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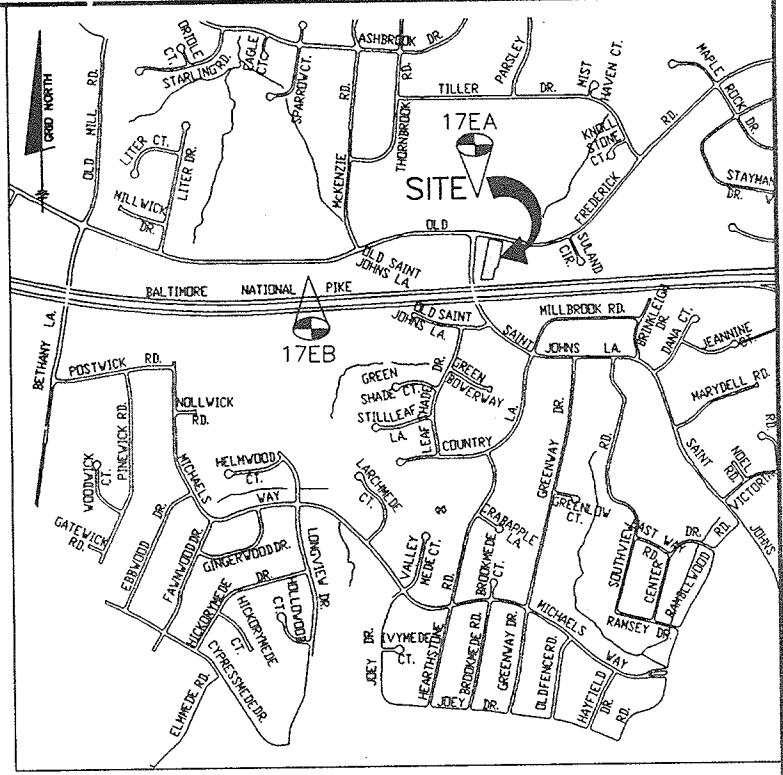
# FULTON PROPERTY

## 2nd ELECTION DISTRICT

### HOWARD COUNTY, MARYLAND

## FINAL PLAN

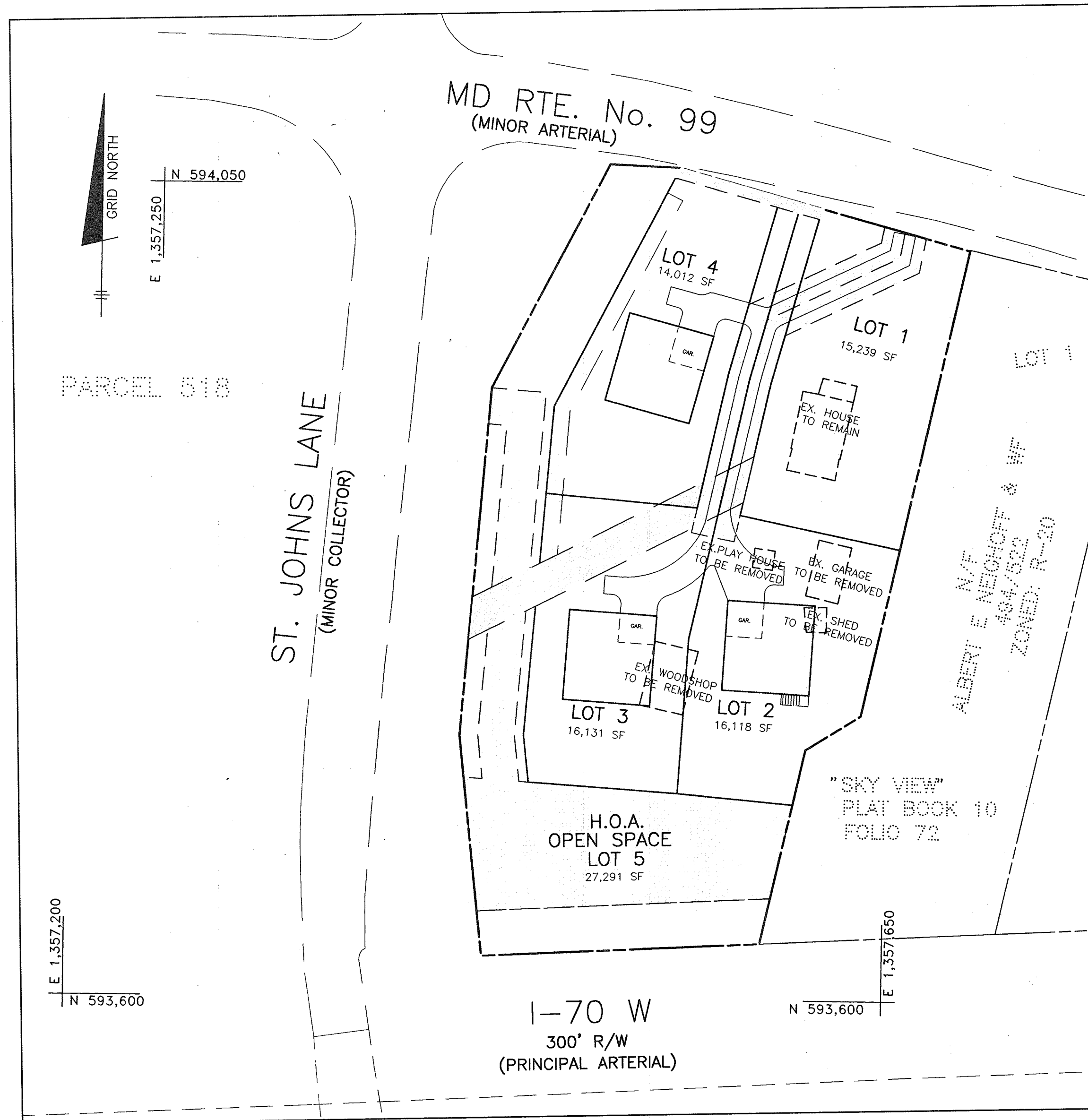
**BENCH MARKS NAD'83**  
HO. CO. #17EA ELEV. 373.36  
STAMPED BRASS DISK SET ON TOP OF CONC. (3" DEEP) CYLINDRICAL BASE LOCATED IN FRONT OF MOUNT HEBRON HIGH SCHOOL, 33.7' SOUTH OF THE FLAG POLE AND 21.3' NORTH OF THE CURB AND 49.7' WEST OF A 15" WHITE PINE.  
N 594,357.7264' E 1,357,519.3741'  
HO. CO. #17EB ELEV. 348.10  
STAMPED BRASS DISK SET ON TOP OF CONC. (3" DEEP) CYLINDRICAL BASE LOCATED 22.4' WEST OF THE ENTRANCE TO BETHANY FIRE STATION, 19' SOUTH OF THE CL OF OLD FREDERICK ROAD AND 38.6' EAST OF G&E POLE #474531.  
N 593,814.0053' E 1,355,731.8846'



VICINITY MAP  
SCALE: 1"=2000'

**~GENERAL NOTES~**

1. THE SUBJECT PROPERTY IS ZONED R-20 PER THE 1993 COMPREHENSIVE ZONING PLAN.
2. ALL LANDSCAPING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124(d)(3)(g) OF THE SUBDIVISION REGULATIONS.
3. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR F-03-091 IN THE AMOUNT OF \$10,350.00.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
5. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.
6. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" @ 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
7. THE CONTOURS SHOWN HEREON HAVE BEEN TAKEN FROM FIELD RUN TOPOGRAPHIC SURVEYS AT 2' INTERVALS.
8. VERTICAL CONTROL AND HORIZONTAL CONTROL BASED UPON HOWARD COUNTY NAD '83 CONTROL STATIONS NO. 17EA AND 17EB.
9. THIS PROPERTY IS WITHIN THE METROPOLITAN WATER AND SEWER DISTRICT.
10. WATER AND SEWER FOR THIS PROJECT IS PUBLIC. CONTR. NO.14-4114-D DRAINAGE AREA IS IN THE PATAPSCO WATERSHED.
11. STORMWATER MANAGEMENT QUALITY CONTROL IS BEING PROVIDED BY A BIO-RETENTION FACILITY AS PART OF THIS SUBMISSION; THIS FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
12. AN ADEQUATE PUBLIC FACILITIES ORDINANCE TRAFFIC ANALYSIS IS NOT REQUIRED FOR MINOR SUBDIVISIONS.
13. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
14. ALL PROPOSED EXTERIOR LIGHTING SHALL BE DIRECTED/REFLECTED AWAY FROM ALL ADJACENT PUBLIC ROADS AND RESIDENTIAL ZONING DISTRICTS IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
15. EXISTING UTILITIES SHOWN WERE LOCATED BY RECORD DRAWINGS AND FIELD LOCATIONS.
16. UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
17. BENCHMARK ENGINEERING, INC. SUBMITTED THREE WAIVER PETITION REQUESTS (WP-03-115) FOR THE FOLLOWING SECTIONS: 16.120(c)(2) SINGLE-FAMILY DETACHED DWELLINGS SHALL HAVE MINIMUM LOT FRONTS: 16.119 (1)(1) A PROPOSED SUBDIVISION SHOULD PROVIDE VEHICULAR ACCESS TO THE SUBDIVISION AT A LOWER CLASSIFICATION ROAD; 16.120(d)(4)(v) RESIDENTIAL LOTS SHALL NOT BE ENCUMBERED BY ACCESS EASEMENTS FOR OPEN SPACE. THEY WERE SUBMITTED TO HOWARD COUNTY ON MAY 29, 2003 AND THEY WERE APPROVED ON JULY 2, 2003 BY THE DIRECTOR OF THE DEPARTMENT OF PLANNING AND ZONING. SUBJECT TO THE FOLLOWING:
  1. THE APPLICANT SHALL BE REQUIRED TO OBTAIN A USE-IN-COMMON DRIVEWAY ACCESS PERMIT FROM THE MARYLAND STATE HIGHWAY ADMINISTRATION.
  2. A NOTATION WILL BE ADDED TO THE PLAT WHICH RESTRICTS INGRESS/EGRESS ALONG ALONG MD ROUTE 99 EXCEPT AT THE APPROVED USE-IN-COMMON DRIVEWAY ACCESS LOCATION.
  3. THE DEVELOPER SHALL PROVIDE A 6' WIDE PEDESTRIAN OPEN SPACE ACCESS EASEMENT ACROSS THE NORTHERN PORTION OF THE PARCEL FROM THE OPEN SPACE LOT TO THE PROPERTY LINE OF LOT 1 FOR THE BENEFIT OF RESIDENTS TO REACH THE OPEN SPACE.
  4. A NOTATION SHALL BE ADDED TO THE PLAT WHICH INDICATES THAT MAINTENANCE VEHICLES ACCESSING THE OPEN SPACE LOT OR STORM WATER MANAGEMENT FACILITY WILL DERIVE INGRESS/EGRESS TO THE OPEN SPACE AREA ONLY BY ST. JOHNS LANE.
18. 3RL INDICATES BUILDING RESTRICTION LINE.
19. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
20. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
21. THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION, TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES, IS RECOMMENDED.
22. THERE ARE EXISTING STRUCTURES LOCATED ON-SITE.
23. Forest Conservation for this project is fulfilled via a fee in lieu.
24. Surety for required landscaping shall be posted with the Developer's Agreement for this project.



PLAN  
SCALE: 1" = 50'

**~SITE ANALYSIS DATA/TABULATION~**

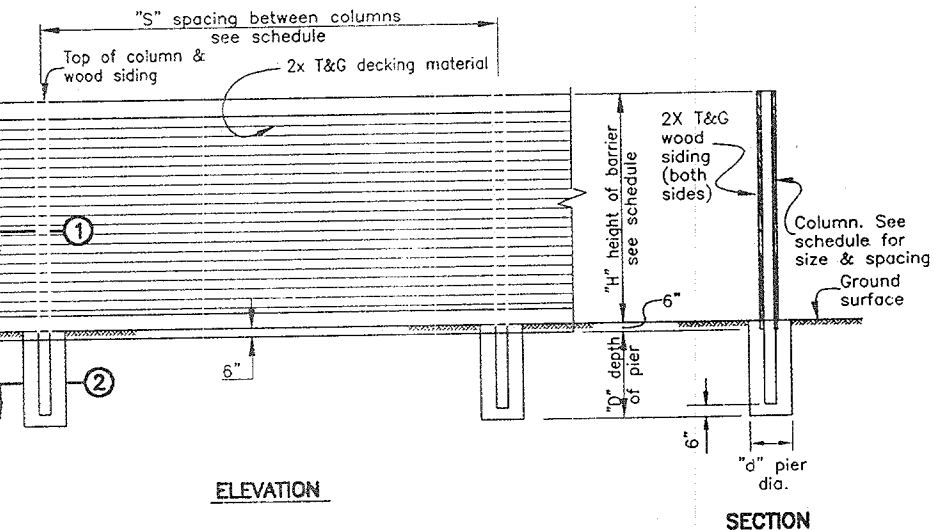
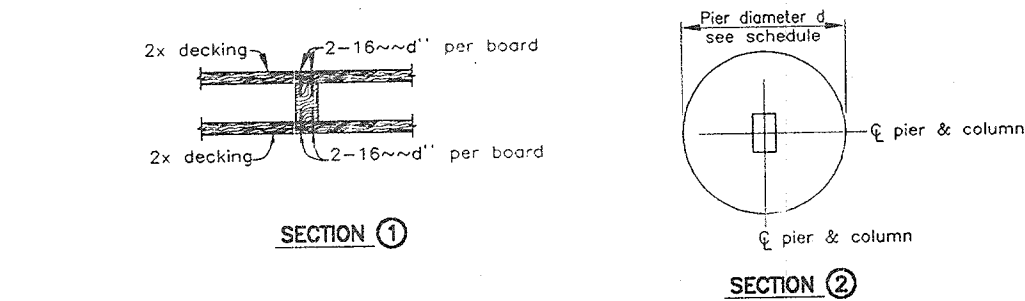
A) TOTAL PROJECT AREA.....	2.04 AC.
B) AREA OF 100 YR. FLOODPLAIN.....	N/A
C) AREA OF STEEP SLOPES.....	N/A
D) NET AREA OF SITE(S).....	2.04 AC.
E) NUMBER OF RESIDENTIAL UNITS PROPOSED.....	4
F) AREA OF PLAN SUBMISSION.....	2.04 AC.
G) LIMIT OF DISTURBED AREA.....	0.44AC.
H) OPEN SPACE AREA REQUIRED (30%).....	0.612 AC.
I) TOTAL OPEN SPACE AREA PROVIDED.....	0.63 AC.
J) PRESENT ZONING DESIGNATION.....	R-20
K) MINIMUM LOT SIZE REQUIRED.....	14,000 SF

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamer* 10/24/06  
CHIEF, DIVISION OF LAND DEVELOPMENT BB DATE  
*John D. ...* 10/24/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DE DATE

NO.	DATE	REVISION

**BENCHMARK**  
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
**ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644  
www.bei-civilengineering.com

OWNER/DEVELOPER:  MICHAEL G. FULTON 9429 OLD FREDERICK ROAD ELLICOTT CITY, MD 21042 PHONE: 410-984-7163	PROJECT: <b>FULTON PROPERTY</b> LOTS 1 THRU 4 AND OPEN SPACE LOT 5
LOCATION: TAX MAP 17 - BLOCK 16 PARCEL 63 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: <b>TITLE SHEET</b>
DATE: MAY, 2003 AUG/31, 2006	PROJECT NO. 1510
Design: MLV    Draft: EDD    Check: DAM	SCALE: AS SHOWN    DRAWING 1 OF 6



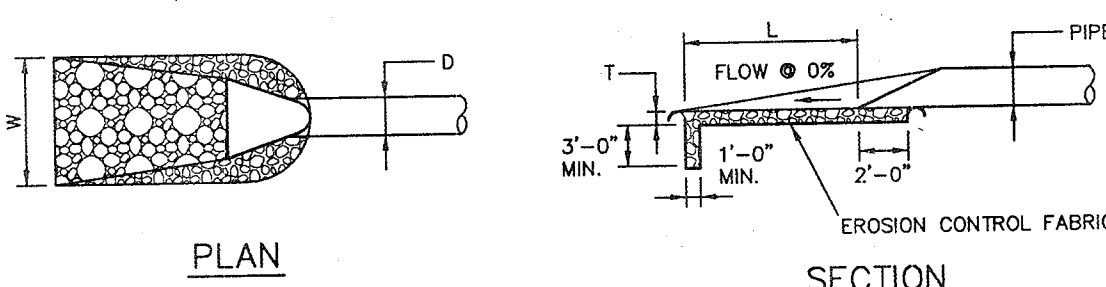
SCHEDULE					
40	#	horizontal loading			
H	S	D	d	Post size	
5'	8"	6"	12"	4x6	
10'	8"	8"	18"	6x12	
15'	8"	10"	24"	8x16	
20'	6"	10"	30"	10x16	

- NOTES:**
- GENERAL:
    - Height of barrier shall be based on acoustic requirements.
    - Barrier walls having a height (H) not indicated in the tables shall be constructed as shown in the next higher height category.
  - SIDING:
    - 2x wood decking material shall be utilized to span horizontally between posts. Design criteria is based on an allowable bending stress of 1400 lbs. per sq. in. and a 3x1/3 increase in stress for wind loads as conditions appropriate. Decking shall be MIC5.
    - Siding in contact with the ground and for a distance of 6" above grade shall be treated with wood preservative.
  - POST:
    - Wood post shall be selected of the spacing indicated on the schedule. Design criteria is based on an allowable bending stress of 1400 lbs. per sq. in. and a 3x1/3 increase for wind loading.
    - Post embedded in concrete shall be treated with a wood preservative in the area of embedment and 12" above grade.
  - CONCRETE:
    - Concrete in the piers shall have a 28 day compressive strength of 2500 lbs. per sq. in.
    - Concrete shall be placed in drilled piers utilizing the earth as the forms.
  - FOUNDATIONS:
    - The drilled piers have been designed utilizing an allowable passive pressure of 300 lbs. per sq. ft. and the following formula:
 
$$D = \left( \frac{14,520 M^{1/3}}{P} \right)^{1/3}$$
 where:
      - D = Diameter of pier (ft.)
      - M = Moment at top of drilled pier (ft.-lbs.)
      - P = Allowable passive pressure (300 lbs. per sq. ft.)
  - ALTERNATE #1 (Preservative Treatment): Alternate #1 represents the additional cost factor for treating the basic wood structure indicated on this reference plan. The necessity for treatment and the type of preservative will be subject to local conditions. All treatments shall conform to NAPA standard C-14.
  - ALTERNATE #2 (Painting): Alternate #2 represents the additional cost factor required to paint one side of the basic wood structure shown on this reference plan. Painting shall consist of 3 applications of paint, 2 coats of primer base paint conforming to Federal Specification TT-P-20966 shall be applied over a primer coat conforming to Federal Specification TT-P-209250.
  - ALTERNATE #3 (Staining): Alternate #3 represents the additional cost factor required to stain one side of the basic wood structure. Stain shall consist of 2 coats of semi-transparent sealer stain applied in accordance with manufacturer's written instructions.
  - ALTERNATE #1 (Preservative Treatment) shall be utilized for this project.

**NOISE WALL DETAIL**

NOT TO SCALE

NOTE: THE PROPOSED NOISE WALL IS PRIVATELY OWNED AND SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION. THE NOISE WALL SHALL BE INSPECTED AND REPAIRED AS NECESSARY AT A MINIMUM OF ONCE A YEAR.



STRUCTURE	D-50	LENGTH(L)	WIDTH(W)	THICK (T)	SHA CLASS
E-1	9.5'	20.0' @ 0%	21.25'	19"	I

**OUTLET PROTECTION DETAIL**

NOT TO SCALE



**PLAN VIEW**

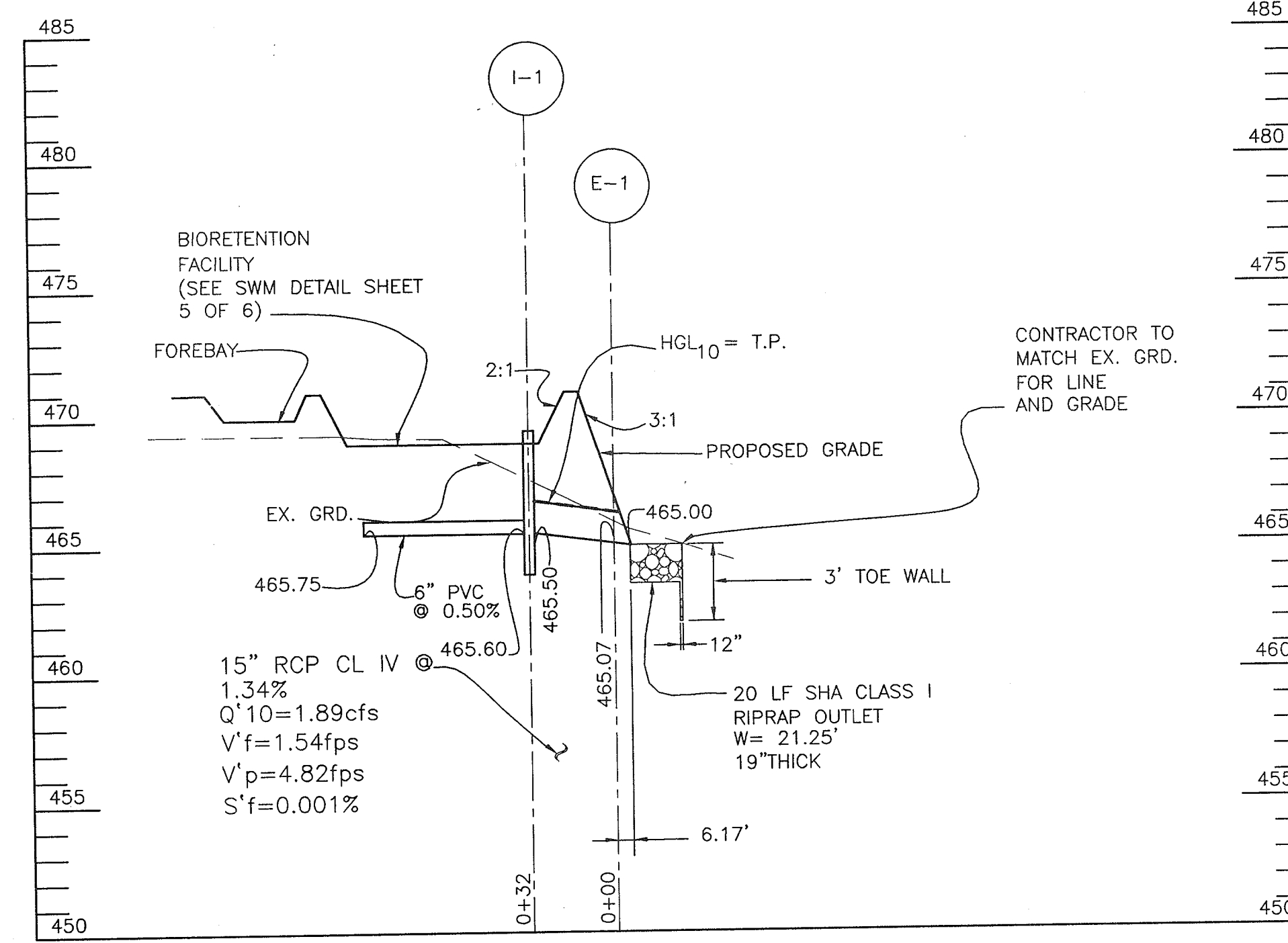
SCALE: 1" = 50'

SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
Ba	D	BAILE SILT LOAM
ChC3	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
CuB	B	COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES
GIB2	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MIB2	B	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MIC2	B	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED

\* INDICATES HYDRIC SOILS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 7

PIPE SCHEDULE				
SIZE	LENGTH	TYPE & CLASS		
15"	32'	RCP CL IV		

STRUCTURE SCHEDULE									
NO.	TYPE	LOCATION	INVERT IN	INVERT IN	INVERT OUT	TOP ELEV.	HO. CO. STD.	REMARKS	FRONT TO BACK INSIDE DIM. OF INLET
I-1	10" INLET	N593681.22 E1357510.05	469.00(THROAT)	465.60	465.50	469.83	SD-4.11	-	2'-6"
E-1	15" RCP	N593669.55 E1357539.91	465.07	-	465.00	-	SD-5.51	-	-



**STORM DRAIN PROFILE**

VERTICAL SCALE 1" = 5'  
HORIZONTAL SCALE 1" = 50'

**LEGEND**

- EXISTING CONTOURS
- PROPOSED GRADES
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- EXISTING WELL
- DRAINAGE AREA DIVIDE

NO	DATE	REVISION

**BENCHMARK**  
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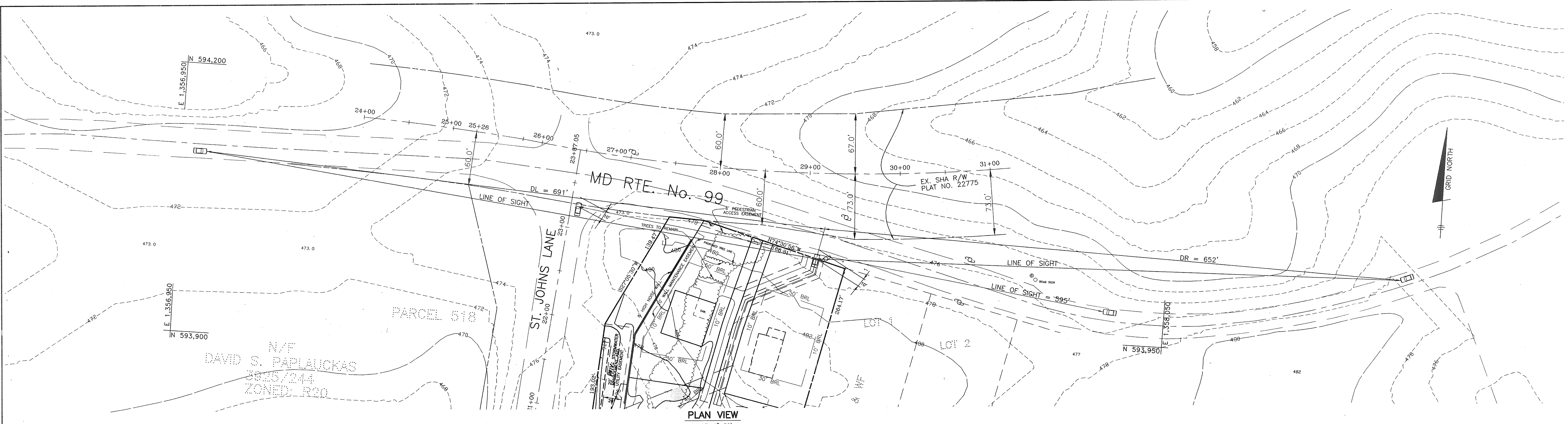
10/2/06

OWNER/DEVELOPER:	PROJECT:
MICHAEL G. FULTON 9429 OLD FREDERICK ROAD ELLICOTT CITY, MD 21042 410-984-7163	MINOR SUBDIVISION <b>FULTON PROPERTY</b>
LOCATION:	TITLE:
9429 OLD FREDERICK ROAD ELLICOTT CITY, MARYLAND TAX MAP 17 GRID 16 PARCEL 63 2nd. ELECTION DISTRICT ZONED-R20	<b>STORM DRAIN DRAINAGE AREA MAP, SCHEDULES AND PROFILE</b>
DATE:	PROJECT NO.
MAY, 2003 AUGUST, 2006	1510
DES: MLV	SCALE: AS SHOWN
CHK: DAM	DRN: MAN
DRAWING 2 OF 8	

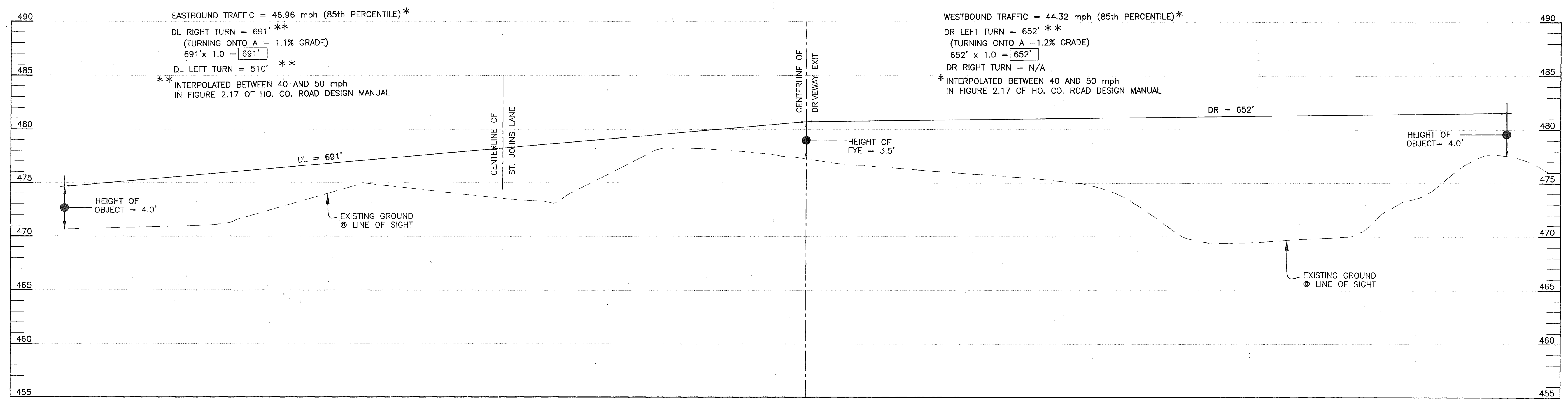
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

*Cindy Hanota* 10/2/06  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Michael G. Fulton* 10/2/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION



PLAN VIEW  
SCALE: 1"=50'



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

\* NOTE:  
THE TRAFFIC SPEED STUDY FOR THIS PROJECT WAS TAKEN FROM THE TREYBURN PROPERTY SPEED STUDY CONDUCTED BY THE TRAFFIC GROUP (4/99). THE TREYBURN PROPERTY IS APPROXIMATELY 0.4 MILES TO THE WEST OF THE FULTON PROPERTY. MD ROUTE 99 HAS THE SAME NUMBER OF LANES AND POSTED SPEED FOR BOTH THE TREYBURN PROPERTY AND THE FULTON PROPERTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hanna* 10/24/06  
CHIEF, DIVISION OF LAND DEVELOPMENT  
*William [Signature]* [Signature]  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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phone: 410-465-6105 • fax: 410-465-6644  
email: Benchmark@ccis.com

OWNER/DEVELOPER:		PROJECT: <b>FULTON PROPERTY</b>	
MICHAEL G. FULTON 9429 OLD FREDERICK RD. ELLCOTT CITY, MD 21042 410-984-7163		LOTS 1-4 AND OPEN SPACE LOT 5	
LOCATION:		TAX MAP: 17, GRID: 16 PARCELS 63 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: <b>SIGHT DISTANCE ANALYSIS</b>			
DATE: MAY 2003	PROJECT NO. 1510		
AUGUST, 2006			
DESIGN: MLV	DRAFT: MAN	CHECK: DAM	SCALE: AS SHOWN
		SHEET 3 OF 6	

SEDIMENT CONTROL NOTES

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
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...
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, 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.

Definition
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose
To provide a suitable 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
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 Experimental 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 1 1/2" in diameter.
ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, bitulle, or others as specified.
iii. Where the 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.
iii. 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.
IV. 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 phytotoxic materials.
Note: Topsoil substitutes or 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 - Section I - Vegetative Stabilization Methods and Materials.
V. Topsoil Application
i. When topsoiling, maintain needed erosion and sediment control practices such as diversion, 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 preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent 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 seeded preparation. G-21-2
VI. 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 prescribed amendments and for sites having disturbed areas under 5 acres 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.
iv. 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.

TEMPORARY SEEDBED PREPARATION

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).
SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (07 LBS/1000 SQ FT) FOR THE PERIOD NOVEMBER 16 THROUGH 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.
MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/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.

PERMANENT SEEDBED PREPARATION

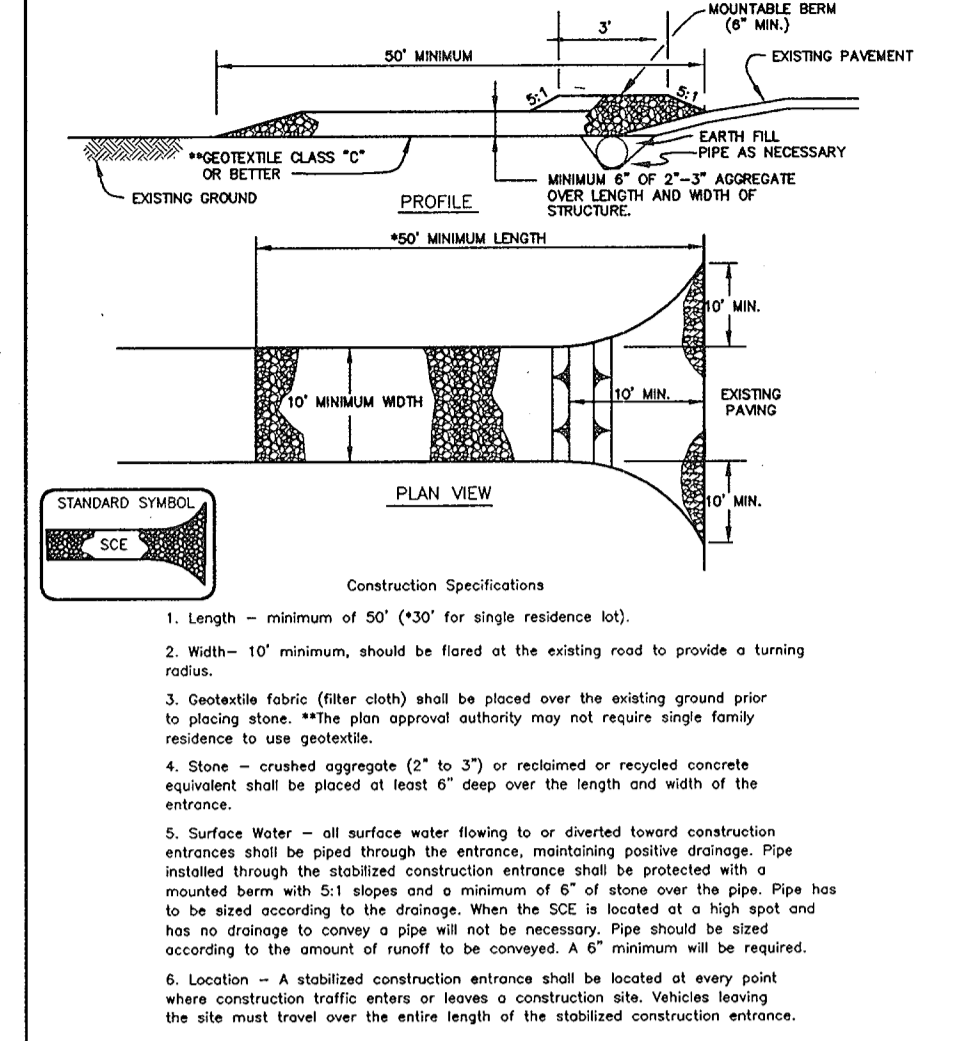
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING SCHEDULES:
1. PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS PER ACRE 30-0-0-0 UREAIFORM FERTILIZER (9 LBS/1000 SQ FT).
2. ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.
MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.
MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEQUENCE OF CONSTRUCTION

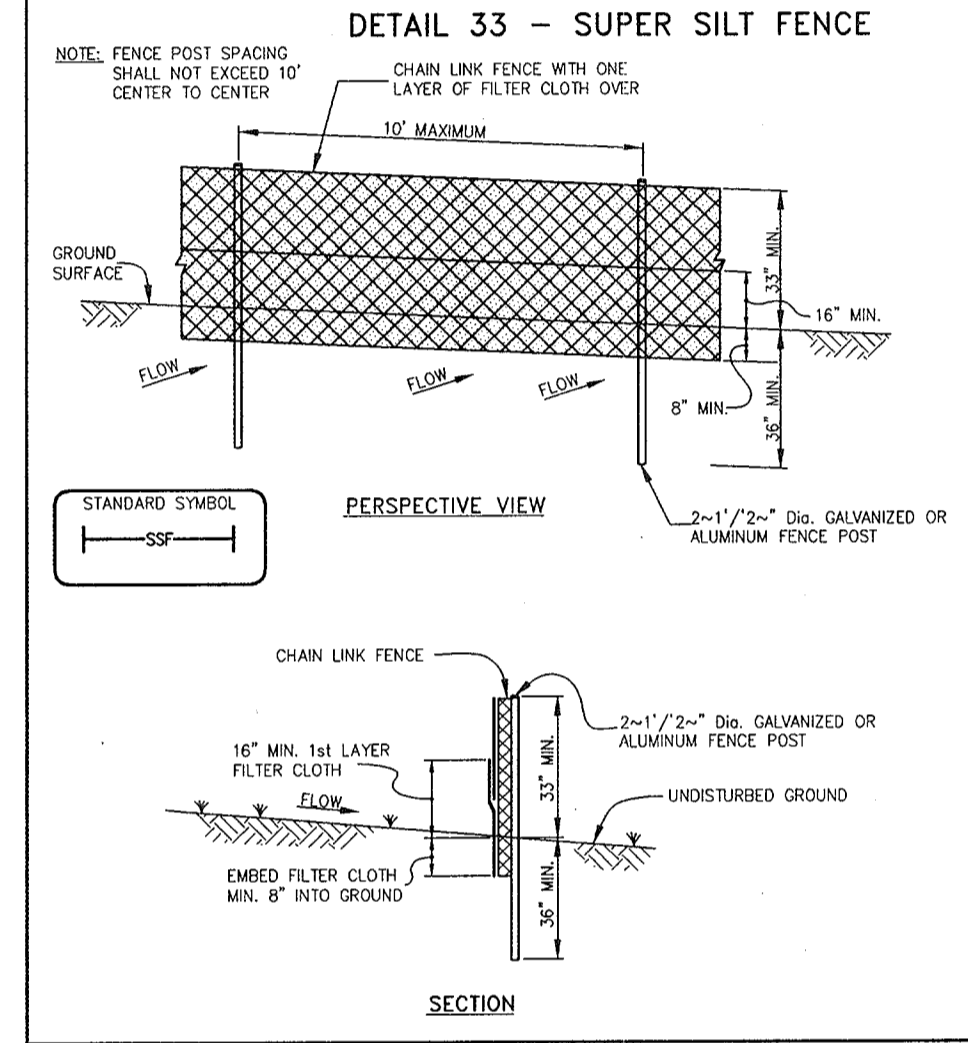
- DAY 1 OBTAIN GRADING PERMIT.
DAY 2-3 CLEAR & GRUB FOR SEDIMENT CONTROL DEVICES.
DAY 4-5 CLEAR AND GRUB REMAINDER OF THE SITE.
DAY 6-9 UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, BEGIN MASS GRADING.
DAY 10 STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES.
DAY 11-17 INSTALL BIO-RETENTION FACILITY, STORM DRAINS AND OTHER UTILITIES.
DAY 18-19 FINAL GRADE REMAINDER OF SITE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
DAY 20-22 INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON LANDSCAPE PLANS.
DAY 23-25 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE THE SITE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hannon, Chief, Division of Land Development
Date: 10/14/06
Mike Roman, Chief, Development Engineering Division
Date: 10/14/06

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



DETAIL 33 - SUPER SILT FENCE



SUPER SILT FENCE CONSTRUCTION SPECIFICATIONS

- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6" fence shall be used, substituting 42" fabric and 6" length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
Tensile Strength 50 lbs/in (min.) Test: MSMT 509
Tensile Modulus 20 lbs/in (min.) Test: MSMT 509
Flow Rate 75% (min.)/minute (max.) Test: MSMT 322
Filtering Efficiency Test: MSMT 322

SUPER SILT FENCE DESIGN CRITERIA

Table with 4 columns: Slope, Slopes, Slope Length (maximum), Silt Fence Length (maximum). Rows include 0-10%, 10-20%, 20-33%, 33-50%, and 50%+ slopes.

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

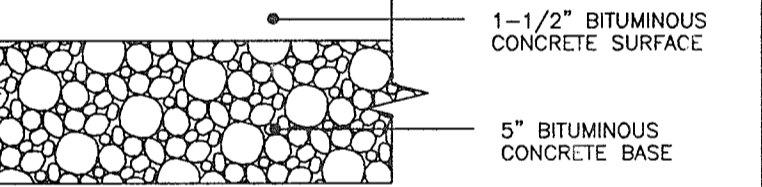
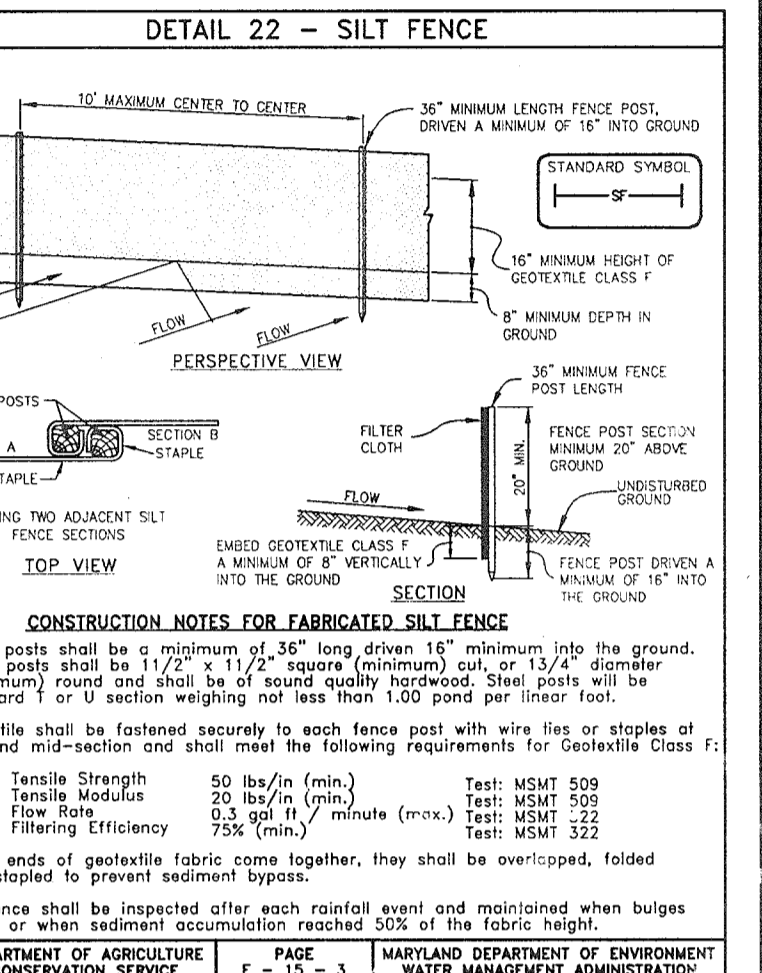
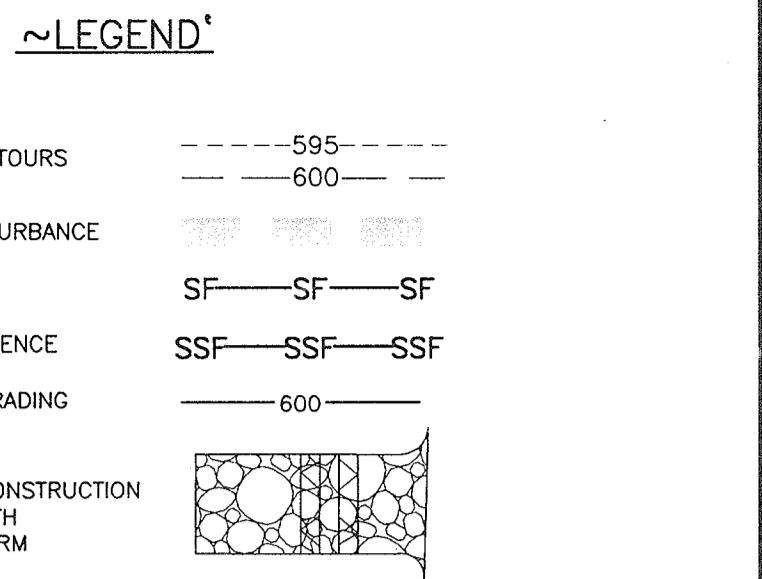
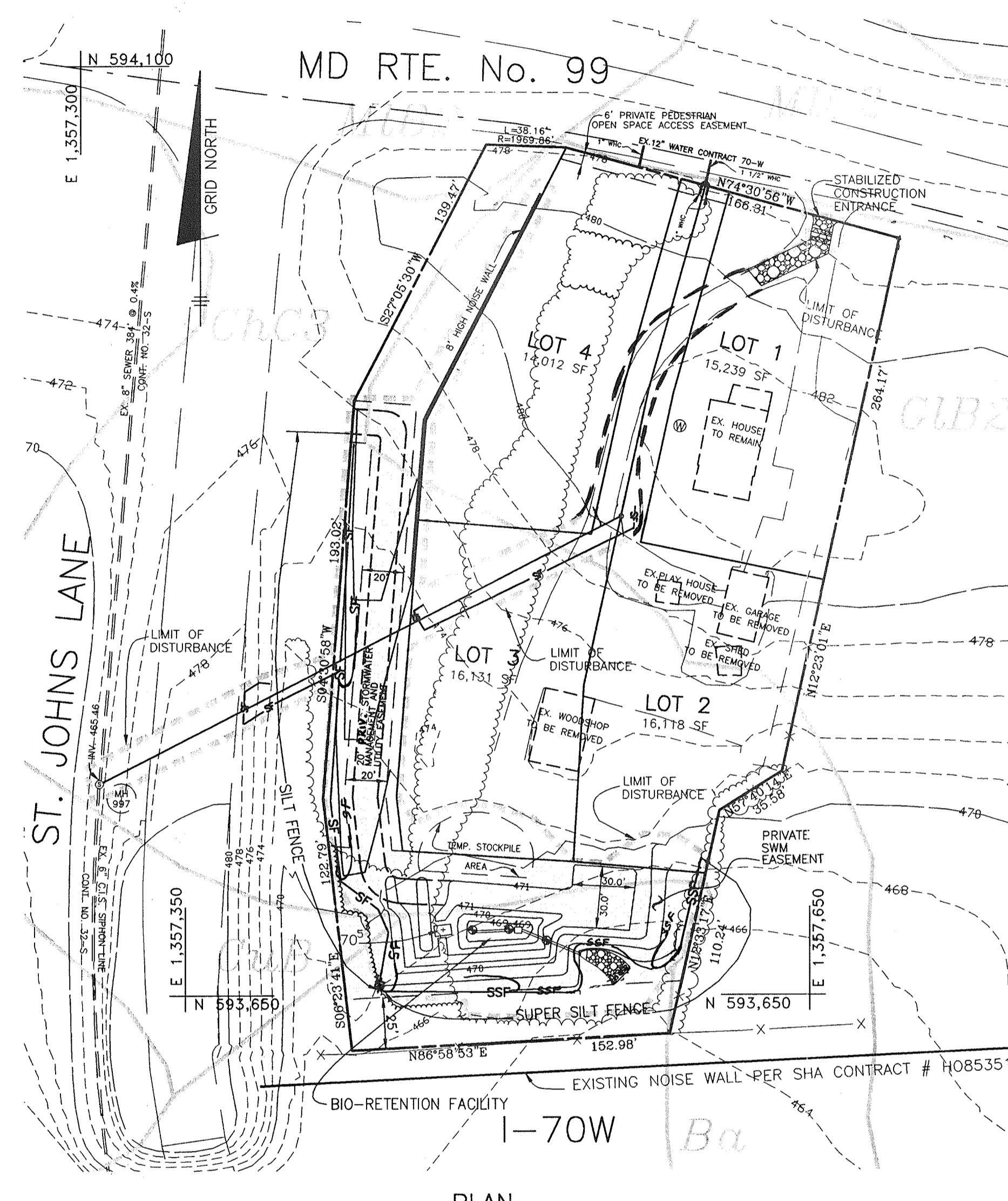


Table with columns: NO., DATE, REVISION.

BENCHMARK ENGINEERS, LAND SURVEYORS & PLANNERS logo and contact information for Michael G. Fulton.

BY THE DEVELOPER: MICHAEL G. FULTON, DEVELOPER, DATE: 8-11-06

BY THE ENGINEER: DONALD A. MASON, ENGINEER, DATE: 8/14/06

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. DATE: 10/14/06

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS. DATE: 10/14/06

OWNER/DEVELOPER: MICHAEL G. FULTON, 9429 OLD FREDERICK RD., ELLICOTT CITY, MD 21042. PROJECT: FULTON PROPERTY LOTS 1 THRU 4 AND OPEN SPACE LOT 5. TITLE: SEDIMENT & EROSION CONTROL PLAN, NOTES AND DETAILS. DATE: MAY 2003. PROJECT NO. 1510. SCALE: AS SHOWN. DRAWING NO. 4 OF 6.

**CONSTRUCTION SPECIFICATIONS**

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

**Site Preparation**

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

**Earth Fill**

**Material** - The fill material shall be taken from approved designated borrow areas. If shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

**Placement** - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

**Compaction** - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

**Structure Backfill**

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.											
Page 1 of 1											
PROJECT NAME: KAISER FARM PHASE 3 SWM BORING # B-1											
LOCATION: HOWARD COUNTY, MARYLAND JOB # 01473A											
Datum	Horizontal Wt.	Hole Diameter	Foreman	Lantern Smith							
Surf. Elev.	Hammer Drop	30"	Rock Core Dia.	Inspector							
Date Started	10/17/01	Pipe Size	2.0"x6.6"	Boring Method	HEA	Date Completed	7-03-00				
ELEV.	SOL. DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON.	BELOW #"	NO.	REC.	BORING & SAMPLING NOTES			
0.0	SURFACE	0.0	0.0	D	1-2-3	1	13'	3" Topsoil			
5.0	Brown, moist, medium dense SANDY SILT trace mica & quartz (ML)	5.0	5.0	D	5-7-10	2	16'	No groundwater encountered during drilling			
7.5	Brown, moist, medium dense SANDY SILT trace mica & quartz (ML)	7.5	7.5	D	6-8-12	3	24'	Cased in at 6.5' after 24 hours			
10.0	Brown, moist, medium dense, micaceous SANDY SILT with rock fragments (ML)	10.0	10.0	D	5-6-8-7	4	10'	Cased in at 7.0' at completion			
12.0	Brown, moist, very dense, micaceous SANDY SILT with rock fragments (ML)	12.0	12.0	D	4-10-23-31(67)	5	14'				
Bottom of hole at 12.0'											

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.											
Page 1 of 1											
PROJECT NAME: KAISER FARM PHASE 3 SWM BORING # B-3											
LOCATION: HOWARD COUNTY, MARYLAND JOB # 01473A											
Datum	Horizontal Wt.	Hole Diameter	Foreman	Lantern Smith							
Surf. Elev.	Hammer Drop	30"	Rock Core Dia.	Inspector							
Date Started	10/17/01	Pipe Size	2.0"x6.6"	Boring Method	HEA	Date Completed	7-03-00				
ELEV.	SOL. DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON.	BELOW #"	NO.	REC.	BORING & SAMPLING NOTES			
0.0	SURFACE	0.0	0.0	D	2-2-3	1	14'	3" Topsoil			
2.5	Brown, moist, very loose to medium dense SANDY SILT trace mica, with decomposed rock fragments (ML)	2.5	2.5	D	20-15-13	2	16'	No groundwater encountered during drilling			
5.0	Brown, moist, medium dense SANDY SILT trace mica, with decomposed rock fragments (ML)	5.0	5.0	D	8-8-10	3	18'	Cased in at 7.0' after 24 hours			
7.5	Brown, moist, medium dense SANDY SILT trace mica, with decomposed rock fragments (ML)	7.5	7.5	D	7-5-7-9	4	14'	Cased in at 8.0' at completion			
10.0	Brown, moist, medium dense SANDY SILT trace mica, with decomposed rock fragments (ML)	10.0	10.0	D	8-10-11-13	5	13'				
Bottom of hole at 12.0'											

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.											
Page 1 of 1											
PROJECT NAME: KAISER FARM PHASE 3 SWM BORING # B-2											
LOCATION: HOWARD COUNTY, MARYLAND JOB # 01473A											
Datum	Horizontal Wt.	Hole Diameter	Foreman	Lantern Smith							
Surf. Elev.	Hammer Drop	30"	Rock Core Dia.	Inspector							
Date Started	10/17/01	Pipe Size	2.0"x6.6"	Boring Method	HEA	Date Completed	7-03-00				
ELEV.	SOL. DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON.	BELOW #"	NO.	REC.	BORING & SAMPLING NOTES			
0.0	SURFACE	0.0	0.0	D	2-3-5	1	20'	4" Topsoil			
2.5	Brown, moist, medium dense to dense SANDY SILT trace mica, with rock fragments (ML)	2.5	2.5	D	10-11-12	2	14'	No groundwater encountered during drilling			
5.0	Brown, moist, medium dense SANDY SILT trace mica, with decomposed rock fragments (ML)	5.0	5.0	D	23-16-16	3	24'	Cased in at 6.0' after 24 hours			
7.5	Peck and Brown, moist, dense to very dense, micaceous SANDY SILT with decomposed rock fragments (ML)	7.5	7.5	D	12-12-21	4	18'	Cased in at 6.5' at completion			
10.0	Brown, moist, medium dense SANDY SILT trace mica, with decomposed rock fragments (ML)	10.0	10.0	D	31-35-37	5	12'				
Bottom of hole at 12.0'											

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

**Pipe Conduits**

All pipes shall be circular in cross section

**Plastic Pipe** - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**Drainage Diaphragms** - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

**Concrete**

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

**Rock Riprap**

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

**Care of Water during Construction**

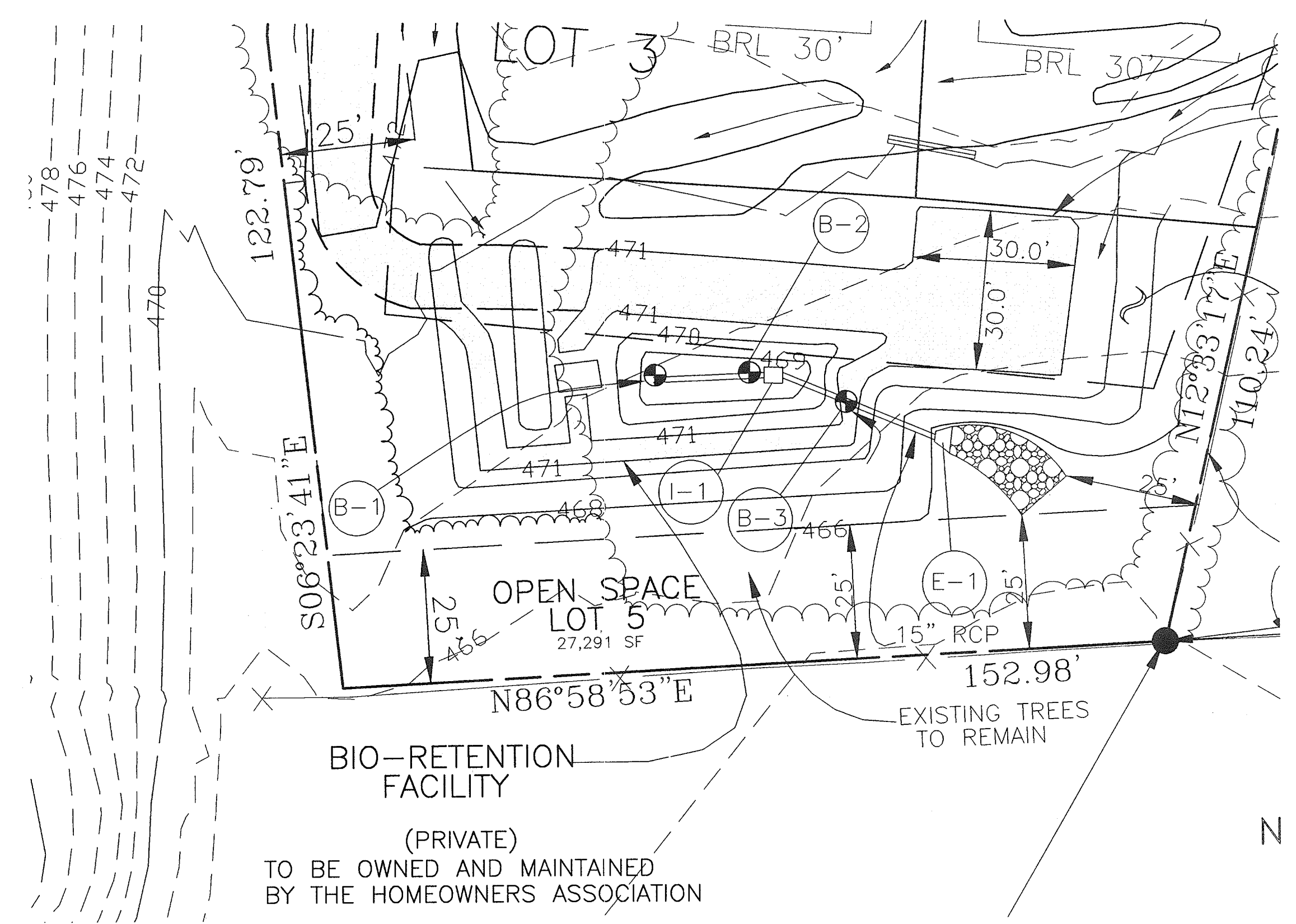
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom concerning excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the location being filled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

**Stabilization**

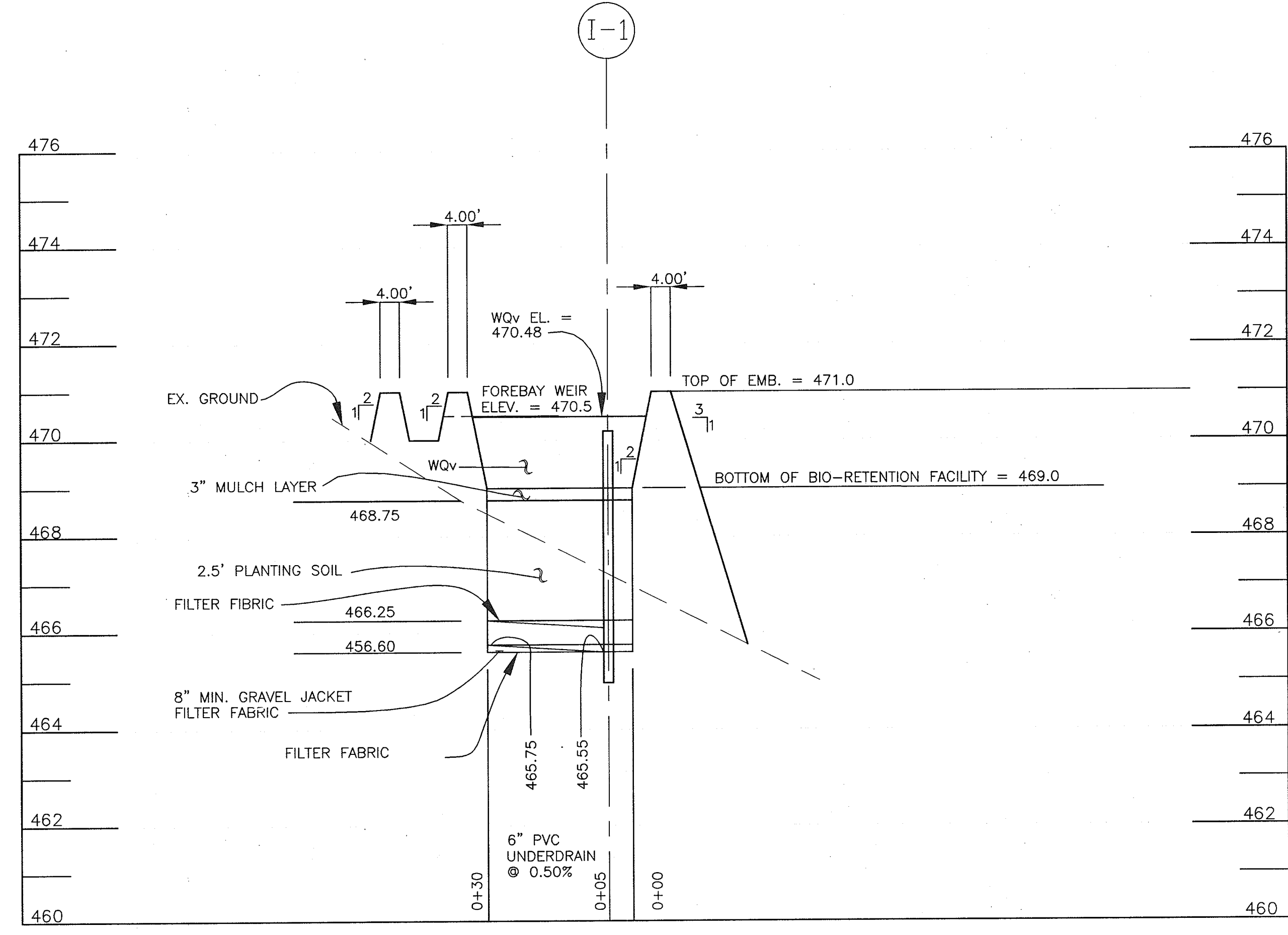
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

**Erosion and Sediment Control**

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.



PLAN VIEW  
SCALE: 1" = 20'



PROFILE ALONG Q-Q OF EMBANKMENT  
BIO - RETENTION FACILITY

VERTICAL SCALE 1" = 2'  
HORIZONTAL SCALE 1" = 20'

PLAN VIEW  
SCALE: 1" = 20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: [Redacted] DATE: 10/24/06  
Signature: [Redacted] DATE: 10/24/06

<p><b>BENCHMARK</b> ENGINEERS &amp; LAND SURVEYORS &amp; PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 E-MAIL: benchmark@cais.com</p>		<p>STATE OF MARYLAND Professional Engineer 9/9/06</p>
<p>OWNER/DEVELOPER: MICHAEL G. FULTON 9429 OLD FREDERICK ROAD ELLICOTT CITY, MD 21042 410-984-7163</p>	<p>PROJECT: MINOR SUBDIVISION <b>FULTON PROPERTY</b></p> <p>LOCATION: 9429 OLD FREDERICK ROAD ELLICOTT CITY, MARYLAND TAX MAP 17 GRID 16 PARCEL 63 2nd. ELECTION DISTRICT ZONED-R20</p> <p>TITLE: <b>STORMWATER QUALITY FACILITY PLAN, NOTES AND DETAILS</b></p> <p>DATE: AUGUST, 2002 PROJECT NO. 1510 AUGUST, 2006</p>	
<p>DES: MLV CHK: DAM DRN: EDD</p>	<p>SCALE: AS SHOWN DRAWING 5 OF 6</p>	<p>F-03-91</p>

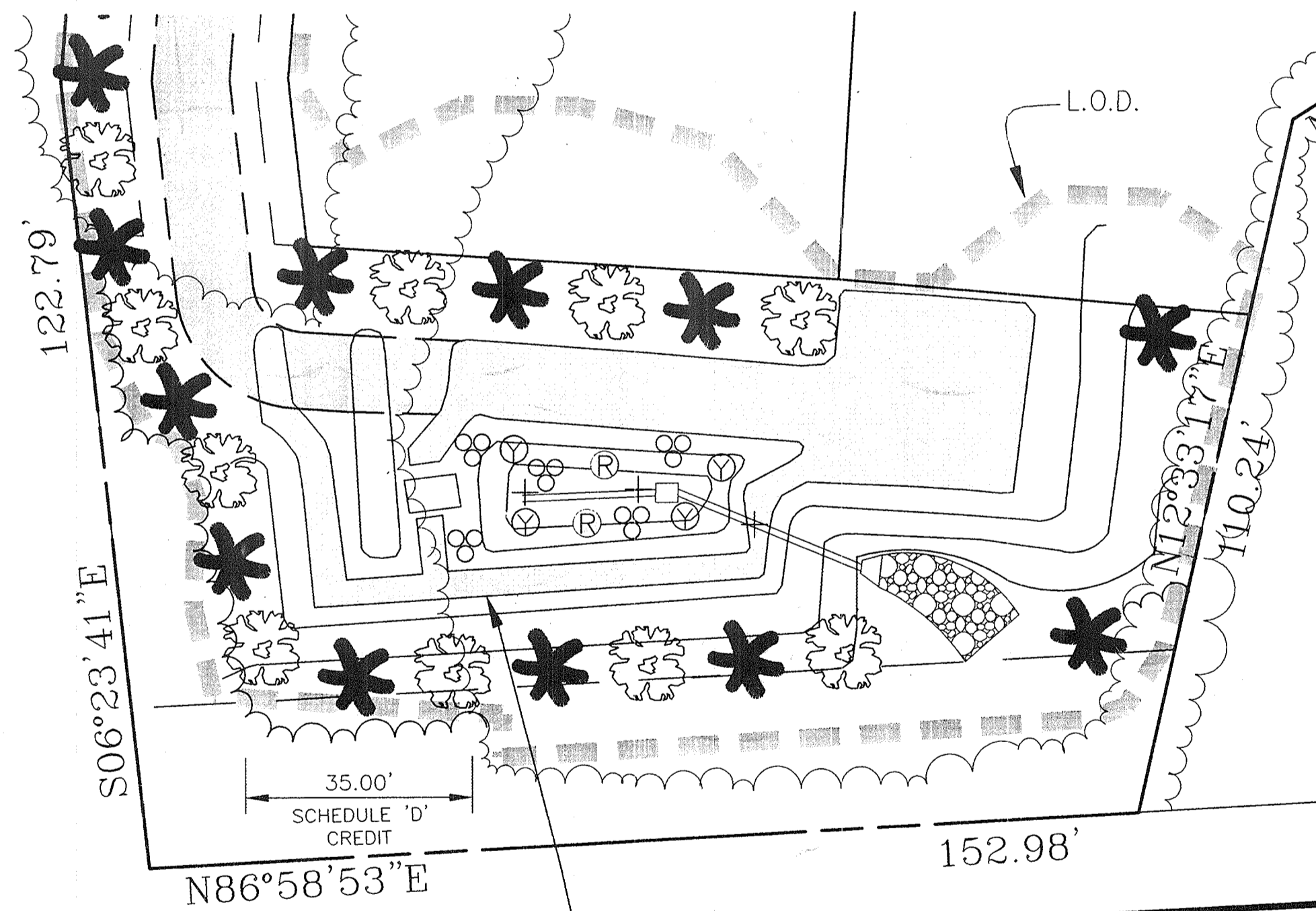
**SWMF - LANDSCAPING DATA**

HYDROLOGIC ZONE 2 - SHALLOW WATER BENCH (LOW MARSH)

HYDROLOGIC CONDITION - 6" TO 1' - 0" DEEP HARDINESS - TEMPERATE ZONE 6b (-5' TO 0')

NOTES: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES.

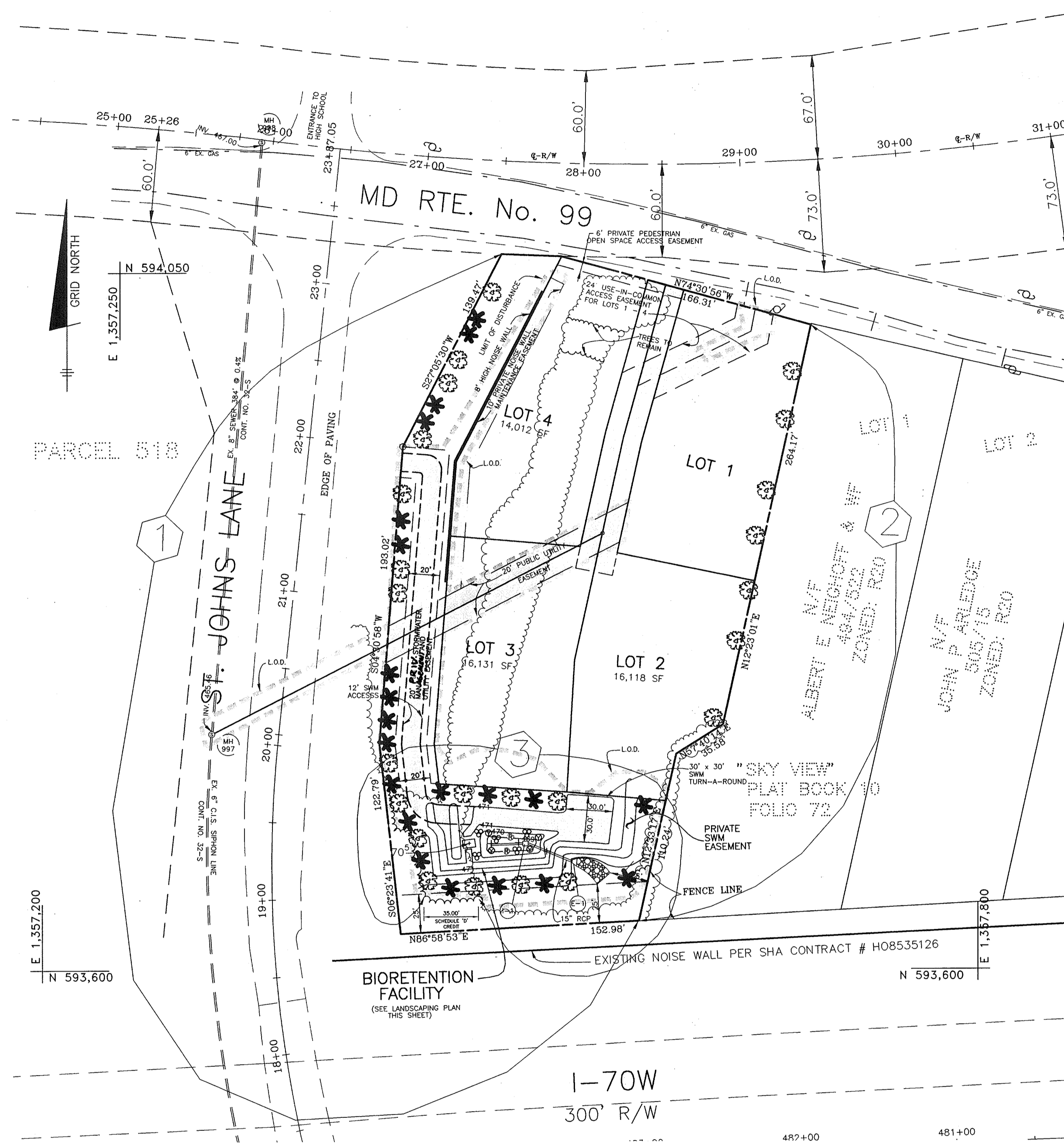
SWMF PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(R)	2	RHOODENDRON CANADENSE "RHODODENDRON"	2.0' - 2.5' HT. 15" - 18" WIDTH 18" - 24" SPACE MIN.
(Y)	4	ALEX VOMITORIA "YALPON HOLLY"	5.0' - 6' HT. UNSHEARED
(O)	5	ANDROPOGON GLOMERATUS "BUSHY BEARDGRASS"	UP TO 12" WHIPS



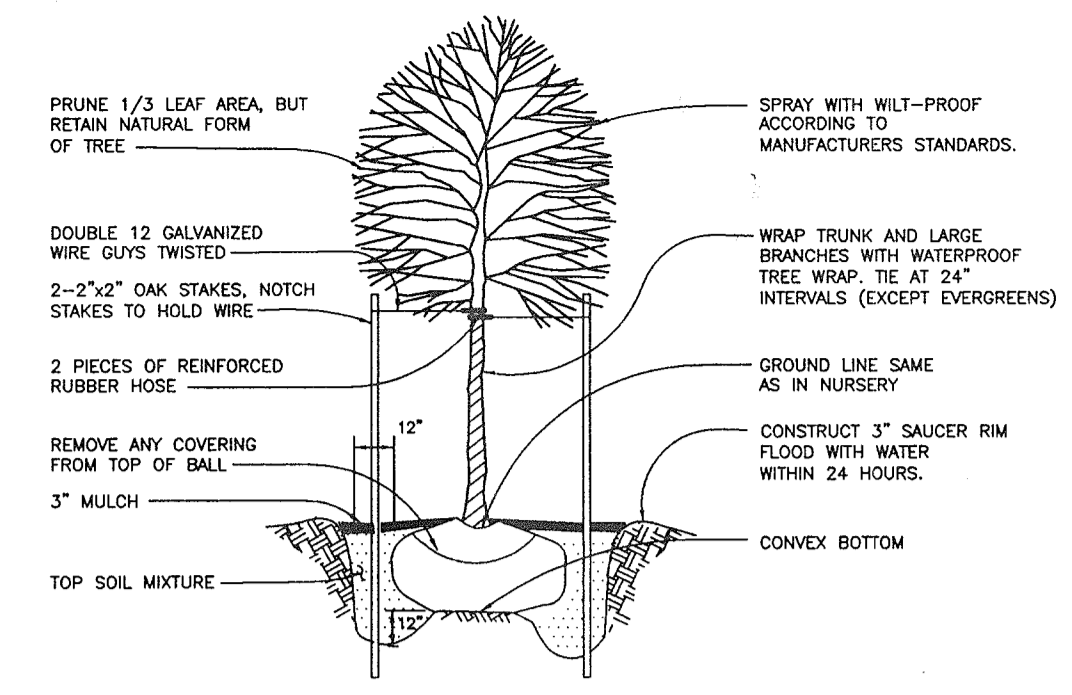
**BIORETENTION**

**BIO-RETENTION FACILITY LANDSCAPING**

SCALE: 1" = 20'



**PLAN**  
SCALE: 1" = 50'



**TREE PLANTING DETAIL**  
NOT TO SCALE

- NOTES**
- TREES MUST BE A MINIMUM OF FOUR(4) FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN.
  - TREES MUST BE PLANTED A MINIMUM OF FIVE(5) FEET FROM AN OPEN SPACE ACCESS STRIP AND TEN(10) FEET FROM A DRIVEWAY.
  - SEE PLANTING LIST, THIS SHEET.

**LANDSCAPING NOTES**

- PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE EXISTING VEGETATION TO REMAIN AND BY THE PLANTINGS AS SHOWN ON THESE PLANS.
  - THE DEVELOPER SHALL BE RESPONSIBLE FOR THE STREET TREES, STORMWATER MANAGEMENT POOL PLANTING, THE PRESERVATION OF THE PERIMETER VEGETATION AS SHOWN ON THESE PLANS AND FOR THE PERIMETER PLANTING ON PERMITS. BONDING FOR PERIMETER PLANTING IS THE OBLIGATION OF THE DEVELOPER AS PART OF THE DEVELOPER'S AGREEMENT.
  - A MINIMUM OF TWENTY(20) FEET SHALL BE MAINTAINED BETWEEN TREES AND STREET LIGHTS.
- NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPE TREES IN THE AMOUNT OF \$10,000.00 MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJ. TO PERIMETER PROPERTY	ADJ. TO PERIMETER PROPERTY	
		(1) B	(2) A
PERIMETER NO. / LANDSCAPE TYPE			
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	608.28'	409.99'	
CREDIT FOR EXISTING VEGETATION (NO OR YES W/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES	YES	35'
CREDIT FOR WALL, FENCE OR BERM (NO OR YES W/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	
NUMBER OF PLANTS REQUIRED:			
SHADE TREES	8	7	
EVERGREEN TREES	10	0	
NUMBER OF PLANTS PROVIDED:			
SHADE TREES	8	7	
EVERGREEN TREES	10	0	

**SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER BUFFER TYPE	470.8' TYPE 'B'
NUMBER OF TREES REQUIRED	10
SHADE TREES (1:50)	12
EVERGREEN TREES (1:40)	
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	YES, 35'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED	
SHADE TREES	9
EVERGREEN TREES	11

**LANDSCAPE LEGEND**

SYMBOL	DESCRIPTION
(*)	EVERGREEN TREES ALONG PERIMETER AND STORMWATER MANAGEMENT AREA TO BE PROVIDED BY THE DEVELOPER.
(O)	SHADE TREES ALONG PERIMETER AND STORMWATER MANAGEMENT AREA TO BE PROVIDED BY THE DEVELOPER.

**PERIMETER LIST**

SYMBOL	QUANTITY	NAME	REMARKS
(*)	21	PINUS STROBUS (Eastern White Pine)	6'-8" h.t. UNSHEARED
(O)	24	ACER RUBRUM 'Red Sunset' (Red Sunset Red Maple)	2 1/2" - 3 CAL. B&B FULL HEAD

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Michael J. Leab  
DEVELOPER: \_\_\_\_\_ DATE: 8-11-06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Haman  
CHIEF, DIVISION OF LAND DEVELOPMENT  
10/21/06  
DATE

Walter J. ...  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
10/21/06  
DATE

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418  
ELlicott CITY, MARYLAND 21043  
phone: 410-465-8105 ▲ fax: 410-465-6844  
email: Benchmark@cois.com

STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
DONALD W. ...  
8/9/06

PROJECT: MINOR SUBDIVISION  
**FULTON PROPERTY**

OWNER/DEVELOPER: MICHAEL G. FULTON  
9429 OLD FREDERICK ROAD  
ELlicott CITY, MD 21042  
410-984-7163

LOCATION: 9429 OLD FREDERICK ROAD  
ELlicott CITY, MARYLAND  
TAX MAP 17 GRID 16 PARCEL 63  
2nd. ELECTION DISTRICT ZONED-R20

TITLE: **LANDSCAPE PLAN NOTES AND DETAILS**

DATE: MAY 2003  
AUGUST 2006  
PROJECT NO. 1510

DES: MLV    CHK: DAM    DRN:MAN/EDD    SCALE: AS SHOWN    DRAWING NO. OF 6