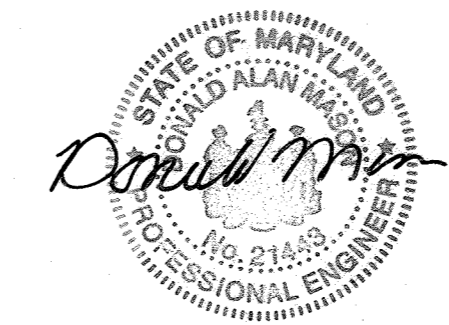
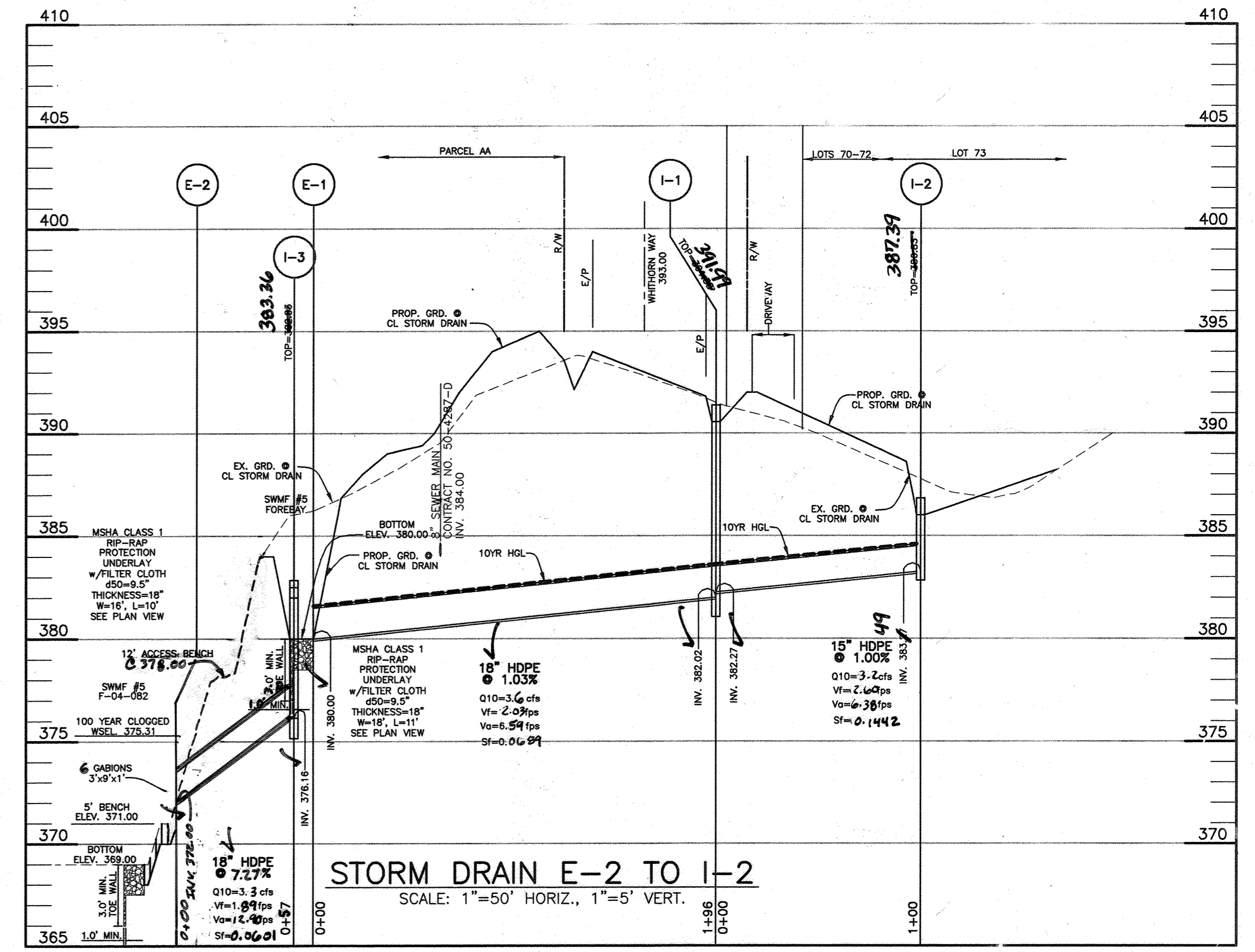


PLAN VIEW
SCALE: 1" = 50'

LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- CL. STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- STEEP SLOPES 25% OR GREATER
- EXIST. FOREST CONSERVATION EASEMENT (F-04-82)
- LIMIT OF 100-YEAR FLOODPLAIN DRAINAGE AND UTILITY ESMT.



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 1/13/14

PIPE SCHEDULE

RUN	LENGTH	DIAMETER	MATERIAL	NOTES
E-1 TO I-1	196'	15"	HDPEP	PUBLIC
I-1 TO I-2	100'	18"	HDPEP	PRIVATE
E-2 TO I-3	57'	18"	HDPEP	PRIVATE

MATERIAL SCHEDULE

DIAMETER	MATERIAL	LENGTH
15"	HDPEP	100'
18"	HDPEP	253'

STORM DRAIN DATA

INLET NO.	ZONING	AREA (AC)	'C' FACTOR	% IMPERVIOUS	Q2	Q10
I-1	RC-DEO	0.10	0.86	100	0.4	0.6
I-2	RC-DEO	1.61	0.30	31	2.2	3.2
I-3	RC-DEO	1.71	0.33	35	2.6	3.7

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
Ba	D*	BAILE SILT LOAM
CgB2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
CgC2	B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChA	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
ChB2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ChC2	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChC3	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
ChD2	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
Co	B	COMUS SILT LOAM
ElxB2	B	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ElC3	B	ELIOAK SILTY CLAY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
GIB2	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GIC2	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
GID2	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
GnB2	C*	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Ho	D*	HARBORO SILT LOAM
MgB2	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MgC3	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
MD2	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
MD3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
ME	B	MANOR LOAM, 25 TO 45 PERCENT SLOPES
MnD	B	MANOR VERY STONY LOAM, 3 TO 25 PERCENT SLOPES
MnF	B	MANOR VERY STONY LOAM, 25 TO 60 PERCENT SLOPES
Mo	B*	MIXED ALLUVIAL LAND

* INDICATES HYDRIC SOILS
TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 31

3 3-4-22 ADD SHEET 12
2 3-14-14 REVISE STORM DRAIN PROFILE & STORM DRAIN DATA CHART 1 & 2
1 6-8-11 REVISE TITLE BLOCK

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
EMAIL: bal@bel-civilengineering.com

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21443, Expiration Date: 12-31-2014

2014
Donald Mason
Professional Engineer
1/13/14

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Walter F. M... 8-25-11
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cindy Ham... 7/1/12
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: [Signature] 9/11/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
E-1	18" CONC. END SECT.	N 575941.75 E 1339290.53	--	380.00	--	SD - 5.52
E-2	18" CONC. END SECT.	N 575948.79 E 1339355.79	--	372.00	-391.99	SD - 5.52
I-1	'D' INLET	LP STA. 1+75 OFFS. 8.00' LEFT (WHITHORN)	382.27	382.02	391.30	SD - 4.11 OR 4.39 OPEN 4 SIDES
I-2	'D' INLET	N 575889.22 E 1339011.79	--	383.24	383.30	SD - 4.11 OR 4.39 OPEN 4 SIDES
I-3	'D' INLET	N 575943.37 E 1339298.79	--	376.16	382.85	SD - 4.11 OR 4.39 OPEN 4 SIDES

1) STRUCTURE ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
2) STRUCTURE ELEVATION AND LOCATION FOR INLETS IS AT THE TOP OF CURB AT MIDPOINT OF THE INLET OR AT THE CENTER OF SLAB FOR "D" INLETS.
3) STRUCTURE AND LOCATION FOR ENDSECTIONS IS AT THE CONNECTION OF PIPE AND END SECTION.
4) PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.
5) ALL STORM DRAINS SHALL BE SMOOTH CORE HIGH DENSITY POLYETHYLENE PIPE.

DEVELOPER/OWNER: ELIOAK, L.L.C., P.O. BOX 417, ELLCOTT CITY, MARYLAND 21041, 410-465-4244

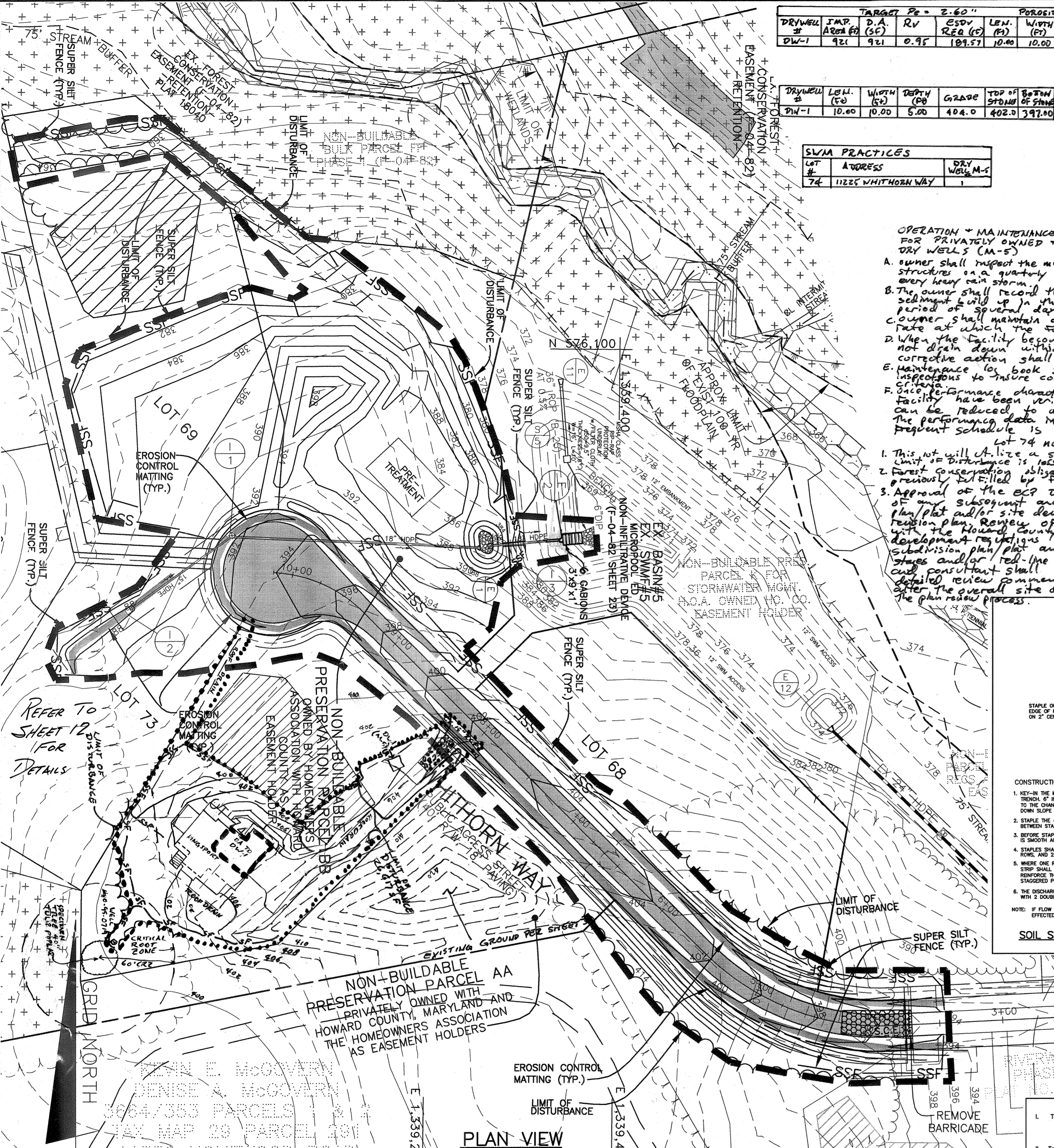
PROJECT: RIVERWOOD - PHASE 2
A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'AA' THRU 'GG' TO CREATE LOTS 43-77 NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA' - 'EE' AND 'NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'E', 'F', 'G' & 'S' TO ADD FOREST CONSERVATION AREAS

LOCATION: TAX MAP: 23, GRID: 21 TAX MAP: 29, GRID: 3, 4, 9 & 10 PARCELS: 86 PARCELS: 29 & 86 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: STORM DRAINAGE AREA MAP & PROFILE

DATE: JULY, 2007 PROJECT NO. 1132
DES: JMC/DBT DRAFT: JMC/DBT CHECK: DAM SCALE: 1" = 50' SHEET 3 OF 12

AS-BUILT F-06-134



DRYWELL	JMP. D. (ft)	TARGET R.V. (ft)	PERCENTAGE (%)	PERMEABILITY (ft)	PERMEABILITY (ft)	PERMEABILITY (ft)	PERMEABILITY (ft)	PERMEABILITY (ft)	PERMEABILITY (ft)
DW-1	9.21	9.21	0.95	10.57	10.00	10.00	5.00	200.00	YES

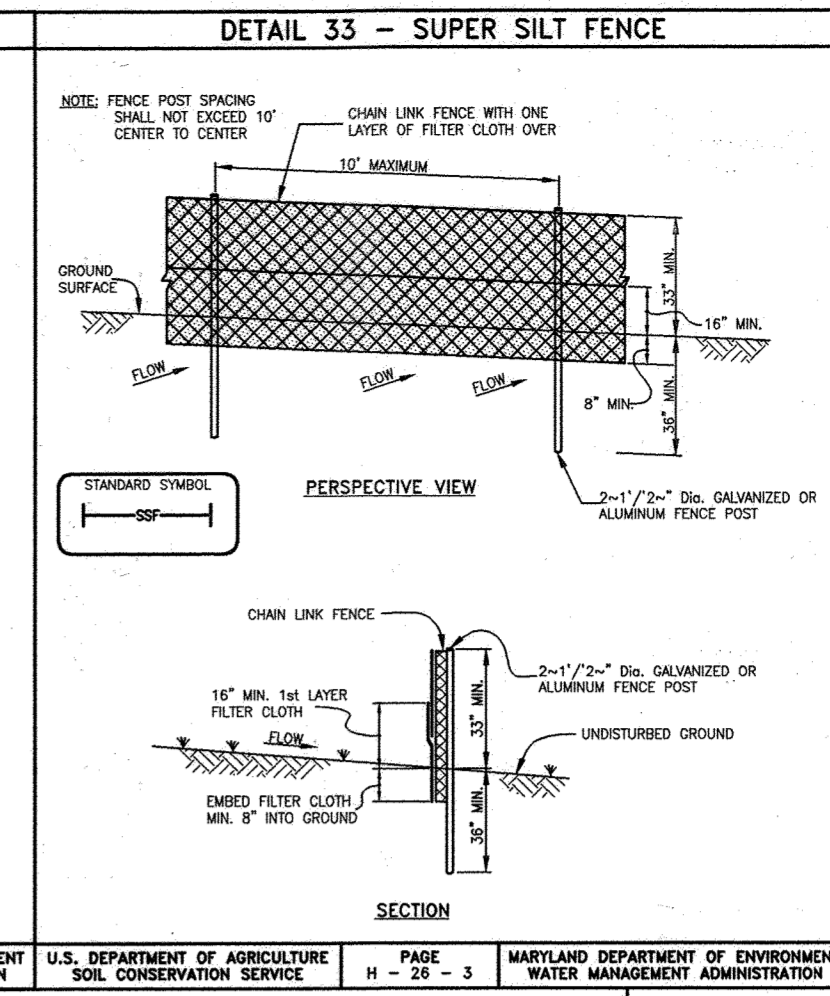
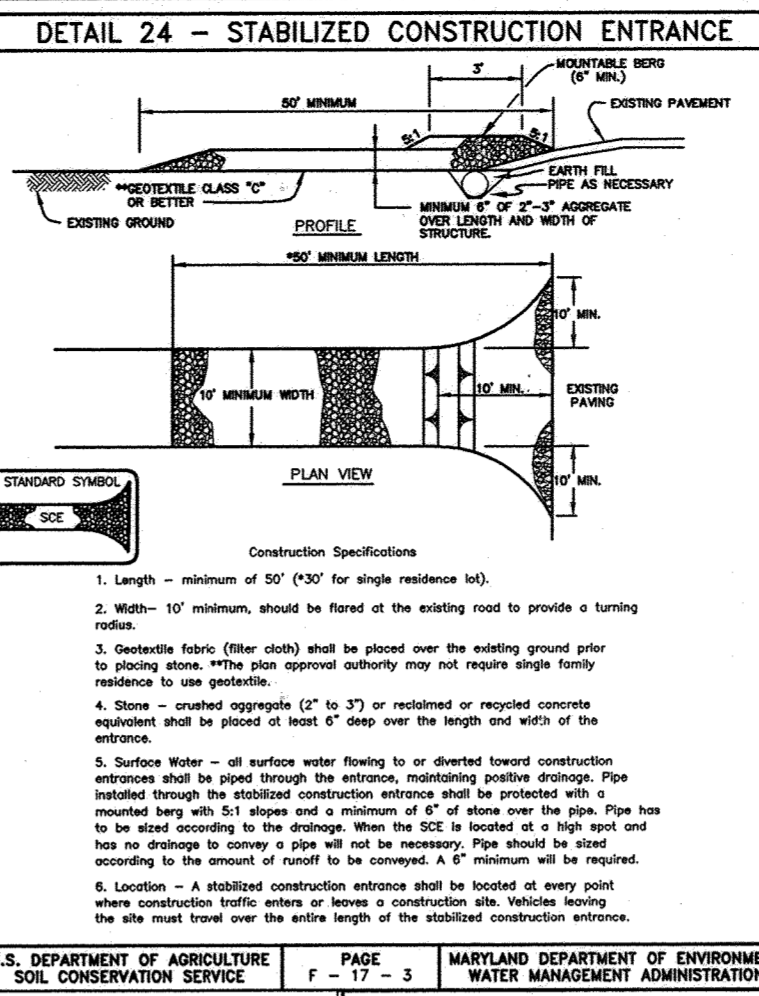
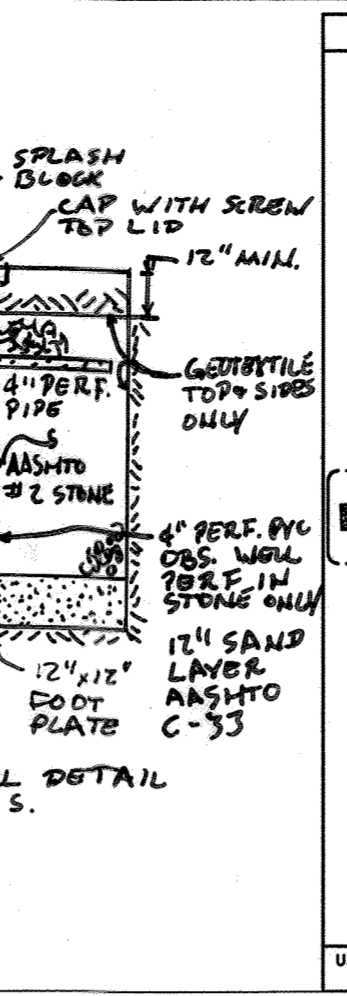
SVIA PRACTICES	NO.	ADDRESS	DRY WELLS (M-S)
74	11225 WHITHORN WAY	1	

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED & MAINTAINED DRY WELLS (M-S)

- The owner shall inspect the monitoring wells and structures on a quarterly basis and after every heavy rain.
- The owner shall record the water levels and sediment build up in the monitoring wells over a period of several days to insure trench drainage.
- The owner shall maintain a log book to determine the date at which a filter cloth or grate is to be replaced.
- When the facility becomes clogged so that it does not drain down within a 72 hour time period, corrective action shall be taken.
- Maintenance log book shall be available to H.C. inspectors to insure compliance with operation & maintenance criteria.
- Site performance characteristics of the infiltration practices have been verified. The monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

Lot 74 notes:

- This lot will utilize a standard sediment control plan with a maximum velocity of 30,000 ft/min.
- Final construction site plan was previously submitted by E-04-082 & F-06-132.
- Approval of the ECP did not constitute an approval of any subsequent and associated subdivision plan/plat and/or site development plan and/or redline revision. Review of this project for compliance with the Howard County subdivision and development regulations shall occur at the subdivision plan/plat and/or site development plan stages and/or redline revision process. The applicant and consultant shall verify the information and details of the overall site design, as the project progresses through the plan review process.



CONSTRUCTION SPECIFICATIONS			
1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Design for Chain Link Fencing. The specification for a 6" fence shall be used, substituting 42" for 36" 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 cross 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" of 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 all bulges removed when "bulges" develop in the silt fence, or when silt reaches 20% of fence height.			
7. Filter cloth shall be fastened securely to each fence post with wire ties at staples at top and mid section and shall meet the following requirements for Geotextile Class F:			
Tensile Strength	50 lb/in (min.)	Test: MSFT 509	
Flexure Modulus	0.5 g/in (min.)	Test: MSFT 509	
Flow Rate	0.3 g/in (min.)	Test: MSFT 322	
Filtration Efficiency	75% (min.)	Test: MSFT 322	

CONSTRUCTION SPECIFICATIONS

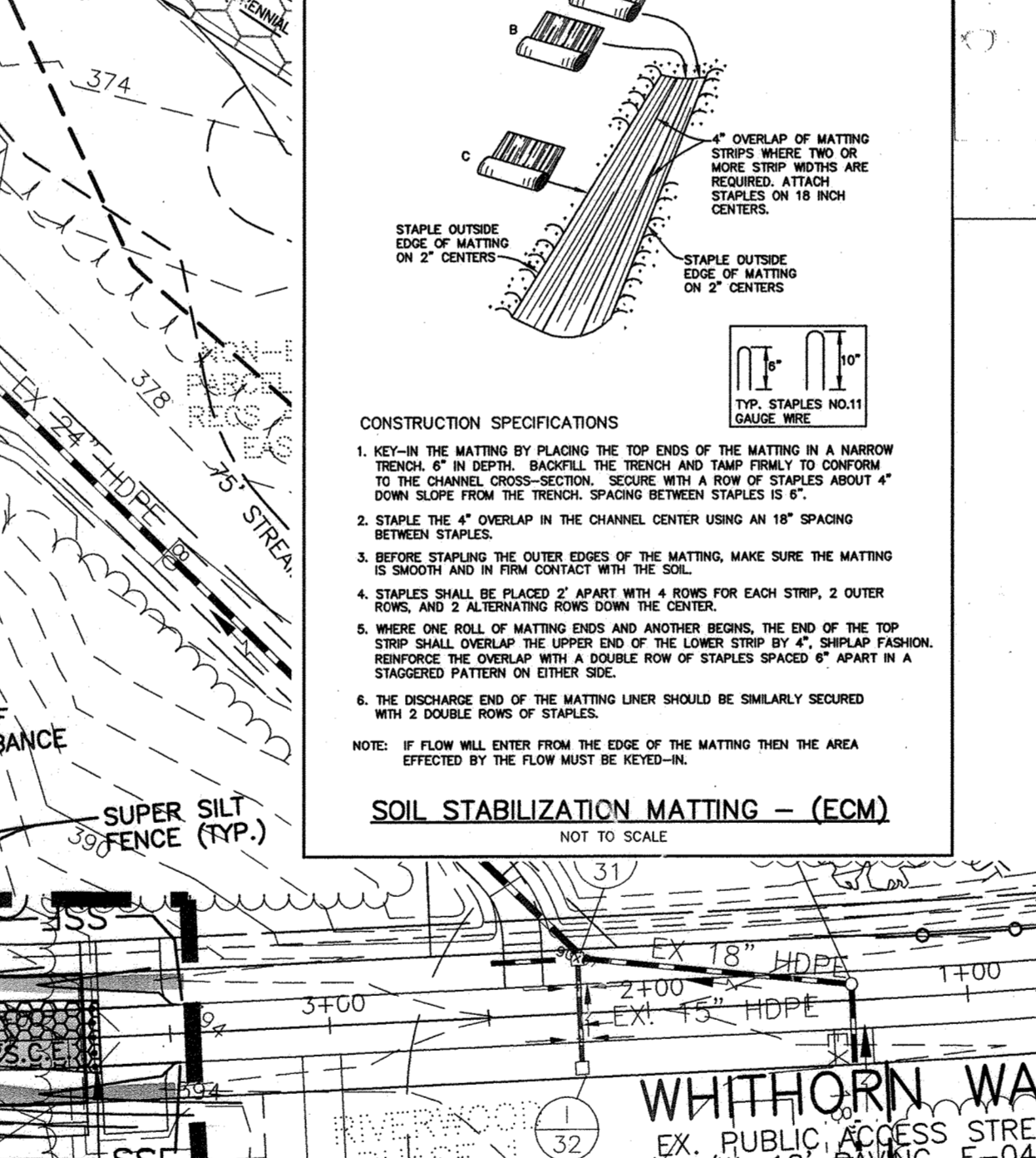
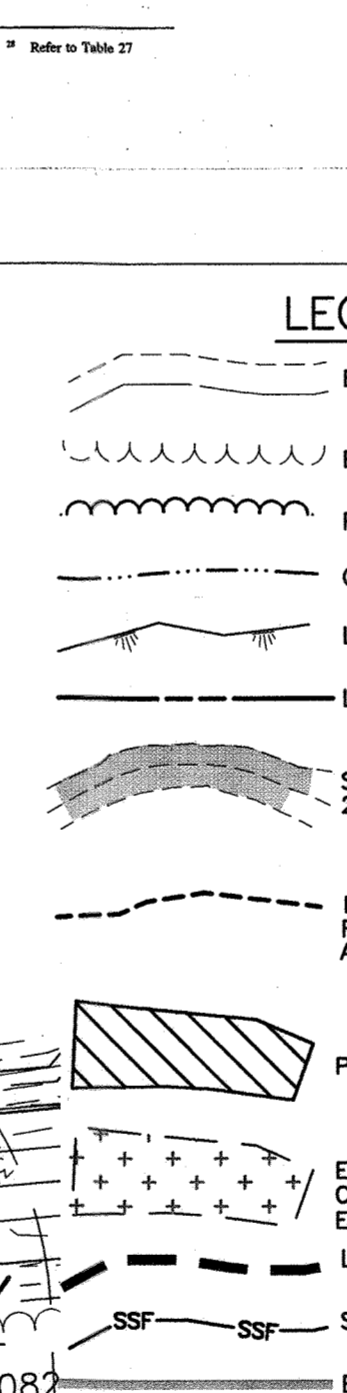
- Length - minimum of 50' (30' for single residence lot).
- Width - 10' minimum, should be based on the existing post to provide a turning radius.
- Material - Filter cloth shall be placed over the existing ground prior to placing stone. This stone approved surface may not require single layer resistance to the geotextile.
- Stone - crushed aggregate (2" to 3") or retained or recycled concrete material shall be placed to a depth of at least 6" deep over the length and width of the entrance.
- Surface Water - All surface water flowing to or through the construction entrance shall be kept from the entrance, maintaining positive drainage. Pipe installed through the construction entrance shall be 12" diameter and shall be installed with 5:1 slope and a minimum of 12" of stone over the pipe. Pipe has to be at least 12" diameter. The stone shall be placed in a 12" diameter hole in the ground. The stone shall be placed in a 12" diameter hole in the ground. The stone shall be placed in a 12" diameter hole in the ground.
- Location - A stabilized construction entrance shall be located at every point where the site must be crossed by the stabilized construction entrance.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTOR LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1850).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL", REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 2 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 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 TEMPORARY SEEDINGS (SEC. 51) SO (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMANENT STRUCTURES HAVE BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	269.88 ACRES
AREA DISTURBED	7.1 ACRES
AREA TO BE ROOFED OR PAVED	1.4 ACRES
AREA TO BE VEGETATIVELY STABILIZED	5.7 ACRES
TOTAL CUT	4866 CY
TOTAL FILL	4646 CY
OFFSITE WASTE/BORROW AREA LOCATION	SEE NOTE #12
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- WASTE WILL BE HAULED TO AN APPROVED WASTE DISPOSAL SITE, WITH A ACTIVE GRADING PERMIT.

TEMPORARY SEEDBED PREPARATIONS	
APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED THROUGH 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 BUSHES PER ACRE OF ANNUAL RYE (12 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 CUT BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SO.	
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, OR 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.	



TOPSOIL SPECIFICATIONS

- Topsoil salvaged from the existing site may be used provided that it meets that 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-NRCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - 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 texture subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials large than 1-1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-6 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:
 - Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas under 5 acres:
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - 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 6.0.
 - Organic content or topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient lime has been applied (14 days min.) to permit dispersion of phytotoxic materials.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist approved by the appropriate approval authority, may be used in lieu of natural topsoil.

PERMANENT SEEDBED PREPARATIONS

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:

- 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. HOLLOW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
- 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. HOLLOW 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) KENTUCKY 31 TALL FESCUE PER ACRE AND 0.5 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 SOO, 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, OR 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION

- OBTAIN GRADING PERMIT. A LETTER OF AUTHORIZATION FROM HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS MUST BE OBTAINED PRIOR TO DISTURBANCE OF THE STREAM OR WETLANDS FOR THE SEWER CROSSING. STREAM CLOSURE SHALL BE BETWEEN MARCH 1st AND JUNE 15th.
- INSTALL ANY REMAINING SEDIMENT CONTROL DEVICES. ENTRANCES AND SUPER SILT FENCE.
- UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, BEGIN ROAD BEDS TO SUBSOIL AND STABILIZE SLOPES IN ACCORDANCE WITH TEMPORARY SEEDING NOTES. STORM DRAINAGE DRAINAGE BEDS TO BE INSTALLED TO THE BASINS PRIOR TO STARTING ROAD GRADING.
- COMPLETE GRADING OF SITE AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES.
- UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONVEY SEDIMENT BASIN (F-04-1082) TO STORMWATER MANAGEMENT FACILITY (F-04-002) SHAPE FACILITIES PER FINAL ORDINANCES SHOWN ON THE PHASE 2 PLANS AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. CONTRACTOR SHALL REMOVE ALL OLD AND NEW TRASH, JUNK AND DEBRIS FROM ALL BUFFER AND FLOODPLAIN AREAS.
- UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES, AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES.

BENCHMARK ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-8105 & fax: 410-465-8644
 email: ben@benchmark-engineering.com

DEVELOPER/OWNER: ELLIOTT, L.L.C. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244

PROJECT: RIVERWOOD - PHASE 2
 A REVISIONS OF NON-BUILDABLE BULK PARCELS 'AA' THRU 'GG' TO CREATE LOTS 43-77 NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA-EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'F', 'F', 'F', 'S' TO ADD FOREST CONSERVATION AREAS

LOCATION: TAX MAP: 23, GRID: 21 TAX MAP: 29, GRID: 3,4,9&10 PARCELS: 88 PARCELS: 20 & 86 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: GRADING, SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

DATE: JULY, 2007 PROJECT NO. 1132

SCALE: 1" = 50' SHEET 4 OF 12

DES: JMC/DBT DRAFT: JMC/DBT CHECK: DAM

BY THE DEVELOPER:
 STEVEN K. BREEDEN MEMBER OF ELLIOTT, L.L.C. DEVELOPER
 DATE: 7-23-07

BY THE ENGINEER:
 DONALD A. MASON, P.E. ENGINEER
 DATE: 7/23/07

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 8/21/07

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 8/21/07

APPROVED: HOWARD COUNTY DEPARTMENT OF LAND DEVELOPMENT
 DATE: 8/21/07

APPROVED: HOWARD COUNTY DEPARTMENT OF DEVELOPMENT ENGINEERING DIVISION
 DATE: 8/21/07

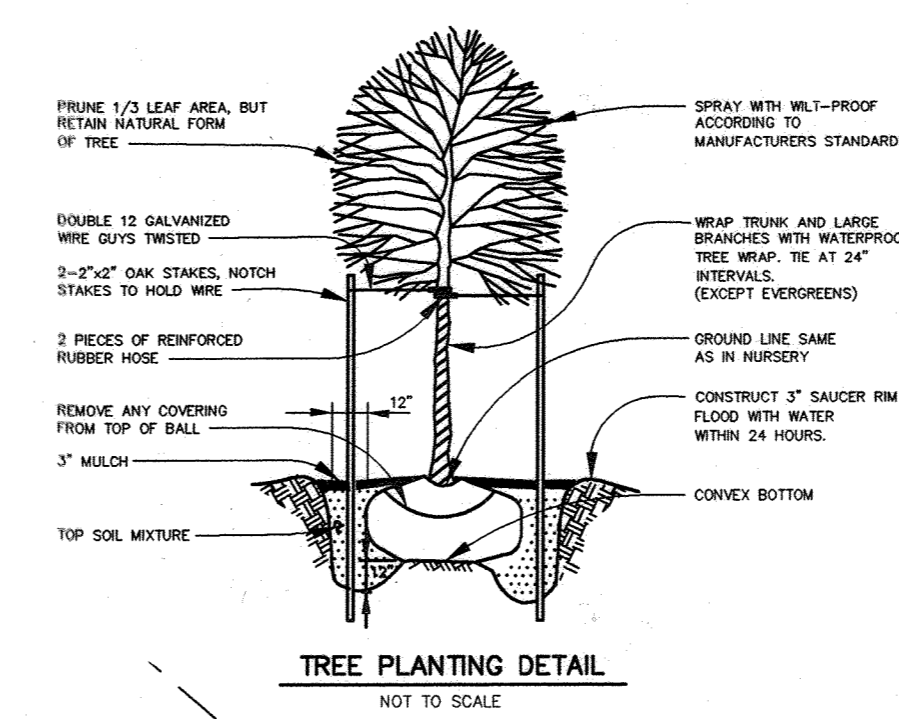
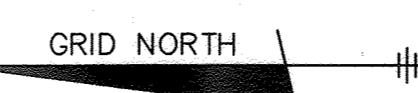
Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 7-243, Expiration Date: 12-31-2009

NOTE:
 AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE 0' 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 RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.

LANDSCAPE NOTES:

- TREES SHOULD BE PLANTED A MINIMUM OF 6 FEET FROM THE EDGE OF PAVING AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
- TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
- SEE TREE PLANTING DETAIL - THIS SHEET.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$9,300.00 FOR 31 PERIMETER SHADE TREES.
- FINANCIAL SURETY FOR THE REQUIRED PERIMETER 19 HAS BEEN POSTED AS PART OF AN AMENDED DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$1,450 FOR 4 SHADE TREES AND 5 EVERGREENS.

NOTE:
 THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND 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 OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.



PHASE 2 - SCHEDULE A PERIMETER LANDSCAPE EDGE									
ADJ. TO DRIVEWAY	ADJ. TO PERIMETER PROP. (12)	ADJ. TO PERIMETER PROP. (13)	ADJ. TO PERIMETER PROP. (14)	ADJ. TO PERIMETER PROP. (15)	ADJ. TO PERIMETER PROP. (16)	ADJ. TO PERIMETER PROP. (17)	ADJ. TO PERIMETER PROP. (18)	ADJ. TO ROADS	TOTAL
B	A	A	A	A	A	A	A	A	B
192'	992'	2157'	2554'	723'	428'	132'	2207'	275'	
NO	YES*	YES*	YES*	YES*	YES*	YES*	YES*	YES*	
NO	NO	NO	NO	NO	NO	NO	NO	NO	
4	0	5	11	7	-	-	8	-	35
									5

*EXISTING WOODS 20' OR GREATER IN WIDTH.

DEVELOPER'S/BUILDER'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 OF A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Steven K. Breeden 7-23-07
 STEVEN K. BREEDEN, MEMBER DATE
 ELOAK, L.L.C.

James R. Moxley III 7/23/07
 JAMES R. MOXLEY, III, MEMBER DATE
 ELOAK, L.L.C.

STREET TREE SCHEDULE		
ROAD NAME	PERIMETER	TREES REQ.
WHITHORN WAY	1,447	36

PUBLIC STREET TREE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	
⊕	36	ACER RUBRUM 'OCTOBER GLORY' (October Glory Red Maple)	2 1/2" MIN. CAL. B&B FULL HEAD	STREET TREES TO BE PROVIDED BY THE DEVELOPER.

NOTE:
 1. LANDSCAPING FOR THIS SUBDIVISION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
 2. SOME LOTS IN PHASE 2 ARE SURROUNDED BY LANDSCAPE PERIMETERS CREATED IN PHASE 1. SEE THE FINAL LANDSCAPE PLAN FOR PHASE 1, F-04-082. PERIMETERS 2, 4, 5 AND 10 WERE DESIGNED AND APPROVED UNDER PHASE 1 (F-04-082).

LEGEND

- EXISTING TREELINE
- PROPOSED TREELINE
- CL. STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- PROPOSED FOREST CONSERVATION EASEMENT
- LANDSCAPE PERIMETER DESIGNATION
- STREET TREES
- TREE TREES PHASE 1 (F-04-82)
- PERIMETER LANDSCAPE TREE PHASE 1 (F-04-82)

LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
⊕	35	QUERCUS RUBRA (Red Oak)	2-1/2" - 3" cal.	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
*	5	PINUS STROBUS (EASTERN WHITE PINE)	6'-8' HT.	EVERGREEN TREES PROVIDED BY DEVELOPER

Donald M. Moore 11/13/14
 PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 LICENSE NO. 2143

REVISION: 3 3-4-22 ADD SHEET 12

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 fax: 410-465-6644
 email: Benchmark@ccals.com

OWNER/DEVELOPER: ELOAK, L.L.C.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND
 21041 410-465-4244

PROJECT: RIVERWOOD - PHASE 2
 A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'AA' THRU 'GG' TO CREATE LOTS 43-77 NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA' - 'EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'C', 'F', 'I' & 'S' TO ADD FOREST CONSERVATION AREAS

LOCATION: TAX MAP: 23, GRID: 21 TAX MAP: 29, GRID: 3,4,9&10 PARCELS: 86 & 87 ARCS: 20 & 86
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE AND STREET TREE PLAN

DATE: JULY, 2007 PROJECT NO. 1132
 SCALE: 1" = 100' SHEET 5 OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William F. Mabel 8-29-07
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cindy Hamer 9/11/07
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John Deussen 9/11/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*ALSO KNOWN AS RIVERWOOD PHASE 2, LOTS 43-45, 48-64, 67-77 AND 79-84

NOTE: THIS PLAN IS FOR LANDSCAPE AND STREET TREE PURPOSES ONLY.



DEVELOPER'S/BUILDER'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 OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SK 7-23-07
 STEVEN K. BREEDEN, MEMBER DATE
 ELIOAK, L.L.C.

James R. Moxley, III 7/23/07
 JAMES R. MOXLEY, III, MEMBER DATE
 ELIOAK, L.L.C.

- LEGEND**
- EXISTING TREELINE
 - PROPOSED TREELINE
 - CL. STREAM
 - LIMIT OF WETLANDS
 - LIMIT OF SUBMISSION
 - PROPOSED FOREST CONSERVATION EASEMENT
 - LANDSCAPE PERIMETER DESIGNATION
 - STREET TREES
 - STREET TREES PHASE 1 (F-04-82)
 - PERIMETER LANDSCAPE TREE PHASE 1 (F-04-82)



NOTE: THIS PLAN IS FOR LANDSCAPE AND STREET TREE PURPOSES ONLY

NO.	DATE	REVISION
1	3-4-22	ADD SHEET 12
2	4-7-11	ADD PERIMETER 19
3	6-2-11	REVISE LOT LINES, LOT NO., FCE AND TITLE BLOCK

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 • fax: 410-465-6644
 email: Benchmark@ccis.com

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21-45, Expiration Date: 12-21-2008.

Donald M. Man 7/23/07

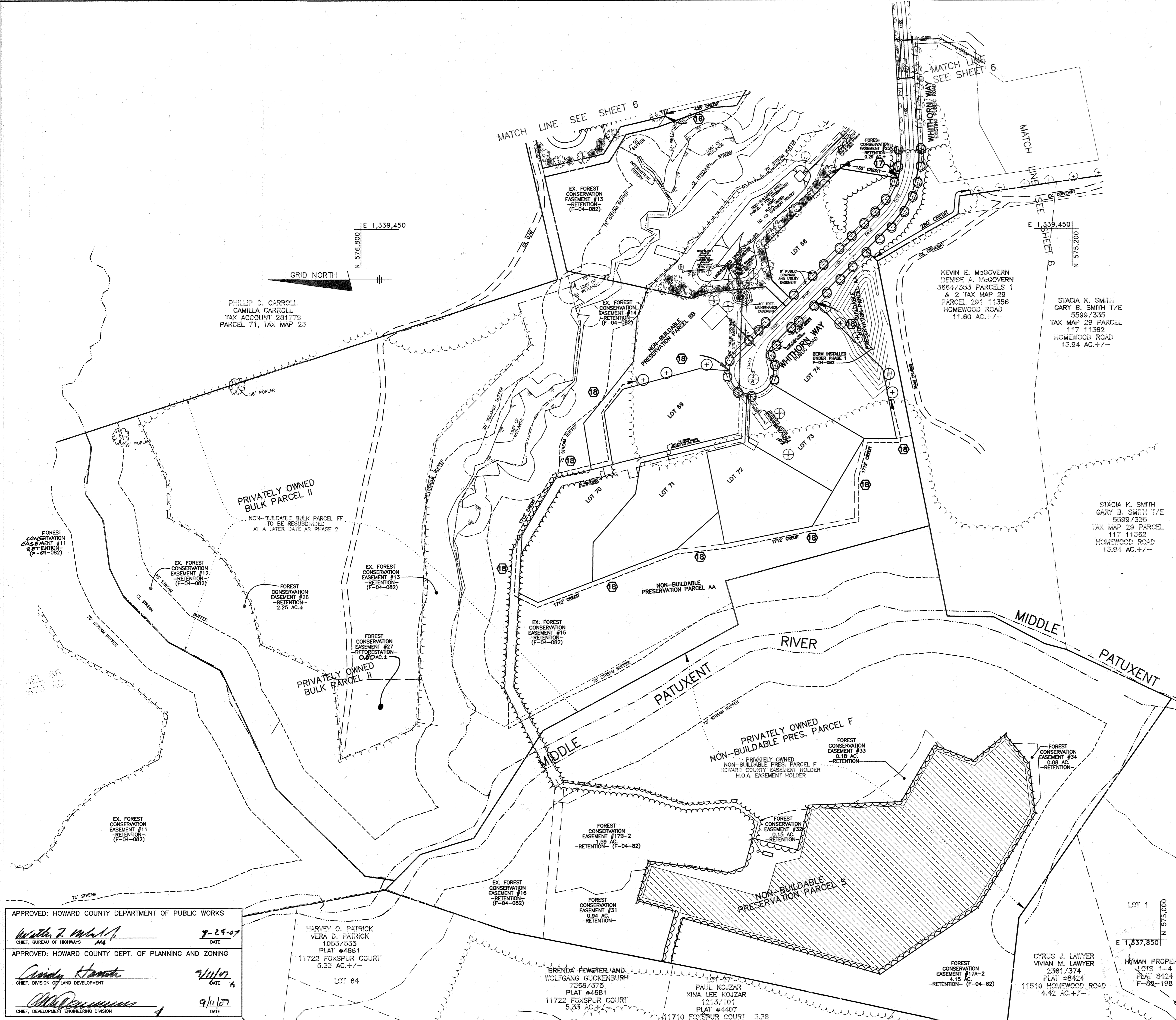
OWNER/DEVELOPER: E'IOAK, L.L.C. P.C. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	PROJECT: RIVERWOOD - PHASE 2 A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'A' THRU 'GG' TO CREATE LOTS 43-77, NON-BUILDABLE PRESERVATION PARCELS '1' THRU 'Z', 'A', 'EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS '1', '2', '3', '4', '5', '6', '7', '8', '9', '10', '11', '12', '13', '14', '15', '16', '17', '18', '19', '20', '21', '22', '23', '24', '25', '26', '27', '28', '29', '30', '31', '32', '33', '34', '35', '36', '37', '38', '39', '40', '41', '42', '43', '44', '45', '46', '47', '48', '49', '50', '51', '52', '53', '54', '55', '56', '57', '58', '59', '60', '61', '62', '63', '64', '65', '66', '67', '68', '69', '70', '71', '72', '73', '74', '75', '76', '77', '78', '79', '80', '81', '82', '83', '84', '85', '86', '87', '88', '89', '90', '91', '92', '93', '94', '95', '96', '97', '98', '99', '100', '101', '102', '103', '104', '105', '106', '107', '108', '109', '110', '111', '112', '113', '114', '115', 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DATE: JULY, 2007	PROJECT NO. 1132	
SCALE: 1" = 100'	SHEET 6 OF 12	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Walter J. M... 8-29-07
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cindy Hamilton 9/11/07
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *James R. Moxley, III 9/11/07*
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

* ALSO KNOWN AS RIVERWOOD PHASE 2 LOTS 43-45, 48-64 67-77 AND 79-84



PHILLIP D. CARROLL
CAMILLA CARROLL
TAX ACCOUNT 281779
PARCEL 71, TAX MAP 23

KEVIN E. McGOVERN
DENISE A. McGOVERN
3664/353 PARCELS 1
& 2 TAX MAP 29
PARCEL 291 11386
HOMWOOD ROAD
11.80 AC. +/-

STACIA K. SMITH
GARY B. SMITH T/E
5589/335
TAX MAP 29 PARCEL
117 11382
HOMWOOD ROAD
13.94 AC. +/-

STACIA K. SMITH
GARY B. SMITH T/E
5589/335
TAX MAP 29 PARCEL
117 11382
HOMWOOD ROAD
13.94 AC. +/-

PRIVATELY OWNED
NON-BUILDABLE PRES. PARCEL F
PRIVATELY OWNED
NON-BUILDABLE PRES. PARCEL F
HOWARD COUNTY EASEMENT HOLDER
H.O.A. EASEMENT HOLDER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Walter P. M... 7-25-07
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cindy Ham... 7/11/07
CHIEF, DIVISION OF LAND DEVELOPMENT

... 9/11/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION

HARVEY G. PATRICK
VERA D. PATRICK
1055/555
PLAT #4861
11722 FOXSPUR COURT
5.33 AC. +/-
LOT 64

BRENDA FEWSTER AND
WOLFGANG GUCKENBURH
7368/575
PLAT #4881
11722 FOXSPUR COURT
5.33 AC. +/-

LOT 47
PAUL KOJZAR
XINA LEE KOJZAR
1213/101
PLAT #4407
11710 FOXSPUR COURT 3.38

CYRUS J. LAWYER
VIVIAN M. LAWYER
2381/374
PLAT #8424
11510 HOMWOOD ROAD
4.42 AC. +/-

LOT 1
HUMAN PROPERTY
LOTS 1-4
PLAT 8424
F-88-198

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 OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

HWL 1-23-07
STEVEN K. BREEDEN, MEMBER DATE
ELOAK, L.L.C.

James R. Moxley III 7/23/07
JAMES R. MOXLEY, III, MEMBER DATE
ELOAK, L.L.C.

- LEGEND
- EXISTING TREELINE
 - PROPOSED TREELINE
 - CL STREAM
 - LIMIT OF WETLANDS
 - LIMIT OF SUBMISSION
 - PROPOSED FOREST CONSERVATION EASEMENT
 - LANDSCAPE PERIMETER DESIGNATION
 - STREET TREES
 - STREET TREES PHASE 1 (F-04-82)
 - PERIMETER LANDSCAPE TREE PHASE 1 (F-04-82)

No As-Built Information is required on this sheet

Professional Engineer Seal: DONALD MAON, No. 21149, 11/13/14

NOTE: THIS PLAN IS FOR STREET TREE AND LANDSCAPE PURPOSES ONLY.

*ALSO KNOWN AS RIVERWOOD PHASE 2
LOTS 43-45, 48-64, 67-77 AND 79-84

3	3-4-22	ADD SHEET 12	
1	6-8-11	REVISE TITLE BLOCK	
NO.	DATE	REVISION	
BENCHMARK ENGINEERS • LAND SURVEYORS • PLANNERS			
8480 BALTIMORE NATIONAL PIKE • SUITE 418 ELLCOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 • FAX: 410-465-6644 EMAIL: Benchmark@ccis.com			
OWNER/DEVELOPER:		PROJECT: RIVERWOOD - PHASE 2 A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'A' THRU 'G' TO CREATE LOTS 43-77, NON-BUILDABLE PRESERVATION PARCELS 'A' THRU 'Z', 'AA'-'ZZ' AND NON-BUILDABLE BULK PARCEL 'I' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'E', 'F', 'R' & 'S' TO ADD FOREST CONSERVATION AREAS	
ELOAK, L.L.C. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 410-465-4244		LOCATION: TAX MAP: 23, GRID: 21 TAX MAP: 29, GRID: 3,4,9&10 PARCELS: 88 PARCELS: 20 & 86 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: LANDSCAPE AND STREET TREE PLAN			
DATE: JULY, 2007	PROJECT NO. 1132		
DES: JMC/DBT	DRAFT: JMC/DBT	CHECK: CAM	SCALE: 1" = 100'
		SHEET 7	OF 12

SITE ANALYSIS DATA CHART

- GENERAL SITE DATA**
- PRESENT ZONING: RC-DEO
 - APPLICABLE DPZ FILE REFERENCES: WP-02-64, S-02-009, P-03-010, F-04-082, P-04-09, WP-05-98, RE-06-06 SFD
 - PROPOSED USE OF SITE: SFD
 - PROPOSED WATER AND SEWER SYSTEMS: PRIVATE WATER, PRIVATE SEWER AND PUBLIC SEWER
- AREA TABULATION**
- GROSS TRACT AREA: 269.88 AC.±
 - AREA WITHIN 100-YEAR FLOODPLAIN: 44.83 AC.±
 - NET TRACT AREA: 225.05 AC.±

LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- CL STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- STEEP SLOPES 25% OR GREATER
- APPROXIMATE LIMIT OF EXISTING 100-YEAR FLOODPLAIN AREA
- APPROXIMATE LIMIT OF PROPOSED 100-YEAR FLOODPLAIN AREA
- FOREST CONSERVATION RETENTION
- FOREST CONSERVATION SIGNAGE

SOILS LEGEND		SOIL TYPE
MAP SYMBOL	SOIL GROUP	
Ba	D*	BAILE SILT LOAM
Cg2	B	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Cg2	B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChA	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
ChB2	B	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ChC2	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChC3	B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
ChD2	B	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES
Cs	B	COMUS SILT LOAM
EkB2	B	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
ElC3	B	ELIOAK SILTY CLAY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
GIB2	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GlC2	B	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
GlD2	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
Gh2	C	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Ho	D*	HATBORO SILT LOAM
MgB2	B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MgC3	B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED
MID2	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
MID3	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
MIE	B	MANOR LOAM, 25 TO 45 PERCENT SLOPES
MID	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
Mf	B	MANOR VERY STONY LOAM, 3 TO 25 PERCENT SLOPES
Mf	B	MANOR VERY STONY LOAM, 25 TO 60 PERCENT SLOPES
Mo	B*	MIXED ALLUVIAL LAND

* INDICATES HYDRIC SOILS
 TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 31

EX. FCE ACREAGE CHART	
EASEMENT #	ACREAGE (RETENTION)
FCE#1	1.09 AC.
FCE#2	1.11 AC.
FCE#2A	1.24 AC.
FCE#3	9.81 AC.
FCE#4	1.70 AC.
FCE#5	0.33 AC.
FCE#6	5.77 AC.
FCE#7	7.56 AC.
FCE#8	1.52 AC.
FCE#9	0.55 AC.
FCE#10	1.56 AC.
FCE#11	5.55 AC.
FCE#12	1.28 AC.
FCE#13	4.22 AC.
FCE#14	2.69 AC.
FCE#15	2.68 AC.
FCE#16	0.87 AC.
FCE#17A-2A	4.26 AC.
FCE#17B-2A	1.40 AC.
FCE#18	1.46 AC.
FCE#19	1.22 AC.
FCE#20	1.45 AC.
FCE#21	0.83 AC.
FCE#22	0.89 AC.
TOTALS	61.04 AC.

FCE ACREAGE CHART		
EASEMENT #	ACREAGE (REFORESTATION)	ACREAGE (RETENTION)
FCE#23		0.87 AC.
FCE#24		0.55 AC.
FCE#25		0.29 AC.
FCE#26		2.25 AC.
FCE#27	0.80 AC.	
FCE#28A	0.57 AC.	
FCE#28	0.52 AC.	
FCE#30	0.87 AC.	
FCE#31		0.94 AC.
FCE#32		0.15 AC.
FCE#33		0.18 AC.
FCE#34		0.08 AC.
FCE#35		0.32 AC.
TOTAL PHASE 2	2.86 AC.	6.61 AC.
TOTAL SITE	2.56 AC.	66.65 AC.

**SEE THE FINAL RECORD PLAT FOR FOREST CONSERVATION EASEMENT BEARINGS AND DISTANCES.
 SEE SHEET 10 FOR FOREST CONSERVATION CALCULATIONS
 SEE SHEET 11 FOR FOREST CONSERVATION NOTES AND SHEET 10 FOR SIGNAGE DETAIL

NO.	DATE	REVISION
3	3-4-22	ADD SHEET 12
2	8-26-13	REVISE FCE ACREAGE CHART
1	6-8-11	REVISE TITLE BLOCK, REVISE FCE ACREAGE CHART

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21443, Expiration Date: 12/31/2014

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

Donald Maam
 1/23/07

DEVELOPER/ OWNER:	ELIOAK, L.L.C. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244
PROJECT:	RIVERWOOD - PHASE 2 A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'AA' THRU 'GG' TO CREATE LOTS 43-77 NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA'-'EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'F', 'G', 'H', 'I', 'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z' TO ADD FOREST CONSERVATION AREAS
LOCATION:	TAX MAP: 23, GRID: 21 TAX MAP: 29, GRID: 3, 4, 9&10 PARCELS: 88 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	FOREST CONSERVATION PLAN
DATE:	JULY, 2007
PROJECT NO.:	1132
DES: JMC/DBT	DRAFT: JMC/WEO
CHECK: CAM	SCALE: 1" = 100'
	SHEET 8 OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Walter J. Walsh
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 8/29/07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cindy Hamer
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/1/07

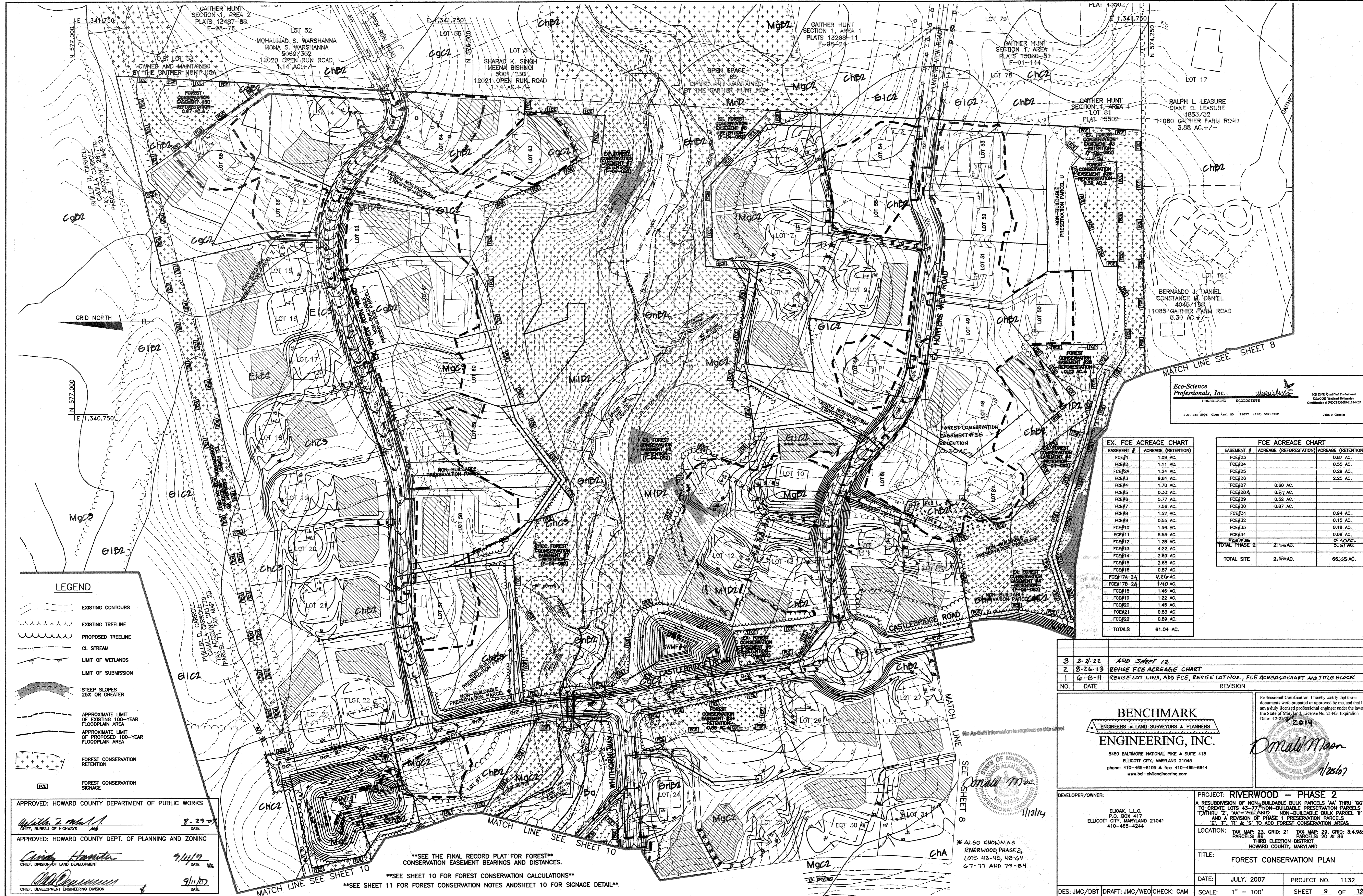
John P. Casler
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/1/07

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS
 MD DBR Qualified Professional
 USA-CES Wetland Designer
 Certification # WDCP290MD0104483
 P.O. Box 5006 Glen Arden, MD 21057 (410) 592-4752
 John P. Casler

* ALSO KNOWN AS RIVERWOOD PHASE 2, LOTS 43-45, 48-64, 67-77 AND 79-84

Donald Maam
 PROFESSIONAL ENGINEER
 No. 21443
 1/13/14





LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- CL STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- STEEP SLOPES 25% OR GREATER
- APPROXIMATE LIMIT OF EXISTING 100-YEAR FLOODPLAIN AREA
- APPROXIMATE LIMIT OF PROPOSED 100-YEAR FLOODPLAIN AREA
- FOREST CONSERVATION RETENTION
- FOREST CONSERVATION SIGNAGE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 8-29-07
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 [Signature] 9/14/07
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9/11/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SEE THE FINAL RECORD PLAT FOR FOREST
 CONSERVATION EASEMENT BEARINGS AND DISTANCES.

SEE SHEET 10 FOR FOREST CONSERVATION CALCULATIONS

SEE SHEET 11 FOR FOREST CONSERVATION NOTES AND SHEET 10 FOR SIGNAGE DETAIL

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS
 3100 Glen Ave. MD 21057 (410) 592-4752
 MD DNR Qualified Professional USACE Wetland Delimiter Certificate # WDCP25MD0169442
 John P. Cantle

EX. FCE ACREAGE CHART

EASEMENT #	ACREAGE (RETENTION)
FCE#1	1.09 AC.
FCE#2	1.11 AC.
FCE#2A	1.24 AC.
FCE#3	9.81 AC.
FCE#4	1.70 AC.
FCE#5	0.33 AC.
FCE#6	5.77 AC.
FCE#7	7.56 AC.
FCE#8	1.52 AC.
FCE#9	0.55 AC.
FCE#10	1.56 AC.
FCE#11	5.55 AC.
FCE#12	1.28 AC.
FCE#13	4.22 AC.
FCE#14	2.69 AC.
FCE#15	2.58 AC.
FCE#18	0.87 AC.
FCE#17A-2A	4.26 AC.
FCE#17B-2A	1.40 AC.
FCE#18	1.46 AC.
FCE#19	1.22 AC.
FCE#20	1.45 AC.
FCE#21	0.83 AC.
FCE#22	0.89 AC.
TOTALS	61.04 AC.

FCE ACREAGE CHART

EASEMENT #	ACREAGE (REFORESTATION)	ACREAGE (RETENTION)
FCE#23		0.87 AC.
FCE#24		0.55 AC.
FCE#25		0.29 AC.
FCE#26		2.25 AC.
FCE#27	0.60 AC.	
FCE#28A	0.57 AC.	
FCE#29	0.52 AC.	
FCE#30	0.87 AC.	
FCE#31		0.94 AC.
FCE#32		0.15 AC.
FCE#33		0.18 AC.
FCE#34		0.08 AC.
FCE#35		0.30 AC.
TOTAL PHASE 2	2.56 AC.	5.67 AC.
TOTAL SITE	2.56 AC.	66.65 AC.

NO.	DATE	REVISION
3	3-7-22	ADD SHEET 12
2	8-26-13	REVISE FCE ACREAGE CHART
1	6-8-11	REVISE LOT LINES, ADD FCE, REVISE LOT NOS., FCE ACREAGE CHART AND TITLE BLOCK

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-485-0105 • fax: 410-485-8844
 www.bel-clivtengineering.com

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21443, Expiration Date: 12-31-2014
 [Signature] 1/25/07

DEVELOPER/OWNER: ELIQUA, L.L.C., P.O. BOX 417, ELLICOTT CITY, MARYLAND 21041, 410-485-4244

PROJECT: RIVERWOOD - PHASE 2
 A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'AA' THRU 'GG' TO CREATE LOTS 43-77, NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA' - 'EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'E', 'F', 'R' & 'S' TO ADD FOREST CONSERVATION AREAS

LOCATION: TAX MAP: 23, GRID: 21 TAX MAP: 29, GRID: 3,4,9&10 PARCELS: 86 PRESERVATION PARCELS: 20 & 86 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: FOREST CONSERVATION PLAN

DATE: JULY, 2007 PROJECT NO. 1132

DES: JMC/DBT DRAFT: JMC/WEO CHECK: CAM SCALE: 1" = 100' SHEET 9 OF 12

FOREST RETENTION AREA
MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED
VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1998

Forest Conservation Area
AFFORESTATION PROJECT
Trees for Your Future

LEGEND

	EXISTING CONTOURS
	EXISTING TREELINE
	PROPOSED TREELINE
	CL. STREAM
	LIMIT OF WETLANDS
	LIMIT OF SUBMISSION
	STEEP SLOPES 25% OR GREATER
	APPROXIMATE LIMIT OF EXISTING 100-YEAR FLOODPLAIN AREA
	APPROXIMATE LIMIT OF PROPOSED 100-YEAR FLOODPLAIN AREA
	FOREST CONSERVATION RETENTION
	FOREST CONSERVATION SIGNAGE

APPENDIX G FOREST CONSERVATION WORKSHEET

		ACRES (1/10 acre)
I. BASIC SITE DATA		
GROSS SITE AREA	269.9	
AREA WITHIN 100-YEAR FLOODPLAIN	44.8	
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	N/A	
NET TRACT AREA	225.1	
LAND USE CATEGORY (R-RD, R-RMD, R-S, C/I/O, I)	RC-DEO	
II. INFORMATION FOR CALCULATIONS		
A. NET TRACT AREA	225.1	
B. REFORESTATION THRESHOLD (25% x A)	56.28	
C. AFFORESTATION MINIMUM (20% x A)	45.02	
D. EXISTING FOREST ON NET TRACT AREA	117.30	
E. FOREST AREAS TO BE CLEARED	50.45*	
F. FOREST AREAS TO BE RETAINED	66.85**	

* CLEARING FOR PHASE 1 AND PHASE 2 (11.85 ACRES FOR PHASE 2).
** 61.04 ACRES WITHIN RETENTION EASEMENTS CREATED UNDER PHASE 1 (F-04-082).

- III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION**
- 1. Reforestation**
If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply.
GO TO SECTION IV
 - 2. Afforestation**
If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.
GO TO SECTION V

IV. REFORESTATION CALCULATIONS

		ACRES (1/10 acre)
A. NET TRACT AREA	225.10	
B. REFORESTATION THRESHOLD (25% x A)	56.28	
C. EXISTING FOREST ON NET TRACT AREA	117.30	
D. FOREST AREAS TO BE CLEARED (D-B, Alternate 2)	50.45	
E. FOREST AREAS TO BE RETAINED	66.85	
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1)	50.45	
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (D-F, if less than B, Alternate 2)	N/A	
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (B-F, if applicable)	N/A	
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (B-F, Retention Credit, if applicable)	10.37	

SELECT THE ALTERNATE THAT APPLIES:

- 1. Clearing above the threshold only**
If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply:
REFORESTATION FOR CLEARING ABOVE THRESHOLD $G \times 1/4 = 12.66$
CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD $I = 10.37$
TOTAL REFORESTATION REQUIRED $(G \times 1/4) - I = 2.29^{***}$
If the total reforestation requirement is equal to or less than 0, no reforestation is required.

- 2. Clearing below the threshold**
If forest areas to be retained are less than the reforestation threshold (if F is less than B), the following calculations apply:
REFORESTATION FOR CLEARING ABOVE THRESHOLD N/A
REFORESTATION FOR CLEARING BELOW THRESHOLD N/A
TOTAL REFORESTATION REQUIRED $(G \times 1/4) + (H \times 2) = N/A$
Since clearing occurs below the threshold, no forest retention credit is possible.

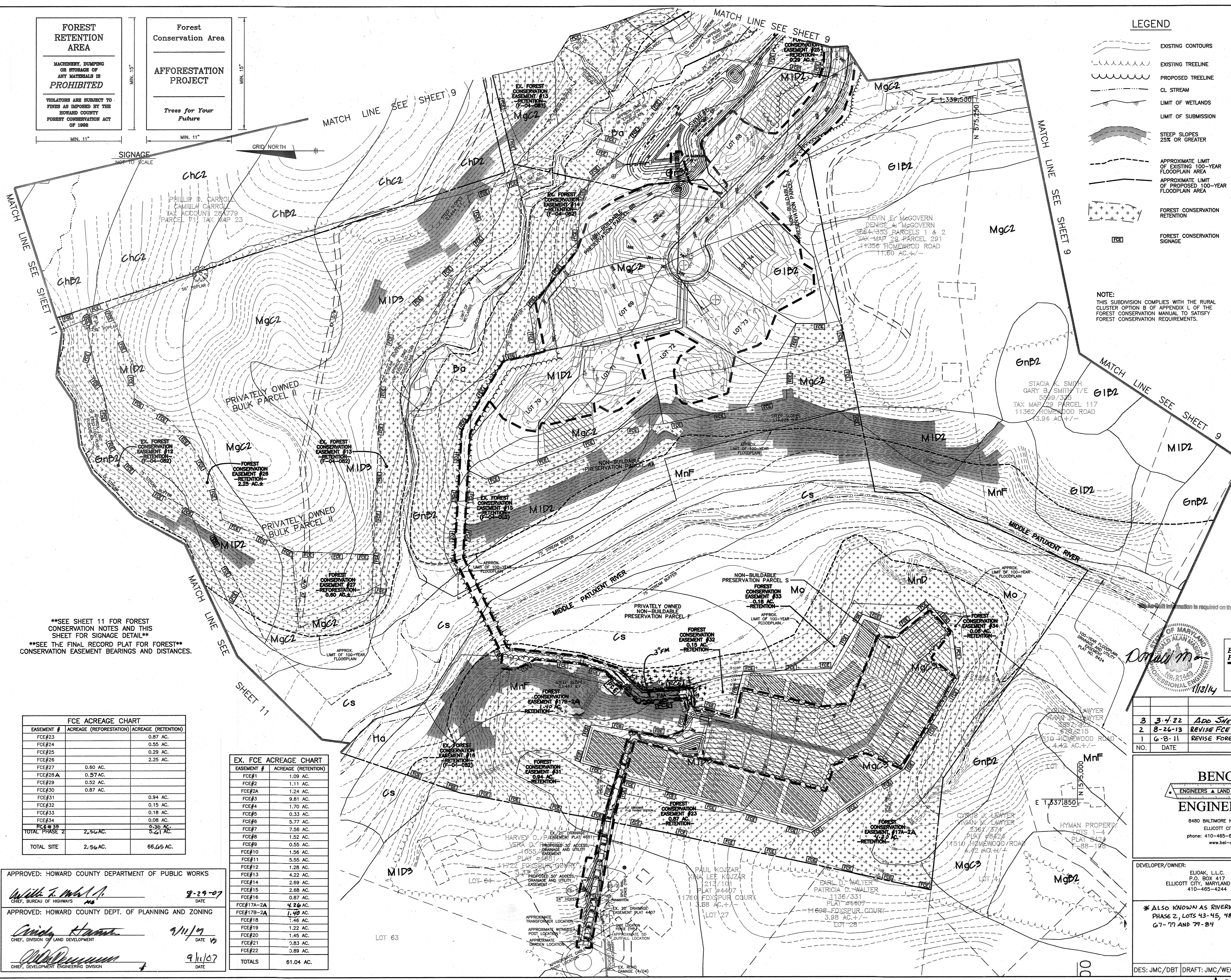
*** AT THIS TIME THE EXACT LOCATION OF THE SEPTIC FORCE MAIN IS NOT KNOWN. THE LIMITS OF THE RETENTION AREAS MAY BE MODIFIED SO WE HAVE PROVIDED AN ADDITIONAL 0.27 ACRES OF REFORESTATION AT THIS TIME.

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
P.O. Box 506 Clarksville, MD 21037 (410) 592-4752
John P. Condit
MD DNR Qualified Professional
SINCE 2005
Professional Engineer
Certificate # WCE02920040104020

3	3-4-22	ADD SHEET 12
2	8-26-13	REVISE FCE FOR FORCE MAIN LOCATION / REVISION PLAT
1	6-8-11	REVISE FOREST CONSERVATION WORKSHEET AND TITLE BLOCK

BENCHMARK ENGINEERING, INC.
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ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 • fax: 410-465-6644
www.be1-civilengineering.com

DEVELOPER/OWNER: ELIOAK, L.L.C. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	PROJECT: RIVERWOOD - PHASE 2 A REVISION OF NON-BUILDABLE BULK PARCELS 'A' THRU 'G' TO CREATE LOTS 43-77 NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA'-'EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'E', 'F', 'G', 'H' & 'I' TO ADD FOREST CONSERVATION AREAS
* ALSO KNOWN AS RIVERWOOD PHASE 2, LOTS 43-45, 48-64, G7-77 AND 79-84	LOCATION: TAX MAP 23, GRID: 21 TAX MAP 28, GRID: 3,4,9&10 PARCELS: 88 PARCELS: 20 & 98 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: FOREST CONSERVATION PLAN	
DATE: JULY, 2007	PROJECT NO. 1132
DES: JMC/DBT DRAFT: JMC/WEQ CHECK: CAM	SCALE: 1" = 100' SHEET 10 OF 12



SEE SHEET 11 FOR FOREST CONSERVATION NOTES AND THIS SHEET FOR SIGNAGE DETAIL
**SEE THE FINAL RECORD PLAT FOR FOREST CONSERVATION EASEMENT BEARINGS AND DISTANCES.

FCE ACREAGE CHART

EASEMENT #	ACREAGE (REFORESTATION)	ACREAGE (RETENTION)
FCE#23	0.87 AC.	0.87 AC.
FCE#24	0.55 AC.	0.55 AC.
FCE#25	0.29 AC.	0.29 AC.
FCE#26	2.25 AC.	2.25 AC.
FCE#27	0.60 AC.	0.60 AC.
FCE#28A	0.57 AC.	0.57 AC.
FCE#29	0.52 AC.	0.52 AC.
FCE#30	0.87 AC.	0.87 AC.
FCE#31		0.94 AC.
FCE#32		0.15 AC.
FCE#33		0.18 AC.
FCE#34		0.08 AC.
FCE#35		0.36 AC.
TOTAL PHASE 2	2.56 AC.	5.61 AC.
TOTAL SITE	2.56 AC.	66.65 AC.

EX. FCE ACREAGE CHART

EASEMENT #	ACREAGE (RETENTION)
FCE#1	1.09 AC.
FCE#2	1.11 AC.
FCE#2A	1.24 AC.
FCE#3	9.81 AC.
FCE#4	1.70 AC.
FCE#5	0.33 AC.
FCE#6	5.77 AC.
FCE#7	7.56 AC.
FCE#8	1.52 AC.
FCE#9	0.55 AC.
FCE#10	1.56 AC.
FCE#11	5.55 AC.
FCE#12	1.28 AC.
FCE#13	4.22 AC.
FCE#14	2.69 AC.
FCE#15	2.68 AC.
FCE#16	0.87 AC.
FCE#17A-2A	4.26 AC.
FCE#17B-2A	1.46 AC.
FCE#18	1.46 AC.
FCE#19	1.22 AC.
FCE#20	1.45 AC.
FCE#21	0.83 AC.
FCE#22	3.89 AC.
TOTALS	61.04 AC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William J. Mohr 8-29-07
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Christy Hester 9/11/07
CHIEF, DIVISION OF LAND DEVELOPMENT

William J. Mohr 9/11/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION

EASEMENT #	ACREAGE (RETENTION)
FC#1	1.09 AC.
FC#2	1.11 AC.
FC#3	1.24 AC.
FC#4	0.81 AC.
FC#5	1.70 AC.
FC#6	0.33 AC.
FC#7	5.77 AC.
FC#8	7.56 AC.
FC#9	1.52 AC.
FC#10	0.55 AC.
FC#11	1.56 AC.
FC#12	5.55 AC.
FC#13	1.28 AC.
FC#14	4.22 AC.
FC#15	2.69 AC.
FC#16	2.68 AC.
FC#17	0.87 AC.
FC#17A-2	4.07 AC.
FC#17B-2	1.59 AC.
FC#18	1.46 AC.
FC#19	1.22 AC.
FC#20	1.45 AC.
FC#21	0.83 AC.
FC#22	0.89 AC.
TOTALS	61.04 AC

EASEMENT #	ACREAGE (REFORESTATION)	ACREAGE (RETENTION)
FC#23		0.87 AC.
FC#24		0.92 AC.
FC#25		0.87 AC.
FC#26		2.87 AC.
FC#27	0.60 AC.	
FC#28 A	0.57 AC.	
FC#29	0.97 AC.	
FC#30	0.87 AC.	
FC#31		0.94 AC.
FC#32		0.15 AC.
FC#33		0.18 AC.
FC#34		0.28 AC.
FC#35		0.32 AC.
TOTAL PHASE 2	2.56 AC.	5.61 AC.
TOTAL SITE	2.56 AC.	66.65 AC.

PLANTING SCHEDULE

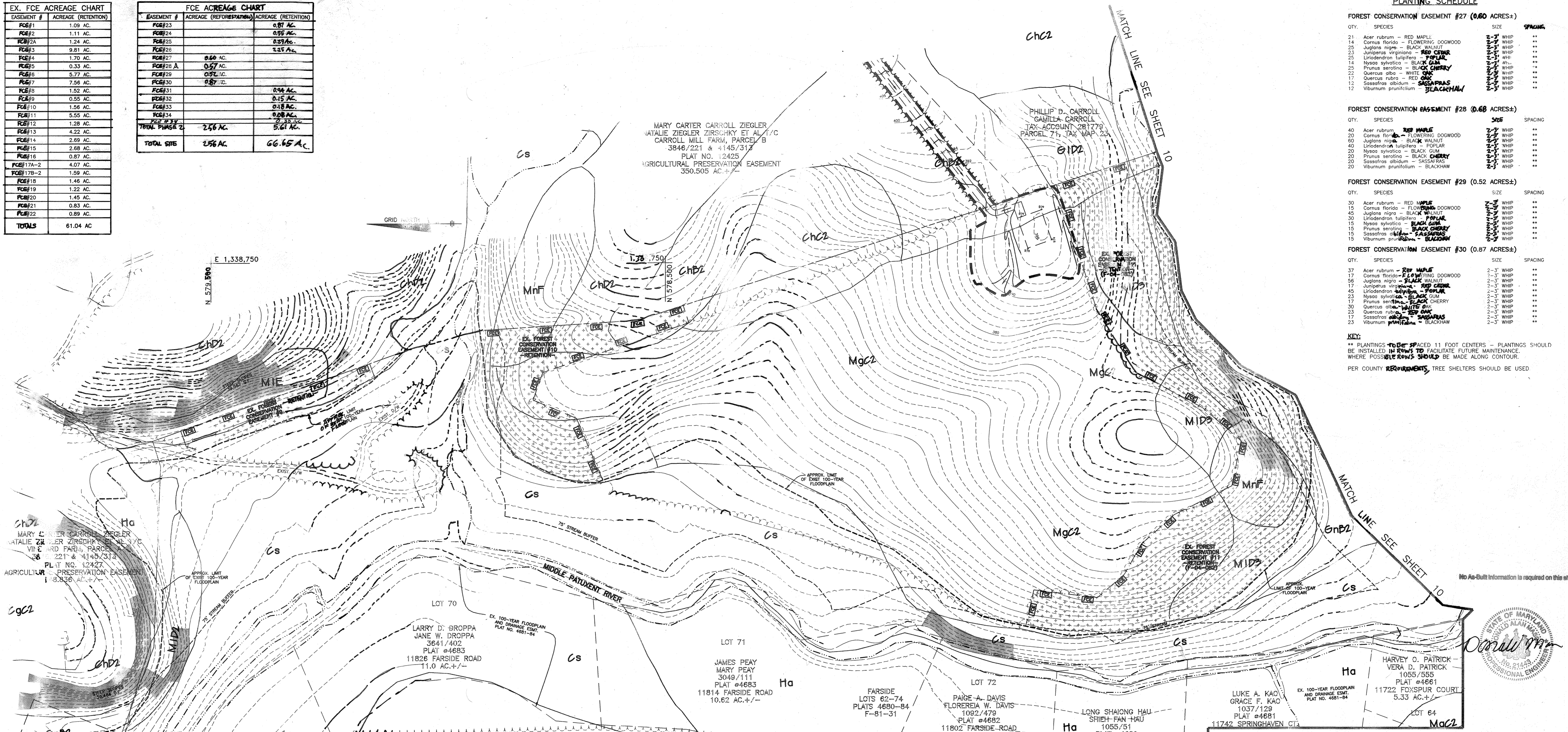
QTY.	SPECIES	SIZE	SPACING
21	Acer rubrum - RED MAPLE	2-3"	WHIP
14	Cornus florida - FLOWERING DOGWOOD	2-3"	WHIP
23	Juglans nigra - BLACK WALNUT	2-3"	WHIP
23	Juniperus virginiana - RED CEDAR	2-3"	WHIP
25	Liriodendron tulipifera - POPLAR	2-3"	WHIP
14	Nyssa sylvatica - BLACK CHERRY	2-3"	WHIP
27	Prunus serotina - BLACK CHERRY	2-3"	WHIP
22	Quercus alba - WHITE OAK	2-3"	WHIP
17	Quercus rubra - RED OAK	2-3"	WHIP
12	Sassafras albidum - SASSAPARILLA	2-3"	WHIP
12	Viburnum prunifolium - BLACKHAWK	2-3"	WHIP

QTY.	SPECIES	SIZE	SPACING
40	Acer rubrum - RED MAPLE	2-3"	WHIP
20	Cornus florida - FLOWERING DOGWOOD	2-3"	WHIP
60	Juglans nigra - BLACK WALNUT	2-3"	WHIP
40	Liriodendron tulipifera - POPLAR	2-3"	WHIP
20	Nyssa sylvatica - BLACK CHERRY	2-3"	WHIP
20	Prunus serotina - BLACK CHERRY	2-3"	WHIP
20	Quercus alba - WHITE OAK	2-3"	WHIP
20	Quercus rubra - RED OAK	2-3"	WHIP
20	Viburnum prunifolium - BLACKHAWK	2-3"	WHIP

QTY.	SPECIES	SIZE	SPACING
30	Acer rubrum - RED MAPLE	2-3"	WHIP
15	Cornus florida - FLOWERING DOGWOOD	2-3"	WHIP
45	Juglans nigra - BLACK WALNUT	2-3"	WHIP
30	Liriodendron tulipifera - POPLAR	2-3"	WHIP
15	Nyssa sylvatica - BLACK CHERRY	2-3"	WHIP
15	Prunus serotina - BLACK CHERRY	2-3"	WHIP
15	Quercus alba - WHITE OAK	2-3"	WHIP
15	Quercus rubra - RED OAK	2-3"	WHIP
15	Viburnum prunifolium - BLACKHAWK	2-3"	WHIP

QTY.	SPECIES	SIZE	SPACING
37	Acer rubrum - RED MAPLE	2-3"	WHIP
17	Cornus florida - FLOWERING DOGWOOD	2-3"	WHIP
56	Juglans nigra - BLACK WALNUT	2-3"	WHIP
17	Juniperus virginiana - RED CEDAR	2-3"	WHIP
45	Liriodendron tulipifera - POPLAR	2-3"	WHIP
23	Nyssa sylvatica - BLACK CHERRY	2-3"	WHIP
17	Prunus serotina - BLACK CHERRY	2-3"	WHIP
30	Quercus alba - WHITE OAK	2-3"	WHIP
23	Quercus rubra - RED OAK	2-3"	WHIP
11	Sassafras albidum - SASSAPARILLA	2-3"	WHIP
23	Viburnum prunifolium - BLACKHAWK	2-3"	WHIP

KEY:
 ** PLANTINGS TO BE SPACED 11 FOOT CENTERS - PLANTINGS SHOULD BE INSTALLED IN ROWS TO FACILITATE FUTURE MAINTENANCE. WHERE POSSIBLE ROWS SHOULD BE MADE ALONG CONTOUR.
 PER COUNTY REQUIREMENTS, TREE SHELTERS SHOULD BE USED.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 With 2 sheets
 8-29-07
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Cindy Hamilton
 9/11/07
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 9/11/07
 DATE

FP NOTES:

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. FENCING SHALL BE INSTALLED ALONG LIMITS OF DISTURBANCE OCCURRING WITHIN 50 FEET OF THE PROPOSED FCE LIMITS. PERMANENT SIGNAGE WILL BE POSTED AT 50-100 FOOT INTERVALS ALONG ALL FCE LIMITS.
- THE TOTAL FOREST CONSERVATION OBLIGATION IS 69.02 ACRES FOR THIS SUBMISSION AND HAS BEEN MET BY THE ON-SITE RETENTION OF 66.35 ACRES OF NET TRACT AREA FOREST AND 2.67 ACRES OF REFORESTATION. 61.04 ACRES OF RETENTION WAS RECORDED WITHIN THE LIMITS OF FOREST CONSERVATION EASEMENTS RECORDED UNDER PHASE 1, F-04-082. DUE TO THE CREATION OF LOT 45, REVISION TO THE COMMUNITY SEPTIC DESIGN AND NON-BUILDABLE PRESERVATION PARCEL 'U' FOREST CONSERVATION EASEMENTS #2 AND #17 HAVE BEEN MODIFIED TO EXCLUDE 0.64 ACRES. THIS AREA IS COMPENSATED FOR IN THE PHASE TWO FOREST CONSERVATION AREAS. THE REMAINING FOREST CONSERVATION OBLIGATION IS THE OVERALL FOREST CONSERVATION OBLIGATION MINUS THE AREA PROVIDED IN PHASE 1 AND IS PROVIDED WITH PHASE 2. PHASE 2 PROVIDES AN ADDITIONAL 5.31 ACRES OF RETENTION AND 2.67 ACRES OF REFORESTATION. THIS RESULTS IN THE OVERALL FOREST OBLIGATION BEING ADDRESSED BY 66.35 ACRES OF RETENTION AND 2.67 ACRES OF REFORESTATION. FINANCIAL SURETY FOR THE REQUIRED FOREST CONSERVATION ADDRESSED IN PHASE 2 IN THE AMOUNT OF \$104,413.32 (5.31 ACRES OF RETENTION AT \$8,712 PER ACRE (\$46,260.72) AND 2.67 ACRES OF REFORESTATION AT \$21,780 PER ACRE (\$58,152.60)) SHALL BE PAID AS PART OF THE DEVELOPER'S AGREEMENT.

PLANTING/SOIL SPECIFICATIONS

- PLANTING OF NURSERY STOCK SHALL TAKE PLACE BETWEEN MARCH 15TH AND APRIL 30TH. CONTAINER STOCK MAY BE PLANTED BETWEEN SEPTEMBER 1ST AND OCTOBER 30TH.
- A TWELVE (12) INCH LAYER OF TOPSOIL SHALL BE SPREAD OVER ALL REFORESTATION AREAS IMPACTED BY SITE GRADING TO ASSURE A SUITABLE PLANTING AREA. DISTURBED AREAS SHALL BE SEEDS AND STABILIZED AS PER GENERAL CONSTRUCTION PLAN FOR PROJECT. PLANTING AREAS NOT IMPACTED BY SITE GRADING SHALL HAVE NO ADDITIONAL TOPSOIL INSTALLED.
- ALL BAREROOT PLANTING STOCK SHALL HAVE THEIR ROOT SYSTEMS DIPPED INTO AN ANTI-DESCASCANT GEL PRIOR TO PLANTING SO THAT THE TOP OF ROOT MASS IS LEVEL WITH THE TOP OF EXISTING SPACE. BACKFILL IN THE PLANTING PITS SHALL CONSIST OF 3 PARTS EXISTING SOIL TO 1 PART FINE FINES OR SUBSILT.
- FERTILIZER SHALL CONSIST OF AGRIFORM 22-8-2, OR EQUIVALENT, APPLIED AS PER MANUFACTURER'S SPECIFICATIONS.
- A TWO (2) INCH LAYER OF HARDWOOD MULCH SHALL BE PLACED OVER THE ROOT AREA OF ALL PLANTS.
- PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TARPED OR COVERED TRUCK. PLANTS SHALL BE KEPT MOIST PRIOR TO PLANTING.
- ALL NON-ORGANIC DEBRIS ASSOCIATED WITH THE PLANTING OPERATION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

SEQUENCE OF CONSTRUCTION

- PLANTS SHALL BE INSTALLED AS PER PLANT SCHEDULE AND PLANTING/SOIL SPECIFICATIONS FOR THE PROJECT.
- UPON COMPLETION OF THE PLANTING, SIGNAGE SHALL BE INSTALLED AS PER THE FOREST RETENTION AREA PROTECTION COVENANTS SHOWN ON THE FOREST CONSERVATION PLAN.
- PLANTINGS SHALL BE MAINTAINED AND GUARANTEED IN ACCORDANCE WITH THE MAINTENANCE AND GUARANTEE REQUIREMENTS FOR PROJECT.

MAINTENANCE OF PLANTINGS

- MAINTENANCE OF ALL PLANTINGS SHALL LAST FOR A PERIOD OF 24 MONTHS.
- ALL PLANT MATERIAL SHALL BE WATERED TWICE A MONTH DURING THE 1ST GROWING SEASON, ONCE A MONTH DURING MAY-SEPTEMBER, IF NEEDED.
- INVASIVE EXOTIC AND NOXIOUS WEEDS WILL BE REMOVED FROM REFORESTATION AREAS. OLD FIELD SUCCESSIONAL SPECIES WILL BE RETAINED.
- PLANTS WILL BE EXAMINED A MINIMUM OF TWO TIMES DURING THE GROWING SEASON FOR SERIOUS PLANT PESTS AND DISEASES. SERIOUS PROBLEMS WILL BE TREATED WITH THE APPROPRIATE AGENT.
- DEAD BRANCHES WILL BE PRUNED FROM PLANTINGS.

SURETY FOR REFORESTATION

- AFTER ONE GROWING SEASON, PLANT MATERIAL SHALL BE MAINTAINED AT 80% SURVIVAL THRESHOLD. A 75 PERCENT SURVIVAL RATE OF REFORESTATION PLANTINGS WILL BE REQUIRED AT THE END OF THE SECOND GROWING SEASON. ALL TREES BELOW THE 75 PERCENT THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE NEXT GROWING SEASON. THE CONTRACTOR WILL NOT BE LIABLE FOR PLANT LOSS DUE TO THEFT OR VANDALISM.

MULTIFLORA ROSE CONTROL NOTE

MULTIFLORA ROSE IS PREVALENT IN CERTAIN AREAS TO BE REFORESTED. PRIOR TO PLANTING ALL MULTIFLORA ROSE SHOULD BE REMOVED. REMOVAL OF THE ROSE MAY BE PERFORMED WITH MOWING AND HERBICIDE TREATMENTS. PHYSICAL REMOVAL OF ALL TOP GROWTH FOLLOWED BY A PERIODIC HERBICIDE TREATMENT OF STUMP SPROUTS IS RECOMMENDED. NATIVE TREE AND SHRUB SPECIES OCCURRING WITHIN THE ROSE THICKETS SHOULD BE RETAINED WHEREVER POSSIBLE. HERBICIDE TREATMENTS SHALL OCCUR ON 2 MONTH INTERVALS DURING THE FIRST GROWING SEASON AND ONCE EACH IN THE SPRING AND FALL FOR SUBSEQUENT YEARS. HERBICIDE USED SHALL BE MADE SPECIFICALLY TO ADDRESS WOODY PLANT MATERIAL AND SHALL BE APPLIED AS PER MANUFACTURER'S SPECIFICATIONS. CARE SHOULD BE TAKEN NOT TO SPRAY PLANTED TREES OR NATURALLY OCCURRING NATIVE TREE/SHRUB SEEDLINGS. IT IS RECOMMENDED THAT INITIATION OF ROSE REMOVAL BEGIN AT LEAST SIX MONTHS PRIOR TO PLANTING.

PLANTING NOTES:

- MULTIFLORA ROSE CONTROL MAY BE REQUIRED AS PART OF THIS PLANTING PLAN.
- BAREROOT PLANT MATERIAL MAY BE USED TO OFFSET THE COST OF MULTIFLORA ROSE REMOVAL AND MAINTENANCE IF BAREROOT MATERIAL IS USED IT MUST BE PLANTED IN MARCH - APRIL AND AN ANTI-DESCASCANT GEL SHOULD BE UTILIZED TO PROTECT ROOT SYSTEMS. CONTAINER GROWN STOCK IS RECOMMENDED.
- PLANTS SHOULD BE FLAGGED TO AID ON LOCATION DURING MAINTENANCE. PLANTINGS SHOULD ALSO BE PLANTED IN A GRID PATTERN TO FACILITATE MAINTENANCE AND REMOVAL OF INVASIVE AND EXOTIC SPECIES.

NO.	DATE	REVISION
3	3-4-22	ADD SHEET 12
1	6-8-11	REVISE TITLE BLOCK

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
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 phone: 410-465-6105 A fax: 410-465-6844
 www.bei-cvllengineering.com

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21443, Expiration Date: 12-31-2014.

DEVELOPER/OWNER: ELUOK, L.L.C., P.O. BOX 417, ELLICOTT CITY, MARYLAND 21041, 410-465-4244

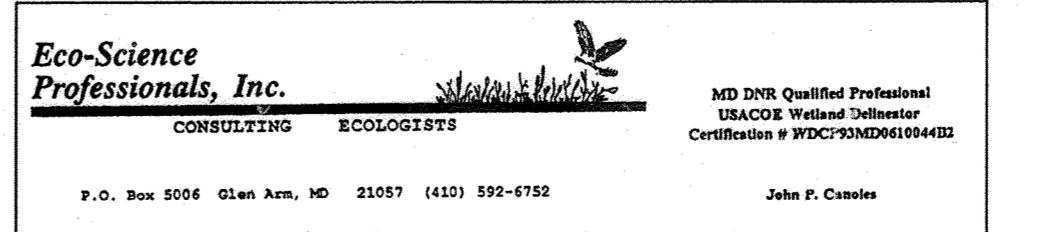
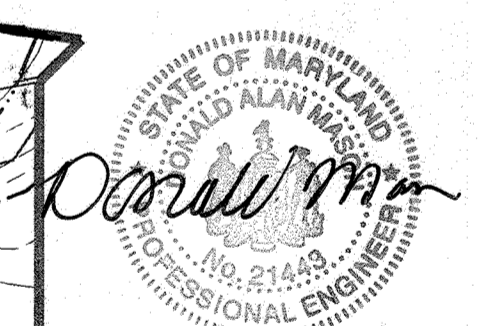
PROJECT: RIVERWOOD - PHASE 2
 A RESUBDIVISION OF NON-BUILDABLE BULK PARCELS 'A' THRU 'GG' TO CREATE LOTS 43-77 NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'Z', 'AA'-'EE' AND NON-BUILDABLE BULK PARCEL 'II' AND A REVISION OF PHASE 1 PRESERVATION PARCELS 'A' THRU 'R' & 'S' TO ADD FOREST CONSERVATION AREAS.

LOCATION: TAX MAP-23, GRID: 21 TAX MAP-29, GRID: 3,4,9&10 PARCELS: 88 PARCELS: 20 & 86

TITLE: FOREST CONSERVATION PLAN

DATE: JULY, 2007 **PROJECT NO.:** 1132

DES: JMC/DBT DRAFT: JMC/WEO CHECK: CAM **SCALE:** 1" = 100' **SHEET 11 OF 12**



****SEE THE FINAL RECORD PLAT FOR FOREST** CONSERVATION EASEMENT BEARINGS AND DISTANCES.**

****SEE SHEET 10 FOR FOREST CONSERVATION CALCULATIONS AND SIGNAGE DETAIL****