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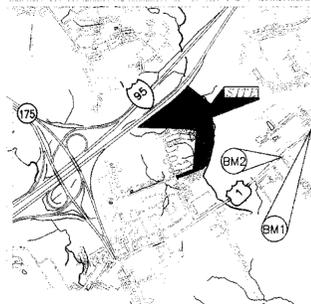
FINAL FOREST CONSERVATION PLAN

THE OAKS AT WATERS EDGE

PARCEL A-1

A RESUBDIVISION OF BLUE STREAM PROPERTY

NON-BUILDABLE PARCEL 'A' & ELK LLC PARCEL '279'

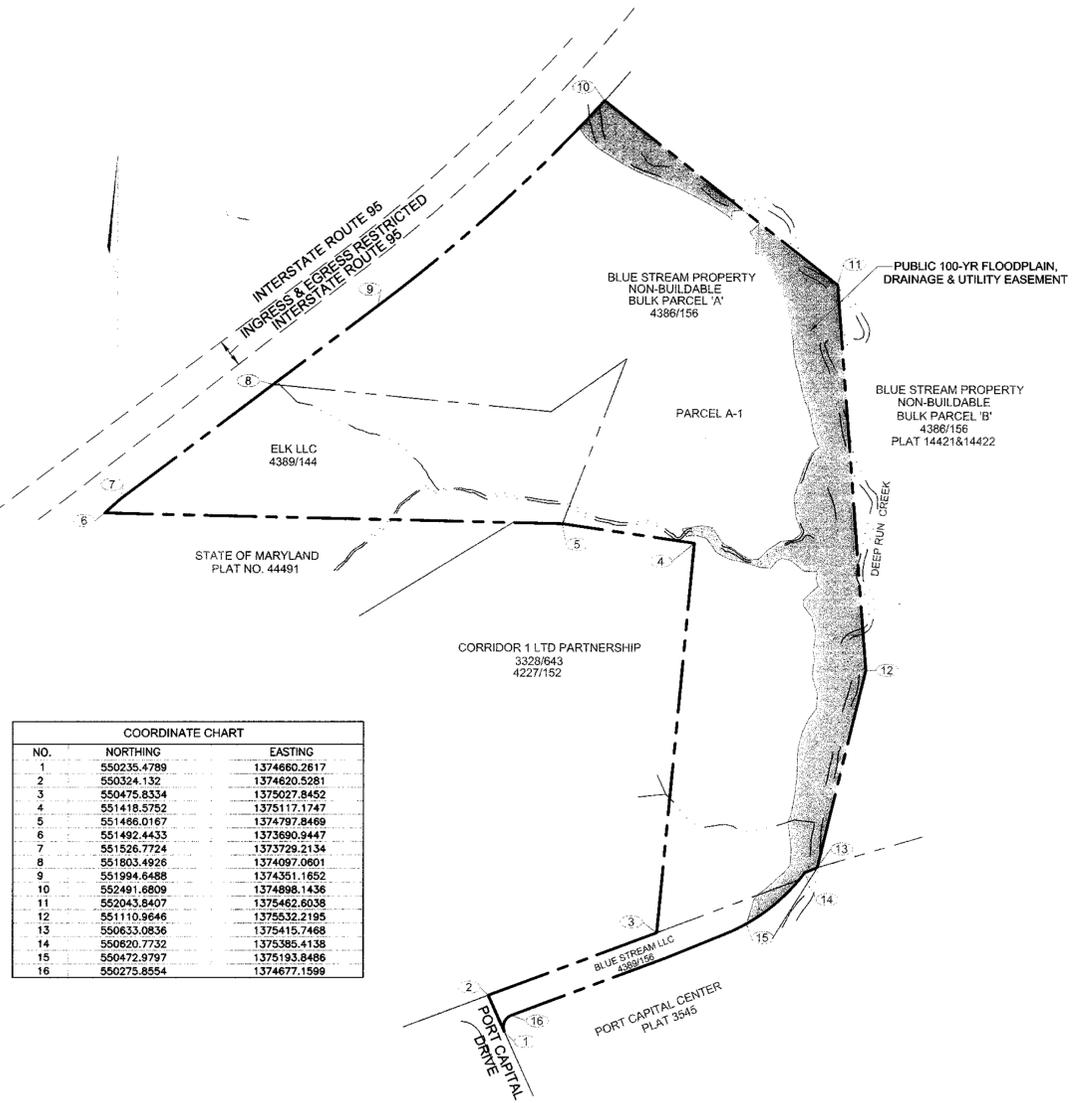


VICINITY MAP
SCALE: 1"=2000'
BENCHMARKS
BM1 - 4382 N. 551855.009 . E. 1378176.841
BM2 - 4386 N. 550801.593 . E. 1378866.047

SITE DATA
LOCATION: TAX MAP 43 BLOCK 4 PARCELS 279, P/O 5, & 647
1ST ELECTION DISTRICT
EXISTING ZONING: R-MH
BLUE STREAM BULK PARCEL 'A' REF: PLAT # 14421&14422; F-00-126
SRC PLAT NO. 36516, WP-97-89,
SITE TABULATIONS
GROSS AREA OF PROPERTY: 33.97 AC
ZONING: RM-H
AREA OF 100 YEAR FLOODPLAIN: 4.86 AC
AREA OF 25% OR GREATER SLOPES: 1.64 AC (OUTSIDE FLOODPLAIN)
NET AREA OF PROPERTY: 27.47 AC

GENERAL NOTES
1. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. DEED REFERENCE: L.4389 / F.156, L.4389 / F.144.

3. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PERFORMED BY VOGEL & ASSOCIATES, INC. DATED JANUARY, 1998.
4. THE TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY PHOTOGRAMETRIC MAP PERFORMED BY POTOMAC AERIAL SURVEY, DATED MARCH, 1998.
5. COORDINATE DATUM IS BASED ON THE MARYLAND COORDINATE SYSTEM (NAD 83) AS PROJECTED BY THE FOLLOWING HO.CO. GEODETIC CONTROL STATIONS: 4382 & 4386.
6. WATER FOR THIS PROJECT TO TIE TO A PUBLIC SYSTEM, SEWER FOR THIS PROJECT WILL BE PRIVATE. EXISTING WATER CONTRACT NUMBER: 14-3864-D. EXISTING SEWER CONTRACT NUMBER 5445. THE ONSITE WATER TO BE PUBLIC, THE ONSITE SEWER TO BE PRIVATE.
7. WETLANDS AND STREAMS SHOWN ONSITE ARE BASED ON A FIELD INVESTIGATION PERFORMED BY CAMPBELL-NOLAN ASSOCIATES DATED MARCH, 2000.
8. FLOODPLAIN SHOWN ONSITE IS BASED ON HOWARD COUNTY FLOODPLAIN STUDY D-1084, DEEP RUN FLOODPLAIN STUDY, DATED JANUARY, 1997, AND STUDY DATED JANUARY 08, 2001 BY VOGEL & ASSOCIATES, INC.
9. FOREST STAND DELINEATION PLAN PREPARED BY DENNIS J. LABARE DATED NOVEMBER, 1998.
FOREST CONSERVATION PLAN PREPARED BY CAMPBELL-NOLAN ASSOCIATES DATED MARCH, 2000.
FOREST CONSERVATION REQUIREMENTS
FOREST RETENTION: 5.78 ACRES/251,672 SF (0.20)= \$50,334.20
REFORESTATION REQUIRED: 5.52 ACRES
REFORESTATION SHOWN: 0.86 ACRES/37,303 SF (0.50)= \$18,651.50
REMAINING REFORESTATION OBLIGATION: 4.66 ACRES \$68,985.70 (TOTAL SURETY AMOUNT)
THE ADDITIONAL 4.66 ACRES OF REFORESTATION WILL BE ACCOMPLISHED THROUGH PURCHASE OF REFORESTATION CREDIT FROM THE HOWARD COUNTY APPROVED, WINKLER FOREST CONSERVATION BANK. SURETY FOR THE 6.64 AC. OF FOREST CONSERVATION EASEMENT IN THE AMOUNT OF \$68,985.70 IS TO BE POSTED WITH THE DEVELOPER'S AGREEMENT.
10. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
11. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETARY LOCATIONS ON SITE.
12. THIS SUBDIVISION WILL UTILIZE R-A-15 DISTRICT ZONING REGULATIONS (SECTION 112.D), REFERENCE SECTION 113.D.1 (R-MH DISTRICT) (SDP-03-41)
13. ALL 25 PERCENT STEEP SLOPES ON SITE CONTAIN LESS THAN 20,000 SF OF CONTIGUOUS AREA (SDP-03-41)
14. THIS PLAN IS SUBJECT TO WP 97-98 ON APRIL 3, 1997 THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE SECTION 16.119(g) TO NOT REQUIRE A SECOND VEHICULAR ACCESS POINT FOR A PROJECT GENERATION OVER 1,000 ADT VOLUMES AND SECTION 16.116 (g) (1) and (2) (i) TO PERMIT GRADING OR THE REMOVAL OF VEGETATIVE COVER WITHIN 25 FEET OF A WETLAND AND WITHIN 75 FEET OF A PERENNIAL STREAM FOR THE CONSTRUCTION OF TWO 16' WIDE EMERGENCY BYPASS ROADS AND A NOISE BARRIER/BERM, SUBJECT TO CONDITIONS.
15. ALL ROADS WILL BE PRIVATE ROADS AND WILL BE REVIEWED AT THE TIME OF SITE DEVELOPMENT PLAN REVIEW.
16. THE REQUIRED LANDSCAPING WILL BE PROVIDED WITH THE REQUIRED SITE DEVELOPMENT PLAN FOR PARCEL A-1 (SDP-03-41)



COORDINATE CHART		
NO.	NORTHING	EASTING
1	550235.4789	1374660.2817
2	550324.132	1374620.5281
3	550475.8334	1375027.8452
4	551418.5752	1375117.1747
5	551486.0167	1374797.8469
6	551492.4433	1373690.9447
7	551526.7724	1373729.2134
8	551803.4926	1374097.0901
9	551994.6488	1374351.1652
10	552491.6809	1374898.1436
11	552043.8407	1375462.8038
12	551110.9646	1375532.2195
13	550633.0836	1375415.7468
14	550620.7732	1375385.4138
15	550472.9797	1375193.8486
16	550275.8554	1374677.1599

LOCATION MAP
SCALE: 1"=200'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cinda Amato 8/26/03
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A M/D/LD
CHIEF, BUREAU OF HIGHWAYS DATE

Bob Damman 8/26/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	REVISION	DATE

COVER SHEET
THE OAKS AT WATERS EDGE
A RESUBDIVISION OF BLUE STREAM PROPERTY
NON-BUILDABLE PARCEL 'A'

TAX MAP 43 BLOCK 4 PARCEL '279', P/O '5', & '647'
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
REF.: S-97-01, F75-05, ZB 966-M, WP-97-89, F-00-126, P-00-19,
SDP-03-41

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: JCO/RJ
DRAWN BY: CMHR/J
CHECKED BY: JCO
DATE: JULY 17, 2003
SCALE: AS SHOWN
W.O. NO.: 2019175.00

OWNER/DEVELOPER
BLUE STREAM L.L.C. & ELK L.L.C.
c/o ARNOLD SAGNER
P.O. BOX 416
ELLCOTT CITY, MD 21041

ROBERT H. VOGEL, PE No. 10193

1 3

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

I. BASIC SITE AREA	ACRES (1/10 acre)
GROSS SITE AREA	33.97 ACRES
AREA WITHIN 100 YEAR FLOODPLAIN	4.86 ACRES
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (if applicable)	0.00 ACRES
NET TRACT AREA	29.11 ACRES
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/A/O, I) M-1	RMH

II. INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	29.11 ACRES
B. REFORESTATION THRESHOLD (20% X A)	5.82 ACRES
C. AFFORESTATION MINIMUM (1.5% X A)	4.37 ACRES
D. EXISTING FOREST ON NET TRACT AREA	27.61 ACRES
E. FOREST AREAS TO BE CLEARED	21.83 ACRES
F. FOREST AREAS TO BE RETAINED	21.82 ACRES
G. FOREST AREAS TO BE CLEARED	5.78 ACRES

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 is proposed, reforestation requirements may apply.

GO TO SECTION IV

If existing forests exceed the afforestation minimum (if D equals or is more than C), and clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.

GO TO SECTION V

IV. REFORESTATION CALCULATIONS	
A. NET TRACT AREA	29.11 ACRES
B. REFORESTATION THRESHOLD (20% X A)	5.82 ACRES
D. EXISTING FOREST ON NET TRACT AREA	27.61 ACRES
E. FOREST AREA TO BE CLEARED	21.83 ACRES
F. FOREST AREAS TO BE RETAINED	5.78 ACRES
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-E, if F equals or is greater than B, Alternate 1) (D-B, if F is less than B, Alternate 2)	21.79 ACRES
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (G-E, if applicable)	0.04 ACRES
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable)	0.00 ACRES

Select the alternative 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 x 1/4 = 5.44 ACRES

CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD
I = Retention Credit = 0.00 ACRES

TOTAL REFORESTATION REQUIRED
(G x 1/4) - I = 5.44 ACRES

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 less than B), the following calculations apply:

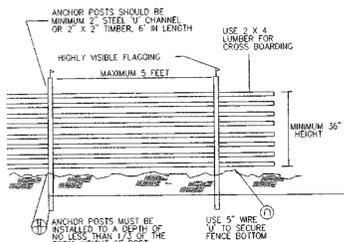
REFORESTATION FOR CLEARING ABOVE THRESHOLD
G x 1/4 = 5.44 ACRES

REFORESTATION FOR CLEARING BELOW THRESHOLD
H x 2 = 0.08 ACRES

TOTAL REFORESTATION REQUIRED
(G x 1/4) + (H x 2) = 5.52 ACRES

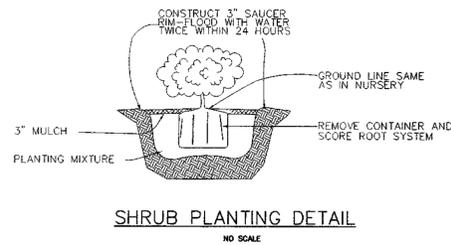
Since clearing occurs below the threshold, no forest retention credit is possible.

BLAZE ORANGE PLASTIC MESH

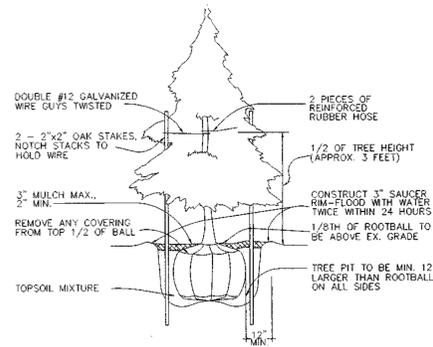


- NOTES:**
1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. ROOT DAMAGE SHOULD BE AVOIDED.
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

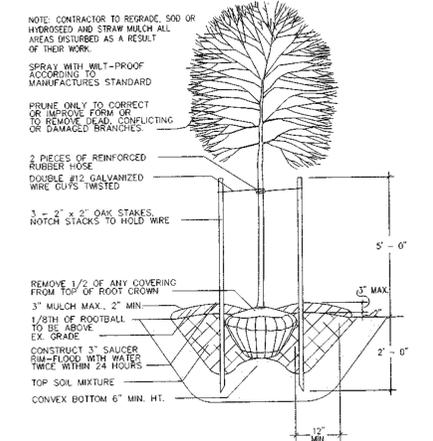
TREE PROTECTION FENCING



SHRUB PLANTING DETAIL
NO SCALE



EVERGREEN PLANTING DETAIL
NOT TO SCALE



TREE PLANTING DETAIL
NOT TO SCALE

PLANT SCHEDULE

Quantity	Botanical Name/Common Name	Size	Spacing
8	Acer rubrum Red Maple	1" Cal. B&B	15 x 15
14	Diospyrus virginiana Persimmon	2'-3' Container	11 x 11
28	Fraxinus americana White Ash	1" Cal. B&B	15 x 15
38	Fraxinus Pennsylvanica Green Ash	2'-3' Container	11 x 11
30	Juniperus virginiana Eastern Red Cedar	2'-3' Container	11 x 11
30	Liquidambar styraciflua American Sweet Gum	1" Cal. B&B	15 x 15
38	Prunus serotina Black Cherry	2' - 3' Container	11 x 11
20	Quercus rubra Red Oak	1" Cal. B&B	15 x 15
30	Sassafras albidum Sassafras	2' - 3' Container	11 x 11

REFORESTATION PROVIDED by FCE "A":

37,303 SF OR 0.86 ACRES

1" Caliper trees
86 @ 200 Trees per acre
Seedlings - with tree shelters
150 @ 350 whips per acre

COST ESTIMATE: (For bonding purposes, only)

ON-SITE RETENTION PROVIDED 251,671 SF X 0.20 = \$50,334.20
ON-SITE REFORESTATION PROVIDED 37,303 SF X 0.50 = \$18,651.50

SURETY NOTE

FINANCIAL SURETY IN THE AMOUNT OF \$68,985.70 WILL BE POSTED WITH THE FC INSTALLATION AND MAINTENANCE AGREEMENT.

FOREST CONSERVATION EASEMENTS

FOREST RETENTION AREA 1	68,437 SQ FT OR 1.5711 ACRES
FOREST RETENTION AREA 2	142,898 SQ FT OR 3.2805 ACRES
FOREST RETENTION AREA 3	25,951 SQ FT OR 0.5958 ACRES
FOREST RETENTION AREA 4	14,756 SQ FT OR 0.3388 ACRES
TOTAL	251,671 SQ FT OR 5.78 ACRES

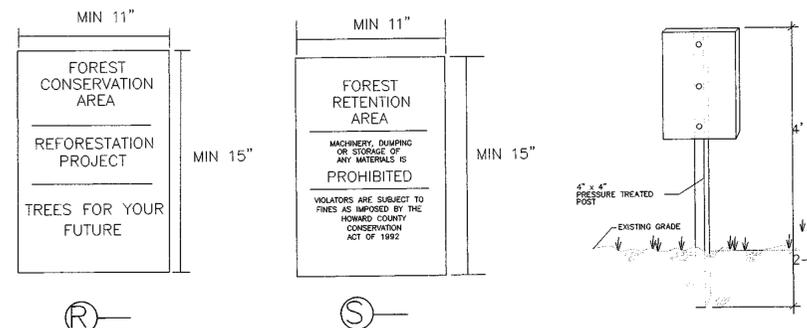
FOREST CONSERVATION REQUIREMENTS

FOREST RETENTION: 5.78 ACRES

REFORESTATION REQUIRED: 5.52 ACRES
REFORESTATION SHOWN: 0.86 ACRES

REMAINING REFORESTATION OBLIGATION: (4.66 ACRES)

NOTE: 1) THE ADDITIONAL 4.66 ACRES OF REFORESTATION WILL BE ACCOMPLISHED THROUGH PURCHASE OF REFORESTATION CREDIT FROM THE HOWARD COUNTY APPROVED, WINKLER FOREST CONSERVATION BANK



FOREST RETENTION & REFORESTATION SIGN DETAIL

OWNER/DEVELOPER

BLUE STREAM L.L.C.
c/o NORTHERN TRADING L.L.C.
P.O. BOX 416
ELLCOTT CITY, MD 21041

FINAL FOREST CONSERVATION PLAN
THE OAKS
AT WATERS EDGE, PARCEL A-1
A RESUBDIVISION OF THE BLUESTREAM PROPERTY
NON-BUILDABLE BULK PARCEL A AND ELK L.L.C. BULK PARCEL 279
TAX MAP #43 PARCEL '279, P/O 5, & 647'
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
REFERENCE: S-97-01, F-75-05, ZB 966-M, WP-97-89, SDP-03-41

CNA
campbell & nolan associates, inc.

Civil Engineers • Land Surveyors • Landscape Architects
Planners • Geotechnical Engineers • Environmental Engineers
P.O. Box 850 • Bel Air, Maryland 21014
(410)797-7200 • (410)839-2784 • Fax (410)838-1811
E-mail: cnaemo@campbell-nolan.com

DESIGN BY: R.A.R.
DRAWN BY: R.A.R./D.M.H.
CHECKED BY: D.R.K.
DATE: NOV. 16, 2001
PROJECT NO: 00009
SCALE: 1"=100'
W.O. NO.: 99-178
REVISED: JULY 17, 2003
3 SHEET OF 3



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 5/26/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: N/A
CHIEF, BUREAU OF HIGHWAYS

Note: Forest Conservation and Reforestation signs shall be located all sides of the Forest Conservation Easements at a MAXIMUM of 50 - 100 feet.

