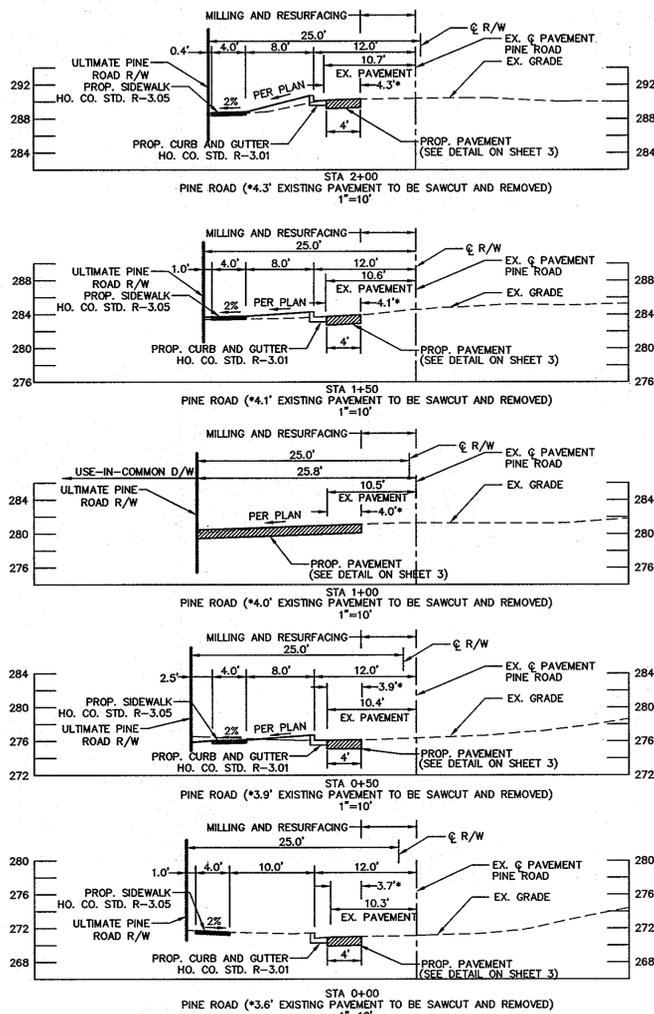


SHEET INDEX

- 1 SUPPLEMENTAL, ROAD CONSTRUCTION, GRADING, AND SEDIMENT AND EROSION CONTROL PLAN
- 2 SUPPLEMENTAL, LANDSCAPE, AND STORMWATER MANAGEMENT PLAN
- 3 NOTES AND DETAILS
- 4 NOTES AND DETAILS
- 5 OFFSITE FOREST CONSERVATION PLAN



PINE ROAD IMPROVEMENT SECTIONS

SCALE AS SHOWN
(SEE TYPICAL PINE ROAD IMPROVEMENT DETAIL ON SHEET 3 AND HO. CO. STD. DETAIL R-1.08 FOR ADDITIONAL DETAILS)

SOILS DESCRIPTION

- CeC (B) CHILLUM LOAM, 5 TO 10% SLOPES
- CrD (C) CROOM AND EVESBORO, 10 TO 15% SLOPES

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO PERIODIC ON-SITE INSPECTION.

Signature: R. JACOB KHAMAT, MANAGING MEMBER, PINE ROAD, LLC
Date: 7/30/12

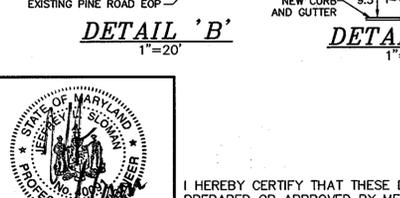
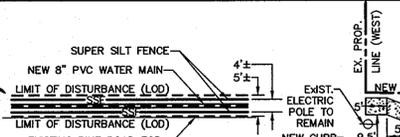
ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

Signature: JEFFREY SLOMAN, PE
Date: 7/30/12

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: Diane Schwann, Acting
Date: 8/17/12

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: [Blank]
Date: 8/22/12



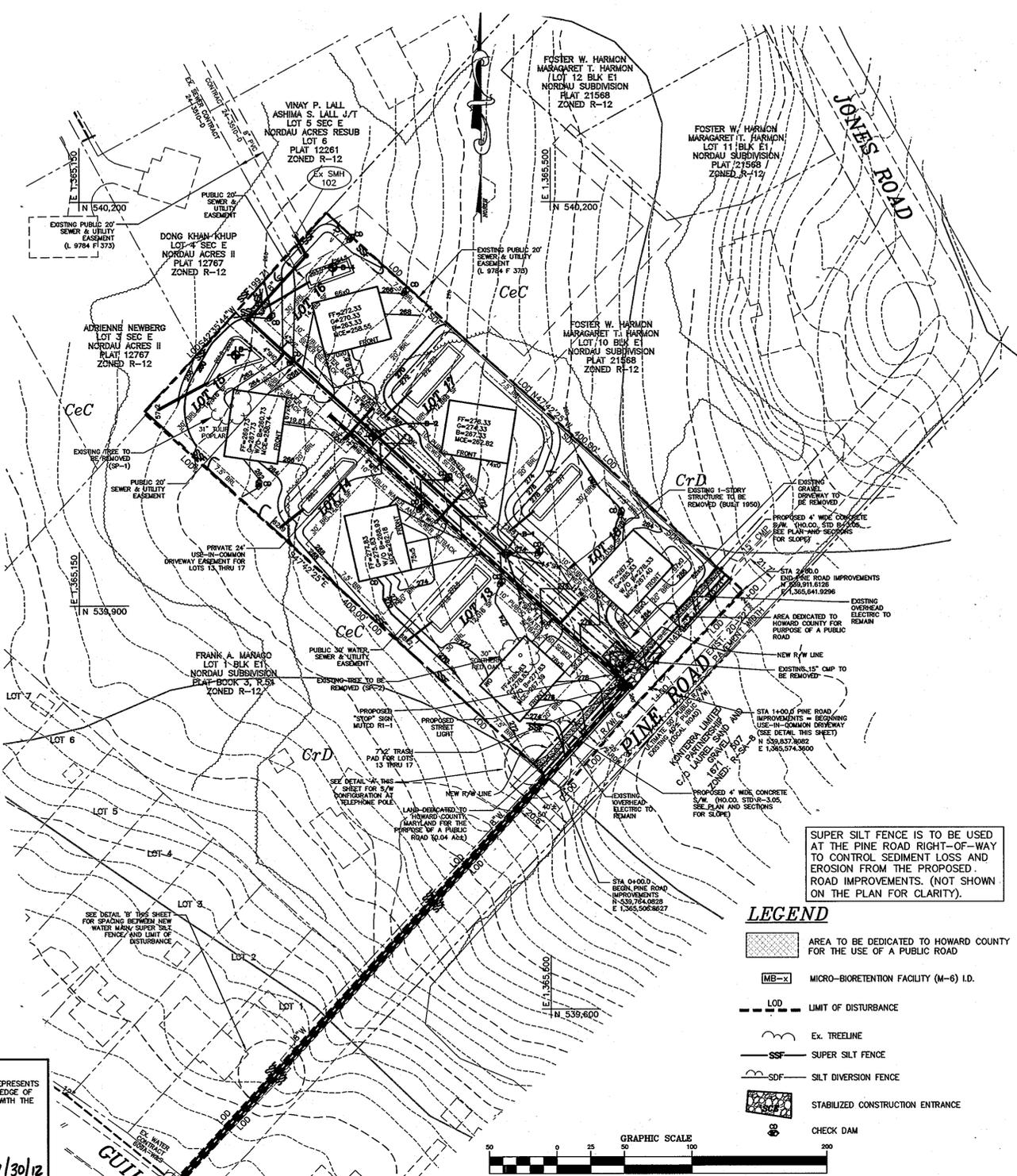
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40091, EXP. DATE 2/13/13.

DEVELOPER / OWNER

PINE ROAD, LLC
6800 DEERPATH ROAD, SUITE 150
ELKBRIDGE, MD 21755
(410)997-0296

PINE ROAD - STREET LIGHT SCHEDULE

SYMBOL	DESCRIPTION	LOCATION
*	100 WATT HPS PREMIERE PO I-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE	STA 0+84.0 OFFSET: 17.2' L



NOTES

1. SITE ANALYSIS DATA: LOCATION: TAX MAP: 47 PARCEL: 668 ELECTION DISTRICT: SIXTH ZONING: R-12 TOTAL AREA: 1.84 AC ± ADJ MAP 5053 - GRID K7 LIMIT OF DISTURBED AREA: 1.87 AC ± (COUNTING ROAD IMPROVEMENTS) PROPOSED USE FOR SITE: RESIDENTIAL TOTAL NUMBER OF UNITS: 6 TYPE OF PROPOSED UNIT: SFD DEED REFERENCE: 13637 / 061
2. HORIZONTAL AND VERTICAL DATUMS ARE RELATED TO THE MARYLAND NAD 83 (HORZ) AND NAVD83 (VERT) AS PROJECTED FROM HOWARD COUNTY CONTROL STATIONS NO. 4775 & 4848. STA. No. 4775 ELEV. 234.996 E 1365653.4555 STA. No. 4848 ELEV. 225.653 E 1365645.7904
3. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS (COUNCIL BILL 45-2003) AND COMP LITE ZONING AMENDMENTS DATED 7/28/06. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION OR BUILDING/GRADING PERMIT.
4. SITE DEVELOPMENT PLAN APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING IS REQUIRED PRIOR TO BUILDING PERMITS BEING ISSUED FOR THE CONSTRUCTION OF RESIDENTIAL DWELLINGS ON THESE LOTS.
5. THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH 16.127 RESIDENTIAL INFILL DEVELOPMENT OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPERS OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
6. PROJECT BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT NOVEMBER, 2011 BY MILDBERG, BOENDER AND ASSOC., INC.
7. TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY PERFORMED ON OR ABOUT NOVEMBER, 2011 BY MILDBERG, BOENDER AND ASSOC., INC.
8. FOREST CONSERVATION IN ACCORDANCE WITH SECTION 16.1202 OF THE FOREST CONSERVATION MANUAL SHALL BE PROVIDED BY PLACEMENT OF 0.77 ACRES OF REQUIRED AFFORESTATION INTO AN OFF-SITE EASEMENT ON PROPERTY IDENTIFIED AS THE ROSEBAR PROPERTY, PRESERVATION PARCEL A, LOCATED ON TAX MAP NO. 14 AND IDENTIFIED AS PARCEL 221, SITUATED ON THE WEST SIDE OF HOBBS ROAD. THE ROSEBAR FOREST CONSERVATION EASEMENT HAS BEEN SHOWN ON SHEET 18 OF SDP-97-115 NEW COLONY VILLAGE. DPZ HAS DETERMINED THAT A REDLINE REVISION SHALL BE MADE TO SDP-97-115 TO SHOW 0.77 ACRES OF AFFORESTATION DEDUCTED FROM THE TOTAL FC EASEMENT LOCATED ON ROSEBAR. SURETY IN THE AMOUNT OF \$16,770.00 FOR 0.77 ACRES OF REQUIRED AFFORESTATION SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THE FINAL PLAN, F-12-047/NORDAU SUBDIVISION LOTS 13 THRU 17.
9. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
10. NO FOREST STAND OR WETLAND EXISTS ON SITE AS CERTIFIED BY ECO SCIENCE INC. A FIELD AND CERTIFICATION LETTER DATED OCTOBER, 2011.
11. WP-12-084 WAS APPROVED ON NOVEMBER 2, 2011 WAIVING SECTION 16.1205(c)(7) TO ALLOW THE REMOVAL OF 2 SPECIMEN TREES WHICH WILL REQUIRE REPLACEMENT MITIGATION AT A RATIO OF 2 LARGER CALIPER TREES (3.5" DBH MIN.) FOR EACH SPECIMEN TREE REMOVED.
12. FINANCIAL SURETY FOR PERIMETER AND TRASH PAD SCREENING IN THE AMOUNT OF \$6,600 FOR 20 SHADE TREES, 2 EVERGREENS, AND 10 SHRUBS SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS SUBDIVISION, F-12-047.
13. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWIT LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL.
14. THE FINAL LANDSCAPE DESIGN WILL BE SHOWN ON THE SITE DEVELOPMENT PLAN FOR THE CONSTRUCTION OF HOUSES ON THESE LOTS PER THE COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
15. NO CEMETERIES EXIST ON SITE.
16. A FEE IN LIEU IN THE AMOUNT OF \$9,000.00 WILL BE PAID TO SATISFY THE OPEN SPACE REQUIREMENT OF SECTION 16.121(o)(2) OF THE SUBDIVISION REGULATIONS.
17. THIS PROPOSED SUBDIVISION WILL CONSIST OF SINGLE FAMILY DETACHED DWELLINGS.
18. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE 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 CHIP COATING (1-1/2"). C) GEOMETRY: MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. OF 45 FOOT TURNING RADIUS. D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING). E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD PLAIN WITH NO MORE THAN 1 FOOT OF DEPTH OVER DRIVEWAY SURFACE. F) STRUCTURE CLEARANCES - MINIMUM 12 INCHES. G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
19. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
20. ALL EXISTING STRUCTURES ON SITE WILL BE REMOVED, UNLESS OTHERWISE NOTED.
21. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED UNDER CONTRACT # 609A-W&S (WATER) AND 24-3510-D (SEWER)
22. STORMWATER MANAGEMENT IS PROVIDED VIA ROOFTOP, NON-ROOFTOP DISCONNECTIONS AND MICRO-BIORETENTION FACILITIES IN ACCORDANCE WITH THE 2000 MDE STORMWATER DESIGN MANUAL.
23. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
24. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 301-315-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
25. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
26. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
27. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)," A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
28. THE COORDINATES SHOWN HEREON ON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS 47E5 AND 484B WERE USED FOR THIS PROJECT.
29. EXISTING UTILITIES ARE BASED ON AS-BUILT PLANS FOR WATER AND SEWER CONTRACTS 24-3510-D & 609A W&S
30. THERE IS NO FLOODPLAIN ON THIS SITE.
31. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, INC., DATED NOVEMBER 22, 2011 AND WAS APPROVED ON DECEMBER 16, 2011.
32. THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE 6-25-12, ON WHICH DATE DEVELOPER AGREEMENT #2011-1384 WAS FILED AND ACCEPTED.
33. BG&E HAS REVIEWED AND APPROVED STREET TREE PLANTINGS ALONG PINE ROAD.



LEGEND

- AREA TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF A PUBLIC ROAD
- MB-X MICRO-BIORETENTION FACILITY (M-B) I.D.
- LOD LIMIT OF DISTURBANCE
- EX. TRELINE
- SSF SUPER SILT FENCE
- SDF SILT DIVERSION FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- CHECK DAM

SITE ANALYSIS DATA:

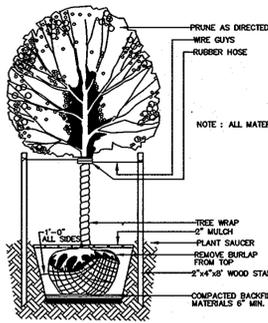
1. AREA OF THE SITE = 1.84 ± ACRES, LIMIT OF DISTURBANCE = 1.97 ± ACRES
2. AREA OF WETLANDS AND ITS BUFFERS = 0
3. AREA OF FLOODPLAIN = 0
4. AREA OF STREAM BUFFER = 0
5. AREA OF STEEP SLOPES = 0 ACRES
6. AREA OF FOREST = 0.5 ACRES ±
7. TOTAL ENVIRONMENTAL SENSITIVE AREA = 0 ± ACRES
8. DEVELOPABLE AREA = 1.84 ± ACRES (ON-SITE)
NEW IMPERVIOUS AREA:
12,000 SF / 0.28 AC (HOUSES AND STOOPS)
5,629 SF / 0.13 AC (USE-IN-COMMON DRIVEWAY)
1,883 SF / 0.04 AC (PINE ROAD FRONTAGE IMPROVEMENTS - SIDEWALK, CURB AND GUTTER, NEW ASPHALT)
4,503 SF / 0.10 AC (LOT DRIVEWAYS)
24,015 SF / 0.55 AC (TOTAL NEW IMPERVIOUS)
9. NO SLOPES OF 15%-24.99% OR SLOPES OF 25% OR GREATER EXIST ONSITE.
10. ALMOST ALL OF THE SITE CONSISTS OF HIGHLY ERODIBLE CHILLUM LOAM (CeC)
11. ONE SINGLE FAMILY DETACHED DWELLING PER LOT IS PROPOSED.
12. DUE TO THE SMALL SIZE OF THE PROJECT AND IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS, FEE IN LIEU OF OPEN SPACE WILL BE PAID. HOWARD COUNTY WILL USE THAT FEE TO BETTER IMPLEMENT OPEN SPACE AREAS WITHIN THE COUNTY.

project	11-017	date	AUG 2012
illustration	JLS	engineering	JLS
scale	1"=50'	approval	RH

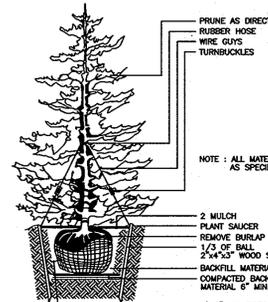
no.	date	description	revisions

NORDAU SUBDIVISION LOTS 13 THRU 18, SECTION E-1
RESUBDIVISION OF LOT 2, PLAT BOOK 3, PAGE 51
TAX MAP: 47 PARCEL: 668
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SUPPLEMENTAL, ROAD CONSTRUCTION, GRADING, AND SEDIMENT AND EROSION CONTROL PLAN

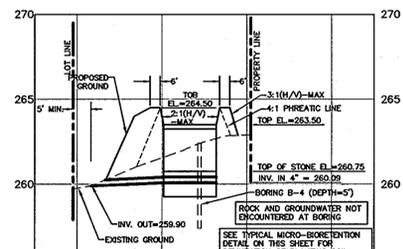
MILDBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Ellicott City, Maryland 21075
(410) 997-0296 Fax



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

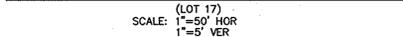


SECTION - FACILITY MB-D

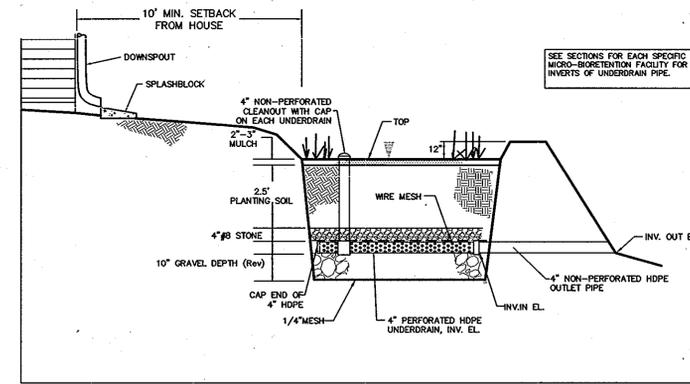
MICRO-BIORETENTION DIMENSION CHART

FACILITY	TOP (40' ELEV.)	LENGTH @ 4'	WIDTH @ 4'
MB-A	271.80	51.2'	12'
MB-B	268.30	50.0'	13.5'
MB-C	264.50	31.2'	11'
MB-D	277.00	44.5'	8'

SECTION - FACILITY MB-E



SECTION - FACILITY MB-F



TYPICAL MICRO-BIORETENTION PROFILE
NOT TO SCALE

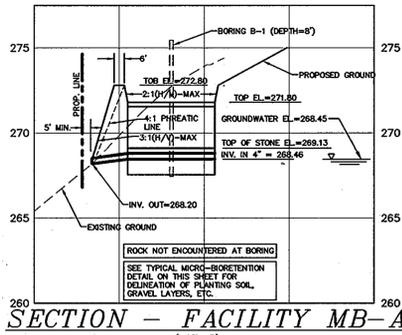
SCHEDULE A: PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER PROPERTIES				REPLACEMENTS FOR SPECIMEN TREES REMOVED	TRASH PAD	TOTAL
	N/A (PERIMETER 1)	A (PERIMETER 2)	A (PERIMETER 3)	A (PERIMETER 4)	A (PERIMETER 2)	A (PERIMETER 3)	A (PERIMETER 4)	C			
LANDSCAPE TYPE	N/A	200.00 LF	400.43 LF	200.86 LF	N/A	N/A	N/A	N/A	11 LF	N/A	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NUMBER OF PLANTS REQUIRED	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	7 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	3 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	7 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 1 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 1 EVERGREEN TREES 0 SHRUBS	21 SHADE TREES 1 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 1 EVERGREEN TREES 0 SHRUBS	0	21 SHADE TREES 1 EVERGREEN TREES 0 SHRUBS	
CREDIT FOR EXISTING VEGETATION (SHADE TREES, EVERGREEN TREES)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NUMBER OF PLANTS PROVIDED	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	7 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 2 EVERGREEN TREES 0 SHRUBS	7 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 10 SHRUBS	20 SHADE TREES 2 EVERGREEN TREES 2 SUBSTITUTION TREES 10 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0	20 SHADE TREES 2 EVERGREEN TREES 2 SUBSTITUTION TREES 10 SHRUBS	

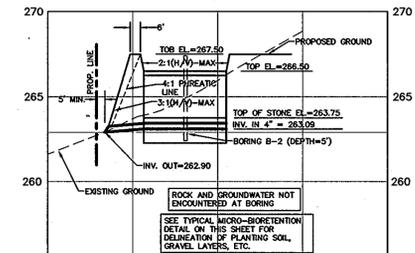
OWNER / DEVELOPER

PINE ROAD, LLC
6800 DEERPATH ROAD, SUITE 150
ELKBRIDGE, MD 21075
(410)997-0296

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. 40091, EXP. DATE 2/13/13.



SECTION - FACILITY MB-A

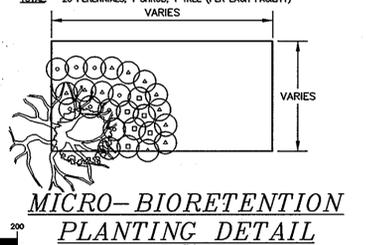


SECTION - FACILITY MB-B

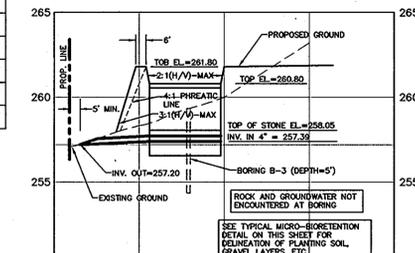
PLANT LIST

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
1	○	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2-1/2" - 3" CAL.
1	○	ALEX GLABRA	INK BERRY	2' - 3' HT.
12	○	LOBELIA SPIRITUALICA	GREAT BLUE LOBELIA	1 GAL. CONTAINER
8	○	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 GAL. CONTAINER
6	○	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER

TOTAL: 26 PERENNIALS, 1 SHRUB, 1 TREE (PER EACH FACILITY)
VARIES



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE



SECTION - FACILITY MB-C

STREET TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
7	○	ACER BURGERSIENANUM OR EQUIVALENT	TRIDENT MAPLE OR EQUIVALENT	2-1/2" - 3" CAL.
7	○	ANY 'EQUIVALENT' STREET TREE MUST HAVE A MATURE HEIGHT OF 25 FEET OR LESS		

TOTAL TREES REQUIRED = 7 TREES
TOTAL TREES PROVIDED = 7 TREES

STREET TREE CALCULATIONS

PINE ROAD - 200 / 30 = 7
TOTAL TREES REQUIRED = 7 TREES
TOTAL TREES PROVIDED = 7 TREES

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
16	○	ACER RUBRUM 'RED SUNSET' OR EQUIVALENT	RED SUNSET RED MAPLE OR EQUIVALENT	2 1/2" - 3" CAL.
2	○	PINUS STROBUS OR EQUIVALENT	WHITE PINE OR EQUIVALENT	6' - 8' HT.
10	○	TAXUS MEDIA 'HICKSI'	HICKS YEW OR EQUIVALENT	2 1/2" - 3" HT.
18	○	TOTAL (16 SHADE TREES, 2 EVERGREENS), 10 SHRUBS		

LANDSCAPE FOR REPLACEMENT OF 2 SPECIMEN TREES REMOVED

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
4	○	QUERCUS RUBRA 'RED OAK' OR EQUIVALENT	RED OAK OR EQUIVALENT	MIN. 3 1/2" CAL.
4	○	TOTAL (4 SHADE TREES)		

LEGEND

- AREA TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF A PUBLIC ROAD
- MB-x MICRO-BIORETENTION FACILITY (M-6) I.D.
- LOD CONCEPTUAL LIMIT OF DISTURBANCE
- EX. TREELINE
- AREA OF PAVEMENT TREATED BY N-2, NON-ROOFTOP DISCONNECTION
- AREA OF N-2, NON-ROOFTOP DISCONNECTION
- AREA TREATED BY M-6; MICRO-BIORETENTION
- N-1, ROOFTOP DISCONNECTION AREA AND FLOW PATH WITH LENGTH, SLOPE, AND TREATED AREA

SCALE: 1"=50' HOR
1"=5' VER

SCALE: 1"=50' HOR
1"

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 800 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UNIFORM FERTILIZER (8 LBS./1000 SQ.FT.)
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU MAY 15, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT. OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JUNE 15, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOD. OPTION (3) - SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU MAY 15 AND FROM AUGUST 1 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED WEEP FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 7 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1
 - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1981 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC.51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC.52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE:	1.83 ACRES
AREA DISTURBED:	1.97 ACRES
AREA TO BE ROOFED OR PAVED:	0.60 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	1.37 ACRES
TOTAL CUT:	2,100 CU. YDS.
TOTAL FILL:	3,000 CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION:	150

THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRAINOSTRUC.

CONDITIONS WHERE PRACTICE APPLIES

- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THIS SPECIFICATION. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF COM-TRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF ONDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSTON-SON GRASS, NUTSEDEGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, QUACKGRASS, JOHNSTON SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
- FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - pH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERFORMED TO RAISE THE pH TO 6.5 OR HIGHER.
 - ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 - TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 - NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 - NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- TOPSOIL APPLICATION
 - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL SHALL NOT BE PLACED WHERE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
 - COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOROUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB./1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

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

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

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

GEOTECHNICAL CONSULTANTS, INC.
 6800 DEERPATH ROAD, SUITE 150
 ELKBRIDGE, MARYLAND 21075
 TEL: (410) 381-1064
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February 20, 2012
 Milldenberg, Boender & Associates, Inc.
 6800 Deerpath Road, Suite 150
 Elkridge, Maryland 21075

Attn: Mr. R. Jacob Hikmat, P.E.
 President

Ref: Limited Subsurface Exploration
 Proposed Residential Building
 Nordau Subdivision, Lots 13 thru 18
 Howard County, Maryland
 GE&T Project No. G-207

Geotechnical:
 On February 17 and 20, 2012, GE&T Consultants, Inc. utilized hand augers and a Tripod to bore four (4) soil borings at the approximate locations shown on the attached sheet. The purpose of the borings was to evaluate the presence/absence of bedrock and groundwater at the locations shown. The number, location, and depth of the borings were determined by others and the borings were staked-out in the field by others.

Our field observations are summarized in Table 1 below:

Boring No.	Depth to Groundwater (ft)	Depth to Refusal (ft)	Termination Depth (ft)
B-1	2.0	N/A	8.0
B-2	N/A	N/A	5.0
B-3	N/A	N/A	5.0
B-4	N/A	N/A	5.0

Note: All depths are below existing ground surface.

It should be noted that the actual level of groundwater and the amount and level of perched water should be anticipated to fluctuate through the year, depending on variations in precipitation.

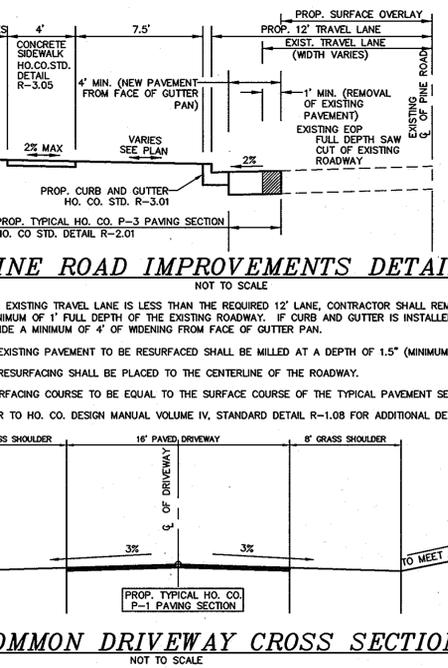
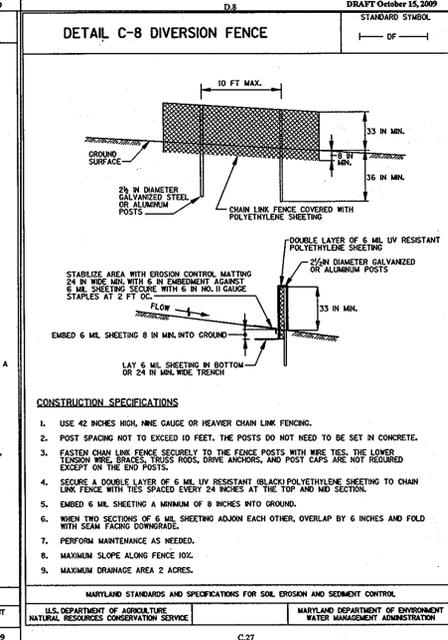
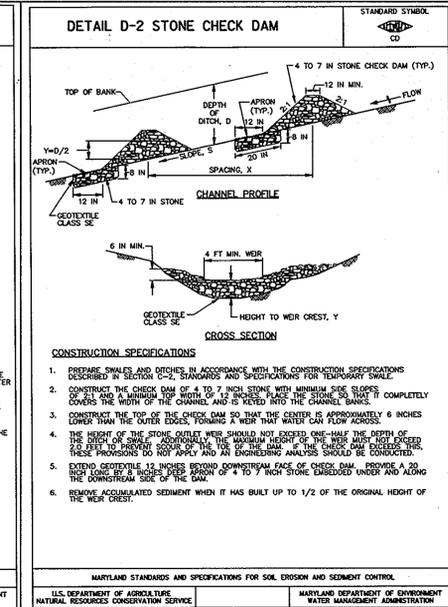
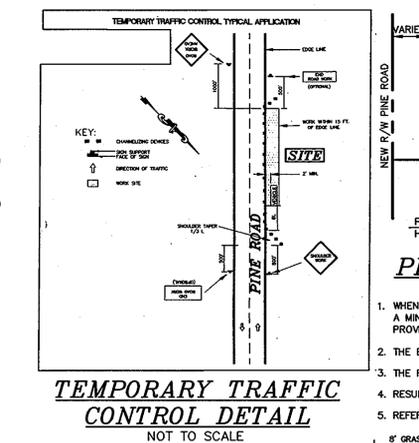
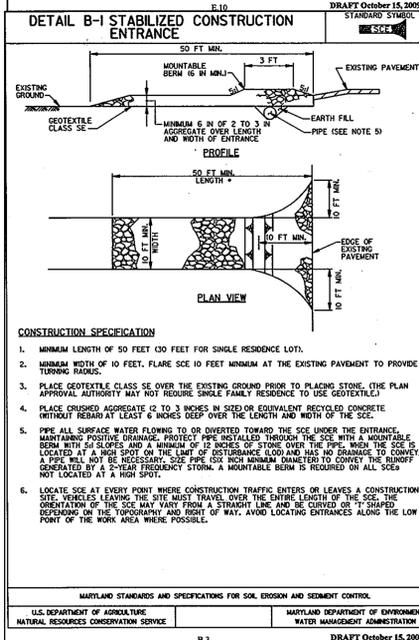
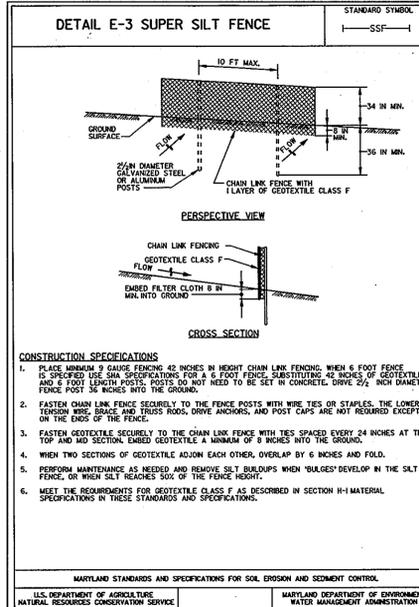
REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

EROSION AND SEDIMENT CONTROL NOTES

- ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
- ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
- ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE MAIN TRENCH.
- EXCAVATION AND BACKFILL SHALL BE LIMITED TO THAT WHICH CAN BE STABILIZED WITHIN ONE WORKING DAY.
- IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
- THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
- ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN (1 DAY)
- CONSTRUCT SUPER SILT FENCES, DIVERSION FENCES AND CHECK DAMS. (1 DAY)
- WITH PERMISSION OF INSPECTOR, BRING SITE TO GRADE. (30 DAYS)
- CONSTRUCT MICRO-BIORETENTION FACILITIES (10 DAYS)
- CONSTRUCT PINE ROAD SIDEWALK AND ROAD WIDENING AS INDICATED. (4 DAYS)
- WHEN ALL CONTRIBUTING DRAINAGE AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES (EXCEPT SILT FENCES AND SUPER SILT FENCES WHICH SHOULD BE USED FOR SDP-CONSTRUCTION OF THE HOUSES) AND STABILIZE REMAINING DISTURBED AREAS. (3 DAYS)



project	date	approval
11-017	AUG 2012	JIS
illustration	engineering	JIS
JIS	JIS	RH
scale	1"=50'	
revision		
no.		

NORDAU SUBDIVISION LOTS 13 THRU 18, SECTION E-1
 RESUBDIVISION OF LOT 2, PLAT BOOK 3, PAGE 51
 TAX MAP: 47 PARCEL: 668
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Cell: (410) 997-0298 Fax

3 OF 5
 F-12-047

H-11-07 PINE ROAD DWS17-CONCEPT-COMM-MTS.DWG

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Base Course - The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% ($n = 0.30$).

3. Reinforced Turf

Reinforced Grass Pavement (RGP) - Whether used with grass or gravel, the RGP thickness shall be at least 1 1/4" thick with a load capacity capable of supporting the traffic and vehicle types that will be carried.

B.4.C Specifications for Micro-Bioretenion, Rain Gardens, Landscape Infiltration & Infiltration Berms

1. Material Specifications

The allowable materials to be used in these practices are detailed in Table B.4.1.

2. Filtering Media or Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretenion practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are

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Appendix B.4. Construction Specifications for Environmental Site Design Practices

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material

Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.

5. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8" of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

B.4.5 Supp. 1

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

6. Underdrains

Underdrains should meet the following criteria:

- Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/2" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (3/8" to 3/4" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous

These practices may not be constructed until all contributing drainage area has been stabilized

Supp. 1 B.4.6

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.8R9; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

H:\11-017_PINE_ROAD\DWG\17-CONCEPT-COMM-MTC.DWG

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Diane Schroy, Acting Chief, Bureau of Highways, 8/17/12

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature], 8/21/12
 [Signature], 8/22/12

OWNER / DEVELOPER

PINE ROAD, LLC
 6800 DEERPATH ROAD, SUITE 150
 ELKBRIDGE, MD 21075
 (410)997-0296



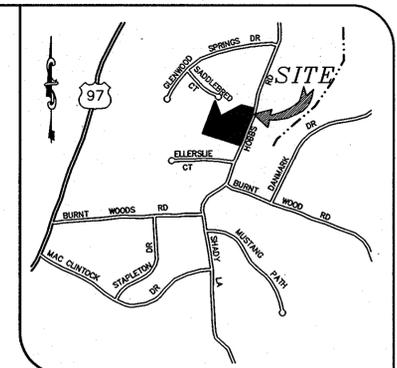
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40091, EXP. DATE 2/13/13.

Project	11-017	date	AUG 2012
Illustration	JIS	engineering	JIS
scale	1" = 50'	approval	RH

no.	1	description	revisions	date
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NORDAU SUBDIVISION LOTS 13 THRU 18, SECTION E-1
 RESUBDIVISION OF LOT 2, PLAT BOOK 3, PAGE 51
 TAX MAP: 47 PARCEL 668
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 NOTES AND DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax: (410) 997-0296 Fax



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 5053, GRID K7

PROJECT BACKGROUND:
TAX MAP: 14, PARCEL: 221, BLOCK: 23
ELECTION DISTRICT: FOURTH
ZONING: RR-DEO

date	AUG 2012	approval	MMT	scale	1"=50'
project	11-017	illustration	MMT	revision	
description		revisions			
no.					

NORDAU SUBDIVISION LOTS 13 THRU 18
FOREST CONSERVATION EASEMENT GRANTED FROM ROSEBAR PROPERTY, PRESERVATION PARCEL "A"
TAX MAP: 14, PARCEL: 668
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OFF-SITE REFORESTATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deepwater Road, Suite 150, Ellicott City, Maryland 21075
(410) 997-0296 Fax: (410) 997-0298 Fax

SOILS CLASSIFICATION

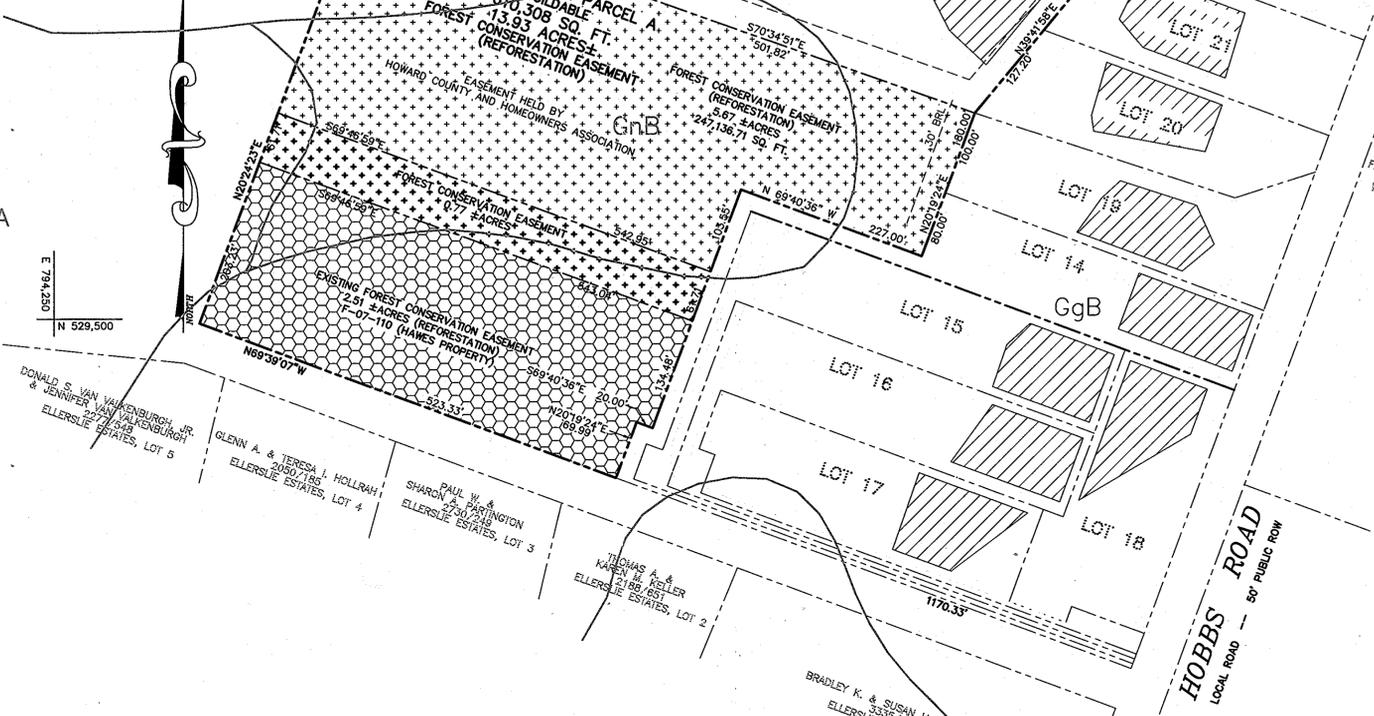
SYMBOL	DESCRIPTION
BaA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES (D)
CbB	CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES (B)
GgA	GLENELG LOAM, 0 TO 3 PERCENT SLOPES (B)
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES (B)

NOTE:
THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.
THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION, OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

FERTILIZING
1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALY AND ARE RECOMMENDED IF THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE
1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOOTHING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION
1. ALL FOREST CONSERVATION ACTIVITIES SHALL BE DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER QUALIFIED PROFESSIONAL AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

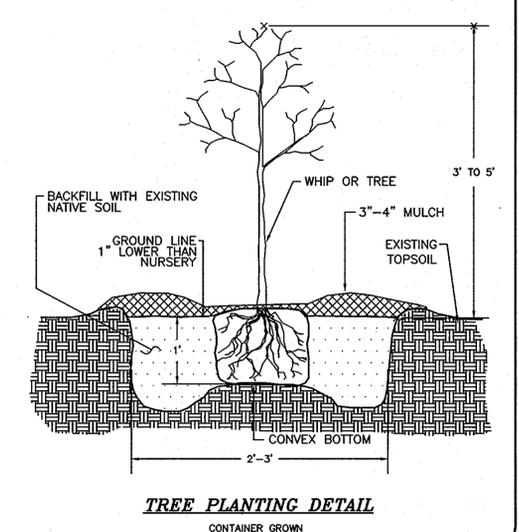


FOREST CONSERVATION WORKSHEET
NET TRACT AREA:
A. Total tract area = 1.84
B. Area within 100 year floodplain and overhead transmission line = 0.00
C. Area to remain in agricultural production = 0.00
D. Net tract area = 1.84
LAND USE CATEGORIES:
Input the number "1" under the appropriate land use zoning, and limit to only one entry.
ARA MDR IDA HDR MPD CIA
0 0 0 1 0 0
E. Afforestation Threshold = 15% x D = 0.28
F. Conservation Threshold = 20% x D = 0.37
EXISTING FOREST COVER:
G. Existing forest cover (excluding floodplain) = 0.50
H. Area of forest above afforestation threshold = 0.22
I. Area of forest above conservation threshold = 0.13
BREAK EVEN POINT:
J. Forest retention above threshold with no mitigation = 0.39
K. Clearing permitted without mitigation = 0.11
PROPOSED FOREST CLEARING
L. Total area of forest to be cleared = 0.50
M. Total area of forest to be retained = 0.00
PLANTING REQUIREMENTS:
N. Reforestation for clearing above conservation threshold = 0.03
P. Reforestation for clearing below conservation threshold = 0.74
Q. Credit for retention above conservation threshold = 0.00
R. Total reforestation required = 0.77
S. Total afforestation required = 0.77
T. Total reforestation and afforestation required = 0.77
TOTAL ON-SITE AFFORESTATION = 0.77

LEGEND

[Hatched pattern]	EXISTING SEPTIC EASEMENT
[Dotted pattern]	EXISTING FOREST CONSERVATION EASEMENT (REFORESTATION) F-07-110
[Cross-hatched pattern]	FOREST CONSERVATION EASEMENT (REFORESTATION) F-01-11

MO. DNR QUALIFIED PROFESSIONAL
David Syza



TREE PLANTING DETAIL
CONTAINER GROWN

FOREST PROTECTION

- ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE OR RED MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF THE FOREST RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES.
- ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION INCLUDING SET FENCING AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
- INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
- THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS. ROOT PRUNING SHALL BE LIMITED TO THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

PRE-CONSTRUCTION MEETING

- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND THE PURPOSE OF THIS MEETING WILL BE:
 - TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS.
 - INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES.
 - MAKE ALL NECESSARY ADJUSTMENTS.
 - ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

CONSTRUCTION MONITORING

- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES. SUCH DAMAGE INCLUDES TRUNK WOUNDS, TRUNK INJURY, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE DAMAGE MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
- IF THE CONSTRUCTION MONITORING REVEALS DAMAGE OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS, ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANTING SPECIFICATIONS AND NOTES

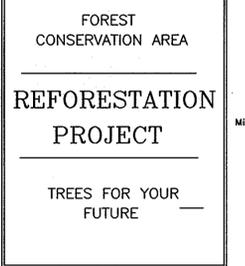
- SITE PREPARATION AND SOILS**
- PROTECTION FENCING IS TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
 - DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL, A PLANTING FIELD OF RADIUS 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
 - SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
 - SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
 - ALL MIXING IN 3" AND 4" SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT NURSERY AND INSPECTION

- FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
- FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
- PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
- UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT.

PLANT INSTALLATION

- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER GENEROUSLY TO SETTLE SOIL BACKFILLED AROUND TREES.
- PLANTING FIELD DIMENSIONS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.



SIGNAGE DETAILS
NOT TO SCALE

REFORESTATION PLANT LIST

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN. Q.C. FAC	SIZE & SPACING	REMARKS
30	Acer rubrum	VT	D-W	FAC	15'	CONT/B & B	1" CALIPER
30	Lindera benzoin	T	M	FACW	15'	CONT/B & B	3'-5' HEIGHT
30	Liquidambar styraciflua	I	M-W	FAC	15'	CONT/B & B	1" CALIPER
22	Liriodendron tulipifera	MT	D-M	FAC	15'	CONT/B & B	1" CALIPER
22	Nyssa sylvatica	T	M-W	FAC	15'	CONT/B & B	1" CALIPER
20	Prunus serotina	I	M	FACU	15'	CONT/B & B	3'-5' HEIGHT
TOTAL	154 TREES						
50	Acer rubrum	VT	D-W	FAC	11'	SEEDLING/WHIP	WITH TREE SHELTER
50	Lindera benzoin	T	M	FACW	11'	SEEDLING/WHIP	WITH TREE SHELTER
50	Liquidambar styraciflua	I	M-W	FAC	11'	SEEDLING/WHIP	WITH TREE SHELTER
50	Liriodendron tulipifera	MT	D-M	FAC	11'	SEEDLING/WHIP	WITH TREE SHELTER
40	Nyssa sylvatica	T	M-W	FAC	11'	SEEDLING/WHIP	WITH TREE SHELTER
30	Prunus serotina	I	M	FACU	11'	SEEDLING/WHIP	WITH TREE SHELTER
TOTAL	270 WHIPS WITH TREE SHELTERS						

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schurz, Acting 8/17/12
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John Schurz 8/17/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

W.D. DeLoach 8/22/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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