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	<u>LEGEND</u>	LIMIT OF DISTURBANCE ——LOD—					
R.O.W. LINE							
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	ı. L. ı	AT GRADE INLET PROTECTION	AGIP				
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NAME OF UTILITY CONTRACTOR	: IACOBONI SITE	SPECIALISTS 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			YPE OF BUILDING: RESIDENTIAL	14. The
Sediment control measures				MOINITY MAD		RAINAGE AREA: PATAPSCO	Bends thick s
will be implemented in accor 219 of the Specifications an	dance with Section		W & S Code County Use	VICINITY MAP SCALE: 1"=600'	NU	UMBER OF PARCELS: 18	as sho 15. The and co
drawings.			Water No. A01/D09 Test Gradient: 550		. ,	UMBER OF W.H.C.: 15	16. Ex
			Zone: 400		NU	UMBER OF S.H.C.: N/A	constru approp hyrants
Review for Howard Soil Cons meets technical requirements		DEVELOPER'S CE	RTIFICATION	ENGINEER'S CERT	TIFICATION		nyrants
Lim Marin	1 /4		HAT ALL THE DEVELOPMENT AND CONSTRUCTION WILL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN	BE DONE ACCORDING	· ·	EDIMENT CONTROL REPRESENTS A PRACTICABLE	
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This plan is approved for sediment control by the How	Ssion and	BEFORE BEGINNIN		CONSERVATION D		/ /	
District.	a. a. oon oonoo vacion	7.11		6/1/04		5/28/04	

GENERAL NOTES

- roximate location of existing mains are shown. All existing water main and fittings shall be
- horizontal controls are based on Maryland State Coordinates, NAD 83/91.
- vertical controls are based on NAVD 88.
- pipe elevations shown are invert elevations unless otherwise noted on the plans.
- or all utilities by a minimum of 12 inches. Clear all poles by 5'-0" minimum or tunnel as required otherwise noted. The owner has contacted the utility companies and has made arrangements for of poles as shown on the drawings. In the event the contractor's work requires the bracing of al poles, any cost incurred by the owner for the bracing of additional poles or damages shall be ed from monies owed the contractor. The contractor shall coordinate with the utility companies to the bracing of the poles.
- details not shown on the drawings and specifications, and for materials and construction methods, use County Design Manual, Volume IV, Standard Specifications and Detail for Construction (Latest Edition). tractor shall have a copy of Volume IV on the job.
- re test pits have been made on existing utilities, they are noted by the symbol 🖼 at the location test pit. A note or notes containing the results of the test pit or pits is included on the drawings. utilities in the vicinity of the proposed work for which test pits have not been dug shall be 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 working days before

work shown on these plans: 1-800-257-7777 1-800-252-1133 1-800-743-033 / 410-224-9210 410-850-4620 ontractor Services) nderground Damage Control) 410-787-9068 410-313-4900 of Utilities 410-531-5533 ighway Administration

- es and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located he 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 shall be included in the unit price bid for construction of the main.
- contractor shall notify the Bureau of Highways, Howard County, at 410-313-7450 at least five days before open cutting or boring/jacking of any County road for laying water/sewer mains or house tions. The approval of these drawings will constitute compliance with DPW requirements per Section a) of the Howard County Code.

WATER NOTES

- ot as indicated on the plans and noted below, all public water mains shall be polyvinyl chloride (PVC) pipe the requirements of AWWA C900 DR 18, pressure Class 150 and the Howard County Design Manual Volume dard Specifications and Details for Construction and all subsequent amendments thereto.
- os of all water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- ves adjacent to tees shall be strapped to tees.
- fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless se provided for on the drawings.
- hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be I in accordance with Standard Details. The soil around the fire hydrant shall be compacted in ince with Section 1000 and 1005 of the Standard Specifications.
- contractor shall not operate any water main valves on the existing water system.
- ntractor shall replace all WHC's. Termination of WHC shall be either at the outside meter or curb stop de meter settings.
- apporary water service connections should only occur between April 15th., and October 15th., and e closest available, serviceable fire hydrant. Contractor must also notify property owners 72 hours
- ductile iron pipes to be used on the public water system shall be class 54. Ductile iron fittings shall
- the requirements of the Howard County Standard Specifications and Details for Construction and shall be repoxy coated in accordance with AWWA C116. water house connections shall be copper meeting the requirements of and constructed in accordance with ward County Design Manual Volume IV—Standard Specifications and Details for Construction.
- fire hydrant leads including the tee shall be ductile iron class 54 meeting the requirements of and cted in accordance with the Howard County Design Manual Volume IV—Standard Specifications and
- for Construction. water mains constructed in fill areas shall be restrained ductile iron pipe class 54 meeting the requirements constructed in accordance with the Howard County Design Manual Volume IV — Standard Specifications and
- for Construction. water mains within casing pipes shall be restrained ductile iron pipe class 54 meeting the requirements of nstructed in accordance with the Howard County Design Manual Volume IV—Standard Specifications and Details
- following note is added to Howard County Standard Detail W2.22, Buttresses and Anchorages for Vertical When achoring PVC pipe, the strapping in contact with the pipe surface shall be 1—inch wide by 1/4—inch teel. The remaining portion of the strap shall be reinforcing bar sized in accordance with the pertinent chart wn on the detail."
- 4—inch temporary bypass water main piping shall be Certa—lok Yelomine restrained joint PVC pressure pipe uplings as manufactured by Certain Teed Corporation or approved equal.
- kisting water mains, including pipe material, fittings, valves and appurtenances excavated or removed for the uction of the new water main shall be removed from the work site and disposed of by the Contractor at an riate receiving facility at the Contractor's expense, unless otherwise directed by the Engineer. Existing fire removed as part of this construction shall be delivered to the Bureau of Utilities.

INDEX OF DRAWINGS

SHEET NO. TITLE

TITLE SHEET WATER PLAN AND PROFILE

SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

SEDIMENT AND EROSION CONTROL NOTES TEMPORARY WATER SERVICE CONNECTION PLAN

2007

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

6/1/04 BUREAU OF ENGINEERING 5-28-04

CHIEF, UTILITY DESIGN DIVISION

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

DEPARTMENT OF PUBLIC WORKS

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



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	СНК:	G.C.L.						HILL S
Z /O	7							
PATE	APRI	L, 2004	BY	NO.	REVISION	DATE		600' SCALE MAP NO. 38

PATTON HARRIS RUST & ASSOCIATES, pc

8818 CENTRE PARK DRIVE, COLUMBIA, MD 21045

TITLE SHEET

BLOCK NO. 3 & 9

BONNIE VIEW LANE AND HOOKS LANE WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241

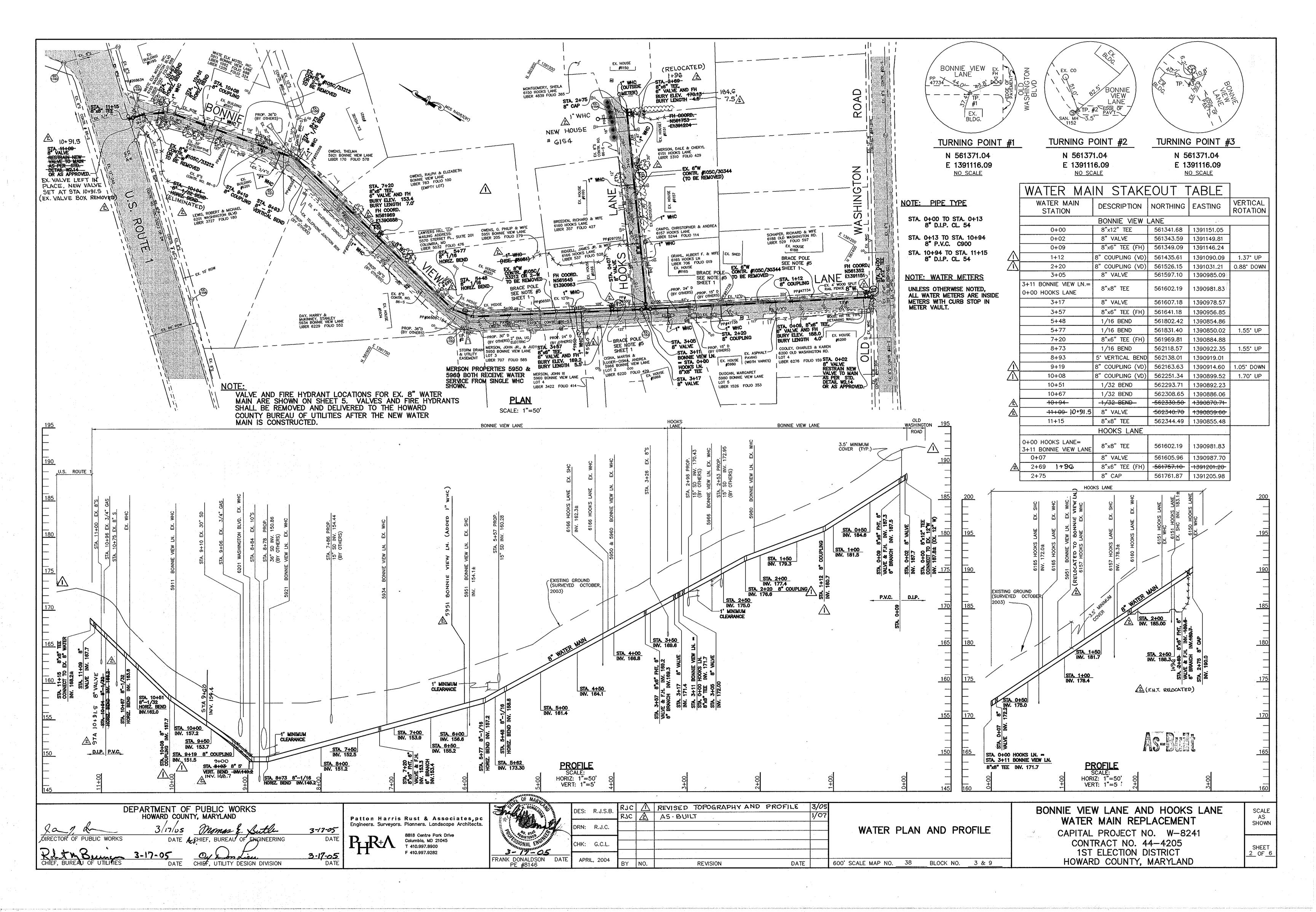
CONTRACT NO. 44-4205 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

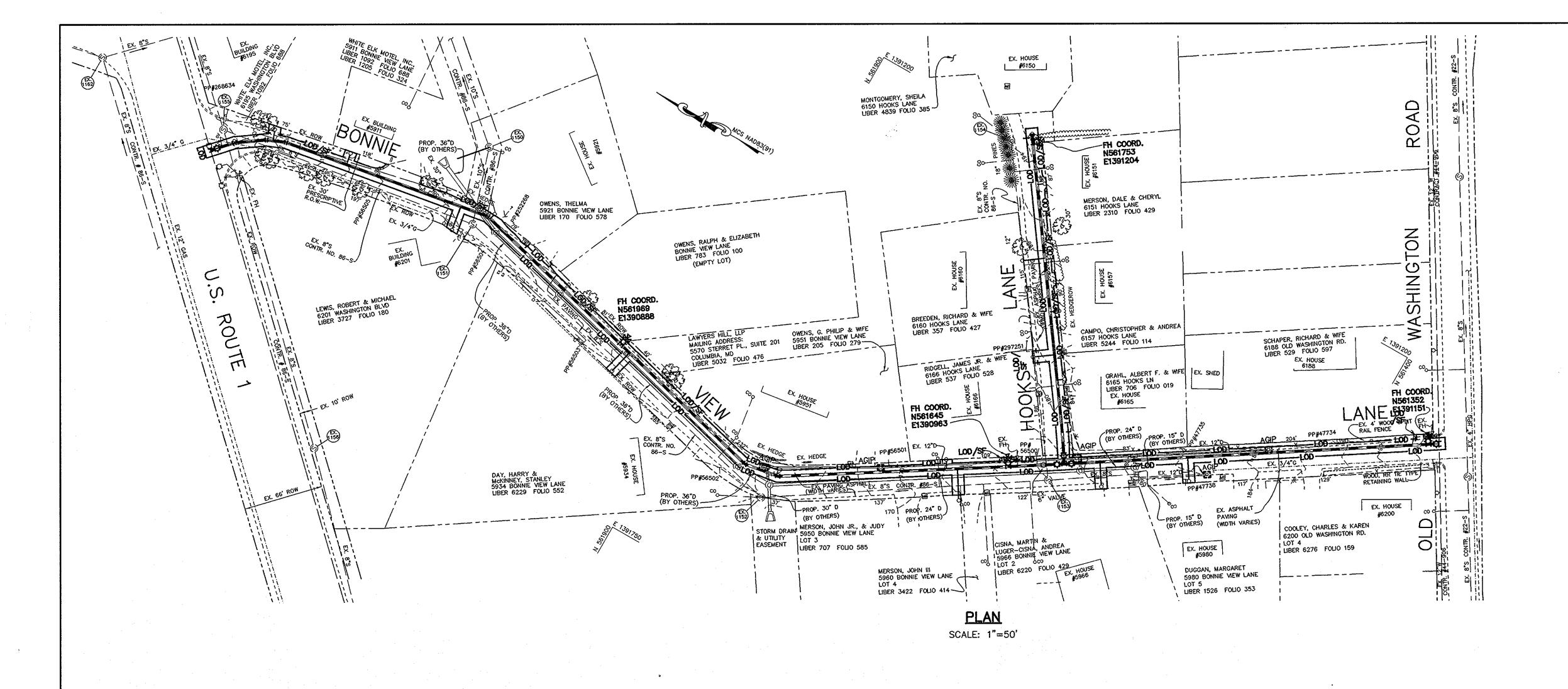
SHEET 1_OF_6

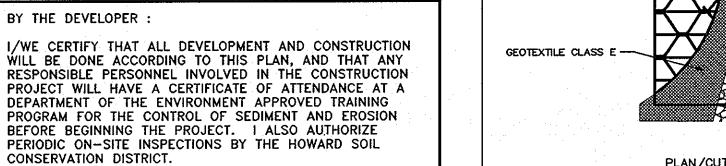
SCALE

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DEVELOPER Epson 6

BY THE ENGINEER :

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

ENGINEER

WITH THE REQUIREMENTS OF THE HOWARD SOIL

5/28/04

ENGINEER

DATE

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

HAS URAL RESOURCES OF INSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION
AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION
OF THE PROPERTY OF THE

AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT

HAVE BELLEVIEW OF THE HOWARD SOIL CONSERVATION DISTRICT

GEOTEXTILE CLASS E

PLAN/CUT AWAY VIEW

GEOTEXTILE CLASS E

PLAN/CUT AWAY VIEW

GEOTEXTILE CLASS E

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GEOTEXTILE CLASS E

WIRE TIES

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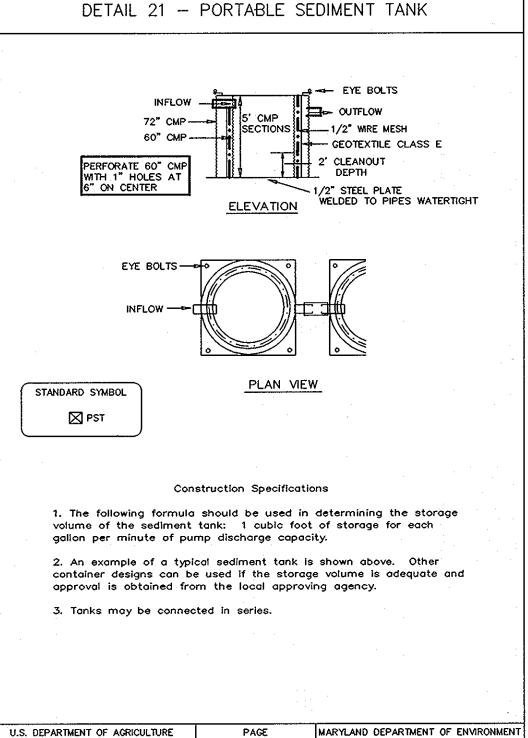
CROSS SECTION

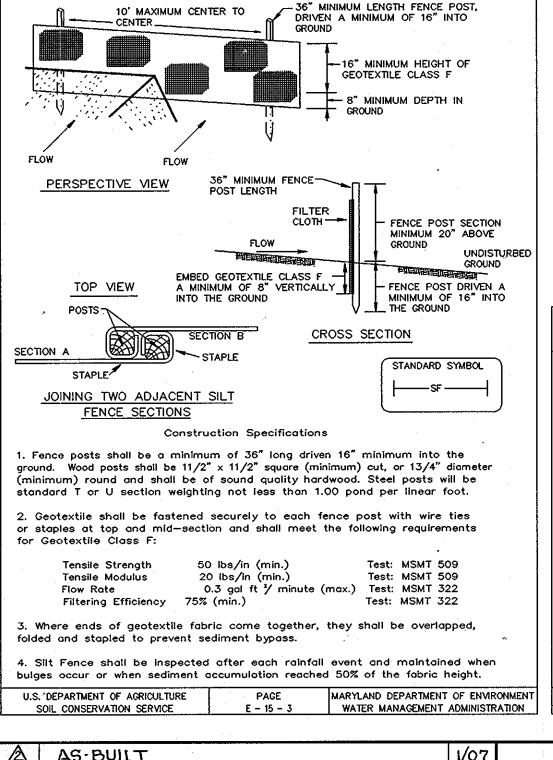
MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place 3/4" to 11/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.





DETAIL 22 - SILT FENCE

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- 3 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 STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4. 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, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED OF GRASSES.
- 5. 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.

6. SITE ANALYSIS:

AREA DISTURBED

AREA TO BE ROOFED OR PAVED

(RESTORATION OF EXISTING PAVEMENT)

AREA TO BE VEGETATIVELY STABILIZED

TOTAL CUT

TOTAL FILL

OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.

- 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 8. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 9. 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.
- 10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- 11. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- 12. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
- 13. SPOIL FROM TRENCHING OPERATIONS SHALL BE PLACED ON UPHILL SIDE OF TRENCHS.
- 14. A STABILIZED CONSTRUCTION ENTRANCE (SCE) MAY BE REQUIRED IF DEEMED NECESSARY BY THE SOIL CONSERVATION DISTRICT INSPECTOR. (FOR DETAIL SEE SHEET 4.)

•	•	
	Silt Fence Design Co	riteria
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
atter than 50:1	unlimited	unlimited
0:1 to 10:1	125 feet	1,000 feet
D:1 to 5:1	100 feet	750 feet
:1 to 3:1	60 feet	500 feet
:1 to 2:1	40 feet	250 feet
:1 and steeper	20 feet	125 feet

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

BLOCK NO. 3 & 9

WATER MANAGEMENT ADMINISTRATION

AS-BUILT 2007

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

A 7 La 6/1/04

RECTOR OF PUBLIC WORKS

DATE CHIEF, BUREAU OF ENGINEERING

DATE

DATE

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

CHIEF, UTILITY DESIGN DIVISION

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

Columbia, MD 21045

T 410.997.8900

F 410.997.9282

SOIL CONSERVATION SERVICE

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

c	Silver to the same of the same		DES:
S.	TOMA		DRN:
•	ONAL ENGINE		CHK:
	FRANK DONALDSON D	ÂTE	APR

PE #8146

WATER MANAGEMENT ADMINISTRATION

	DES:	R.J.S.B.	KJC		AS-BUILT		1/07
)_	DRN:	R.J.C.					
	CHK:	G.C.L.					
ATE	APRI	L, 2004	BY	NO.	REVISION	DATE	

SEDIMENT & EROSION CONTROL PLAN AND DETAILS

600' SCALE MAP NO. 38

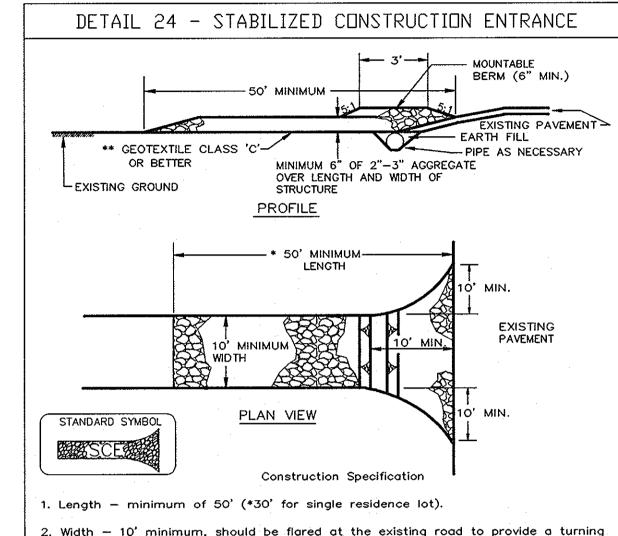
WATER MAIN REPLACEMENT
CAPITAL PROJECT NO. W-8241
CONTRACT NO. 44-4205
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

BONNIE VIEW LANE AND HOOKS LANE

SCALE AS SHOWN SHEET 3 OF 6

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT (1 DAY)
- CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION, INSPECTION DIVISION (410-313-1810) PRIOR TO STARTING WORK. (1 DAY) INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL
- VOLUME IV. (2 DAYS) INSTALL TEMPORARY WATER SERVICE CONNECTIONS. (5 DAYS)
- EXCAVATE AND INSTALL PROPOSED 8" WATER MAIN AND WATER HOUSE CONNECTIONS. (45 DAYS)
- 6. TEST AND DISINFECT PROPOSED WATER MAIN. (2 DAYS)
- 7. RESTORE TRENCHES TO THEIR ORIGINAL CONDITION WITH TEMPORARY PAVING AS PER HOWARD COUNTY STANDARDS AND
- SPECIFICATIONS. (5 DAYS) 8. CONNECT WATER HOUSE CONNECTIONS (WHC) TO EXISTING METERS. (4 DAYS)
- 9. REMOVE TEMPORARY SERVICE CONNECTION PIPING. (2 DAYS)
- 10. INSTALL PERMANENT PAVING PATCH OVER TRENCH. (5 DAYS)
- 11. UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTION, REMOVE SEDIMENT CONTROL DEVICES. (2 DAYS)



- Width 10' minimum, should be flared at the existing road to provide a turning.
- 3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family
- 4. Stone crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water — all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location — A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance. U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE

BY THE DEVELOPER:

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.

DEVELOPER.

BY THE ENGINEER

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

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

THIS DEVELOPMENT PLANTS AFTERVED FOR SOIL EROSION THE HOWARD SOIL CONSERVATION

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF ENGINEERING

CHIEF! UTILITY DESIGN DIVISION

i. TEMPORARY SEEDING

SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL, AT A DEPTH OF 3-6" 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 ROUGHEST CONDITION. SLOPED AREA (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE,

21.0 STANDARD AND SPECIFICATIONS <u>FOR TOPSOIL</u>

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. CONDITIONS WHERE PRACTICE APPLIES

I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

- a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR
- FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1

SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS. CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTATION STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

- I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11" IN DIAMETER.
- NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED. iii. WHERE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS,

II. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES: I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

- i. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME
- AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING: a. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
- b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
- c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED. d. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- NOTE: TOPSOIL SUBSTITUTES TO AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - BSECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION

- I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
- II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE
- MAINTAINED. ALBEIT 4" 8" HIGHER IN ELEVATION. III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE
- FORMATION OF DEPRESSIONS OR WATER POCKETS. IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER
- GRADING AND SEEDBED PREPARATION. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW: I. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5

ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITE HAVING DISTURBED AREAS UNDER 5 ACRES

SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE

- SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: A. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
- B. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS. THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
- C. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET. D. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. SITE PREPARATION

- i. INSTALL SEDIMENT AND EROSION CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS
- . PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.
- iii. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT
- COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.
- II. 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 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
- III. LIME MATERIAL 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.
- iv. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION:

- b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- c. INCORPORATE LIME AND FERTILIZER INTO THE 3-5" OF SOIL BY DISKING OR OTHER SUITABLE

ii. PERMANENT SEEDING.

- a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
- 1. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
- 2. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
- 3. 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 IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
- 4. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
- 5. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT
- 6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN

ACCORDANCE WITH SECTION 21 STANDARDS AND SPECIFICATIONS FOR TOPSOIL.

- b. 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.
- c. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.
- d. MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE REMOVE LARGE OBJECTS SUCH AS 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 (GREATER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN RREGULAR 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

- I 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.
- ii. INOCULANT THE INOCULATION FOR TREATING LEGUME SEEDS IN THE MIXTURE SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED ESPECIALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD

- FERTILIZER). BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.
- a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION AMOUNTS WILL
- b. 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
- c. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY
- a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL. AT THE RATES PRESCRIBED FOR TEMPORARY OR PERMANENT SEEDING. THE SEEDED AREA SHALL THEN BE ROLLED WITH
- b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING KATE IN EACH DIRECTION.
- iii. DRILL OR CULTIPACKER SEEDING, MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH
- a. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO
- b. 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)

- i. 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.
- ii. WOOD CELLULOSE FIBER MULCH (WCFM)
- a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
- b. WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN A PACKAGE THAT WILL PROVIDE AN
- d. 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 BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL
- e. WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS
- i. IF GRADING IS COMPLETED OUTSIDE THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND
- SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE
- iii. WOOD CELLULOSE FIBER USED A S A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500
- 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.

- I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE 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
- ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LBS/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 OF WATER.
- iii. 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 APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.
- iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300-3,000 FEET LONG.

SECTION II TEMPORARY SEEDING

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- i. SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY
- ii. SOIL AMENDMENTS : APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.).
- iii. SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.07 LBS. PER 1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28. PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
- iv. MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL. PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL. PER ACRE (8 GAL. PER 1000 SQ.FT.) FOR ANCHORING.
- REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SECTION III PERMANENT SEEDING

UPPER THREE INCHES OF SOIL.

- APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
- i. SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY
- ii. SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
- a. PREFERRED APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING. APPLY 400 LBS.
- b. ACCEPTABLE -- APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO

PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 1000 SQ.FT.).

- iii. SEEDING: FOR THE PERIOD MARCH 1 THRU APRIL 30 AND FROM AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS. PER 1000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE(0.05 LBS. PER 1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 THRU FEBRUARY 28,
- PROTECT SITE BY ONE OF THE FOLLOWING OPTIONS : a. 2 TONS PER ACRE OF WELL ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING.
- b. USE SOD.
- c. SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH

WITH 2 TONS PER ACRE WELL ANCHORED STRAW.

- iv. MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 SO.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE(5 GALLONS PER 1000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS; ON SLOPES 8 FEET OR HIGHER, USE 347 GALLONS PER ARCE(8 GALLONS PER 1000 SQUARE FEET) FOR ANCHORING.
- v. MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS,

SECTION IX SOD

REPLACEMENTS AND RESEEDINGS.

A. GENERAL SPECIFICATIONS

C. SOD MAINTENANCE

- i. 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.
- ii. SOD SHALL BE MACHINE CUT AT A 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 WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- III. 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.
- iv. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL. v. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED

- i. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD. ii. THE FIRST ROW SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY
- ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS. III. 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,

STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN

iv. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD 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.

i. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY

SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.

BE MAINTAINED BETWEEN 2" AND 3" UNLESS OTHERWISE SPECIFIED.

DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING

II. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT. iii. 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

BONNIE VIEW LANE AND HOOKS LANE WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241

CONTRACT NO. 44-4205 1ST ELECTION DISTRICT

SHOWN

HOWARD COUNTY, MARYLAND

<u>4</u> OF <u>6</u>

ADEQUATE ROOT PENETRATION.

- NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.
- 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 75-80F CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS

E. METHODS OF SEEDING:

- i. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND
- NOT EXCEED THE FOLLOWING: NITROGEN, MAXIMUM OF 100 LB TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS): 200 LBS/AC. K20 (POTASSIUM): 200 LBS/AC.
- ii. DRYSEEDING: THIS INCLUDES USE OF CONVENTIONAL, DROP OR BROADCAST SPREADERS.
- A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

- APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. c. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
- COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF
- WHAT WILL BE PHYTO-TOXIC. APPROXIMATELY 10 MM. DIAMETER APPROXIMATELY 1MM, PH RANGE OF 4.0 TO 8.5, ASH CONTENT
- SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS. ii. 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
- LBS/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 OF WATER.

DATE

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APRIL, 2004

NO.

REVISION

AS-BUILT

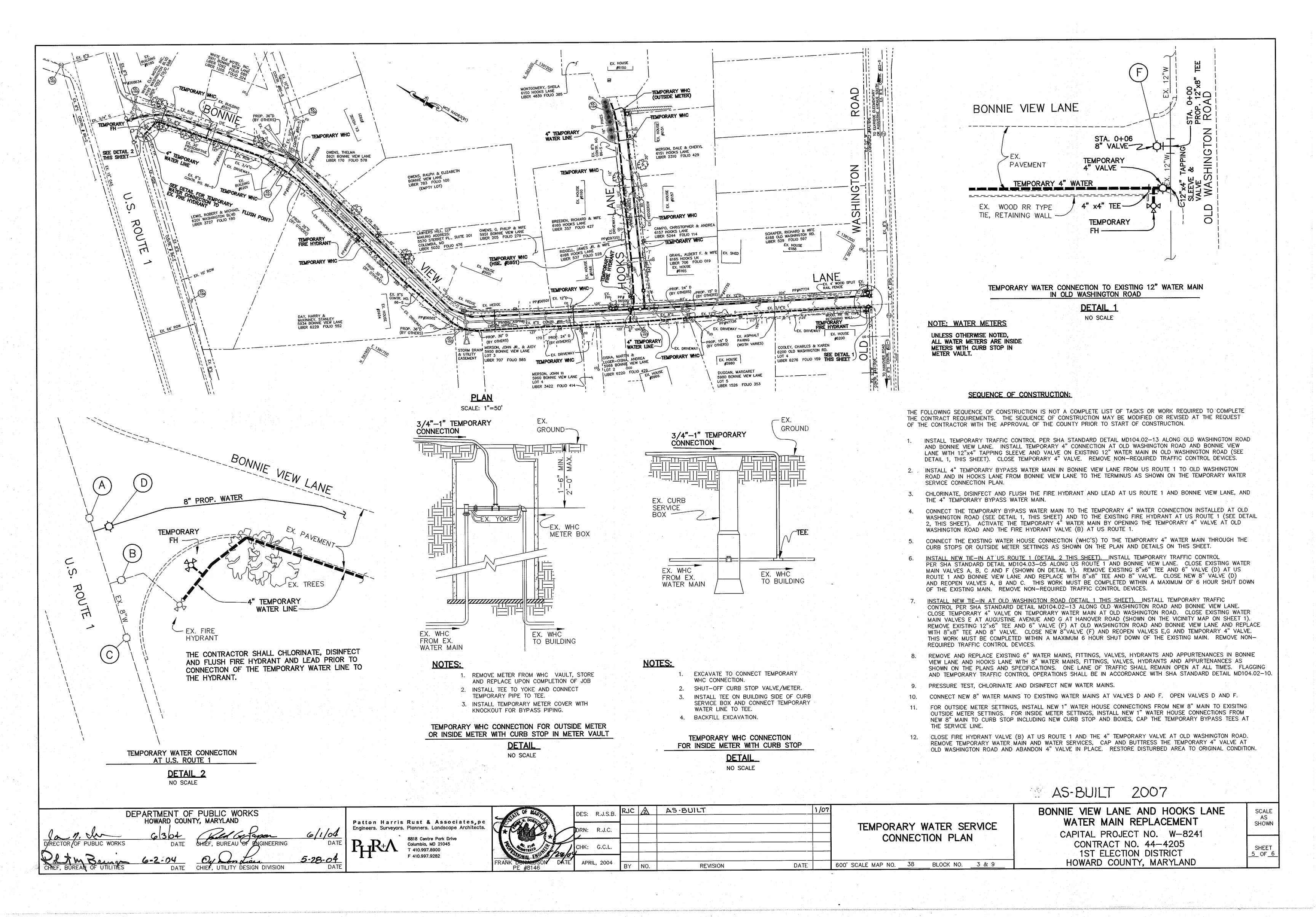
600' SCALE MAP NO. 38

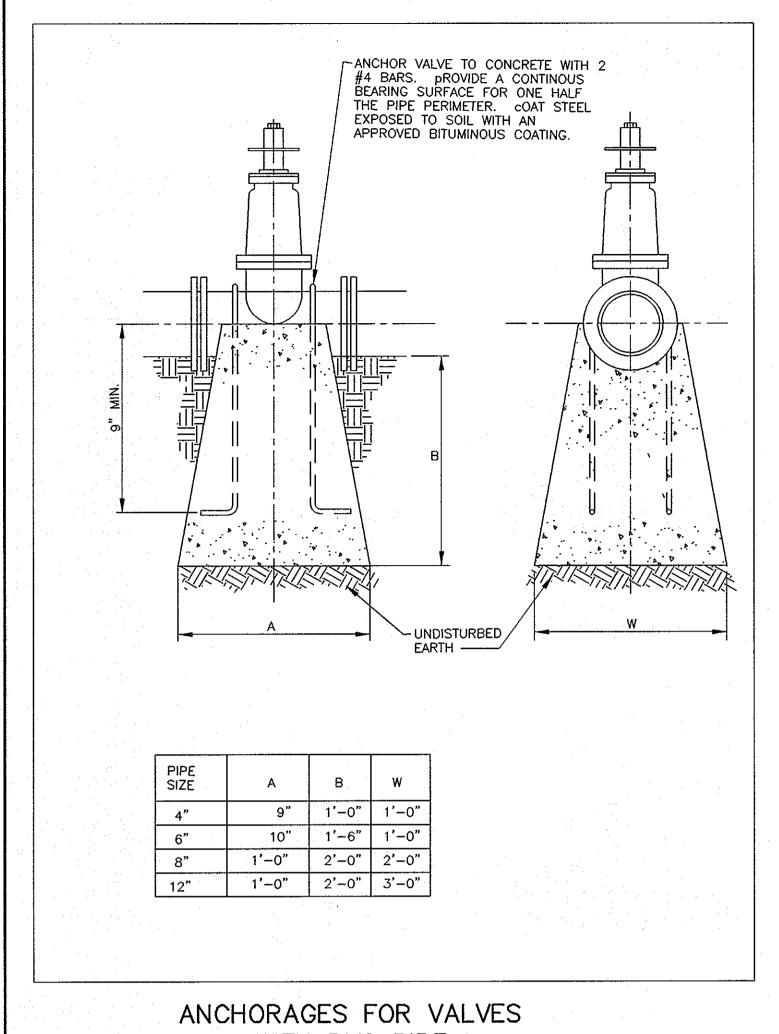
BLOCK NO. 3 & 9

SEDIMENT AND EROSION CONTROL

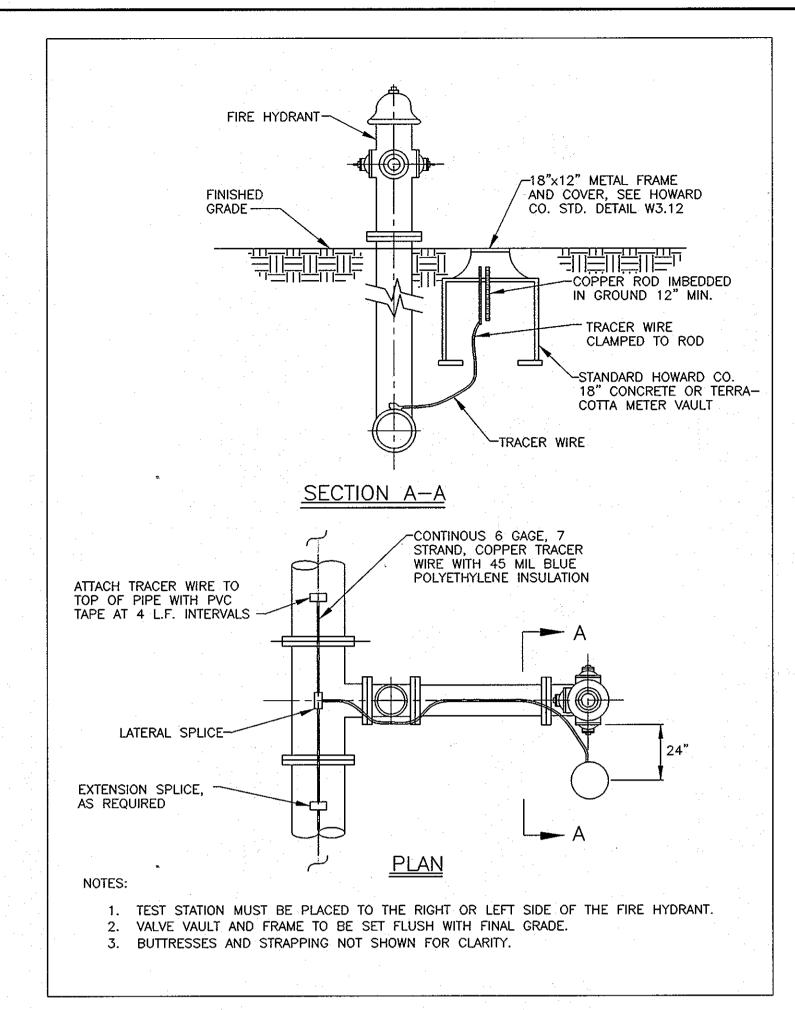
NOTES

COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES. WITHIN THIS PERIOD SHALL BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION. f, WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS): OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREA WHERE ONE SPECIES OF GRASS I. 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 G. MULCHING SEEDED AREAS — MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND

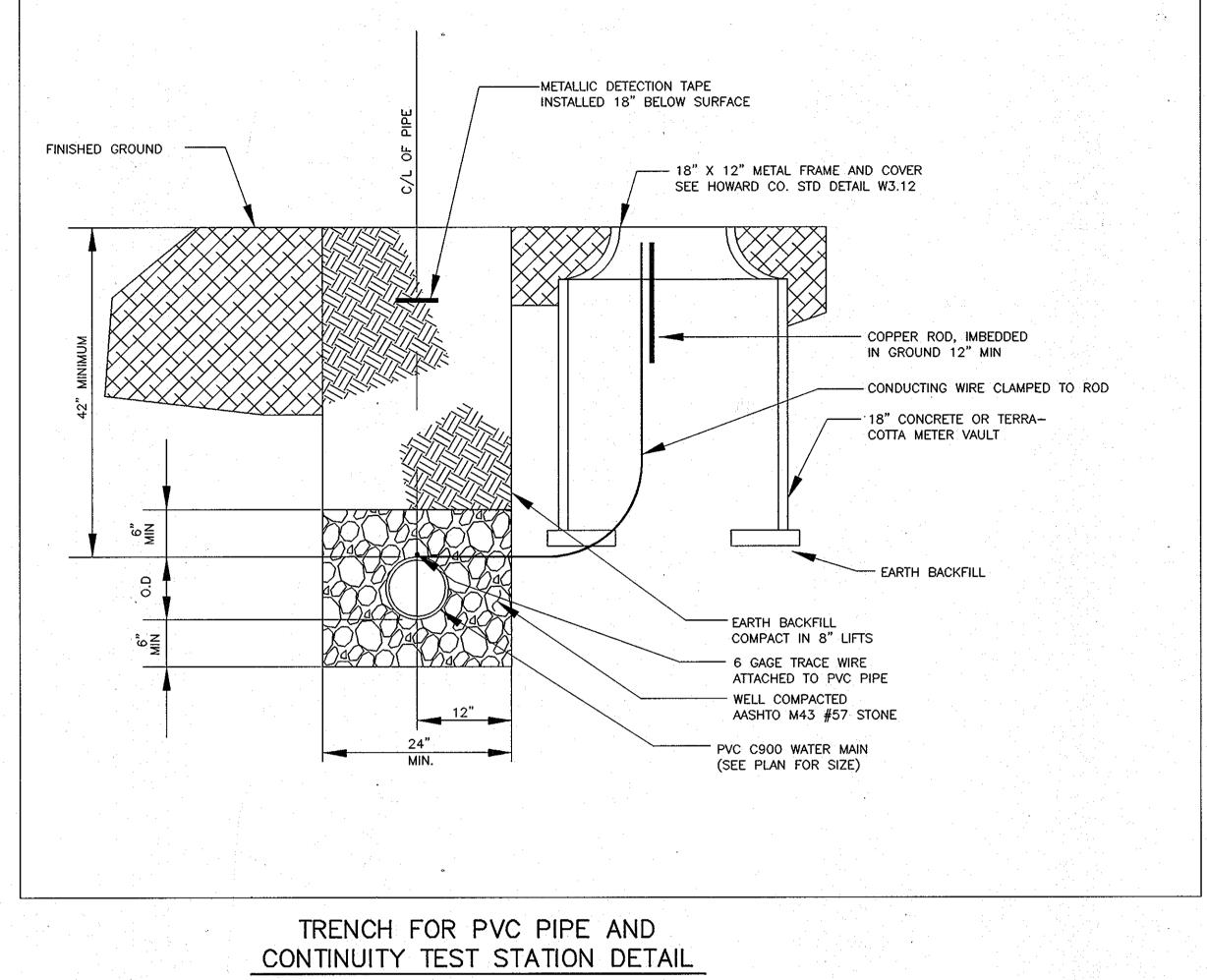




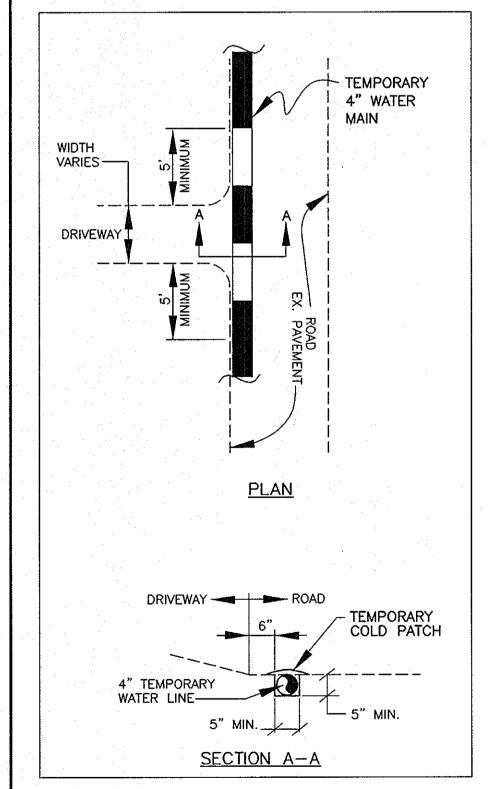




CONTINUITY TEST STATION AT FIRE HYDRANT NOT TO SCALE



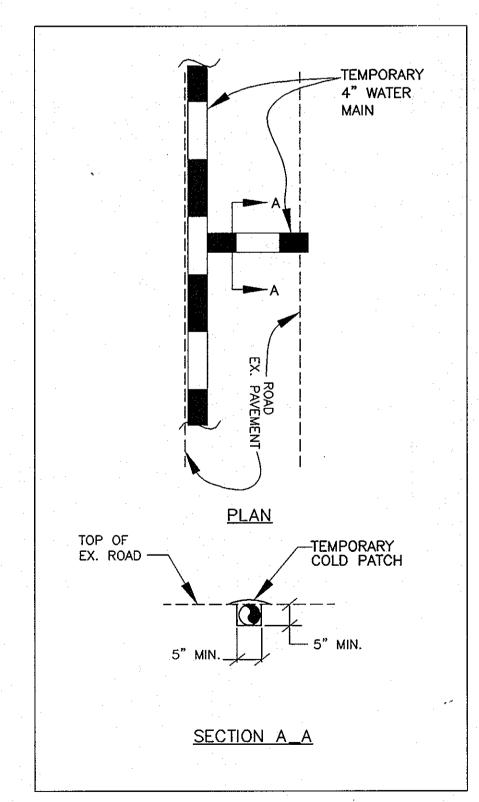
NOT TO SCALE



TRENCH FOR TEMPORARY WATER CROSSING DRIVEWAYS

<u>PLAN</u> TOP OF EX. ROAD — —TEMPORARY COLD PATCH TEMPORARY WHC-(3/4' - 1") 1 1/2" MIN. SECTION A_A

TRENCH FOR TEMPORARY WHC CROSSING ROAD



TRENCH FOR TEMPORARY WATER CROSSING ROAD

AS-BUILT 2007

BONNIE VIEW LANE AND HOOKS LANE WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4205

1ST ELECTION DISTRICT

SCALE AS

SHOWN

SHEET 6 OF 6

600' SCALE MAP NO. 38

DATE

HOWARD COUNTY, MARYLAND

NOT TO SCALE NOT TO SCALE 1/07 DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND RJC AS-BUILT DES: R.J.S.B. Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. **DETAILS** 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 APRIL, 2004 BLOCK NO. 3 & 9 BY NO. REVISION