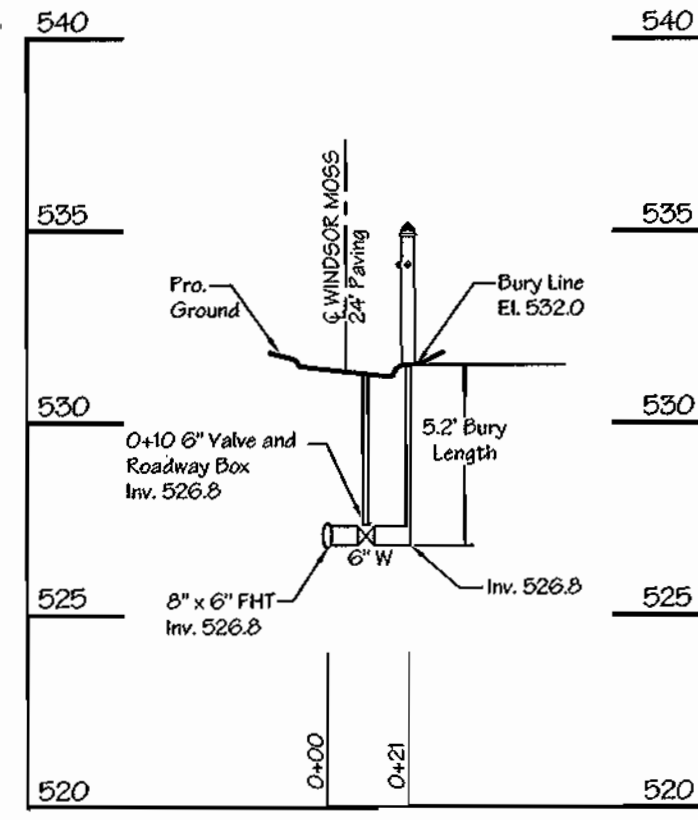
Fire Hydrant Lead
Homeland Way Sta. 2+30
= Water Line Sta. 2+47



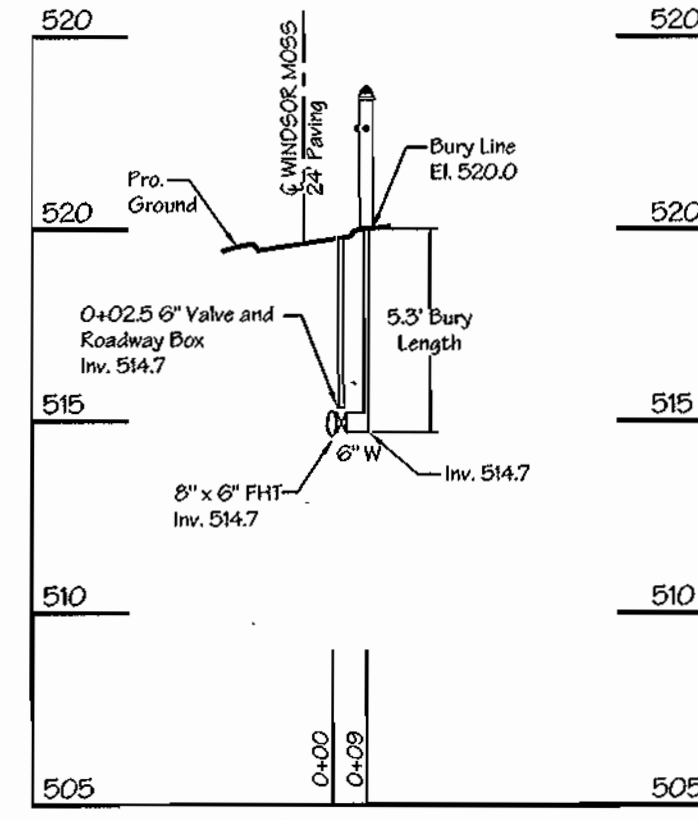
Fire Hydrant Lead
Homeland Way Sta. 6+06.25
= Water Line Sta. 6+23



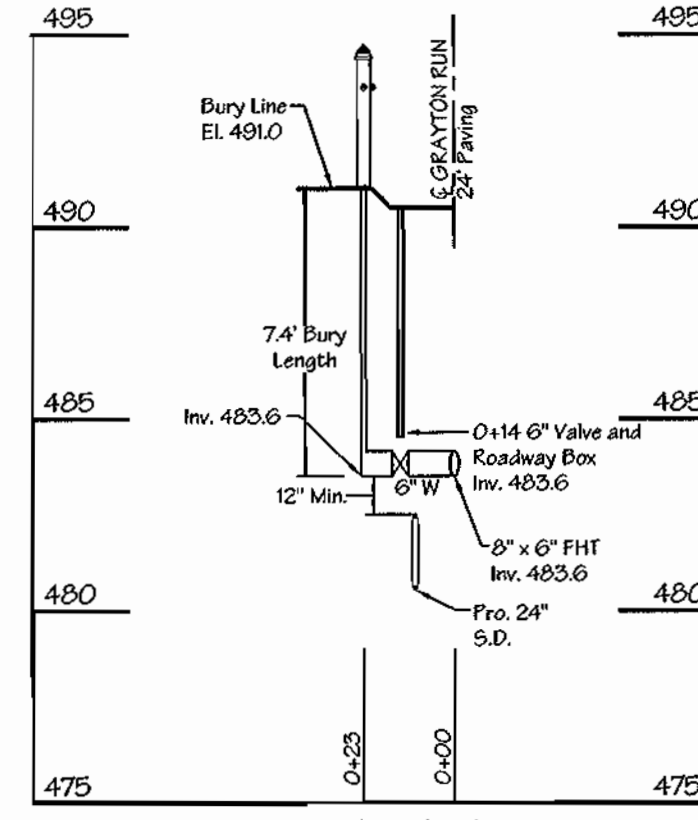
Fire Hydrant Lead
Windsor Moss Sta. 7+94.20
= Water Line Sta. 7+90.70



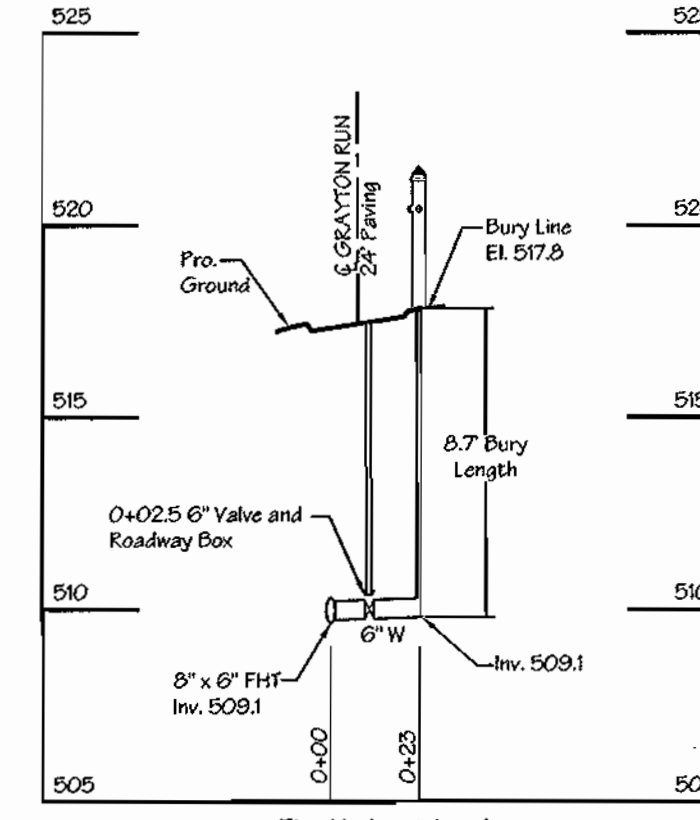
Fire Hydrant Lead
Windsor Moss Sta. 12+89.20
= Water Line Sta. 12+93



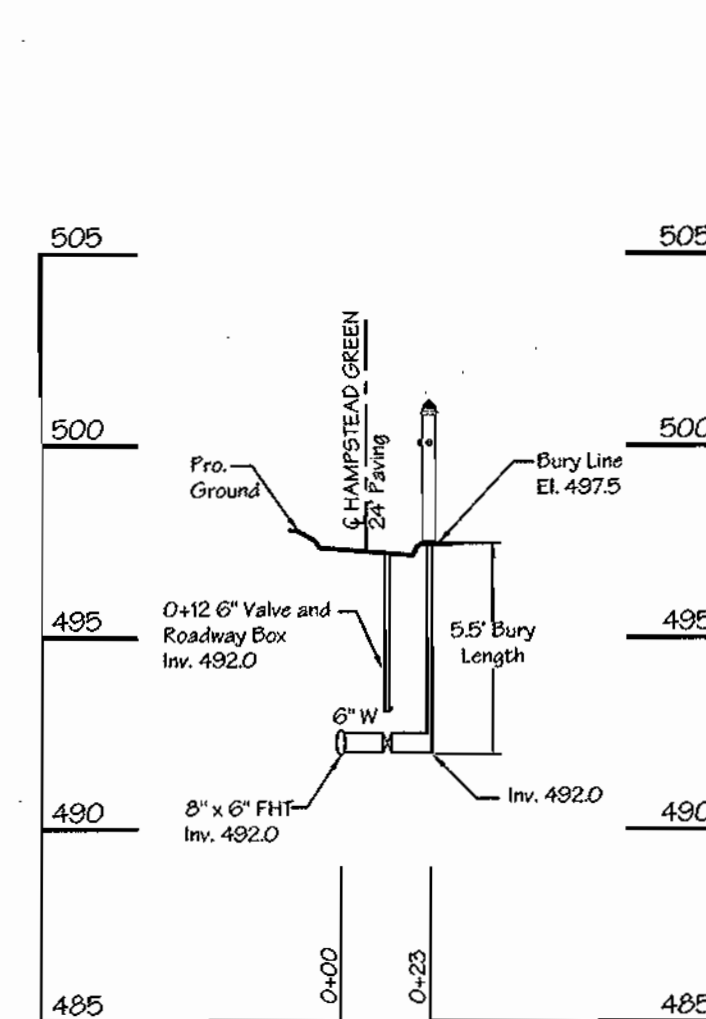
Fire Hydrant Lead
Windsor Moss Sta. 18+70.33
= Water Line Sta. 18+75



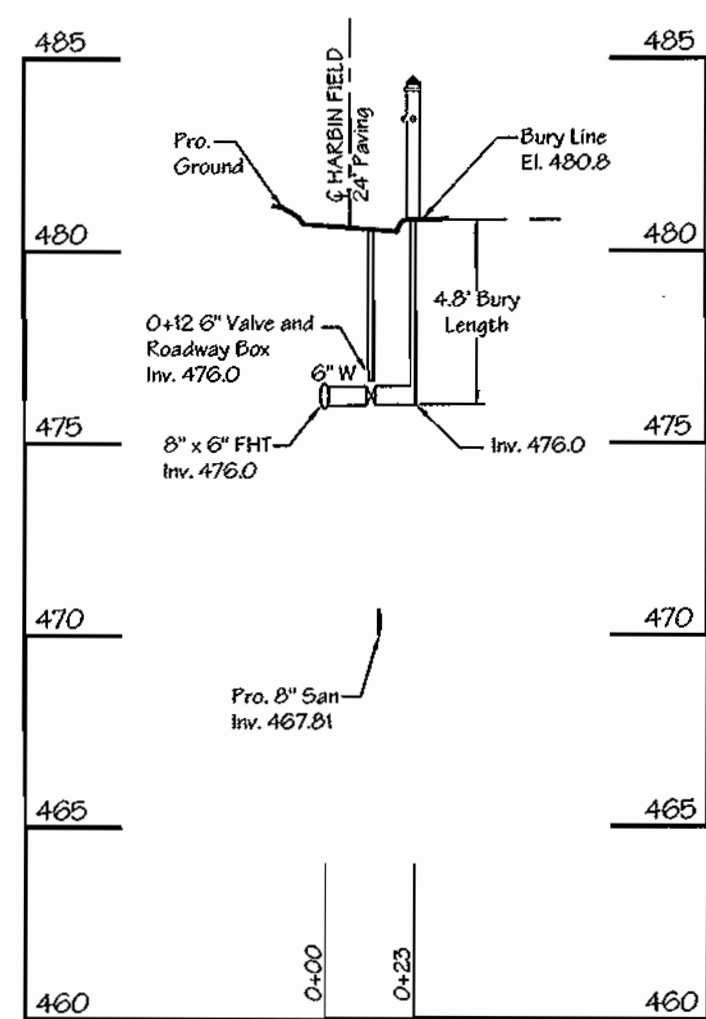
Fire Hydrant Lead
Grayton Run Sta. 0+82.20
= Water Line Sta. 22+86.43



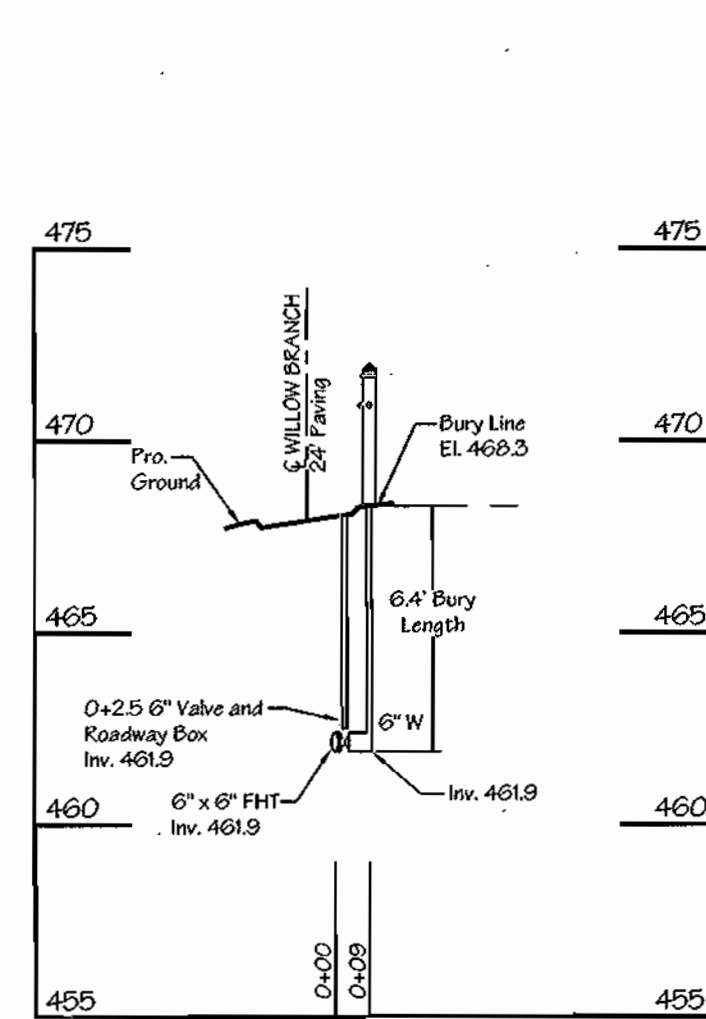
Fire Hydrant Lead
Grayton Run Sta. 6+04.09
= Water Line Station 2+59



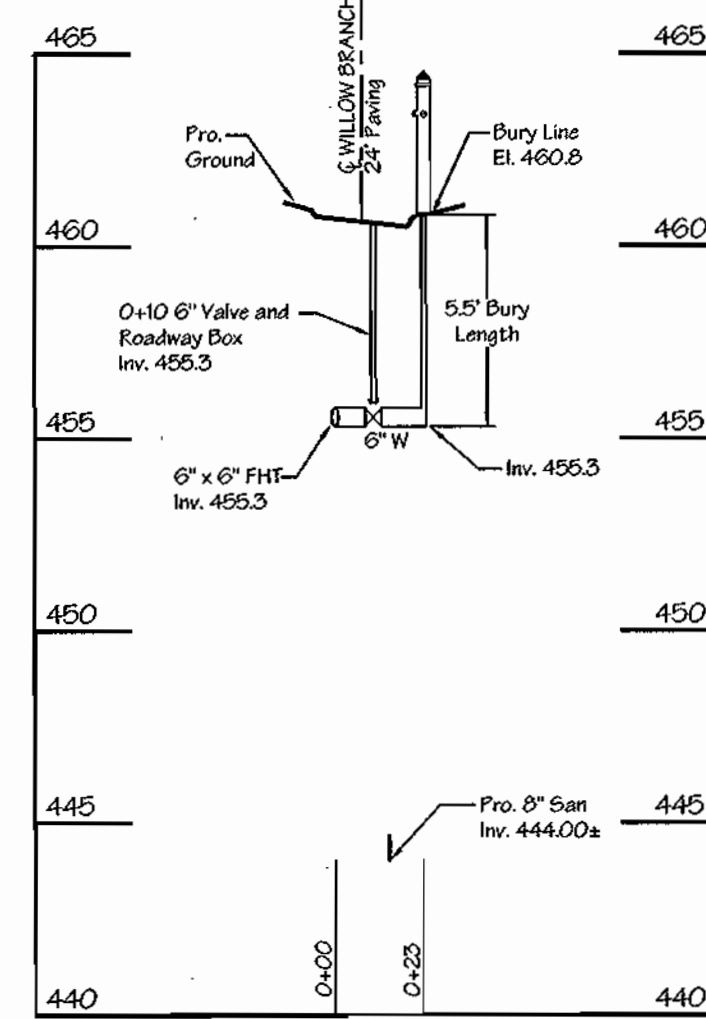
Fire Hydrant Lead
Hampstead Green Sta. 3+21
= Water Line Sta. 1+40



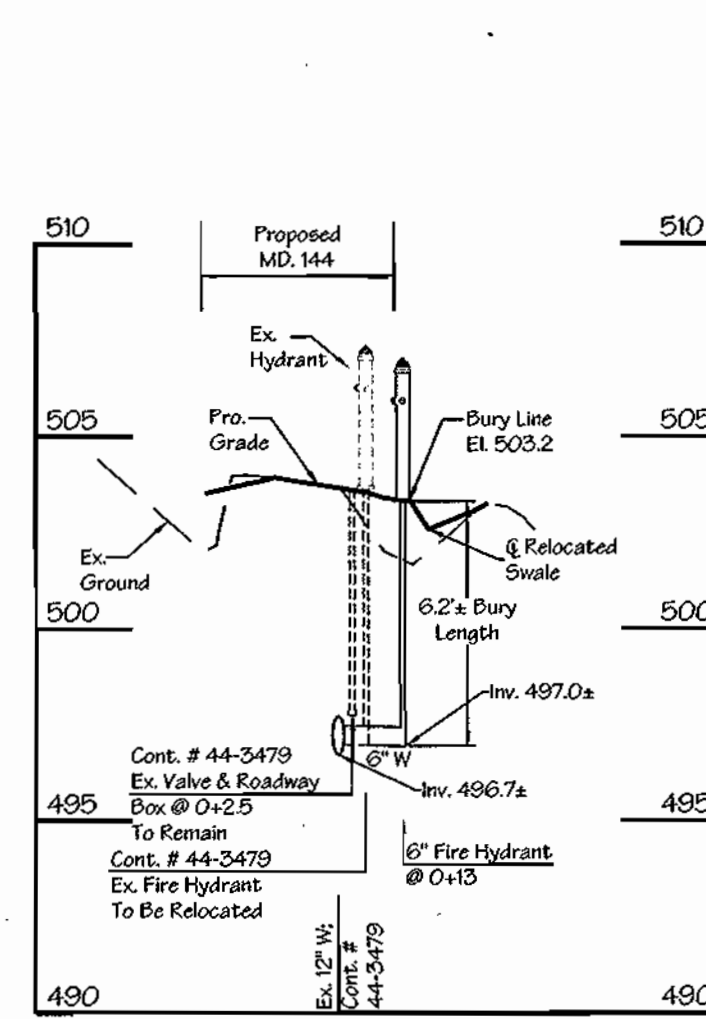
Fire Hydrant Lead
Harbin Field Sta. 2+31.60
= Water Line Sta. 2+52



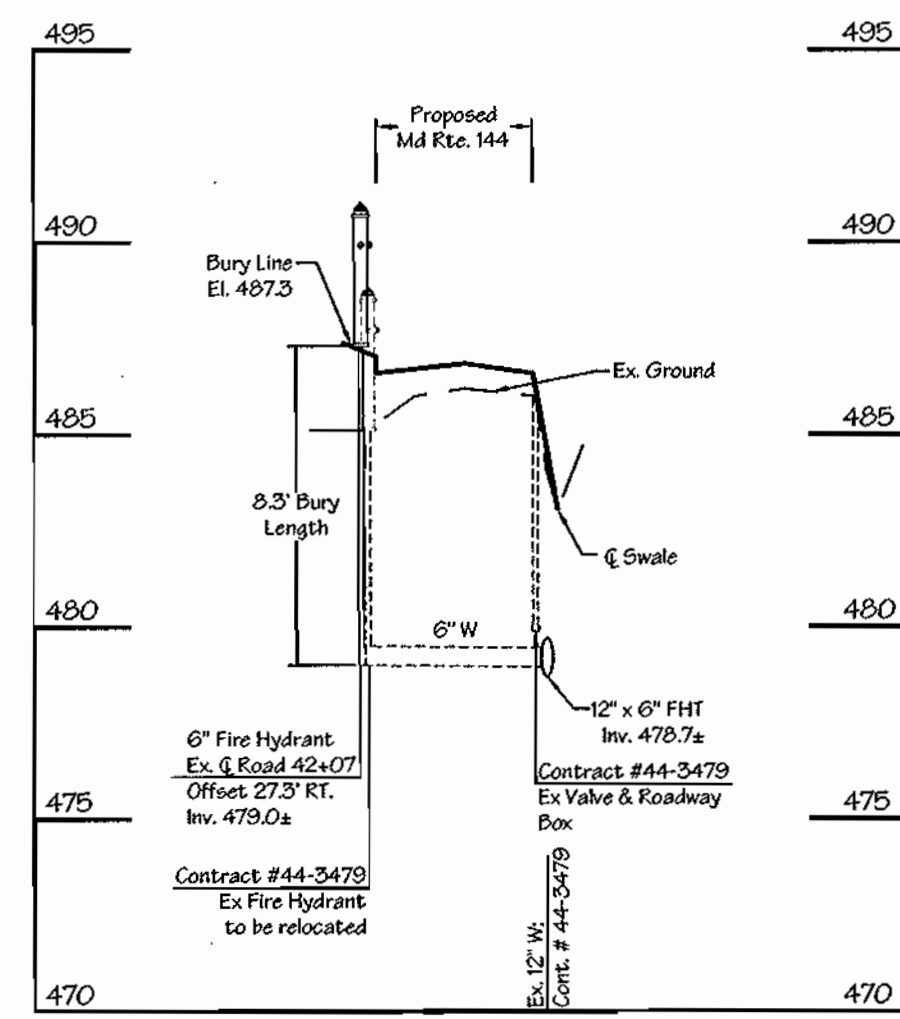
Fire Hydrant Lead
Willow Branch Sta. 4+73.89
= Water Line Sta. 1+33.62



Fire Hydrant Lead
Willow Branch Sta. 7+82.94
= Water Line Sta. 5+01.66



Fire Hydrant Lead
MD. Route 144 - Frederick Road
Ex. Water Line Station 47+16±



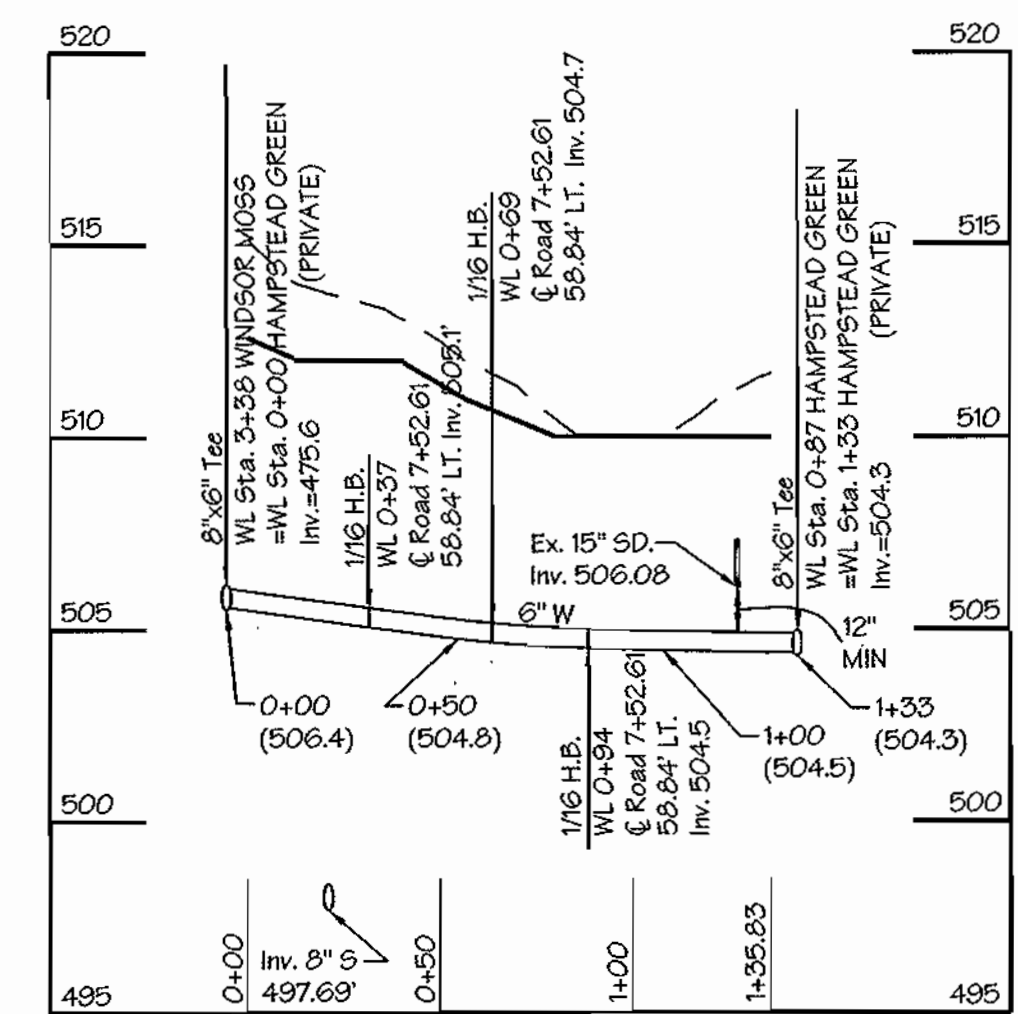
Fire Hydrant Lead
MD. Route 144 - Frederick Road
Ex. Water Line Station 42+07±

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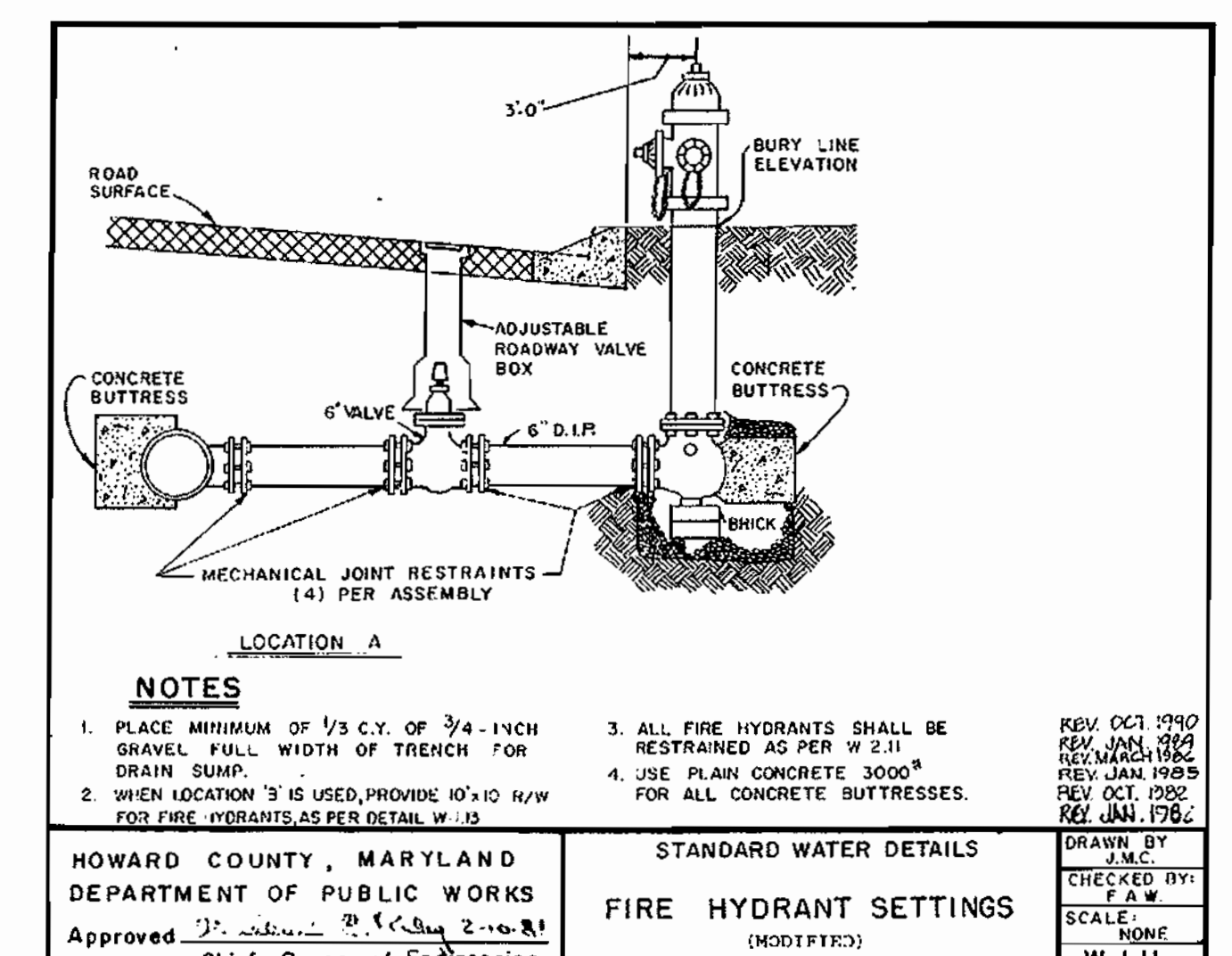
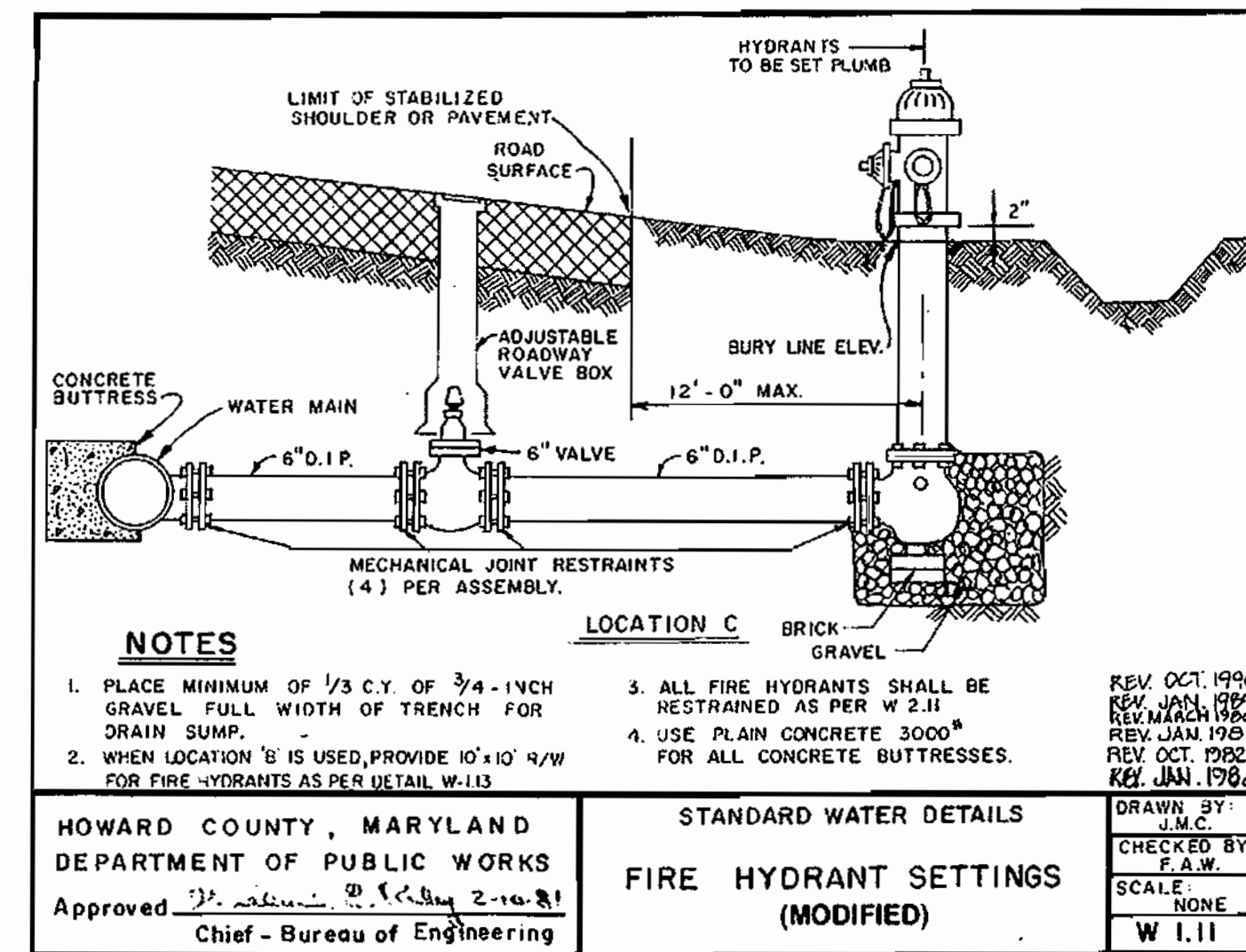
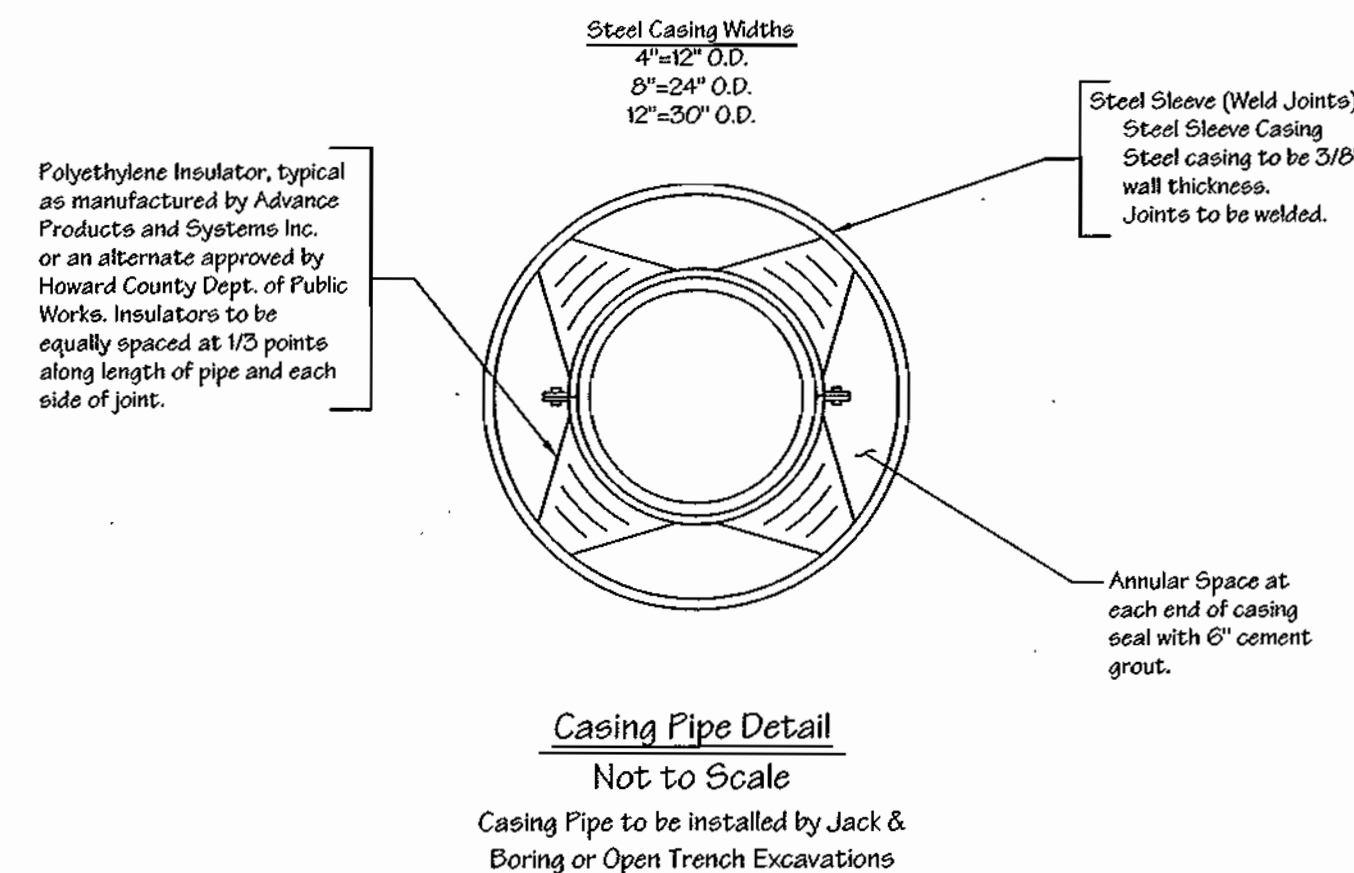
NOTE:
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PROFILE - HAMPSTEAD GREEN (PRIVATE)



Cont. # 44-3479 Frederick Road Ex. WL Sta. 47+16

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PLANNING & ZONING

LDE Inc.
Engineers, Surveyors, Planners
9250 Ramsey Road, Suite 106 Columbia, Maryland - 21045
(410) 715-1070 - (410) 596-3424 - FAX (410) 715-9540



DESIGNED	EDS				
DRAWN	J.D.R.				
CHECKED	BDB				
DATE	7/2004				
BY	NO.	REVISION	DATE		

PROFILE & DETAIL SHEET

HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
CONTRACT NO. 44-4143-D

SCALE
SHEET
10 of 11

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

Except as indicated herein, all work shall be in accordance with the pertinent sections of the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction. Article 9, Sections 908 Nonmetallic Pipes and Drainage Tiles and Article 10, Section 1002 Water Mains of the Howard County Standard Specifications are amended to include the following requirements.

GENERAL

1. Polyvinylchloride (PVC) pipe and couplings shall be homogeneous 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.

2. PVC pipe manufactured more than six months prior to work site inspection will not be accepted.

3. 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.

4. Submittals: The following items shall be submitted for review and approval prior to installation. Materials not approved will not be accepted.

a. PVC Pipe: Submit manufacturer's literature and certificates of compliance for PVC pipe along with the manufacturer's identification codes for nominal 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 the tests and the methods of selecting test specimens shall be in accordance with AWWA C900.

b. PVC Pipe Fittings: Submit manufacturer's literature and certificates of compliance for PVC pipe fittings along with the manufacturer's identification codes for nominal 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.

c. Miscellaneous for PVC water pipe: Submit manufacturer's literature and certificates of compliance, for joint restraint devices, pipe couplings, tracer wire, wire connector splice kits, detection tape, and service saddles.

d. Submit manufacturer's installation instructions for PVC pipe and fittings, joint restraint devices, pipe couplings, wire connector splice kits, service saddles, and manufacturer's instructions for tapping pipe.

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.

1. PVC pipe and fittings:

a. 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 ratio (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 tested in accordance with AWWA C900. PVC pipe shall be manufactured by one of the following:

1. Uponor ETI
2. J-T Pipe
3. Diamond Plastics Corp
4. National Pipe and Plastics, Inc.

b. 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 by the Harrington Corporation (Harco) or approved equal. Pipe joints shall be in accordance with the standards specified for the pipe and fittings.

c. Pipe couplings for PVC and ductile iron water mains shall be suitable for potable water service and shall have epoxy or nylon coated ductile iron center and end rings. Pipe couplings shall be Romac Style 501, Ford FC2M or approved equal.

2. 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. Joint restraints for harnessing joints shall be in accordance with the Standard Specifications and the requirements below:

- a. All joint restraint devices shall be Factory Mutual approved.
- b. In restrained joints, PVC pipe shall not be deflected. If deflection is required in a restrained joint, use ductile iron pipe or fittings.
- c. Where a restrained joint is required between PVC pipe and a 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.
- d. 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 1500-C, or approved equal.

3. Tracer Wire for Non Metallic Pipelines:

Tracer wire shall be 6-gauge, 7-strand continuous copper wire with a 45-mil polyethylene insulation. The wire shall be blue, have "UL" markings and suitable for direct bury applications.

4. 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"x12" metal frame and cover as shown in 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.

5. Detection Tape:

Visual Detection Tape shall be 3 inches wide (minimum) metallic blue plastic tape lettered "water" in black graphics.

6. Connection to PVC waterlines:

a. Connections to PVC waterlines shall be by using fittings, such as tees, indicated on the Plans.

b. Saddles may be used for 2-inch and smaller connections to PVC waterlines. Saddles with clamps 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 clamp/straps shall be formed 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 B564 and AWWA C800 or ductile iron saddles meeting ASTM A536 or A395 with two 1/8-inch stainless steel straps and shall be epoxy or nylon coated. Saddles shall have watertight gaskets of Buna-N rubber meeting ASTM D2000 or nitrile around the tap hole. Saddles shall be one of the following:

1. Ford FC-202
2. Mueller Series DR25
3. Romac 202N
4. Smith Blair 317 Nylon Coated
5. JCT 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.

1. Installation of PVC Water Mains:

a. PVC pipe and fittings shall be handled in accordance with AWWA C605.

b. 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 for 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 in 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.

c. 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 or high-deflection couplings. Deflecting PVC pipe 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 mating 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.

d. Tracer wires: Install tracer wires with the pipe. Tape wire to the top of the pipe with minimum 2-inch wide x 1/2-inch 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. Where required, splicing shall be done with direct-bury wire connector, wire nut, or splice kit listed and labeled for direct bury, installed as recommended by manufacturer, and taped to the pipe. 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.

e. Backfill:

Backfill over the PVC pipe in accordance with Standard Detail G2.01 and the detail shown on the Plans for Trench for PVC Pipe using well-compacted AASHTO M 43, size number 57 aggregate to a 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 98% as determined by AASHTO T-180-A.

f. Detection Tape:

Install detection tape directly over the centerline of the water mains on 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.

2. Joints:

a. Mechanical Joints:

For PVC plain-end to be connected to ductile iron 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.

b. Push-on Joints:

For PVC pipe 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 pipe that is not furnished with a depth mark on the plain end to show the depth of the socket and to verify that pipe is properly set in the bell. Assemble joints in accordance with AWWA C605, the manufacturer's recommendations, and 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. The spigot shall not be inserted deeper than manufacturer's recommendations. Install push-on restrained joints in accordance with manufacturer's recommendations.

c. Restrained Joints:

In a restrained joint, PVC pipe shall not be deflected. If deflection is required in a restrained joint, use restrained ductile iron pipe.

3. 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.

4. Fire Hydrant lead, including mainline tee, shall be ductile iron only.

5. Connections to PVC pipe for Water House Connections:

a. Perform taps on PVC pipe in accordance with AWWA C605, the pipe manufacturer's recommendations, and as indicated herein.

b. Install a service saddle when tapping a PVC water main. Maintain a minimum of 24 inches between taps and PVC pipe bells.

c. 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. The machine shall be supported so that its weight is not carried by the pipe. When tapping PVC pipe, follow the manufacturer's safety precautions and the safety precautions cited in AWWA C605.

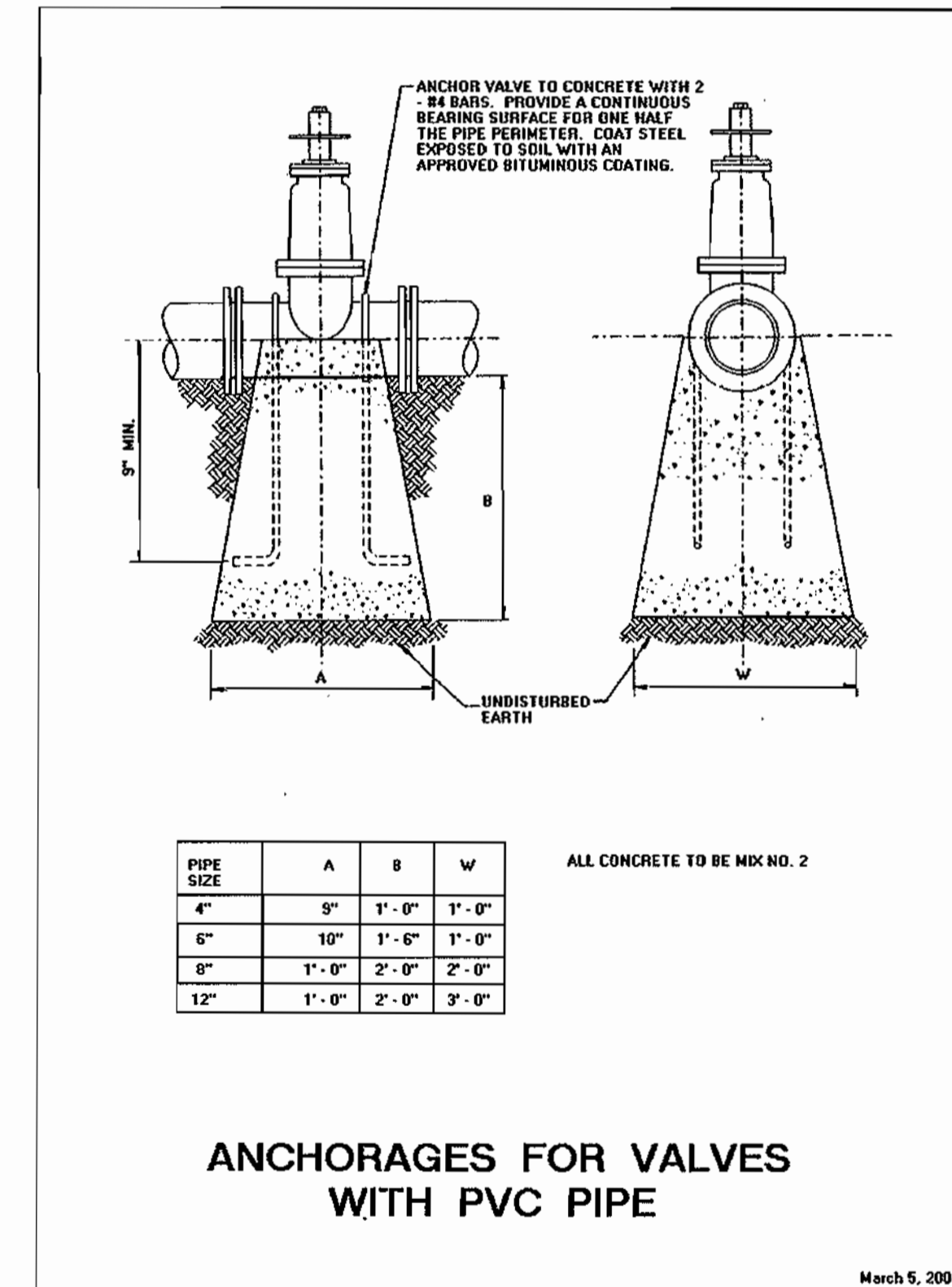
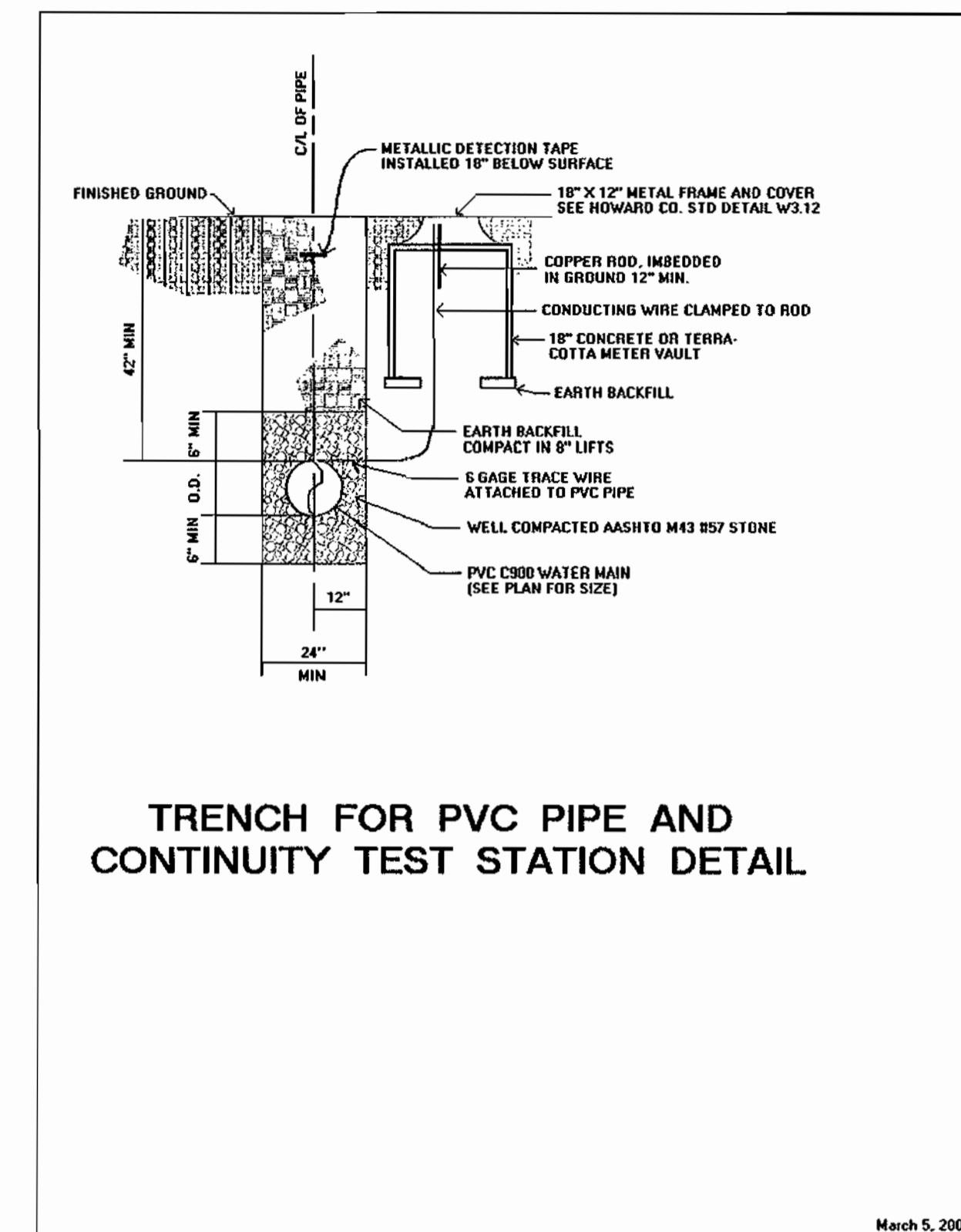
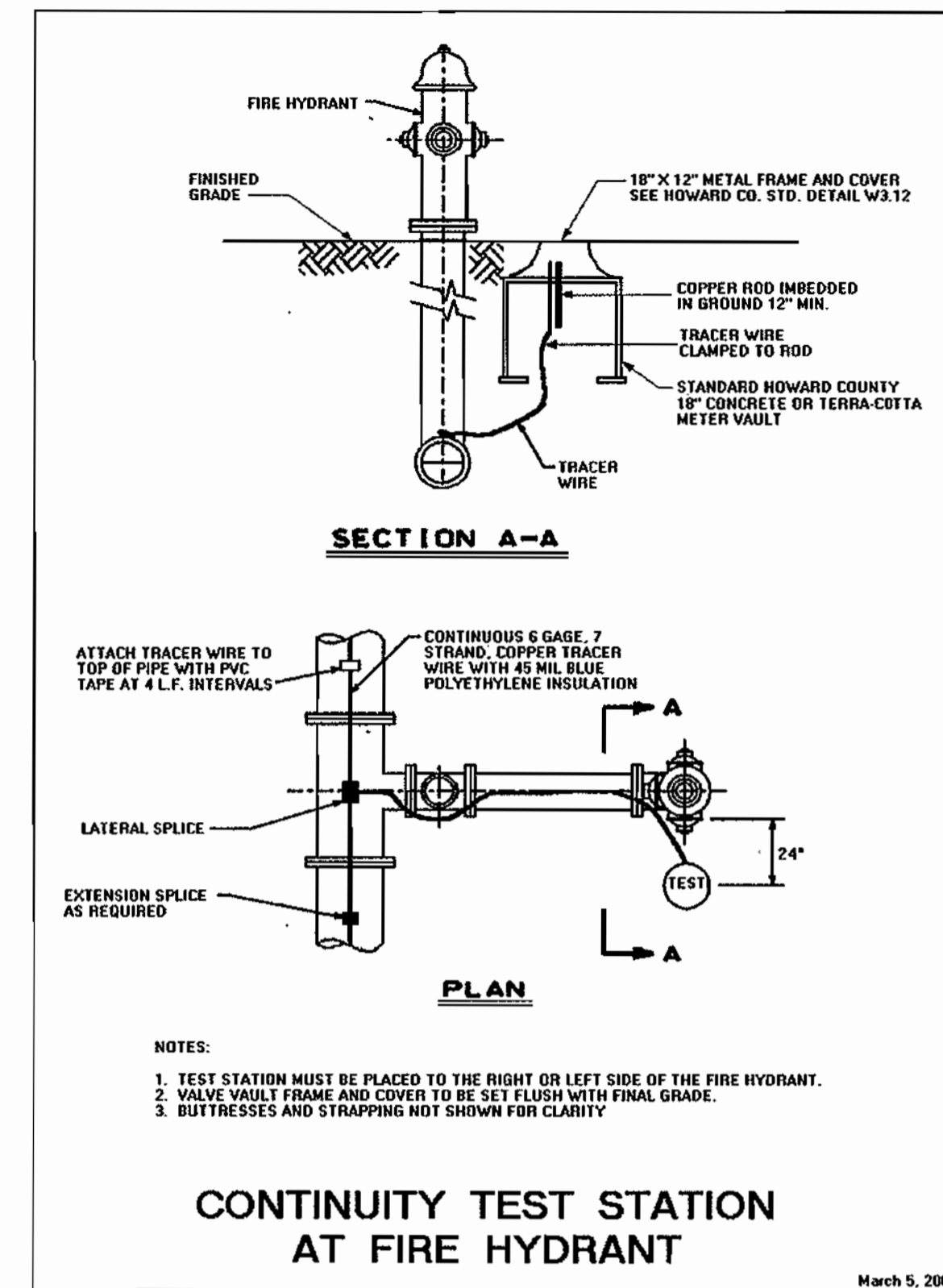
d. Multiple taps in a single pipe shall be staggered around the pipe circumference so they are not on a common line parallel to the longitudinal axis of the pipe and be at least 18-inches apart when measured longitudinally.

NOTE:

If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

NOTE TO CONTRACTORS:

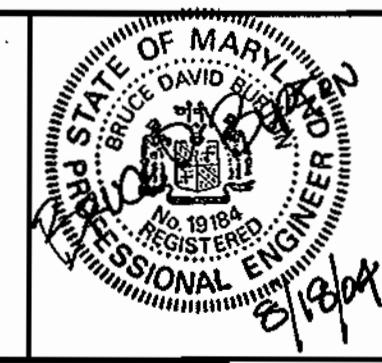
THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.



SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DEPARTMENT OF PUBLIC WORKS 8-27-04 CHEF-BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING 9/1/04 CHIEF-DEVELOPMENT ENGINEERING DIVISION
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LDE Inc.
 Engineers, Surveyors, Planners
 9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
 (410)715-1070 - (301)596-3424 - FAX(410)715-9540



DESIGNED	EDS		
DRAWN	J.D.R.		
CHECKED	BDB		
DATE	7/2004		
BY	LDE	NEW SHEET PER HOWARD COUNTY	7/2004
	NO.	REVISION	DATE

PVC C-900 SPECIFICATIONS

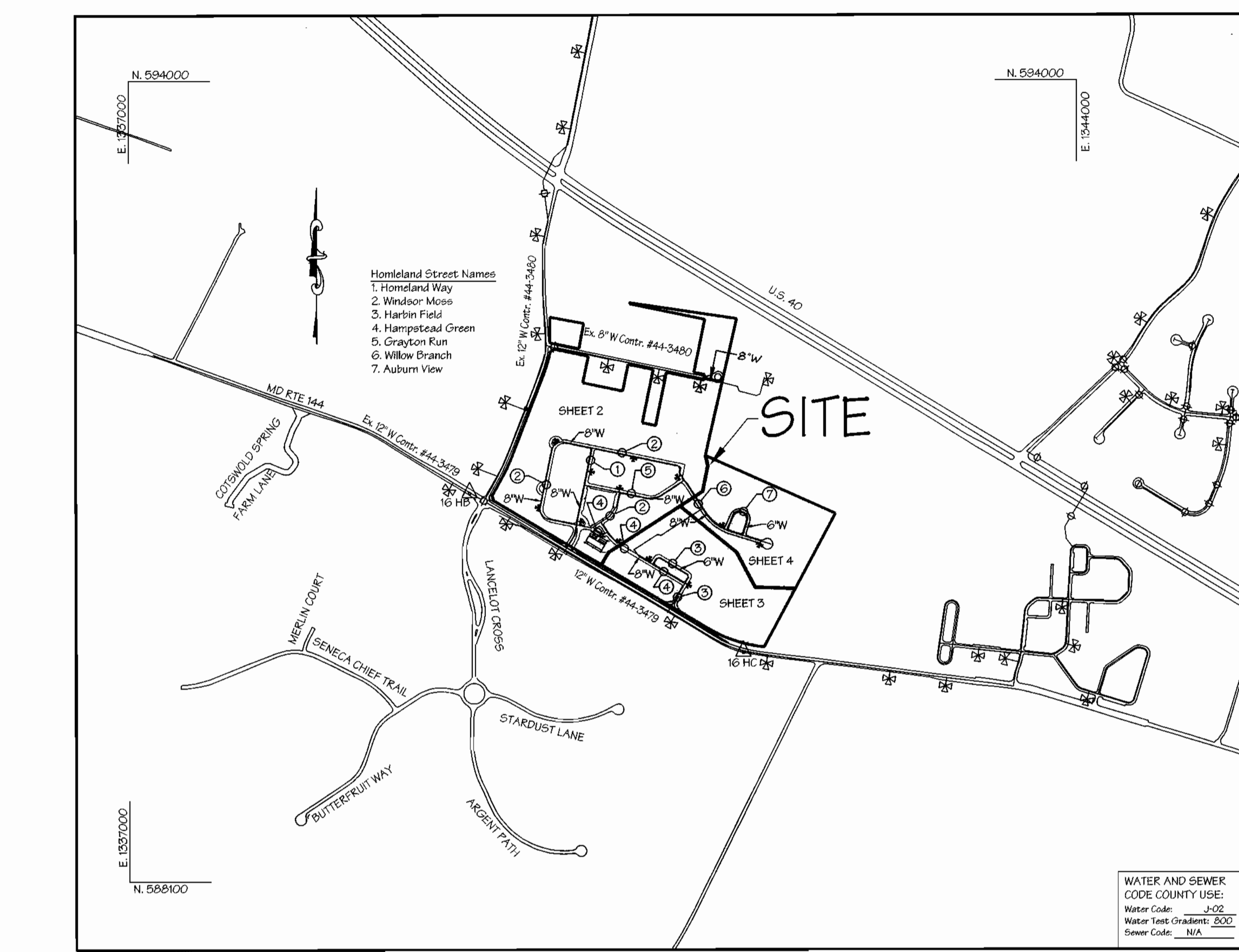
HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 CONTRACT NO. 44-4143-D

SCALE AS SHOWN
 SHEET 11 of 11

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Road Name	Description	Centerline Road Sta.	Centerline Offset	Waterline Station
Maryland Route 144	8" Value	50+00.00	19.50' LT	0+00
Maryland Route 144	8" Value	47+35	20.05' LT	0+00
Homeland Way	8" 1/2 Bend	1+25.11	4.02' LT	1+42
Homeland Way	8" Value	1+82.81	7.11	2+00
Homeland Way	8" x 8" Cross	2+02.85	7.11	2+20
Homeland Way	8" Value	2+15	7.11	2+50
Homeland Way	8" x 6" FHT	2+30	7.11	2+47
Homeland Way	6" Value	2+30	3' RT	2+47
Homeland Way	6" FH	2+30	10.19' RT	2+47
Homeland Way	8" x 8" Tee	5+01.01	7.11	5+15
Homeland Way	8" x 6" FHT	6+00.50	7.11	6+25
Homeland Way	6" Value	6+00.50	3' RT	6+25
Homeland Way	6" FH	6+00.50	10' RT	6+25
Homeland Way	8" Value	7+65	7.11	7+85
Homeland Way	8" x 8" Tee	7+81	7.11	7+98
Windsor Moss	8" x 8" Tee	0+07	7.11	0+00
Windsor Moss	8" Value	0+17	7.11	0+10
Windsor Moss	8" 1/2 Bend	1+06.30	7.11	1+02
Windsor Moss	8" 1/2 Bend	2+00.69	3.25' RT	1+94
Windsor Moss	8" x 8" Tee	2+31.15	7' RT	2+35
Windsor Moss	8" x 6" Tee	3+48.29	4.59' RT	3+53
Windsor Moss	8" 1/2 Bend	3+61.78	0.33' RT	3+52
Windsor Moss	8" Value	4+00.33	7' RT	4+50
Windsor Moss	8" Value	4+30.33	7' RT	4+80
Windsor Moss	8" 1/2 Bend	7+00.32	0.87' LT	6+95
Windsor Moss	8" 1/2 Bend	7+32.52	0.55' LT	7+25
Windsor Moss	8" 1/2 Bend	7+85.15	3.19' LT	7+50
Windsor Moss	8" 1/2 Bend	7+89	9.65' LT	7+54
Windsor Moss	8" x 6" FHT	7+94.80	8.39' LT	7+90
Windsor Moss	6" Value	7+94.80	10.99' LT	7+90
Windsor Moss	6" FH	7+94.80	16.39' LT	7+90
Windsor Moss	8" 1/2 Bend	12+43.07	0.69' LT	12+42
Windsor Moss	8" 1/2 Bend	12+64.54	3.30' LT	12+60
Windsor Moss	8" x 6" FHT	12+89.20	4.65' LT	12+95
Windsor Moss	6" Value	12+89.20	10.11' LT	12+95
Windsor Moss	6" FH	12+89.20	16.11' LT	12+95
Windsor Moss	8" 1/2 Bend	15+01.53	5.21' LT	15+00
Windsor Moss	8" 1/2 Bend	15+25.90	1.79' LT	15+20



BENCHMARKS

HOWARD COUNTY GEODETIC CONTROL: 16HC
Elevation: 449.451
Station is a standard stamped disc set on top of concrete monument. Located on the southern boundary of Maryland Route 144, 0.1 Mile west of Folly Road.

HOWARD COUNTY GEODETIC CONTROL: 16HB
Elevation: 540.658
Station is a standard stamped disc set on top of concrete monument. Located 21.9' south of centerline - Maryland Route 144, 147.5' west of Marriottville Road. Station is flush with surface.

INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET
2	PLAN SHEET
3	PLAN SHEET
4	PLAN SHEET
5	PLAN SHEET
6	PROFILE SHEET
7	PROFILE SHEET
8	PROFILE SHEET
9	PROFILE SHEET
10	PROFILE & DETAILS SHEET
11	PVC C-900 SPECIFICATIONS

GENERAL NOTES

- PART I: GENERAL**
- 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 at the Contractor's expense.
 - All horizontal controls are based on Maryland State Coordinates, NAD 83/91.
 - 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 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 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, if required.
 - 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 location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawing. 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.
 - Contractor shall notify the utility companies or agencies at least five (5) working days before starting work shown on these plans:
 - a. AT&T: (800) 252-1153
 - b. BGE (Contractor Services): (410) 850-4620
 - c. BGE (Underground damage control): (410) 767-9068
 - d. Bureau of Utilities: (410) 313-4900
 - e. Columbia Gas Transmission Corporation: (301) 762-6308
 - f. Colonial Pipeline Co.: (410) 795-1390
 - g. Miss Utility: 1-800-257-7777
 - h. State Highway Administration: (410) 531-5633
 - i. Verizon: 1-800-743-0033 / 410-224-9210
 - j. Construction Inspection Division (410-313-1880)
 - Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs within the construction area are not to be removed or damaged by the Contractor.
 - Contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.

- PART II: WATER**
- All water main materials shall be as specified and approved by the Howard County Department of Public Works.
 - Tops of all water mains to have a minimum of 3 1/2' cover unless otherwise noted.
 - Valves adjacent to the tees shall be strapped to the 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. 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.
 - All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
 - For sprinkler system for all townhomes or multi-family dwelling units should have a minimum of 1 1/2' connection with a 1" meter. (model 70)
 - Water house connection ball valves shall be set within the grassy area 2' behind the sidewalk or curb line.
 - Addition to the Approved Plans:
 - The 10 drawings contained herein constitute the Approved Water Plans for the Homeland Development, however water main construction materials, methods and details shall be approved by the Department of Public Works and added to these Approved Water Plans as Additional Plan Sheets prior to installation of the water mains. The contractor shall install the water mains in accordance with the Approved Water Plans, the Additional Plan Sheets, the Special Provisions and the Howard County Standard Specifications.
 - A 10' Public Easement exists centered on each Public Water House Connection up to and including the water house connection ball valve.
 - If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. To accomplish vertical deflections, the horizontal bends shall be rotated.
 - Attached units 1-28, 58-75, and 93-120 require 1 1/2" water house connections with 1" meters. (model 70) All meter settings shall be inside.
 - Mechanical joints shall be required in all fill areas.
 - The "Record Plat" (F03-194) records the metes and bounds of the typical 10' public water house connection easement as detailed herein.
 - 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 and shall be exterior epoxy coated in accordance with AWWA C116.
 - 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 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.
 - The following note is added to Howard County Standard Detail W2.22, Buttresses and Anchorages for Vertical Bends. "When anchoring PVC pipe, the strapping in contact with the pipe surface shall be 1-inch wide by 1/4-inch thick steel. The remaining portion of the strap shall be reinforcing bar sized in accordance with the pertinent chart shown on the detail."
 - Except as indicated on the Plans and noted above, all public water mains shall be polyvinylchloride (PVC) pipe meeting the requirements of AWWA C900 DR18, pressure Class 150 and the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and all subsequent amendments thereto.

QUANTITIES				
ITEM	QUANTITIES ESTIMATED	QUANTITIES	TYPE	AS BUILT MANUFACTURER/SUPPLIER
12" x 8" TAPPING TEE (Ea.)	2			
8" WATER (L.F.)	7399			
8" VALVE (Ea.)	17			
8" x 8" TEE (Ea.)	9			
8" x 8" CROSS (Ea.)	1			
8" CAP & BUTTRESS (Ea.)	4			
8" x 6" REDUCER (Ea.)	2			
8" x 6" FIRE HYDRANT TEE (Ea.)	10			
8" x 8" x 6" TEE (Ea.)	3			
8" - 1/2 Bend (Ea.)	5			
8" - 1/2 Bend (Ea.)	19			
6" WATER (L.F.)	1210			
6" VALVE (Ea.)	17			
6" x 6" TEE (Ea.)	2			
6" CAP & BUTTRESS (Ea.)	1			
6" - 1/2 Bend (Ea.)	8			
6" - 1/2 Bend (Ea.)	1			
6" - 1/2 Bend (Ea.)	4			
6" FIRE HYDRANT (Ea.)	14			
6" x 6" FIRE HYDRANT TEE (Ea.)	2			
1" WHC (L.F.)	3926			
1-1/2" WHC (L.F.)	243			
2" WHC (L.F.)	285			

Type of Building: 143 Condominium Units
Number of Lots/Parcels: 4
Number of W.H.C.'s: 141 Proposed / 2 Existing
Number of S.H.C.'s: 0
Drainage Area: Little Patuxent River
Treatment Plant: Alpha Ridge LPWWTP

Vicinity Map
Scale: 1"=600'

WATER CONSTRUCTION PLANS

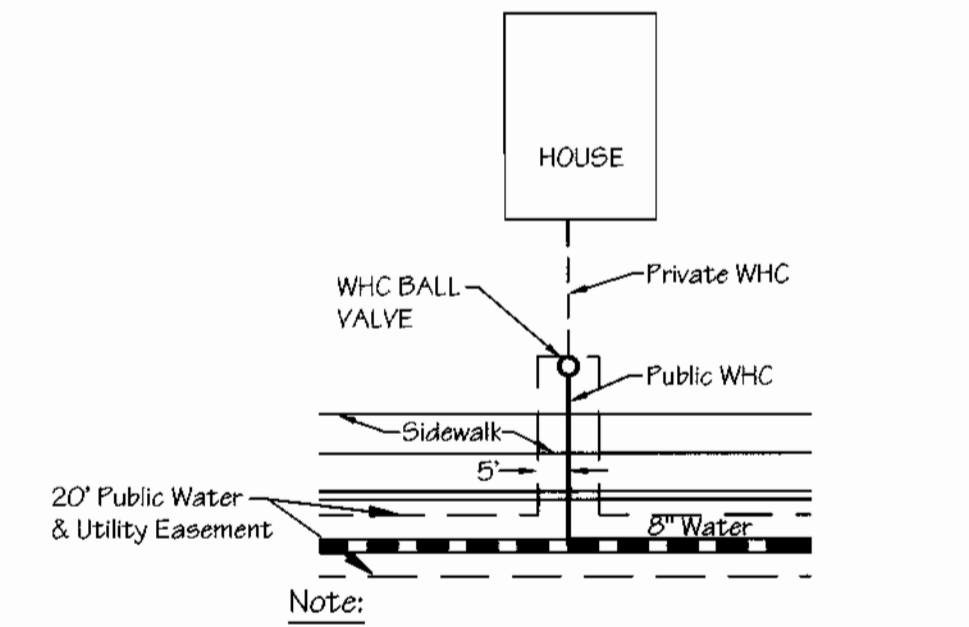
HOMELAND

3rd Election District - Howard County, Maryland
Contract No. 44-4143-D

NOTE:
If PVC AWWA C-900 pipe is selected for this contract, all pipe deflections, horizontal and vertical, shall be accomplished using bends. The contractor shall be responsible for determining the Bury Line depth of all fire hydrants prior to installation and adjustment of hydrant flange to 2" above finished grade. The contractor shall also be responsible for providing corrosive protection when installing any ductile iron pipe (D.I.P.) as directed by the county inspector.

NOTE TO CONTRACTORS:

THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK. WHERE TEST PITS ARE REQUIRED, THE SYMBOL IS SHOWN. ANY CONFLICTS SHOULD BE BROUGHT TO THE ENGINEERS ATTENTION FOR POSSIBLE REDESIGN / FIELD ADJUSTMENTS.



REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jim Myers 9/7/04
NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
John R. Robertson 9/7/04
HOWARD COUNTY SOIL CONSERVATION DISTRICT

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

DESIGNED	EDS	DATE
JLM / JDR		
CHECKED	DBD	DATE
LDE		7/20/04
BY	NO.	REVISION
LDE	1	Add 100 L.F. of 8" W Removed from C44-4101-D
LDE	2	REVISE STAKEOUT TABLES, VICINITY MAP, SHT #3, QUANTITIES

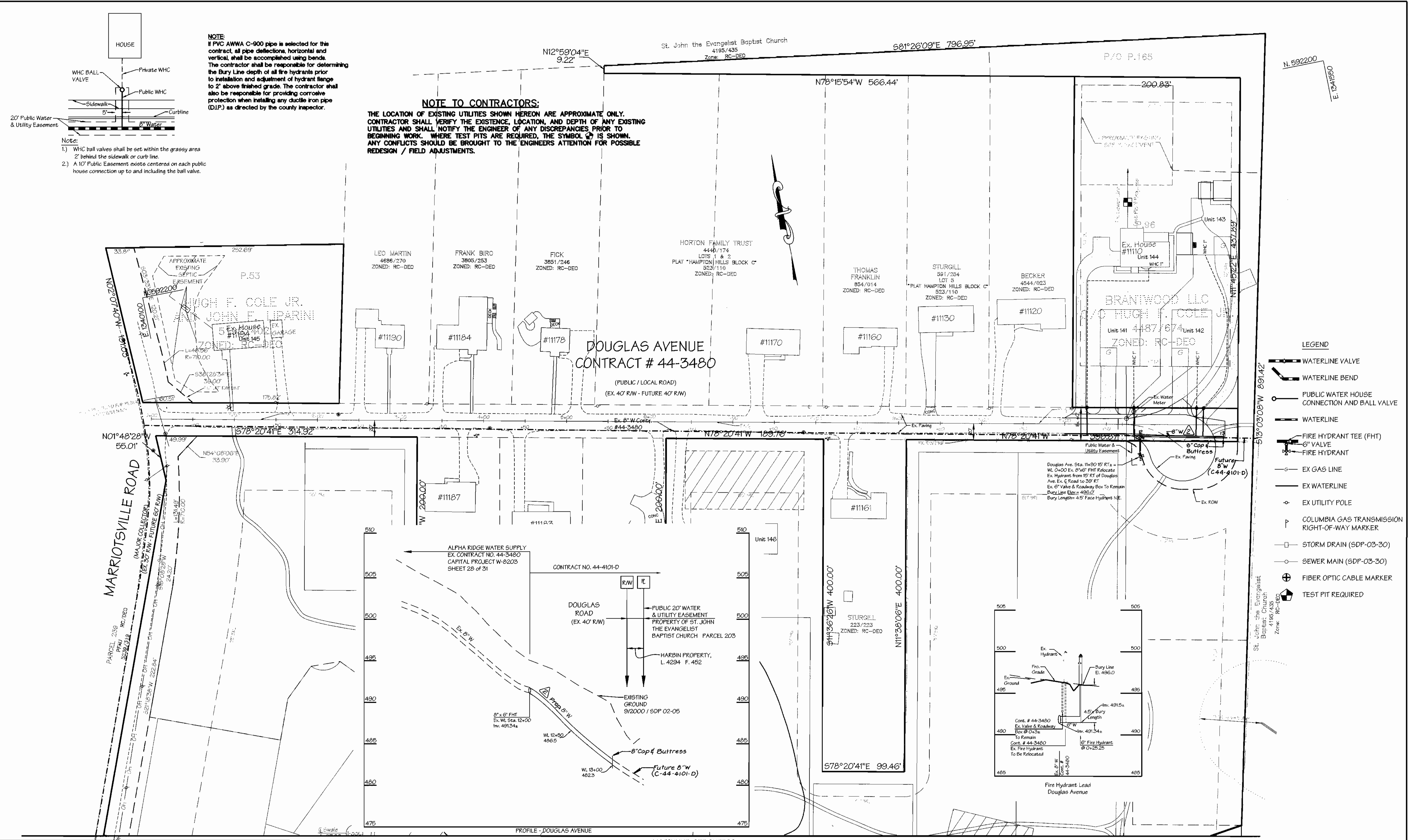
HOMELAND

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
CONTRACT NO. 44-4143-D

TITLE SHEET

600 SCALE MAP NO. 16 BLOCK 16 & 22

SCALE AS SHOWN SHEET 1 OF 11



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SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATION AND THE APPROVED SITE DEVELOPMENT PLAN, SDP-03-30.

MATCHLINE SEE SHEET 2

DEPARTMENT OF PUBLIC WORKS CHIEF-BUREAU OF UTILITIES 8-27-04 DATE		DEPARTMENT OF PLANNING & ZONING CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE		LDE Inc. Engineers, Surveyors, Planners 9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9540		 DESIGNED EDS DRAWN J.D.R. CHECKED BDB DATE 7/2004		<table border="1"> <tr> <th>BY</th> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>LDE</td> <td>2</td> <td>Add 100 L.F. of 8" W Removed from C44-4101 D</td> <td>11/2/04</td> </tr> <tr> <td>LDE</td> <td>1</td> <td>REMOVE HAND DRAFTING, ADD UNIT NUMBERS, REVISE SHEET NUMBERS</td> <td>7/2004</td> </tr> </table>		BY	NO.	REVISION	DATE	LDE	2	Add 100 L.F. of 8" W Removed from C44-4101 D	11/2/04	LDE	1	REMOVE HAND DRAFTING, ADD UNIT NUMBERS, REVISE SHEET NUMBERS	7/2004	PLAN SHEET 600 SCALE MAP NO. 16 BLOCK 16 & 22		HOMELAND 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 44-4143-D		SCALE SHEET 5 of 11
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