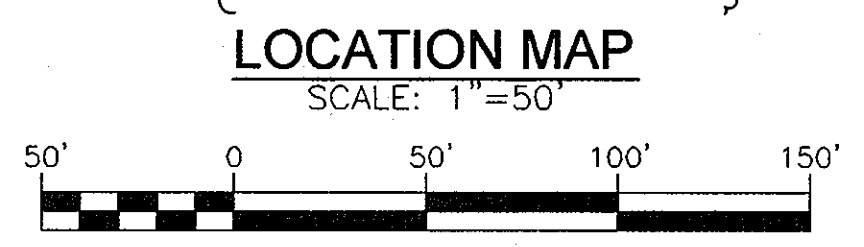
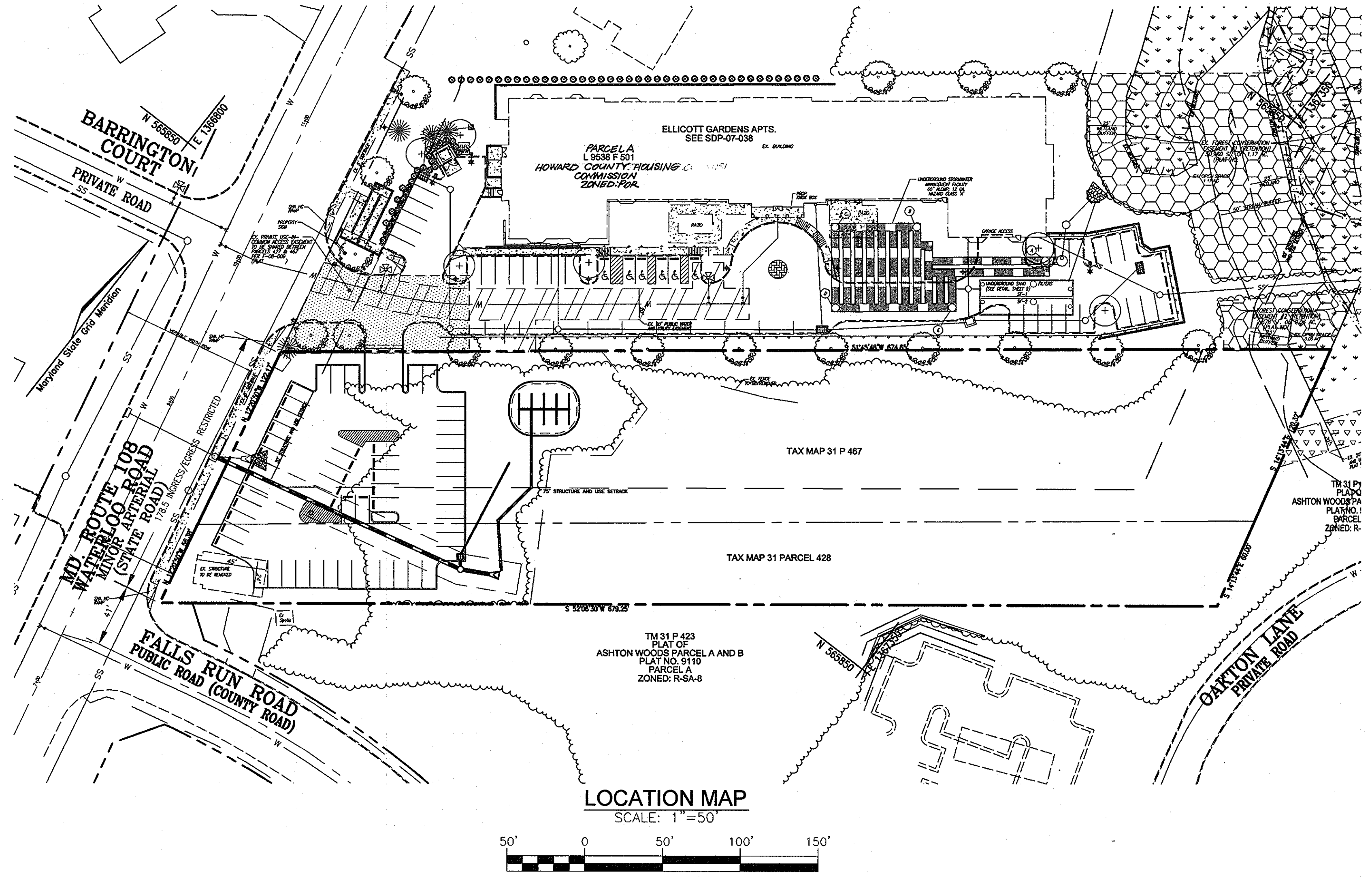


GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 S UTILITIES: 1-800-257-7777
 VERIZON TELEPHONE COMPANY: 1-410-954-6281
 HOWARD COUNTY BUREAU OF UTILITIES: 410-313-1880
 AT&T CABLE LOCATION DIVISION: 393-3553
 B.G.&E. CO. CONTRACTOR SERVICES: 850-4620
 B.G.&E. CO. UNDERGROUND DAMAGE CONTROL: 750-4620
 STATE HIGHWAY ADMINISTRATION: 531-5533
- SITE ANALYSIS:**
 TOTAL AREA OF PARCEL 428: 0.82 AC.
 TOTAL AREA OF PARCEL 467: 1.71 AC.
 TOTAL SITE AREA: 2.53 AC.
 PRESENT ZONING: POR
 USE OF STRUCTURE: N/A
 BUILDING COVERAGE: 0
 PAVED PARKING LOT/AREA WITHIN LOD: 0.4135 AC. OR 16.42% OF GROSS AREA
 AREA OF LANDSCAPE ISLAND: 0.0138 AC. OR 0.14% OF GROSS AREA
 LIMIT OF DISTURBED AREA: 0.8082 AC.
 CUT: 743 CY FILL: 3159 CY
- PROJECT BACKGROUND:**
 LOCATION: COLUMBIA, MD; TAX MAP 31, BLOCK 19, PARCEL 428 & 467
 ZONING: POR
 SUBDIVISION: N/A
 SECTION/AREA: N/A
 SITE AREA: N/A
 DEED REFERENCES: L 12015/F 485, L 10427/F 321, L 7894/F 473, L 763/F 501.
 DPZ REFERENCES: BA CASE NO. 06-005-V, APPROVED 04/24/06; SDP-07-038, F-08-064 SDP-07-137, WP-08-111, WP-09-085
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3,500 P.S.I.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST 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.
- ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
- SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST PRIOR TO CONSTRUCTION.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED AUGUST 2004. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
- THE PROPERTY LINES SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC.; DATED NOVEMBER 2004.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION.
- ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.03 ASPHALT CURB (SEE DETAILS, SHEET 2)
- CONTRACTOR RESPONSIBLE TO CONSTRUCT ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- STORMWATER MANAGEMENT QUALITY IS PROVIDED BY THE PROPOSED BIO-RETENTION FACILITY AND GRAVEL BELOW (REV.). STORMWATER MANAGEMENT QUANTITY (CPV) IS NOT REQUIRED FOR THIS PROJECT SINCE THE 1-YEAR RUNOFF IS LESS THAN 2.0 CFS.
- ALL EXTERIOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. (DETAIL ON SHEET 2)
- GEOTECHNICAL REPORT WAS PREPARED BY HILLIS-CARNE ENGINEERING ASSOCIATES, INC., DATED MAY 15, 2007.
- ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
- THE SUBJECT PROPERTY IS ZONED POR PER THE 2006 COMPREHENSIVE ZONING PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS) OR THEIR BUFFERS.
- ALL STORMDRAIN PIPE BEDDING IS TO BE IN CONFORMANCE WITH HOWARD COUNTY STANDARD DETAIL G-2.12.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY CD 75-2003.
- THE FOREST CONSERVATION OBLIGATION FOR THIS SITE PLAN, WHICH PROPOSES THE CLEARING OF 18,730 SQFT OF FOREST, WAS MET BY THE SUBMISSION OF A "DECLARATION OF INTENT FOR SINGLE RESIDENTIAL LOT EXEMPTION CLEARING LESS THAN 20,000 SQFT OF FOREST" THE FOREST CONSERVATION WORK SHEET REQUIRED FOR ANY FUTURE DEVELOPMENT OF THIS SITE SHALL INCLUDE THE 18,730 SQFT OF CLEARED FOREST AS "18,730 SQFT OF EXISTING FOREST" WHEN COMPUTING THE FOREST CONSERVATION OBLIGATION.
- WETLAND DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED FEBRUARY 1, 2006
- THERE IS NO FLOODPLAIN LOCATED ON SITE. PER FIRM MAP PANEL #24004 0035 B, DATED DECEMBER 4, 1996.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS" (JUNE 1993) A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTRY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) -3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- REF BA CASE NO. 06-005-V, APPROVED 04-24-2006 TO REDUCE THE REQUIRED 75' USE SETBACK FROM RESIDENTIAL DISTRICT TO 10' FOR PARKING USES AND TO 64' FOR A BUILDING AND REDUCE THE 30' USE SETBACK FROM A PUBLIC STREET RIGHT OF WAY TO 14' FOR PARKING.
- REF BA CASE NO. 08-042V, APPROVED 01-05-2009 TO REDUCE THE REQUIRED 75' USE SETBACK FROM RESIDENTIAL DISTRICT TO 62' FOR PARKING USES AND A RETAINING WALL AND REDUCE THE 30' STRUCTURE AND USE SETBACK FROM A PUBLIC STREET RIGHT OF WAY TO 14' FOR PARKING USES.
- THE PLANNING DIRECTOR HAS DETERMINED THAT THIS SITE AND ADJACENT TM PARCEL 427, ELLICOTT GARDENS (SDP-07-038, ARE "PART OF THE SAME DEVELOPMENT" FOR DEVELOPMENT AND ZONING SETBACK PURPOSES PER ZONING REGULATION SECTION 128A.10.
- IN ACCORDANCE WITH ZONING SECTIONS 133.D.8 AND 133.E, THE PLANNING DIRECTOR HAS APPROVED REQUEST TO REDUCE THE REQUIREMENT OF 2 PARKING SPACES MINIMUM PER APARTMENT PER UNIT AS REQUIRED BY ZONING SECTION 133.D.2, TO 1.70 PARKING SPACES PER APARTMENT UNIT ON ADJACENT TM PARCEL 427, ELLICOTT GARDENS. SEE THE SHARED PARKING ANALYSIS AND TABULATION, THIS SHEET. THIS DECISION IS BASED ON THE FOLLOWING:
 A. THE SHARED PARKING ANALYSIS AND TABULATION FOR THIS SITE AND ADJACENT TM PARCEL 427, ELLICOTT GARDENS (RENTAL APARTMENTS)/SDP-07-038.
 B. THE ADJACENT RENTAL APARTMENT PROJECT, SDP-07-038, CONSIST OF 95 ONE-BEDROOM UNITS AND 11 TWO-BEDROOMS, AND IS TO BE OWNED AND MANAGED BY HOWARD COUNTY.
 C. THE OWNER OF THE APARTMENT PROJECT, SDP-07-038, WILL MANAGE IT AND RESPOND TO ANY PARKING INADEQUACIES SHOULD THEY ARISE.
 D. THE APARTMENT UNITS WILL BE ABLE TO USE/SHARE PARKING ON THIS SITE BASED ON THE SUBMITTED SHARED PARKING ANALYSIS AND TABULATION FOR THIS SITE AND ADJACENT TM PARCEL 427, ELLICOTT GARDENS/SDP-07-038 (SHOWN ON THIS SHEET).
- THIS PROJECT IS SUBJECT TO A JOINT USE EASEMENT AND COVENANT AGREEMENT (L11060, F.306); RECORDED JANUARY 15, 2008; BY AND BETWEEN HOWARD COUNTY HOUSING COMMISSION (ELLICOTT GARDENS, SDP-07-038) AND ESC/AM WATERLOO ROAD, LLC (WATERLOO OFFICE, SDP-07-137).
- THE EXISTING SEPTIC SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH HOWARD COUNTY HEALTH DEPARTMENT REGULATIONS. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS PRIOR TO ABANDONMENT.
- LANDSCAPE SURETY IN THE AMOUNT OF \$19,200.00 HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR 15 SHADE TREES @ \$300.00 PER TREE, 23 EVERGREEN TREES @ \$150.00 PER TREE, AND 45 SHRUBS @ \$50.00 PER SHRUB.

ELLICOTT GARDENS TEMPORARY PARKING SITE DEVELOPMENT PLAN



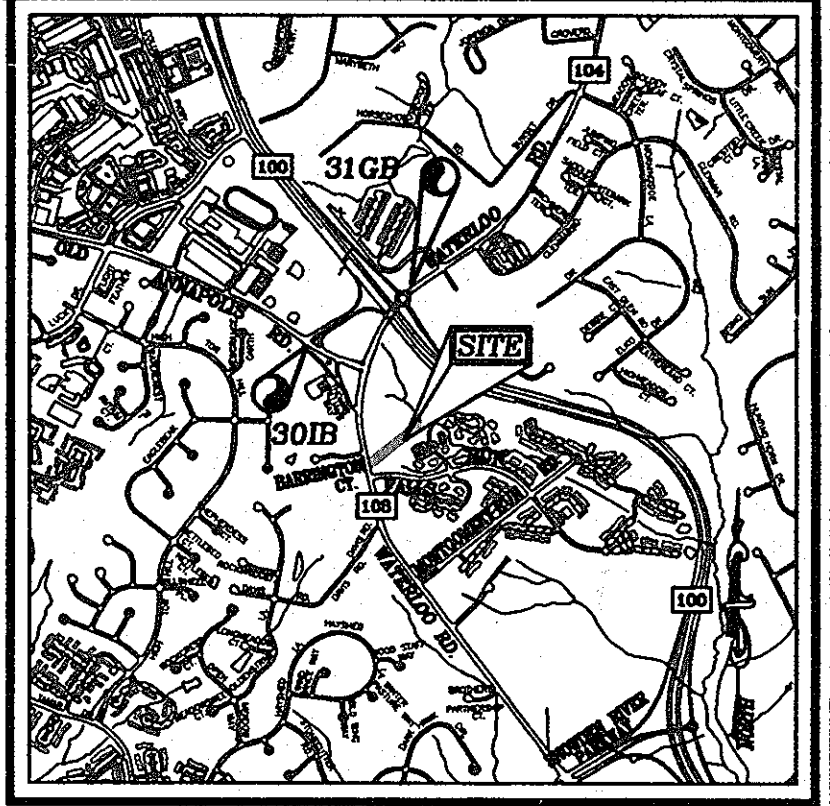
LEGEND

- Existing Contour: ---382---
- Proposed Contour: ---[8]---
- Existing Spot Elevation: +382.56
- Proposed Spot Elevation: +82.53
- Direction of Flow: →
- Existing Trees to Remain: [Cloud symbol]
- Light Poles: □ Single Overhead, □ Double Overhead
- Concrete: [Stippled pattern]

BENCHMARKS

HOWARD COUNTY BENCHMARK 301B
 N 566937.926 E 1366270.75 ELEV. 526.868

HOWARD COUNTY BENCHMARK 31GB
 N 567567.473 E 1367353.38 ELEV. 512.080



SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 7
SITE LAYOUT PLAN	2 OF 7
GRADING AND SEDIMENT AND EROSION CONTROL PLAN	3 OF 7
SEDIMENT AND EROSION CONTROL NOTES AND DETAILS	4 OF 7
STORM DRAIN DRAINAGE AREA MAP	5 OF 7
STORMWATER MANAGEMENT NOTE AND DETAILS	6 OF 7
LANDSCAPE AND FOREST CONSERVATION PLAN	7 OF 7

PARKING TABULATION

	REQUIRED
SENIOR HOUSING APARTMENT: 103,760 SF	180 SPACES
1.7 SPACES @ 106 UNITS	180 SPACES (REFERENCE SDP-07-038)
TOTAL SPACES REQUIRED:	180 SPACES (REFERENCE SDP-07-038)
TOTAL SPACES PROVIDED IN GARAGE:	65 SPACES (INCLUDING 6 HANDICAP)
TOTAL SPACES PROVIDED OUTSIDE GARAGE:	60 SPACES (INCLUDING 6 HANDICAP)
TOTAL SPACES PROVIDED ON SITE :	125 SPACES (INCLUDING 12 HANDICAP) (TM PARCELS 427)
TEMPORARY PARKING SPACES PROVIDED (TM PARCELS 428 & 467)	55 SPACES
TOTAL SPACES PROVIDED:	180 SPACES

OWNER/DEVELOPER
 HOWARD COUNTY HOUSING COMMISSION
 6751 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21064
 410-730-3725

NO.	REVISION	DATE
1	ADD LIGHT POLE LOCATIONS	9/28/10

**SITE DEVELOPMENT PLAN
COVER SHEET**

ELLICOTT GARDENS TEMPORARY PARKING
 BA-06-005V, SDP-07-038, F-08-064, BA-08-042V
 SDP-07-137, WP-08-111, WP-09-085

TAX MAP 31 BLOCK 19 (PARCEL '428' & '467')
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

AS-BUILT CERTIFICATION
 I, HEREBY CERTIFY THAT THE FACILITY SHOWN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 ROBERT H. VOGEL, P.E., NO. 16193 DATE

ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
428 AND 467	5511 & 5513 WATERLOO ROAD

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER			
ELLICOTT GARDEN TEMPORARY PARKING	N/A	428 AND 467			
LIBER/FOLIO	BLOCK NO.	ZONE	TAX/ZONE	ELECT. DIST.	CENSUS TR. #
12015/485	19	POR	31	1ST	6011.02
WATER CODE: 607		SEWER CODE: 2780000			

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

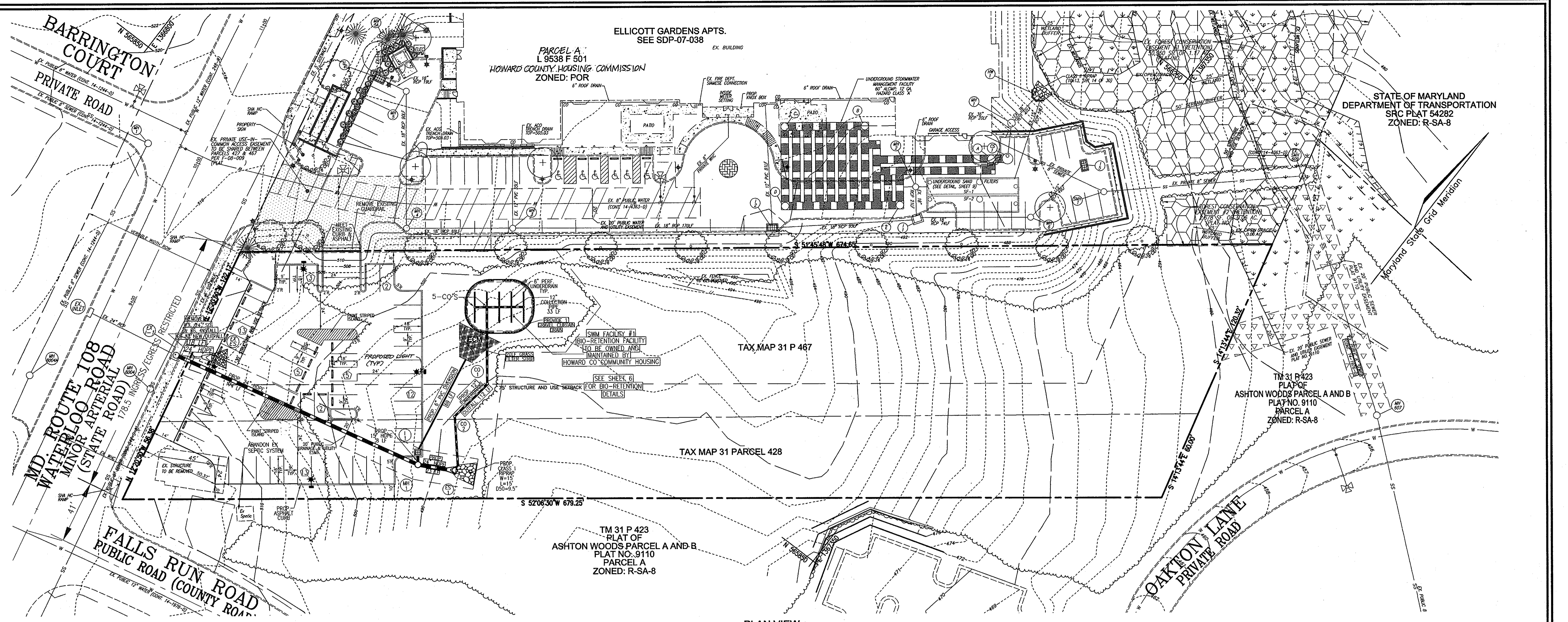
Chad Edwards 2-18-10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kristen Edwards 2-19-10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Thomas J. Suttle 2/19/10
 DIRECTOR, DEP. DATE

DESIGN BY: JAR
 DRAWN BY: JAR
 CHECKED BY: JAR
 DATE: DECEMBER 2009
 SCALE: AS SHOWN
 W.O. NO.: 06-01

1 SHEET OF 7



ELlicOTT GARDENS APTS.
SEE SDP-07-038

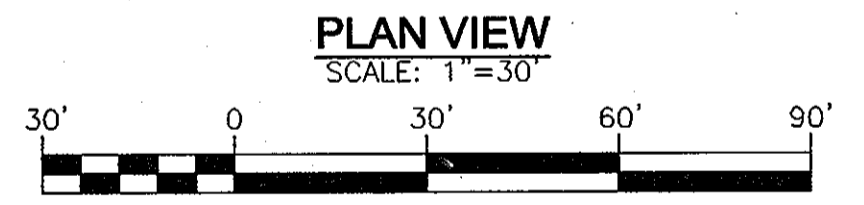
PARCEL A
L 9538 F 501
HOWARD COUNTY HOUSING COMMISSION
ZONED: POR

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
SRC PLAT 54282
ZONED: R-SA-8

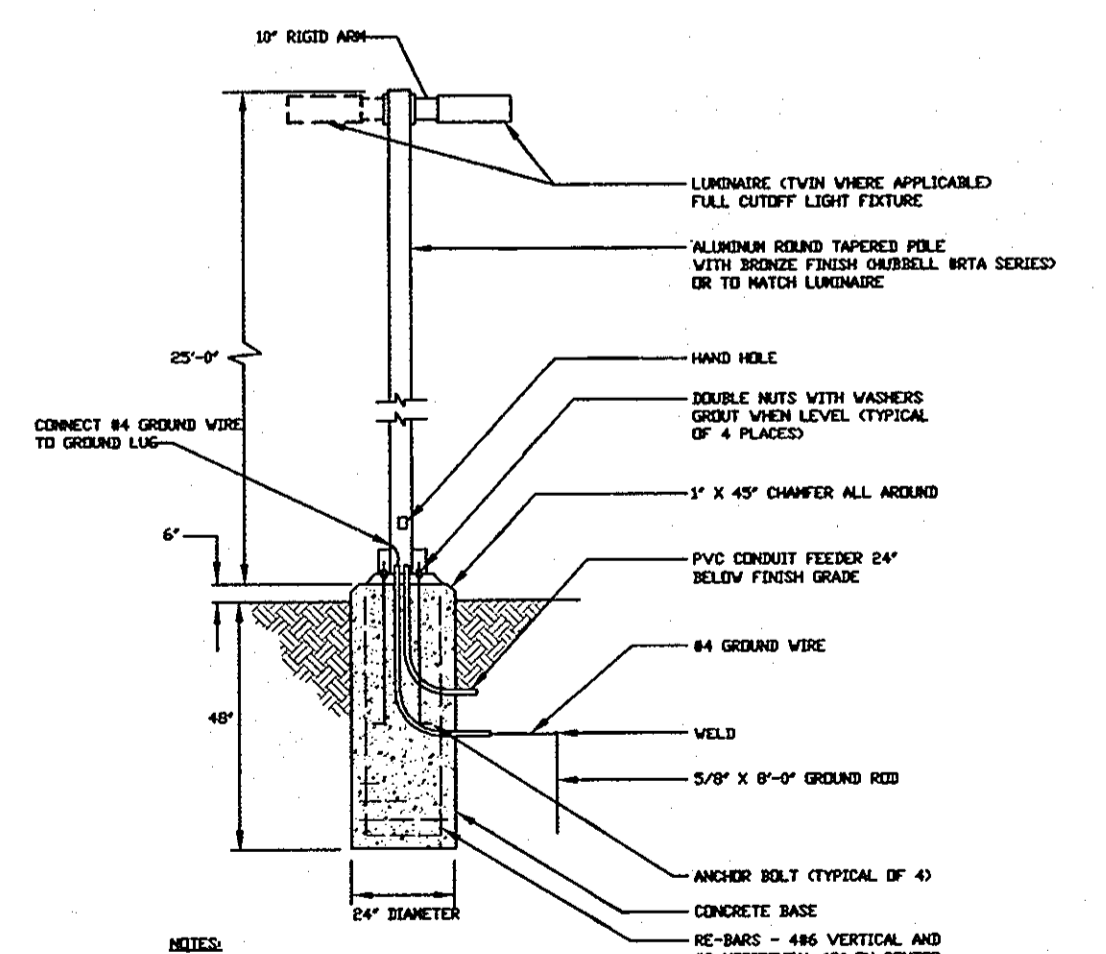
TAX MAP 31 P 467

TAX MAP 31 PARSEL 428

TM 31 P 423
PLAT OF
ASHTON WOODS PARCEL A AND B
PLAT NO. 9110
PARCEL A
ZONED: R-SA-8



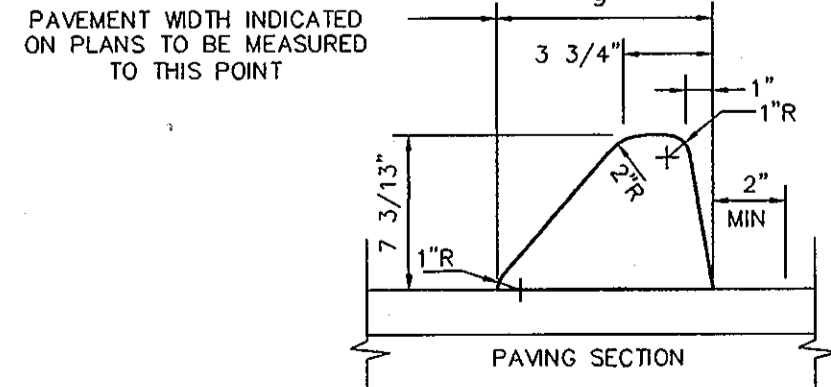
OWNER/DEVELOPER
HOWARD COUNTY HOUSING COMMISSION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21064
410-730-3725



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING PAVEMENT (CBP)					
		PAVEMENT MATERIAL (INCHES)	3 TO 4	5 TO 6	7 TO 8	9 TO 10	11 TO 12
P-1	PARKING DRIVE, NON-RESIDENTIAL, THROUGH TRAFFIC, AND NO MORE THAN 2 HEAVY TRUCKS PER DAY	1.5" SMA SUPERFINE FINISH SURFACE	1.5	1.5	1.5	1.5	1.5
		1.5" SMA SUPERFINE INTERMEDIATE SURFACE (IN)	1.5	1.5	1.5	1.5	1.5
		1.5" SMA SUPERFINE BASE (IN)	1.5	1.5	1.5	1.5	1.5

PAVEMENT SECTION IS FOR BID PURPOSE ONLY.
PAVEMENT SECTION TO BE VERIFIED AT THE TIME OF CONSTRUCTION
BY GEOTECHNICAL CONSULTANT RETAINED BY THE OWNER OR CONTRACTOR

PAVEMENT SECTION



STANDARD BITUMINOUS CURB
HOWARD COUNTY STANDARD R-3.03
NOT TO SCALE

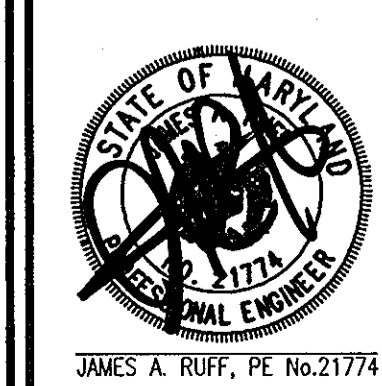
LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- +40.25 EXISTING SPOT ELEVATION
- +40.28 EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- PROP. LIGHT POLE
- PROP. STREET LIGHT
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- EX. 20" PUBLIC WATER AND UTILITY EASEMENT
- EX. PUBLIC FOREST CONSERVATION "RETENTION" EASEMENT
- EXISTING WETLANDS
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED TREELINE
- BORING LOCATION

NO.	ADD LIGHT POLE LOCATIONS	REVISION	DATE
1	ADD LIGHT POLE LOCATIONS		9/28/10

SITE DEVELOPMENT PLAN
SITE LAYOUT PLAN
ELlicOTT GARDENS TEMPORARY PARKING
BA-06-003V, SDP-07-038, F-09-064, BA-08-042V
SD9-07-137, WP-08-111, WP-09-085
TAX MAP 31 BLOCK 19 PARCEL '428' & '467'
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELlicOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961



DESIGN BY: JAR
DRAWN BY: JAR
CHECKED BY: JAR
DATE: DECEMBER 2009
SCALE: 1"=30'
W.O. NO.: 06-01

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND LICENSE NO. 21774 EXPIRES 12-31-2013

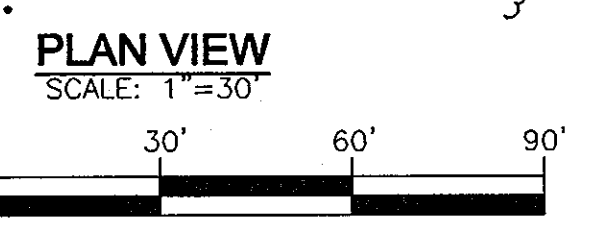
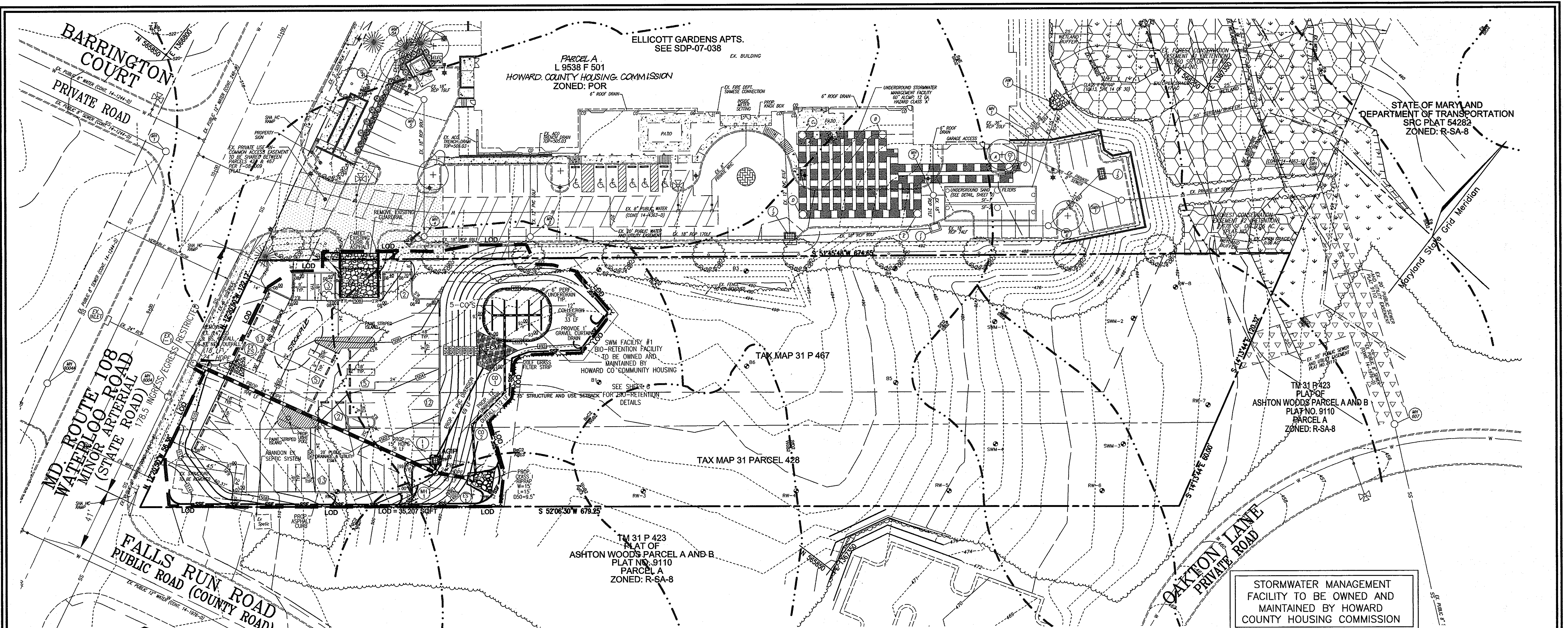
2 SHEET OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 2-19-10

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2-19-10

 DIRECTOR, DEP.
 DATE: 2/19/10



LEGEND:

--- 389 ---	EXISTING CONTOUR	[Symbol]	PROPOSED SIDEWALK
--- 406 ---	PROPOSED CONTOUR	[Symbol]	EX. 20' PUBLIC WATER AND UTILITY EASEMENT
+02.58	PROPOSED SPOT ELEVATION	[Symbol]	EX. PUBLIC FOREST CONSERVATION "RETENTION" EASEMENT
+02.88	EXISTING SPOT ELEVATION	[Symbol]	EXISTING WETLANDS
==	EXISTING CURB AND GUTTER	[Symbol]	EXISTING STREAM
---	PROPOSED CURB AND GUTTER	[Symbol]	EXISTING STREAM BUFFER
---	EXISTING UTILITY POLE	[Symbol]	PROP. LIGHT POLE
[Symbol]	EXISTING LIGHT POLE	[Symbol]	PROP. STREET LIGHT
[Symbol]	EXISTING MAILBOX	[Symbol]	SILT FENCE
[Symbol]	EXISTING SIGN	[Symbol]	SUPER SILT FENCE
[Symbol]	EXISTING SANITARY MANHOLE	[Symbol]	LIMIT OF DISTURBANCE
[Symbol]	EXISTING SANITARY LINE	[Symbol]	CURB INLET PROTECTION
[Symbol]	EXISTING CLEANOUT	[Symbol]	AT GRADE INLET PROTECTION
[Symbol]	EXISTING FIRE HYDRANT	[Symbol]	STABILIZED CONSTRUCTION ENTRANCE
[Symbol]	EXISTING WATER LINE	[Symbol]	
[Symbol]	PROPOSED STORM DRAIN	[Symbol]	
[Symbol]	PROPOSED STORM DRAIN INLET	[Symbol]	
[Symbol]	EXISTING TREES (FIELD LOCATED)	[Symbol]	
[Symbol]	EXISTING TREELINE (FIELD LOCATED)	[Symbol]	
[Symbol]	PROPOSED TREELINE	[Symbol]	
[Symbol]	EXISTING FENCE	[Symbol]	
[Symbol]	PROPERTY LINE	[Symbol]	
[Symbol]	RIGHT-OF-WAY LINE	[Symbol]	
[Symbol]	SOILS BOUNDARY	[Symbol]	

STORMWATER MANAGEMENT FACILITY TO BE OWNED AND MAINTAINED BY HOWARD COUNTY HOUSING COMMISSION

OWNER/DEVELOPER
HOWARD COUNTY HOUSING COMMISSION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21064
410-730-3725

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
SITE GRADING, SEDIMENT AND
EROSION CONTROL PLAN**
ELLICOTT GARDENS TEMPORARY PARKING
BA-06-05V, SDP-07-038, F-08-064, BA-08-042V
SD9-07-137, WP-08-111, WP-09-085
TAX MAP 31 BLOCK 19 PARCEL '428' & '467'
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET COLUMBIA, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: JAR
DRAWN BY: JAR
CHECKED BY: JAR
DATE: DECEMBER 2009
SCALE: AS SHOWN
W.O. NO.: 06-01

JAMES A. RUFF, PE No.21774

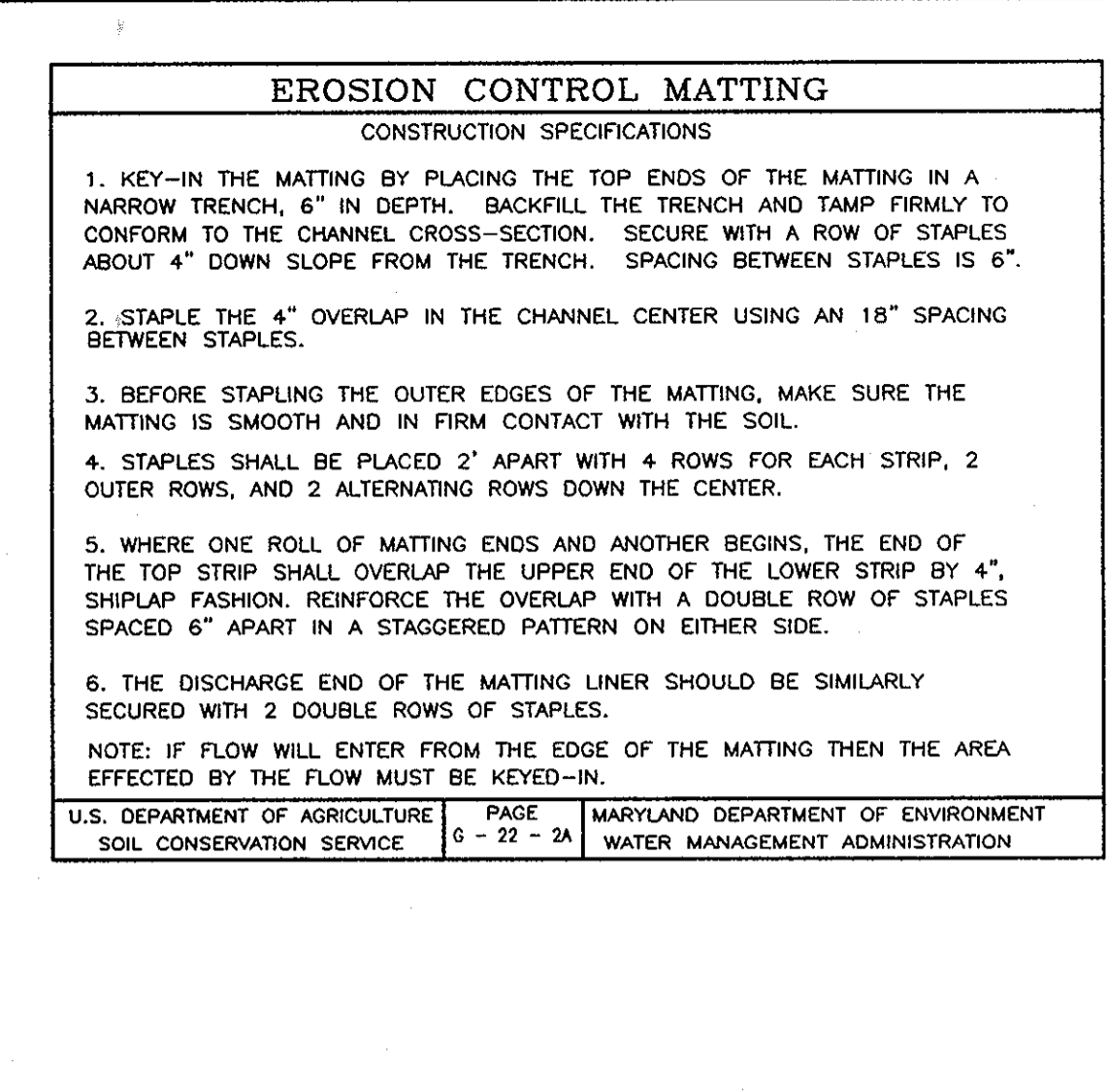
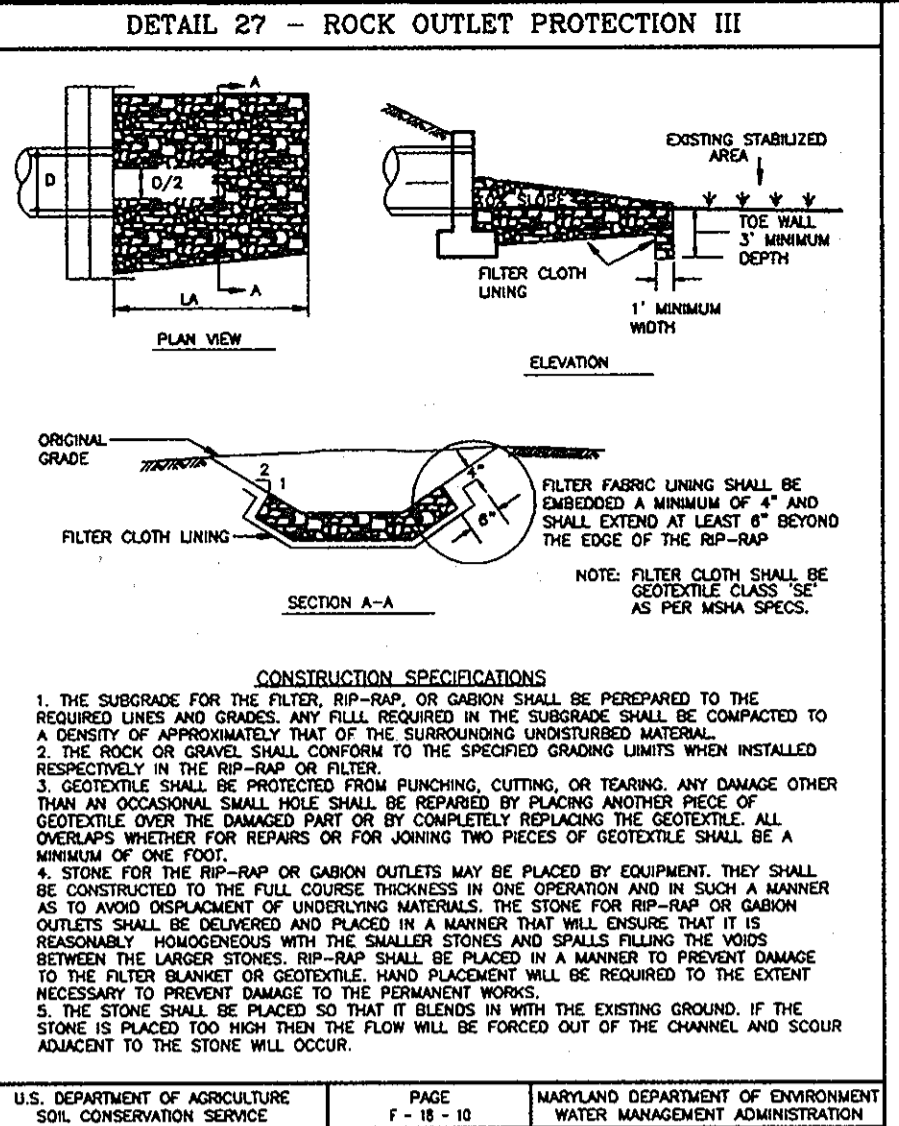
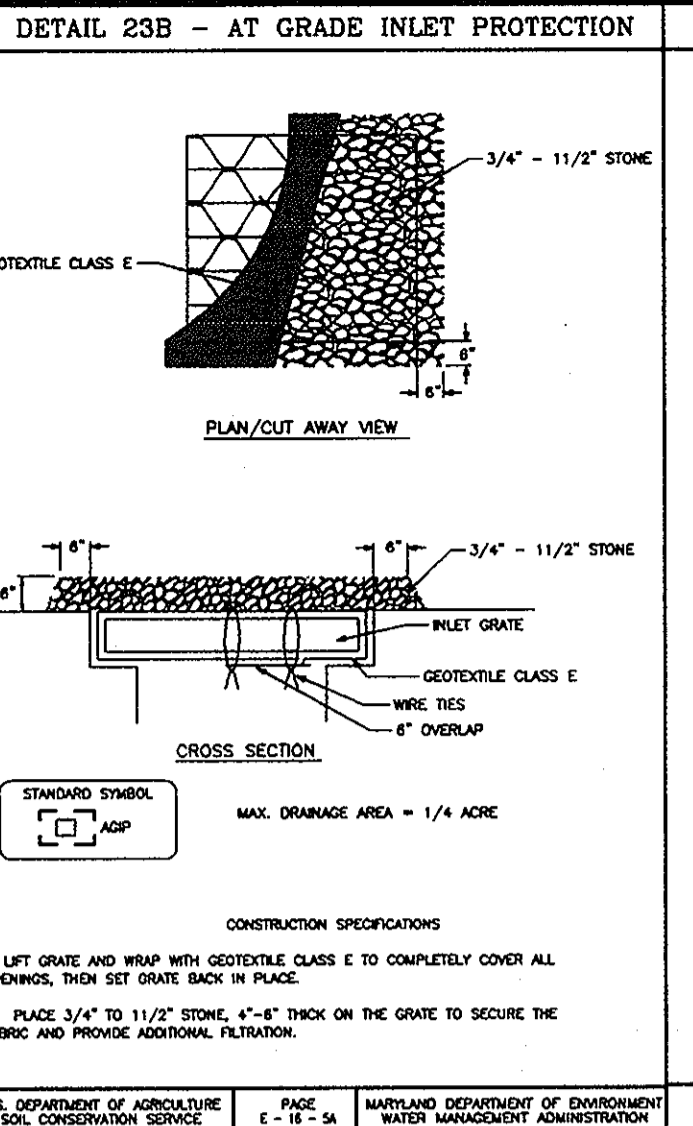
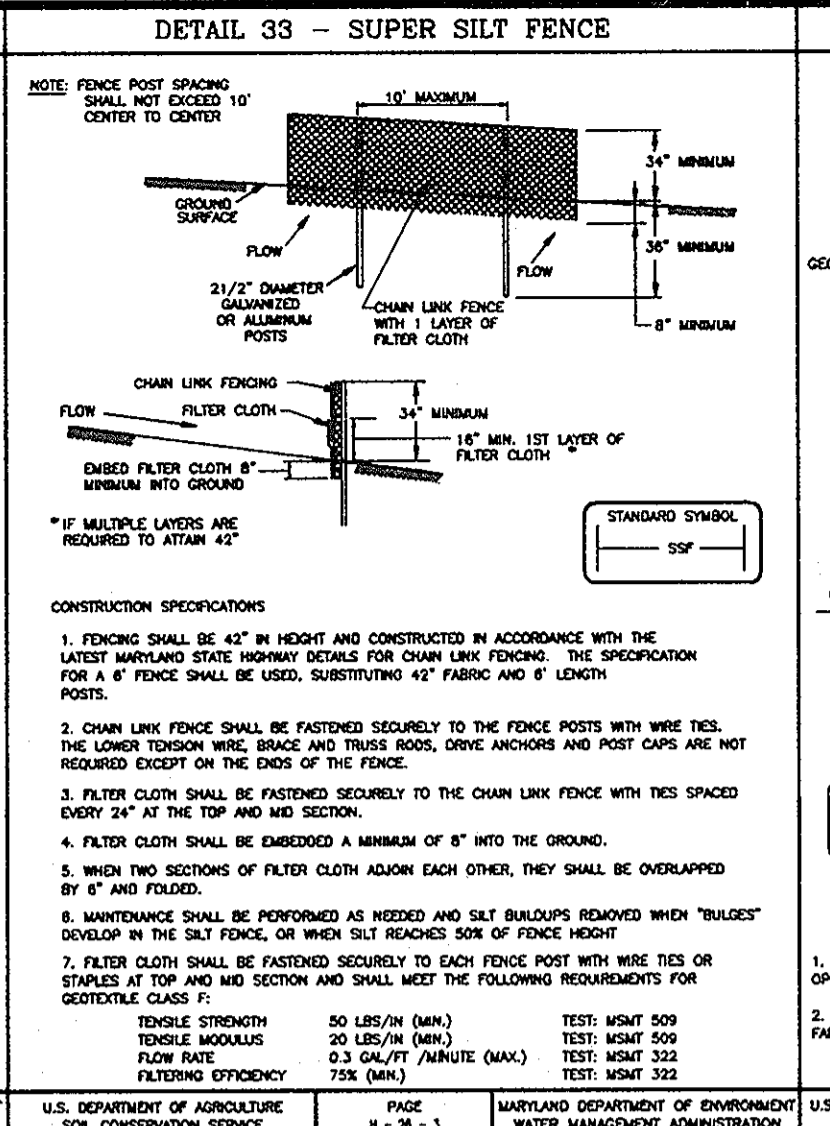
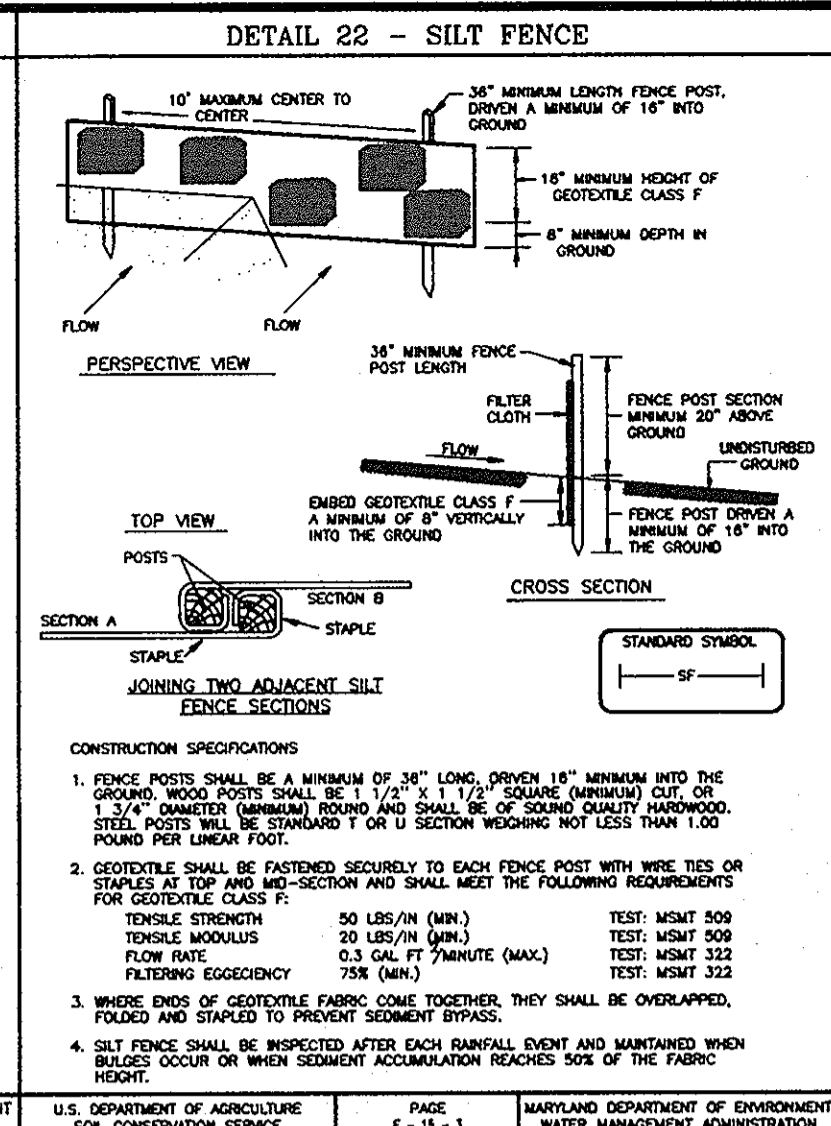
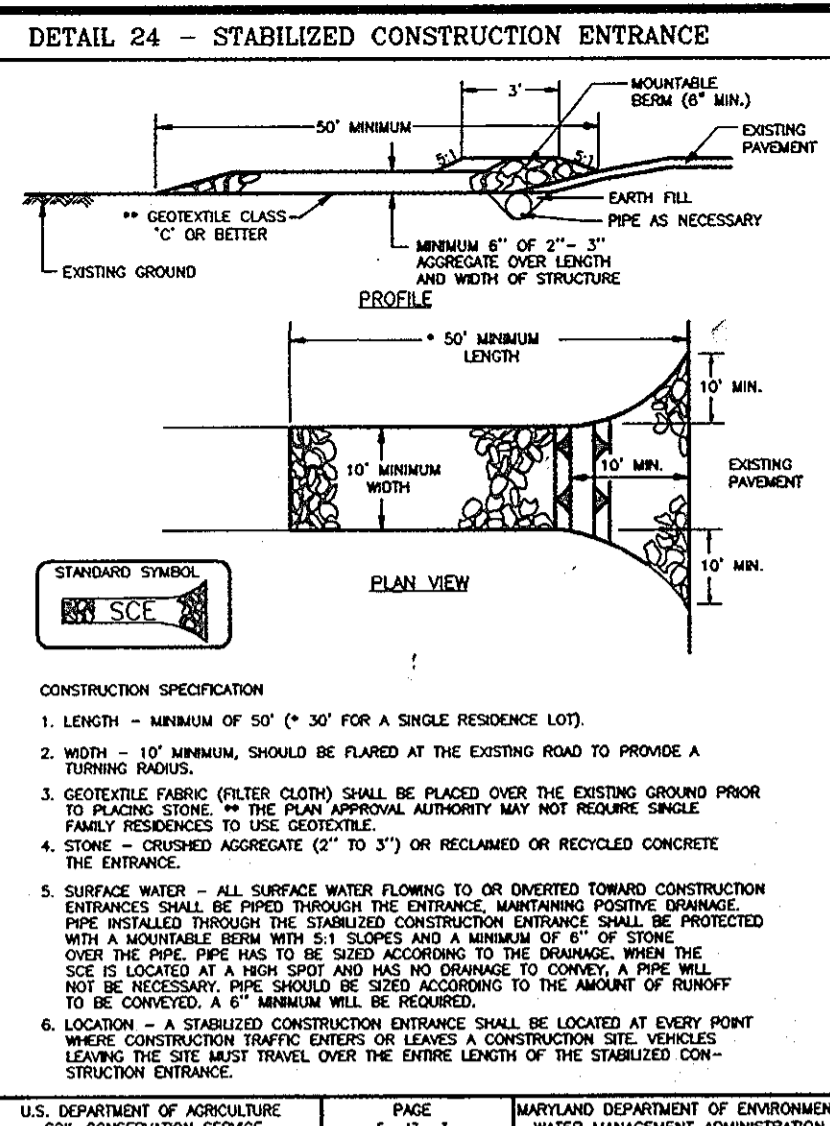
3 SHEET OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 2-18-10
[Signature] 2-19-10
[Signature] 2/19/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR, DEP.

REMOVED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
[Signature] [Signature]
USDA-NATURAL RESOURCES CONSERVATION SERVICE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. 2/10

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 2/10/09
SIGNATURE OF DEVELOPER DATE

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.
[Signature] 12/10/09
SIGNATURE OF ENGINEER DATE



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE
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MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

PERMANENT SEEDING NOTES
APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATION IS DESIRED.

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously accomplished.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following:

1. Preferred—Apply 2 tons per acre dolomitic limestone (92 lbs./100 sq.ft.) and 800 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureiform fertilizer (9 lbs./1000 sq.ft.).
2. Acceptable—Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 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 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by applying 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use seed. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw mulch.

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.

MAINTENANCE: Inspect all seeded areas and make needed repairs.

TEMPORARY SEEDING NOTES
SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously accomplished.

SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer.

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.) for the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use seed. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw mulch.

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.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT SHOWN.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

Purpose
To provide a suitable soil medium for vegetable growth. Soil of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies
1. 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 vegetable growth.
b. The soil moisture 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
1. 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 Experiment Station.
2. 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 a soil scientist and approved by the appropriate 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, rocks, trash, or other materials larger than 1" and 1/2" in diameter.
ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, biode, 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 slope operations as described in the following procedures.
iii. F. For sites having disturbed areas over 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.

SEQUENCE OF CONSTRUCTION

1. OBTAIN HOWARD COUNTY GRADING PERMIT.
2. NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. (WEEK 1)
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (WEEK 1)
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTAINABLE BEAM. (WEEK 1)
5. INSTALL ALL SUPER SILT FENCE AND SILT FENCE. (WEEK 2)
6. BEGIN STORM DRAIN CONSTRUCTION, CLEAR AND GRADE AS NECESSARY TO PREVENT OVERFLOW FROM EXISTING TO OUTFALL TO PROTECT DRAINAGE BYPASS FOR SWA STORM DRAIN SYSTEM (WEEK 4)
7. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRADE (WEEK 4)
8. BEGIN GRADING OF SITE (WEEK 4)
9. INSTALL ON-SITE CURB AND GUTTER. (2 WEEKS)
10. PAVE PARKING LOT. (2 WEEKS)
11. FINE GRADE AND STABILIZE ALL AREAS OF PARCEL INCLUDING ANY EXPOSED EARTH AREAS OUTSIDE THE LOOP. REMOVE ALL TRASH JUNK AND DEBRIS FROM ENTIRE PARCEL. (1 WEEK)
12. INSTALL SITE LANDSCAPING. (1 WEEK)
13. REMOVE ALL SEDIMENT CONTROL MEASURES AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. (1 WEEK)

NOTES:
1. DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES AND ALL SLOPES GREATER THAN 3:1.
B. 14 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.
3. THE BORETRENCH FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetation 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 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.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. 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. 6). Temporary stabilization with mulch alone shall be done when recommended seeding does not allow for proper germination and establishment of grasses.
6. 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.
7. Site Analysis:
Total Area: 2.53 Acres
Area Disturbed: 0.81 Acres
Area to be roofed or paved: 0.92 Acres
Area to be vegetatively stabilized: 0.39 Acres
Total Cut: 7.14 Cy
Total Fill: 3,159 Cy
WASTE/BORROW LOCATION:
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. 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.
11. 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.
*To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit.

OWNER/DEVELOPER
HOWARD COUNTY HOUSING COMMISSION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21064
410-730-3725

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
2-18-10
2-19-10
2/19/10

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
DATE: 2/19/10
DATE: 2/19/10
DATE: 2/19/10

BY THE DEVELOPER:
I, WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM ON SEDIMENT AND EROSION CONTROL BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: Dec. 10, 2009
DATE: 2/19/10

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 I WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: 2/19/10
DATE: 2/19/10

NOTE: DEBRIS IS TO BE KEPT OUT OF STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

**SITE DEVELOPMENT PLAN
SEDIMENT AND EROSION CONTROL
NOTES AND DETAILS**

ELLCOTT GARDENS TEMPORARY PARKING
BA-06-003V, SUP-07-038, F-08-064, BA-08-042V
S09-1-137, WP-08-111, WP-09-085

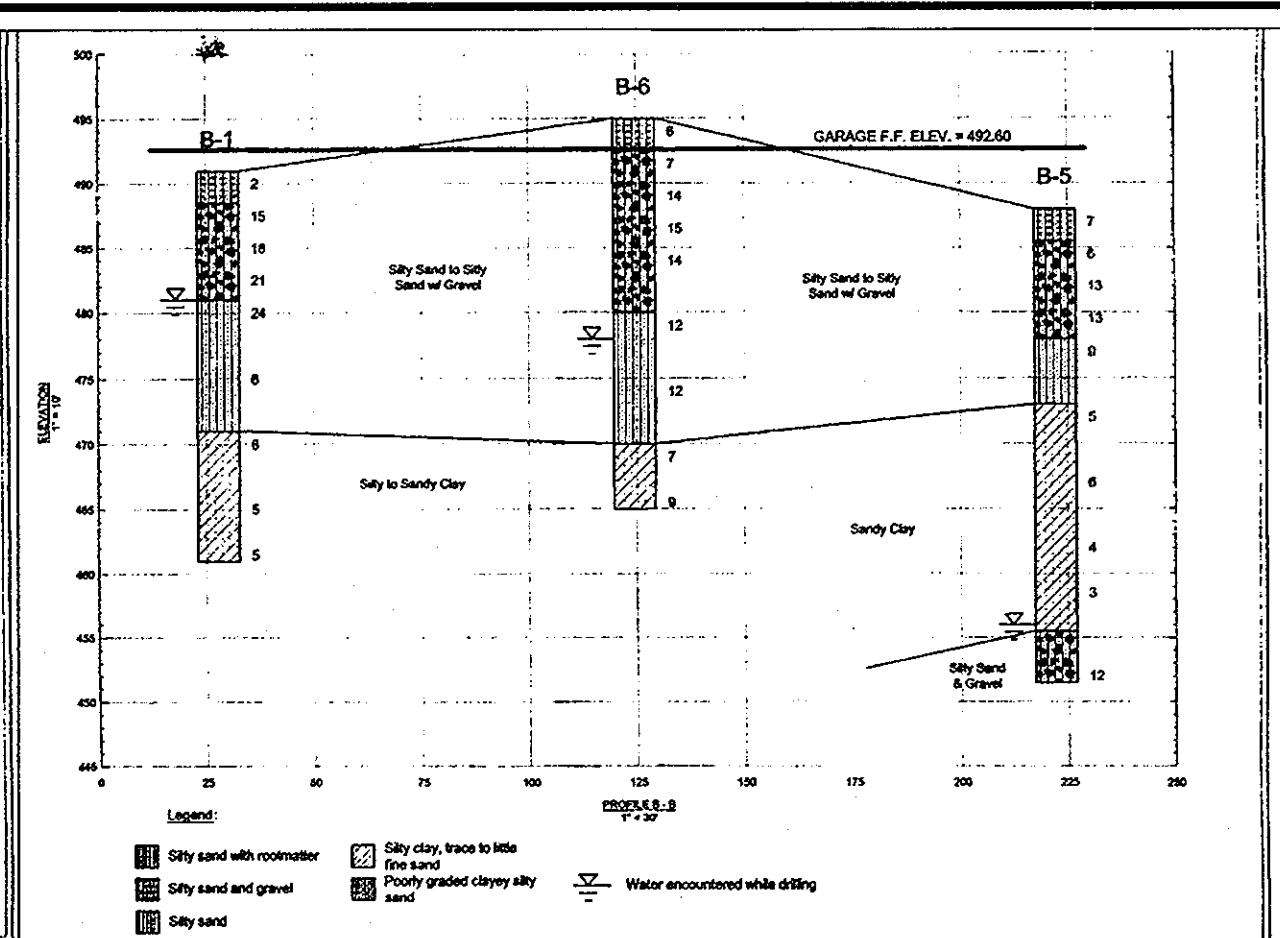
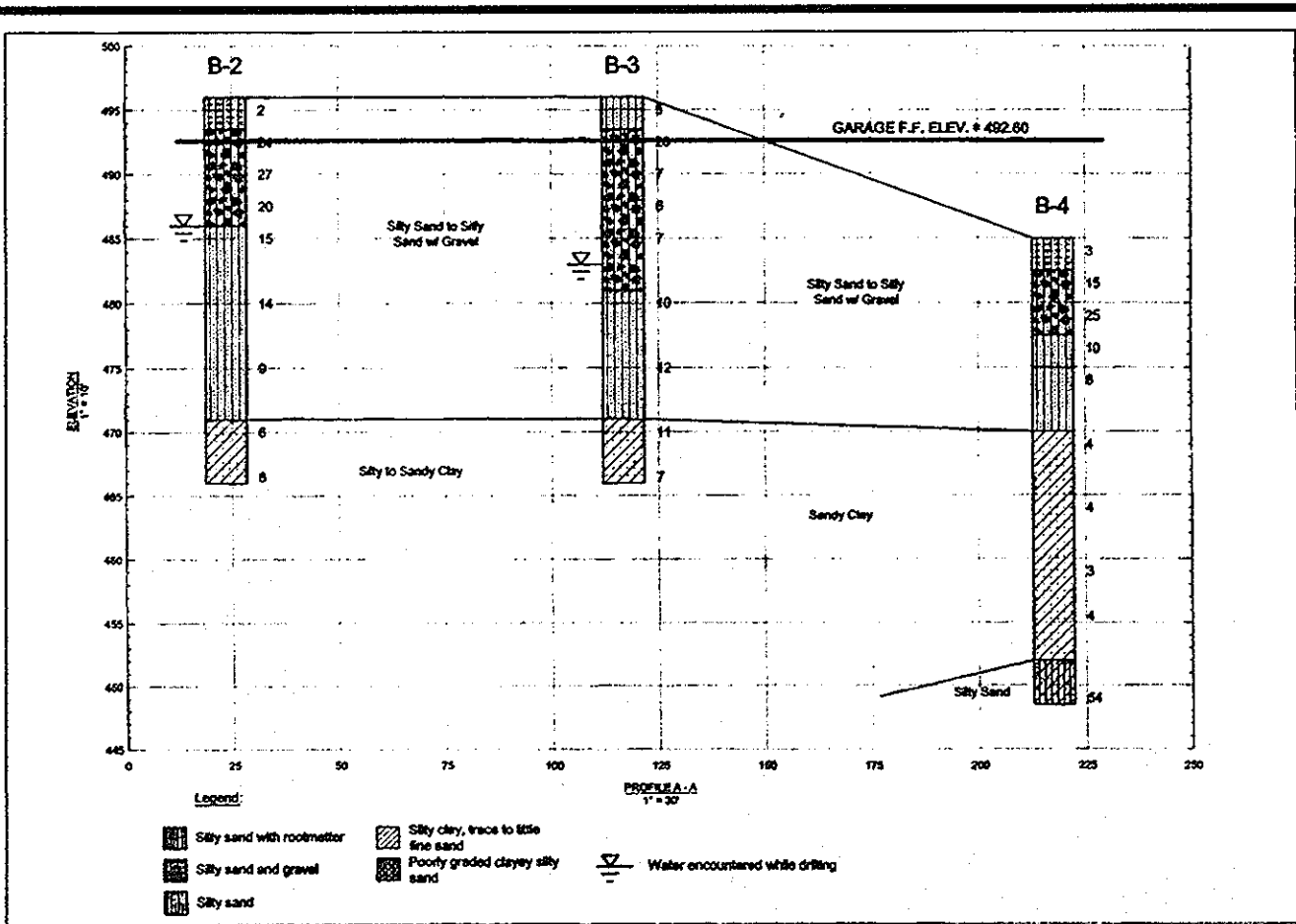
TAX MAP 31 BLOCK 19 PARCEL '428' & '467'
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: JAR
DRAWN BY: JAR
CHECKED BY: JAR
DATE: DECEMBER 2009
SCALE: AS SHOWN
W.O. NO.: 06-01

4 SHEET OF 7

AS-BUILT 6/20/2011 SDP-10-021



BORING PROFILE A - A
WATER CO LYNN PROPERTY
HOWARD COUNTY, MARYLAND

BORING PROFILE B - B
WATER CO LYNN PROPERTY
HOWARD COUNTY, MARYLAND

HILLS-CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Howard County, Maryland Job # 07222A

Date: 09/14/09 Job Number: 07222A Job Description: RECORD OF SOIL EXPLORATION

Depth	Description	Moisture (%)	SPC (%)	SPC (%)
0-12"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
12-15"	Change from medium, medium dense silty sand, fine gravel, trace clay (S4)	13.15	13.15	13.15
15-22"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
22-27"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
27-34"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
34-38"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
38-44"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
44-50"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
50-54"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
54-60"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
60-66"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
66-72"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
72-78"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
78-84"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
84-90"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
90-96"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
96-100"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1

HILLS-CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

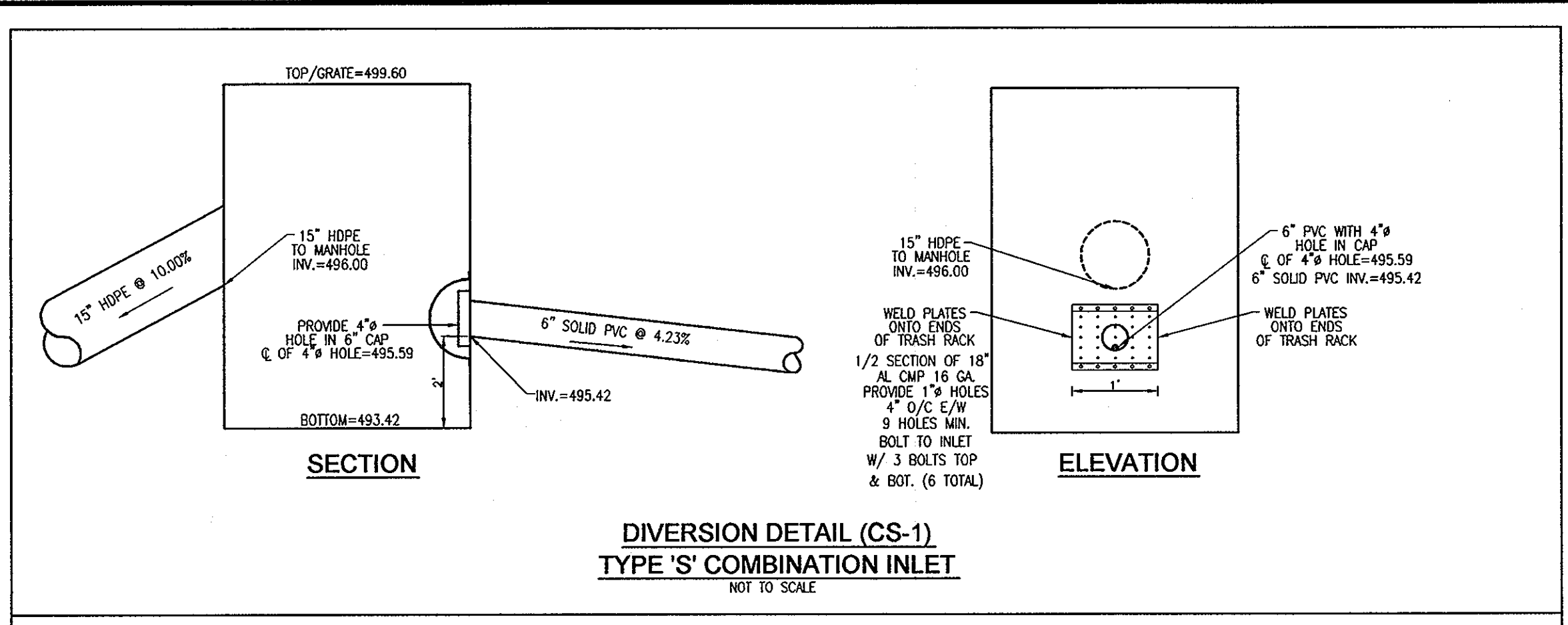
Project Name: Howard County, Maryland Job # 07222A

Date: 09/14/09 Job Number: 07222A Job Description: RECORD OF SOIL EXPLORATION

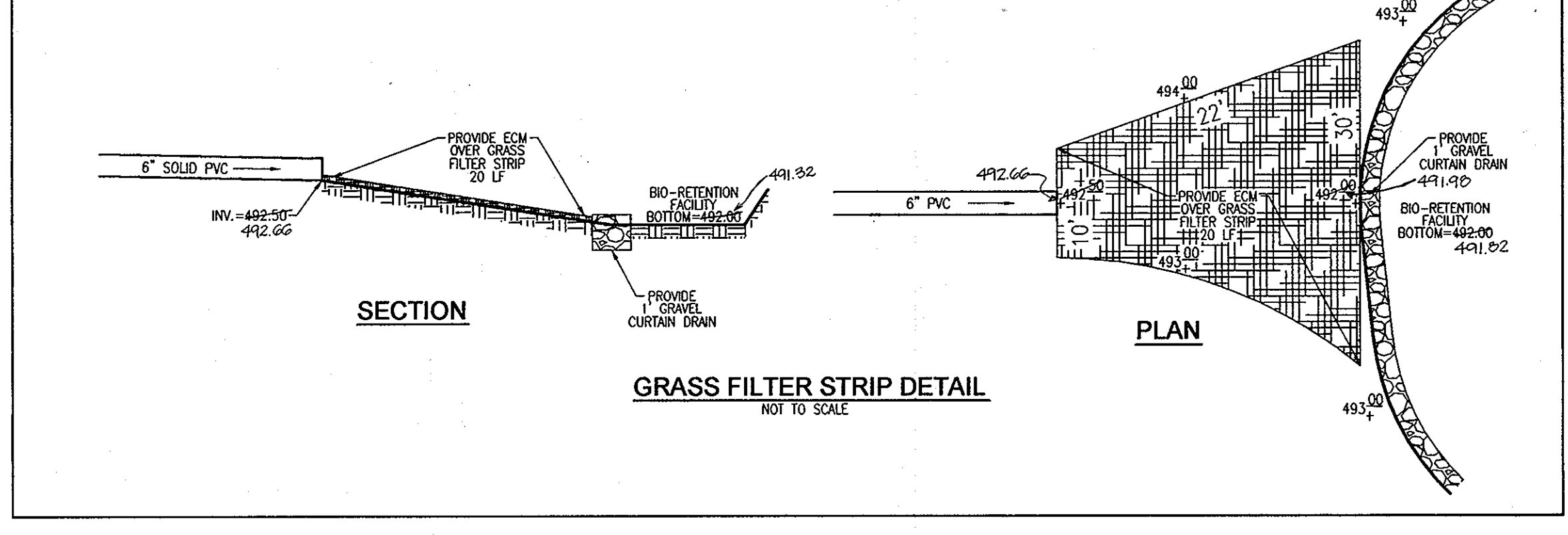
Depth	Description	Moisture (%)	SPC (%)	SPC (%)
0-12"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
12-15"	Change from medium, medium dense silty sand, fine gravel, trace clay (S4)	13.15	13.15	13.15
15-22"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
22-27"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
27-34"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
34-38"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
38-44"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
44-50"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
50-54"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
54-60"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
60-66"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
66-72"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
72-78"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
78-84"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
84-90"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
90-96"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1
96-100"	Dark brown, medium, very loose silty sand with nodules (S4)	15.1	15.1	15.1

STANDARD PRESCRIPTION TEST METHOD 2.0.1. SAMPLE 1 WITH WATER FALLING BY COUNT MADE AT 10 MINUTES.

STANDARD PRESCRIPTION TEST METHOD 2.0.1. SAMPLE 1 WITH WATER FALLING BY COUNT MADE AT 10 MINUTES.



DIVERSION DETAIL (CS-1)
TYPE 'S' COMBINATION INLET
NOT TO SCALE



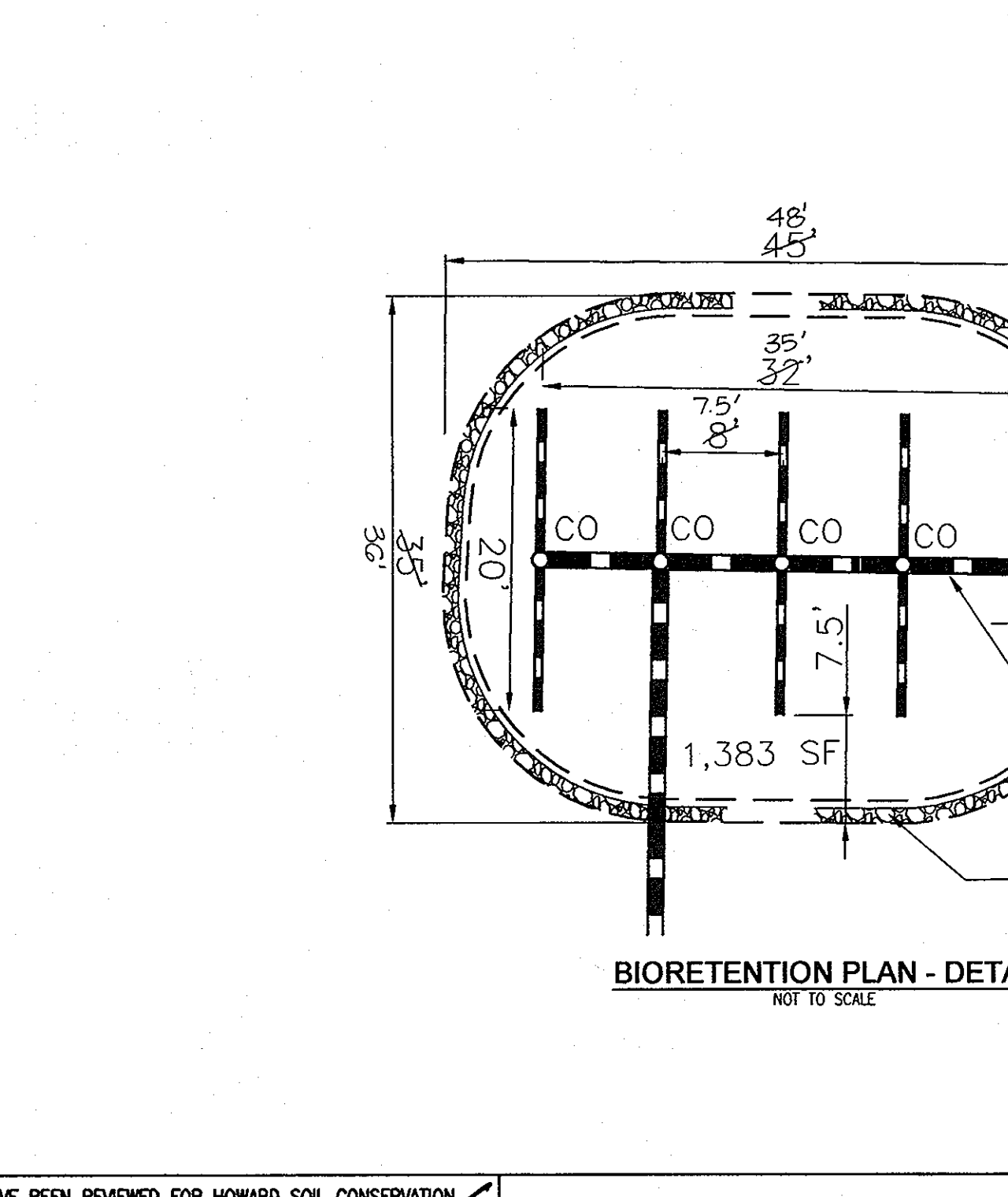
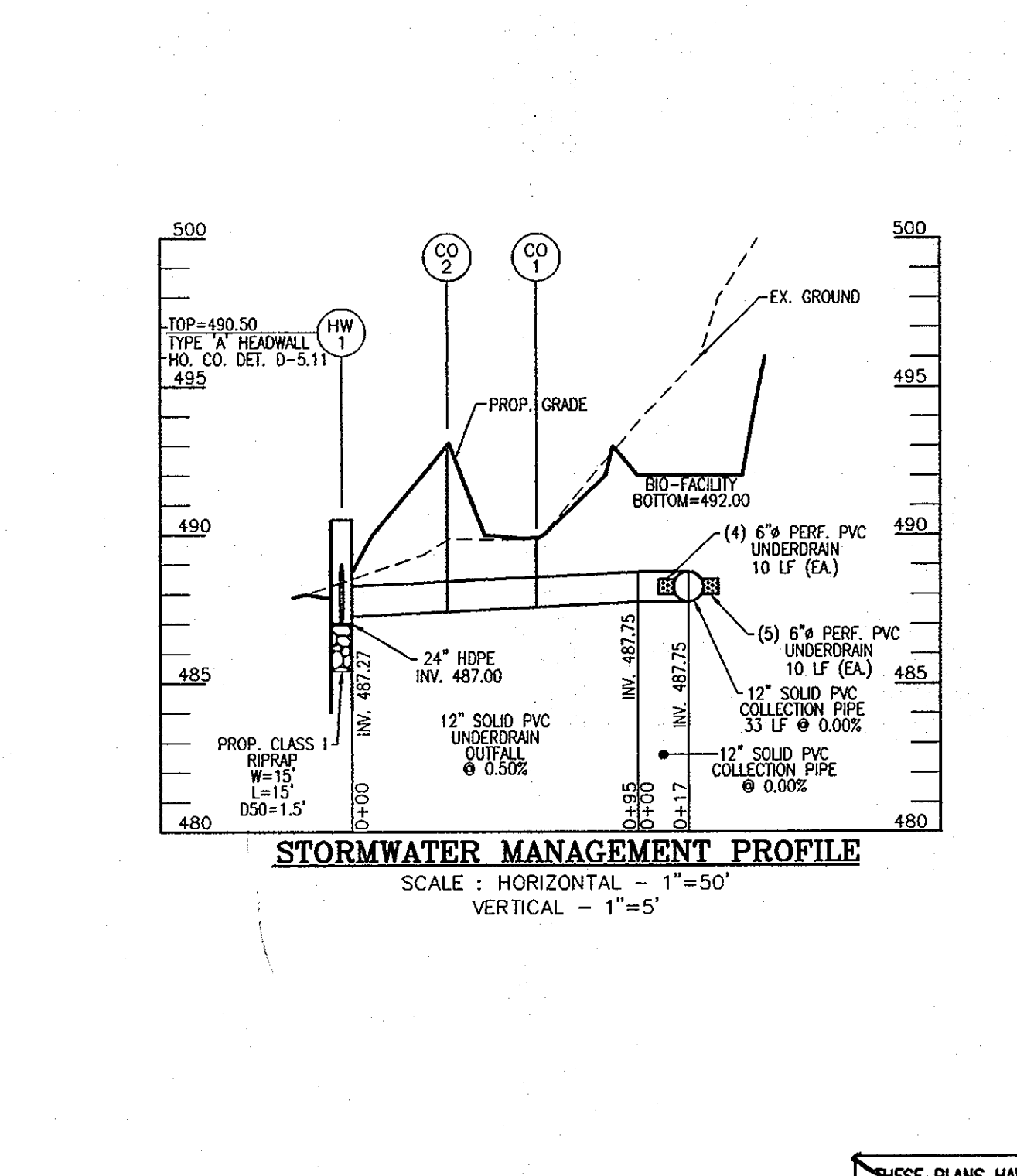
GRASS FILTER STRIP DETAIL
NOT TO SCALE

APPENDIX B.3. CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS

- 1. MATERIAL SPECIFICATIONS**
THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.3.2.
- 2. PLANTING SOIL**
THE SOIL SHALL BE A UNIFORM MIX FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED WITH THE BIORETENTION SOIL THAT MAY BE HARMFUL TO PLANT GROWTH OR PRESENT AN OBSTACLE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERBERIS GRASS, QUAILGRASS, JARVIS GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
- THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
PH RANGE: 6.5 - 7.0
ORGANIC MATTER: 1.0 - 2.0% (BY WEIGHT)
NUTRIENT (NITROGEN): 10 - 20 PPM
NUTRIENT (PHOSPHORUS): 10 - 20 PPM
NUTRIENT (POTASSIUM): 10 - 20 PPM
SULFATE SALTS: NOT TO EXCEED 500 PPM
- ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS AND POTASSIUM AND ADDITIONAL TEST OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL WAS EXCAVATED.
- SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY. SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MOISTENED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.
- 3. COMPACTION**
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE HAND TO PLACE AND COMPACT. BOTH FINDER AREAS ARE EXCAVATED USING HAND TOOLS. COMPACTORS SHOULD USE WHEEL TRACKS OR MARCH TRACK OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
- COMPACTION CAN BE ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, REPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
- ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE REQUIRED SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.
- WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
- WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT MUST BE USED AROUND THE PERIMETER OF THE BASIN TO SHIP SOILS AND SAND. GRAZE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- 4. PLANT MATERIAL**
RECOMMENDED PLANT MATERIAL FOR BIORETENTION AREAS CAN BE FOUND IN APPENDIX A, SECTION A.2.3. OF THE 2000 MARYLAND STORMWATER DESIGN MANUAL.
- 5. PLANT INSTALLATION**
MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHROUDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL PLANT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHROUDED MULCH MUST BE WELL KEPT (6 TO 12 MONTHS) FOR ACCEPTANCE.
- ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS.
- TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
- GRASSES AND LEGUME SEED SHOULD BE ORILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
- THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS OR FERTILIZER AT A MINIMUM INTERVALS, SUCH AS COAL ONLY AND FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS OF NITROGEN PER 1000 SQUARE FEET.
- 6. UNDERGRANS**
UNDERGRANS ARE TO BE PLACED ON A 3"-6" WIDE SECTION FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERGRAN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.
- THE MAIN COLLECTOR PIPE FOR UNDERGRAN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELL AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
- 7. MISCELLANEOUS**
THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

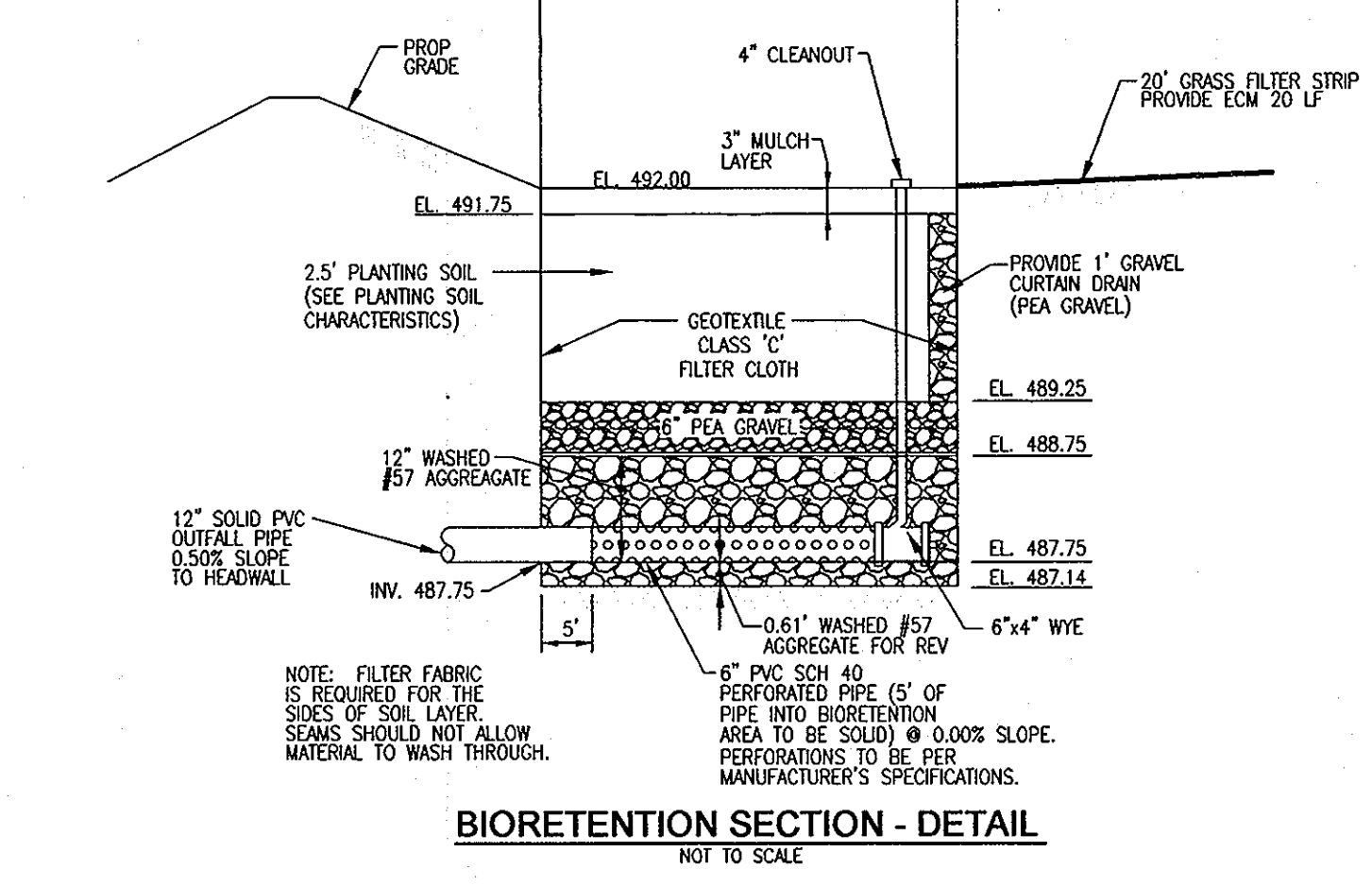
- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT OF AN DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

ROBERT H. VOGEL, P.E. NO. 10193 DATE 12/11/09



BIORETENTION SECTION - DETAIL
NOT TO SCALE

SUMMARY TABLE AREA (DA-A)

AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	1,615 CF	N/A	1,615 CF	BIO-RETENTION FACILITY
2	RECHARGE VOLUME REV	327 CF	N/A	327 CF	PROVIDE IN STONE UNDER BIO-RETENTION
3	CHANNEL PROTECTION VOLUME CPV	N/A	N/A	N/A	1YR RUNOFF 1.86 CFS < 2.0 CFS. CPV NOT REQUIRED
4	OVERHEAD FLOOD PROTECTION, OHP	N/A	N/A	N/A	
5	EXTREME FLOOD VOLUME, EFP	N/A	N/A	N/A	

OWNER/DEVELOPER
HOWARD COUNTY HOUSING COMMISSION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21084
410-730-3725

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Johnson 2-18-10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Victor Shindler 2-19-10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Thomas J. Butler 2/19/10
DIRECTOR, DEP DATE

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. DATE

BY THE DEVELOPER:

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

SS DATE 12-10-2009
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Robert H. Vogel DATE 12/11/09
SIGNATURE OF ENGINEER DATE

STORMWATER MANAGEMENT FACILITY TO BE OWNED AND MAINTAINED BY HOWARD COUNTY HOUSING COMMISSION

NOTE: DEBRIS IS TO BE KEPT OUT OF STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT
NOTES AND DETAILS
ELLCOTT GARDENS TEMPORARY PARKING
BA-08-005A, SDP-07-038, F-08-06A, BA-08-042V
S09-07-137, WP-08-111, WP-08-085

TAX MAP 31 BLOCK 19 PARCEL '428' & '467'
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8961

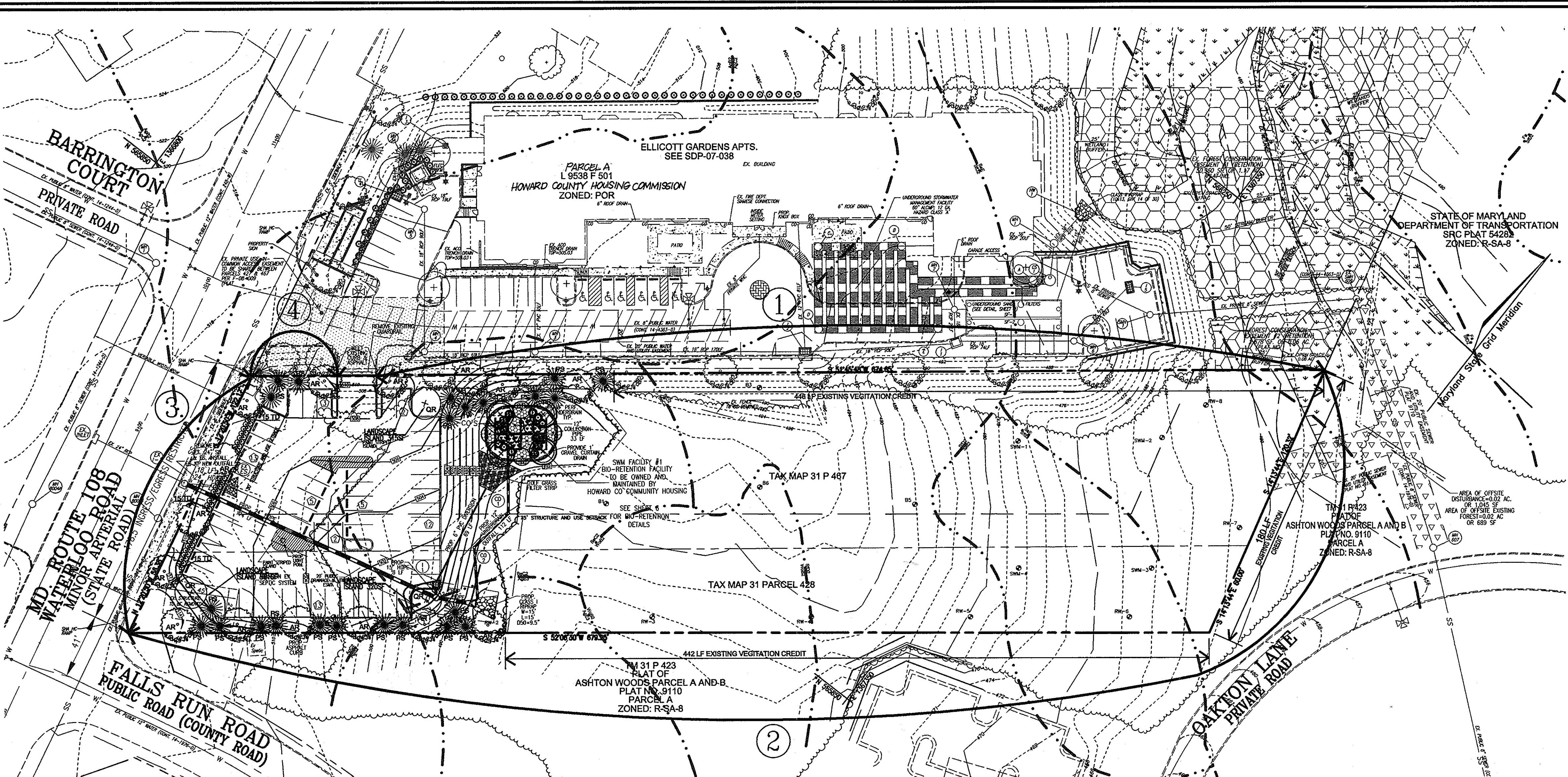
DESIGN BY: JAR
DRAWN BY: JAR
CHECKED BY: JAR
DATE: DECEMBER 2009
SCALE: AS SHOWN
W.O. NO.: 06-01

I HEREBY CERTIFY THAT THESE PLANS REPRESENT THE PROFESSIONAL DESIGN AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. EXPIRES 11-10-2010

JAMES A. RUFF, PE No. 21774

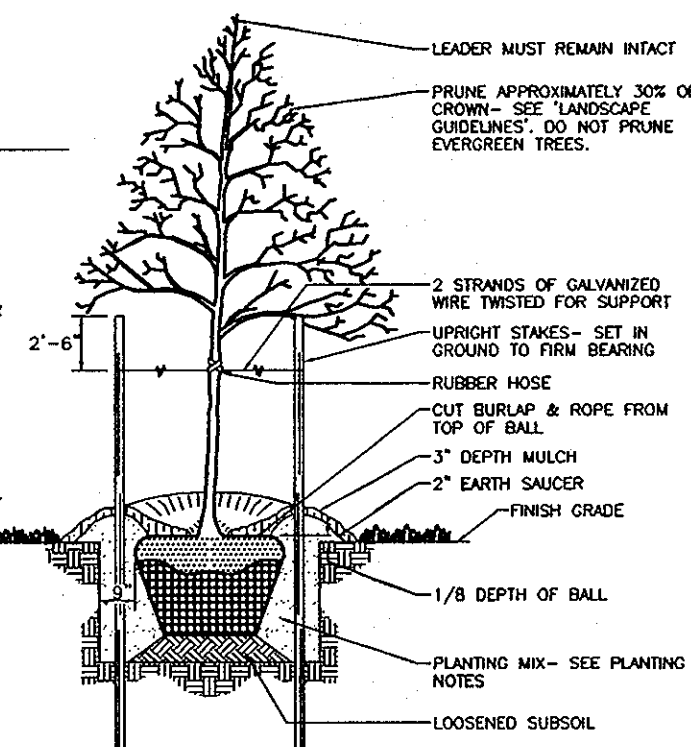
6 SHEET OF 7

AS-BUILT 6/20/2011 SDP-10-021

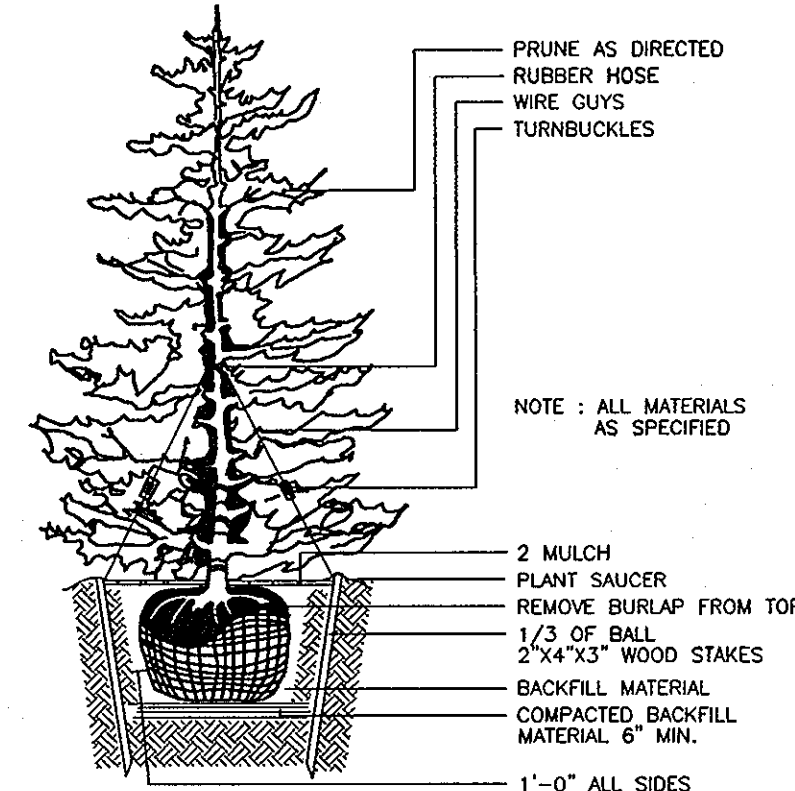


PLAN VIEW
SCALE: 1"=40'

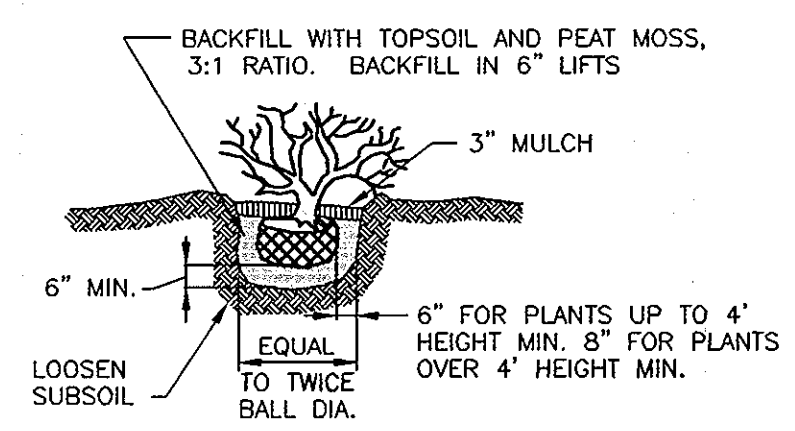
- NOTES:
- SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT AND PROCEDURE SPECIFICATIONS.
 - SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
 - PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
 - KEEP MULCH 1" FROM TRUNK.
 - SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
 - TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

LEGEND:

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EXISTING TREES (FIELD LOCATED)
	EXISTING TREELINE
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	PROPOSED SIDEWALK
	EX. 20' PUBLIC WATER AND UTILITY EASEMENT
	EX. PUBLIC FOREST CONSERVATION RETENTION EASEMENT
	EXISTING WETLANDS
	EXISTING STREAM
	EXISTING STREAM BUFFER
	PROP. LIGHT POLE
	PROP. STREET LIGHT
	FOREST CONSERVATION SIGNS
	PROPOSED SHADE TREE
	PROPOSED EVERGREEN TREE
	PROPOSED SHRUBS
	LANDSCAPE PERIMETER
	PROPOSED TREELINE

LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HED PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of parking spaces	55
Number of trees required	3
Number of trees provided	3
Shade Trees	

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.
AR	15	ACER RUBRUM	2 1/2"-3" CAL.	B & B
OR	3	OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B
PS	23	QUERCUS PHELLOS	2 1/2"-3" CAL.	B & B
TD	45	WILLOW OAR	6'-8' HI.	B & B
		TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS, NEW	2 1/2" - 3" HT.	B & B

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES	TOTAL
PERIMETER/FRONTAGE DESIGNATION		
LANDSCAPE TYPE	1 2 3 4	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	596 860 179 54	1689
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	446 622	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No No No No	
NUMBER OF PLANTS REQUIRED		
SHADE TREES	1:40 4 1:40 6 1:40 4 1:40 3	15
EVERGREEN TREES	1:20 8 1:20 12 1:45 45	23
SHRUBS		
NUMBER OF PLANTS PROVIDED		
SHADE TREES	4 6 4 1	15
EVERGREEN TREES	8 12 3	23
OTHER TREES (2:1 SUBSTITUTION)	-	45
SHRUBS (10:1 SUBSTITUTION)	-	
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED		

BIORETENTION PLANTING SCHEDULE

KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
X	4	CLADRASTIS LUTEA 'SWEETSHADE' SWEETSHADE YELLOWWOOD	1 1/2"-2" CAL.	B & B
6		ILEX GLABRA COMPACTA DWARF HIBERNY	3 GALLON	CONT
8		VIBURNUM TRILOBUM AMERICAN HIGBUSH CRANBERRY	5 GALLON	CONT
8		KALMA LATEOLA MOUNTAIN LABEL	5 GALLON	CONT
6		RHOODODENDRON HY. 'GLACIER' OR 'WHITE ROSEBUD' GLACIER OR WHITE ROSEBUD HYBRID AZALEA	3 GALLON	CONT
265		LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

BIORETENTION PLANTING REQUIREMENTS

AREA	STEMS REQUIRED	STEMS PROVIDED
1,383 SF	32	32

BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (6222 STEMS PER SQUARE FOOT).

GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN. HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HERewith AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY, UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- THERE IS NO 100YR FLOODPLAIN ON SITE, PER FIRM MAP PANEL #240044 0035 B, DATED DECEMBER 4, 1986.
- WETLANDS ARE LOCATED ON SITE IN ACCORDANCE WITH DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED FEBRUARY 1, 2006.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURE SHALL BE PERMITTED WITHIN THE WETLANDS, WETLANDS BUFFER OR STREAM BANK BUFFER.
- LANDSCAPE SURETY IN THE AMOUNT OF \$10,200.00 HAS BEEN POSTED AS PART OF THE PERMITS. THIS SURETY IS \$300.00 PER TREE, 23 EVERGREEN TREES @ \$1500.00 PER TREE, AND 45 SHRUBS @ \$20.00 PER SHRUB.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 18.124 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 (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Signature of Developer: *[Signature]* DATE: Dec. 10, 2009

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: *[Signature]* DATE: 2-18-10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: *[Signature]* DATE: 2-19-10
 CHIEF, DIVISION OF LAND DEVELOPMENT

Signature: *[Signature]* DATE: 2/19/10
 DIRECTOR, DEP.

Forest Conservation Worksheet 2.2

Net Tract Area

A. Total Tract Area	A = 0.81
B. Deductions	B = 0.00
C. Net Tract Area	C = 0.81

Land Use Category

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	0	0	1

D. Afforestation Threshold (Net Tract Area x 15%)	D = 0.12
E. Conservation Threshold (Net Tract Area x 15%)	E = 0.12
Existing Forest Cover	
F. Existing Forest Cover within the Net Tract Area	F = 0.43
G. Area of Forest Above Conservation Threshold	G = 0.30
Break Even Point	
H. Break Even Point	H = 0.18
I. Forest Clearing Permitted Without Mitigation	I = 0.24
Proposed Forest Clearing	
J. Total Area of Forest to be Cleared	J = 0.43
K. Total Area of Forest to be Retained	K = 0.00
Planting Requirements	
L. Reforestation for Clearing Above the Conservation Threshold	L = 0.08
M. Reforestation for Clearing Below the Conservation Threshold	M = 0.24
N. Credit for Retention above the Conservation Threshold	N = 0.00
P. Total Reforestation Required	P = 0.32
Q. Total Afforestation Required	Q = 0.00
R. Total Planting Requirement	R = 0.32

THE FOREST CONSERVATION OBLIGATIONS FOR THIS SITE PLAN, WHICH PROPOSES THE CLEARING OF 18,730 SQFT OF FOREST, WAS MET BY THE SUBMISSION OF A "DECLARATION OF INTENT FOR SINGLE RESIDENTIAL LOT EXEMPTION CLEARING LESS THAN 20,000 SQFT OF FOREST". THE FOREST CONSERVATION WORK SHEET REQUIRED FOR ANY FUTURE DEVELOPMENT OF THIS SITE SHALL INCLUDE THE 18,730 SQFT OF CLEARED FOREST AS "18,730 SQFT OF EXISTING FOREST" WHEN COMPUTING THE FOREST CONSERVATION OBLIGATION.

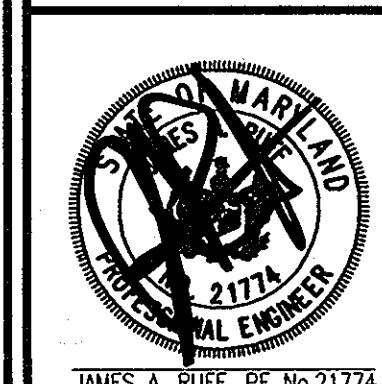
Signature: *[Signature]*
 CHRIS OGLE
 CNR QUALIFIED PROFESSIONAL

OWNER/DEVELOPER
 HOWARD COUNTY HOUSING COMMISSION
 6751 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21064
 410-730-3725

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
 SITE LANDSCAPE AND FOREST
 CONSERVATION PLAN
 ELLICOTT GARDENS TEMPORARY PARKING
 BA-06-005V, SDP-07-038, F-08-064, BA-08-042V
 SD9-07-137, WP-08-111, WP-09-085
 TAX MAP 31 BLOCK 19 PARCEL '428' & '467'
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
 ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410-461-7666
 ELLICOTT CITY, MD 21043 FAX: 410-461-8961



DESIGN BY: JAR
 DRAWN BY: JAR
 CHECKED BY: JAR
 DATE: DECEMBER 2009
 SCALE: AS SHOWN
 W.O. NO.: 06-01

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY OR UNDER THE CLOSE PERSONAL SUPERVISION AND CONTROL OF ME AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY EXPIRATION DATE IS 11-30-2010.

7 SHEET OF 7