

SITE ANALYSIS DATA CHART

- General Site Data
 - Present Zoning: MD-3
 - Applicable DPZ File References: F-04-53, F-05-93, WIS 24-420 D, F-05-12, F-03-175, F-03-13, ZB-979-M, F-05-49, PB-339, PB-369, F-01-127, F-03-16, WP-01-14, WP-03-154, WP-05-24, F-07-138, WP-09-11
 - Proposed Use of Site or Structure(s): OPEN SPACE
 - Proposed Water and Sewer Systems are public
 - Any Other Information Which May be Relevant: N/A
- Area Tabulation
 - Total Project Area: 52.41 Acres
 - Area of This Plan Submission: 52.41 Acres
 - Limits of Disturbed Area: N/A Acres
 - Area of Buildings: 52.41 Acres
 - Limit of Open Space: 52.41 Acres
 - Area of 100-year Flood Plain: 51.29 Acres
- Site Program
 - Number of Units: N/A
 - Number of open space lots: N/A
 - Parking Spaces Required: N/A (2.3 SP/1UN)
 - Parking Spaces Provided: N/A
 - Garage and Driveway: N/A
 - Courts: N/A

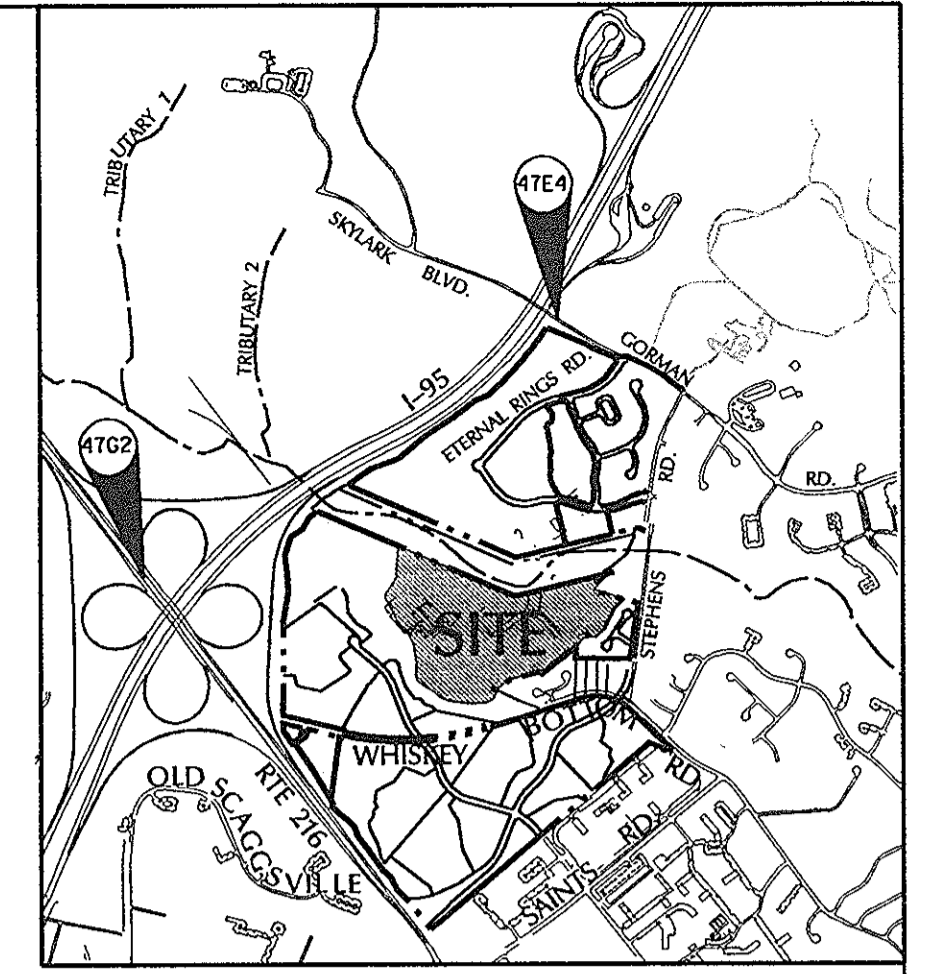
SHEET INDEX	
SHEET 1	FINAL PLAN COVER SHEET
SHEET 2	COMPOSITE FOREST CONSERVATION EASEMENT SHEET
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SHEET 4	FOREST CONSERVATION PLAN
SHEET 5	FOREST CONSERVATION PLAN
SHEET 6	FCP NOTES AND DETAILS

FINAL PLAN

EMERSON SECTION 2 PHASE 9

OPEN SPACE LOT 1

Howard County, Maryland



LOCATION MAP
SCALE: 1" = 2000'

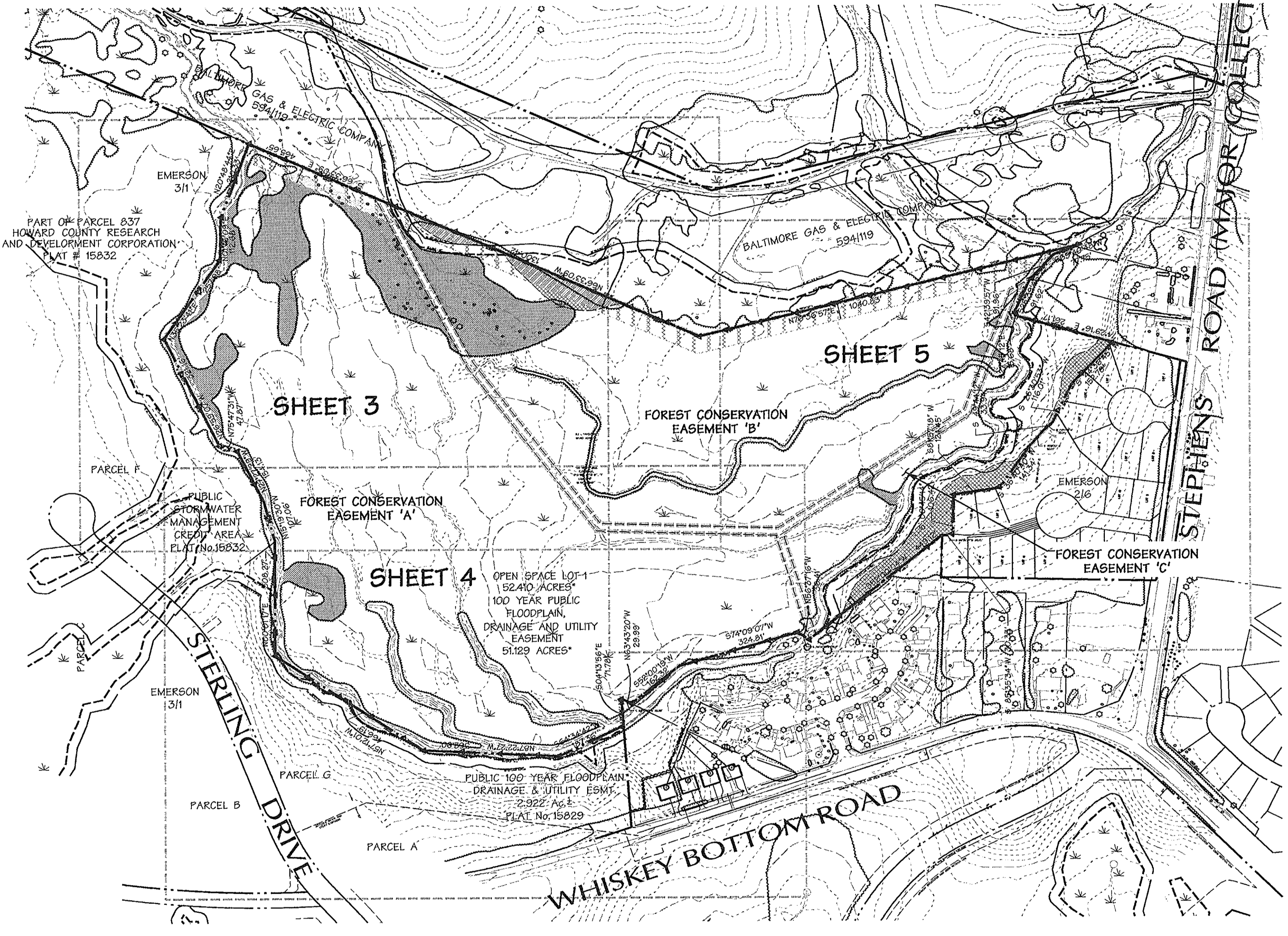
BENCHMARK DESCRIPTION

COORDINATES IN MARYLAND NAD83(91) (HORIZONTAL) AND NGVD29 (VERTICAL) DATUMS.

BM1	4774	NORTHING: 163336.2295	EASTING: 410336.2590	ELEVATION: 336.909ft
BM2	4762	NORTHING: 162440.1212	EASTING: 410336.2590	ELEVATION: 364.210ft

GENERAL NOTES

- THE EXISTING TOPOGRAPHY IS TAKEN FROM F-04-53 GRADING PLAN AND SUPPLEMENTED BY FIELD SURVEY BY DMW DATED JAN. 17, 2006.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT 4762 AND 4764 WERE USED FOR THIS PROJECT.
- EXISTING UTILITIES ARE BASED ON CONTRACT NO. 24-4120-D AND F-04-53 PLANS OF RECORD.
- THIS PHASE OF THE EMERSON PROJECT COMPLIES WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY RETAINING 0.90± ACRES OF EXISTING FOREST AND PROVIDING 4.50± ACRES OF REFORESTATION. WHEN EVALUATED CUMULATIVELY WITH PREVIOUS PHASES OF THE PROJECT, 75.4± ACRES OF FOREST HAVE BEEN CLEARED. 56.58± ACRES HAVE BEEN RETAINED, AND 20.56± ACRES HAVE BEEN REFORESTED. THE CUMULATIVE REFORESTATION OBLIGATION IS 13.50 ACRES.
- THERE ARE NO EXISTING STRUCTURES ON THE SITE.
- DEPARTMENT OF PLANNING AND ZONING REFERENCE FILE NUMBERS: WP-08-41, F-04-53, F-05-93, WIS 24-420-D, S-99-12, ZB-979-M, F-05-49, PB-339, PB-369, F-01-127, P-05-16, WP-01-14, WP-03-154, WP-05-24, F-07-138.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- NO IMPROVEMENTS SHALL BE CONSTRUCTED OR PLACED WITHIN THE PUBLIC WATER AND UTILITY EASEMENT THAT WILL OBSTRUCT OR HINDER ACCESS TO THE WATER MAIN.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT UNLESS FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- RESERVATION OF PUBLIC UTILITY AND FOREST CONSERVATION EASEMENTS DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, DRAINAGE, OTHER PUBLIC UTILITIES AND FOREST CONSERVATION (DESIGNATED AS "FOREST CONSERVATION AREA"), LOCATED IN, OVER, AND THROUGH LOTS/PARCELS, ANY CONVEYANCES OF THE AFORESAID LOTS/PARCELS SHALL BE SUBJECT TO THE EASEMENTS HEREIN RESERVED WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOTS/PARCELS. DEVELOPER SHALL EXECUTE AND DELIVER DEEDS FOR THE EASEMENTS HEREIN RESERVED TO HOWARD COUNTY WITH A METES AND BOUNDS DESCRIPTION OF THE FOREST CONSERVATION AREA UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, AND IN THE CASE OF THE FOREST CONSERVATION EASEMENT(S), UPON THE COMPLETION OF THE DEVELOPER'S OBLIGATIONS UNDER THE FOREST CONSERVATION INSTALLATION AND MAINTENANCE AGREEMENT EXECUTED BY THE DEVELOPER AND THE COUNTY, AND THE RELEASE OF DEVELOPER'S SURETY POSTED WITH SAID AGREEMENT. THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY HOWARD COUNTY FOR THE HAMMOND BRANCH, DATED 1986.
- OPEN SPACE TO BE DEDICATED TO HOWARD COUNTY, MARYLAND.
- THE WETLANDS AND STREAM DELINEATION FOR THIS PROJECT WAS PREPARED BY DMW DATED MARCH 28, 2000. THE EXISTING WETLANDS SHOWN HEREON WILL NOT BE IMPACTED BY THIS PLAN.
- REF. WP-08-41, APPROVED FEBRUARY 1, 2008, TO WAIVE SECTIONS 16.146 AND 16.121 (c) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SUBJECT TO THE FOLLOWING:
 - THE DEVELOPER SHALL COMPLY WITH THE DPZ POLICY MEMORANDUM DATED JANUARY 8, 2008 CONCERNING REQUIRED SETBACKS AND PLANTING REQUIREMENTS FOR PROPOSED FOREST CONSERVATION EASEMENTS LOCATED IN CLOSE PROXIMITY TO BGE POWER LINES OR TRANSMISSION RIGHT-OF-WAY.
 - BEST MANAGEMENT PRACTICES FOR PLANTING THE PROPOSED FOREST CONSERVATION TREES WHEN WORKING WITHIN THE ENVIRONMENTAL FEATURES (STREAMS, WETLANDS AND FLOODPLAIN AREA) AND BUFFERS SHALL BE USED BY THE LANDSCAPE CONTRACTOR WHEN INSTALLING THE FOREST CONSERVATION PLANTS AND PROTECTIVE DEVICES.



FOREST CONSERVATION TRACKING CHART

DPZ FILE NUMBER	Sectional Phase Number	Gross Area	Floodplain	Net Tract Area	Ex-Forest Area	Forest Cleared	Forest Retained	Reforest./Mitig.	Reforest./Mitig. Provided	Excess Reforest./Mitig.	Future Forest Clearing	Future Reforest./Mitig.	Comments
F-01-137	2 1A/B	106.20	3.50	102.70	24.70	7.93	16.77	0.61	5.03	4.42	4.48	3.41	
F-01-146	212	18.90	3.50	15.40	24.80	8.03	16.77	2.95	5.03	2.08	3.28	3.41	See Note A
F-02-98	213	137.35	4.00	133.35	34.40	12.53	21.87	1.27	5.03	3.76	2.18	3.91	See Note B
F-02-131	311	206.85	21.19	185.66	85.20	39.47	45.83	0.00	5.03	5.03	2.18	3.91	
F-02-178	312	220.27	21.27	199.00	87.30	41.67	45.83	0.00	5.03	5.03	2.18	3.91	See Note C
F-03-13	2 14	264.81	26.57	238.24	98.18	47.15	51.03	0.00	5.03	5.03	2.49	5.24	
F-03-175	215C	267.84	27.10	240.74	98.62	47.59	51.03	0.00	5.77	5.77	2.49	5.24	
F-04-68	216A	277.75	27.10	250.65	98.62	47.59	51.03	0.00	5.77	5.77	2.49	5.24	See Note D
F-04-131	214	277.75	27.10	250.65	98.62	47.59	51.03	0.00	8.55	8.55	2.49	3.91	See Note E
F-04-53	215A	306.93	27.51	279.42	98.66	47.63	51.03	2.79	8.74	5.95	2.49	3.91	
F-04-127	215B	332.63	32.43	300.20	115.66	63.31	52.35	8.51	11.51	3.00	2.49	3.91	See Note F
F-05-49	211B	332.63	32.43	300.20	115.66	61.73	53.93	6.53	13.29	6.76	0.49	1.84	See Note G
F-05-93	217	341.19	32.43	308.76	115.66	61.73	53.93	7.81	13.29	5.48	0.49	1.84	
F-05-99	216B	347.46	32.43	315.03	121.26	67.33	53.93	10.15	13.52	3.37	0.49	1.84	
SOP-06-024 "FARM FOND"		347.46	32.43	315.03	121.26	67.33	53.93	10.15	15.49	5.34	0.49	1.84	
F-07-141	218B	373.80	32.75	341.05	125.82	71.14	54.68	14.27	16.06	1.79	0.49	1.84	See Note H
F-08-62	219	426.21	63.60	362.61	136.72	71.14	55.58	13.50	20.56	7.06	0.49	1.84	See Note I

- 1.20± ACRES OF FUTURE FOREST CLEARING SHOWN ON F-01-137 WAS CLEARED FOR SWM ON OPEN SPACE LOT 17A.
- 1.50± ACRES OF FUTURE FOREST CLEARING SHOWN ON F-01-137 WAS CLEARED FOR SWM ON OPEN SPACE LOT 17B.
- 0.69± ACRES INCLUDES 1.07± ACRES FOR SANITARY SEWER EXTENSION AND CONTAINS 0.08± ACRES OF FLOODPLAIN.
- 0.69± ACRES INCLUDES 0.38 ACRES FOR THE SANITARY SEWER SHOWN ON F-02-175. 0.69± ACRES ALSO INCLUDES 0.07 ACRES FOR AREA PROBABLY ACCOUNTED FOR UNDER F-03-16.
- THIS LINE ITEM ACCOUNTS FOR REFORESTATION PROVIDED RETROSPECTIVELY ON A PHASE THAT PREVIOUSLY ADDRESS FOREST CONSERVATION. APPROXIMATELY 1.33 ACRES OF FUTURE REFORESTATION AREA WILL BE USED UNDER THIS REFORESTATION PLAN.
- 0.69± ACRES INCLUDES 0.52± ACRES FOR SANITARY SEWER SHOWN ON F-02-175. A GROSS AREA INCLUDES 2.37 ACRES FOR THE WETLAND MITIGATION AREA FLOODPLAIN. FLOODPLAIN INCLUDES 12 ACRES FOR THE MITIGATION AREA FLOODPLAIN.
- APPROXIMATELY 0.42 ACRES OF FUTURE CLEARING/FUTURE REFORESTATION IS BEING CLEARED AND IS NOT BEING REFORESTED. APPROXIMATELY 1.58 ACRES OF FUTURE CLEARING/FUTURE REFORESTATION IS BEING RETAINED. APPROXIMATELY 0.13 ACRES OF FUTURE REFORESTATION IS BEING REFORESTED.
- GROSS AREA INCLUDES 0.13 AC FOR SEWER SHOWN ON F-02-175. GROSS AREA ALSO INCLUDES 2.37 AC FOR WETLAND MITIGATION AREA CONTROL UNDER F-04-127. FLOODPLAIN INCLUDES 1.22 AC FOR MITIGATION AREA FLOODPLAIN COUNTED UNDER F-04-127.
- NET TRACT AREA EXCLUDES 0.36 ACRES OUTSIDE THE FLOODPLAIN WITHIN THE BGE RESTRICTED AREA.

LEGEND

	EXISTING BUILDINGS		PROPERTY BOUNDARY
	EXISTING CONTOURS		PROPOSED ROAD R/W LINES
	EXISTING SPOT ELEVATION		75' STREAM BUFFER
	100 YR FLOODPLAIN		SOILS LINES
	PERENNIAL STREAM		REFORESTATION AREA PLANTING ZONE 'A'
	EXISTING TREE LINE		REFORESTATION AREA PLANTING ZONE 'B'
	WETLANDS		RETENTION AREA
	25' WETLAND BUFFER		PERMANENT FOREST PROTECTION SIGNAGE
	LIMIT OF WETLANDS		FOREST CONSERVATION EASEMENT
	PROPOSED ROAD		
	EDGE OF ROAD		

LOCATION MAP
SCALE: 1" = 200'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Alan Vannoy 5/1/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Crissy Hamer 5/2/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

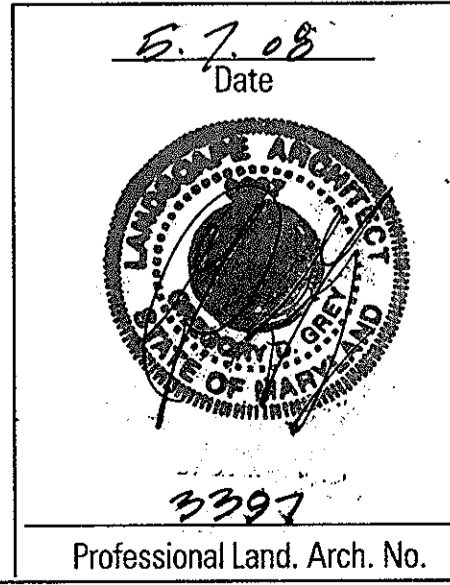
Date	No.	Revision Description

FINAL PLAN
EMERSON SECTION 2 PHASE 9
OPEN SPACE LOT 1

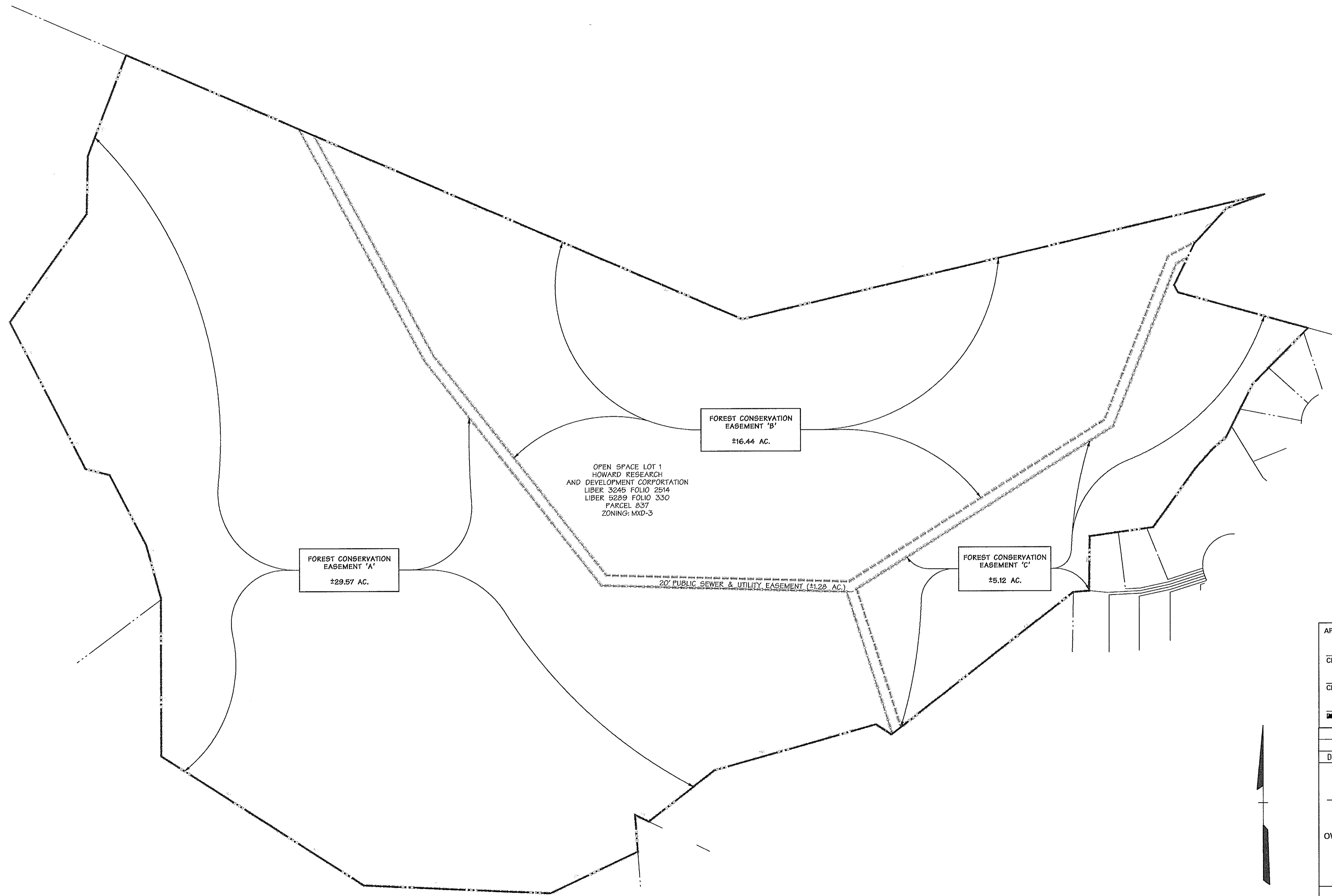
OWNER/DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

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Towson, Maryland 21286
(410) 296-3358
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals



EMERSON	SECTION/AREA	SEC 2 PHASE 9	SHEET/PAIRS #	837	
MAP OF LOT 1	BLOCK #	LOT	TAXING MAP #	6069.03	
15299.0300	47	06	LOT IDENTIF.		
WATER CODE	E-15	MARKETS	SEWER CODE	7520000	
TITLE					
COVER SHEET					
FOREST CONSERVATION PLAN					
Des. By	CRH	Scale	1"=200'	Proj. No.	95054.U0
Drn. By	CRH/JLS	Date	5-6-08		
Chk. By		Approved			1 of 6



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
John D... 5/10/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Con... 5/20/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description

FINAL PLAN
EMERSON SECTION 2 PHASE 9
 OPEN SPACE LOT 1

OWNER/DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
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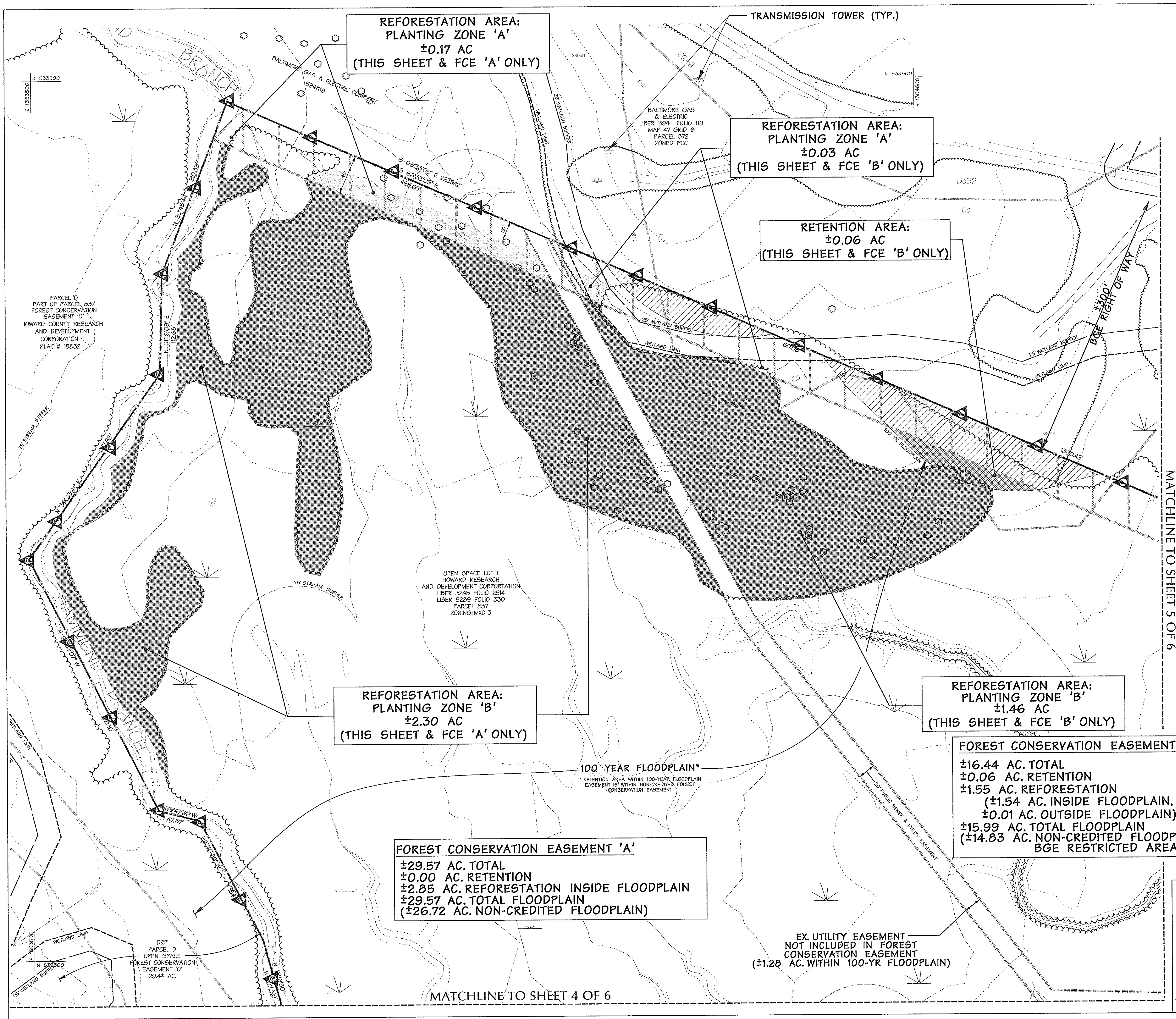
5.7.08
 Date

 3397
 Professional Land Arch. No.

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
EMERSON	SEC 2 PHASE 9	837
PLAT # OR L.P.	BLOCK #	ZONE
5289/330	15	MXD-3
MAP #	TRACT DISTRICT	OWNER TRACT
47	06	6068.03
WATER CODE	SEWER CODE	
E-15	7520000	

TITLE		
COMPOSITE FOREST CONSERVATION PLAN		
Des. By	Scale	Proj. No.
CRH	1"=100'	95054.U0
Dm. By	Date	
CRH/JLS	5-6-08	
Chk. By	Approved	
		2 of 6

F-08-82



**REFORESTATION AREA:
PLANTING ZONE 'A'
±0.17 AC
(THIS SHEET & FCE 'A' ONLY)**

**REFORESTATION AREA:
PLANTING ZONE 'A'
±0.03 AC
(THIS SHEET & FCE 'B' ONLY)**

**RETENTION AREA:
±0.06 AC
(THIS SHEET & FCE 'B' ONLY)**

**REFORESTATION AREA:
PLANTING ZONE 'B'
±2.30 AC
(THIS SHEET & FCE 'A' ONLY)**

**REFORESTATION AREA:
PLANTING ZONE 'B'
±1.46 AC
(THIS SHEET & FCE 'B' ONLY)**

**FOREST CONSERVATION EASEMENT 'B'
±16.44 AC. TOTAL
±0.06 AC. RETENTION
±1.55 AC. REFORESTATION
(±1.54 AC. INSIDE FLOODPLAIN,
±0.01 AC. OUTSIDE FLOODPLAIN)
±15.99 AC. TOTAL FLOODPLAIN
(±14.83 AC. NON-CREDITED FLOODPLAIN/
BGE RESTRICTED AREA)**

**FOREST CONSERVATION EASEMENT 'A'
±29.57 AC. TOTAL
±0.00 AC. RETENTION
±2.85 AC. REFORESTATION INSIDE FLOODPLAIN
±29.57 AC. TOTAL FLOODPLAIN
(±26.72 AC. NON-CREDITED FLOODPLAIN)**

**EX. UTILITY EASEMENT
NOT INCLUDED IN FOREST
CONSERVATION EASEMENT
(±1.28 AC. WITHIN 100-YR FLOODPLAIN)**

- Legend**
- EXISTING CONTOURS
 - EXISTING SPOT ELEVATION
 - 100 YR PUBLIC FLOODPLAIN & DRAINAGE AND UTILITY EASEMENT
 - PERENNIAL STREAM
 - EXISTING TREE LINE
 - WETLANDS
 - 25' WETLAND BUFFER
 - LIMIT OF WETLANDS
 - EX. EDGE OF ROAD
 - EXISTING BUILDINGS
 - PROPERTY BOUNDARY
 - PROPOSED ROAD R/W LINES
 - 75' STREAM BUFFER
 - SOILS LINES
 - REFORESTATION AREA PLANTING ZONE 'A'
 - REFORESTATION AREA PLANTING ZONE 'B'
 - RETENTION AREA
 - 45' BGE RESTRICTED AREA
 - AREA OUTSIDE OF 100-YEAR FLOODPLAIN BUT WITHIN THE NON-CREDITED BGE RESTRICTED AREA (0.36 AC. NOT INCLUDED IN NET TRACT AREA)
 - 25' REFORESTATION AREA WITHIN BGE RESTRICTED AREA (SHORT MATURE HEIGHT)
 - FOREST CONSERVATION EASEMENT (FCE)
 - PERMANENT FOREST PROTECTIVE SIGNAGE
 - TRANSMISSION TOWER

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

John J. ... 5/19/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy ... 5/20/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

FINAL PLAN
EMERSON SECTION 2 PHASE 9
OPEN SPACE LOT 1

OWNER/DEVELOPER:
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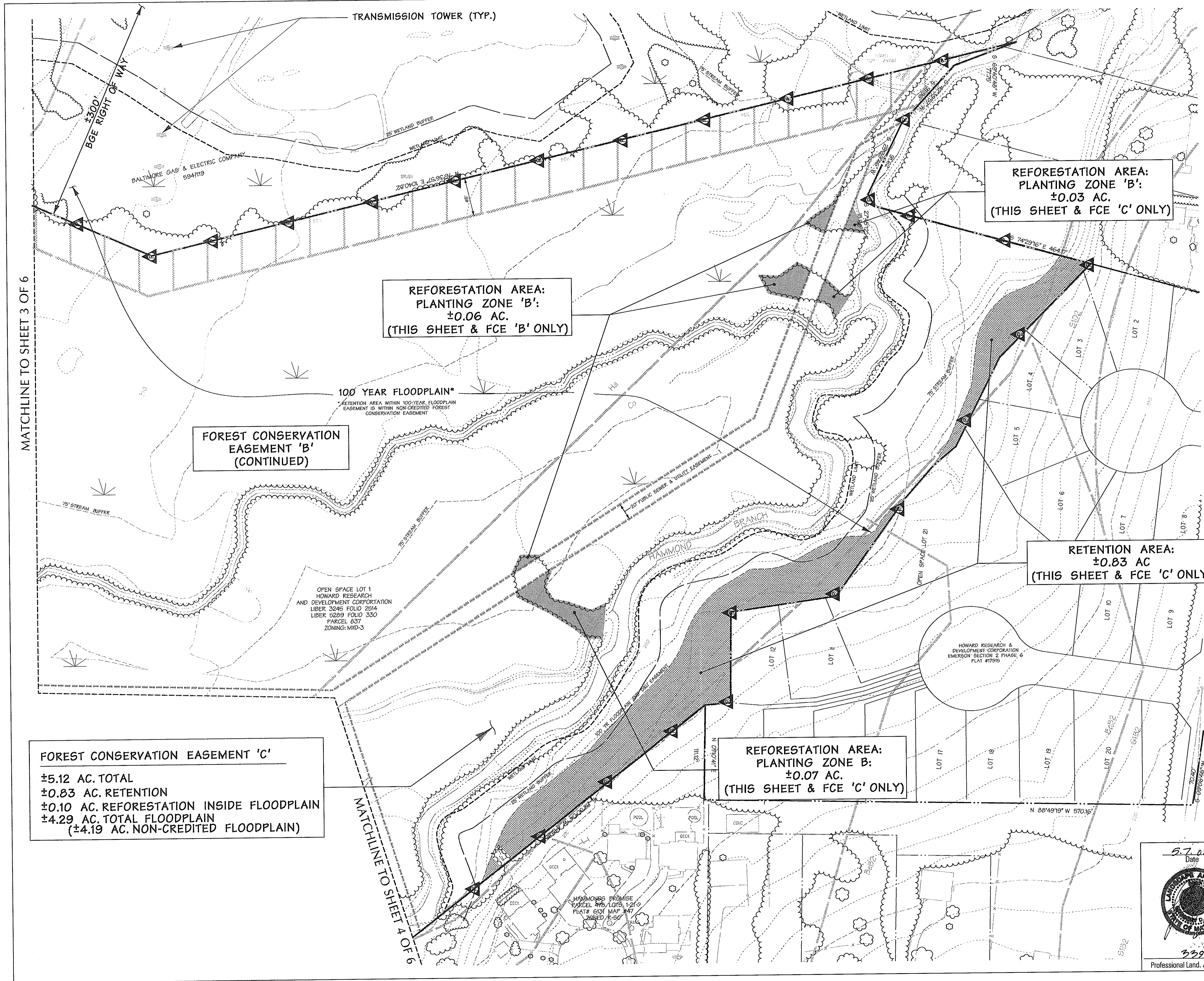
DATE OF PLAN	5/20/08	DATE OF MAP	5/20/08	DATE OF TRACT	6/06/03
PROJECT NAME	EMERSON	SECTION/AREA	SEC 2 PHASE 9	UTL/PARCEL #	837
WATER CODE	E-15	SEWER CODE	7520000	TITLE	FOREST CONSERVATION PLAN
Des. By	CRH	Scale	1"=50'	Proj. No.	95054.00
Drn. By	CRH/JLS	Date	5-6-08		
Chk. By	Approved				3 of 6

MATCHLINE TO SHEET 5 OF 6

MATCHLINE TO SHEET 4 OF 6

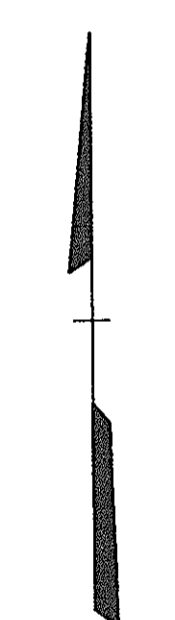
5-7-08
Date

Professional Land. Arch. No. 3397



Legend

- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- 100 YR. PUBLIC FLOODPLAIN & DRAINAGE AND UTILITY EASEMENT
- PERENNIAL STREAM
- EXISTING TREE LINE
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- REFORESTATION AREA PLANTING ZONE 'B'
- RETENTION AREA
- 45' EDGE RESTRICTED AREA
- FOREST CONSERVATION EASEMENT (FCE)
- PERMANENT FOREST PROTECTIVE SIGNAGE
- TRANSMISSION TOWER



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Chris DeWitt 5/19/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Chris DeWitt 5/23/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
		FINAL PLAN
		EMERSON SECTION 2 PHASE 9
		OPEN SPACE LOT 1

OWNER/DEVELOPER:
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 Environmental Professionals

SUBDIVISION NAME EMERSON	SECTION/AREA SEC 2 PHASE 9	LOT/PARCEL # 837
PLAT # OR LOT # 5289/330	BLK # 15	TRK # 47
DATE 5-23-08	DATE DWN 06	DATE TRAC 6069.03
WATER CODE E-15	SEWER CODE 7520000	
TITLE FOREST CONSERVATION PLAN		
Des. By CRH	Scale 1"=50'	Proj. No. 95054.UO
Dwn. By CRH/JLS	Date 5-6-08	
Chk. By	Approved	5 of 6

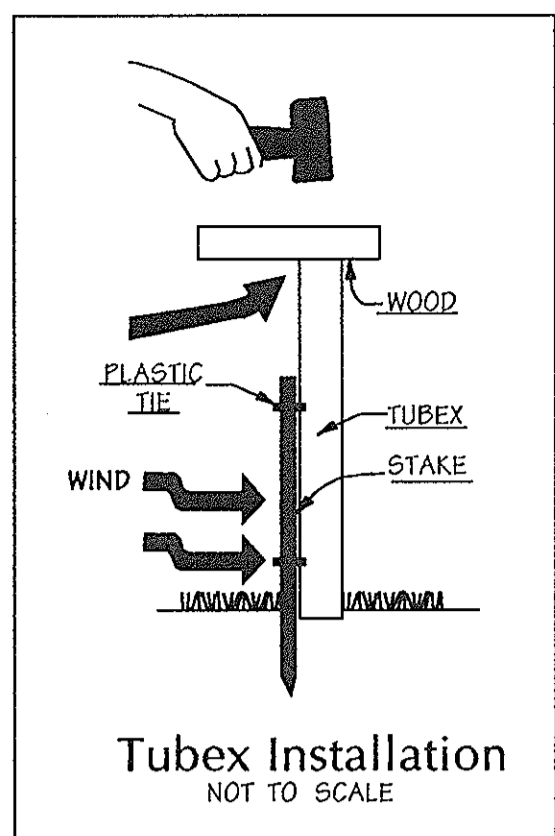
5.7.08
 Date

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 Professional Land Arch. No.

MATCHLINE TO SHEET 3 OF 6

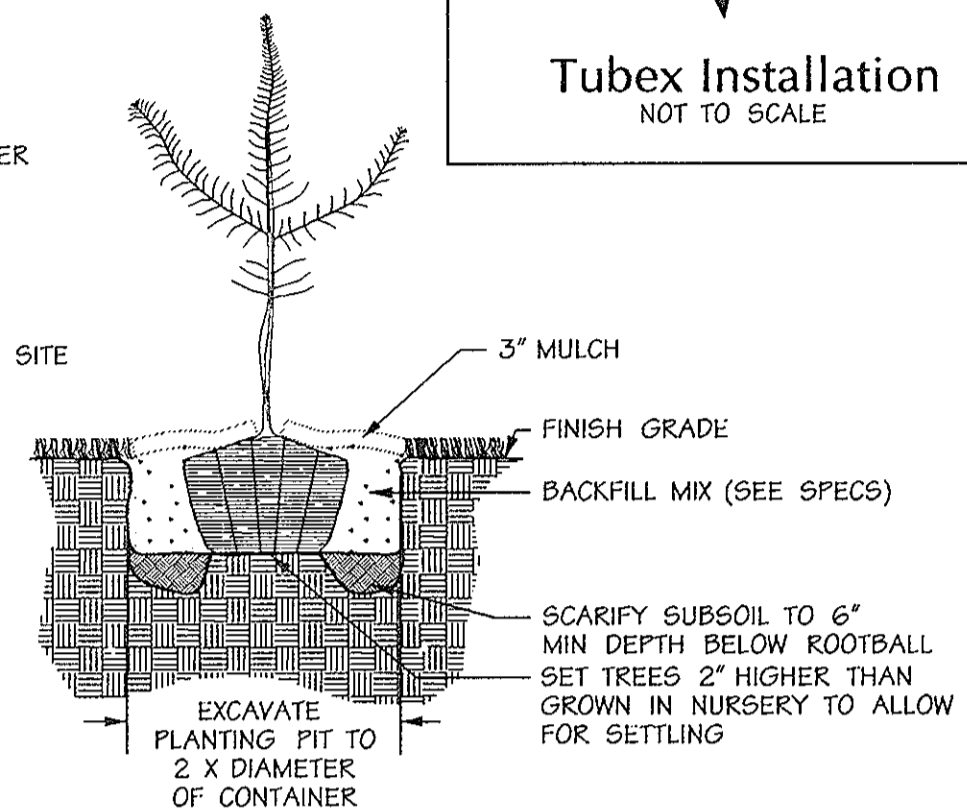
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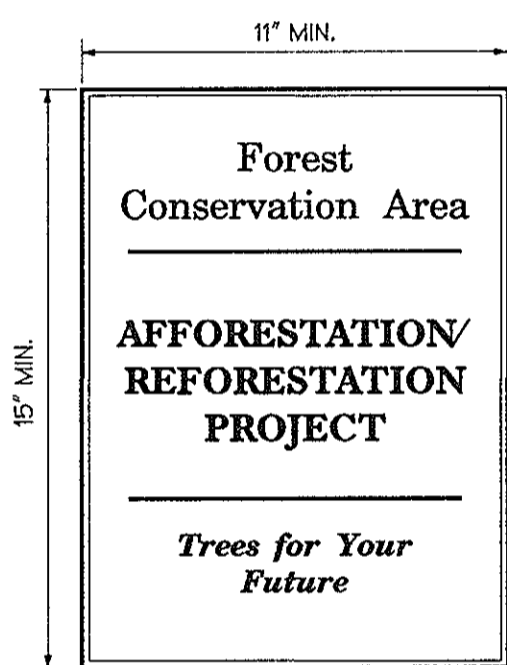


PLANTING PROCEDURES FOR ALL CONTAINER GROWN TREES AND SHRUBS:

1. REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER
2. GENTLY LOOSEN ROOTS FROM SOILS. ROOTS MAY NOT BE CUT OR TRIMMED ON SITE
3. PLANT SHRUB OR TREE 1 TO 2 INCHES ABOVE THE EXISTING GRADE
4. APPLY 2 TO 3 INCH THICK LAYER OF SHREDDED HARDWOOD MULCH



Typical Tree Planting (For container grown whips) Not To Scale



SIGNS TO BE PLACED ON METAL POSTS 4" ABOVE FINISH GRADE PRIOR TO PLANTING. PLACE SIGNS EVERY 50 TO 100' AROUND PERIMETER OF FOREST CONSERVATION AREA.

Permanent Signage

Not To Scale

CUMULATIVE FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (1000)
GROSS SITE AREA	426.21
AREA WITHIN 100 YEAR FLOODPLAIN	83.88
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	N/A
AREA WITHIN BGE RESTRICTED AREA	0.38
NET TRACT AREA	341.95
LAND USE CATEGORY	CAI
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	341.95
B. REFORESTATION THRESHOLD (15% x A)	51.29
C. AFFORESTATION MINIMUM (15% x A)	51.29
D. EXISTING FOREST ON NET TRACT AREA	126.72
E. FOREST AREAS TO BE CLEARED	71.14
F. FOREST AREAS TO BE RETAINED	55.58
REFORESTATION CALCULATIONS	
A. NET TRACT AREA	341.95
B. REFORESTATION THRESHOLD (15% x A)	51.29
C. EXISTING FOREST ON NET TRACT AREA	126.72
D. FOREST AREAS TO BE CLEARED	71.14
E. FOREST AREAS TO BE RETAINED	55.58
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	71.14
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.00
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	4.29
CLEARING ABOVE THE THRESHOLD	
IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF F IS GREATER THAN B), THE FOLLOWING CALCULATIONS APPLY:	
REFORESTATION FOR CLEARING ABOVE THRESHOLD (F-14)	17.79
REFORESTATION FOR CLEARING BELOW THRESHOLD (G)	0.00
TOTAL REFORESTATION REQUIRED (F-14) + (G)	17.79
CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	
REFORESTATION REQUIRED	13.50 ACRES
REFORESTATION PROVIDED	20.56 ACRES

FOREST CONSERVATION GOALS AND OBJECTIVES

The goals and objectives of this Forest Conservation Plan are to account for the retention of approximately 0.90 acres of existing forest outside the floodplain, and to detail the reforestation of approximately 4.50 acres. Reforestation species have been chosen to reflect and enhance the existing forest community, and were selected to tolerate the mesic moisture regime in the designated planting areas.

When calculated cumulatively with previous phases of this project, a total of 71.14 acres of forest will be cleared, and 55.58 acres will be retained. The total reforestation obligation is 13.50 acres, and 20.56 acres of reforestation have been provided. A surety in the amount of \$7,941.00 is required for forest retention (0.90 acres @ \$9,000/acre), and a surety in the amount of \$98,010.00 is required for reforestation (4.50 acres @ \$21,778/acre). The total Forest Conservation surety amount is \$105,951.00.

PART 2 PRODUCTS

2.01 PLANTS

- A. Sound, healthy, vigorous, free from plant diseases, insect pests or their eggs.
- B. Plants cut back from larger sizes or pruned prior to delivery will not be accepted.
- C. It is anticipated that these plants will need to be obtained from a nursery source. These plant species are normally unavailable from standard landscape nursery sources.
- D. Shape and Form: Plant materials shall be symmetrical and typical for the variety and species.
- E. Containers: The soil/root masses shall be thoroughly moist upon delivery to the job site. Any dry and light weight plants shall be rejected. If not planted immediately after being delivered to the job site, the plants shall be stored out of direct exposure to the sun and wind and their root masses maintained moist, through periodic watering, until the time of planting.

Until the removal of the plants from the containers, the soil/root masses shall be the size of the specified container size. If the soil/root masses are substantially smaller than the specified container size and loose soil exists on the bottom of the containers, the plants will be rejected since they have not been grown sufficiently long in the containers to root into the soils contained therein.

The plants shall appear healthy with no leaf spots, leaf damage, leaf discolorations, leaf wilting, or evidence of insects on the leaves.

The container size shall be at least as large as indicated in the specifications or shown in the plant tables/lists. Plants shall not be rejected if supplied in containers larger than specified.

F. Fiber or Peat Pot: If not planted immediately after being delivered to the job site, the plants shall be stored out of direct exposure to the sun and wind and their pots and associated root masses maintained moist, through periodic watering, until the time of planting.

The plants shall be well-rooted through the sides and bottoms of the pots and firmly contained therein. Should the plants be removed from the pots by holding them from their tops and gently pulling on the pots, the plants shall be rejected.

If growing, the plants shall appear healthy with no foliar spots, discolorations, wilting, or other evidence of the presence of disease or insects.

The pot size shall be at least as large as indicated in the specifications or shown in the plant tables/lists. Plants shall not be rejected if supplied in pots larger than specified.

The number of plants, stems, or culms per pot as specified or shown in the plant tables/lists at least shall be present, on the average, or the plants shall be rejected.

G. Dormant Propagule (Herbaceous): If not planted immediately after being delivered to the job site, the dormant propagules shall be stored out of the direct exposure to the sun and wind, and they shall be protected by covering with straw, peat moss, compost, or other suitable materials and shall be maintained moist, through periodic watering, until the time of planting.

The bodies and shoots associated with the propagules shall have turgor or be rigid to the touch. If the bodies and/or shoots associated with the propagules are soft or mushy or appear rotten or decomposed, the plant materials shall be rejected.

Rhizome (stolon) sections shall provide a minimum of two shoots per section or Rhizome (stolon) sections containing at least a terminal shoot shall be a minimum of four inches in length (in order to ensure sufficient stored energy to support the new growth). Rhizome sections containing shoots that are soft or mushy or otherwise appear rotten shall not be accepted.

Suckers shall contain a terminal shoot and be a minimum of four inches in length (in order to ensure sufficient stored energy to support the new growth).

Growing Bare Root Plant (Herbaceous): The plants shall contain new roots that are clean and white in coloration.

If not planted immediately after delivery to the job site, the plants shall be stored out of direct exposure to the sun and wind and the new roots shall be protected by the use of straw, peat moss, compost, or other suitable materials and shall be maintained moist, through periodic watering, until the time of planting.

The plants shall appear healthy with no foliar spots, discolorations, wilting, or other evidence of the presence of disease or insects.

2.02 FERTILIZER

A. Plant Fertilizer: Slow release fertilizer such as Osmocote 19-6-12 analysis (3-4 month release) or equal approved by the Landscape Architect.

B. Slow release fertilizer shall be applied at the time of planting and at the following rate: All emergent plant material - planting pit application of 1 oz. per container or bare root plant.

C. Pesticides, herbicides and fungicides will not be used unless judged necessary by the wetland landscaper. If applied, quantities recommended by the Department of Agriculture shall not be exceeded.

D. Fertilizer shall be delivered to the site in the original unopened containers with formulas attached.

PART 3 EXECUTION

3.01 PREPARATION

A. Plant Locations: As shown on the Drawings, to dimensions if shown, to scale if not dimensioned. Locations subject to review by the Landscape Architect before starting excavation.

B. No plant material shall be installed until the Landscape Architect has approved the finish grade of the planted areas.

3.02 PLANTING PROCEDURES

A. Set plants straight and plumb.

B. Plant material shall be planted in existing soil with each planting pit excavated to size sufficient to contain the entire root stock or root mass without cramping.

C. Where water is not available on-site, the Contractor shall furnish sufficient quantities to complete the Work at no additional cost to the Owner.

3.04 CLEAN-UP

A. During planting operations, excess and waste materials including discarded containers, shall be removed from the site on a daily basis.

B. Repair turf areas and other existing conditions damaged during planting operations, including regrading, seed, mulch and fertilization to the satisfaction of the Owner.

3.05 MAINTENANCE

A. Watering of plant material shall take place at the end of each for fourteen (14) consecutive days if necessary after planting has been completed. The watering shall completely saturate the soil and partially immerse the plant material.

B. During maintenance period, on approximately the 1st and 15th of each month, the Contractor shall provide sufficient supervision, equipment, materials and manpower to:

1. Keep all plants in a healthy growing condition by watering, when necessary, removing dead or dying branches, controlling insect infestations, removing sprouts, weeding.

2. Remove and replace dead or damaged plant material. Where replacement is not possible due to season, remove dead material, etc. and level pit until planting is possible.

B. Notify Owner for review of activities prior to initiating maintenance operations each month.

Maintenance by the Contractor

A. A 2-year Contractor's Maintenance and Monitoring Period shall be at mobilization. Seventy-five percent survivorship must be guaranteed for this period. The Site Shall be inspected at the end of the two year period to ascertain survivorship and provide for replacement if necessary.

B. The Contractor's maintenance of new planting shall consist of watering, cultivating, weeding (and spot spraying with an approved herbicide as needed to control multiflora rose), mulching, and removing invasive vegetation as necessary to insure survival. The Contractor shall maintain and protect plantings from herbivory using Ropel or other approved herbivore deterrent as necessary to ensure survival.

C. Protect planting area and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection barriers and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by Landscape Architect at no additional cost to Owner.

D. DUE TO THE SENSITIVE NATURE OF THE PLANTING AREAS, ALL MAINTENANCE SHALL BE CONDUCTED BY HAND, NO MECHANIZED VEHICLES OR EQUIPMENT SHALL BE USED

GUARANTEE: A MINIMUM SURVIVAL RATE OF 75% IS TO BE GUARANTEED BY THE CONTRACTOR AT THE END OF THE TWO YEAR MAINTENANCE PERIOD.

PLANTING ZONE 'A' (BGE Restricted Height Zone Plantings)**

Forest Conservation Easement A & B- mesic moisture regime

Plants required - 70 (350 whips/acre x 0.20 acres)

Species name	Common name	Size	Spacing	Quantity	Tolerance	Indicator status
<i>Alnus serrulata</i>	brookside alder	18"-24" height/cont. grown	11' x 11'	10	full sun	OBL
<i>Carpinus caroliniana</i>	American hornbeam	18"-24" height/cont. grown	11' x 11'	20	full sun	FAC
<i>Cornus amomum</i>	silky dogwood	18"-24" height/cont. grown	11' x 11'	25	full sun	FACW
<i>Viburnum dentatum</i>	arrow wood	18"-24" height/cont. grown	11' x 11'	15	full sun to part shade	FAC
TOTALS				70		

PLANTING ZONE 'B'***

Forest Conservation Easement A, B, & C - mesic moisture regime

Plants required - 1,505 (350 whips/acre x 4.30 acres)

Species name	Common name	Size	Spacing	Quantity	Tolerance	Indicator status
<i>Acer rubrum</i>	red maple	18"-24" height/cont. grown	11' x 11'	350	full sun to part shade	FAC
<i>Acer saccharinum</i>	silver maple	18"-24" height/cont. grown	11' x 11'	175	full sun to part shade	FACW
<i>Betula nigra</i>	river birch	18"-24" height/cont. grown	11' x 11'	175	full sun	FACW
<i>Cornus amomum</i>	silky dogwood	18"-24" height/cont. grown	11' x 11'	175	full sun	FACW
<i>Liquidambar styraciflua</i>	sweet gum	18"-24" height/cont. grown	11' x 11'	280	full sun	FAC
<i>Platanus occidentalis</i>	sycamore	18"-24" height/cont. grown	11' x 11'	250	full sun to part shade	FACW
<i>Quercus palustris</i>	pin oak	18"-24" height/cont. grown	11' x 11'	100	full sun	FACW
TOTALS				1,505		

Whip plantings should be installed in a curvilinear pattern to facilitate maintenance but avoid a grid appearance. Tree shelters should be installed on all whip plantings.

**DUE TO THE SENSITIVE NATURE OF THE PLANTING AREAS, ALL PLANTING AND MAINTENANCE SHALL BE CONDUCTED BY HAND, NO MECHANIZED VEHICLES OR EQUIPMENT SHALL BE USED

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR DATE

Date	No.	Revision Description

FINAL PLAN
EMERSON SECTION 2 PHASE 9
 OPEN SPACE LOT 1

OWNER/DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

DMW
 Daft McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBDIVISION NAME	EMERSON	SECTION/AREA	SEC 2 PHASE 9	LOT/PARCEL #	837
PLAT #	02288/330	BLOCK #	15	ZONE	NKD-2
TAXING MAP	47	ELECT. DISTRICT	06	CENSUS TRACT	6069.03
WATER CODE	E-15	SEWER CODE	7820000		

TITLE			
FOREST CONSERVATION DETAIL			
Des. By	CRH	Scale	1"=50'
Proj. No.	95054.10		
Dm. By	CRH/JLS	Date	5-6-08
Chk. By	Approved		
		6 of 6	

5.7.08
 Date
 Professional Land. Arch. No. 3397