GENERAL NOTES (CONTINUED)

7.) THE FOREST CONSERVATION EASEMENT ESTABLISHED ON THE PROPERTY CONSTITUTES A "RESTRICTIVE EASEMENT" AS NOTED IN SECTION 106.B.1.C. OF THE HOWARD COUNTY ZONING REGULATIONS AND LIMITS THE FURTHER DEVELOPMENT OF THE PROPERTY, INCLUDING THE SENDING DEVELOPMENT RIGHTS.

8.) THIS PLAT IS SUBJECT TO A DEVELOPERS AGREEMENT EXECUTED BY THE DEVELOPER WITH HOWARD COUNTY ON January 20, 2000

9.) ▭ DENOTES AREA OF FOREST CONSERVATION EASEMENT AND MITIGATION BANK. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED AS A FOREST MITIGATION BANK, PER SECTION 16.1216 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

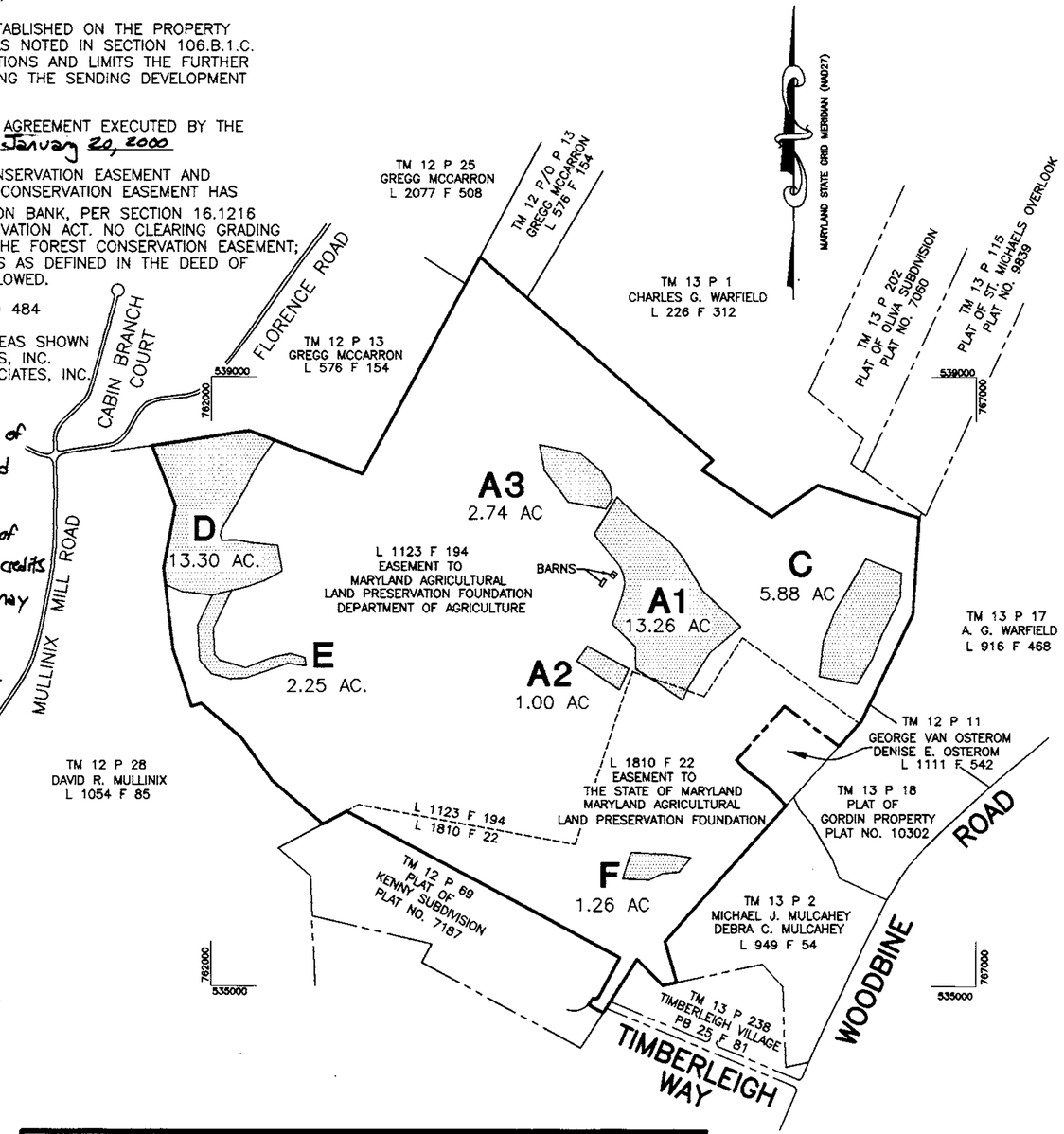
10.) SITE DEED REFERENCE: LIBER 4094 FOLIO 484

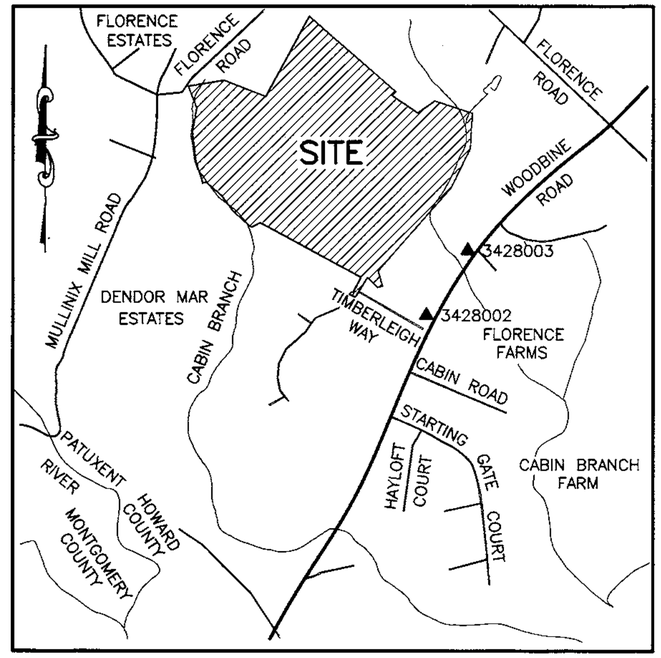
11.) THE FOREST CONSERVATION EASEMENT AREAS SHOWN HEREON WERE DELINEATED BY BIOHABITATS, INC. AND FIELD LOCATED BY VOGEL AND ASSOCIATES, INC.

12.) SEE SDP-99-117 APPROVED 5\11\99.

13.) The initial sale of 2.6 acres of forest credits has been authorized by the State Dept. of Natural Resources. Upon the completion of the planting, up to 75% of the credits associated with the planted area may be sold.* The credits associated with the remaining planted acreage may only be sold following the satisfactory completion of the 2 year post construction survival period, or in accordance with County policy in effect at the time of the sale.

*This requirement may be altered if County policy or Regulation have been modified.





VICINITY MAP
SCALE 1"= 2000'

GENERAL NOTES

1.) SUBJECT PROPERTY IS ZONED RC-DEO AS PER THE 10/19/93 COMPREHENSIVE ZONING PLAN.

2.) THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY BY THIS OFFICE. HOWEVER, THE BOUNDARY CORNERS SHOWN AND MARKED "FOUND" HEREON ARE FIELD LOCATED. THE OUTLINE OF THE PROPERTY SHOWN HEREON IS BASED ON THE DEEDS AND PLATS OF RECORD.

3.) THIS PLAT WAS PREPARED WITHOUT THE BENEFIT OF TITLE REPORT AND THEREFORE MAY NOT INCLUDE ALL ITEMS OF RECORD AFFECTING THIS PROPERTY.

4.) TITLE REFERENCES SHOWN HEREON ARE BASED ON THE INFORMATION OBTAINED FROM THE TAX ASSESSMENT OFFICE. NO GUARANTEE IS EXPRESSED OR IMPLIED AS TO THE ACCURACY OF THE TITLE INFORMATION.

5.) COORDINATES SHOWN HEREON ARE BASED ON THE MARYLAND STATE GRID MERIDIAN (NAD 27) AS PROJECTED BY HOWARD COUNTY CONTROL POINTS

3428002	N 534569.816	E 765937.104
3428003	N 535667.418	E 766474.958

6.) THIS PROPERTY IS ENCUMBERED BY A FOREST CONSERVATION EASEMENT AND IS RESTRICTED BY AN ACCOMPANYING EASEMENT AGREEMENT. THE EASEMENT AGREEMENT ENTERED INTO BY THE PROPERTY OWNER AND DEVELOPER, OUTLINES THE MAINTENANCE RESPONSIBILITIES OF THE PARCEL OWNER AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.

SENDING PARCEL INFORMATION		FIRST EXCHANGE
TOTAL FOREST CONSERVATION EASEMENT AREA	39.69 AC.	
FOREST MITIGATION CREDITS CREATED	39.69 AC*	
FOREST MITIGATION CREDITS EXPENDED		2.60 AC
RECEIVING PARCEL		JESSUP PARK PARCEL 'A' SDP-99-161
REMAINING FOREST CONSERVATION MITIGATION CREDITS		37.09 AC**

* ALL EASEMENT AREAS ARE PLANTED FOREST, 1:1 CREDIT RATIO.

** See Note 13

▭ DENOTES FOREST CONSERVATION EASEMENT

THE PURPOSE OF THIS PLAT IS TO ESTABLISH A FOREST CONSERVATION MITIGATION BANK.

VOGEL & ASSOCIATES
ENGINEERS·SURVEYORS·PLANNERS
3691 Park Avenue, Suite 101 • Ellicott City, Maryland 21043
Tel 410.461.5828 Fax 410.465.3966

APPROVED:

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 2/8/00

OWNERS CERTIFICATE

WE, JEFFERY W. WINKLER AND RHONDA P. WINKLER, OWNERS OF THE PROPERTY SHOWN AND DESCRIBED HEREON, HEREBY ADOPT THIS PLAT AND IN CONSIDERATION OF THE APPROVAL OF THIS FINAL PLAT BY THE DEPARTMENT OF PLANNING AND ZONING, ESTABLISH THE FOREST CONSERVATION EASEMENTS TO BE CONSIDERED A MITIGATION BANK FOR FOREST CONSERVATION CREDITS.

WITNESS OUR HANDS THIS 22nd DAY OF December, 1999.

JEFFERY W. WINKLER — WITNESS Mike Sweadner

RHONDA P. WINKLER — WITNESS Mike Sweadner

SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT THE FINAL PLAT SHOWN HEREON IS CORRECT AND IS INTENDED TO PROVIDE FOREST CONSERVATION EASEMENTS OVER THAT PARCEL LAND CONVEYED BY JOHN H. HARDY, JR., THOMAS REED HARDY AND NANCY L. HARDY TO JEFFERY W. WINKLER AND RHONDA P. WINKLER BY DEED DATED OCTOBER 21, 1997 RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND IN LIBER 4094 FOLIO 484.

STATE OF MARYLAND — MARK CHARLES MARTIN — No. 10884 — REGISTERED PROFESSIONAL LAND SURVEYOR

MARK C. MARTIN
PROFESSIONAL LAND SURVEYOR NO. 10884 — DATE 12/17/99

RECORDED AS PLAT NO. 14106 ON 2/10/2000 AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND.

PLAT OF FOREST CONSERVATION EASEMENTS
ON THE

WINKLER PROPERTY

TAX MAP 12 & 13, BLOCK 6, PARCEL 14
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE 1"= 1000' SEPTEMBER 17, 1999

SHEET 1 OF 4

9979EP1.DWG

SDP 99117

COORDINATE TABLE		
POINT	NORTH	EAST
423	536146.56251	762882.28484
424	536062.33675	762728.27585

FOR CONTINUATION SEE SHEET 4

PART OF **A1**

A2
1.00 AC

S61°21'18"E 310.09'
N35°30'58"E 119.86'
N55°50'28"W 336.47'
151.69' L
S24°40'53"W

MARYLAND STATE GRID MERIDIAN (NAD27)

537500
763000

L 1123 F 194
EASEMENT TO
MARYLAND AGRICULTURAL
LAND PRESERVATION FOUNDATION
DEPARTMENT OF AGRICULTURE

L 1810 F 22
L 1123 F 194

L 1810 F 22
EASEMENT TO
THE STATE OF MARYLAND
MARYLAND AGRICULTURAL
LAND PRESERVATION FOUNDATION

N56°39'10"E 1801.47'

L 1123 F 194
L 1810 F 22

S76°14'14"E 1859.17'

F
1.26 AC

S87°12'22"E 235.91'
S82°25'14"E 160.11'
123.50'
S39°51'20"W
108.15'
S85°25'56"W
N1°56'05"E 179.02'
172.34'
N87°11'59"W
97.69'
S63°27'56"W

TM 12 P 11
GEORGE VAN OSTEROM
DENISE E. VAN OSTEROM
L 1111 F 542

S41°29'22"W 473.18'
S53°25'59"E 137.76'
S43°46'55"E 100.53'
98.04'
S43°27'27"E
48.40'
S49°48'51"E
S41°13'49"E 57.53'

TM 13 P 18
PLAT OF
CORDIN PROPERTY
PLAT NO. 10302

765500
535500

1190.34'
S41°29'22"W

TM 13 P 2
MICHAEL J. MULCAHEY
DEBRA C. MULCAHEY
L 949 F 54

WOODBINE ROAD

S15°52'39"E 278.62'

240.04'
N44°28'31"W 93.05'
S77°52'21"W

TM 13 P 238
TIMBERLEIGH VILLAGE
PB 25 F 81

S32°10'30"W 412.89'

291.01'
N28°14'29"E
50.00'
N57°01'47"E
C2
C1

TIMBERLEIGH WAY

2028.58'
N61°45'30"W
(S61°59'37"E 202.26' LINE OF KENNEY SUBDIVISION PLAT NO. 7187)

TM 12 P 69
PLAT OF
KENNEY SUBDIVISION
PLAT NO. 7187

423
MONUMENT FOUND

424
PIPE FOUND

N35°42'40"W 347.61'
N49°12'40"W 437.08'
(17TH OR N45°15'W 421' LINE OF L 130 F 55)

175.54'
S61°19'35"W
(PART OF THE 16TH OR S65°30'W 306' LINE OF L 130 F 55)

TM 12 P 28
DAVID R. MULLINIX
L 1054 F 85

763000
535500

FOR CONTINUATION SEE SHEET 3

CURVE DATA					
CURVE	ARC	RADIUS	TANGENT	DELTA	CHORD
C1	109.98'	500.00'	55.21'	12°36'11"	N61°07'52"W 109.76'
C2	42.29'	25.00'	28.22'	96°55'49"	N76°42'21"E 37.42'

DENOTES FOREST CONSERVATION EASEMENT

VOGEL & ASSOCIATES
ENGINEERS·SURVEYORS·PLANNERS
3691 Park Avenue, Suite 101 • Ellicott City, Maryland 21043
Tel 410.461.5828 Fax 410.465.3966

THE PURPOSE OF THIS PLAT IS TO ESTABLISH A FOREST CONSERVATION MITIGATION BANK.

APPROVED:

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 2/8/00

OWNERS CERTIFICATE

WE, JEFFERY W. WINKLER AND RHONDA P. WINKLER, OWNERS OF THE PROPERTY SHOWN AND DESCRIBED HEREON, HEREBY ADOPT THIS PLAT AND IN CONSIDERATION OF THE APPROVAL OF THIS FINAL PLAT BY THE DEPARTMENT OF PLANNING AND ZONING, ESTABLISH THE FOREST CONSERVATION EASEMENTS TO BE CONSIDERED A MITIGATION BANK FOR FOREST CONSERVATION CREDITS.

WITNESS OUR HANDS THIS 22nd DAY OF December, 1999.

JEFFERY W. WINKLER — WITNESS Mike Sweaver

RHONDA P. WINKLER — WITNESS Mike Sweaver

SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT THE FINAL PLAT SHOWN HEREON IS CORRECT AND IS INTENDED TO PROVIDE FOREST CONSERVATION EASEMENTS OVER THAT PARCEL LAND CONVEYED BY JOHN H. HARDY, JR., THOMAS REED HARDY AND NANCY L. HARDY TO JEFFERY W. WINKLER AND RHONDA P. WINKLER BY DEED DATED OCTOBER 21, 1997 RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND IN LIBER 4094 FOLIO 484.

STATE OF MARYLAND — MARK CHARLES MARTIN — NO. 10884 — REGISTERED — PROFESSIONAL LAND SURVEYOR

Mark C. Martin — DATE 12/17/99

MARK C. MARTIN
PROFESSIONAL LAND SURVEYOR NO. 10884

RECORDED AS PLAT NO. 14107 ON 2/10/2000 AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND.

PLAT OF FOREST CONSERVATION EASEMENTS
ON THE

WINKLER PROPERTY

TAX MAP 12 & 13, BLOCK 6, PARCEL 14
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE 1"= 200' SEPTEMBER 17, 1999

9979EP2.DWG

SDP 99117

COORDINATE TABLE		
POINT	NORTH	EAST
404	538388.04856	765204.47540
425	538360.16351	762983.78831
426	539782.84605	763749.46318
429	538079.23029	765659.05819
430	538288.20299	765960.62989

CURVE TABLE						
CURVE	ARC	RADIUS	TANGENT	DELTA	CHORD	
C3	240.85'	600.00'	122.07'	23°00'00"	S42°01'21"E	239.24'
C4	217.10'	200.00'	120.64'	62°11'48"	N08°01'59"W	206.60'

LINE TABLE		
L15	S49°06'35"W	259.51'
L16	S32°40'52"W	148.95'
L17	S31°32'14"W	139.21'
L18	S22°17'46"W	74.46'
L19	N54°48'48"W	213.46'
L20	N58°43'11"W	155.88'
L21	N01°19'39"W	147.30'
L22	S24°19'19"W	81.79'
L23	S26°39'25"W	188.59'
L24	S21°15'38"W	181.92'

TM 13 P 202
PLAT OF OLIVA SUBDIVISION
PLAT NO. 7060

TM 13 P 115
PLAT OF ST. MICHAELS OVERLOOK
PLAT NO. 9839

MARYLAND STATE GRID MERIDIAN (NAD27)

TM 13 P 1
CHARLES G. WARFIELD
L 226 F 312

TM 12 P/O P 13
GREGG MCCARRON
L 576 F 154

TM 12 P 25
GREGG MCCARRON
L 2077 F 508

TM 13 P 17
A. G. WARFIELD
L 916 F 468

(426) STONE FOUND

S48°54'54"E 2023.52'
(3RD OR S44°50'E 2030' LINE OF L 130 F 55)

(430) STONE FOUND

S71°59'56"E 695.42'

S03°37'20"W 630.00'

N55°16'49"E 366.90'
(6TH OR N61°45'E 412.25' LINE OF L 130 F 55)

S66°01'22"E 672.91'

S68°38'43"E 250.03'

S02°35'47"W 158.01'

(404) STONE FOUND

S55°48'36"E 549.56'
(5TH OR S49°45'E 552' LINE OF L 130 F 55)

(429) STONE FOUND

S47°12'20"W 95.65'

S15°50'09"W 744.18'

S25°37'20"W 782.15'

N30°10'11"E 394.86'

L22 L23 L24

S31°06'32"W 186.59'

S80°56'24"W 609.61'

S33°13'30"E 110.00'

S07°03'18"E 99.85'

S78°41'01"E 112.42'

S77°09'32"E 166.69'

S49°17'32"E 168.62'

S45°45'35"E 216.40'

S53°31'20"E 163.99'

C3

S30°31'21"E 213.60'

S46°37'43"E 343.91'

A3
2.74 AC

C
5.88 AC

N10°29'14"W 171.52'

N37°04'01"W 260.84'

N79°54'45"W 250.07'

S32°29'42"W 71.61'

N39°07'53"W 244.85'

N31°24'53"E 289.40'

BARNS

C4

A1
13.26 AC

N18°14'11"E 200.56'

N45°11'22"W 207.14'

L21

L15 L16 L17 L18

L20 L19

A2

N22°04'45"E 210.41'

N06°27'12"E 233.83'

N78°03'29"W 254.35'

L 1123 F 194
L 1810 F 22

S41°29'22"W 215.57'

200.00'

N53°39'22"W 442.34'

TM 12 P 11
GEORGE VAN OSTEROM
DENISE E. VAN OSTEROM
L 1111 F 542

TM 13 P 18
PLAT OF
GORDIN PROPERTY
PLAT NO. 10302

473.18'

S41°29'22"W

S43°46'55"E 100.53'

S41°13'49"E 57.53'

S53°25'59"E 137.76'

98.04' S43°27'27"E

48.40' S49°48'51"E

TM 12 P 13
GREGG MCCARRON
L 576 F 154

(2ND OR N32°15'E 1620' LINE OF L 130 F 55)

N28°17'19"E 1615.64'

L 1123 F 194
EASEMENT TO
MARYLAND AGRICULTURAL
LAND PRESERVATION FOUNDATION
DEPARTMENT OF AGRICULTURE

FOR CONTINUATION
SEE SHEET 3

(425) STONE FOUND

S68°41'38"E 787.25'

L 1810 F 22
EASEMENT TO
THE STATE OF MARYLAND
MARYLAND AGRICULTURAL
LAND PRESERVATION FOUNDATION

FOR CONTINUATION SEE SHEET 2

DENOTES FOREST CONSERVATION EASEMENT

THE PURPOSE OF THIS PLAT IS TO ESTABLISH A FOREST CONSERVATION MITIGATION BANK.

VOGEL & ASSOCIATES
ENGINEERS·SURVEYORS·PLANNERS
3691 Park Avenue, Suite 101 • Ellicott City, Maryland 21043
Tel 410.461.5828 Fax 410.465.3966

APPROVED:

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 2/8/00

OWNERS CERTIFICATE

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JEFFERY W. WINKLER — WITNESS Mike Sweadner

RHONDA P. WINKLER — WITNESS Mike Sweadner

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STATE OF MARYLAND — MARK CHARLES MARTIN — No. 10884 — PROFESSIONAL LAND SURVEYOR

MARK C. MARTIN
PROFESSIONAL LAND SURVEYOR NO. 10884 — DATE 12/17/99

RECORDED AS PLAT NO. 14109 ON 2/10/2000
AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND.

PLAT OF FOREST CONSERVATION EASEMENTS
ON THE

WINKLER PROPERTY

TAX MAP 12 & 13, BLOCK 6, PARCEL 14
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE 1"= 200' SEPTEMBER 17, 1999

9979EP4.DWG

SDP 99117

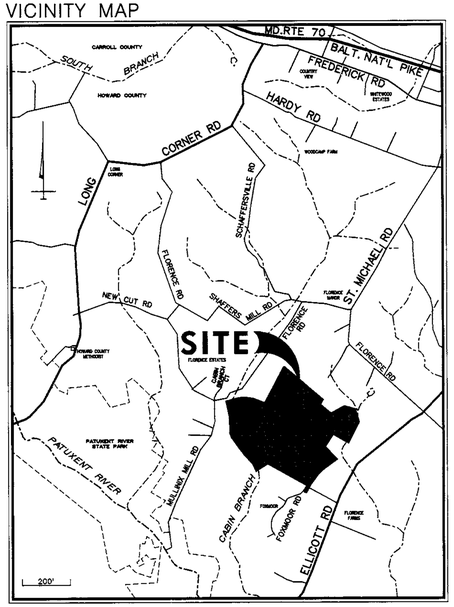
WINKLER TRACT FOREST MITIGATION BANK

HOWARD COUNTY MARYLAND

LEGEND

- PROPERTY LINE
- G1B2 — SOIL TYPE
- EXISTING NON-TIDAL WETLANDS LINE
- 25' WETLAND BUFFER LINE
- 75' STREAM BUFFER LINE
- EXISTING CONTOUR
- SLOPES GREATER THAN OR EQUAL TO 25%
- 15-25% STEEP SLOPES
- STREAM CHANNEL
- ST-1 — SPECIMEN TREE (WITH SIZE AND SPECIES)

VICINITY MAP



SHEET INDEX:

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH MAX. FIVE FOOT CONTOUR INTERVALS PREPARED BY HOWARD COUNTY DATED 4-8-93.
5. 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 NOS. MAP 35 AND MAP 326 WERE USED FOR THIS PROJECT.
6. THIS SITE IS EXEMPT FROM PROVIDING STORMWATER MANAGEMENT.
7. EXISTING UTILITIES ARE BASED ON N/A.
8. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY NRCS, BIOHABITATS, AND HOWARD COUNTY PLANNING STAFF 2/99; AND WAS APPROVED ON 2/99.
9. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
10. For easement information, see plat entitled: "Plat of Forest Conservation Easements on the Winkler Property", plat # 14106-14109 recorded on 2/9/00

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE: 2/11/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 12/27/99

CHIEF, DIVISION OF LAND ~~DEVELOPMENT~~ Development — DATE: 2/10/00

REVISION		
DATE	BY	DESCRIPTION

DATE: 8/26/99
DESIGNED: EWM
DRAWN: TLS
CHECKED: JKB
APPROVED
Biohabitats Project No. 98028.01

MR. JEFF WINKLER
C/O GEORGE KELLY
ENVIRONMENTAL BANC & EXCHANGE
6400 RIDGE ROAD, SUITE 9
ELDERSBERG, MD. 21784
410-781-0072

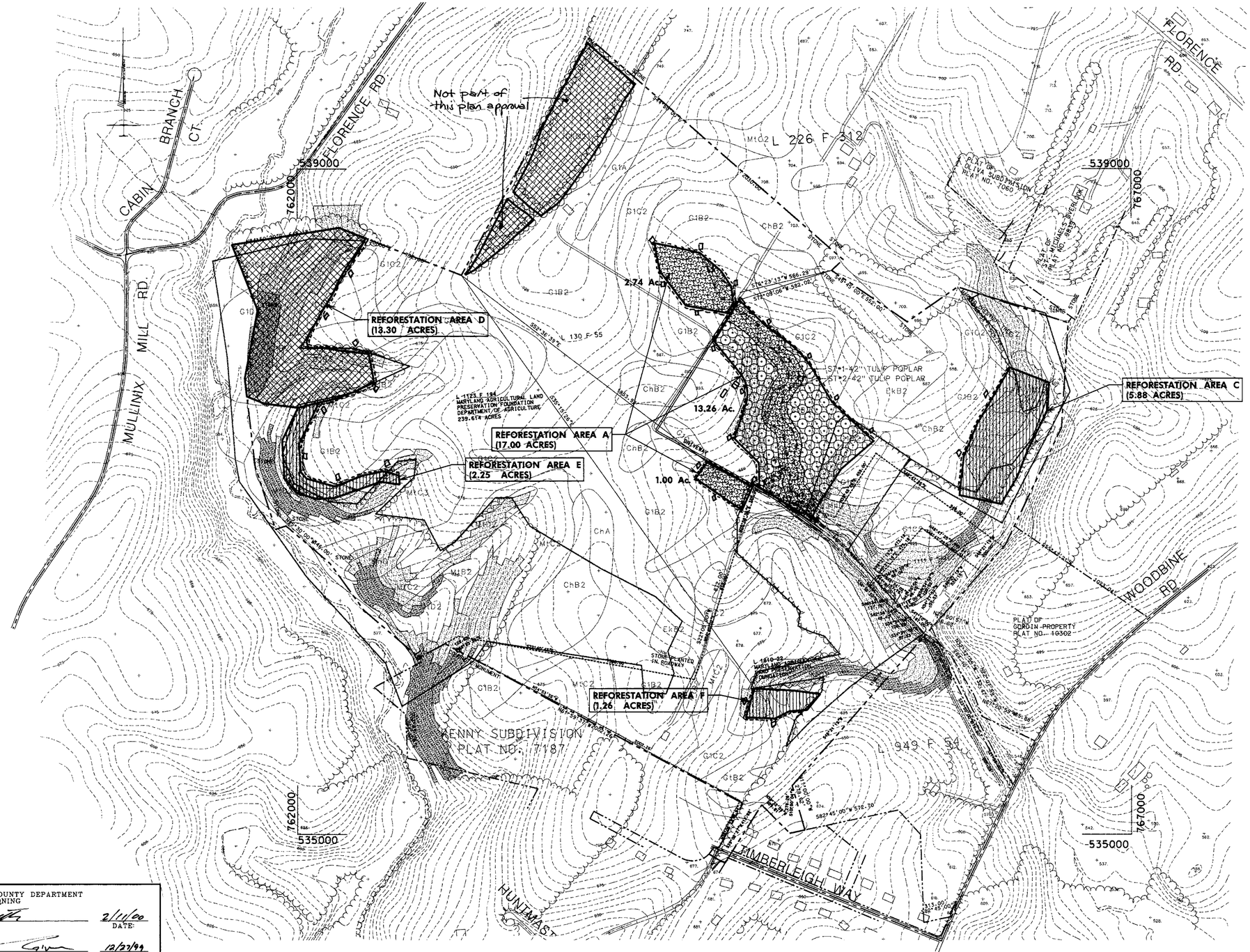
Biohabitats, Inc.
15 West Aylesbury Road
Timonium, Maryland 21093
Phone: 410-337-3659
Fax: 410-583-5678
• Fostering Ecological Stewardship •

WINKLER TRACT FOREST MITIGATION BANK
SUBDIVISION NAME: N/A
TAX MAP — SECTION/AREA
LOT/PARCEL — ZONING
ZB/BA REFERENCE — ELECTION DISTRICT
SITE AREA
FINAL PLAN APPROVAL DATE — DPZ REFERENCE NUMBER

TITLE SHEET

SCALE: AS SHOWN
CONTRACT NO.
SHEET 1 OF 4

SDP 99117



PLANTING AREA LEGEND:

- ZONE 1– FORESTED WETLAND AND BUFFER
- ZONE 2– MESIC FOREST SUPPLEMENT
- ZONE 3– UPLAND FOREST SUPPLEMENT
- ZONE 4– SUCCESSIONAL UPLAND WOODS
- FOREST CONSERVATION EASEMENT AREAS
- SINGLE STRAND HIGH TENSILE WIRE TREE PROTECTION FENCE
- FOREST CONSERVATION AREA SIGNAGE

SCALE
0 300 600

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE: 2/11/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 12/27/99

CHIEF, DIVISION OF LAND ~~DEVELOPMENT~~ Development — DATE: 2/10/00

NO.	DATE	BY	REVISION DESCRIPTION

DATE: 8/26/99
DESIGNED: EWM
DRAWN: TLS
CHECKED: JKB
APPROVED:
Biohabitats Project No. 98028.01

MR. JEFF WINKLER
C/O GEORGE KELLY
ENVIRONMENTAL BANC & EXCHANGE
6400 RIDGE ROAD, SUITE 9
ELDERSBERG, MD. 21784
410-781-0072

Biohabitats, Inc.
15 West Aylesbury Road
Timonium, Maryland 21093
Phone: 410-337-3659
Fax: 410-583-5678
• Fostering Ecological Stewardship •

WINKLER TRACT FOREST MITIGATION BANK

SUBDIVISION NAME: N/A
TAX MAP — SECTION/AREA
LOT/PARCEL — ZONING
ZB/BA REFERENCE — ELECTION DISTRICT
SITE AREA
FINAL PLAN APPROVAL DATE — DPZ REFERENCE NUMBER

FOREST MANAGEMENT PLAN
PROPOSED REFORESTATION AREA & PLANTING PLAN

SCALE: 1" = 300'-0"
CONTRACT NO.
SHEET 2 OF 4

SDP 99-117

STAND DESCRIPTIONS AND RECOMMENDATIONS

Stand Descriptions and Recommendations

Area A

Description of Proposed Reforestation Area A

Area A is an approximate 17-acre area which includes non-forested cover types as described below. Area A is segmented into three segments shown on Plan Sheet 2 of 4 (Appendix B).

Section 1 is an approximate 2.7-acre seasonally wet area dominated by herbaceous plants and includes essentially no woody vegetation. Section 2 is an area (approximately 13.3 acres) that includes a spring with emergent marsh vegetation that is fenced off from cattle access, a steep-sided draw with a perennial stream channel, and limited pasture containing scattered existing trees. This area has a non-existent midstory and understory layer due to a lack of sapling, shrubs and vines. Its ground cover is herbaceous plants including pasture grasses and weeds. Section 3 is an approximately 1.0-acre area that is associated with an existing grassed waterway between a privcte driveway and a crop field.

Most of this area has no true "forest stand age" (because it is not a forest), however, in the pasture area there are trees that are estimated to be 20-25 years old on average with some specimens to 75+ years. Currently, even the areas with trees represent poor quality woodlands and do not constitute a forest stand. The areas cleared of trees include pasture, grassed waterway, seasonally wet field and a spring area. Mortality includes numerous blow downs on the steep hillside area of the pasture, apparently as a result of severe wind storm. Essentially no new growth or regeneration of forests has occurred in these areas due to the ongoing pasturing of dairy cattle, cropping, and mowing.

Recommendations for Reforestation Area A

The proposed approach for this area includes planting of trees in areas that are currently open. This will include seedlings/whips and containerized plants at ratios, densities and size to be determined. Conceptually, this will entail the planting of containerized tree saplings of native species (e.g., red, white and chestnut oak, hickory, etc.) in the 3 - 4 ft height range. Plants to be selected for planting along the wetland areas will include hydrophytic species adapted to wet soil conditions. Trees proposed for supplemental plantings in the area of the tree groves will include containerized materials consisting of midstory trees and shrubs of shade tolerant native species, in the 1½ - 2 ft height range.

Proposed Harvesting Recommendation

Harvesting in these areas will be limited to the removal of up to 25% of the basal area of the trees present after an initial growth of no less than 40 years. Subsequent harvests would also be limted to 25% of the basal area. It is anticipated that such harvests will not occur more frequently than once every 30 years. All harvests would need to comply with BMPs in use at the time of the harvest. In no case may the harvest in this specific area remove or damage trees contributing more than 25% of the basal area of the existing resource in this specific area.

Area C

Description of Proposed Reforestation of Area C

This is an approximately 5.9-acre area that is an existing field in herbaceous plant cover located on a steep and erodible slope and floodplain adjacent to a tributary to Cabin Branch. It is an old field successional area cleared in the past for agricultural purposes but has not been used for crop production for the last three to five years. Tree canopy coverage is nonexistent. No regeneration of woodlands by saplings is evident.

Recommendations for Reforestation of Area C

The approach for this area is to plant a variety of native tree seedlings (i.e., red, white and chestnut oaks). This area is currently in old field growth of mainly forbs and grasses and will require little in the way of site preparation. Preparation and maintenance techniques will focus on enhancing the survival opportunities of plantings by the removal of competing/invading vegetation around individual plants. Certain approaches such as planting high density small whips may require the use of protection devices such as tree tubes.

Proposed Harvesting Recommendation

Harvesting in these areas will be limited to the removal of up to 25% of the basal area of the trees present after an initial growth of no less than 40 years. Subsequent harvests would also be limted to 25% of the basal area. It is anticipated that such harvests will not occur more frequently than once every 30 years. All harvests would need to comply with BMPs in use at the time of the harvest. In no case may the harvest in this specific area remove or damage trees contributing more than 25% of the basal area of the existing resource in this specific area.

Area D and Area E

Description of Proposed Reforestation of Areas D and E

These areas (totaling approximately 15.5 acres) are discussed together because they are adjacent to one another and together have the effect of increasing the riparian, wetland and steep slope buffer along Cabin Creek, a tributary to the Patuxent River.

Area D is an approximate 13.3 acre area located in an area where the existing forest buffer to Cabin Creek is at its narrowest due to recent timber harvesting. All or portions of the remaining woodlot does not meet the goals of a functioning forest due to the low density of remaining pole trees coupled with the weedy understory growth (i.e., blackberry, vines, shrubs).

Area E is an approximate 2.25 acre field area located at the head of a forested intermittent tributary to Cabin Creek which wraps around the top of the forested slope adjacent to Cabin Creek. Areas D and E are situated on steep slopes in the 15% to 25% and >25% range on Glenelg soils with K values of greater than 0.35.

Recommendations for Reforestation of Area D and E

The proposed approaches for area D consist of a variety of techniques collectively characterized as selective management of reforestation. This recently cleared area contains numerous volunteer seedlings of native tree species, some of which are desirable (i.e., hickory) and will be protected (e.g., vines and weedy growth will be controlled around these seedlings). In addition, other desirable native species not present (e.g., oaks) will be installed to improve forest composition. In addition, the dense thickets of weedy growth that includes invasive species (e.g., multiflora rose) will require various control measures (e.g., cutting, herbicide application, etc.) to eliminate the dominance of non-native invasive species.

The proposed approach of selective management is to include mowing/bush hogging of dense grass, forb and vine growth. This approach is intended to release seedlings in order to ensure a higher degree of survival and to accelerate growth and vigor. The clearing techniques employed also will focus on the removal of invasive species such as multiflora rose, Norway maple, and certain blackberries. Those areas where essentially all vegetation requires removal of invasive plants or dense vines/weeds etc., will receive supplemental plantings of native trees.

The approach for Reforestation Area E along the top of the steep slope and the intermittent tributary is the same as described for Reforestation Area C above. This includes planting a variety of native tree seedlings. This area is currently in a cropped condition and will require little in the way of site preparation. Preparation and maintenance techniques will focus on enhancing the survival opportunities of plantings by the removal of competing/invading vegetation around individual plants. Certain approaches of high density small whips may require the use of protection devices such as tree tubes.

Proposed Harvesting Recommendation

Harvesting in these areas will be limited to the removal of up to 25% of the basal area of the trees present after an initial growth of no less than 40 years. Subsequent harvests would also be limted to 25% of the basal area. It is anticipated that such harvests will not occur more frequently than once every 30 years. All harvests would need to comply with BMPs in use at the time of the harvest. In no case may the harvest in this specific area remove or damage trees contributing more than 25% of the basal area of the existing resource in this specific area.

Area F

Description of Proposed Reforestation of Area F

This is an approximate 1.3-acre area that is an existing field located on an area of steep and erodible slope (Glenelg soils in the 15 to 25% range) immediately upgradient from a large forested swale and wetland area draining to to a tributary to Cabin Creek. Tree canopy coverage is nonexistent. No regeneration of woodlands by saplings is evident.

Recommendations for Reforestation of Area F

The approach to reforesting the existing agricultural field on the steep slope and adjacent to the forested swale and wetland is the same as described for reforestation area C and E above. This includes planting a variety of native tree seedlings. This area is currently in a cropped condition and will require little in the way of site preparation. Preparation and maintenance techniques will focus on enhancing the survival opportunities of plantings by the removal of competing/invading vegetation around individual plants. Certain approaches of high density small whips may require the use of protection devices such as tree tubes.

Proposed Harvesting Recommendation

Harvesting in these areas will be limited to the removal of up to 25% of the basal area of the trees present after an initial growth of no less than 40 years. Subsequent harvests would also be limted to 25% of the basal area. It is anticipated that such harvests will not occur more frequently than once every 30 years. All harvests would need to comply with BMPs in use at the time of the harvest. In no case may the harvest in this specific area remove or damage trees contributing more than 25% of the basal area of the existing resource in this specific area.

Timber Harvesting Plan

The primary goal for the proposed reforestation effort is the compensation for forest clearing in other areas of Howard County. The proposed reforestation areas on the Winkler Tract have been selected as areas which will provide significant additional resource value when reforested. These increases in value relate to soil and stream bank stabilization, water quality enhancement, flood flow attenuation, wetland enhancement, and wildlife habitat enhancement.

As a result of these considerations, Timber Harvesting Plans for the forest mitigation areas must not eliminate or significantly degrade the forest character of these areas. As a result, the typical temporary diminution of the forest values associated with normal timber harvests will not be authorized under the Timber Harvesting Plan.

In recognition of these circumstances, the Timber Management Plan has been developed to minimize the usual temporary diminution of forest value by placing significant constraints on timber harvesting.

Approach

The ultimate timber harvesting practices will differ for to address the regulatory issues and forest management practices relating to riparian zones along perennial and intermittent stream courses, non-tidal wetlands, and steep and erodible soils. Future harvests will be selective in terms of allowing these areas to retain forest character and required quantities and composition in accordance with Howard County's Subtitle 12 Forest Conservation regulations.

Future proposed timber harvest activities will be subject to the conditions of an approved Timber Harvest Plan nested in the restrictions to harvesting presented by the preeminent Forest Management Plan approved for the Winkler Tract by Howard County and the State of Maryland.

The Timber Harvest Plan restricts all proposed timber harvests on the forest mitigation bank lands occurring in a 100-ft wide riparian buffer (either side of the stream), in wetland areas and within a 35-ft buffer of wetland areas, and on steep (>25%) or erodible (slopes >15% with soil erodibility coefficients > 0.35) lands. These areas are shown on Plan Sheet 3 of 3 (Appendix B). The intent of the restriction is to retain not only the long term forest land use, but the functionality of the forest by limiting tree removal to 25% of the basal area and limiting timber harvesting frequency in any area to once every 30 years following initial harvest.

In addition to this restriction on harvesting proportion and frequency, all timber harvesting will be executed in accordance with recognized environmentally-sound best management practices in use at the time of the timber harvest. This will also include consistency with requirements for erosion control including an approved Compliance Agreement for Standard Erosion and Sediment Control Plan for Forest Harvest Operations (Standard Plan), as applicable to the proposed harvest areas and any other relevant regulations applicable at the time of the harvest. This will be supplemented on a periodic basis to address the rules, regulations, policies and guidelines applicable at the time of the harvest.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE: 2/11/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 12/27/99

CHIEF, DIVISION OF LAND ~~MANAGEMENT~~ Development — DATE: 2/10/00

DATE	BY	REVISION DESCRIPTION

DATE: 8/26/99
DESIGNED: EWM
DRAWN: TLS
CHECKED: JKB
APPROVED: ____
Biohabitats Project No. 98028.01

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• Fostering Ecological Stewardship •

WINKLER TRACT FOREST MITIGATION BANK

SUBDIVISION NAME: N/A
TAX MAP — SECTION/AREA
LOT/PARCEL — ZONING
ZB/BA REFERENCE — ELECTION DISTRICT
SITE AREA
FINAL PLAN APPROVAL DATE — DPZ REFERENCE NUMBER

NOTES

SCALE: AS SHOWN
CONTRACT NO.
SHEET 3 OF 4

SDP 99117

PLANT SCHEDULE

Size (acres): 8.12

Planting Area: Winkler Tract | Zone: 1 | Habitat: Area A-Zone1 | Classification: PFO

Quantity	Botanical Name	Common Name	Unit	Size
TREES				
544	Acer rubrum	red maple	con	2 - 3 ft.
357	Fraxinus pensylvanca	green ash	con	2 - 3 ft.
357	Nyssa sylvatica	black gum	con	2 - 3 ft.
357	Platanus occidentalis	American sycamore	con	2 - 3 ft.
268	Quercus palustris	pin oak	con	2 - 3 ft.
UNDERSTORY				
325	Cornus amomum	silky dogwood	con	1.5 - 2 ft.
219	Ilex verticillata	common winterberry	con	1.5 - 2 ft.
219	Lindera benzoin	northern spicebush	con	1.5 - 2 ft.
325	Magnolia virginiana	sweetbay magnolia	con	1.5 - 2 ft.

COMPOSITION SCHEDULE

Planting Area: Winkler Tract | Zone: 1 | Habitat: Area A-Zone1 | Classification: PFO

% Composition Per strata (per acre)	Overall Spacing (per acre)	Total (per acre)	Vegetation Strata/ Species Name	Frequency (%)	Quantity (per acre)	Spacing Type	Individual Spacing (ft.)
100	14 ft.	222	TREES				
			Acer rubrum	30	67	RANDOM	25
			Fraxinus pennsylvanca	20	44	RANDOM	31
			Nyssa sylvatica	15	33	RANDOM	36
			Platanus occidentalis	20	44	RANDOM	31
			Quercus palustris	15	33	RANDOM	36
100	18 ft.	134	UNDERSTORY				
			Cornus amomum	30	40	RANDOM	33
			Ilex verticillata	20	27	RANDOM	40
			Lindera benzoin	20	27	RANDOM	40
			Magnolia virginiana	30	40	RANDOM	33

PLANT SCHEDULE

Size (acres): 8.9

Planting Area: Winkler Tract | Zone: 2 | Habitat: Area A-Zone 2 | Classification: N/A

Quantity	Botanical Name	Common Name	Unit	Size
TREES				
205	Acer negundo	box elder	con	2 - 3 ft.
401	Acer rubrum	red maple	con	2 - 3 ft.
267	Carpinus caroliniana	ironwood	con	2 - 3 ft.
267	Celtis occidentalis	hackberry	con	2 - 3 ft.
205	Quercus phellos	willow oak	con	2 - 3 ft.
UNDERSTORY				
267	Amelanchier canadensis	shadbush	con	1.5 - 2 ft.
107	Aronia arbutifolia	red chokeberry	con	1.5 - 2 ft.
160	Cercis canadensis	eastern redbud	con	1.5 - 2 ft.
214	Sambucus canadensis	common elderberry	con	1.5 - 2 ft.
320	Viburnum dentatum	southern arrowwood	con	1.5 - 2 ft.

COMPOSITION SCHEDULE

Planting Area: Winkler Tract | Zone: 2 | Habitat: Area A-Zone 2 | Classification: N/A

% Composition Per strata (per acre)	Overall Spacing (per acre)	Total (Per acre)	Vegetation Strata/ Species Name	Frequency (%)	Quantity (per acre)	Spacing Type	Individual Spacing (ft.)
100	17 ft.	151	TREES				
			Acer negundo	15	23	RANDOM	44
			Acer rubrum	30	45	RANDOM	31
			Carpinus caroliniana	20	30	RANDOM	38
			Celtis occidentalis	20	30	RANDOM	38
			Quercus phellos	15	23	RANDOM	44
100	19 ft.	121	UNDERSTORY				
			Amelanchier canadensis	25	30	RANDOM	38
			Aronia arbutifolia	10	12	RANDOM	60
			Cercis canadensis	15	18	RANDOM	49
			Sambucus canadensis	20	24	RANDOM	43
			Viburnum dentatum	30	36	RANDOM	35

PLANT SCHEDULE

Size (acres): 13.3

Planting Area: Winkler Tract | Zone: 3 | Habitat: Area D-Zone 3 | Classification: N/A

Quantity	Botanical Name	Common Name	Unit	Size
TREES				
452	Liriodendron tulipifera	tulip poplar	con	2 - 3 ft.
359	Quercus alba	white oak	con	2 - 3 ft.
266	Quercus prinus	chesnut oak	con	2 - 3 ft.
359	Quercus rubra	red oak	con	2 - 3 ft.
359	Sassafras albidum	sassafras	con	2 - 3 ft.
UNDERSTORY				
293	Cornus florida	flowering dogwood	con	1 - 1.5 ft.
293	Hamamelis virginiana	witch hazel	con	1 - 1.5 ft.
293	Ilex opaca	American holly	con	1 - 1.5 ft.
213	Vaccinium angustifolium	lowbush blueberry	con	1 - 1.5 ft.
213	Viburnum lentago	nannyberry viburnum	con	1 - 1.5 ft.

COMPOSITION SCHEDULE

Planting Area: Winkler Tract | Zone: 3 | Habitat: Area D-Zone 3 | Classification: N/A

% Composition Per strata (per acre)	Overall Spacing (per acre)	Total (per acre)	Vegetation Strata/ Species Name	Frequency (%)	Quantity (per acre)	Spacing Type	Individual Spacing (ft.)
100	18 ft.	134	TREES				
			Liriodendron tulipifera	25	34	RANDOM	36
			Quercus alba	20	27	RANDOM	40
			Quercus prinus	15	20	RANDOM	47
			Quercus rubra	20	27	RANDOM	40
			Sassafras albidum	20	27	RANDOM	40
100	20 ft.	109	UNDERSTORY				
			Cornus florida	20	22	RANDOM	44
			Hamamelis virginiana	20	22	RANDOM	44
			Ilex opaca	20	22	RANDOM	44
			Vaccinium angustifolium	25	27	RANDOM	40
			Viburnum lentago	15	16	RANDOM	52

PLANT SCHEDULE

Size (acres): 9.39

Planting Area: Winkler Tract | Zone: 4 | Habitat: Area C,E,F-Zone 4 | Classification: N/A

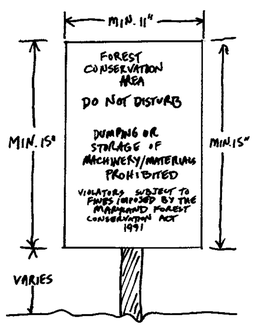
Quantity	Botanical Name	Common Name	Unit	Size
TREES				
629	Diospyros virginiana	persimmon	con	2 - 3 ft.
836	Juniperus virginiana	eastern red cedar	con	2 - 3 ft.
836	Liriodendron tulipifera	tulip poplar	con	2 - 3 ft.
629	Prunus serotina	black cherry	con	2 - 3 ft.
836	Sassafras albidum	sassafras	con	2 - 3 ft.
413	Viburnum prunifolium	black haw	con	2 - 3 ft.

COMPOSITION SCHEDULE

Planting Area: Winkler Tract | Zone: 4 | Habitat: Area C,E,F-Zone 4 | Classification: N/A

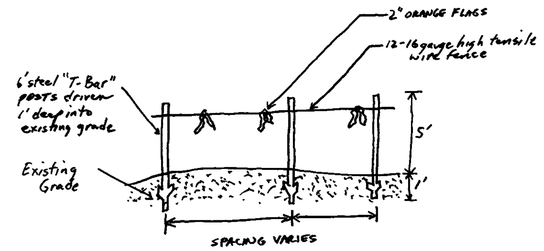
% Composition Per strata (per acre)	Overall Spacing (per acre)	Total (per acre)	Vegetation Strata/ Species Name	Frequency (%)	Quantity (per acre)	Spacing Type	Individual Spacing (ft.)
100	14 ft.	444	TREES				
			Diospyros virginiana	15	67	RANDOM	25
			Juniperus virginiana	20	89	RANDOM	22
			Liriodendron tulipifera	20	89	RANDOM	22
			Prunus serotina	15	67	RANDOM	25
			Sassafras albidum	20	89	RANDOM	22
			Viburnum prunifolium	10	44	RANDOM	31

FOREST CONSERVATION AREA SIGNAGE DETAIL

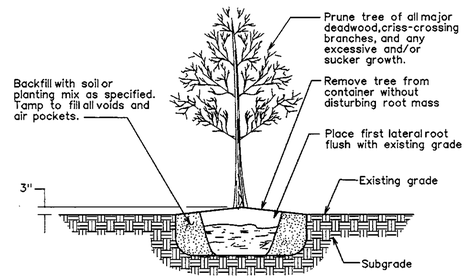


NOTES:
Bottom of sign to be higher than tree protection fence.
Signs to be placed approximately 100' apart.
Signs may not be attached to trees

SINGLE STRAND HIGH TENSILE WIRE TREE PROTECTION FENCE DETAIL



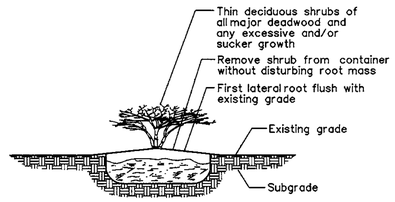
NOTES
Avoid root damage when placing steel posts.
Locate fence outside critical root zone.
Protection signs are also required



1. Excavate hole 1-1/2 times the width of the root mass.
2. Remove all non-organic material from the planting pit completely and tamp loose soil in bottom of pit by hand.

CONTAINER TREE PLANTING

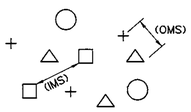
NOT TO SCALE



1. Excavate hole 1-1/2 times the width of the root mass.
2. Remove all non-organic material from the planting pit completely and tamp loose soil in bottom of pit by hand.

CONTAINER SHRUB PLANTING DETAIL

Not To Scale



1. An overall minimum spacing distance (OMS) is assigned to the planting configuration (see plant schedule).
2. An individual minimum spacing distances (IMS) is assigned to each individual species (see plant schedule).

RANDOM PLANT SPACING DETAIL
PLAN VIEW

Not To Scale

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE: 2/11/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 12/27/99

CHIEF, DIVISION OF LAND ~~DEVELOPMENT~~ Development — DATE: 2/10/00

NO.	DATE	BY	REVISION DESCRIPTION

DATE: 8/26/99
DESIGNED: EWM
DRAWN: TLS
CHECKED: JKB
APPROVED
Biohabitats Project No. 98028.01

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WINKLER TRACT FOREST MITIGATION BANK

SUBDIVISION NAME: N/A
TAX MAP | SECTION/AREA
LOT/PARCEL | ZONING
ZB/BA REFERENCE | ELECTION DISTRICT
SITE AREA
FINAL PLAN APPROVAL DATE | DPZ REFERENCE NUMBER

PLANTING DETAILS AND SCHEDULES

SCALE: AS SHOWN
CONTRACT NO.
SHEET 4 OF 4

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SDP 99117