BENCHMARKS					
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	
15FA	595,906.955	1,325,627.710	486.95'	29.0' E OF S.B.L. MD RT. 32 22.8' NORTHEAST TRAFFIC SIGNAL POLE	
15FC	595,354.551	1,327,142.598	570.235'	54' NORTHWEST OF CL OF CLOVER HILL RD. 6.8' NORTH OF EP OF MD RT. 144	

FOREST CONSERVATION AREA CHART						
EASEMENT	RETENTION AREA (AC.)	AFFORESTATION AREA (AC.)		NON-CREDIT AREA (AC.)		
1	1.8578	0	1.8578	0	1,8578	
2	0	7.5265	7.5265	0	7,5265	
3	0.8916	4.8663	4.8663	0.8916	5.7579	

SITE ANALYSIS DATA CHART					
TOTAL PROJECT AREA	PRE	PRESENT ZONING PROPOSED USE			
26.69 AC±		RC-DEO	RESIDENTAIL / FOREST MITIGATION BANK		
PRESERVATION EASEMENT AREA		TAX MAP, GRID, PARCEL			
26.69 AC±		TAX I	TAX MAP 15, GRID 17, PARCEL 18		
FOREST RETENTION EASEMENT AREA		AFFORESTATION (PLANTING) FOREST CONSERVATION EASE EASEMENT AREA TOTAL AREA		T CONSERVATION EASEMENTS TOTAL AREA	
1.86 AC±	12,39 AC±		14.25		
NUMBER OF BUILDABLE PARCELS	ang altra ay burb in mantas grand, ng 179 pagang, m	AS	SSOCIATED FILE NUMBERS		
1			F-17-054 , RE-16-004-SI		
APPROXIMATE STREAM AREA		APPROXIMATE WETLAND AREA		APPROXIMATE FLOODPLAIN AREA	
2,614 LF		4.66 AC±		3,32 AC±*	
APPROXIMATE STREAM BUFFER AREA		APPROXIMATE WETLAND BUFFER AREA		APPROXIMATE STEEP SLOPES AREA	
7.98 AC±		2.19 AC±		0.48 AC±	

^{*} SEE GENERAL NOTE 15 - THIS SHEET

SALE	CONSERVATION OBLIGATION	PROJECT NAME	HOWARD COUNTY FILE NUMBER	REMAINING ACREAGE
			,	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
		<u> </u>		

^{* 1.86} ACRES TOTAL OF FOREST CONSERVATION EASEMENT - RETENTION

FCE BANK SALES ACREAGE CHART: AFFORESTATION- 12.39 ACRES*				
SALE	CONSERVATION OBLIGATION	PROJECT NAME	HOWARD COUNTY FILE NUMBER	REMAINING ACREAGE
		N		
.,,				
44				
,	,	200 min 100 mi		**************************************

^{* 12.39} ACRES TOTAL OF FOREST CONSERVATION EASEMENT - AFFORESTATION

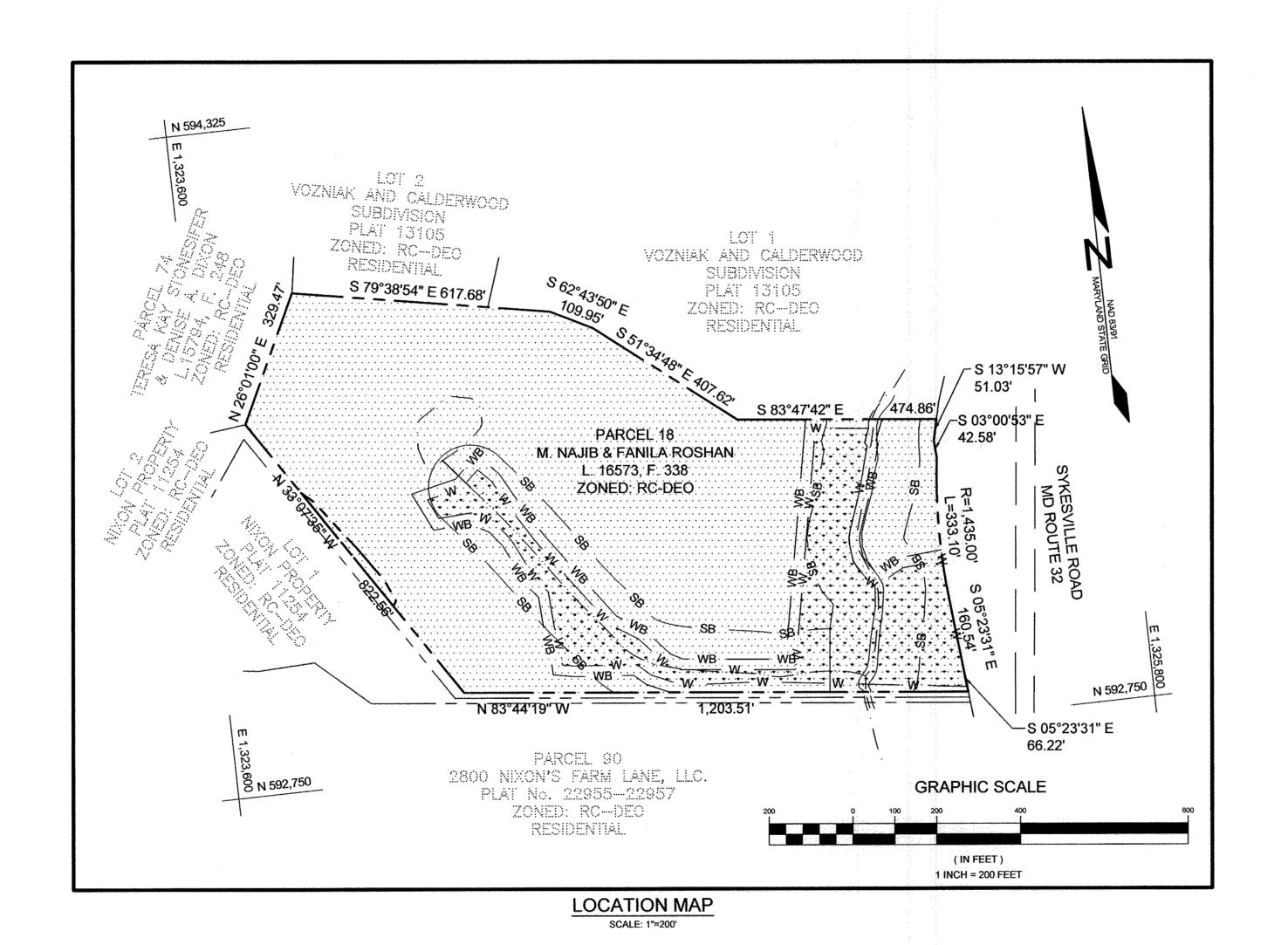
EASEMENT			
LINE TABLE			
LINE	BEARING	DIST.	
L1	S 38°25'12" W	57.89	
L2	N 51°34'48" W	167.18	
L3	S 76°09'40" W	158,84	
L4	S 64°43'54" W	75.41	
L5	N 77°25'58" W	100.38	
L.6	S 57°16'59" W	122.38	
L7	N 87°45'42" W	22,32'	
L.8	N 47°57'59" W	41.44'	
L9	N 01°56'33" W	35.61'	
L10	N 35°08'49" E	235.31'	
L11	S 08°53'02" E	240.21	
L12	N 79°25'02" E	123.04	
L13	N 49°02'39" E	78.58'	
L14	S 42°03'02" E	41.90'	
L15	S 08°46'53" E	50.94	
L16	S 36°31'24" E	73,24	
L17	S 46°38'42" E	75.14	
L18	S 09°25'11" E	48.06'	
L19	S 14°33'47" W	228.99	
L20	S 16°20'49" W		
L21	N 83°44'22" W		
L22	N 83°52'58" W	957.76'	
L23	N 16°20'49" E	47,14	
L24	N 14°33'47" E	196.98	
L25	S 37°04'43" E	242.37	
L26	S 65°16'07" E	69.97	
L27	S 83°40'46" E	300.69	
L28	N 08°50'06" E	560.95	
L29	S 83°16'25" E	289.63	
L30	S 50°28'45" E	5,65	
L31	S 00°57'28" W	<u> </u>	
L32	S 00°09'42" E	256.98	
L33	S 05°20'43" E	10.72	
L34	S 83°45'48" W	 	
L35	S 06°14'12" E	20.00	
LJO			

L38 S 05°10'23" W 125.21'

A SURETY FOR THE 12.39 ACRES OF FOREST CONSERVATION PLANTING SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT. THE SURETY WILL BE BASE3D ON THE \$0.50 PER SQUARE FOOT OF PLANTING AND WILL BE \$269,855.00.

SITE DEVELOPMENT PLAN ROSHAN PROPERTY

FOREST CONSERVATION MITIGATION BANK PARCEL 18 HOWARD COUNTY, MARYLAND



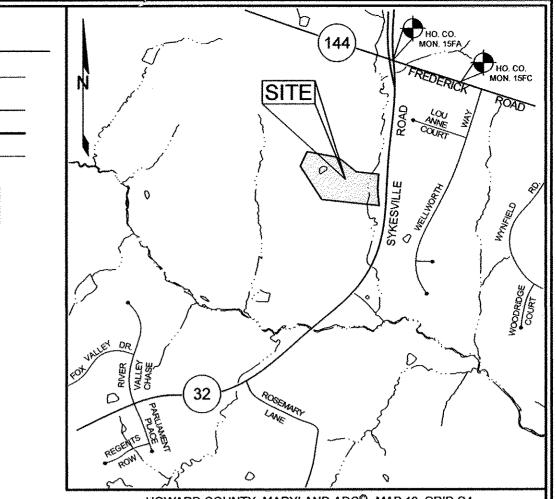
RESERVATION OF PUBLIC UTILITY AND FOREST CONSERVATION EASEMENTS DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, STORM DRAINAGE, OTHER PUBLIC UTILITIES AND FOREST CONSERVATION (DESIGNATED AS "FOREST CONSERVATION AREA") LOCATED IN, ON, OVER, AND THROUGH LOT(S)/PARCELS, ANY CONVEYANCES OF THE AFORESAID LOT(S)/PARCELS SHALL BE SUBJECT TO EASEMENTS HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOT(S)/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 COMPLETION OF THE DEVELOPER'S OBLIGATION 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.

				Company of the Control of the Contro
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS IN ACCORDANCE WITH THE MASTER PLAN OF HOWARD COUNTY			
The hard for KS 1-17-18 CHIEF, DIVISION OF LAND DEVELOPMENT VIN DATE				
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE	BADULA DE MAURA REFERENCE 12/2018 COUNTY HEALTH OFFICER DATE HOWARD COUNTY HEALTH DEPARTMENT	NO.	DESCRIPTION REVISIONS	DATE

PERMIT INFORMATION CHART PROJECT NAME **TAX MAP PARCEL 18** ROSHAN PROPERTY TAX MAP # | ELECT. DIS. CENSUS TRACT RC-DEO 3RD 603003.02 SEWER CODE **DPZ FINAL NUMBER** 24468

OWNER/DEVELOPER

M. NAJIB ROSHAN AND FANILA ROSHAN 2770 STATE ROUTE 32 WEST FRIENDSHIP, MARYLAND 21794 240.508.3200



HOWARD COUNTY, MARYLAND ADC® MAP 18, GRID C4 **VICINITY MAP**

GENERAL NOTES:

LEGEND

LIMIT OF WETLANDS

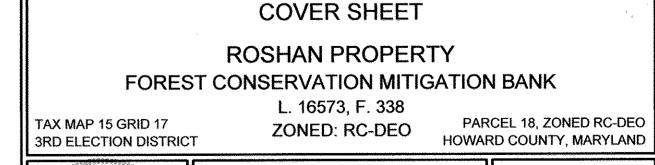
WETLANDS BUFFE EXISTING STREAM

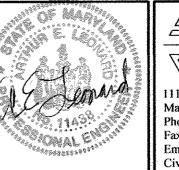
EXITING WETLANDS

- SUBJECT PROPERTY IS ZONED: RC-DEO PER THE10/06/2013 COMPREHENSIVE ZONING PLAN PROPERTY ADDRESS: 2770 ROUTE 32, WEST FRIENDSHIP, MARYLAND 21794.
- TOTAL AREA OF PROPERTY: 26.6945 AC.±
- THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN MONUMENT BOUNDARY SURVEY PREFORMED OR ABOUT FEBRUARY OF 2015 BY NJR & ASSOCIATES, LLC.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH I 15FA AND 15FC WERE USED FOR THIS PROJECT.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004 THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE
- THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT, OF AT LEAST 10,000 SF AS REQUIRED BY THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE
- 12 NO GRADING REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR BUFFERS, FLOOD PLAINS, STEEP SLOPES
- 13. THE ENTIRE 26,6945 ACRES OF THIS PARCEL IS ENCUMBERED BY A PRESERVATION EASEMENT AGREEMEN WITH HOWARD COUNTY MARYLAND. THE RESTRICTIONS AND PERMITTED USES ASSOCIATED WITH THE

- AREA, A 100-YEAR FLOOD PLAIN DELINEATION IS NOT REQUIRED FOR THIS PROJECT, THE FLOODPLAIN SHOW! HEREON HAS BEEN APPROXIMATED BY USING THE ELEVATIONS FROM STUDIES COMPLETED FOR ADJACENT
- SUPPORT OF ANY LAND DEVELOPMENT, OR IN SUPPORT OF ANY LAND DISTURBANCE ACTIVITY.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT 19. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
- 20. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED UNDER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT, NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED VITHIN THE FOREST CONSERVATION EASEMENTS, HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- 21. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED
- 22. THERE IS AN EXISTING DWELLING (CIRCA 1975), BANK BARN(CIRCA 1955-1975) AND STRUCTURES (CIRCA 1975) LOCATED ON PARCEL 18 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING/ STRUCTURES ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS
- DENOTES THE AREA OF PRESERVATION EASEMENT WITH HOWARD COUNTY, MARYLAND AND M. NAJIB AND FANILA ROSHAN. THE EASEMENT AGREEMENT
- OUTLINES THE MAINTENANCE RESPONSIBILITIES OF THE OWNER, PROHIBITS SUBDIVISION OF THE PARCEL AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.
- 24. THIS FOREST MITIGATION BANK IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL BECAUSE NO NEW LOTS ARE BEING CREATED.
- 25. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- 26. 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
- 27. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY
- EXCAVATION WORK BEING DONE. 28. WATER AND SEWER ARE PRIVATE.
- 29. NO STORMWATER MANAGEMENT IS REQUIRED FOR THIS PROJECT. 30. EXISTING UTILITIES ARE BASED ON FIELD LOCATION.
- 31. THIS PLAN IS EXEMPT FROM REQUIREMENTS OF THE FOREST CONSERVATION PROGRAM PER SECTION
- 16.1202(B)(1)(Vii) OF HOWARD COUNTY SUBDIVISION AND LAND REGULATIONS BECAUSE THE PROPERTY IS A PLAN OF EASEMENT AND NO NEW LOTS ARE BEING CREATED. A FOREST CONSERVATION BANK IS BEING
- 32. THERE ARE NO CEMETERIES ON-SITE.
- 33. THE HOWARD COUNTY PLANNING AND ZONING, RESOURCE CONSERVATION DISTRICT HAS ESTABLISHED THE EXISTING BARN AS A BANK BARN(CIRCA DATE 1955-1975), THAT WOULD REQUIRE A DEMOLITION PERMIT IF IT WERE TO BE REMOVED. THERE ARE NO OTHER HISTORIC STRUCTURES ON SITE. 34. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP WIDTH, AND LOT AREA AS REQUIRED BY
- THE MARYLAND DEPARTMENT OF THE ENVIRONMENT. 35. TOTAL AREA OF FOREST CONSERVATION MITIGATION BANK AREA IS 14.25 ACRES (1.86 ACRES OF RETENTION
- AND 12.39 ACRES OF AFFORESTATION) LOCATED WITHIN THREE FOREST CONSERVATION EASEMENTS. THE TOTAL SURETY REQUIRED FOR THE AFFORESTATION PORTION OF THE BANK IS \$269,855.00 WHICH WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS PLAN.

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SIMPLIFIED FOREST STAND DELINEATION & FOREST CONSERVATION PLAN
3	SIMPLIFIED FOREST STAND DELINEATION & FOREST CONSERVATION PLAN





ENGINEERING DRAWN BY: PS/AEA GROUP, LLC

11130 Dovedale Court, Suite 200 Marriottsville, Maryland 21104 Phone: 443.325.5076 Fax: 410.696.2022

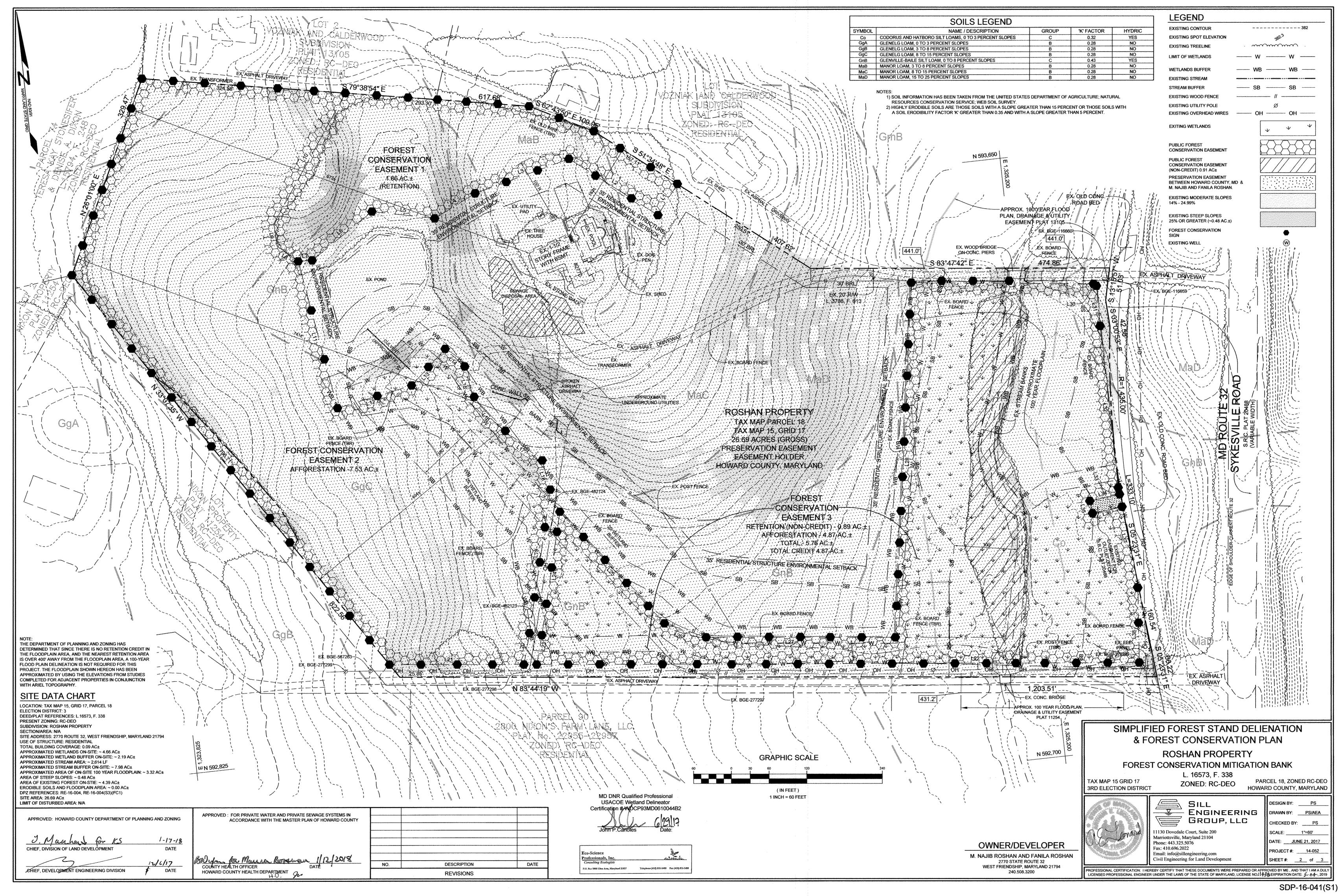
DATE: <u>JUNE 21, 2017</u> PROJECT#: 14-052 Email: info@sillengineering.com Civil Engineering for Land Development SHEET#: __1__ of __3_

ROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME , AND THAT I AM A D LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 11432 EXPIRATION DATE: 5-04-19

DESIGN BY: PS

CHECKED BY: PS

SCALE: AS SHOWN



EXISTING CONDITIONS OVERVIEW

THE SUBJECT PROPERTY IS A 26.7+ACRE PARCEL LOCATED AT 2770 MARYLAND ROUTE 32 IN THE WEST FRIENDSHIP SECTION OF HOWARD COUNTY, MARYLAND. THE PROPERTY INCLUDES A SINGLE FAMILY HOME THAT IS SURROUNDED BY LAWN AREA. ACCESSORY USES AROUND THE HOME INCLUDE PLAYSETS, STORAGE, A POOL AND GARDEN AREAS. THE MAJORITY OF THE SITE WAS PREVIOUSLY USED AS PASTURE THOUGH NO CURRENT PASTURE USES OCCURRING. A SMALL BARN IS LOCATED TO THE SOUTH OF THE HOUSE AND LAWN AREA. LANDSCAPING AROUND THE HOUSE AND YARD INCLUDES RED BUD, HYDRANGEA, AZALEAS, RHODODENDRON, JAPANESE MAPLE AND HOLLY. SCATTERED TREES ARE PRESENT WITHIN THE LAWN AREAS ALSO. RED MAPLE, WHITE OAK, PIGNUT HICKORY AND BLACK CHERRY ARE COMMONLY OBSERVED IN THE TREED

THE HOUSE IS LOCATED ON A KNOLL THAT OVERLOOKS THE PROPERTY. FOREST AREAS ARE PRESENT AROUND THE HOME AND ALONG THE ADJACENT SLOPES. THE FOREST COMMUNITY IS COMPRISED OF A MIXED OAK STAND THAT INCLUDES WHITE OAK, BLACK OAK, AND TULIP POPLAR IN ITS CANOPY. FLOWERING DOGWOOD, BLACK CHERRY, BLACK WALNUT AND RED MAPLE WERE ALSO NOTED, MOST COMMONLY IN THE UNDERSTORY OF THE COMMUNITY. THE CANOPY TREES ARE GENERALLY 12-29 INCHES DIAMETER AT BREAST HEIGHT WITH SEVERAL LARGER INDIVIDUALS NOTED. SPECIMEN TREES ARE PRESENT WITHIN THE LAWN AROUND THE HOME AND WITHIN THE FOREST.

THE SHRUB LAYER OF THE FOREST IS LIMITED BUT DOES CONTAIN SPICEBUSH AND SHADBUSH. ORIENTAL BITTERSWEET, JAPANESE STILT GRASS, AND VIRGINIA CREEPER WERE ALL NOTED IN THE HERBACEOUS LAYER. SOME VINE GROWTH EXTENDS INTO THE UPPER VEGETATIVE LAYERS.

A SMALL FARM POND IS PRESENT IN THE IN THE VALLEY BELOW THE HOMESTEAD , JUST WEST OF THE BARN. THIS POND APPEARS TO HAVE BEEN CREATED BY EXCAVATION OF A HEADWATER WETLAND. THE POND IS DOMINATED BY OPEN WATER BUT DOES HAVE CATTAILS AND BLACK WILLOWS GROWING ALONG THE OUTER FRINGE. THE POND OUTFALLS TO PERENNIAL STREAM CHANNEL THAT CUTS THROUGH THE PASTURE. THE STREAM DRAINS ACROSS THE SITE AND JOINS WITH A LARGER TRIBUTARY FLOWS FROM NORTH TO SOUTH THE EASTERN END OF THE SITE. A LARGE 100 YEAR FLOODPLAIN HAS BEEN MAPPED FOR THIS LARGER TRIBUTARY.

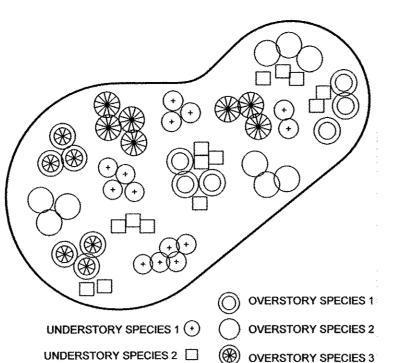
WETLAND DEVELOPMENT IS PRESENT ALONG THE STREAMSIDE TERRACES AND WITHIN THE 100 YEAR FLOODPLAIN. THE WETLANDS APPEAR TO HAVE BEEN MAINTAINED AS PART OF THE PASTURE COMPLEX, THOUGH RECENTLY MAINTENANCE HAS BEEN LIMITED. VEGETATION WITHIN THE WETLANDS INCLUDES BLUE VERVAIN, SOFT RUSH, NEW YORK IRONWEED, FOXTAIL SEDGE, LURID SEDGE AND MANY HEADED SEDGE. RED MAPLE AND SYCAMORE ARE PRESENT WITHIN THE FLOODPLAIN WETLANDS ADJACENT TO THE MAINSTREAM CHANNEL.

A LARGE PERCENTAGE OF THE PROPERTY IS UPLAND OLDFIELD/PASTURE. THOUGH THESE AREAS WERE PREVIOUSLY MAINTAINED AS PASTURE THEY HAVE NOT BEEN ROUTINELY MOWED THIS SEASON. NOTABLE VEGETATION WITHIN THE UPLAND OLD FIELDS INCLUDES COMMON MILKWEED, CURLED DOCK, KENTUCKY FESCUE, CANADA THISTLE, AGRIMONY, GOLDENRODS, AND ASTERS. SOME MULTIFLORA ROSE AND RASPBERRY COLONIZATION IS OCCURRING WITHIN THE FIELDS.

FOREST CONSERVATION BANK PROPOSAL

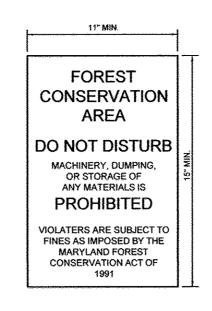
THE PROPERTY OWNERS ARE SEEKING TO CREATE A FOREST CONSERVATION BANK THAT WILL INCLUDE APPROXIMATELY1.86 ACRES OF FOREST RETENTION (OUTSIDE OF THE 100 YEAR FLOODPLAIN) AND 12.39 ACRES OF AFFORESTATION. THE PLANTING AREAS WILL CREATE A LARGE CONTIGUOUS FOREST BLOCK THAT WILL EXPAND THE ONSITE FOREST RESOURCES THE PLANTING AREAS WILL ALSO BE CONTIGUOUS WITH OFFSITE FOREST EXPANDING THE OVERALL VALUE OF THE PLANTING. THE PLANTINGS WILL INCREASE FOREST RESOURCES AND HABITAT FUNCTION IN THE AREA OF THE SITE AND WILL PROVIDE ENHANCEMENT WATER QUALITY BENEFIT WHERE PLANTINGS OCCUR WITHIN WETLANDS, BUFFERS AND FLOODPLAIN.

THE PLANTING PLAN HAS BEEN DESIGNED TO CREATE A NATURAL COMMUNITY WITH A MIX OF SUCCESSIONAL ELEMENTS. EARLY SUCCESSIONAL SPECIES HAVE BEEN FAVORED TO PROMOTE NATURAL COMMUNITY DEVELOPMENT WHILE SOME LATER SUCCESSIONAL SPECIES HAVE BEEN INCLUDED TO INCREASE DIVERSITY AND PROMPT FUTURE SUCCESSION.



THIS DIAGRAM SHOWS A TYPICAL DISPERSAL OF SPECIES WITHIN PLANTING AREA. THE SPACING SHALL BE IN ACCORDANCE WITH THE APPROVED PLANTING SCHEDULE, WHERE THE SIZE OF THE PLANTING STOCK VARIES, THE PLANTING UNITS SHALL INSTALLED AT AVERAGED SPACING TO PROVIDE APPROXIMATELY UNIFORM

RANDOM PLANTING DISTRIBUTION PLAN



FOREST CONSERVATION SIGN DETAIL NOT TO SCALE

- 1. BOTTOM OF SIGN TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE. 2 SIGNS TO BE PLACED APPROXIMATELY 50' APART, CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER
- 3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED. 4. SEE SDP 16-041 FOR SIGN LOCATIONS.
- 5. SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.

PLANTING SCHEDULE					
PLANTING U	ORESTATION AREA - 7.53 ACRES NITS REQUIRED: 5271 NITS PROVIDED: 5272				
QUANTITY	SPECIES	SIZE	SPACING	TOTAL FCA UNITS	
225	ACER NEGUNDO - BOX ELDER	2-3' WHIP	11' O.C.		
331	ACER RUBRUM - RED MAPLE	2-3' WHIP	11' O.C.		
250	JUGLANS NIGRA - BLACK WALNUT *	2-3' WHIP	11' O.C.		
225	JUNIPERUS VIRGINIANA - RED CEDAR	2-3' WHIP	11' O.C.		
300	LIRIODENDRON TULIPIFERA - TULIP POPLAR *	2-3' WHIP	11' O.C.		
300	NYSSA SYLVATICA - BLACK GUM	2-3' WHIP	11' O.C.		
300	PLATANUS OCCIDENTALIS - SYCAMORE	2-3' WHIP	11' O.C.		
300	PRUNUS SEROTINA - BLACK CHERRY *	2-3' WHIP	11' O.C.		
155	QUERCUS PALUSTRIS - PIN OAK	2-3' WHIP	11' O.C.		
250	VIBURNUM PRUNIFOLIUM - BLACKHAW*	2-3' WHIP	11' O.C.		
2636	TOTAL WHIP PLANTINGS X 2 UNITS /TREE =	FCA UNIT CF	REDIT	5272	
	TOTAL UNIT CREDIT		, , , , , , , , , , , , , , , , , , , 	5272	
ECE 2 AEE	ODECTATION ADEA AS ACRES				

AFFORESTATION PLAN

A. PLANTING PLAN AND METHODS

THE AFFORESTATION AREA WILL BE PLACED INTO A FOREST CONSERVATION EASEMENT.

PLANT SPECIES SELECTION WAS BASED ON OUR KNOWLEDGE REGARDING PLANT

COMMUNITIES IN MARYLAND'S PIEDMONT PLATEAU AND INFORMATION PROVIDED IN THE SOIL

SELECTION WAS ALSO BASED ON OUR KNOWLEDGE OF PLANT AVAILABILITY IN THE NURSERY

SURVEY ON TYPICAL VEGETATION FOR THE SOIL TYPE ON THE PLANTING SITE. SPECIES

AFFORESTATION WILL BE ACCOMPLISHED THROUGH A MIXED PLANTING OF WHIPS AND

TO PLANTING TO IMPROVE MOISTURE RETENTION IN THE ROOT SYSTEMS.

ROSE REMOVAL BEGIN AT LEAST SIX MONTHS PRIOR TO PLANTING.

REPLACED BY THE BEGINNING OF THE NEXT GROWING SEASON.

INSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE FCP.

PLANTING SPECIFICATIONS SHOWN ON THE FOREST CONSERVATION PLAN.

AMENDMENTS TO EXISTING SOIL WILL BE IN ACCORDANCE WITH THE PLANTING

B. PLANTING AND SOIL SPECIFICATIONS

LIMITED TO INDIVIDUAL PLANTING LOCATIONS.

C. GUARANTEE REQUIREMENTS

D. SECURITY FOR AFFORESTATION

FOR THIS PLAN.

BRANCHED TRANSPLANTS. CONTAINER GROWN STOCK IS RECOMMENDED BUT BAREROOT

STOCK MAY BE USED TO HELP CONTROL AFFORESTATION COSTS. IF BAREROOT STOCK IS

PRIOR TO PLANTING THE PROPOSED FOREST CONSERVATION EASEMENTS ALL MULTIFLORA

PERFORMED WITH MOWING AND HERBICIDE TREATMENTS. PHYSICAL REMOVAL OF ALL TOP

RECOMMENDED. NATIVE TREE AND SHRUB SPECIES OCCURRING WITHIN THE ROSE THICKETS

SHOULD BE RETAINED WHEREVER POSSIBLE. HERBICIDES TREATMENTS SHALL OCCUR ON 2

MONTH INTERVALS DURING THE FIRST GROWING SEASON AND ONCE EACH IN THE SPRING

AND FALL FOR SUBSEQUENT YEARS. HERBICIDE USED SHALL BE MADE SPECIFICALLY TO

SPECIFICATIONS. CARE SHOULD BE TAKEN NOT TO SPRAY PLANTED TREES OR NATURALLY

PLANT MATERIAL WILL BE INSTALLED IN ACCORDANCE WITH THE PLANTING DETAIL AND

SPECIFICATIONS SHOWN ON THE FOREST CONSERVATION PLAN. SOIL DISTURBANCE WILL BE

A 90 PERCENT SURVIVAL RATE OF THE AFFORESTATION PLANTINGS WILL BE REQUIRED

AFTER ONE GROWING SEASON. ALL PLANT MATERIAL BELOW THE 90 PERCENT SURVIVAL

THE END OF THE SECOND GROWING SEASON, A 75 PERCENT SURVIVAL RATE WILL BE

THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE SECOND GROWING SEASON. AT

REQUIRED. ALL PLANT MATERIAL BELOW THE 75 PERCENT SURVIVAL THRESHOLD WILL BE

SECTION 16-1209 OF THE HOWARD COUNTY FOREST CONSERVATION ACT REQUIRES THAT A DEVELOPER SHALL POST A SECURITY (BOND, LETTER OF CREDIT, ETC.) WITH THE COUNTY TO

TOTAL AREA OF FOREST CONSERVATION MITIGATION BANK AREA IS 14.25 ACRES (1.86 ACRES OF

CONSERVATION EASEMENTS. THE TOTAL SURETY REQUIRED FOR THE AFFORESTATION PORTION

OF THE BANK IS \$269,855.00 WHICH WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT

RETENTION AND 12.39 ACRES OF AFFORESTATION) LOCATED WITHIN THREE FOREST

OCCURRING NATIVE TREE/SHRUB SEEDLINGS. IT IS RECOMMENDED THAT INITIATION OF

ADDRESS WOODY PLANT MATERIAL AND SHALL BE APPLIED AS PER MANUFACTURERS'

ROSE IN THE PLANTING AREA SHALL BE REMOVED. REMOVAL OF THE ROSE MAY BE

GROWTH FOLLOWING BY A PERIODIC HERBICIDE TREATMENT OF STUMP SPROUTS IS

USED THE ROOT SYSTEMS OF ALL PLANTS WILL BE DIPPED IN AN ANTI-DESICCANT GEL PRIOR

FCE 3 - AFFORESTATION AREA - 4.9 ACRES PLANTING UNITS REQUIRED: 3430

PLANTING UNITS PROVIDED: 3430

QUANTITY	SPECIES	SIZE	SPACING	TOTAL FCA UNITS	
150	ACER NEGUNDO - BOX ELDER	2-3' WHIP	11' O.C.		
250	ACER RUBRUM - RED MAPLE	2-3' WHIP	11' O.C.		
215	BETULA NIGRA - RIVER BIRCH	2-3' WHIP	11' O.C.		
50	JUGLANS NIGRA - BLACK WALNUT *	2-3' WHIP	11' O.C.		
50	LIRIODENDRON TULIPIFERA - TULIP POPLAR *	2-3' WHIP	11' O.C.		
200	NYSSA SYLVATICA - BLACK GUM	2-3' WHIP	11' O.C.		
200	PLATANUS OCCIDENTALIS - SYCAMORE	2-3' WHIP	11' O.C.		
50	PRUNUS SEROTINA - BLACK CHERRY *	2-3' WHIP	11' O.C.		
200	QUERCUS PALUSTRIS - PIN OAK **	2-3' WHIP	11' O.C.		
150	SALIX NIGRA - BLACK WILLOW **	2-3' WHIP	11' O.C.		
150	ULMUS RUBRA - SLIPPERY ELM	2-3' WHIP	11' O.C.		
50	VIBURNUM PRUNIFOLIUM - BLACKHAW*	2-3' WHIP	11' O.C.	,	
1715	TOTAL WHIP PLANTINGS X 2 UNITS /TREE :	FCA UNIT C	REDIT	3430	
Name and Address of the State o	TOTAL UNIT CREDIT				

PLANTING NOTES:

PLANTING DENSITY BASED SPACING REQUIREMENTS: WHIPS WITH SHELTER @ 11' ON

* - THESE SPECIES SHOULD NOT BE PLANTED IN WETLANDS ** - THESE SPECIES SHOULD NOT BE PLANTED IN UPLANDS

PLANTING MAY BE MADE IN A CURVILINEAR FASHION ALONG CONTOUR. THE PLANTING SHOULD AVOID A GRID APPEARANCE BUT SHOULD BE SPACED TO FACILITATE MAINTENANCE.

MULTIFLORA ROSE/HEAVY BRUSH REMOVAL/CONTROL MAY BE REQUIRED PRIOR TO INSTALLATION OF PLANTING.

ALL WHIPS ARE REQUIRED TO BE INSTALLED WITH TREE SHELTERS PER HOWARD COUNTY FCA REQUIREMENTS

PLANTING UNITS DEFINED BY THE SPACING REQUIREMENTS ESTABLISHED IN THE FCA MANUAL. ONE PLANT UNIT IS DEFINED AS 1 SEEDLING OR WHIP WITHOUT SHELTER. THE MANUAL STATES THAT 700 SEEDLINGS/WHIPS WITHOUT SHELTERS ARE REQUIRED PER ACRE, OR 350 WHIPS W/SHELTERS, OR 200 1" CALIPER TREES, OR 100 2" CALIPER TREES BY CONVERSION IT HAS BEEN DETERMINED THAT A SEEDING OR WHIP WITHOUT SHELTER = 1 UNIT, WHIP WITH SHELTER = 2 UNITS, 1"CALIPER TREE = 3.5 UNITS AND 2" CALIPER TREE =7 UNITS. THE USE OF PLANT UNITS SIMPLIFIES THE PLANT DENSITY CALCULATIONS WHEN MIXING STOCK SIZE.

MAKE LATERAL SLICES IF ROOTBOUND ROOT SYSTEM KEEP 6 IN DIAMETER CLEARANCE OF MULCH AROUND STEM BACKFILL WITH 2" THICK MULCH RING EXISTING SOIL 24" IN DIAMETER MINIMUM

PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS I. REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER . USE A KNIFE TO CUT THROUGH BOTTOM HALF OF THE ROOT BALL. PLANT SHRUBS ON FORMED UP MOUNDS 4" ABOVE THE EXISTING GRADE

WHEN HIGH WATER TABLE CONDITIONS EXIST, OTHERWISE PLANT FLUSH WITH EXISTING GRADE 4. PLANTING HOLE TO BE 2-3 TIMES THE DIAMETER OF THE CONTAINER. 5. INSERT FERTILIZER TABLET, BACKFILL 2/3 OF THE ROOT BALL AND WATER.

6. AFTER WATER PERCOLATES, BACKFILL HOLE TO TOP OF ROOT BALL AND GENTLY TAMP SOIL TO FIRM CONTACT WITH PLANT. 7. APPLY MULCH RING AROUND PLANT KEEPING A 6 IN CLEARANCE FROM STEM.

> CONTAINER PLANTING DETAIL NOT TO SCALE

> > 1-17-18

DATE

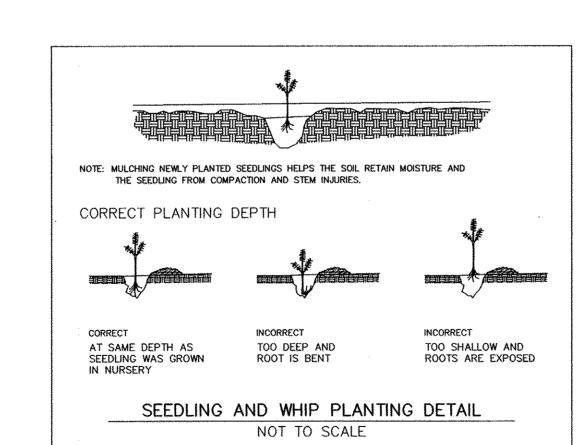
12/6/17

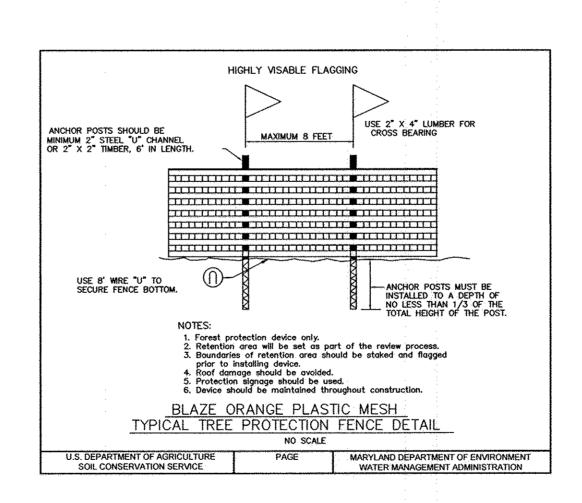
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS IN

COUNTY HEALTH OFFICER

HOWARD COUNTY HEALTH DEPARTMENT

ACCORDANCE WITH THE MASTER PLAN OF HOWARD COUNTY





MD DNR Qualified Professional USACOE Wetland Delineator Certification # WDCP93MD0610044B2

Eco-Science Telephone (415) 832-2480 Fax (416) 832-24 P.O. Box 5006 Glen Arm, Maryland 21057

DESCRIPTION DATE REVISIONS

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. FOREST PROTECTION TECHNIQUES

1. SOIL PROTECTION AREA (CRITICAL ROOT ZONE) THE SOIL PROTECTION AREA, OR CRITICAL ROOT ZONE, OF A TREE IS THAT PORTION OF THE SOIL COLUMN WHERE MOST OF ITS ROOTS MAY BE FOUND. THE MAJORITY OF ROOTS RESPONSIBLE FOR WATER AND NUTRIENT UPTAKE ARE LOCATED JUST BELOW THE SOIL SURFACE. TEMPORARY FENCING SHALL BE PLACED AROUND THE CRITICAL ROOT ZONE OF THE FOREST IN AREAS WHERE THE FOREST LIMITS OCCUR WITHIN 25 FEET OF THE

LIMIT OF DISTURBANCE. 2. FENCING AND SIGNAGE

EXISTING FOREST LIMITS OCCURRING WITHIN 25 FEET OF THE LIMITS OF DISTURBANCE SHALL BE PROTECTED USING TEMPORARY PROTECTIVE FENCING. PERMANENT SIGNAGE SHALL BE PLACED AROUND THE AFFORESTATION AREA PRIOR TO PLANT INSTALLATION, AS SHOWN ON THE PLAN.

B. PRE-CONSTRUCTION MEETING

UPON STAKING OF LIMITS OF DISTURBANCE A PRE-CONSTRUCTION MEETING WILL BE HELD BETWEEN THE DEVELOPER, CONTRACTOR AND APPROPRIATE COUNTY INSPECTOR. THE PURPOSE OF THE MEETING WILL BE TO VERIFY THAT ALL SEDIMENT CONTROL IS IN ORDER. AND TO NOTIFY THE CONTRACTOR OF POSSIBLE PENALTIES FOR NON-COMPLIANCE WITH THE FCP.

C. STORAGE FACILITIES/EQUIPMENT CLEANING

ALL EQUIPMENT STORAGE, PARKING, SANITARY FACILITIES, MATERIAL STOCKPILING, ETC. ASSOCIATED WITH CONSTRUCTION OF THE PROJECT WILL BE RESTRICTED TO THOSE AREAS OUTSIDE OF THE PROPOSED FOREST CONSERVATION EASEMENT. CLEANING OF EQUIPMENT WILL BE LIMITED TO AREA WITHIN THE LOD OF THE PROPOSED HOMESITES. WASTEWATER RESULTING FROM EQUIPMENT CLEANING WILL BE CONTROLLED TO PREVENT RUNOFF INTO ENVIRONMENTALLY SENSITIVE AREAS.

D. SEQUENCE OF CONSTRUCTION

F. POST-CONSTRUCTION MEETING

THE FOLLOWING TIMETABLE REPRESENTS THE PROPOSED TIMETABLE FOR THE PROJECT. BELOW FIND A PROPOSED SEQUENCE OF CONSTRUCTION.

1. BEGIN MULTIFLORA ROSE REMOVAL. INSTALL PERMANENT PROTECTIVE SIGNAGE FOR EASEMENTS AND INITIATE PLANTINGS IN ACCORDANCE WITH FOREST CONSERVATION PLAN

2. HOLD POST-CONSTRUCTION MEETING WITH COUNTY INSPECTORS TO ASSURE COMPLIANCE WITH FCP. SUBMIT CERTIFICATION OF INSTALLATION.

3. MONITOR AND MAINTAIN PLANTINGS FOR 2 YEARS.

E. CONSTRUCTION MONITORING ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL DESIGNATED BY THE DEVELOPER, WILL MONITOR CONSTRUCTION OF THE PROJECT TO ENSURE THAT ALL ACTIVITIES ARE IN COMPLIANCE WITH THE FOREST CONSERVATION PLAN.

UPON COMPLETION OF CONSTRUCTION, ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL DESIGNATED BY THE DEVELOPER. WILL NOTIFY THE COUNTY THAT CONSTRUCTION HAS BEEN COMPLETED AND ARRANGE FOR A POST-CONSTRUCTION MEETING TO REVIEW THE PROJECT SITE. THE MEETING WILL ALLOW THE COUNTY INSPECTOR TO VERIFY THAT AFFORESTATION PLANTINGS HAVE BEEN INSTALLED.

POST-CONSTRUCTION MANAGEMENT PLAN

HOWARD COUNTY REQUIRES A TWO YEAR POST-CONSTRUCTION MANAGEMENT PLAN BE PREPARED AS PART OF THE FOREST CONSERVATION PLAN. THE PLAN GOES INTO EFFECT UPON ACCEPTANCE OF THE CONSTRUCTION CERTIFICATION OF COMPLETION BY THE COUNTY. ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL DESIGNATED BY THE DEVELOPER, WILL BE RESPONSIBLE FOR IMPLEMENTATION OF THE POST-CONSTRUCTION MANAGEMENT PLAN

THE FOLLOWING ITEMS WILL BE INCORPORATED INTO THE PLAN:

FENCING AND SIGNAGE PERMANENT SIGNAGE INDICATING THE LIMITS OF THE RETENTION/AFFORESTATION AREAS TO BE PLACED IN FOREST CONSERVATION ASEMENTS SHALL BE MAINTAINED.

GENERAL SITE INSPECTIONS/MAINTENANCE OF PLANTINGS SITE INSPECTIONS WILL BE PERFORMED A MINIMUM OF THREE TIMES DURING THE GROWING SEASON. THE PURPOSE OF THE INSPECTIONS WILL BE TO ASSESS THE HEALTH OF THE AFFORESTATION PLANTINGS. APPROPRIATE MEASURES WILL BE TAKEN TO RECTIFY ANY PROBLEMS WHICH MAY ARISE.

IN ADDITION, MAINTENANCE OF THE AFFORESTATION PLANTINGS WILL INVOLVE THE FOLLOWING STEPS:

WATERING - ALL PLANT MATERIAL SHALL BE WATERED TWICE A MONTH DURING THE 1ST GROWING SEASON, MORE OR LESS FREQUENTLY DEPENDING ON WEATHER CONDITIONS. DURING THE SECOND GROWING SEASON, ONCE A MONTH DURING MAY-SEPTEMBER, IF REMOVAL OF INVASIVE EXOTICS AND NOXIOUS WEEDS. OLD FIELD SUCCESSIONAL

SPECIES WILL BE RETAINED. IDENTIFICATION OF SERIOUS PLANT PESTS AND DISEASES, TREATMENT WITH

APPROPRIATE AGENT.

PRUNING OF DEAD BRANCHES AFTER 12 AND 24 MONTHS, REPLACEMENT OF PLANTS. IF REQUIRED. IN ACCORDANCE WITH THE GUARANTEE REQUIREMENTS SHOWN ON THE FCP.

EDUCATION THE BANK DEVELOPER WILL PROVIDE APPROPRIATE MATERIALS TO SUBSEQUENT PROPERTY OWNERS INFORMING THEM OF THE LOCATION AND PURPOSE OF THE FOREST CONSERVATION EASEMENTS ON THE PROPERTY. MATERIALS MAY INCLUDE SITE PLANS AND

INFORMATION EXPLAINING THE INTENT OF THE FOREST CONSERVATION LAW. AT THE END OF THE TWO YEAR POST-CONSTRUCTION MANAGEMENT PERIOD, ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL, WILL SUBMIT TO THE

ADMINISTRATOR OF THE HOWARD COUNTY FOREST CONSERVATION PROGRAM CERTIFICATION THAT ALL RETENTION/AFFORESTATION REQUIREMENTS HAVE BEEN MET. UPON ACCEPTANCE OF THIS CERTIFICATION. THE COUNTY WILL RELEASE THE DEVELOPER FROM ALL FUTURE OBLIGATIONS AND RELEASE THE DEVELOPER'S BOND.

OWNER/DEVELOPER

M. NAJIB ROSHAN AND FANILA ROSHAN 2770 STATE ROUTE 32 WEST FRIENDSHIP, MARYLAND 21794 240.508.3200

SIMPLIFIED FOREST STAND DELIENATION & FOREST CONSERVATION PLAN **ROSHAN PROPERTY**

FOREST CONSERVATION MITIGATION BANK

L. 16573, F. 338 TAX MAP 15 GRID 17 **3RD ELECTION DISTRICT**



11130 Dovedale Court, Suite 200 Marriottsville, Maryland 21104

Phone: 443,325,5076 Fax: 410.696.2022 Email: info@sillengineering.con Civil Engineering for Land Development

DATE: JUNE 21, 2017 PROJECT#: 14-052 SHEET#: __3__ of __?

ROFESSIONAL CERTIFICATION: 1 HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME , AND THAT I AM A DU ICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO 11238 EXPIRATION DATE: 5 - 04 -, 2019

SDP-16-041(S1)

PARCEL 18, ZONED RC-DEO

DESIGN BY: JC / PS

DRAWN BY: PS/AEA

CHECKED BY: PS

SCALE: AS SHOWN

HOWARD COUNTY, MARYLAND

J. Muenhar Cx

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISIÓN OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING