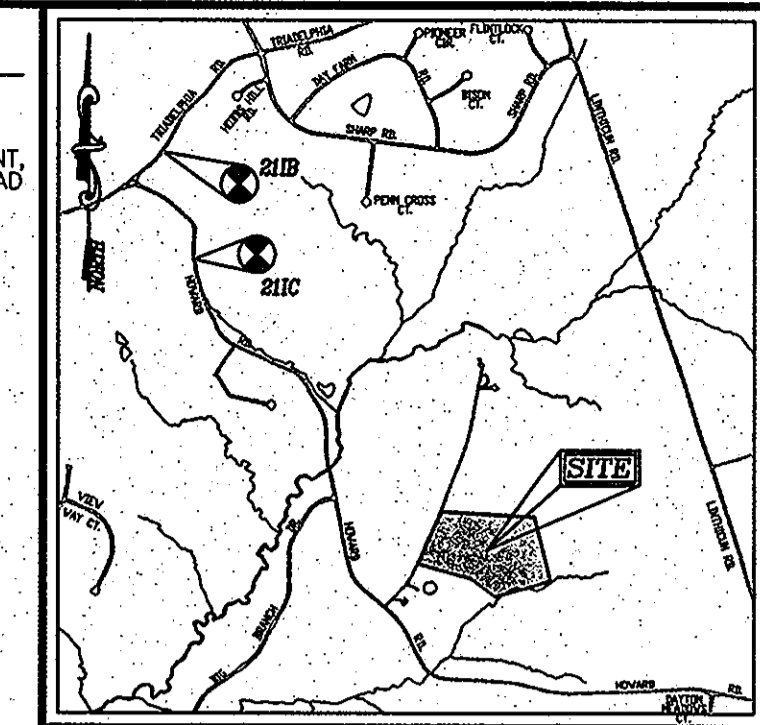


# ENVIRONMENTAL CONCEPT PLAN STUDDARD PROPERTY LOTS 1, 2, 3, AND 4 ECP-11-005

**BENCHMARKS**  
 HOWARD COUNTY BENCHMARK 218 (CONC. MON.)  
 N 579255.46 E 1308799.16  
 \*LOCATED 4.3' BACK FROM THE EDGE OF PAVEMENT,  
 NORTHWEST CORNER OF THE INTERSECTION OF HOWARD ROAD  
 AND TRIADEN ROAD.  
 HOWARD COUNTY BENCHMARK 211C (CONC. MON.)  
 N 578150.48 E 1309107.30  
 \*LOCATED 2.2' BACK FROM EDGE OF PAVEMENT,  
 SOUTH SIDE OF HOWARD ROAD.



**VICINITY MAP**  
 SCALE: 1"=2,000'  
 ADC MAP COORDINATE: 4932 K1

**LEGEND**

- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- - - EXISTING CONTOUR
- - - EXISTING UTILITY POLE
- - - EXISTING SIGN
- - - EXISTING 50' WIDE RIGHT OF WAY
- - - EXISTING 15' WIDE RIGHT OF WAY
- - - PROPOSED 24' USE-IN-COMMON DRIVEWAY EASEMENT
- ⊙ EXISTING WELL
- ⊙ SEPTIC TIE PIT
- ⊙ PROPOSED PRIVATE WELL AREA
- ▨ MODERATE SLOPES
- ▨ PROPOSED PAVEMENT
- ▨ ROOFTOP DISCONNECT (LENGTH)
- ▨ MICRO BIO RETENTION
- ▨ LIMIT OF DISTURBANCE
- ▨ SUPER SILT FENCE

**DESIGN NARRATIVE**

THE STORMWATER MANAGEMENT FOR THIS SITE WAS DESIGNED TO PRESERVE THE NATURAL RESOURCES OF THIS SITE TO THE MAXIMUM EXTENT POSSIBLE. STRUCTURAL PRACTICES HAVE BEEN MINIMIZED WHILE DISCONNECTS HAVE BEEN UTILIZED THROUGHOUT THE SITE. A 3.71 ACRE FOREST CONSERVATION EASEMENT HAS BEEN ADDED ADJACENT TO THE STREAM BUFFER ON THE SITE. THIS WILL ALLOW THIS NATURAL AREA TO REMAIN IN TACT FOR YEARS TO COME AND PROVIDE WATER QUALITY BENEFITS WELL INTO THE FUTURE. IMPERVIOUS AREAS WERE MINIMIZED BY NARROWING DRIVEWAYS AND UTILIZING EXISTING PAVEMENT. SEDIMENT CONTROL FOR THESE LOTS WILL BE ACHIEVED BY USING SUPER SILT FENCE WHICH WILL MINIMIZE DISTURBANCE AND PRESERVE NATURAL SHEETFLOW. LOT 1 HAS NO SWM TREATMENT BECAUSE IT IS THE EXISTING DWELLING ON SITE AND NO ADDITIONAL PAVEMENT IS PROPOSED FOR THIS LOT. LOT 2 HAS A COMBINATION OF ROOFTOP DISCONNECTS, NON-ROOFTOP DISCONNECTS AND THE ONLY MICRO BIORETENTION FOUND ON SITE. LOTS 3 AND 4 TREAT SWM WITH COMBINATIONS OF ROOFTOP AND NON-ROOFTOP DISCONNECTS. LOT 3 ALSO UTILIZES A WATER QUALITY SWALE WITH CHECK DAMS TO TREAT A PORTION OF ITS DRIVEWAY. ALL THE MEASURES USED ON THESE LOTS ARE INTENDED TO WORK IN CONJUNCTION WITH THE NATURAL FEATURE ON THE SITE AND MINIMIZE DISTURBANCE OF THE EXISTING PROPERTY.

**GENERAL NOTES**

1. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
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 START OF WORK.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
5. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006) SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
6. COORDINATE BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY, GEODETIC CONTROL STATIONS NO. 218 AND NO. 211C.
7. THE PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. IN APRIL 2009.
8. THE TOPOGRAPHY SHOWN ON THIS PLAN IS TAKEN FROM HOWARD COUNTY GIS, AND IS VERIFIED TO ACCURATELY REPRESENT THE SUBJECT PROPERTY.
9. WATER AND SEWER FOR THIS PROJECT WILL BE PROVIDED THROUGH WELL AND SEPTIC. WATER AND SEWER SERVICE TO THESE LOTS WILL GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE.
10. THERE ARE WETLANDS ON THIS SITE. THERE IS A PERENNIAL USE IN STREAM LOCATED ON PROPOSED LOT 3.
11. THIS PROJECT IS EXEMPT FROM CIVIL STORM WATER MANAGEMENT SINCE THE SITE P<sub>0</sub> IS ≤ 1.0'.
12. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
13. SUBJECT PROPERTY ZONED RC-DEO PER 2/02/04 COMPREHENSIVE ZONING PLAN AND AMENDED BY THE COMPREHENSIVE LITE AMENDMENT DATED 07/28/06.
14. "DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:  
 a) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).  
 b) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CLIP COATING.  
 c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT DEPTH TURNING RADIUS.  
 d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 CROSS TONS (425 LOADINGS).  
 e) DRAINAGE ELEMENTS-CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.  
 f) STRUCTURE CLEARANCES-MINIMUM 12 FEET.  
 g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
15. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
16. THE PROPOSED SUBDIVISION AND RELATED CONSTRUCTION WILL NOT AFFECT ENVIRONMENTAL FEATURES OR BUFFERS.
17. FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT ARE ADDRESS ON THIS PLAN. A FOREST CONSERVATION EASEMENT WILL BE ADDED TO LOT 3. NP-10-015 WAS APPROVED (02/27/10) TO ALLOW SUBDIVISION WITH LESS THAN THE MINIMUM REQUIRED PUBLIC ROAD FRONTAGE AND TO ALLOW FOREST CONSERVATION EASEMENT ON A LOT UNDER 10 ACRES. SECTION 16.120(c)(2)(iv) WHICH REQUIRES ALL LOTS, PRESERVATION PARCELS OR BULK PARCELS FOR SINGLE-FAMILY DETACHED DWELLINGS TO HAVE MINIMUM FRONTAGES ON APPROVED STREETS WITHIN A PUBLIC RIGHT OF WAY WHICH PROVIDES ACCESS TO THE PROPERTY AS FOLLOWS:  
 LOTS OR PRESERVATION PARCELS WHICH SHARE ACCESS SHALL HAVE SUFFICIENT FRONTAGE COLLECTIVELY TO MEET THE DRIVEWAY EASEMENT REQUIREMENTS IN THE DESIGN MANUAL.  
 APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:  
 1. A NOTE SHALL BE PROVIDED ON ANY AND ALL ASSOCIATED SUBDIVISION PLAT AND SITE DEVELOPMENT PLANS STATING NO FURTHER SUBDIVISION OF PARCEL 31 IS PERMITTED WITHOUT DIRECT ACCESS ON TO A COUNTY RECOGNIZED PUBLIC ROAD.  
 2. IN ORDER TO MAINTAIN THE EXISTING TREELINE ALONG THE PROPERTY LINE OF PARCEL 83, THE EXISTING DRIVEWAY IS PERMITTED TO MAINTAIN A 12' WIDTH ONLY FOR THE EXTENT OF EXISTING PARCEL 83(270'). THE REMAINING DRIVEWAY SHALL BE IMPROVED TO A MINIMUM OF 16', FROM THE PROPERTY LINE OF PARCEL 83 UP TO AN INCLUDING ALL NEWLY PROPOSED LOTS ON PARCEL 31.  
 3. A 24' USE IN COMMON DRIVEWAY EASEMENT (CONTAINING THE 16' DRIVEWAY) SHALL BE CREATED AT THE JUNCTURE OF PARCELS 28 AND 31. THIS EASEMENT SHALL CONTINUE UP TO NEWLY PROPOSED LOTS 2 AND 3.  
 4. A MAINTENANCE AGREEMENT FOR THE IMPROVED DRIVEWAY SHALL BE RECORDED PRIOR TO OR CONCURRENTLY WITH THE ASSOCIATED SUBDIVISION PLAT. THE MAINTENANCE OF THE DRIVEWAY SHALL BE THE RESPONSIBILITY OF THE LOT OWNERS OF PROPOSED LOTS 1-4.  
 SECTION 16.120(c)(4)(iv) WHICH PROHIBITS ENVIRONMENTAL FEATURES ON LOTS OR BUILDABLE PRESERVATION PARCELS OF LESS THAN 10 ACRES IN SIZE.  
 FOR A LOT OR BUILDABLE PRESERVATION PARCEL OF 10 ACRES OR GREATER IN SIZE-FLOODPLAINS, WETLANDS, STREAMS, THEIR BUFFERS, AND FOREST CONSERVATION EASEMENTS FOR AFFORESTATION, REFORESTATION, OR RETENTION MAY BE LOCATED ON THE LOT OR PARCEL IF THE BUILDING ENVELOPE IS NO CLOSER THAN 25' FROM THESE ENVIRONMENTAL FEATURES, PROVIDED THAT A DECK MAY PROJECT 20' BEYOND THE BUILDING ENVELOPE.  
 APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:  
 1. ALL REQUIRED FOREST CONSERVATION SHALL BE MET ON SITE. REQUIRED FOREST CONSERVATION EASEMENT SHALL BE PLACED ADJACENT TO AND INCLUDE THE STREAM AND STREAM BUFFER AREAS.  
 2. ALL DEVELOPMENT ENGINEERING DIVISION CONDITIONS OF APPROVAL MUST BE MET.
18. STORM WATER MANAGEMENT WILL BE ADDRESSED FOR THIS SITE VIA VEGETATED SWALES (M-8), ROOFTOP DISCONNECTS (N-1), NON-ROOFTOP DISCONNECTS (N-2) AND MICRO BIORETENTION FACILITIES (M-6).
19. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS (COUNCIL BILL 45-2003).
20. THIS PROJECT HAS 0.34 AC OF NON-CREDIT FLOODPLAIN ON LOT 2.

**FOREST CONSERVATION WORKSHEET 2.2**

NET TRACT AREA	A = 18.36
A. TOTAL TRACT AREA	B = 0.00
B. DEDUCTIONS	C = 18.36
C. NET TRACT AREA	
LAND USE CATEGORY	
INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY	
AREA MDR IDA HDR MPD CIA	
0 1 0 0 0 0 0	
D. AFFORESTATION THRESHOLD (NET TRACT AREA X 15%)	D = 3.67
E. CONSERVATION THRESHOLD (NET TRACT AREA X20%)	E = 4.59
F. EXISTING FOREST COVER	F = 0.00
G. AREA OF FOREST COVER WITHIN THE NET TRACT AREA	G = 0.00
H. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	H = 0.00
I. BREAK EVEN POINT	I = 0.00
J. FOREST CLEARING PERMITTED WITHOUT MITIGATION	J = 0.00
K. TOTAL AREA OF FOREST TO BE CLEARED	K = 0.00
L. TOTAL AREA OF FOREST TO BE RETAINED	L = 0.00
M. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	M = 0.00
N. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	N = 0.00
O. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	O = 0.00
P. TOTAL REFORESTATION REQUIRED	P = 0.00
Q. TOTAL AFFORESTATION REQUIRED	Q = 3.67
R. TOTAL PLANTING REQUIREMENT	R = 3.67

**SITE DATA**

LOCATION: TAX MAP 27 PARCEL 31  
 USED REFERENCE: L11260/F59  
 5TH ELECTION DISTRICT  
 EXISTING ZONING: RC-DEO  
 PER THE COMPREHENSIVE ZONING PLAN DATED 2/02/04.  
 GROSS AREA OF PARCEL: 18.36 AC.  
 AREA OF RIGHT OF WAY: 0.00 AC.  
 AREA OF FLOODPLAIN: 0.34 AC (14,932 SF)  
 AREA OF STEEP SLOPES: 0  
 NET AREA OF PROJECT: 18.02 AC  
 NUMBER OF RESIDENTIAL LOTS PROPOSED: 4 LOTS  
 AREA OF PROPOSED RESIDENTIAL LOTS: 799,700 SF (18.36 AC)  
 AREA OF SMALLEST BUILDABLE LOT PROPOSED: 132,271 SF LOT 2.  
 NUMBER OF PROPOSED OPEN SPACE LOTS: 0  
 NUMBER OF NON-BUILDABLE BULK PARCELS: 0

**MINIMUM LOT SIZE CHART**

LOT #	NET AREA SQ. FT.	PIPESTEM AREA SQ. FT.	TOTAL AREA SQ. FT.
2	128,995 SF	6,551 SF	135,546 SF
3	391,850 SF	6,695 SF	398,545 SF
4	129,650 SF	2,621 SF	132,271 SF

**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	GROUP
GcC	GAILA LOAM, 8 TO 15 PERCENT SLOPES	B
GdD	GAILA LOAM, 15 TO 25 PERCENT SLOPES	B
GcB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B
GcC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C
GmB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C
LmB	LEGORE-MONTALTO SILT LOAMS, 3 TO 8 PERCENT SLOPES	C

**SITE ANALYSIS DATA**  
 GROSS AREA OF PARCEL: 18.36 AC.  
 AREA OF FLOODPLAINS & STREAM BUFFER: 1.04 AC.  
 AREA OF STEEP SLOPES: 0.00 AC.  
 AREA OF FOREST CONSERVATION: 3.71 AC.  
 TOTAL AREA OF ENVIRONMENTAL FEATURES: 14.80 AC.  
 NET AREA OF PARCEL: 14.56 AC.  
 \*AREA OF ENVIRONMENTAL FEATURES ACCOUNTS FOR DISALLOWING AREAS OF FOREST CONSERVATION, FLOODPLAIN AND WETLAND RESOURCES.

**STORMWATER MANAGEMENT MEASURES**

LOT #	MICRO BIORETENTION	RAIN BARRELS	ROOFTOP DISCONNECTS	NON-ROOFTOP DISCONNECTS	SHEETFLOW TO CON AREA	GRASSED SWALE
1	N/A	N/A	N/A	DRIVEWAY	N/A	N/A
2	YES	N/A	1-75'	N/A	N/A	N/A
3	N/A	N/A	4 @ 75'+	N/A	N/A	DRIVEWAY
4	N/A	N/A	4 @ 75'+	DRIVEWAY TO HSE	N/A	N/A

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature]  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature]  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**SHEET INDEX**

SHT NO.	DESCRIPTION
1 OF 3	ENVIRONMENTAL CONCEPT AND FOREST CONSERVATION PLAN
2 OF 3	ENVIRONMENTAL CONCEPT AND FOREST CONSERVATION PLAN
3 OF 3	STORMWATER MANAGEMENT DA MAP, SWM DETAILS & FOREST CONSERVATION DETAILS

**COORDINATE TABLE**

NO.	NORTH	EAST
63	574,751.541	1,311,328.837
1052	574,833.090	1,312,012.117
1063	574,640.332	1,312,253.776
1074	574,810.764	1,312,812.443
8101	574,510.274	1,311,110.571
8102	574,982.609	1,311,466.232
8103	575,061.701	1,311,507.470
8104	575,502.082	1,311,700.355
8105	575,456.800	1,312,650.182
8110	574,986.664	1,311,451.429

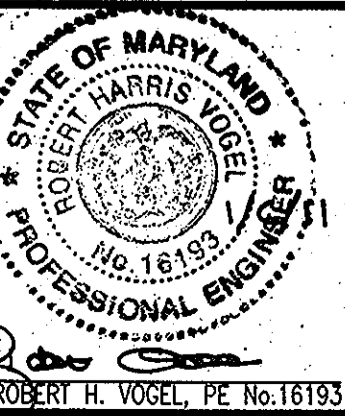
**OWNER**  
 JONATHAN STUDDARD  
 14118 HOWARD ROAD  
 DAYTON MD, 21036  
 443-364-8075

MATCH LINE SEE SHEET 2 OF 3  
 MATCH LINE SEE SHEET 2 OF 3

**ENVIRONMENTAL CONCEPT AND FOREST CONSERVATION PLAN  
 STUDDARD PROPERTY  
 LOTS 1, 2, 3, AND 4**

TAX MAP 27 BLOCK 6 PARCEL 31  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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



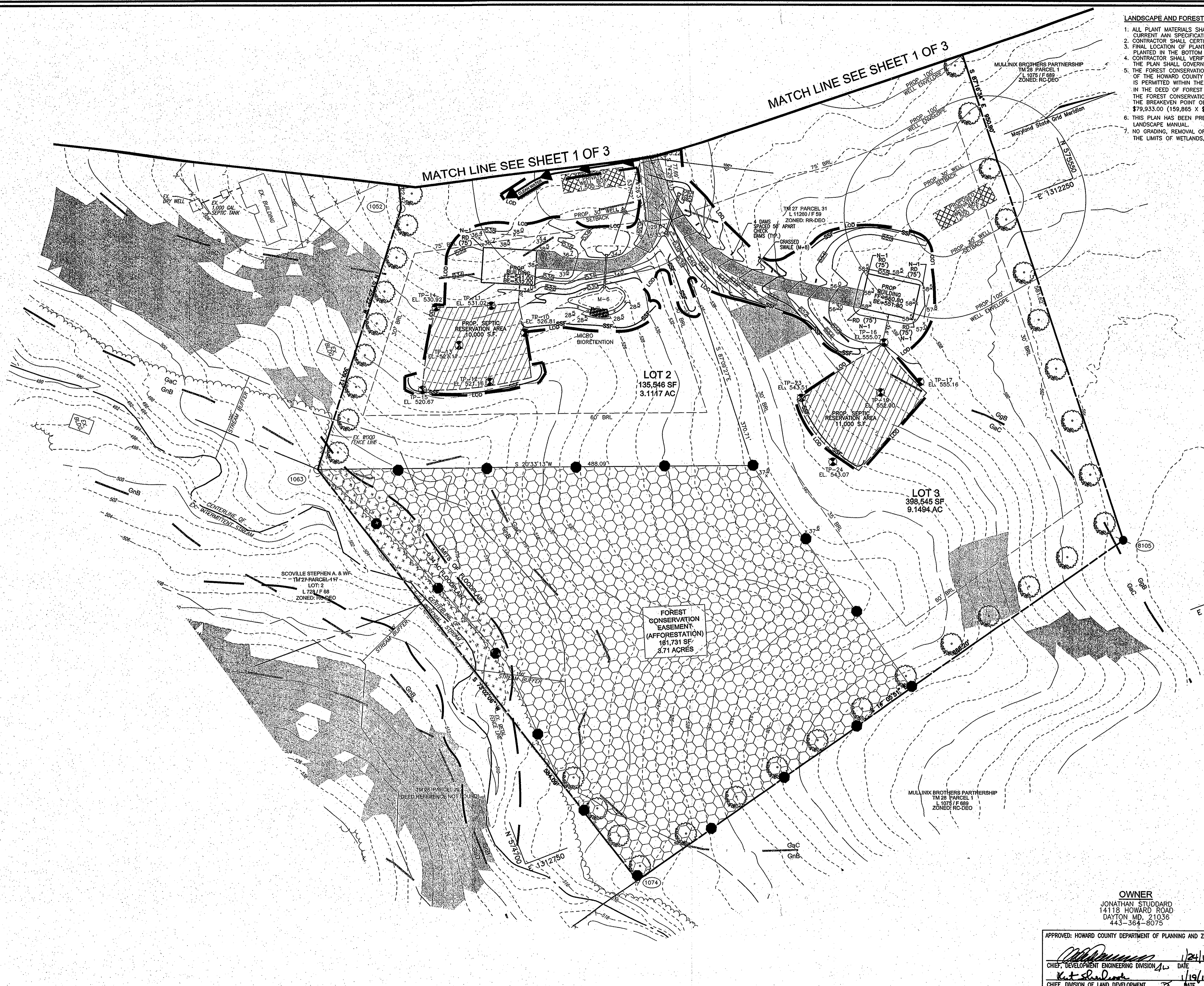
**PROFESSIONAL CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2012.  
 DESIGN BY: JTD  
 DRAWN BY: JTD  
 CHECKED BY: RHV  
 DATE: DECEMBER 2010  
 SCALE: 1"=50'  
 W.O. NO.: 08-50  
 1 SHEET OF 3

**LANDSCAPE AND FOREST CONSERVATION NOTES:**

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAM SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LGAMW PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL CERTIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. 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.
6. THE FOREST CONSERVATION OBLIGATION HAS BEEN FULFILLED BY THE AFFORESTATION OF 3.67 AC. WHICH EXCEEDS THE BREAK-EVEN POINT OBLIGATION OF 3.67 AC. FOR THE SITE. THE TOTAL FINANCIAL SURETY AMOUNT IS \$79,933.00 (159,865 X \$0.50=\$79,933.00)
7. THIS PLAN WAS PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
8. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING, AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN, AND FOREST CONSERVATION EASEMENT AREAS.

**LEGEND**

	RIGHT-OF-WAY LINE
	BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	EXISTING CONTOUR
	EXISTING TREELINE
	EXISTING UTILITY POLE
	EXISTING SIGN
	SOILS
	EXISTING 15' WIDE RIGHT OF WAY
	PROPOSED 24' UTILITY COMMON DRIVEWAY EASEMENT
	PROPOSED WELL
	EXISTING WELL
	PROPOSED PRIVATE WELL AREA
	MODERATE SLOPES
	PROPOSED PAVEMENT
	CLEANWATER DIKE/SWALE
	FOREST CONSERVATION SIGN
	ROOFTOP DISCONNECT (LENGTH)
	SEPTIC TEST PIT
	FOREST CONSERVATION AREA
	LIMITS OF FLOODPLAIN
	MICRO BIO RETENTION
	LIMIT OF DISTURBANCE
	SUPER SILT FENCE



NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT AND FOREST CONSERVATION PLAN**  
**STUDDARD PROPERTY**  
**LOTS 1, 2, 3, AND 4**

TAX MAP 27 BLOCK 6 5TH ELECTION DISTRICT      PARCEL 31 HOWARD COUNTY, MARYLAND

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**OWNER**  
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

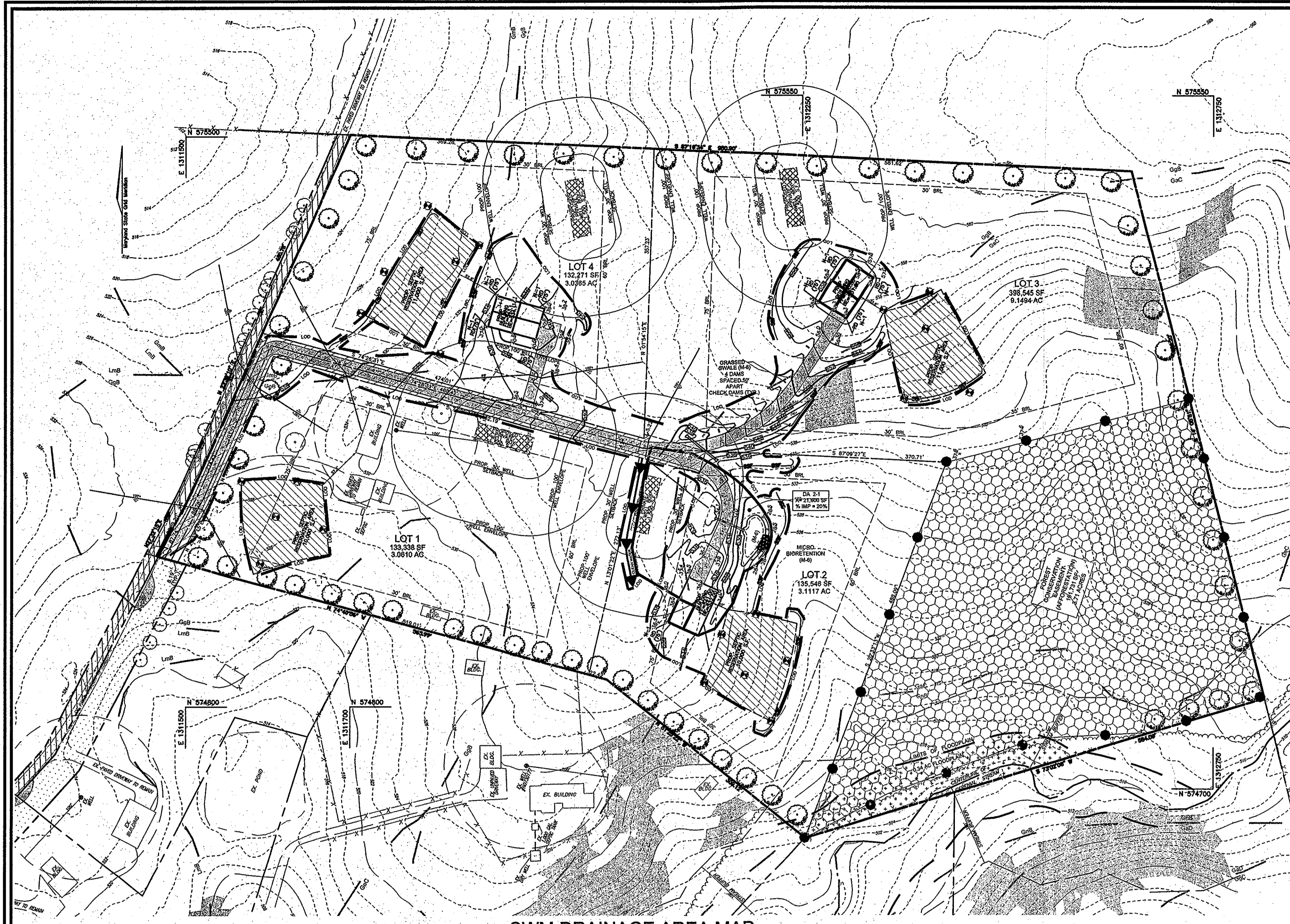
*[Signature]* 1/24/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 1/19/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**PROFESSIONAL CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2012.

DESIGN BY: JTD  
 DRAWN BY: JTD  
 CHECKED BY: RHV  
 DATE: DECEMBER 2010  
 SCALE: 1"=50'  
 W.O. NO.: 08-50

2 SHEET OF 3



**SWM DRAINAGE AREA MAP**  
SCALE 1" = 80'

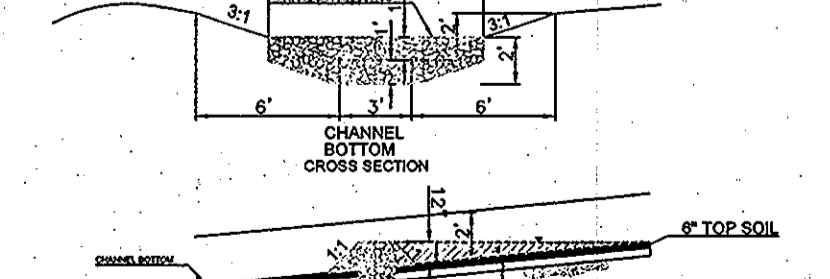
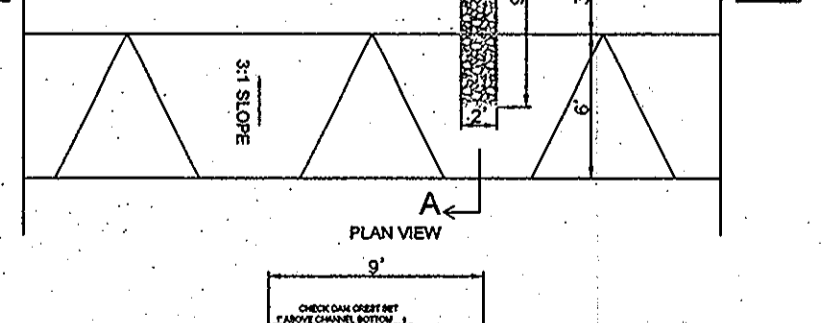
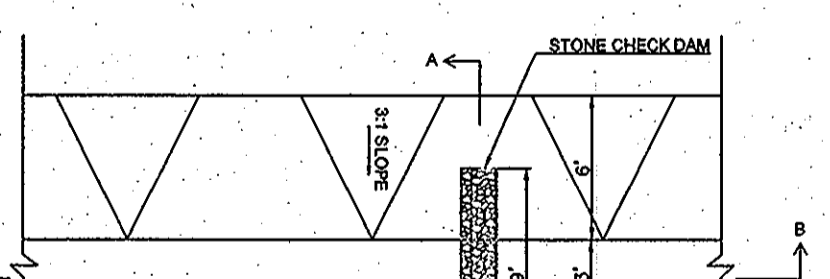
MICROBIORETENTION PLANTING SCHEDULE					
KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	
AR	2	ACER RUBRUM OCTOBER GLORY	2 1/2"-3" CAL B & B		
IG	3	OCTOBER GLORY RED MAPLE	2 1/2"-3" HT	CONT	
PV	90	SWITCH GRASS PANNICUM VIRGATUM	1 GALLON	24" O.C.	
MD	50	BEE BALM MICHAELIS DIDYMA	1 GALLON	24" O.C.	
EP	50	JOE EYE WEED EUPATORIUM PURPUREUM	1 GALLON	48" O.C.	

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1) DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED OPEN CHANNEL SYSTEM GRASS SWALES AND WET SWALES (M-8)**

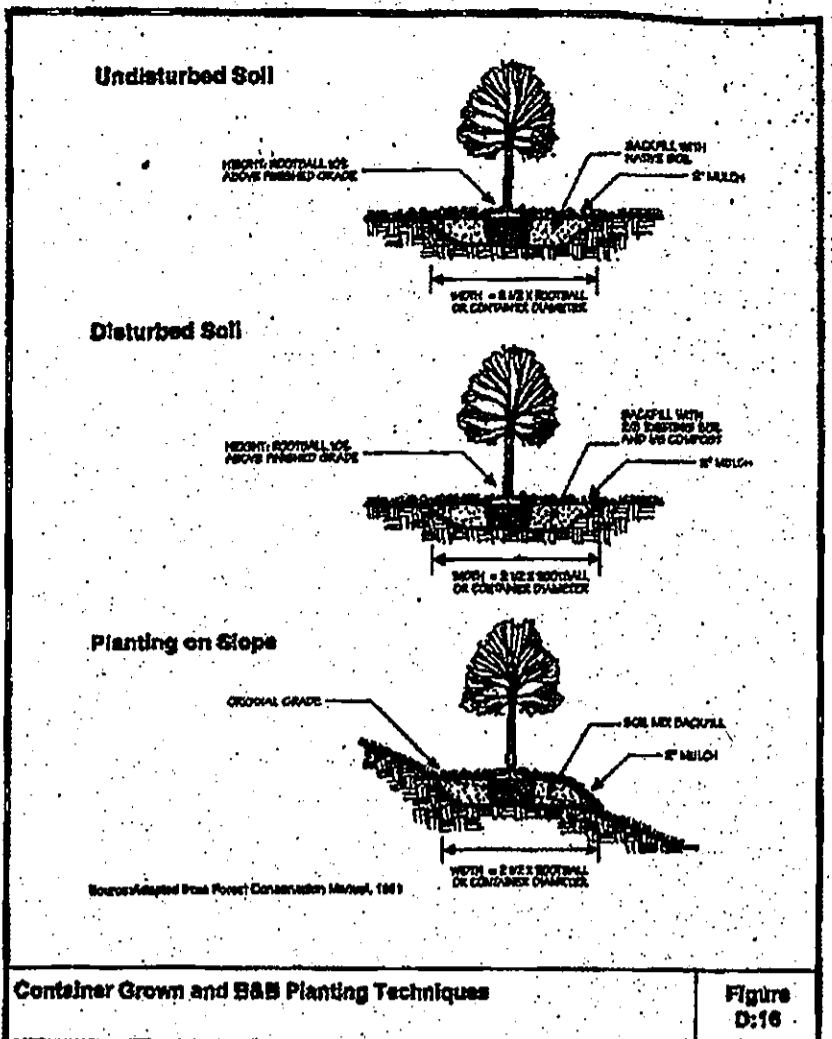
1. THE OPEN CHANNEL SYSTEM SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE OPEN CHANNEL SHALL BE MOWED A MINIMUM OF AS NEEDED DURING THE GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 6 INCHES.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE OPEN CHANNEL SYSTEM SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
5. REMOVE SILT IN THE OPEN CHANNEL SYSTEM WHEN IT EXCEEDS 25% OF THE ORIGINAL WQ.
6. INSPECT CHECK DAMS TWICE A YEAR FOR STRUCTURAL INTEGRITY. RESTORE CHECK DAMS TO ORIGINAL CONDITION AS APPLICABLE.



**GRASSED SWALE DETAIL M-8**  
NOT TO SCALE

NOTES:

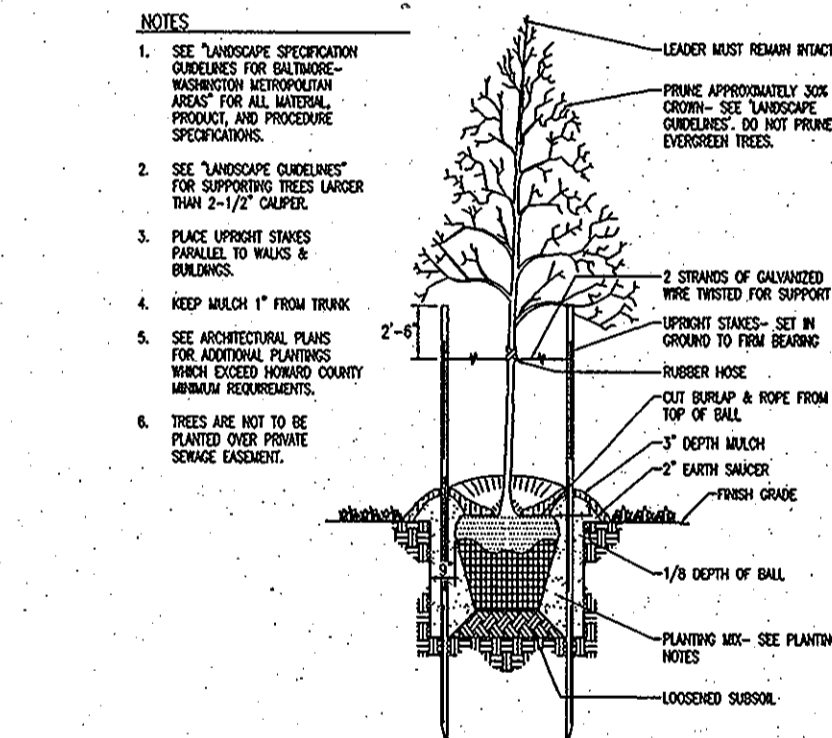
1. CHECK DAMS TO BE KEPT INTO THE EARTH 12" DEEP.
2. CHECK DAMS TO BE CONSTRUCTED USING 24" STONE.



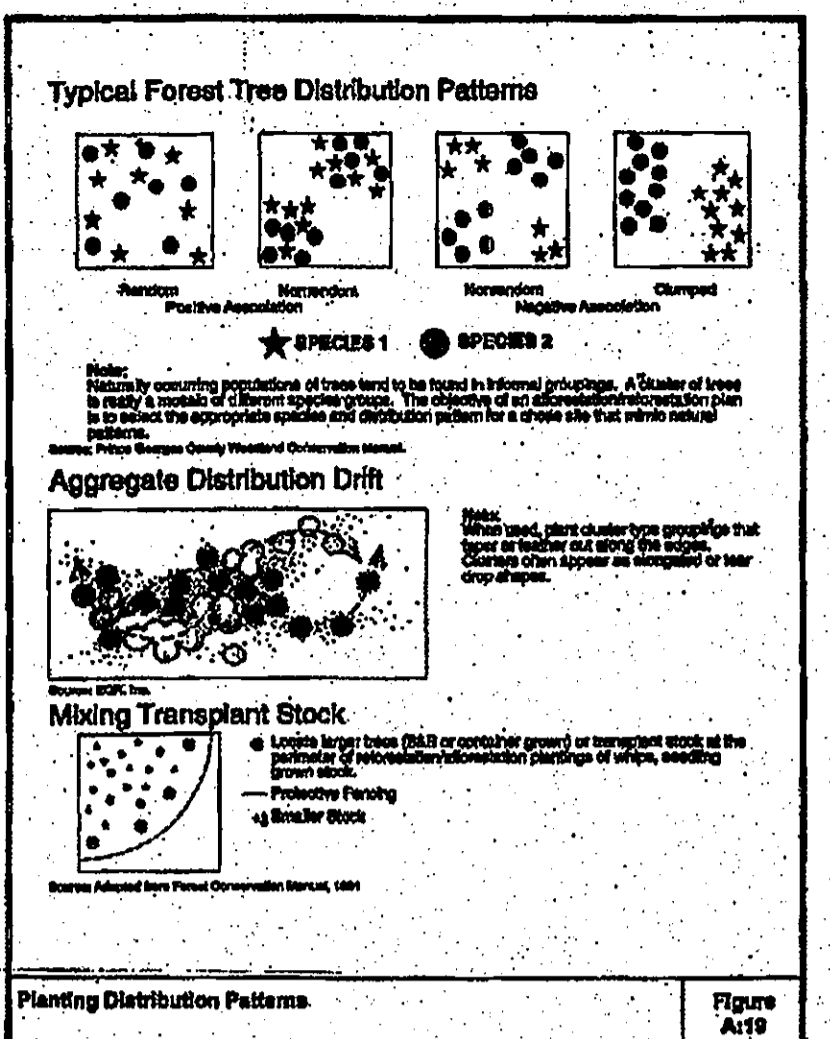
**PLANT SCHEDULE FOR ONSITE REFORESTATION**

QUAN.	BOTANICAL NAME	CONTAINER GROWN SIZE	APPROXIMATE SPACE SPACING (FEET ON CENTER)
149	Acer rubrum Red Maple	1" caliper B & B	15 x 15
148	Pteris occidentalis Sycamore	1" caliper B & B	15 x 15
148	Quercus coccinea Scarlet Oak	1" caliper B & B	15 x 15
148	American Sweetgum Liquidambar styraciflua	1" caliper B & B	15 x 15
149	Prunus spp. Flowering Cherry	1" caliper B & B	15 x 15

**AFFORESTATION PROVIDED - FCE1**  
3.71 ACRES OR 161,610 SF  
1" CALIPER TREES  
742 TREES @ 200 TREES PER ACRE



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



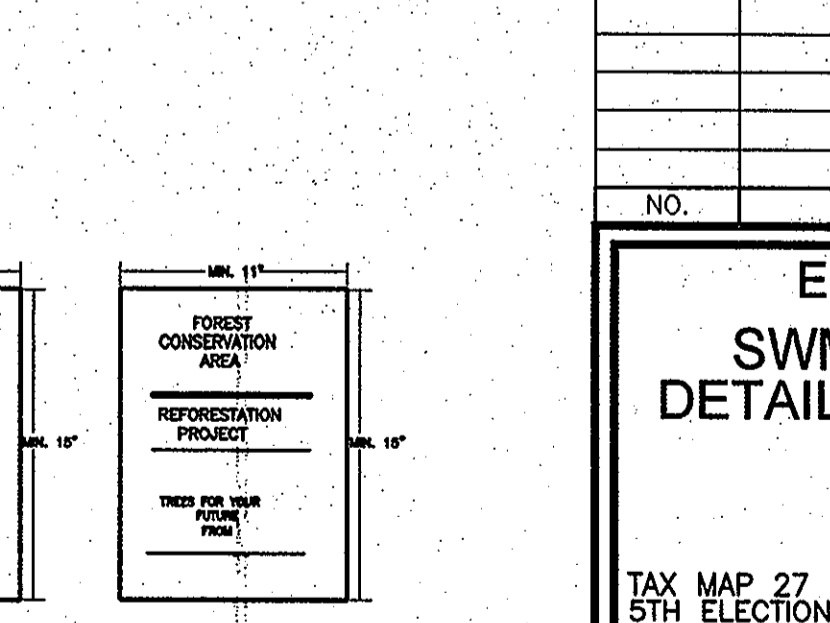
**STANDARD FOREST CONSERVATION CONSTRUCTION NOTES**

**Construction and Planting Practices**

The measures to protect forest retention areas emphasize isolating them from development impacts. Retention or afforestation, in addition to other measures, shall be established by development activities or may be located on land which will require substantial preservation measures through planning and zoning. Appropriate preservation measures shall be established by the developer. Appropriate preservation measures shall be established by the developer. Appropriate preservation measures shall be established by the developer.

**POST-CONSTRUCTION MANAGEMENT PRACTICES**

Many of the post-construction and management practices for the construction period must be continued for at least 2 growing seasons following official certification of completion of the forest conservation plan, and that all post-construction measures required for the construction period have been put in place. Appropriate monitoring and maintenance shall be provided for each certification. Planting must occur within 300' to be certified for the construction period.



**STANDARD FOREST CONSERVATION SIGNAGE DETAIL**

NOTES:

1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

**OWNER**  
JONATHAN STUDDARD  
14118 HOWARD ROAD  
DAYTON MD 21036  
443-364-8075

**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING**

DESIGN BY: JTD  
DRAWN BY: JTD  
CHECKED BY: RHV  
DATE: DECEMBER 2010  
SCALE: 1" = 80'  
W.O. NO.: 08-50

**PROFESSIONAL CERTIFICATE**  
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. 16193, EXPIRATION DATE 09-27-2012.

ROBERT H. VOGEL, PE No. 16193

Site	Number of Trees per Acre	Approximate Spacing Feet on Center	Survivability at End of Second Growing Season
Site 1	700	8 x 8	85%
Site 2	400	10 x 10	80%
Site 3	300	12 x 12	75%
Site 4	200	15 x 15	65%
Site 5	100	20 x 20	50%

**Site Stocking**

These stocking and survival requirements are the minimum numbers estimated to meet the objectives of the forest conservation plan. In certain circumstances, any modification of the above requirements shall be made by the developer. The developer shall be responsible for the implementation of the above requirements. The developer shall be responsible for the implementation of the above requirements.

**Education of New Occupants**

The occupants of a new development, whether owners or tenants, must be advised of the location and extent of forest conservation areas and the importance of maintaining these areas. The developer shall be responsible for the implementation of the above requirements. The developer shall be responsible for the implementation of the above requirements.

**ENVIRONMENTAL CONCEPT PLAN**  
**SWM AND FOREST CONSERVATION DETAILS AND SWM DRAINAGE AREA MAP**  
**STUDDARD PROPERTY**  
**LOTS 1, 2, 3, AND 4**

TAX MAP 27 BLOCK 6  
5TH ELECTION DISTRICT

PARCEL 31  
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELLIOTT CITY MD 21034  
TEL: 410.461.7666  
FAX: 410.461.8961

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3 SHEET OF 3