

WATER STAKEOUT TABLE			
ITEM	STATION	NORTHING	EASTING
12" CAP	10+20	528,383.26	1,360,520.71
12" VALVE	10+23	528,378.46	1,360,517.11
12" X 8" TEE	10+28	528,374.46	1,360,514.11
12" VALVE	10+33	528,370.46	1,360,511.11
12" X 12" TEE	10+64	528,329.71	1,360,480.51
1/8 H.B.	14+08	528,070.83	1,360,286.19
1/8 H.B.	14+24	528,068.53	1,360,270.02
12" VALVE	15+21	527,990.93	1,360,211.74
1/8 H.B.	15+48	527,969.32	1,360,195.51
12" X 12" TEE	15+53	527,965.17	1,360,196.10
12" VALVE	15+56	527,960.69	1,360,196.68
1/8 H.B.	15+75	527,942.93	1,360,199.26
12" X 6" TEE	16+30	527,908.26	1,360,242.22
1/8 H.B.	18+52	527,768.54	1,360,415.32
12" X 6" TEE	18+74	527,746.45	1,360,417.23
1/8 H.B.	18+85	527,736.09	1,360,418.12
12" X 8" TEE	18+95	527,729.55	1,360,426.04
12" X 6" TEE	20+30	527,643.75	1,360,529.87
PC	21+45.28	527,570.26	1,360,618.81
12" X 12" TEE	22+22	527,517.35	1,360,673.72
PT	22+46.58	527,498.29	1,360,689.86
12" X 6" TEE	23+79	527,394.97	1,360,773.01
12" VALVE	23+99	527,380.08	1,360,785.17
12" X 8" TEE	24+02	527,377.33	1,360,787.31
12" VALVE	24+05	527,375.11	1,360,789.04
12" CAP	24+08	527,373.60	1,360,790.21

SURVEY CONTROL

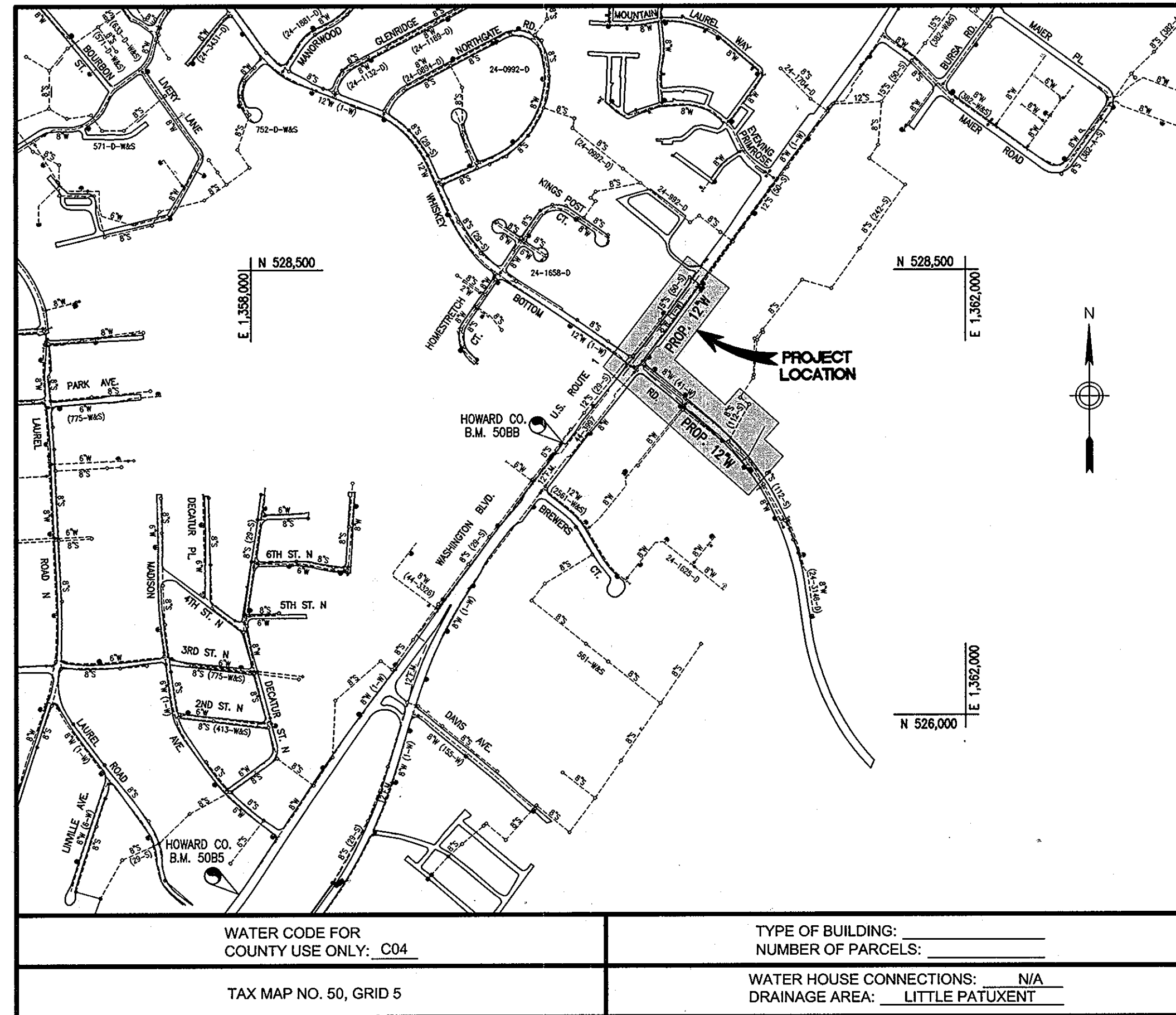
B.M. #1
 HOWARD CO. B.M. 50B5
 NAD 83(1981): N 524,999.3552 E 1,357,925.6879
 NAVD 88: EL. 177.424'

B.M. #2
 HOWARD CO. B.M. 50B8
 NAD 83(1981): N 527,565.8697 E 1,359,782.206
 NAVD 88: EL. 245.186'

HOWARD COUNTY

DEPARTMENT OF PUBLIC WORKS

ELLCOTT CITY, MARYLAND 21043



WATER CODE FOR COUNTY USE ONLY: C04
 TYPE OF BUILDING: _____
 NUMBER OF PARCELS: _____
 TAX MAP NO. 50, GRID 5
 WATER HOUSE CONNECTIONS: N/A
 DRAINAGE AREA: LITTLE PATUXENT

VICINITY MAP
 SCALE: 1" = 600'

WHISKEY BOTTOM ROAD

WATER MAIN EXTENSION

CAPITAL PROJECT W-8270

CONTRACT NO. 44-4259

INDEX OF SHEETS

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

GENERAL NOTES

- Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer by the Contractor at the Contractor's expense.
- Topographic field surveys were performed on December 2004 by Dewberry & Davis, LLC.
- Horizontal and Vertical Survey Controls:
 The coordinates shown on the drawings are based on Maryland State Reference System NAD '83/91 as projected by Howard County Geodetic Control Stations Howard Co. B.M. 50B5 and Howard Co. B.M. 50BB.
 All vertical controls are based on NAVD '88.
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- Clear all utilities by a minimum of 12". Clear all poles by 5'-0" minimum or tunnel as required unless otherwise noted. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the Contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from monies owed the Contractor. The Contractor shall coordinate with the utility companies to schedule the bracing of the poles.
- For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction (Latest Edition). The Contractor shall have a copy of Volume IV on the job.
- All existing utilities shall be test pitted/located as necessary and in advance of the proposed construction, in order to properly make all required utility crossings and/or connections. Any discrepancies or utility conflicts shall be immediately reported to the Engineer. Where test pits have been made on existing utilities, they are noted by the symbol [] at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings or specifications. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the Contractor two (2) weeks in advance of construction operations at his own expense.
- Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:
 AT&T 1-800-252-1133
 BGE - Contractor Services 410-850-4620
 BGE - Emergency 410-685-1400
 State Highway Administration 410-531-5533
 Bureau of Utilities (DPW) 410-313-4900
 Verizon 1-800-743-0033 / 410-224-9210
 Colonial Pipeline Co. 410-795-1390
 Miss Utility 1-800-257-7777
- Trees and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the Contractor.
- Contractor shall remove trees, stumps and roots along the line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- The Contractor shall notify the Bureau of Highways, Howard County at (410) 313-7450 at least five (5) working days before any open cut, boring/jacking or trenchless installation operation of any county roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.
- The Contractor is responsible for contacting the various businesses and coordinating his work activities so as not to negatively impact connected customers. The installation of water main shall cause a minimum of disturbance to the existing businesses and notification to the businesses of any "interruptions of service" shall be the responsibility of the Contractor. The County requires that the Contractor notify each business affected, by letter or with door tags, of the impending service interruption at least 48 hours in advance of the planned interruption. In the event of an unplanned interruption, the Contractor will be responsible for notifying the businesses by "door to door" canvassing.
- The Contractor shall provide all necessary lines, grades and elevations, and cut sheets shall be prepared based on the lines and grades shown on the Contract drawings.

RESTORATION SCHEDULE			
STATION	TO STATION	DISTANCE	MATERIAL
WATER MAINS			
10+00	15+28±	528 L.F.	SEED AND MULCH
15+28±	24+08	880 L.F.	ASPHALT PAVING

TRAVERSE DATA			
D&D TRAV. PT.	NORTHING	EASTING	ELEV.
DEWBERRY #100 MAG NAIL	N 527,997.04	E 1,360,212.25	ELEV. 233.35'
DEWBERRY #101 MAG NAIL	N 528,414.30	E 1,360,530.43	ELEV. 227.27'
DEWBERRY #102 MAG NAIL	N 527,297.17	E 1,360,826.78	ELEV. 220.62'

WATER MAIN NOTES

- All water mains shall be D.I.P. Class 52 unless otherwise noted.
- Tops of water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- Distances shown for the water main are along the centerline of the pipe.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be restrained joints, unless otherwise provided for on the drawings.
- Fire Hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be installed in accordance with Standard Details. Soil around the fire hydrant shall be compacted in accordance with Section 1000 and Section 1005 of the Howard County Standard Specifications.
- The Contractor shall not operate any water main valves on the existing water system.
- The Contractor shall notify the Howard County Bureau of Utilities at least fifteen (15) days prior to any water main shut downs.
- All Ductile Iron Pipes to be used on the public water system shall be Thickness Class not less than Class 52. 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 52, 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 52, 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 52, meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.

QUANTITIES

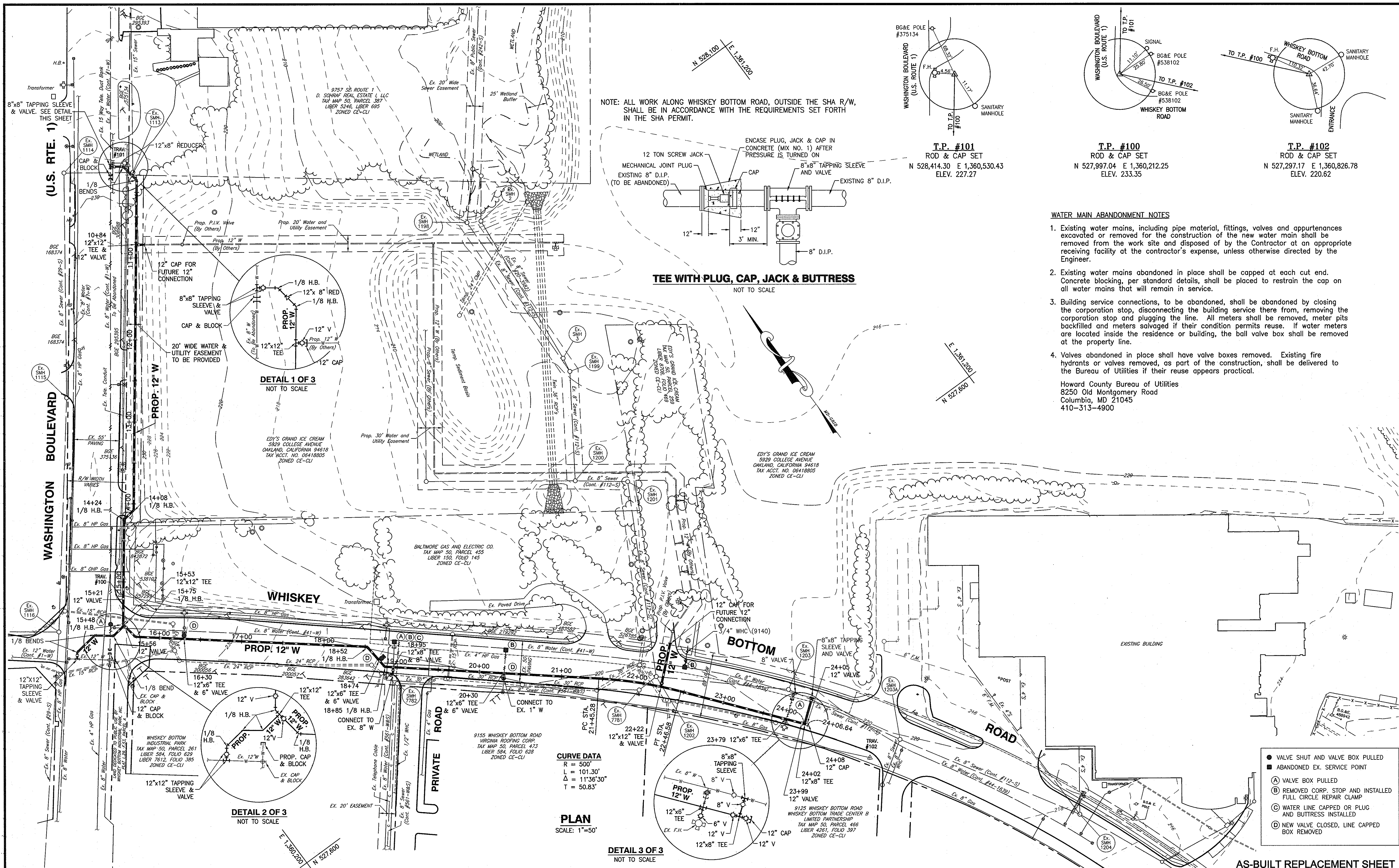
ITEM	UNIT	ESTIMATE	AS-BUILT	SUPPLIER
12" D.I.P. WATER MAIN	L.F.	1,510	1586.0	NATIONAL WATERWORKS
8" D.I.P. WATER MAIN	L.F.	55	95.0	NATIONAL WATERWORKS
6" D.I.P. WATER MAIN	L.F.	70	13.0	NATIONAL WATERWORKS
12" VALVE	EA.	8	8	NATIONAL WATERWORKS
8" VALVE	EA.	1	3	NATIONAL WATERWORKS
6" VALVE	EA.	4	4	NATIONAL WATERWORKS
12" X 12" TEE	EA.	3	3	NATIONAL WATERWORKS
12" X 8" TEE	EA.	3	3	NATIONAL WATERWORKS
12" X 6" TEE	EA.	3	3	NATIONAL WATERWORKS
12" X 12" TAPPING SLEEVE & VALVE	EA.	1	1	NATIONAL WATERWORKS
8" X 8" TAPPING SLEEVE & VALVE	EA.	2	1	NATIONAL WATERWORKS
12" - 1/8 H.B.	EA.	6	6	NATIONAL WATERWORKS
12" CAP & BLOCK	EA.	4	4	NATIONAL WATERWORKS
8" CAP & BLOCK	EA.	2	2	NATIONAL WATERWORKS

NAME OF UTILITY CONTRACTOR: RUSTLER CONSTRUCTION INC.
 CHECK BOX
 AS-BUILT DATE: 1/09/06

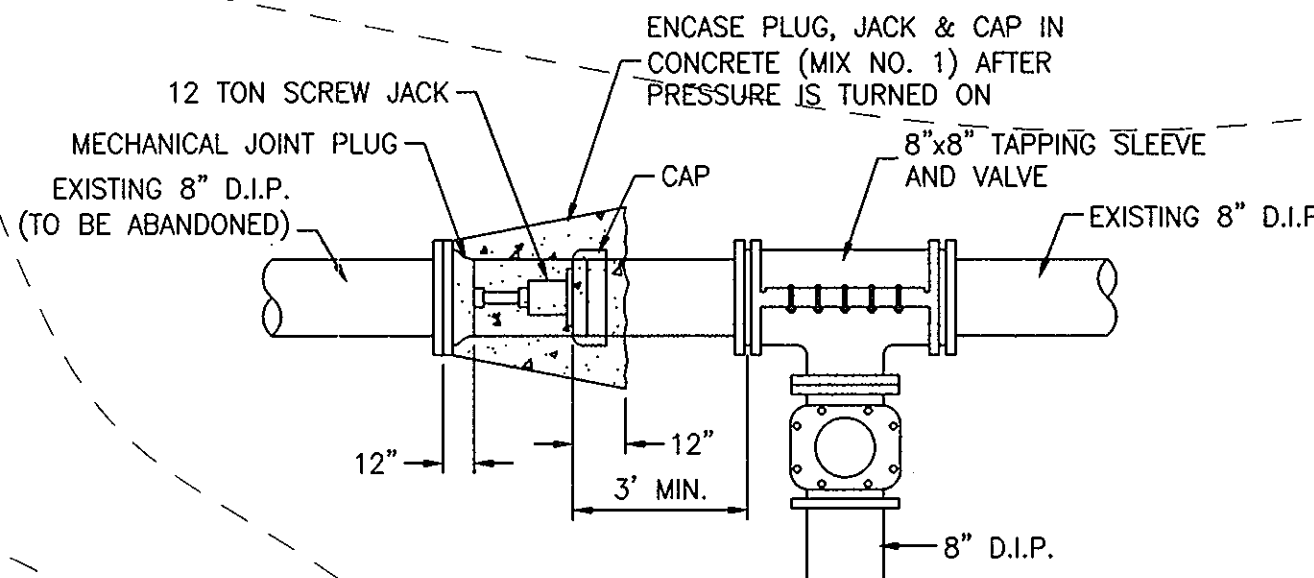
NOTE: Quantities in the above table are solely for record purposes. Contractor shall not rely on the quantities in the table and shall use his/her own takeoff to establish materials and quantities needed for this project.

"AS-BUILT"

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>John J. ...</i> 3-17-05 Chief, Bureau of Utilities: <i>John J. ...</i> 3-17-05	Dewberry Dewberry & Davis LLC 3150 LORD BALTIMORE DRIVE SUITE 211 BALTIMORE, MD 21244-2662 410.285.9500 FAX: 410.285.8875	DES: SMS DRN: AZW CHK: RJB DATE: _____	BY NO. _____ REVISIONS _____ DATE _____	TITLE SHEET 600' SCALE MAP NO. 50 BLOCK NO. 4	WHISKEY BOTTOM ROAD WATER MAIN EXTENSION CAPITAL PROJECT W-8270 CONTRACT 44-4259	ELECTION DISTRICT NO. 6	HOWARD COUNTY, MARYLAND	SCALE: SHOWN
						SHEET 1 OF 7		



NOTE: ALL WORK ALONG WHISKEY BOTTOM ROAD, OUTSIDE THE SHA R/W, SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE SHA PERMIT.



T.P. #101
ROD & CAP SET
N 528,414.30 E 1,360,530.43
ELEV. 227.27

T.P. #100
ROD & CAP SET
N 527,997.04 E 1,360,212.25
ELEV. 233.35

T.P. #102
ROD & CAP SET
N 527,297.17 E 1,360,826.78
ELEV. 220.62

WATER MAIN ABANDONMENT NOTES

- Existing water mains, including pipe material, fittings, valves and appurtenances excavated or removed for the construction of the new water main shall be removed from the work site and disposed of by the Contractor at an appropriate receiving facility at the contractor's expense, unless otherwise directed by the Engineer.
 - Existing water mains abandoned in place shall be capped at each cut end. Concrete blocking, per standard details, shall be placed to restrain the cap on all water mains that will remain in service.
 - Building service connections, to be abandoned, shall be abandoned by closing the corporation stop, disconnecting the building service there from, removing the corporation stop and plugging the line. All meters shall be removed, meter pits backfilled and meters salvaged if their condition permits reuse. If water meters are located inside the residence or building, the ball valve box shall be removed at the property line.
 - Valves abandoned in place shall have valve boxes removed. Existing fire hydrants or valves removed, as part of the construction, shall be delivered to the Bureau of Utilities if their reuse appears practical.
- Howard County Bureau of Utilities
8250 Old Montgomery Road
Columbia, MD 21045
410-313-4900

CURVE DATA
R = 500'
L = 101.30'
Δ = 11°36'30"
T = 50.83'

PLAN
SCALE: 1"=50'

- VALVE SHUT AND VALVE BOX PULLED
- ABANDONED EX. SERVICE POINT
- (A) VALVE BOX PULLED
- (B) REMOVED CORP. STOP AND INSTALLED FULL CIRCLE REPAIR CLAMP
- (C) WATER LINE CAPPED OR PLUG AND BUTTRESS INSTALLED
- (D) NEW VALVE CLOSED, LINE CAPPED BOX REMOVED

AS-BUILT REPLACEMENT SHEET

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *Janet A. [Signature]* 8/10/06
Date: 7-12-06

Chief, Bureau of Utilities: *[Signature]* 7-12-06
Date: 7-12-06

Chief, Utility Design Division: *[Signature]* 7-12-06
Date: 7-12-06

Dewberry
Dewberry & Davis LLC
3120 LORD BALTIMORE DRIVE
SUITE 211
BALTIMORE, MD 21244-2662
410.285.9500
FAX: 410.285.9875

DES:	SMS				
DRN:	AZW				
CHK:	RJB				
DATE:	5/26/06				
BY:	NO.	CD	1	AS-BUILT MODIFICATIONS	5/26/06
				REVISIONS	

PLAN

60' SCALE MAP NO. 50

BLOCK NO. 4

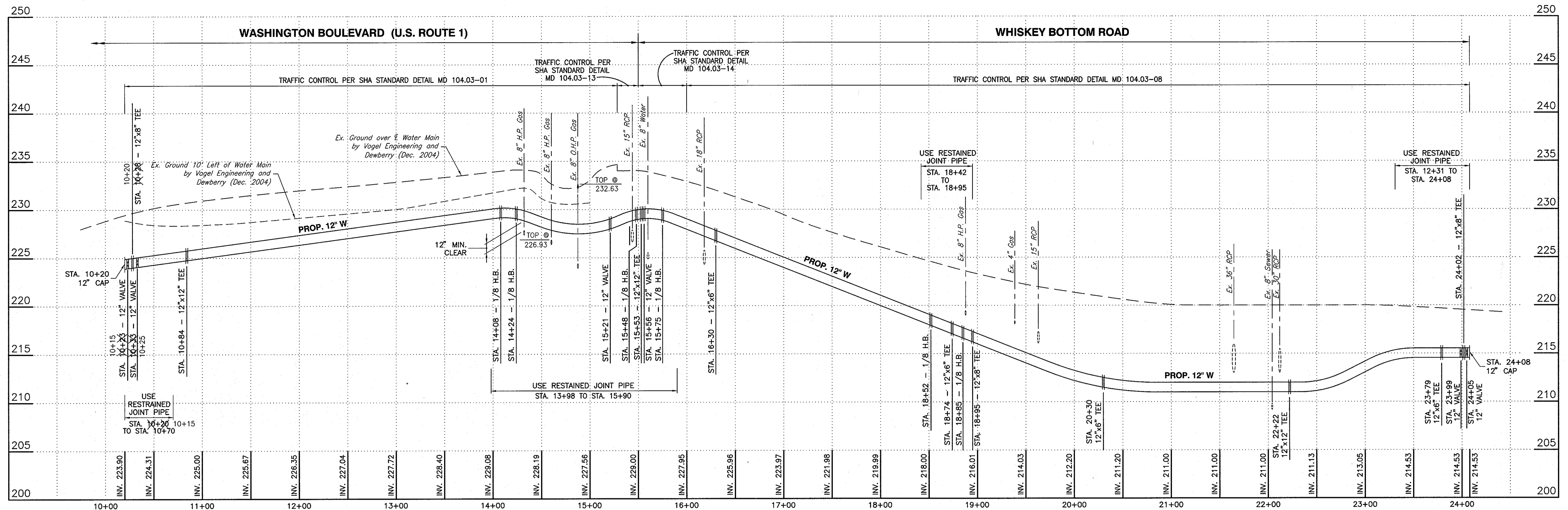
WHISKEY BOTTOM ROAD
WATER MAIN EXTENSION
CAPITAL PROJECT W-8270
CONTRACT 44-4259

ELECTION DISTRICT NO. 6

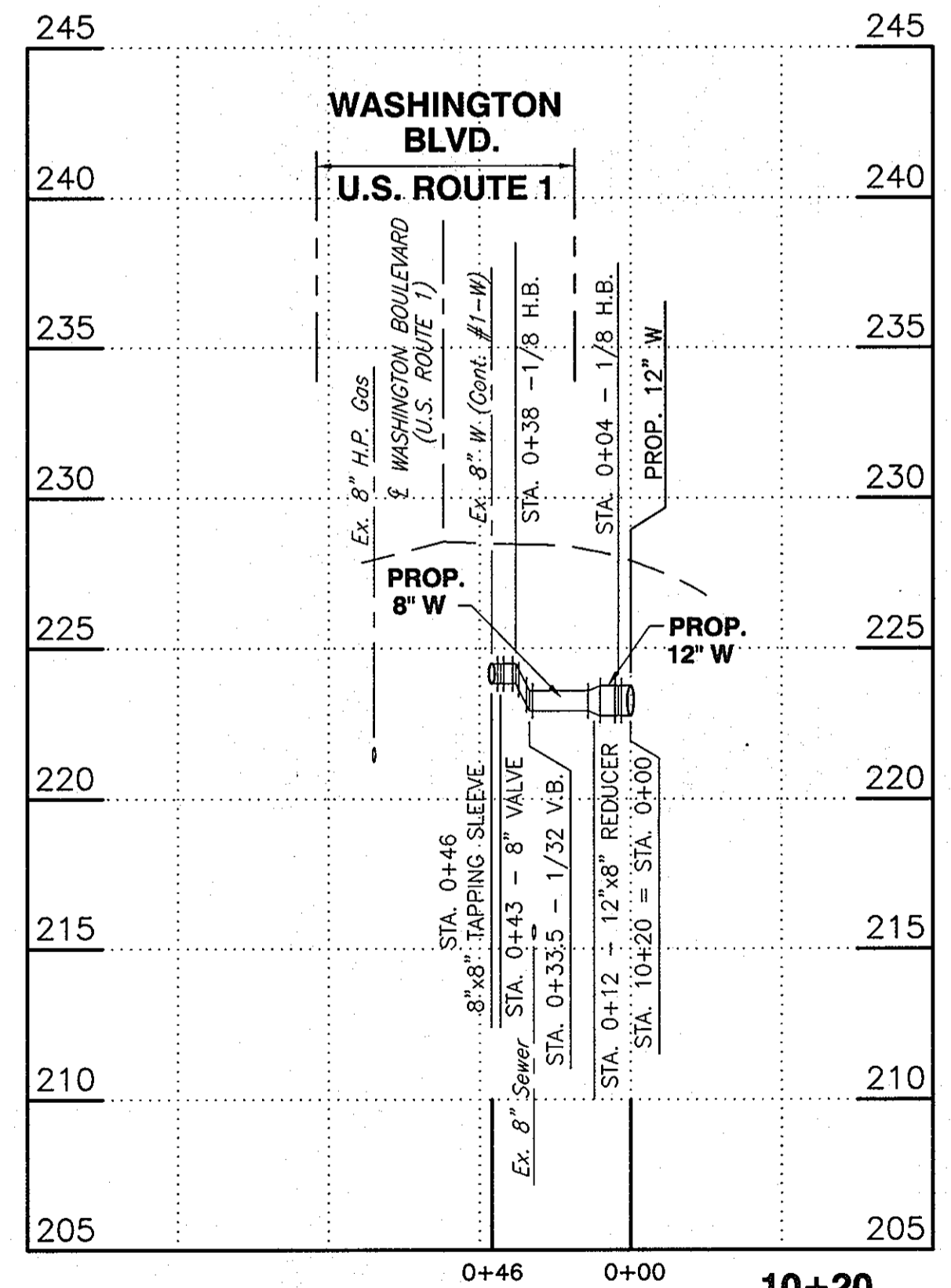
HOWARD COUNTY, MARYLAND

SCALE: SHOWN

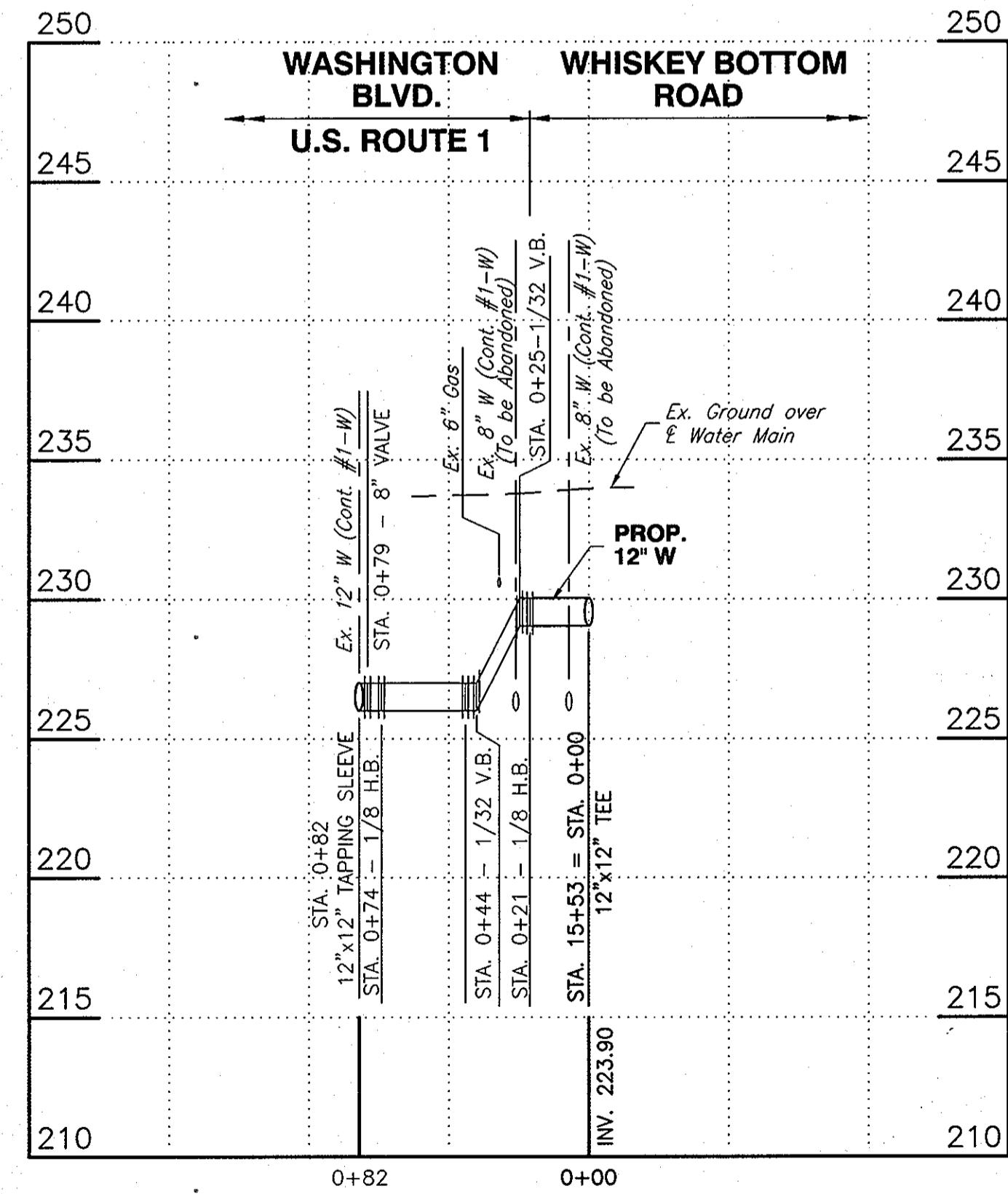
SHEET 2 OF 7



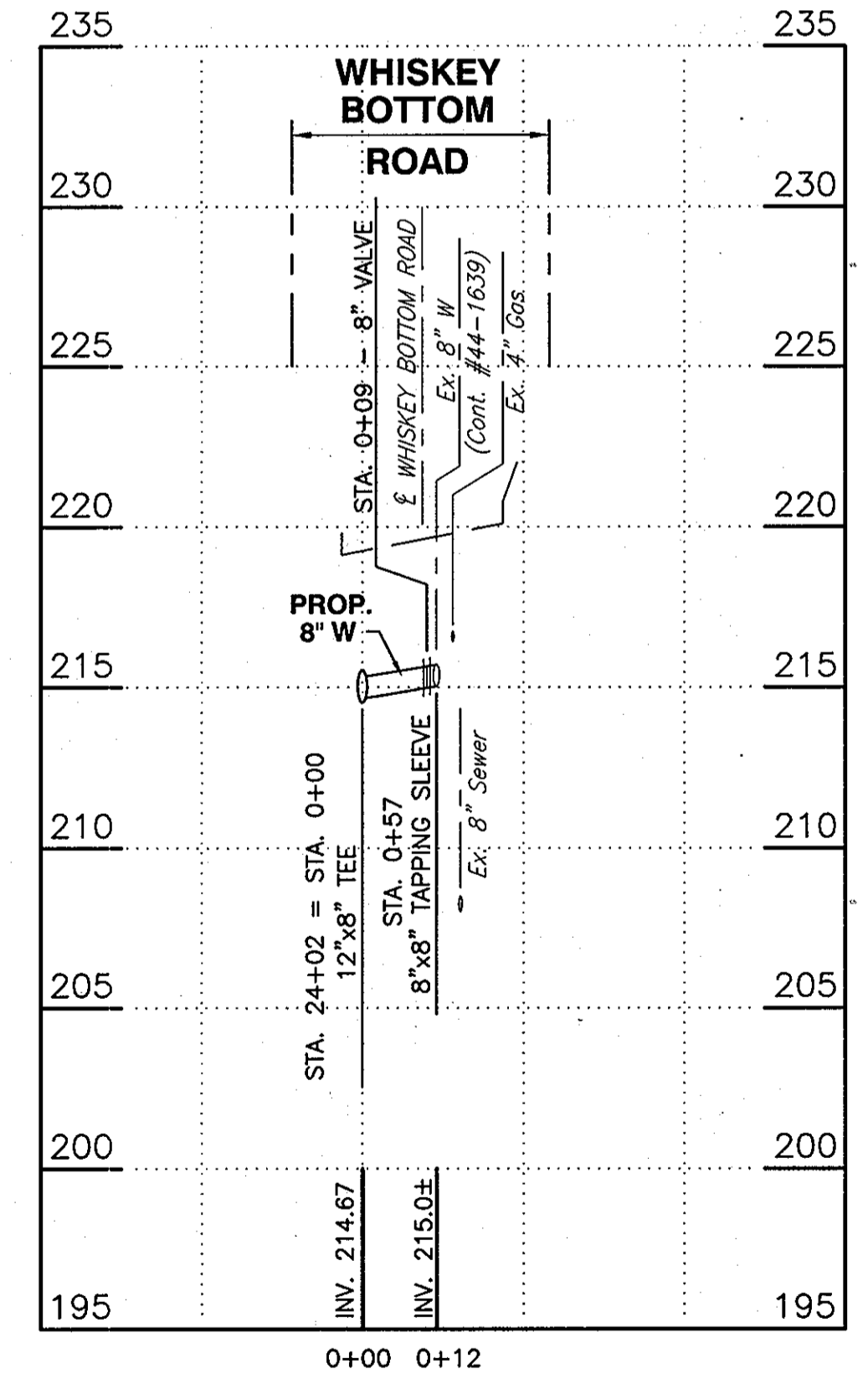
WATER MAIN PROFILE
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'



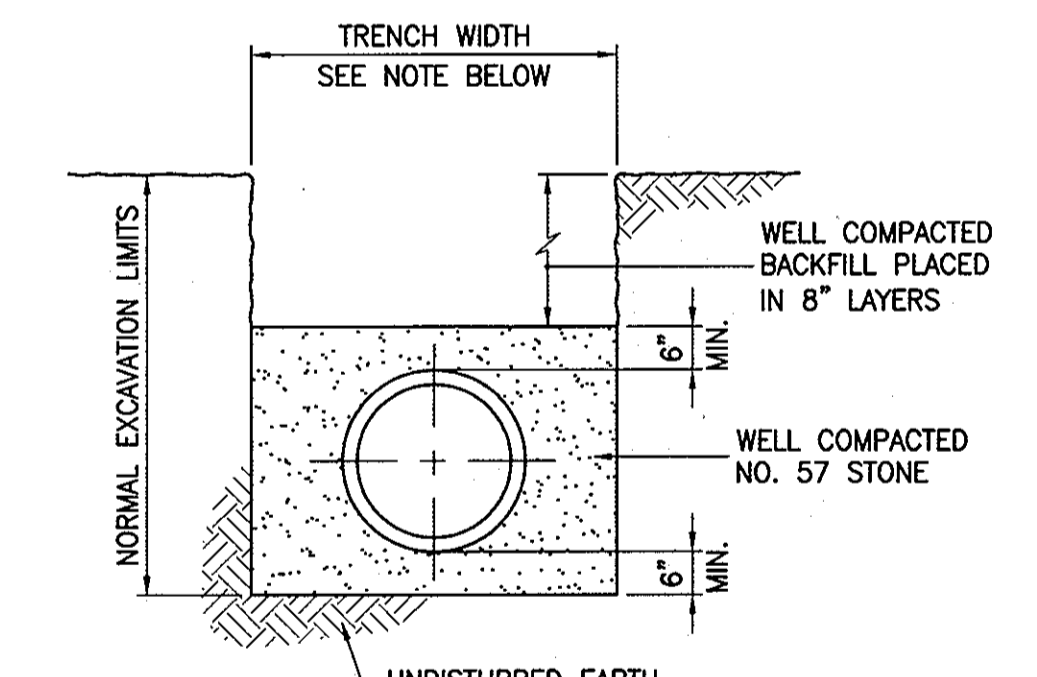
WATER MAIN CONNECTION @ STA. 10+28
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'



WATER MAIN CONNECTION @ STA. 15+53
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'



WATER MAIN CONNECTION @ STA. 24+02
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'



NOTES:
 1. WITHIN ROAD RIGHT-OF-WAY, TRENCH COMPACTION DENSITY SHALL BE 95% AS DETERMINED BY A.A.S.H.T.O. T-180-A.
 2. FOR PAY WIDTHS, SEE DETAIL G 2.02-A

TRENCH BEDDING DETAIL
 NOT TO SCALE

"AS-BUILT"

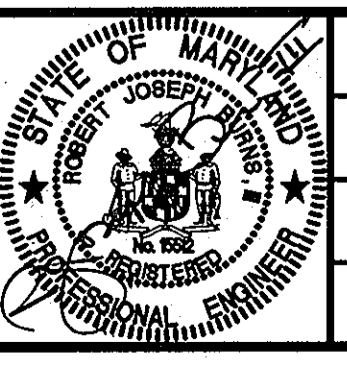
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *Janet L. ...* 3-17-05
 Chief, Bureau of Utilities: *Rita ...* 3-17-05

Chief, Bureau of Engineering: *Thomas ...* 3-16-05
 Chief, Utility Design Division: *...* 3-16-05

Dewberry
 Dewberry & Davis LLC

3120 LORD BALTIMORE DRIVE
 SUITE 211
 BALTIMORE, MD 21244-2662
 410.265.9500
 FAX: 410.265.9875



DES:	FMS
DRN:	AZW
CHK:	RJB
DATE:	
BY:	NO.
REVISIONS:	DATE

PROFILES

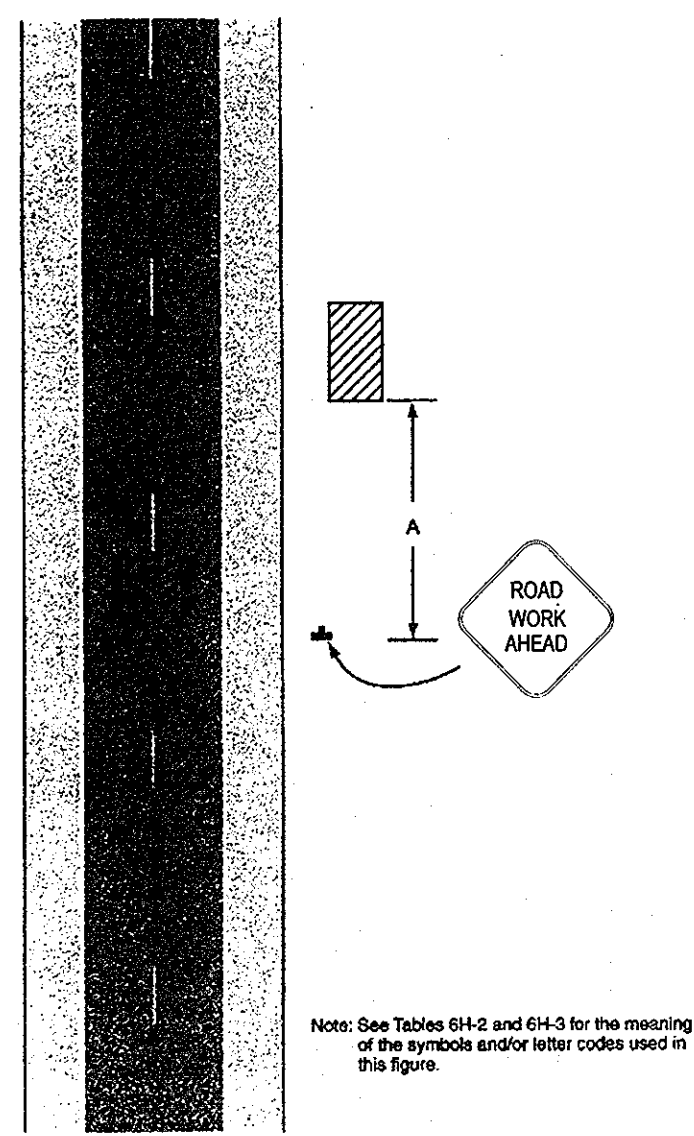
60' SCALE MAP NO. 50
 BLOCK NO. 4

WHISKEY BOTTOM ROAD
 WATER MAIN EXTENSION
 CAPITAL PROJECT W-8270
 CONTRACT 44-4259

ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE: SHOWN
 SHEET 3 OF 7

Figure 6H-1. Work Beyond the Shoulder (TA-1)



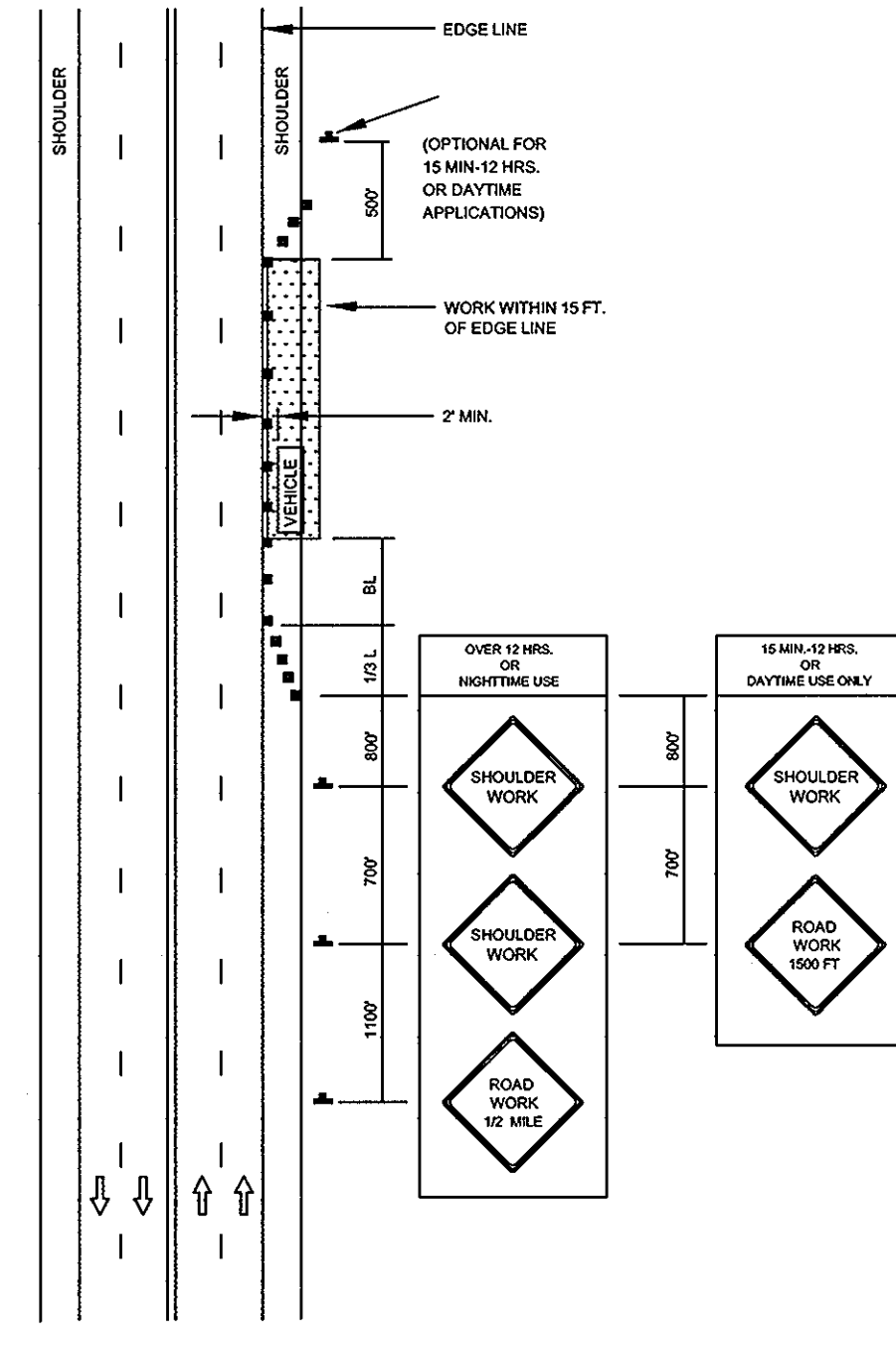
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-62.

NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14.

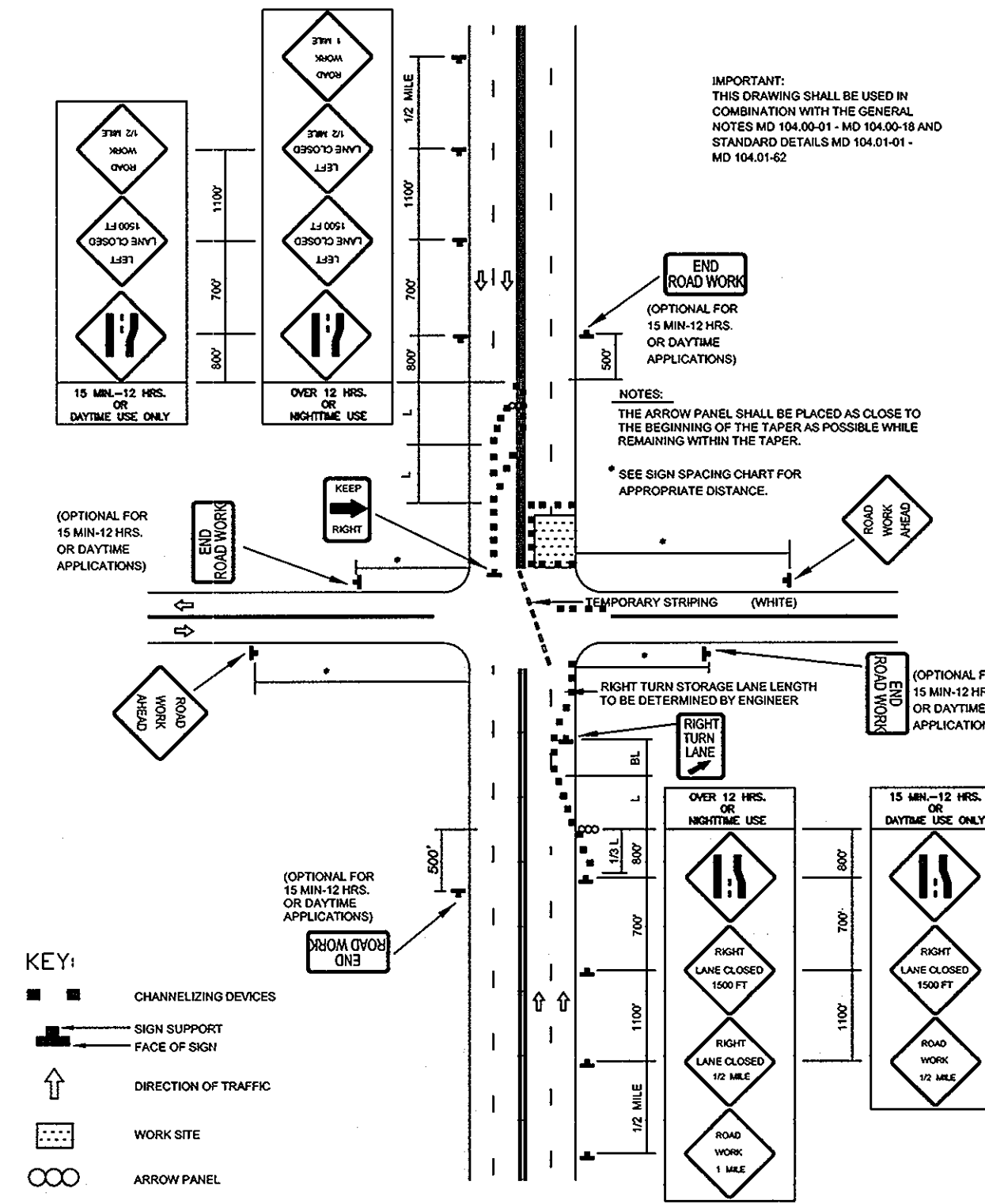
WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

KEY:

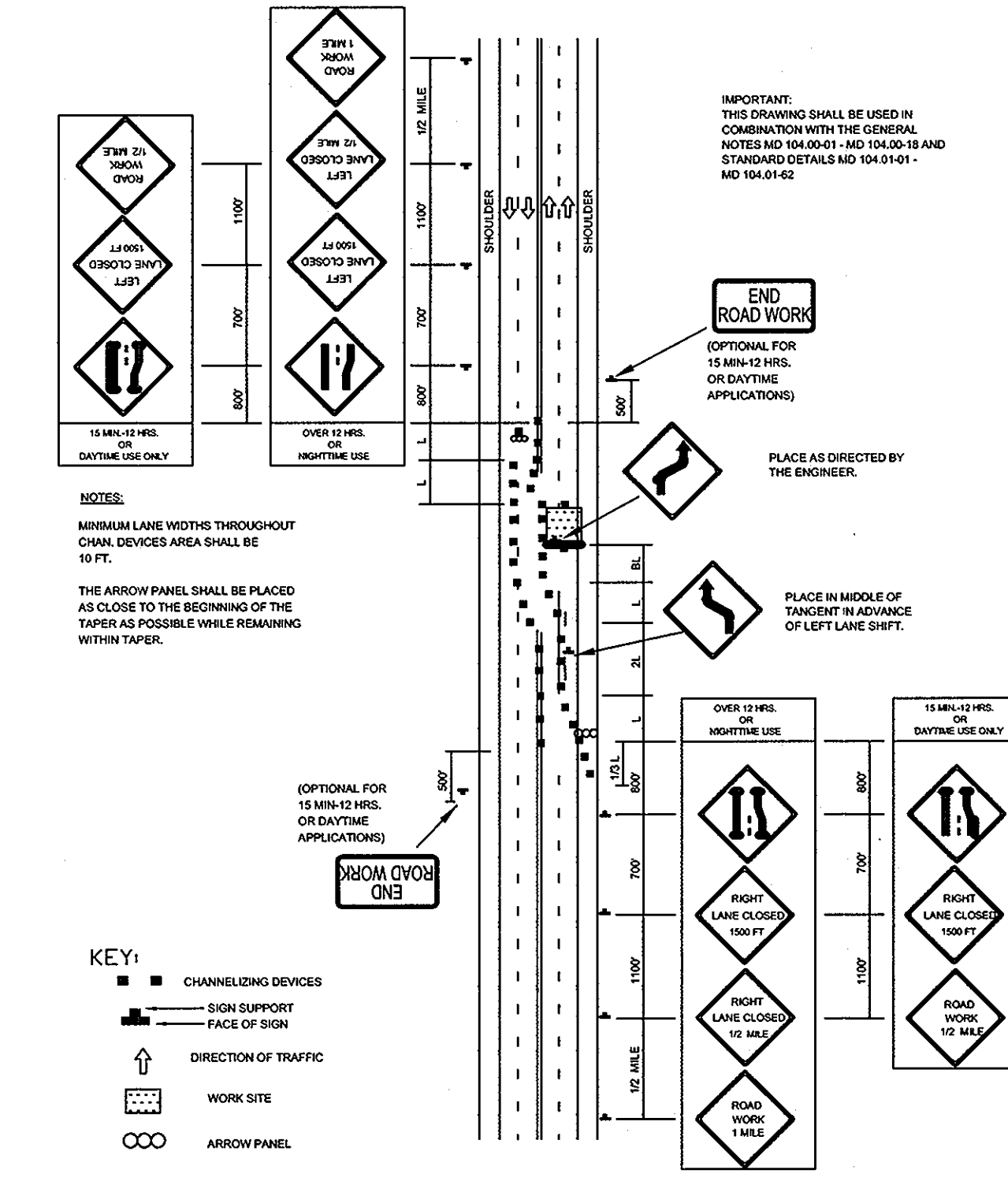
- CHANNELLING DEVICES
- SIGN SUPPORT
- ↑ FACE OF SIGN
- ↑ DIRECTION OF TRAFFIC
- ▭ WORK SITE



SHA STANDARD DETAIL MD 104.03-01
SHOULDER WORK/MULTILANE UNDIVIDED
GREATER THAN 40 MPH
NTS



SHA STANDARD DETAIL MD 104.03-13
INTERSECTION FAR-SIDE CLOSURE/
MULTILANE UNDIVIDED
GREATER THAN 40 MPH
NTS



SHA STANDARD DETAIL MD 104.03-07
PARTIAL ROADWAY CLOSURE/
MULTILANE UNDIVIDED
GREATER THAN 40 MPH
NTS

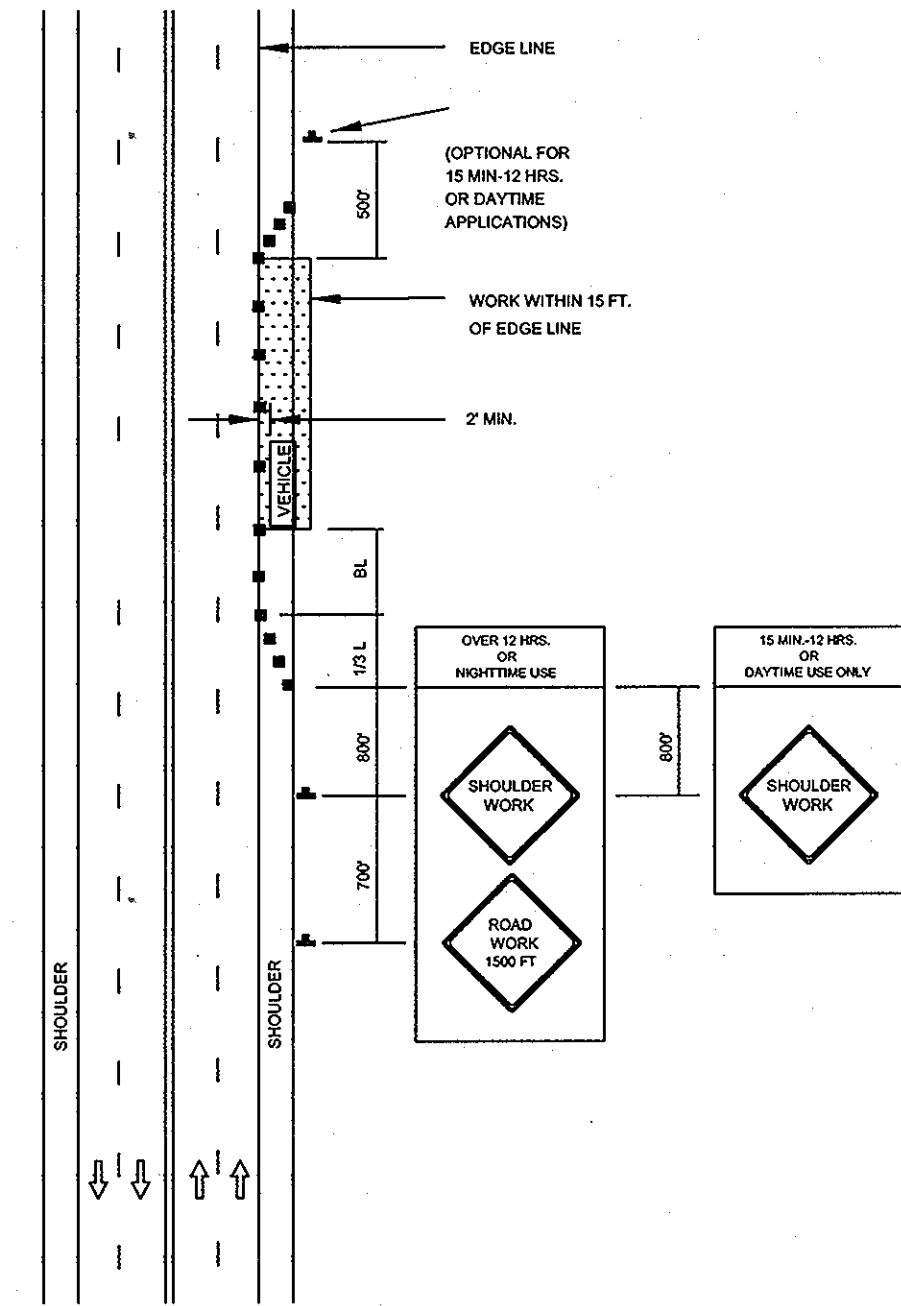
NOTES:

1. No lane closures are permitted on U.S. Rte. 1 weekdays between the hours of 6:00 a.m. to 9:00 a.m. and 3:00 p.m. to 7:00 p.m.
2. No lane closures are permitted on Whiskey Bottom Road weekdays between the hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.
3. Steel plates must be used with cold patch on edges if any excavation cannot be backfilled to specifications.
4. If steel plates are used, warning signs reading "STEEL PLATES AHEAD" must be placed along the road at locations to be determined by the Engineer.

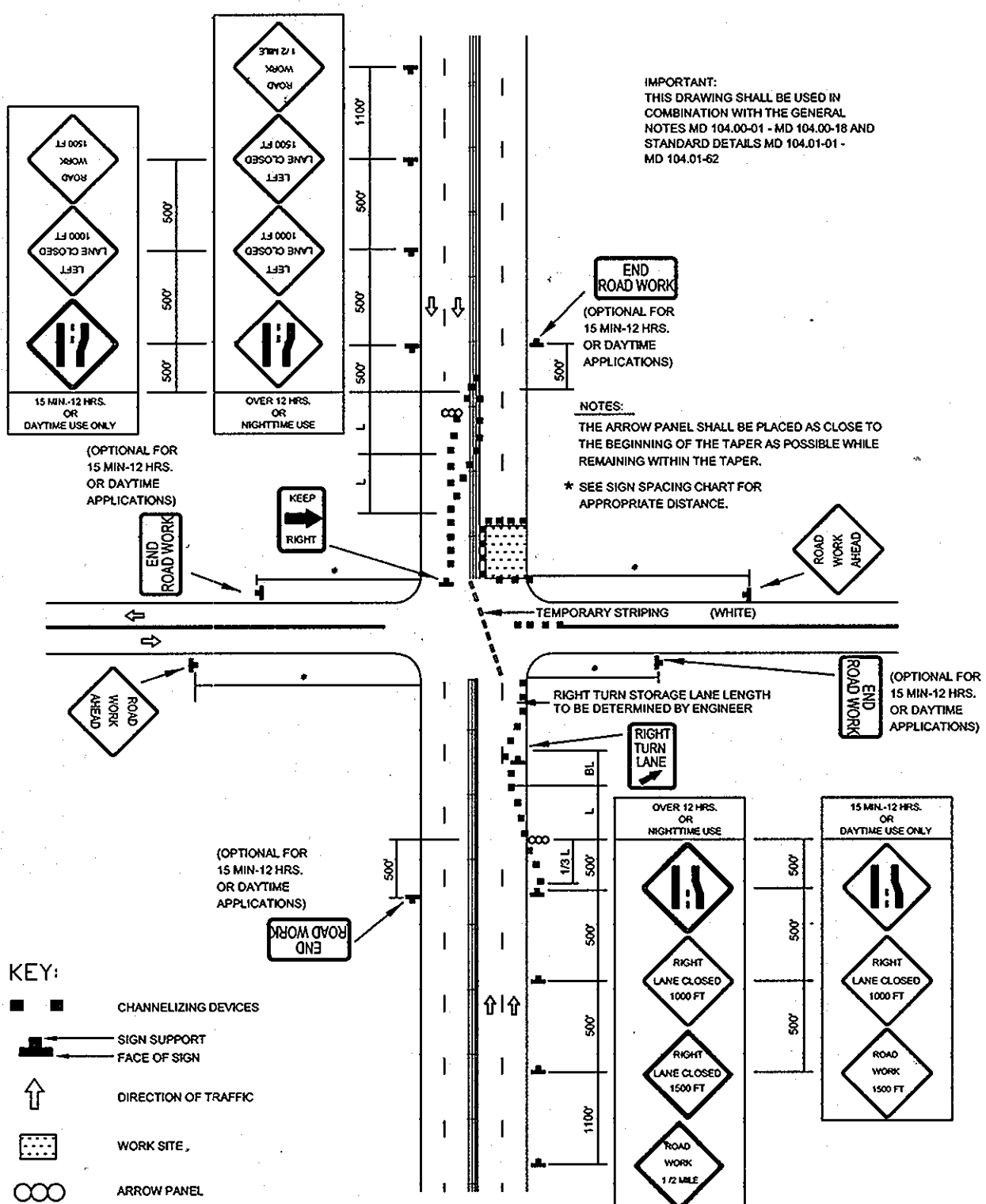
- TABLE 6H-2 - SYMBOLS**
- ○ ○ Arrow panel
 - ○ ○ Arrow panel support or trailer (shown facing down)
 - Changeable message sign or support trailer
 - Channelizing device
 - ▭ Crash Cushion
 - Direction of temporary traffic detour
 - Direction of traffic
 - ⚠ Flagger
 - ⚠ High level warning device (Flag tree)
 - Luminaire
 - ▭ Pavement markings that should be removed for a long term project
 - ⊕ Sign (shown facing left)
 - ⊕ Surveyor
 - ▭ Temporary barrier
 - ▭ Temporary barrier with warning lights
 - ⚠ Traffic or Pedestrian signal
 - ▭ Truck mounted attenuator
 - ▭ Type III Barricade
 - ⚠ Warning lights
 - ▭ Work space
 - ▭ Work vehicle

KEY:

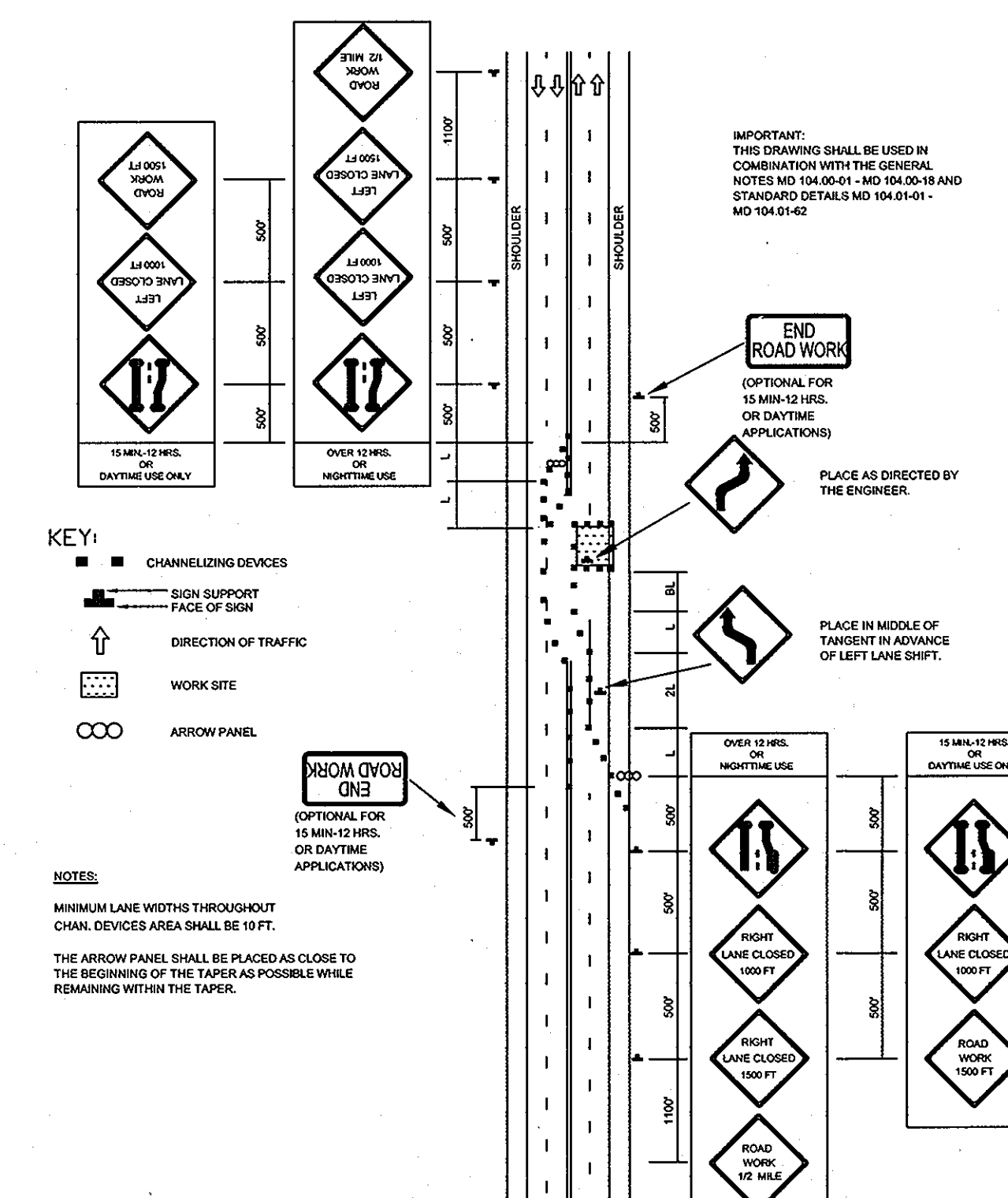
- CHANNELLING DEVICES
- SIGN SUPPORT
- ↑ FACE OF SIGN
- ↑ DIRECTION OF TRAFFIC
- ▭ WORK SITE



SHA STANDARD DETAIL MD 104.03-02
SHOULDER WORK/MULTILANE UNDIVIDED
LESS THAN 40 MPH
NTS



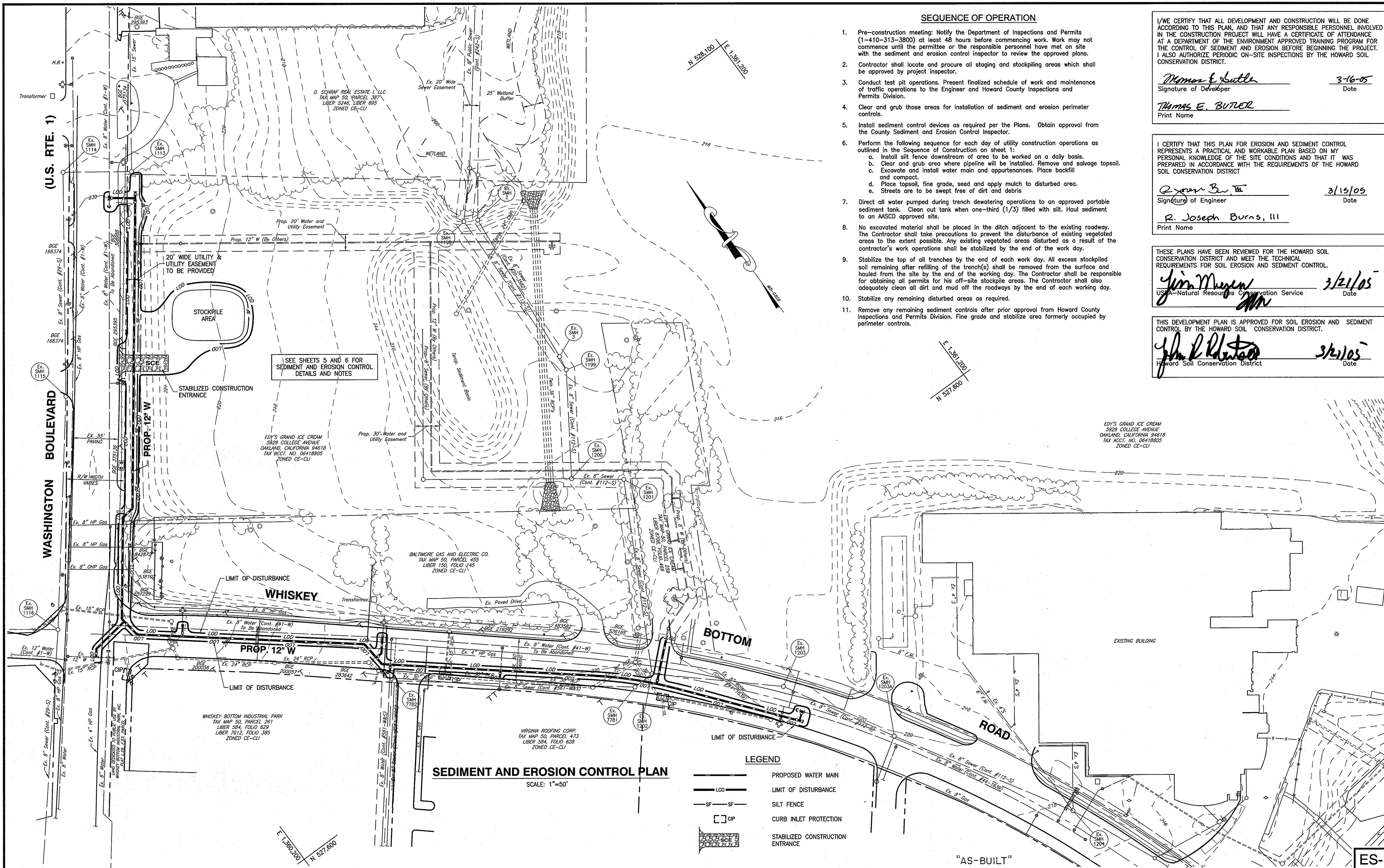
SHA STANDARD DETAIL MD 104.03-14
INTERSECTION FAR-SIDE CLOSURE/
MULTILANE UNDIVIDED
LESS THAN 40 MPH
NTS



SHA STANDARD DETAIL MD 104.03-08
PARTIAL ROADWAY CLOSURE/
MULTILANE UNDIVIDED
LESS THAN 40 MPH
NTS

"AS-BUILT"

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>Janet J. ...</i> 3/7/05 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Rita M. ...</i> 3-17-05 CHIEF, BUREAU OF UTILITIES DATE</p>	<p>Dewberry Dewberry & Davis LLC</p> <p>3120 LORD BALTIMORE DRIVE SUITE 211 BALTIMORE, MD 21244-2682 410.285.9500 FAX: 410.285.8875</p>	<p>STATE OF MARYLAND PROFESSIONAL ENGINEERING</p>	<p>DRN: SMS DRN: AZW CHK: RJB DATE:</p>	<p>TRAFFIC CONTROL DETAILS</p> <p>600' SCALE MAP NO. 50 BLOCK NO. 4</p>	<p>WHISKEY BOTTOM ROAD WATER MAIN EXTENSION CAPITAL PROJECT W-8270 CONTRACT 44-4259</p> <p>ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND</p>	<p>SCALE: SHOWN</p> <p>SHEET 4 OF 7</p>
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SEQUENCE OF OPERATION

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

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Thomas E. Butler
Signature of Developer
3-16-05
Date

THOMAS E. BUTLER
Print Name

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

R. Joseph Burns, III
Signature of Engineer
3/15/05
Date

R. Joseph Burns, III
Print Name

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer
Signature
3/21/05
Date

USDA-Natural Resources Conservation Service

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

John R. Rhoton
Signature
3/21/05
Date

Howard Soil Conservation District

LEGEND

	PROPOSED WATER MAIN
	LIMIT OF DISTURBANCE
	SILT FENCE
	CURB INLET PROTECTION
	STABILIZED CONSTRUCTION ENTRANCE

SEDIMENT AND EROSION CONTROL PLAN
SCALE: 1"=50'

"AS-BUILT"

ES-1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

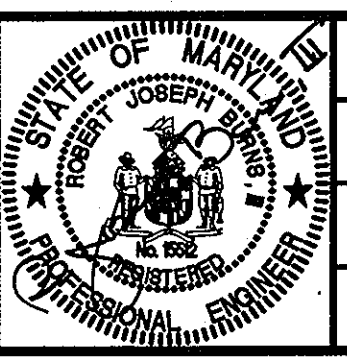
John R. Rhoton 3/17/05
DIRECTOR OF PUBLIC WORKS DATE

Thomas E. Butler 3-16-05
CHIEF, BUREAU OF ENGINEERING DATE

R. Joseph Burns, III 3-17-05
CHIEF, BUREAU OF UTILITIES DATE

Thomas E. Butler 3-16-05
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry & Davis LLC
3120 LORD BALTIMORE DRIVE
SUITE 211
BALTIMORE, MD 21244-2662
410.265.9500
FAX: 410.265.6875



DES:	SMS			
DRN:	AZW			
CHK:	RJB			
DATE:				
BY	NO.	REVISIONS	DATE	

SEDIMENT AND EROSION CONTROL PLAN

600' SCALE MAP NO. 50
BLOCK NO. 4
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

WHISKEY BOTTOM ROAD WATER MAIN EXTENSION
CAPITAL PROJECT W-8270
CONTRACT 44-4259

SCALE: SHOWN
SHEET 5 OF 7

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Section I - Vegetative Stabilization Methods and Materials

- A. Site Preparation
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
- B. Soil Amendments (Fertilizer and Lime Specifications)
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3" - 5" of soil by disking or other suitable means.

- C. Seedbed Protection
 - Temporary Seeding
 - Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3" - 5" of soil by disking or other suitable means.
 - Permanent Seeding
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lowgrass or sereca espedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3" - 5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil tests or as included on the plans.
 - Mix soil amendments into the top 3" - 5" of topsoil by disking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1" - 3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

- D. Seed Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 - Incubant - The incubant for treating legume seed in the seed mixtures shall be a pure culture of the following bacteria prepared specifically for the species. Incubants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80° F. can weaken bacteria and make the inoculant less effective.
- E. Methods of Seeding
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: maximum of 100 lbs/acre total of soluble nitrogen; P205 (phosphorus): 200 lbs/acre; K20 (potassium): 200 lbs/acre.
 - Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- F. Mulch Specifications (In order of preference)
 - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 - Wood Cellulose Fiber Mulch (WCFM)
 - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, shall contain no germination or growth inhibiting factors.
 - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a biotter-like ground cover, on application having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

- G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1 and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons water.
- H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
 - Wood Cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should be applied uniformly after binder application. Synthetic binders - such as Acrylic DLR (Agra-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

- I. Incremental Stabilization - Cut Slopes
 - All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
 - Construction sequence (refer to Figure 4 below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 - Perform phase 1 excavation, dress and stabilize.
 - Perform phase 2 excavation, dress, and stabilize. Overseed phase 1 areas as necessary.
 - Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun, the operation should be continuous from grubbing through completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the season will necessitate the application of temporary stabilization.

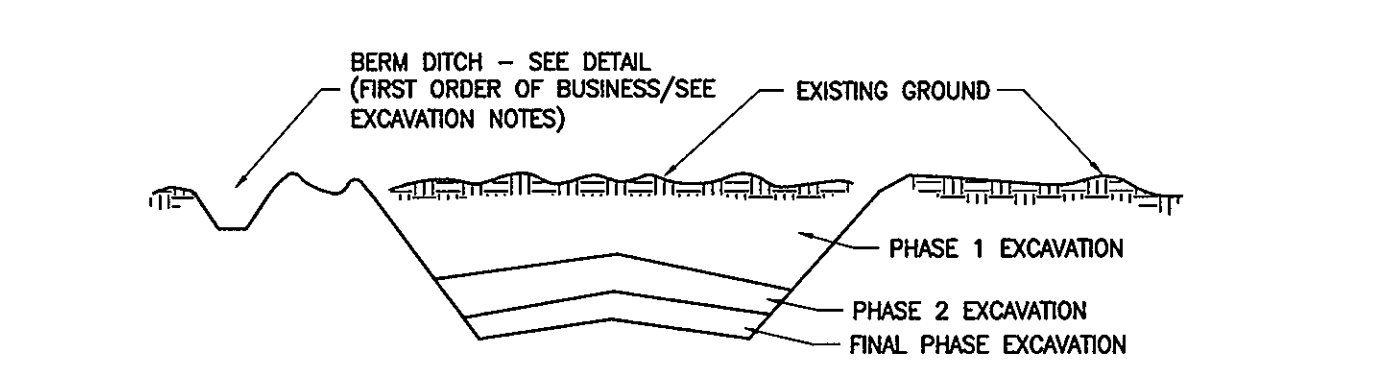


Figure 4 Incremental Stabilization - Cut

- J. Incremental Stabilization of Embankments - Fill Slopes
 - Embankments shall be constructed in lifts as prescribed on the plans. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.
 - At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
 - Construction sequence: Refer to Figure 5 (below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct Slope Silt Fence on low side of fill as shown in Figure 4, unless other methods shown on the plans address this area.
 - Place phase 1 embankment, dress and stabilize.
 - Place phase 2 embankment, dress and stabilize.
 - Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of the fill has begun, the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

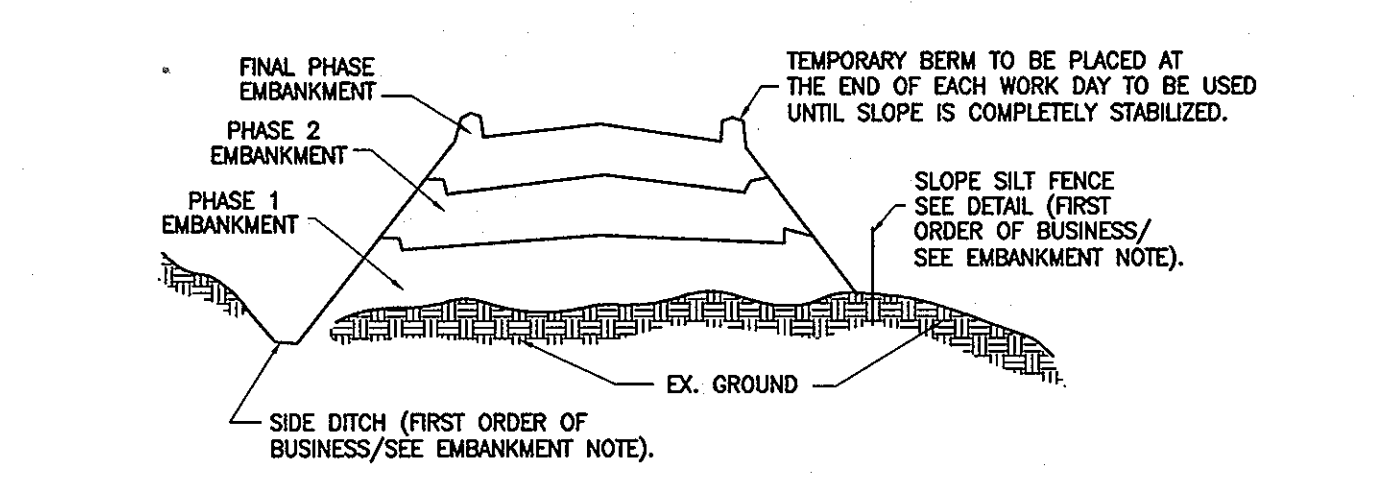


Figure 5 Incremental Stabilization - Embankment Fill Comply with MD 378 Specifications.

Section II - Temporary Seeding

- Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.
 - Seed Mixtures - Temporary Seeding
 - Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this Summary is not put on the plans and completed, then Table 26 must be put on the plans.
 - For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

SEED MIXTURE (HARDINESS ZONE - 6b)				FERTILIZER RATE (10-10-10)		LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P205
	ANNUAL RYEGRASS	50 LB/AC	3/1 - 4/30 8/15 - 11/1	1/4" - 1/2"	600 LB/AC (15 LB/1000 SF)	2 TONS/AC (100 LB/1000 SF)
	MILLET	50 LB/AC	5/1 - 8/14	1/2"		

Section III: Permanent Seeding

- Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.
 - Seed Mixtures - Permanent Seeding
 - Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seed Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this Summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or athletic treatment may be found in USDA-SCS technical Field Office Guide, Section 342 - Critical Area Planting. For special low maintenance areas, see Section IV Sod and V Turfgrass.
 - For sites having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.
 - For areas receiving low maintenance, apply ureamorphic fertilizer (46-0-0) at 3 1/2 lbs./1000 sq. ft. (150 lbs/acre), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

SEED MIXTURE (HARDINESS ZONE 6b)				FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P205	K20
3	TALL FESCUE PERENNIAL RYE KY.BLUEGRASS	125 LB/AC 15 LB/AC 10 LB/AC	3/1 - 5/15 8/15 - 10/15	1/4" - 1/2"	90 LB/AC (15 LB/1000 SF)	175 LB/AC (4 LB/1000 SF)	175 LB/AC (4 LB/1000 SF)
7	TALL FESCUE WEEPING LOVEGRASS SERECA LESPEDEZA	110 LB/AC 3 LB/AC 20 LB/AC	3/1 - 10/15	1/4" - 1/2"			2 TONS/AC (100 LB/1000 SF)

Section IV - Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

- A. General specifications
 - Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
 - Sod shall be machine cut uniform soil thickness of 3/4", plus or minus 1/4", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width and length. Maximum allowable deviation from standard width and lengths shall be 5 percent. Broken pods and torn or uneven ends will not be acceptable.
 - Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
 - Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
 - Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.
- B. Sod Installation
 - During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
 - The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
 - Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
 - Sod shall be watered immediately following rolling or tamping until the underside of the new sod pod and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.
- C. Sod Maintenance
 - In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2" and 3" unless otherwise specified.

Section IV - Turfgrass Establishment

- Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and rolled to prepare a proper seedbed. Stones and debris over 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty. Note: Choose certified material. Certified material is the best guarantee to cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
- A. Permanent Seeding
 - Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
 - Kentucky Bluegrass/Perennial Rye - Full sun mixture - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding rate: 2 pounds mixture/1000 square feet. A minimum of 3 Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.
 - Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue Cultivars 95-100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate: 5 to 8 lb/1000 sq. ft. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue - Shade Mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: certified Kentucky Bluegrass Cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 lbs/1000 square feet. A minimum of 3 Kentucky bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
- Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland".
- B. Ideal times of seeding
 - Western MD: March 15 - June 1, August 1 - October 1 (Hardiness Zones - 5b, 6a)
 - Central MD: March 1 - May 15, August 15 - October 15 (Hardiness Zone - 6b)
 - Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15 (Hardiness Zones - 7a,7b)
- C. Irrigation
 - If soil moisture is deficient, supply new seedlings with adequate water for plant growth (23/64" 0 1" every 3 to 4 days depending on soil type) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

- D. Repairs and Maintenance
 - Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season.
 - Once the vegetation is established, the site shall have 95% ground cover to be considered adequately stabilized.
 - If the stand provides less than 40% ground coverage, reestablish following original time, fertilizer, seedbed preparation and seeding recommendations.
 - If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing half of the rates originally applied may be necessary.
 - Maintenance fertilizer rates for permanent seedings are shown in table 24. For lawns and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No. 171.

SEDIMENT CONTROL GENERAL NOTES

- A minimum of 48 hours notice must be given to Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction. 410-313-1855.
- All vegetative and structural practices are to be installed according to the provisions of the plan and are to be in conformance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control and revisions thereto.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for permanent seeding (Sec. 51), sod (Sec. 54) temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis
 - Site is defined as areas involving any improvement.
 - Total Area of Site: 0.52 Acres
 - Area Disturbed: 0.52 Acres
 - Area to be paved: 587 Sq. Yds.
 - Area to be Vegetatively Stabilized: 352 Sq. Yds.
 - Total Cut: N/A Cu. Yds.
 - Total Fill: N/A Cu. Yds.
 - Offsite waste/borrow area location: To be determined by contractor.
- Any sediment control practices which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.
- Spoil from trench excavation shall be placed on the uphill side of the excavation.

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Thomas E. Butler 3-16-05
Signature of Developer Date
THOMAS E. BUTLER
Print Name

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R. Joseph Burns, III 3/15/05
Signature of Engineer Date
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Print Name

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Jim Mogen 3/21/05
USDA-Natural Resources Conservation Service Date

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

John L. Rafter 3/21/05
Howard Soil Conservation District Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John L. Rafter 3/17/05
DIRECTOR OF PUBLIC WORKS DATE

Morgan & Butler 3-16-05
CHIEF, BUREAU OF ENGINEERING DATE

John L. Rafter 3-17-05
CHIEF, BUREAU OF UTILITIES DATE

John L. Rafter 3-16-05
CHIEF/UTILITY DESIGN DIVISION DATE

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Dewberry & Davis LLC

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DES: SMS
DRN: AZW
CHK: RJB
DATE:

SEAL OF THE STATE OF MARYLAND
JOSEPH P. WELLS
GOVERNOR

SEDIMENT AND EROSION CONTROL NOTES

600' SCALE MAP NO. 50 BLOCK NO. 4

BY NO. REVISIONS DATE

WHISKEY BOTTOM ROAD
WATER MAIN EXTENSION
CAPITAL PROJECT W-8270
CONTRACT 44-4259

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE: SHOWN
SHEET 7 OF 7

"AS-BUILT" ES-3