

GENERAL NOTES

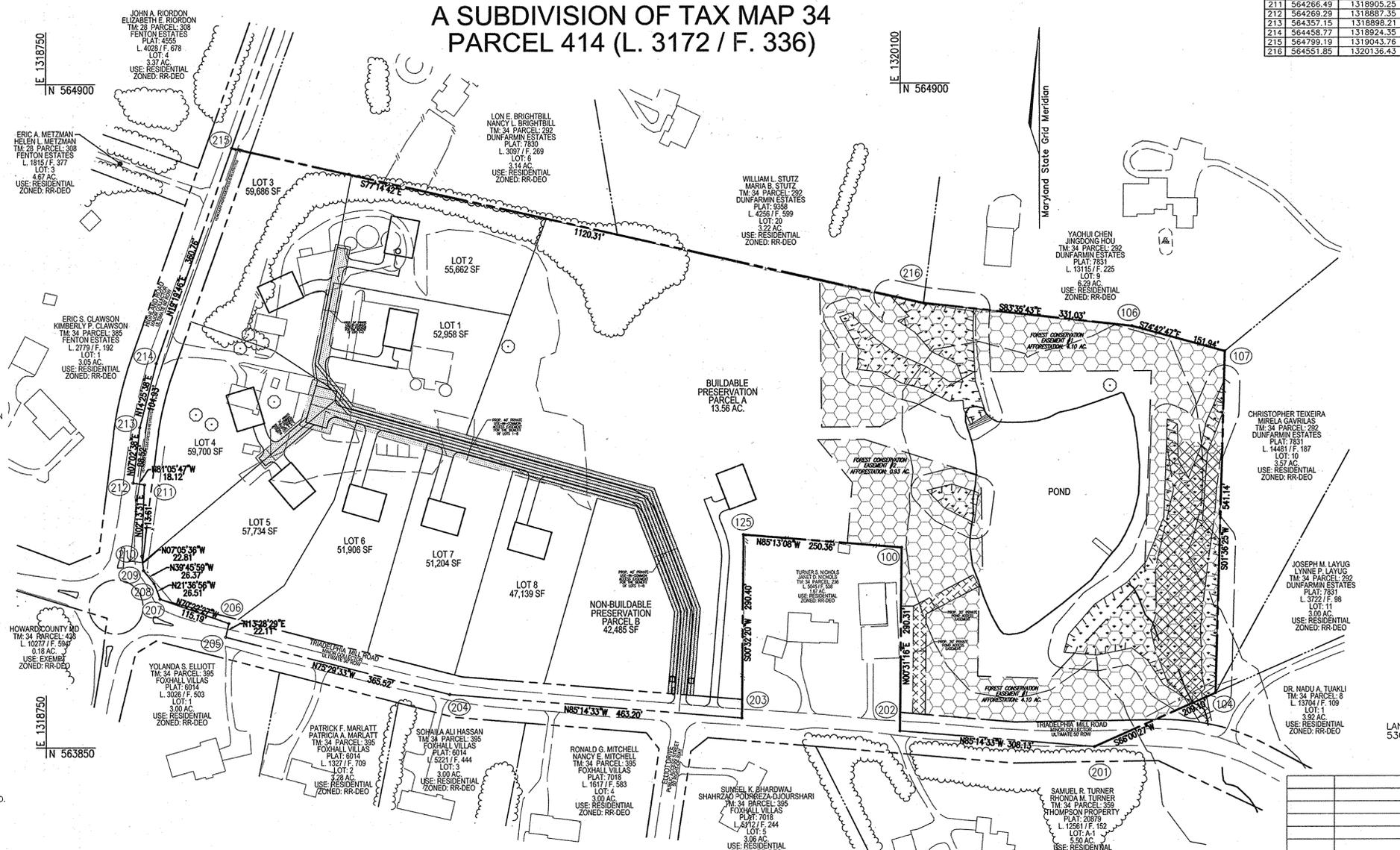
- PROJECT BACKGROUND:
 - LOCATION: TAX MAP 34 GRID 3
 - PARCELS: 414
 - ZONING: RR-DEO
 - SUBDIVISION: JACK'S LANDING
 - GROSS AREA: 25.81 AC.
 - DISTURBED AREA: 2.59 AC.
 - AREA OF PLAN SUBMISSION: 25.81 AC.
 - MINIMUM LOT SIZE: 40,000 SF
 - PROPOSED USE FOR SITE: RESIDENTIAL
 - TOTAL NUMBER OF LOTS: 9
 - TYPE OF PROPOSED UNIT: SFD
 - DEED REFERENCES: L.3172/F.336
 - DPZ REFERENCES: F-08-101, SP-06-14, BA-89-45E, WP 13-184, WP-10-25, WP-11-081, WP-12-036, WP-11-111
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE UNLESS WAIVERS HAVE BEEN APPROVED.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 - MISS UTILITY: 1-800-257-7777
 - VERIZON TELEPHONE COMPANY: 1-410-954-6281
 - HOWARD COUNTY BUREAU OF UTILITIES: 410-313-2386
 - AT&T CABLE LOCATION DIVISION: 1-800-393-3553
 - B.G.&E. CO. CONTRACTOR SERVICES: 410-850-4620
 - B.G.&E. CO. UNDERGROUND DAMAGE CONTROL: 410-827-4620
 - STATE HIGHWAY ADMINISTRATION: 410-531-5533
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- 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.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED NOVEMBER 2013.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 348B AND 348C WERE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED RR-DEO IN ACCORDANCE WITH THE 2-02-04 COMPREHENSIVE ZONING PLAN AND RESOLUTION 07-1209/2004.
- TOPOGRAPHY SHOWN HEREON IS OBTAINED FROM CURRENT HOWARD COUNTY GIS DATA.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY, HOWARD COUNTY, MARYLAND.
- THE EXISTING DWELLING AND ACCESSORY STRUCTURES ON THE SITE WILL BE ABANDONED AND REMOVED PRIOR TO RECORDATION OF THE FINAL PLAT.
- THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- FLOODPLAIN REPORT FOR THIS PROJECT WAS PREPARED BY CAPITOL DEVELOPMENT DESIGN, INC. JULY 3, 2006.
- NO STEEP SLOPES OVER 20.000 SF CONTIGUOUS ARE LOCATED ON-SITE.
- A TRAFFIC STUDY HAS BEEN PREPARED BY THE TRAFFIC GROUP, 2006.
- NEITHER TRIADELPHIA MILL ROAD OR HIGHLAND ROAD IS A SCENIC ROAD.
- TRIADELPHIA MILL ROAD IS CLASSIFIED AS A MINOR COLLECTOR. HIGHLAND ROAD IS CLASSIFIED AS A MAJOR COLLECTOR.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SUBDIVISION.
- STREET LIGHTS ARE NOT REQUIRED FOR THIS DEVELOPMENT.
- ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6-06.
- DRIVEWAYS SHALL BE PAVED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - A) WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE) (18' FOR THE USE-IN-COMMON ASSOCIATED WITH THIS PROJECT. SEE GENERAL NOTE NUMBER 38)
 - B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
 - C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS
 - D) STRUCTURES (CULVERTS/BRIDGES) - MUST SUPPORT 25 GROSS TON LOADING (H25 LOADING)
 - E) DRAINAGE ELEMENTS CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
 - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER AND SEWER FOR THIS PROJECT WILL BE PRIVATE WELLS & SEPTIC SYSTEMS.
- A REVISED PERCOLATION CERTIFICATION PLAN WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED AUGUST 2013, AND APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT ON 08/28/2013, 2014.
- THE PROPOSED DWELLINGS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- 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.
- WETLANDS AND STREAMS SHOWN HEREON ARE BASED ON A FIELD INVESTIGATION PREPARED BY BRAY HILL, LLC. DATED JANUARY 2006. THERE ARE NO PROPOSED DISTURBANCES TO THE WETLANDS OR ASSOCIATED BUFFERS.
- THE PROPOSED SUBDIVISION AND RELATED CONSTRUCTION WILL NOT AFFECT ENVIRONMENTAL FEATURES OR BUFFERS.
- FOREST STAND DELINEATION AND SPECIMEN TREES ARE SHOWN HEREON PER PLAN BY CAPITOL DEVELOPMENT DESIGN, INC. DATED OCTOBER 6, 2006.
- FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
 - TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT WILL BE FULFILLED BY ON-SITE AFFORESTATION OF 5.03 ACRES WHICH IS SUFFICIENT TO MEET THE BREAK-EVEN POINT OF 5.03 ACRES OF REQUIRED AFFORESTATION. FINANCIAL SURETY IN THE AMOUNT OF \$109,504 (219,008 x 0.50) WILL BE POSTED AS PART OF DEPARTMENT OF PUBLIC WORKS DEVELOPER'S AGREEMENT FROM THIS DATE.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY FOR THE PERIMETER LANDSCAPING IN THE AMOUNT OF \$25,000.00 FOR THE REQUIRED 59 SHADE TREES (\$17,700), 51 EVERGREENS (\$7,650) AND 5 SHRUBS (\$150 - TRASH PAD) SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PLAN.
- IN ACCORDANCE WITH SECTION 16.124(E) STREET TREES ARE NOT REQUIRED ALONG TRIADELPHIA MILL ROAD OR HIGHLAND ROAD AS NO IMPROVEMENTS ARE PROPOSED. NO INTERNAL STREETS ARE PROPOSED.
- A PRIVATE RANGE OF ADDRESS SIGNS SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-343-2430 FOR DETAILS AND COST ESTIMATES.
- TRASH AND RECYCLING COLLECTION WILL BE AT TRIADELPHIA MILL ROAD WITHIN 5' OF THE EDGE OF THE COUNTY ROADWAY.
- STORMWATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING: ROOFTOP & NON-ROOFTOP DISCONNECTIONS, RAIN BARRELS, RAIN GARDENS, AND GRASS SWALES. ALL PRACTICES WILL BE PRIVATELY OWNED AND MAINTAINED.
- THIS PLAN IS SUBJECT TO A DESIGN MANUAL WAIVER OF DESIGN MANUAL VOLUME III, SECTION 2.6.A. TO ALLOW MORE THAN 6 USERS TO SHARE A SINGLE USE-IN-COMMON DRIVEWAY. OCTOBER 10, 2013. THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION APPROVED THE REQUEST BASED UPON JUSTIFICATION PROVIDED IN THE WAIVER REQUEST LETTER AND THE FACT THAT THE GRANTING OF SAID REQUEST WILL NOT IMPACT THE COUNTY'S EXISTING AND FUTURE INFRA-STRUCTURE SYSTEMS. SUBJECT TO AN 18' PAVING WIDTH WITH FLUSH CONCRETE CURB IN A 40 FOOT USE-IN-COMMON ACCESS EASEMENT.
- THIS PLAN IS SUBJECT TO WAIVER PETITION #WP-13-184 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.144(R)(3), REQUIRING THE SUBMISSION OF REVISED PLANS WITHIN 45 DAYS OF REQUEST OR THE FINAL PLAN FOR F-08-101/DUNFARMIN ESTATES SHALL BECOME VOID SUBJECT TO THE FOLLOWING CONDITIONS:
 - THIS DEPARTMENT WILL GRANT A 6 MONTH EXTENSION FROM THE JUNE 30, 2013, DEADLINE BY WHICH TO SUBMIT REVISED PLANS FOR F-08-101. THE NEW DEADLINE DATE BY WHICH TO SUBMIT REVISED PLANS IS ON OR BEFORE JANUARY 6, 2014.
 - COMPLIANCE WITH THE ATTACHED COMMENTS FROM THE DEVELOPMENT ENGINEERING DIVISION DATED JULY 9, 2013. THIS SUBDIVISION MUST BE REDESIGNED TO MEET NEW STORMWATER MANAGEMENT REQUIREMENTS.
- BUILDABLE PRESERVATION PARCEL 'A' IS INTENDED TO PROTECT THE EXISTING POND, STREAM AND WETLANDS AND ASSOCIATED BUFFERS, AND ESTABLISH FOREST CONSERVATION (AFFORESTATION).
- THE USE-IN-COMMON MAINTENANCE AGREEMENT FOR LOTS 1 TO 8; LOTS 1 TO 3 AND LOTS 4 AND 5 SHALL BE RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MD SIMULTANEOUSLY WITH THE PLAT.
- B.G.&E. HAS REVIEWED AND APPROVED THE PROPOSED TRASH PAD SCREENING AND PERIMETER TREE PLANTINGS.
- ALL EXISTING WELLS AND ON-SITE SEWAGE DISPOSAL SYSTEM COMPONENTS MUST BE PROPERLY ABANDONED AND NOTIFICATION OF SUCH SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE FINAL RECORD PLAT.
- ALL WELLS MUST BE DRILLED PRIOR TO HEALTH SIGNATURE OF THE FINAL RECORD PLAT.

SUPPLEMENTAL INFORMATION PLAN

JACK'S LANDING

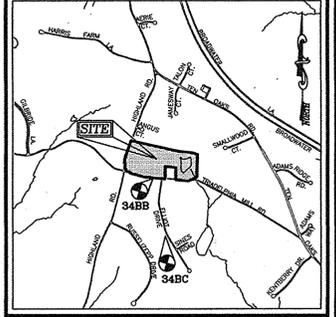
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A, AND NON-BUILDABLE PRESERVATION PARCEL B

A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172 / F. 336)



COORDINATE TABLE

NO.	NORTH	EAST
100	564164.76	1320101.32
104	563933.93	1320596.78
106	564514.92	1320465.39
107	564474.86	1320611.96
125	564185.63	1319851.83
201	563845.91	1320405.75
202	563874.46	1320098.68
203	563895.24	1319849.10
204	563933.66	1319387.50
205	564025.22	1319033.64
206	564046.72	1319385.79
207	564085.41	1318930.29
208	564110.06	1318920.52
209	564130.33	1318903.66
210	564152.96	1318800.84
211	564266.49	1318905.25
212	564269.29	1318887.35
213	564357.15	1318898.21
214	564458.77	1318924.34
215	564739.19	1319043.76
216	564551.85	1320136.43



VICINITY MAP
SCALE: 1"=2,000'
ADC MAP COORDINATE: 4933, D6 & E6

BENCHMARKS
HOWARD COUNTY BENCHMARK 348B (CONC. MON.)
N 563,899.232 E 1319,560.973 ELEV. 559.29'
SOUTH SIDE TRIADELPHIA MILL ROAD, APPROX. 13' EAST OF CENTERLINE OF DRIVEWAY FOR HOUSE # 13295.
HOWARD COUNTY BENCHMARK 348C (CONC. MON.)
N 562,546.800 E 1,319,851.319 ELEV. 529.572'
SOUTH SIDE OF ELLIOTT DRIVE EAST OF CENTERLINE FOR THE DRIVEWAY FOR HOUSE NUMBER 13318.

LEGEND:

[Symbol]	PROPERTY LINE
[Symbol]	EXISTING RIGHT-OF-WAY LINE
[Symbol]	PROPOSED RIGHT-OF-WAY LINE
[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	EXISTING CURB AND GUTTER
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING WETLAND BUFFER
[Symbol]	EXISTING TREELINE
[Symbol]	EXISTING TREES
[Symbol]	EXISTING WOOD FENCE
[Symbol]	EXISTING METAL FENCE
[Symbol]	EXISTING STREAM
[Symbol]	EXISTING STREAM BUFFER
[Symbol]	OBVIOUSLY NOT CRITICAL FLOODPLAIN
[Symbol]	PROPOSED TREELINE
[Symbol]	PROP. FOREST CONSERVATION EASEMENT (AFFORESTATION) PLAT:
[Symbol]	PROP. USE-IN-COMMON ACCESS EASEMENT PLAT:
[Symbol]	PROP. PRIVATE POND ACCESS EASEMENT PLAT:

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR. SUITE 102
COCITT CITY, MD 21031
ATTN: MR. DONALD R. RUEWER
(443) 367-0422

COVER SHEET
SCALE: 1"=100'

MINIMUM LOT SIZE CHART

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	52,958 SF	3,235 SF	49,722 SF	40,000 SF
2	55,662 SF	5,226 SF	50,436 SF	40,000 SF
3	59,686 SF	4,341 SF	55,345 SF	40,000 SF
4	59,700 SF	4,214 SF	55,486 SF	40,000 SF
5	57,734 SF	3,952 SF	53,782 SF	40,000 SF
6	51,906 SF	3,331 SF	48,575 SF	40,000 SF
7	51,204 SF	2,585 SF	48,619 SF	40,000 SF
8	47,139 SF	1,848 SF	45,291 SF	40,000 SF

SITE DATA
LOCATION: TAX MAP 34, BLOCK 03, PARCEL 414
13938 HIGHLAND ROAD, CLARKSVILLE MD, 21029
DEED REFERENCE: L. 3172 / F. 336
5TH ELECTION DISTRICT
PRESENT ZONING: RR-DEO
PROPOSED USE OF SITE: RESIDENTIAL (SFD)
GROSS AREA OF PROJECT: 25.81 AC.
AREA OF FLOOD PLAIN: 0.65 AC.
NET PROJECT AREA: 25.13 AC. (25.81 - 0.68 = 25.13)
AREA OF WETLANDS/BUFFER: 2.91 AC.
AREA OF STREAM/BUFFER: 5.75 AC.
AREA OF EXISTING FOREST COVER: 0.00 AC.
AREA OF STEEP SLOPES (25% OR GREATER): 0.00 AC.
AREA OF ERODIBLE SOILS: 9.13 AC.
TOTAL NUMBER OF UNITS ALLOWED BY RIGHT: 25.81/4.25 = 6
TOTAL NUMBER OF UNITS ALLOWED: 25.13/2 = 12
AREA OF RESIDENTIAL LOTS PROPOSED:
LOTS 1-8: 10.01 AC.
BUILDABLE PRESERVATION PARCEL A: 13.56 AC.
NON-BUILDABLE PRESERVATION PARCEL B: 0.97 AC.
OPEN SPACE REQUIRED: N/A
AREA OF RIGHT-OF-WAY DEDICATION: 1.26 AC.
PROPOSED WATER SYSTEM: PRIVATE WELL
PROPOSED SEWER SYSTEM: PRIVATE SEPTIC
LIMIT OF DISTURBANCE: 2.59 AC.

SHEET INDEX

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SUPPLEMENTAL INFORMATION PLAN
COVER SHEET
JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
AND NON-BUILDABLE PRESERVATION PARCEL B
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172 / F. 336)
TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT
PARCELS: 414
ZONED: RR-DEO
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

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 13-31

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 09-27-2014

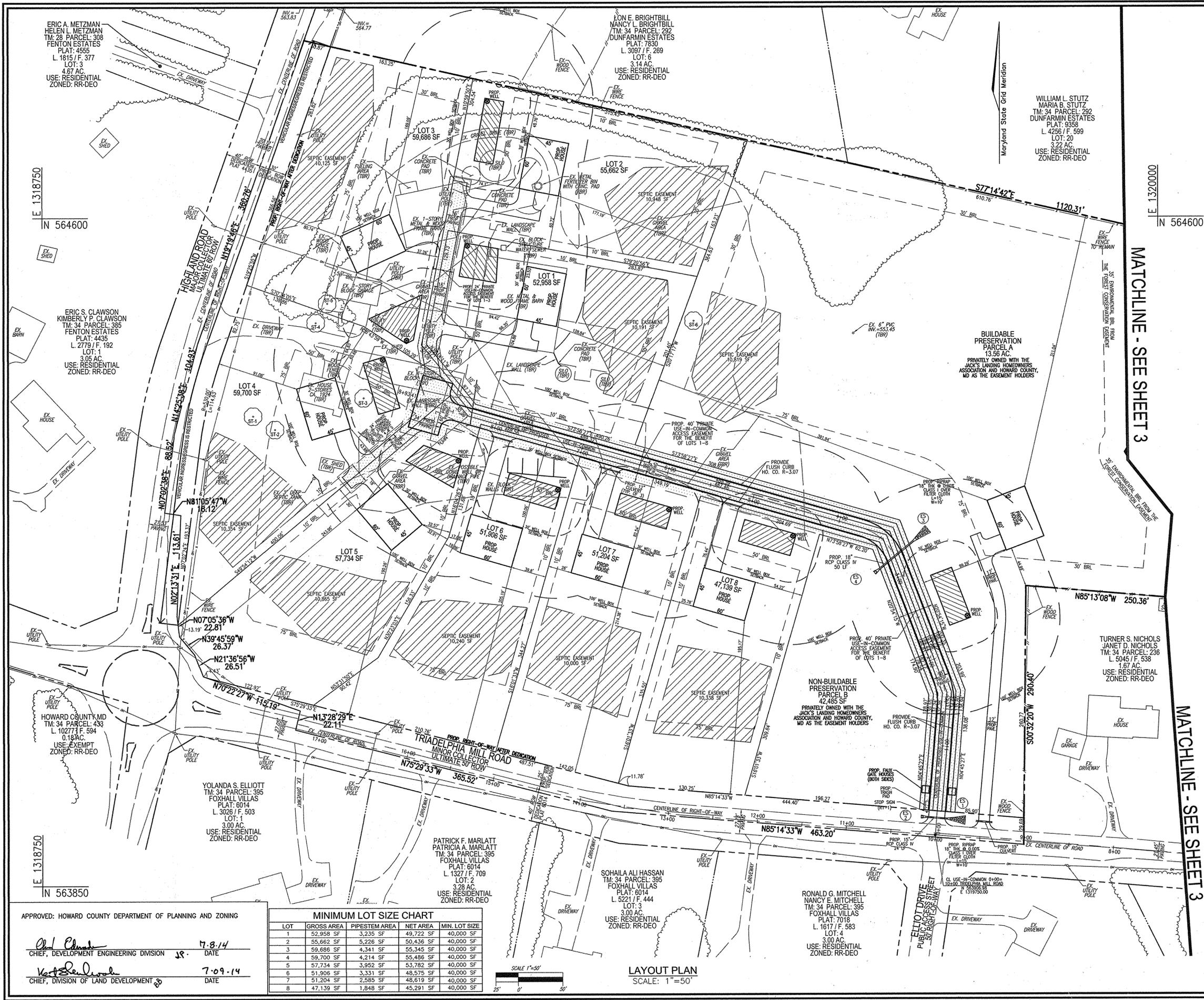
1 SHEET OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad E. ... 7-8-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Nat ... 7-09-14
CHIEF, DIVISION OF LAND DEVELOPMENT

LOT TABULATION
TOTAL NO. OF PROPOSED LOTS/PARCELS: 10
- LOTS 1-8
- BUILDABLE PRESERVATION PARCEL A
- NON-BUILDABLE PRESERVATION PARCEL B
TOTAL NO. OF DWELLING UNITS: 9
NO. OF SINGLE FAMILY DETACHED: 9



LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- PROPOSED TREELINE
- PROPOSED USE-IN-COMMON ACCESS EASEMENT PLAT:
- PROPOSED SEPTIC EASEMENT
- PROPOSED WELL BOX
- EXISTING UTILITY POLE
- PROPOSED STORMDRAIN
- PROPOSED CONCRETE

SPECIMEN TREE CHART

NO.	SIZE	COMMON NAME	COMMENTS
ST-1	40" DBH	ELM	TO REMAIN
ST-2	40" DBH	ELM	TO REMAIN
ST-3	42" DBH	OAK	TO REMAIN
ST-4	36" DBH	OAK	TO REMAIN
ST-5	44" DBH	PINE	TO REMAIN
ST-6	42" DBH	ELM	TO REMAIN
ST-7	40" DBH	MULTI-STEM	TO REMAIN

NOTE: FOR SPECIMEN TREES 3, 4, & 5 TREE PROTECTION FENCING WILL BE REQUIRED

OWNER
 MARTY A. HOWARD
 P.O. BOX 740
 CLARKSVILLE, MD 21029

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR., SUITE 102
 ELLICOTT CITY, MD 21042
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
SITE LAYOUT PLAN
JACK'S LANDING
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
 AND NON-BUILDABLE PRESERVATION PARCEL B
 A SUBDIVISION OF TAX MAP 34
 PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03 PARCELS: 414
 5TH ELECTION DISTRICT ZONED: RR-DEO
 HOWARD COUNTY, MARYLAND

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

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 13-31

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. 161893 EXPIRATION DATE: 09-27-2014

2 SHEET OF 12

MINIMUM LOT SIZE CHART

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	52,958 SF	3,235 SF	49,722 SF	40,000 SF
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7	51,204 SF	2,585 SF	48,619 SF	40,000 SF
8	47,139 SF	1,848 SF	45,291 SF	40,000 SF

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 Chad Chubb 7-8-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

 Kurt Seidman 7-09-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SCALE: 1"=50'

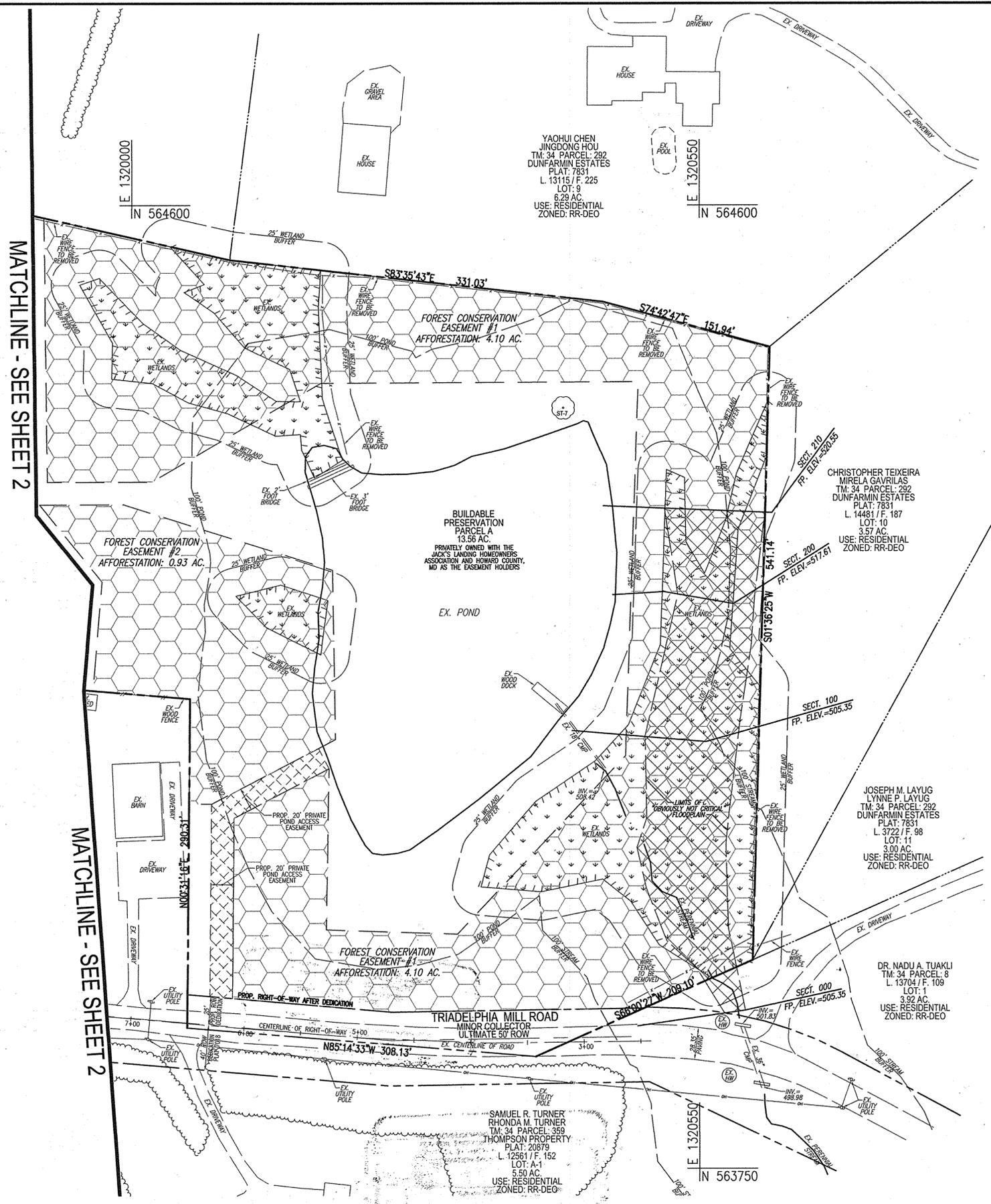
LAYOUT PLAN
 SCALE: 1"=50'

MATCHLINE - SEE SHEET 3

MATCHLINE - SEE SHEET 3

SPECIMEN TREE CHART			
NO.	SIZE	COMMON NAME	COMMENTS
ST-1	40" DBH	ELM	TO REMAIN
ST-2	40" DBH	ELM	TO REMAIN
ST-3	42" DBH	OAK	TO REMAIN
ST-4	36" DBH	OAK	TO REMAIN
ST-5	44" DBH	PINE	TO REMAIN
ST-6	42" DBH	ELM	TO REMAIN
ST-7	40" DBH	MULTI-STEM	TO REMAIN

NOTE: FOR SPECIMEN TREES 3, 4, & 5 TREE PROTECTION FENCING WILL BE REQUIRED



LEGEND:	
	PROPERTY LINE
	EXISTING RIGHT-OF-WAY LINE
	PROPOSED RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	EXISTING EDGE OF PAVING
	EXISTING WETLANDS
	EXISTING WETLAND BUFFER
	EXISTING TREELINE
	EXISTING TREES
	EXISTING WOOD FENCE
	EXISTING METAL FENCE
	EXISTING STREAM
	EXISTING STREAM BUFFER
	OBVIOUSLY NOT CRITICAL FLOODPLAIN
	PROPOSED TREELINE
	PROP. FOREST CONSERVATION EASEMENT (AFFORESTATION) PLAT:
	EXISTING UTILITY POLE
	PROP. PRIVATE POND ACCESS EASEMENT PLAT:

MATCHLINE - SEE SHEET 2

MATCHLINE - SEE SHEET 2

Maryland State Grid Meridian

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., SUITE 102
ELLCOTT CITY, MD 21042
ATTN: MR. DONALD R. REUWER
(443) 367-0422

CHRISTOPHER TEIXEIRA
MIRELA GAVRILAS
TM: 34 PARCEL: 292
DUNFARMIN ESTATES
PLAT: 7831
L. 14481 / F. 187
LOT: 10
3.57 AC
USE: RESIDENTIAL
ZONED: RR-DEO

JOSEPH M. LAYUG
LYNNE P. LAYUG
TM: 34 PARCEL: 292
DUNFARMIN ESTATES
PLAT: 7831
L. 3722 / F. 98
LOT: 11
3.00 AC
USE: RESIDENTIAL
ZONED: RR-DEO

DR. NADU A. TUAKLI
TM: 34 PARCEL: 8
L. 13704 / F. 109
LOT: 1
3.92 AC
USE: RESIDENTIAL
ZONED: RR-DEO

BUILDABLE PRESERVATION PARCEL A
13.56 AC
PRIVATELY OWNED WITH THE JACK'S LANDING HOMEOWNERS ASSOCIATION AND HOWARD COUNTY, MD AS THE EASEMENT HOLDERS

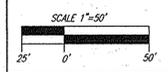
SAMUEL R. TURNER
RHONDA M. TURNER
TM: 34 PARCEL: 369
THOMPSON PROPERTY
PLAT: 20879
L. 12561 / F. 152
LOT: A-1
5.50 AC
USE: RESIDENTIAL
ZONED: RR-DEO

LAYOUT PLAN
SCALE: 1" = 50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edme 7-8-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION J.P. DATE

Kurt Seidenbach 7-09-14
CHIEF, DIVISION OF LAND DEVELOPMENT P.B. DATE



NO.	REVISION	DATE

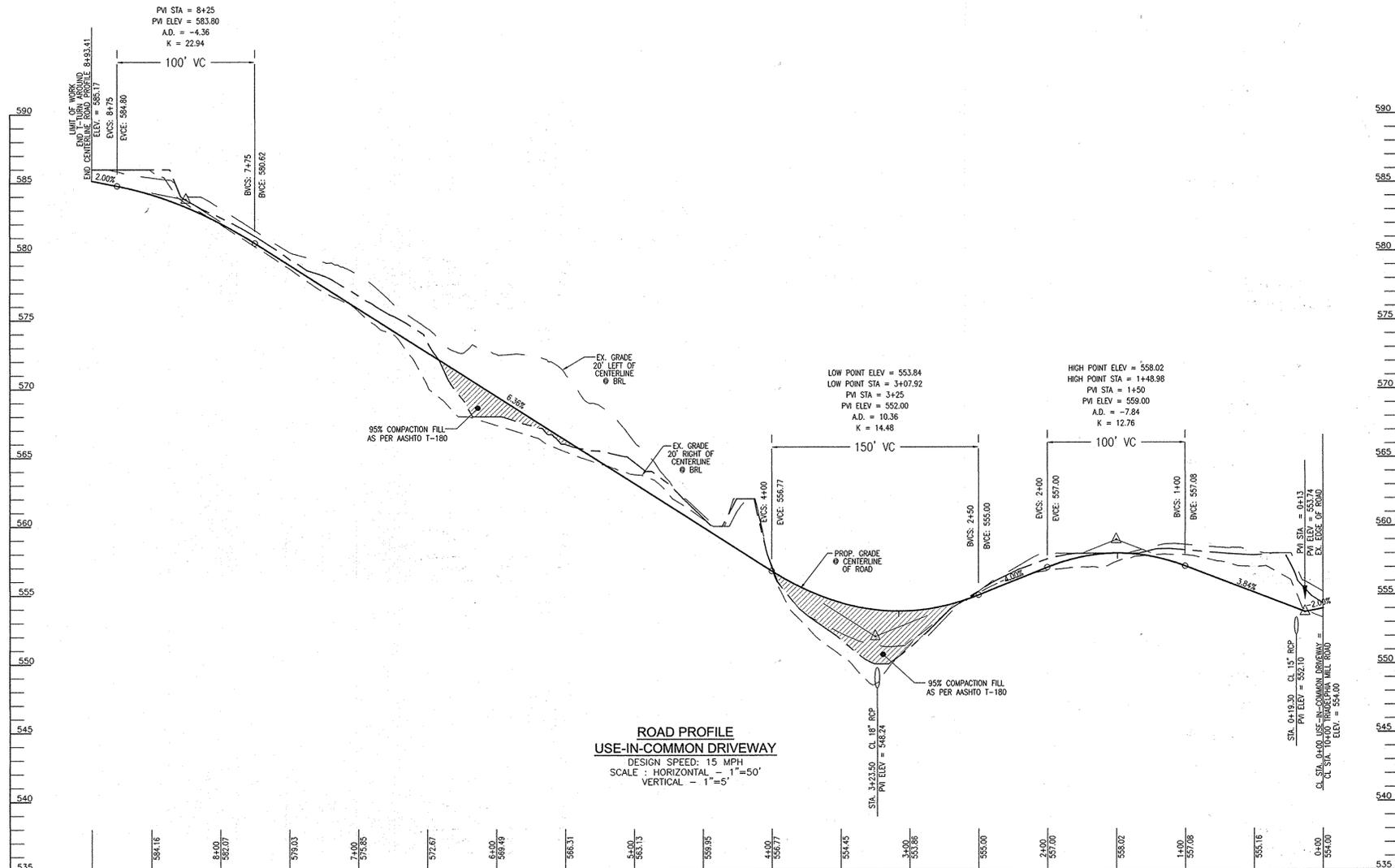
SUPPLEMENTAL INFORMATION PLAN
SITE LAYOUT PLAN
JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
AND NON-BUILDABLE PRESERVATION PARCEL B
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT

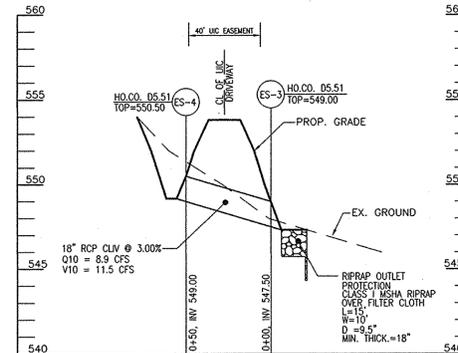
PARCELS: 414
ZONED: RR-DEO
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.2666
ELLCOTT CITY, MD 21043 FAX: 410.461.8961

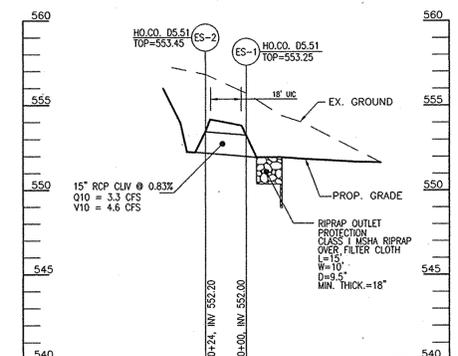
	DESIGN BY: RHW	PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014.
	DRAWN BY: JMR	
	CHECKED BY: RHW	
	DATE: MARCH 2014	
SCALE: AS SHOWN	W.O. NO.: 13-31	3 SHEET OF 12



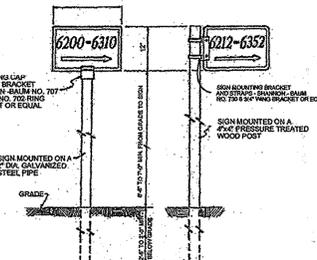
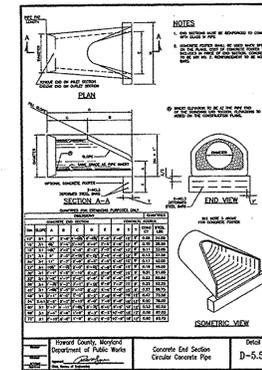
**ROAD PROFILE
USE-IN-COMMON DRIVEWAY**
DESIGN SPEED: 15 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**USE-IN-COMMON DRIVEWAY 3+25
18" DRIVEWAY CULVERT**
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**USE-IN-COMMON DRIVEWAY 0+19
15" DRIVEWAY CULVERT**
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



**Sign Option Number 1 and Number 2
Sign Design and Installation
Detail**

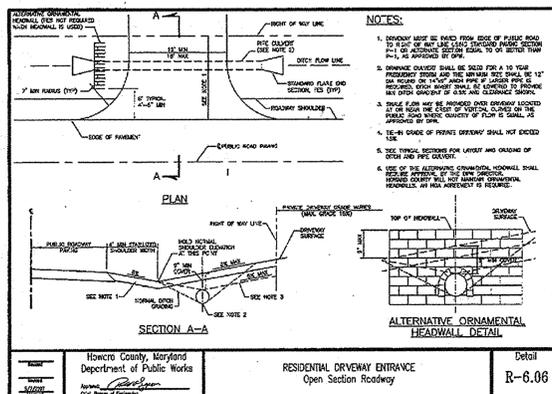
A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., SUITE 102
ELLICOTT CITY, MD 21042
ATTN: MR. DONALD R. REUWER
(443) 367-0422

END TREATMENT SCHEDULE					
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN.	INV. OUT.
ES-1	15" CONCRETE END SECTION (HO. CO. D-5.51)	N 563,924.23 E 1,319,763.53	553.25	-	552.00
ES-2	15" CONCRETE END SECTION (HO. CO. D-5.51)	N 563,926.22 E 1,319,739.61	553.45	552.20	-
ES-3	18" CONCRETE END SECTION (HO. CO. D-5.51)	N 564,236.04 E 1,319,725.80	549.00	-	547.50
ES-4	18" CONCRETE END SECTION (HO. CO. D-5.51)	N 564,204.27 E 1,319,687.47	550.50	549.00	-

PIPE SCHEDULE		
PIPE SIZE	TYPE	TOTAL LENGTH
15"	RCP CLASS IV	24 LF
18"	RCP CLASS IV	50 LF



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEMCO ROAD (CR)		3 TO 4'		4 TO 6'		6 TO 8'		8 TO 10'		
		PREVIOUS LAYOUT (INCHES)	MIN. HMA WITH GAS	MIN. HMA WITH CONSTANT GAS	PREVIOUS LAYOUT (INCHES)	MIN. HMA WITH GAS	MIN. HMA WITH CONSTANT GAS	PREVIOUS LAYOUT (INCHES)	MIN. HMA WITH GAS	MIN. HMA WITH CONSTANT GAS	PREVIOUS LAYOUT (INCHES)	MIN. HMA WITH GAS
P-1	RESIDENTIAL DRIVEWAY ENTRANCE	15.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-2	RESIDENTIAL DRIVEWAY ENTRANCE	15.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
P-3	RESIDENTIAL DRIVEWAY ENTRANCE	15.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
P-4	RESIDENTIAL DRIVEWAY ENTRANCE	15.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development

Howards County, Maryland
 Department of Public Works
 PAVING SECTIONS
 Detail
 R-2.01

**SUPPLEMENTAL INFORMATION PLAN
SITE DETAILS AND PROFILES**

JACK'S LANDING
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
 AND NON-BUILDABLE PRESERVATION PARCEL B
 A SUBDIVISION OF TAX MAP 34
 PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03
 5TH ELECTION DISTRICT

PARCELS: 414
 ZONED: RR-DEO
 HOWARD COUNTY, MARYLAND

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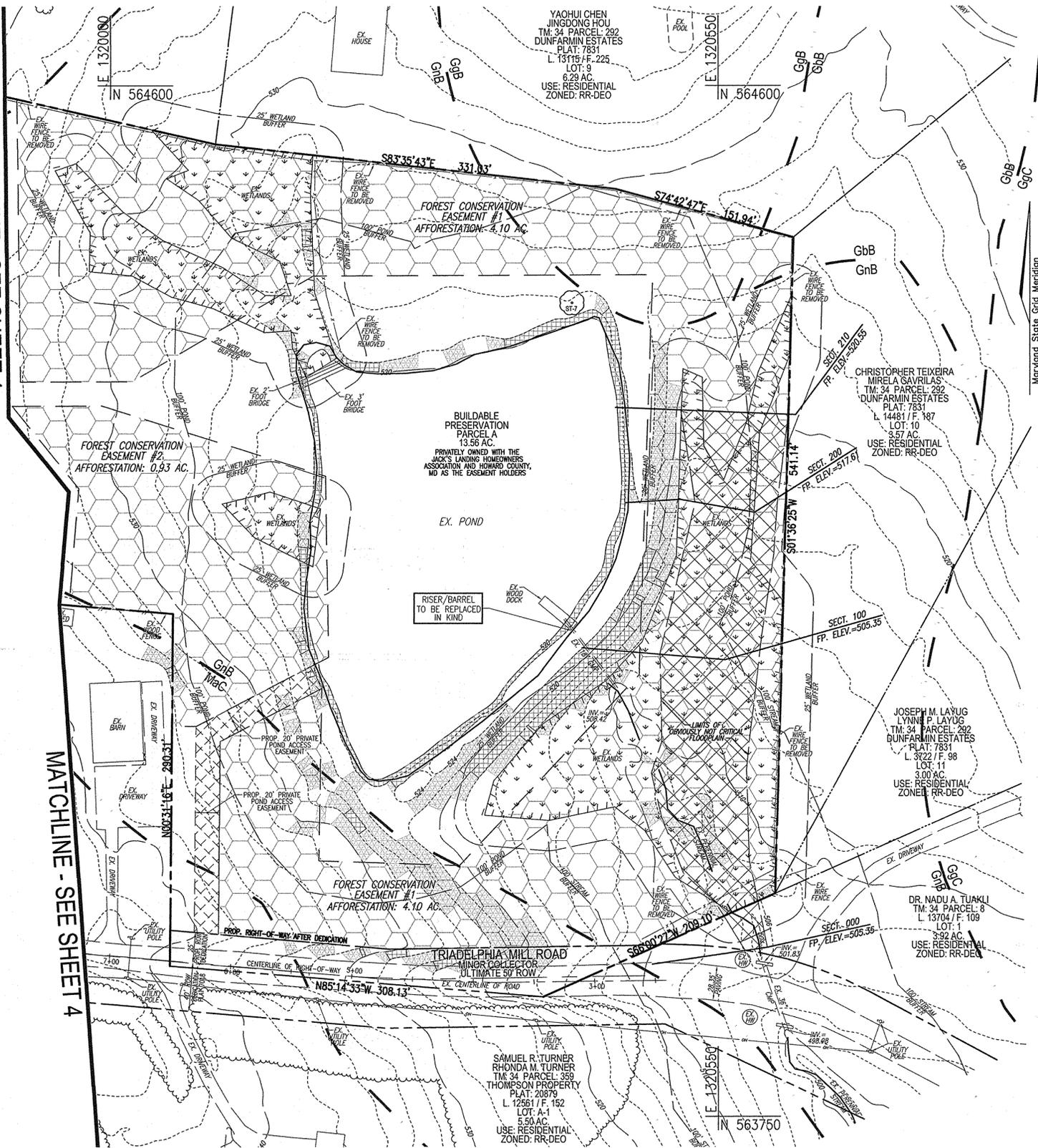
DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 13-31

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: 09-27-2014.

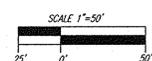
4 SHEET OF 12

MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 4



GRADING & SEDIMENT CONTROL PLAN
SCALE: 1"=50'



SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	.37	YES
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.37	YES
MnC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	C	.24	NO

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

SEQUENCE OF CONSTRUCTION

1. REQUEST FOR A PRE-CONSTRUCTION MEETING WITH HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION.
2. NOTIFY HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410-313-5712) AT LEAST 24 HOURS BEFORE STARTING ANY WORK.
3. CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS. (2 DAYS)
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
5. INSTALL CULVERT ES-3 TO ES-4. INSTALL EARTH DRAKS AND PIPE SLOPE DRAIN (P50-21) TO RIP-RAP LOCATED AT ES-4. (2 DAYS)
6. INSTALL SEDIMENT TRAP INFLOW PROTECTION AND PIPE SLOPE DRAIN AT OUTFALL TO RIP-RAP LOCATED AT ES-4. INSTALL SUPER SILT FENCE AT ES-3 AND ES-4. (5 DAYS)
7. INSTALL PERIMETER SUPER SILT FENCE AND SILT FENCE. (3 DAYS)
8. GRADE SWALE ON SOUTH SIDE OF DRIVEWAY AND DISCHARGE TO SEDIMENT TRAP. (3 DAYS)
9. PERFORM GRADING FOR ALL USE-IN-COMMON DRIVEWAYS. (10 DAYS)
10. INSTALL SWALES, SEED AND MULCH, AND INSTALL STABILIZATION MATTING. (3 DAYS)
11. INSTALL PAVING, LANDSCAPING, AND PERMANENT SWALE CHECK DAMS. (5 DAYS)
12. STABILIZE ALL DISTURBED AREAS. (1 DAY)
13. UPON APPROVAL FROM THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION, REMOVE SEDIMENT CONTROLS AND REGRADE SWALES TO SWM SPECIFICATIONS. (3 DAYS)
14. STABILIZE ALL AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS. (1 WEEK)

NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

LEGEND:

- PROPERTY LINE
- - - EXISTING RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- - - ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- OBVIOUSLY NOT CRITICAL FLOODPLAIN
- PROP. FOREST CONSERVATION EASEMENT (AFFORESTATION) PLAT
- EXISTING UTILITY POLE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- S&E
- SIC2
- EXISTING STEEP SLOPES
- EXISTING MODERATE SLOPES
- PROP. PRIVATE POND ACCESS EASEMENT PLAT

THIS PLAN MAY NOT BE USED TO OBTAIN GRADING OR BUILDING PERMITS FOR THE SHOWN HOUSES

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., SUITE 102
ELLCOTT CITY, MD 21042
ATTN: MR. DONALD R. REUWER
(443) 367-0422

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
SOILS MAP, GRADING & SEDIMENT CONTROL PLAN
JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
AND NON-BUILDABLE PRESERVATION PARCEL B
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172/F. 336)
TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT
PARCELS: 414
ZONED: RR-DEO
HOWARD COUNTY, MARYLAND

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John K. Robert 7/1/14
HOWARD S.C.D. DATE

BY THE ENGINEER:
"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 HOWARD SOIL CONSERVATION DISTRICT."
Robert H. Vogel 7/1/14
SIGNATURE OF ENGINEER DATE

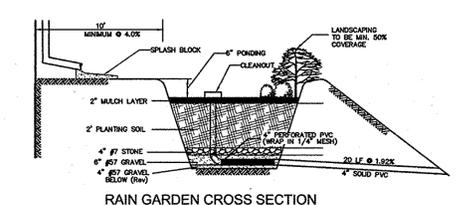
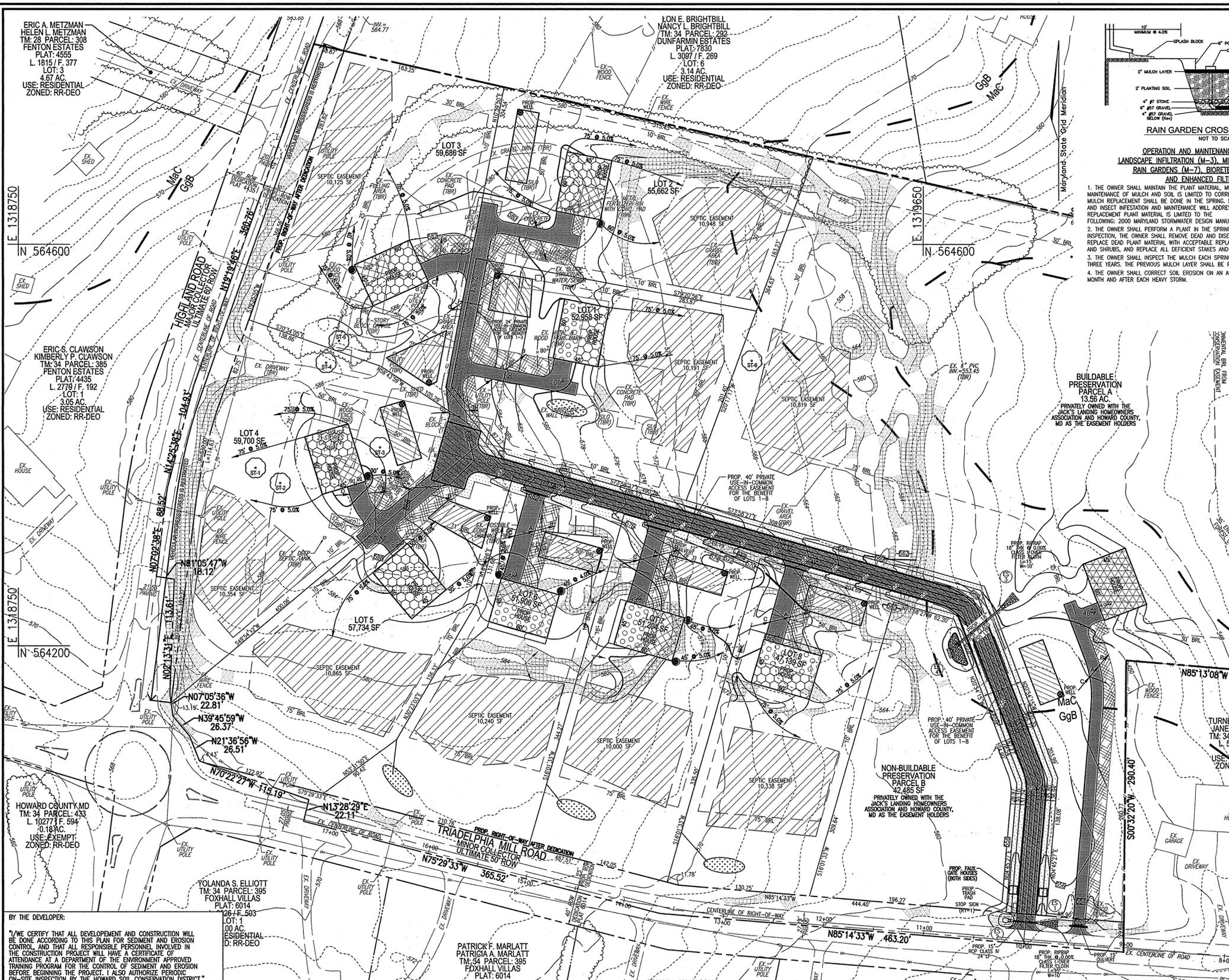
BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
[Signature] 7/1/14
SIGNATURE OF DEVELOPER DATE

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



PROFESSIONAL CERTIFICATE
DESIGN BY: RHY
DRAWN BY: JMR
CHECKED BY: RHY
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 13-31
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: 09-27-2014
6 SHEET OF 12

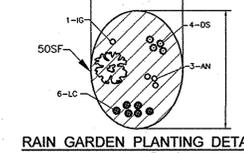
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Adams 7-9-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Karl E. Leavelle 7-9-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



RAIN GARDEN CROSS SECTION
NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR
LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6)
RAIN GARDENS (M-7), BIORETENTION SWALE (M-8),
AND ENHANCED FILTERS (M-9)

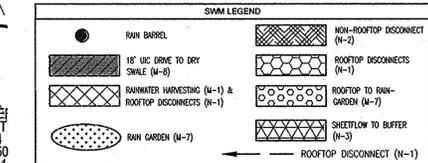
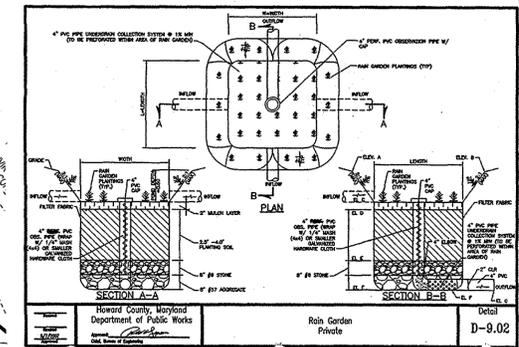
1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE 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.
2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



RAIN GARDEN PLANTING DETAIL
SCALE: 1"=30'

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY 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. SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
6. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.



LEGEND:

---	PROPERTY LINE
---	EXISTING RIGHT-OF-WAY LINE
---	PROPOSED RIGHT-OF-WAY LINE
---	ADJACENT PROPERTY LINE
---	EXISTING CURB AND GUTTER
---	EXISTING EDGE OF PAVING
---	EXISTING TREELINE
---	EXISTING TREES
---	EXISTING SPECIEMEN TREE
---	EXISTING WOOD FENCE
---	EXISTING METAL FENCE
---	PROPOSED TREELINE
---	PROP. USE-IN-COMMON ACCESS EASEMENT PLAT.
---	PROPOSED SEPTIC EASEMENT
---	EXISTING WELL BOX
---	EXISTING UTILITY POLE
---	PROPOSED STORMDRAIN
---	PROPOSED CONCRETE
---	EXISTING 10' CONTOUR
---	EXISTING 2' CONTOUR
---	SOILS
---	PROPOSED 10' CONTOUR
---	PROPOSED 2' CONTOUR
---	PROPOSED SPOT ELEVATION
---	EXISTING SLOPE SLOPES
---	EXISTING MODERATE SLOPES

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., SUITE 102
ELLCOTT CITY, MD 21042
ATTN: MR. DONALD R. REUWER
(443) 367-0422

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL 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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER: [Signature]
DATE: 6/29/14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 7-9-14

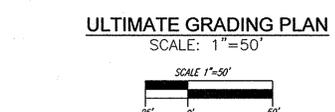
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 7-09-14

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	.37	YES
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.37	YES
MaC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	C	.24	NO

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT



(6) RAINGARDEN PLANT LIST (8.0' x 10' EACH)

QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
1	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	2 1/2"-3" Col.
1	ILEX GLABRA	INK BERRY	2'-3' HT.
6	LOBEIA CARDINALIS	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER
4	DRYOPTERIS SP.	WOOD FERN	1 GAL. CONTAINER
3	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER

NOTE:
THIS SHEET IS NOT TO BE USED FOR GRADING UNDER THIS PLAN. THIS PLAN SHOWS THE ULTIMATE GRADING OF THE LOTS ON THE SITE AND IS CONCEPTUAL ONLY. SEE SHEET 5 FOR GRADING AND SEDIMENT CONTROL UNDER THIS PLAN.

SUPPLEMENTAL INFORMATION PLAN
ULTIMATE GRADING, SEDIMENT CONTROL
AND STORMWATER MANAGEMENT PLAN
JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A
AND NON-BUILDABLE PRESERVATION PARCEL B
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT

PARCELS: 414
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HOWARD COUNTY, MARYLAND

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ELLCOTT CITY, MD 21043
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DESIGN BY: RHY
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7 SHEET OF 12

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LEAF PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

- 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. (311-1855).
- 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 "MARILAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTORATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 3 CALENDAR DAYS FOR ALL PERMITS. SEDIMENT CONTROL STRUCTURES, GRASS, PERENNIAL SLOPES AND ALL SLOPES GREATER THAN 3:1, (B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARILAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5). 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE: 25.81 ACRES
AREA DISTURBED: 0.52 ACRES
AREA TO BE REWOVED OR PAVED: 0.52 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 1.53 ACRES
TOTAL CUT: 1.500 CU. YDS.
TOTAL FILL: 1.500 CU. YDS.
OFFICE WASTE/BORROW AREA LOCATION: #2
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING OR FOR RELOCATION 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 PERMANENT EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS OBTAINED.
- TECHNIQUES 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.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRES PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AGENCY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CONSECUTIVELY MAY BE DISTURBED AT A GIVEN TIME.
- ESTIMATE ONLY CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION. TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LEAF PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

- 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. (311-1855).
- 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 "MARILAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTORATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 3 CALENDAR DAYS FOR ALL PERMITS. SEDIMENT CONTROL STRUCTURES, GRASS, PERENNIAL SLOPES AND ALL SLOPES GREATER THAN 3:1, (B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARILAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5). 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE: 25.81 ACRES
AREA DISTURBED: 0.52 ACRES
AREA TO BE REWOVED OR PAVED: 0.52 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 1.53 ACRES
TOTAL CUT: 1.500 CU. YDS.
TOTAL FILL: 1.500 CU. YDS.
OFFICE WASTE/BORROW AREA LOCATION: #2
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING OR FOR RELOCATION 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 PERMANENT EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS OBTAINED.
- TECHNIQUES 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.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRES PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AGENCY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CONSECUTIVELY MAY BE DISTURBED AT A GIVEN TIME.
- ESTIMATE ONLY CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION. TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT.

R-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

- A. SOIL PREPARATION**
 - TEMPORARY STABILIZATION
 - SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOW, OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSEND, IT MUST NOT BE ROLLED OR COMPACTED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH TRACKS RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 20 PERCENT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS LOVEGRASS WILL BE PLANTED. THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SURFACE LAYER OF HUMUS.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSEND TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - SOIL SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAYER AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND RAKE THE AREA FOR SEED APPLICATION. LOOSEND SURFACE SOIL BY DISKING WITH A HEAVY CROWN OR OTHER EQUIPMENT TO BREAKEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDING.
 - SEEDING LOGS MUST BE MAINTAINED ON ALL TRACKS EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 3 TO 5 INCHES OF SOIL LOOSE AND FRABLE.
 - SEEDING LOGS MUST BE NECESSARY ON HEAVY DISTURBED AREAS.
- B. TOPSOILING**
 - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS 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 GRADATION.
 - TOPSOIL SAMPLING MUST BE PERFORMED TO DETERMINE THE NUTRIENT AND PH CONTENTS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE IN THE SOIL SURVEY PUBLISHED BY US-DNR.
 - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - A. 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 FLURISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND TOPSOILING.
 - TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM OR LOAMY SAND. OTHER MATERIALS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED.
 - BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CONEYERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERBERIS GRASS, QUACK GRASS, JOHNSON GRASS, HUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, ARE PERMITTED TO BE USED IN LIEU OF NATURAL TOPSOIL.
- C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FINE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZERS WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LABELS AND MUST BEAR THE NAME, TRADE NAME OR TRADE MARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNED LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDE (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 90 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHEN THE SUBSOIL IS HEAVY OR HEAVY COMPACTED OR HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERMITS, CONTROL SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

- A. SEEDING**
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARILAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO PRE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B-4 REGARDING THE QUALITY OF SEED. SEED TESTS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY THE TYPE OF SEED AND SEEDING RATE.
 - SEEDING MUST BE PERFORMED TO THE MOST ADVANTAGE AS SOIL AS POSSIBLE UNTIL THE GROUND IS FROZEN. THE APPROPRIATE SEEDING METHOD MUST BE APPLIED WHEN THE GROUND IS FROZEN.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES.
 - HYDROSEEDING: HYDROSEEDING IS REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE INCULCANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP MULCH AS COOL AS POSSIBLE UNTIL THE INOCULANT IS EFFECTIVE.
 - IF FERTILIZER IS NOT TO 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 PREVENT DISPERSION OF PHYTO-TOXIC MATERIALS.
- B. MULCHING**
 - MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARILAND STATE SEED LAW AND MUST NOT BE MOLY, GAYED, DECAYED, OR EXCESSIVELY MUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; PHOSPHORUS, 200 POUNDS PER ACRE; POTASSIUM, 200 POUNDS PER ACRE.
 - LIME USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ONE TIME. DO NOT USE BURNED OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
 - WCFM IS TO BE DIED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM INCLUDING DYE MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST BE A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.8 PERCENT MAXIMUM AND WATER HOLDING CAPACITY 90 PERCENT MINIMUM.
- APPLICATION**
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM THICKNESS OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED, WHEN USING MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER MULCH AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE AND THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD.
 - TERMINAL TIE: TERM TIE OR OTHER APPROVED EQUIV. MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BONDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRISTS OF BANKS. USE OF ACRYLIC BONDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF THE PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- TEMPORARY STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING ZONE, APPLY SEED AND MULCH OR STRAW MULCH AS PRESCRIBED IN SECTION B-4-3.1-A.1 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
					N	P ₂ O ₅ K ₂ O	
1	COOL SEASON ANNUAL PERENNIALS	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (90 LB PER 1000 SF)	0	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON PERENNIALS OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.	0	0	0

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF THE PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- TEMPORARY STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING ZONE, APPLY SEED AND MULCH OR STRAW MULCH AS PRESCRIBED IN SECTION B-4-3.1-A.1 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
					N	P ₂ O ₅ K ₂ O	
1	COOL SEASON ANNUAL PERENNIALS	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (90 LB PER 1000 SF)	0	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON PERENNIALS OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.	0	0	0

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF THE PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- TEMPORARY STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING ZONE, APPLY SEED AND MULCH OR STRAW MULCH AS PRESCRIBED IN SECTION B-4-3.1-A.1 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
					N	P ₂ O ₅ K ₂ O	
1	COOL SEASON ANNUAL PERENNIALS	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (90 LB PER 1000 SF)	0	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON PERENNIALS OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.	0	0	0

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

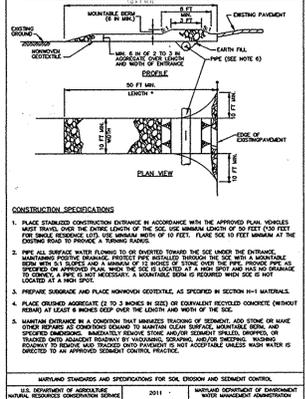
PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERMITS, CONTROL SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

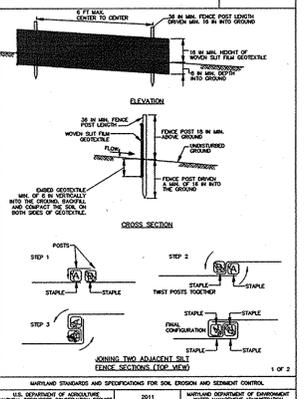
CRITERIA

- A. SEEDING**
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARILAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO PRE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TESTS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY THE TYPE OF SEED AND SEEDING RATE.
 - SEEDING MUST BE PERFORMED TO THE MOST ADVANTAGE AS SOIL AS POSSIBLE UNTIL THE GROUND IS FROZEN. THE APPROPRIATE SEEDING METHOD MUST BE APPLIED WHEN THE GROUND IS FROZEN.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES.
 - HYDROSEEDING: HYDROSEEDING IS REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE INCULCANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP MULCH AS COOL AS POSSIBLE UNTIL THE INOCULANT IS EFFECTIVE.
 - IF FERTILIZER IS NOT TO 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 PREVENT DISPERSION OF PHYTO-TOXIC MATERIALS.
- B. MULCHING**
 - MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARILAND STATE SEED LAW AND MUST NOT BE MOLY, GAYED, DECAYED, OR EXCESSIVELY MUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; PHOSPHORUS, 200 POUNDS PER ACRE; POTASSIUM, 200 POUNDS PER ACRE.
 - LIME USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ONE TIME. DO NOT USE BURNED OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
 - WCFM IS TO BE DIED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM INCLUDING DYE MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST BE A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.8 PERCENT MAXIMUM AND WATER HOLDING CAPACITY 90 PERCENT MINIMUM.
- APPLICATION**
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM THICKNESS OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED, WHEN USING MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER MULCH AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE AND THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD.
 - TERMINAL TIE: TERM TIE OR OTHER APPROVED EQUIV. MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BONDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRISTS OF BANKS. USE OF ACRYLIC BONDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

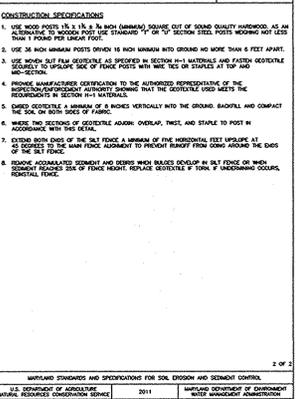
DETAIL C-1 EARTH DIKE



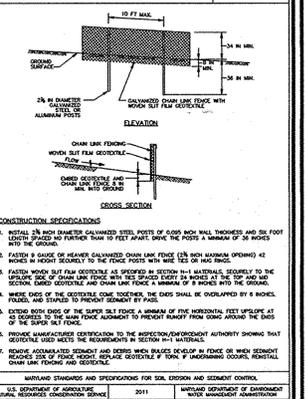
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



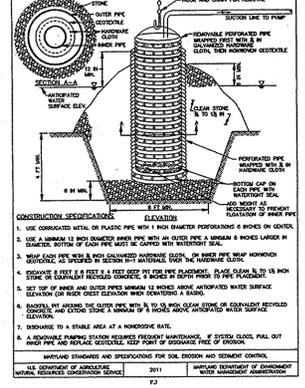
DETAIL E-1 SILT FENCE



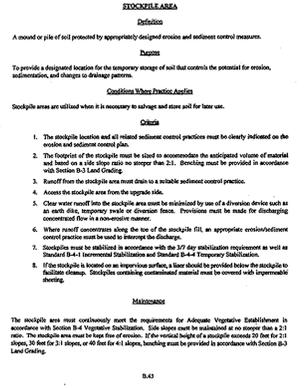
DETAIL E-3 SUPER SILT FENCE



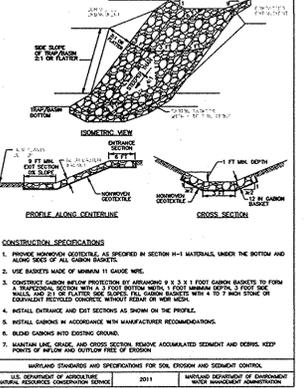
DETAIL F-1 REMOVABLE PUMPING STATION



DETAIL D-2 GASION INFLOW PROTECTION



DETAIL B-4-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION



BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, 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 TEMPERED WITHIN THE MICRO-BIORETENTION 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 (LESA 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 (50%), COARSE SAND (50%), 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 IN TO 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 TEXTURAL 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 EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR WASH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TUFF 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 CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGHOUT 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 WASH TRACKS.

4. PLANT MATERIAL
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION 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 1/3RD 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. 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 PLOTS 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 DEFERS, OR AT A MINIMUM, DEFERS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL LUREA 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 (ASTM 758, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF 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 1/4" (NO. 4 OR 4A) GALVANIZED HARBORWARE 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 (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER BED AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
THIS 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.

N-1. DISCONNECTION OF ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

- THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF
 - SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

INSPECTION:

A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT SIZING FOR TREATMENT AREAS HAVE BEEN MET AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

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 (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

N-2. DISCONNECTION OF NON-ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

- THE FOLLOWING SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH NON-ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN AREAS DESIGNATED FOR NON-ROOFTOP DISCONNECTIONS.
 - SITE DISTURBANCE: TO MINIMIZE DISTURBANCE AND COMPACTION, CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

INSPECTION:

A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT ADEQUATE TREATMENT AREAS AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

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 (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, HIGH FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

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

- A. 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 OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

OPERATION AND MAINTENANCE SCHEDULE FOR M-7 RAIN GARDEN AREAS

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. 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.
- THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

APPENDIX B.4. - CONSTRUCTION SPECIFICATIONS

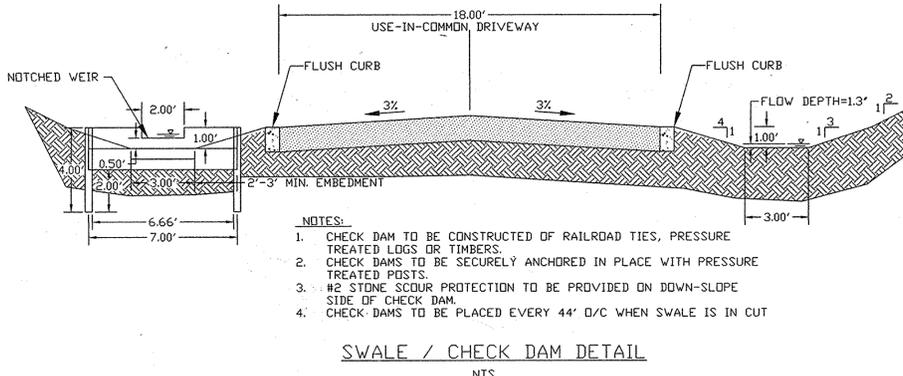
Appendix B.4. Construction Specifications for Environmental Site Design Practices

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 (50%), coarse sand (50%), and 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)	n/a	
Mulch	shredded hardwood	n/a	aged 6 months, minimums: no pine or wood chips
Pea gravel discharge	see ASTM D-448	NO. 57 OR NO. 9 (1/4" TO 3/8")	
Curb/drain	ornamental stone: washed cobble	stone: 2" to 5"	
Geotextile	AASHTO M-43	n/a	FE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (1/2" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SD635	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Min. No. 3, F _c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM A-615-60	n/a	void-free; testing of poured-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved floor or load standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 318.1R/99; vertical loading (84.19 or 81.02); allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO M-6 or ASTM C-33	0.075 to 0.04"	Sand specifications such as Dabson and Graystone (AASHTO) #10 are not acceptable. No sodium sulfonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

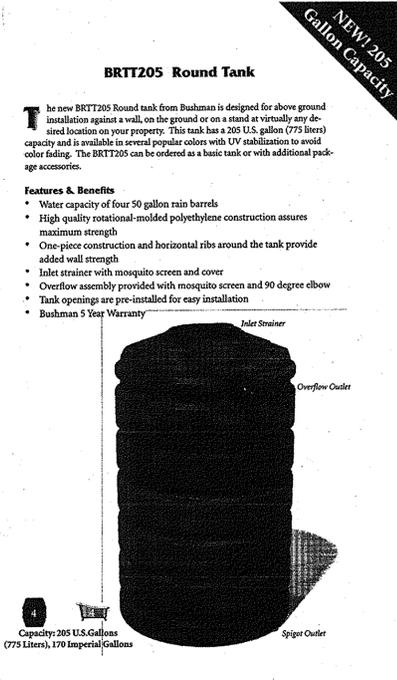
Chad Edwards 7-8-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION J.P. DATE

Walter Deane 7-09-14
CHIEF, DIVISION OF LAND DEVELOPMENT BB DATE



- NOTES:**
- CHECK DAM TO BE CONSTRUCTED OF RAILROAD TIES, PRESSURE TREATED LOGS OR TIMBERS.
 - CHECK DAMS TO BE SECURELY ANCHORED IN PLACE WITH PRESSURE TREATED POSTS.
 - #2 STONE SCOUR PROTECTION TO BE PROVIDED ON DOWN-SLOPE SIDE OF CHECK DAM.
 - CHECK DAMS TO BE PLACED EVERY 44' O/C WHEN SWALE IS IN CUT

SWALE / CHECK DAM DETAIL



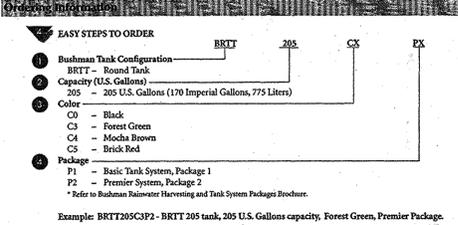
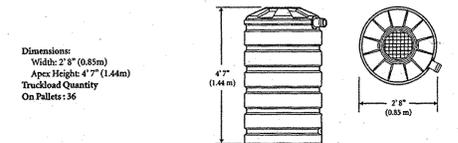
NEW 205 Gallon Capacity

BRTT205 Round Tank

The new BRTT205 Round tank from Bushman is designed for above ground installation against a wall, on the ground or on a stand at virtually any desired location on your property. This tank has a 205 U.S. gallon (775 liters) capacity and is available in several popular colors with UV stabilization to avoid color fading. The BRTT205 can be ordered as a basic tank or with additional package accessories.

Features & Benefits

- Water capacity of four 50 gallon rain barrels
- High quality rotational-molded polyethylene construction assures maximum strength
- One-piece construction and horizontal ribs around the tank provide added wall strength
- Inlet strainer with mosquito screen and cover
- Overflow assembly provided with mosquito screen and 90 degree elbow
- Tank openings are pre-installed for easy installation
- Bushman 5 Year Warranty



BUSHMAN
STORM WATER MANAGEMENT SYSTEMS

Canada: Bushman, Canada
6185 Tisdale Road, Unit 3-5
Mississauga, Ontario L5T 1K3
Tel: 905.887.8332 Fax: 905.565.8282
www.bushmancanada.com

Americas: Bushman, USA
20640 Yess Road, P.O. Box 892051
Temecula, CA 92589-3051
Tel: 951.920.2446 (toll free) Fax: 951.296.6123
www.bushmanusa.com

Bushman is a Division of Chem-Connect Corporation. Printed in USA 0109-109-04-14.

BUSHMAN BRTT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT RAIN BARREL DETAIL

HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)

- THE OWNER SHALL EMPTY BARRELS ON A MONTHLY BASIS AND CLEAN BARREL WITH A HOSE.
- THE OWNER SHALL VERIFY INTEGRITY OF LEAF SCREENS, GUTTERS, DOWNSPOUTS, SPIGOTS, AND MOSQUITO SCREENS, AND CLEAN AND REMOVE ANY DEBRIS.
- THE OWNER SHALL REPLACE DAMAGED COMPONENTS AS NEEDED.
- THE OWNER SHALL DISCONNECT THE BARREL PRIOR TO WINTER, OR ALLOW THE BARREL TO DRAIN BY BOTTOM SPIGOT DURING THE WINTER SEASON.

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., SUITE 102
ELLCOTT CITY, MD 21042
ATTN: MR. DONALD R. REIWER
(443) 367-0422

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
STORM WATER MANAGEMENT NOTES AND DETAILS

JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
AND NON-BUILDABLE PRESERVATION PARCEL B
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172 F. 336)

TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT

PARCELS: 414
ZONED: RR-DEO
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8196

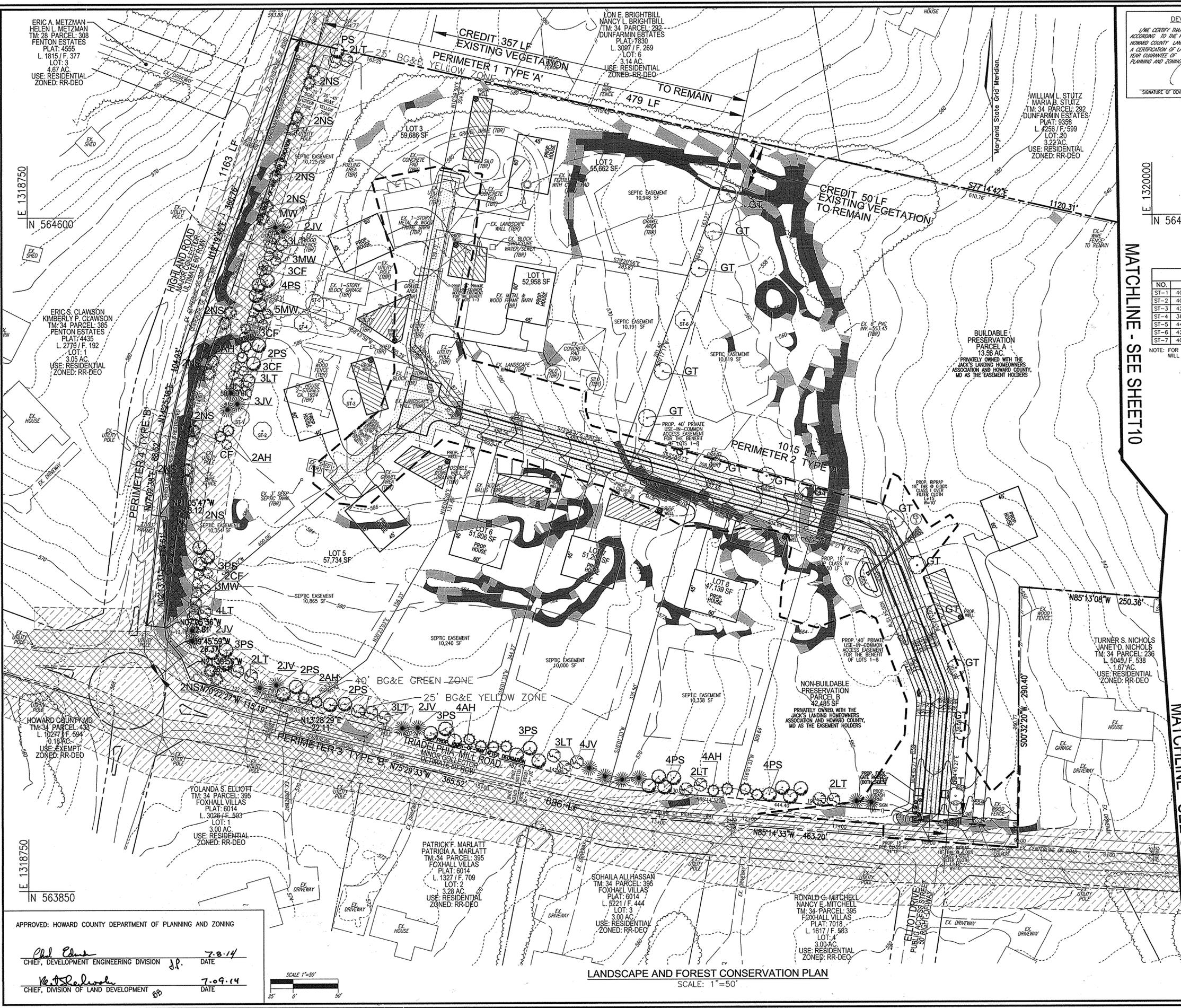
PROFESSIONAL CERTIFICATE

STATE OF MARYLAND
ROBERT H. VOGEL, PE No. 16183

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: MARCH 2014
SCALE: AS SHOWN
W.O. NO.: 13-31

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. 16183, EXPIRATION DATE: 09-27-2014

9 SHEET OF 12



DEVELOPER/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY A DECLARATION OF YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 SIGNATURE OF DEVELOPER: [Signature] DATE: 4/2/14

LEGEND:

[Symbol]	PROPERTY LINE
[Symbol]	EXISTING RIGHT-OF-WAY LINE
[Symbol]	PROPOSED RIGHT-OF-WAY LINE
[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	EXISTING CURB AND GUTTER
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING TREELINE
[Symbol]	EXISTING TREES
[Symbol]	EXISTING WOOD FENCE
[Symbol]	EXISTING METAL FENCE
[Symbol]	PROPOSED TREELINE
[Symbol]	PROP. USE-IN-COMMON ACCESS EASEMENT PLAT.
[Symbol]	PROPOSED SEPTIC EASEMENT
[Symbol]	PROPOSED WELL BOX
[Symbol]	EXISTING UTILITY POLE
[Symbol]	PROPOSED STORMDRAIN
[Symbol]	PROPOSED CONCRETE
[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	SOILS
[Symbol]	PROPOSED 10' CONTOUR
[Symbol]	PROPOSED 2' CONTOUR
[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]	EXISTING STEEP SLOPES
[Symbol]	EXISTING MODERATE SLOPES
[Symbol]	EXISTING BG&E GREEN ZONE
[Symbol]	EXISTING BG&E YELLOW ZONE
[Symbol]	PROPOSED FOREST CONSERVATION SIGN

E 1320000
 IN 564600

MATCHLINE - SEE SHEET 10

SPECIMEN TREE CHART

NO.	SIZE	COMMON NAME	COMMENTS
ST-1	40" DBH	ELM	TO REMAIN
ST-2	40" DBH	ELM	TO REMAIN
ST-3	42" DBH	OAK	TO BE REMOVED
ST-4	36" DBH	OAK	TO REMAIN
ST-5	44" DBH	PINE	TO REMAIN
ST-6	42" DBH	ELM	TO REMAIN
ST-7	40" DBH	MULTI-STEM	TO REMAIN

NOTE: FOR SPECIMEN TREES 4 & 5 TREE PROTECTION FENCING WILL BE REQUIRED

B G & E NOTES:

1. THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
2. BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
3. THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

FSD NOTES:

1. NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR APPROPRIATE HABITAT WERE OBSERVED ON THE PROPERTY.
2. SURROUNDING LAND USE IS MEDIUM-HIGH DENSITY RESIDENTIAL DEVELOPMENT.
3. THERE ARE NO FOREST PRESENT ON SUBJECT PROPERTY.
4. SPECIMEN TREES ARE SHOWN HEREON PER THE 10-6-2006 CAPITOL DEVELOPMENT DESIGN, INC. DELINEATION.

OWNER
 MARTY A. HOWARD
 P.O. BOX 740
 CLARKSVILLE, MD 21029

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR., SUITE 102
 ELLICOTT CITY, MD 21042
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

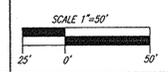
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SUPPLEMENTAL INFORMATION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
JACK'S LANDING
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL A,
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 SUBDIVISION OF TAX MAP 34
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 TAX MAP: 34 GRID: 03
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PROFESSIONAL CERTIFICATE
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 DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 13-31
 SHEET 10 OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7-8-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 7-9-14
 CHIEF, DIVISION OF LAND DEVELOPMENT



LANDSCAPE AND FOREST CONSERVATION PLAN
 SCALE: 1"=50'

MATCHLINE - SEE SHEET 10

LANDSCAPE NOTES

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRO PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

B,G & E NOTES:

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- BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
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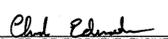
LANDSCAPE SCHEDULE				
SYMBOL	KEY	QUAN.	BOTANICAL NAME	REMARKS
+	AR	2	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2"-3" CAL. B & B
○	GT	15	GLEDTISIA TRIACANTHOS INERMIS 'IMPERIAL' IMPERIAL THORNLESS HONEYLOCUST	2-1/2"-3" CAL. B & B
○	MW	12	CARPINUS CAROLINIANA MUSCLEWOOD	1-1/2"-2" CAL. B & B
○	CF	12	CORNUS FLORIDA 'RUBRA' RED FLOWERING DOGWOOD	8'-10' HT. B & B
○	PS	34	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	1-1/2"-2" CAL. B & B
○	LT	24	LAGERSTROEMIA TUSCARORA TUSCARORA CRAPE MYRTLE (BGE COMPLIANT)	4'-6" HT. (MAX. HEIGHT=25') B & B
○	NS	20	ILEX 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY (BGE COMPLIANT)	5'-6" HT. B & B
○	JV	17	JUNIPERUS VIRGINIANA 'CANAERTII' EASTERN RED CEDAR	2-1/2"-3" CAL. B & B
○	AH	14	ILEX OPACA AMERICAN HOLLY	5'-6" HT. B & B

TRASH PAD LANDSCAPING				
SYMBOL	QTY.	DESCRIPTION	SIZE	REMARKS
⊙	5	DWARF JAPANESE YEW	3'-4" HT	B & B

SCHEDULE A: PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO PERIMETER PROPERTIES			
	1	2	3	4
PERIMETER/FRONTAGE DESIGNATION	A	B	C	D
LANDSCAPE TYPE	A	B	C	D
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	479'	1015'	886'	1163'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES 357'	YES 50'	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED (IF REMAINING)	122	965	886	1163
SHADE TREES	1:60	2	11:60	18
EVERGREEN TREES	1:60	2	11:60	23
SHRUBS	1:60	2	11:60	24
NUMBER OF PLANTS PROVIDED	2	15	-	-
SHADE TREES	-	-	-	-
EVERGREEN TREES	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	22**	29**
SHRUBS (10:1 SUBSTITUTION)	-	-	36**	46**
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED				
* CREDIT 42" ELM TO REMAIN				
** BGE COMPLIANT				

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY FOR THE PERIMETER LANDSCAPING IN THE AMOUNT OF \$25,500.00 FOR THE REQUIRED 59 SHADE TREES (17,700), 51 EVERGREENS (7,650) AND 5 SHRUBS (150 - TRASH PAD) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 7-8-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JR. DATE
 7-09-14
 CHIEF, DIVISION OF LAND DEVELOPMENT RB DATE

GENERAL NOTES

- WATERSHED NAME: MIDDLE PATUXENT RIVER
 WATERSHED NUMBER: 2131106
 WATERSHED NAME: ROCKY GORGE DAM
 WATERSHED NUMBER: 2131107
- GROSS SITE AREA: 25.81 AC.
 - NET SITE AREA: 25.13 AC.
 - AREA OF 100-YEAR FLOODPLAIN: 0.68 AC.
 - AREA OF WETLANDS AND BUFFERS(ONSITE): 2.91 AC.*
 - AREA OF STREAM AND BUFFERS(ONSITE): 5.75 AC.*
 - AREA OF > 25% STEEP SLOPES: 0.00 AC.
 - EXISTING FOREST: 0.00 AC.
 - F. ZONED: RR-DEO
 - EXISTING USE: FARMLAND
 - PROPOSED USE: RESIDENTIAL
- * WETLAND & STREAM BUFFERS OVERLAP

DEVELOPER/BUILDER'S CERTIFICATE

I HEREBY CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I HEREBY CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN INVOICED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

 4/2/14
 SIGNATURE OF DEVELOPER DATE

LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- OBVIOUSLY NOT CRITICAL FLOODPLAIN
- PROP. FOREST CONSERVATION EASEMENT (AFFORESTATION) PLANT
- EXISTING UTILITY POLE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING STEEP SLOPES
- EXISTING MODERATE SLOPES
- EXISTING B&E GREEN ZONE
- EXISTING B&E YELLOW ZONE
- PROPOSED FOREST CONSERVATION SIGN
- PROP. PRIVATE POND ACCESS EASEMENT PLANT

SPECIMEN TREE CHART

NO.	SIZE	COMMON NAME	COMMENTS
ST-1	40" DBH	ELM	TO REMAIN
ST-2	40" DBH	ELM	TO REMAIN
ST-3	42" DBH	OAK	TO BE REMOVED
ST-4	36" DBH	OAK	TO REMAIN
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ST-7	40" DBH	MULTI-STEM	TO REMAIN

NOTE: FOR SPECIMEN TREES 4 & 5 TREE PROTECTION FENCING WILL BE REQUIRED

OWNER
 MARTY A. HOWARD
 P.O. BOX 740
 CLARKSVILLE, MD 21029

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR., SUITE 102
 ELLICOTT CITY, MD 21042
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
JACK'S LANDING
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 PARCEL 414 (L. 3172 / F. 336) HOWARD COUNTY, MARYLAND

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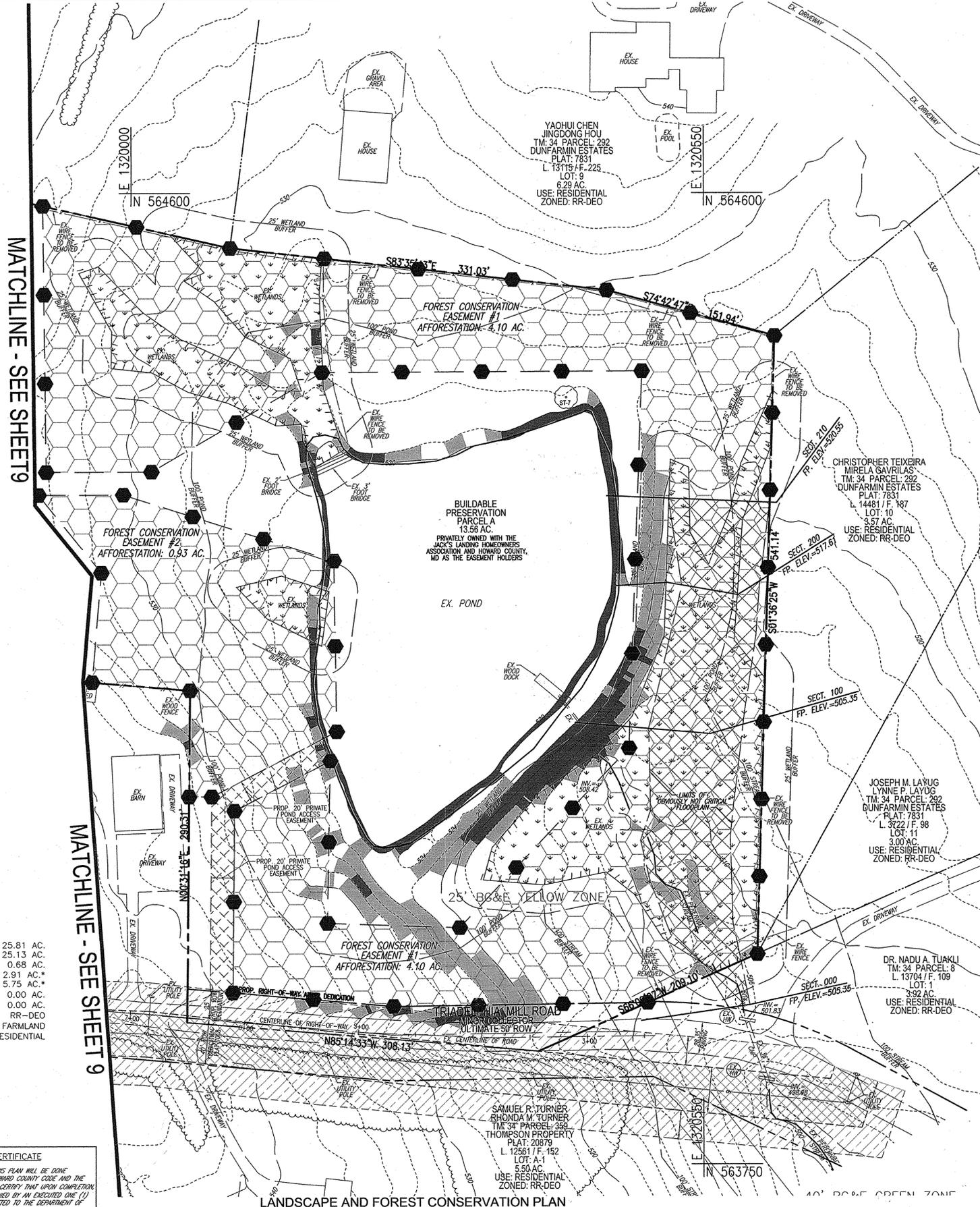
ROBERT H. VOGEL ENGINEERS & SURVEYORS - PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043
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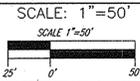
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PROFESSIONAL CERTIFICATE

10 SHEET OF 12



LANDSCAPE AND FOREST CONSERVATION PLAN



F-08-101

AFFORESTATION PLAN

A. PLANTING PLAN AND METHODS

PLANT SPECIES SELECTION WAS BASED ON OUR KNOWLEDGE REGARDING PLANT COMMUNITIES IN MARYLAND'S PIEDMONT PLATEAU AND INFORMATION PROVIDED IN THE SOIL SURVEY ON TYPICAL VEGETATION FOR THE SOIL TYPE ON THE PLANTING SITE. SPECIES SELECTION WAS ALSO BASED ON OUR KNOWLEDGE OF PLANT AVAILABILITY IN THE NURSERY INDUSTRY.

AFFORESTATION WILL BE ACCOMPLISHED THROUGH A MIXED PLANTING OF WHIPS AND BRANCHED TRANSPLANTS. CONTAINER GROWN STOCK IS RECOMMENDED BUT BAREROOT STOCK MAY BE USED TO HELP CONTROL AFFORESTATION COSTS. IF BAREROOT STOCK IS USED THE ROOT SYSTEMS OF ALL PLANTS WILL BE DIPPED IN AN ANTI-DESICCANT GEL PRIOR TO PLANTING TO IMPROVE MOISTURE RETENTION IN THE ROOT SYSTEMS.

PRIOR TO PLANTING THE PROPOSED FOREST CONSERVATION EASEMENTS ALL MULTIFLORA ROSE IN THE PLANTING AREA SHALL BE REMOVED. REMOVAL OF THE ROSE MAY BE PERFORMED WITH MOWING AND HERBICIDE TREATMENTS. PHYSICAL REMOVAL OF ALL TOP GROWTH FOLLOWING BY A PERIODIC HERBICIDE TREATMENT OF STUMP SPROUTS IS RECOMMENDED. NATIVE TREE AND SHRUB SPECIES OCCURRING WITHIN THE ROSE THICKETS SHOULD BE RETAINED WHEREVER POSSIBLE. HERBICIDE TREATMENTS SHALL OCCUR ON 2 MONTH INTERVALS DURING THE FIRST GROWING SEASON AND ONCE EACH IN THE SPRING AND FALL FOR SUBSEQUENT YEARS. HERBICIDE USE SHALL BE MADE SPECIFICALLY TO ADDRESS WOODY PLANT MATERIAL AND SHALL BE APPLIED AS PER MANUFACTURER'S SPECIFICATIONS. CARE SHOULD BE TAKEN NOT TO SPRAY PLANTED TREES OR NATURALLY OCCURRING NATIVE TREE/SHRUB SEEDLINGS. IT IS RECOMMENDED THAT INITIATION OF ROSE REMOVAL BEGIN AT LEAST SIX MONTHS PRIOR TO PLANTING.

B. PLANTING AND SOIL SPECIFICATIONS

PLANT MATERIAL WILL BE INSTALLED IN ACCORDANCE WITH THE PLANTING DETAIL AND PLANTING SPECIFICATIONS SHOWN ON THE FOREST CONSERVATION PLAN.

AMENDMENTS TO EXISTING SOIL WILL BE IN ACCORDANCE WITH THE PLANTING SPECIFICATIONS SHOWN ON THE FOREST CONSERVATION PLAN. SOIL DISTURBANCE WILL BE LIMITED TO INDIVIDUAL PLANTING LOCATIONS.

C. MAINTENANCE OF PLANTINGS

FOR INFORMATION REGARDING MAINTENANCE OF THE AFFORESTATION PLANTINGS, SEE SECTION VIII B.

D. GUARANTEE REQUIREMENTS

A 90 PERCENT SURVIVAL RATE OF THE AFFORESTATION PLANTINGS WILL BE REQUIRED AFTER ONE GROWING SEASON. ALL PLANT MATERIAL BELOW THE 90 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE SECOND GROWING SEASON. AT THE END OF THE SECOND GROWING SEASON, A 75 PERCENT SURVIVAL RATE WILL BE REQUIRED. ALL PLANT MATERIAL BELOW THE 75 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED BY THE BEGINNING OF THE NEXT GROWING SEASON.

E. SECURITY FOR AFFORESTATION

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

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

THE FOLLOWING TIMETABLE REPRESENTS THE PROPOSED TIMETABLE FOR DEVELOPMENT. THE ITEMS OUTLINED IN THE FOREST CONSERVATION PLAN WILL BE ENACTED WITHIN TWO (2) YEARS OF SUBDIVISION APPROVAL.

BELOW FIND A PROPOSED SEQUENCE OF CONSTRUCTION:

1. INSTALL ALL SIGNAGE AND SEDIMENT CONTROL DEVICES.
2. HOLD PRE-CONSTRUCTION MEETING BETWEEN DEVELOPER, CONTRACTOR AND COUNTY INSPECTOR.
3. BUILD ACCESS ROADS, INSTALL UTILITIES, AND CONSTRUCT HOME. STABILIZE ALL DISTURBED AREAS ACCORDINGLY.
4. BEGIN MULTIFLORA ROSE REMOVAL, AS NEEDED. INSTALL PERMANENT PROTECTIVE SIGNAGE FOR EASEMENTS AND INITIATE PLANTINGS IN ACCORDANCE WITH FOREST CONSERVATION PLAN. PLANTINGS WILL BE COMPLETED WITHIN TWO (2) YEARS OF SUBDIVISION APPROVAL.
5. REMOVE SEDIMENT CONTROL.
6. HOLD POST-CONSTRUCTION MEETING WITH COUNTY INSPECTORS TO ASSURE COMPLIANCE WITH FCP. SUBMIT CERTIFICATION OF INSTALLATION.
7. MONITOR AND MAINTAIN PLANTINGS FOR 2 YEARS.

E. CONSTRUCTION MONITORING

EEO-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.

F. POST-CONSTRUCTION MEETING

UPON COMPLETION OF CONSTRUCTION, EEO-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. EEO-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:

A. FENCING AND SIGNAGE

PERMANENT SIGNAGE INDICATING THE LIMITS OF THE RETENTION/AFFORESTATION AREA SHALL BE MAINTAINED.

B. 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:

1. 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 NEEDED.
2. REMOVAL OF INVASIVE EXOTICS AND NOXIOUS WEEDS. OLD FIELD SUCCESSIONAL SPECIES WILL BE RETAINED.
3. IDENTIFICATION OF SERIOUS PLANT PESTS AND DISEASES, TREATMENT WITH APPROPRIATE AGENT.
4. PRUNING OF DEAD BRANCHES.
5. AFTER 12 AND 24 MONTHS, REPLACEMENT OF PLANTS, IF REQUIRED, IN ACCORDANCE WITH THE GUARANTEE REQUIREMENTS SHOWN ON THE FCP.

C. EDUCATION

THE DEVELOPER WILL PROVIDE APPROPRIATE MATERIALS TO PROPERTY OWNERS INFORMING THEM OF THE LOCATION AND PURPOSE OF THE AFFORESTATION AREA. MATERIALS MAY INCLUDE SITE PLANS AND INFORMATION EXPLAINING THE INTENT OF THE FOREST CONSERVATION LAW.

D. FINAL INSPECTION

AT THE END OF THE TWO YEAR POST-CONSTRUCTION MANAGEMENT PERIOD, EEO-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.

PLANTING NOTES:

- PLANTING DENSITY BASED SPACING REQUIREMENTS WHIPS WITH SHELTER @ 11' ON CENTER.
- 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 SEEDLING 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.

PLANTING/SOIL SPECIFICATIONS

1. INSTALLATION OF BAREROOT/PLUG PLANT STOCK SHALL TAKE PLACE BETWEEN MARCH 15 - APRIL 20, B&B/CONTAINER STOCK MARCH 15 -MAY 30 OR SEPTEMBER 15 - NOVEMBER 15. FALL PLANTING OF B&B STOCK IS NOT RECOMMENDED.
2. DISTURBED AREAS SHALL BE SEEDED AND STABILIZED AS PER GENERAL CONSTRUCTION PLAN FOR PROJECT. PLANTING AREAS NOT IMPACTED BY SITE GRADING SHALL HAVE NO ADDITIONAL TOPSOIL INSTALLED.
3. BAREROOT PLANTS SHALL BE INSTALLED SO THAT THE TOP OF ROOT MASS IS LEVEL WITH THE TOP OF EXISTING GRADE. ROOTS SHALL BE DIPPED IN AN ANTI-DESICCANT GEL PRIOR TO PLANTING. BACKFILL IN THE PLANTING PITS SHALL CONSIST OF 3 PARTS EXISTING SOIL TO 1 PART PINE FINES OR EQUIVALENT.
4. FERTILIZER SHALL CONSIST OF AGRIFORM 22-8-2, OR EQUIVALENT, APPLIED AS PER MANUFACTURER'S SPECIFICATIONS, FOR WOODY PLANTS. HERBACEOUS PLANT SHALL BE FERTILIZED WITH OSMOCOTE 8-6-12.
5. PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TARPED OR COVERED TRUCK. PLANTS SHALL BE KEPT MOIST PRIOR TO PLANTING.
6. THE CONTRACTOR SHALL REMOVE ALL NON-ORGANIC DEBRIS ASSOCIATED WITH THE PLANTING OPERATION FROM THE SITE.

SEQUENCE OF CONSTRUCTION

1. SEDIMENT CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH GENERAL CONSTRUCTION PLAN FOR SITE.
2. PLANTS SHALL BE INSTALLED AS PER PLANT SCHEDULE AND THE PLANTING/SOIL SPECIFICATIONS FOR THE PROJECT.
3. UPON COMPLETION OF THE PLANTING, SIGNAGE SHALL BE INSTALLED AS SHOWN.
4. PLANTINGS SHALL BE MAINTAINED AND GUARANTEED IN ACCORDANCE WITH THE MAINTENANCE AND GUARANTEE REQUIREMENTS FOR PROJECT.

MAINTENANCE OF PLANTINGS

1. MAINTENANCE OF PLANTINGS SHALL LAST FOR A PERIOD OF TWO YEARS.
2. PLANTINGS MUST RECEIVE 2 GALLONS OF WATER, EITHER THROUGH PRECIPITATION OR WATERING, WEEKLY DURING THE 1ST GROWING SEASON, AS NEEDED. DURING SECOND GROWING SEASON, ONCE A MONTH DURING MAY-SEPTEMBER, IF NEEDED.
3. INVASIVE EXOTICS AND NOXIOUS WEEDS WILL BE REMOVED, AS REQUIRED, FROM PLANTING AREAS MECHANICALLY AND/OR WITH LIMITED HERBICIDE. OLD FIELD SUCCESSIONAL SPECIES WILL BE RETAINED.
4. PLANTS SHALL BE EXAMINED A MINIMUM TWO TIMES DURING THE GROWING SEASON FOR SERIOUS PLANT PESTS AND DISEASES. SERIOUS PROBLEMS WILL BE TREATED WITH THE APPROPRIATE AGENT.
5. DEAD BRANCHES WILL BE PRUNED FROM PLANTINGS.

GUARANTEE REQUIREMENTS

1. A 90 PERCENT SURVIVAL RATE OF THE REFORESTATION PLANTINGS WILL BE REQUIRED AFTER ONE GROWING SEASON. ALL PLANT MATERIAL BELOW THE 90 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE SECOND GROWING SEASON. AT THE END OF THE SECOND GROWING SEASON, A 75 PERCENT SURVIVAL RATE WILL BE REQUIRED. ALL PLANT MATERIAL BELOW THE 75 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED BY THE BEGINNING OF THE NEXT GROWING SEASON.

EDUCATION OF NEW OCCUPANTS

1. THE DEVELOPER SHALL PROVIDE EDUCATIONAL INFORMATION TO ALL PROPERTY OWNERS WITHIN THE NEW DEVELOPMENT/HOME ABOUT THE PROPER USE OF FOREST CONSERVATION AREAS.
2. AT THE END OF THE POST-CONSTRUCTION MANAGEMENT AND PROTECTION PERIOD THE DEVELOPER SHALL SUBMIT A CERTIFICATION TO THE COUNTY THAT ALL FOREST CONSERVATION AREAS HAVE REMAINED INTACT OR HAVE BEEN RESTORED TO APPROPRIATE CONDITION, THAT THE STIPULATED SURVIVAL RATES HAVE BEEN ACHIEVED, AND THAT ANY PERMANENT PROTECTION MEASURES REQUIRED BY THE PLAN ARE IN PLACE. UPON REVIEW AND ACCEPTANCE THE COUNTY WILL INFORM THE DEVELOPER OF THEIR RELEASE OF OBLIGATION OF FUTURE OBLIGATIONS RELATED TO THE FOREST CONSERVATION ACT.

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED RR-DEO NET TRACT AREA:

A. TOTAL TRACT AREA	25.81 AC.
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.68 AC.
C. AREA IN PRESERVATION PARCEL	0.00 AC. N/A
D. NET TRACT AREA	25.13 AC.

LAND USE CATEGORY

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED RR-DEO

ARA	MDR	IDA	HDR	MPD	CIA
0	1	0	0	0	0

E. AFFOREST THRESHOLD	20% X 9.25 = 5.03 AC
F. CONSERVATION THRESHOLD	25% X 9.25 = 6.28 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER	= 0.00 AC
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	= 0.00 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	= 0.00 AC

BREAK EVEN POINT:

(2 X I) + F = BREAK EVEN POINT (0 AC)

J. FOREST RETENTION WITH NO MITIGATION	= 0.00 AC
K. CLEARING PERMITTED WITHOUT MITIGATION	= 0.00 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED	= 0.00 AC
M. TOTAL AREA OF FOREST TO BE RETAINED	= 0.00 AC

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25)	= 0.00 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	= 0.00 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F)	= 0.00 AC
R. TOTAL REFORESTATION REQUIRED (N+P-Q)	= 0.00 AC
S. TOTAL AFFORESTATION REQUIRED	= 5.03 AC
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	= 5.03 AC

FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1209 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

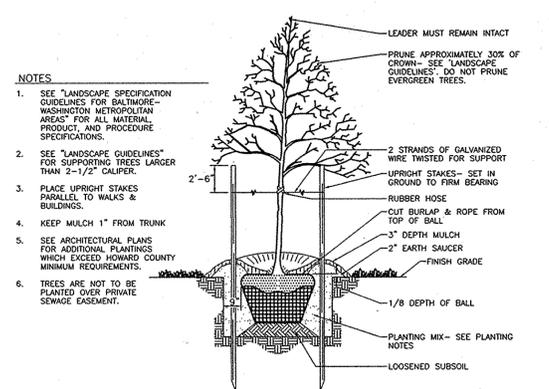
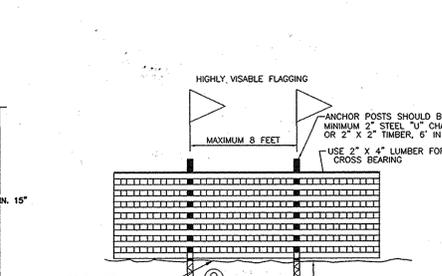
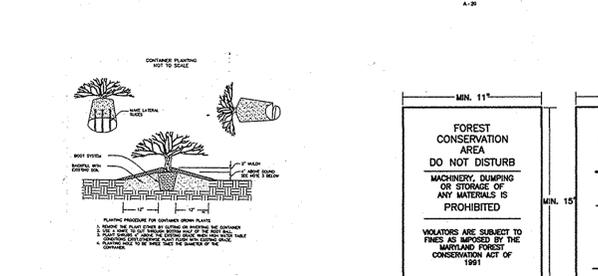
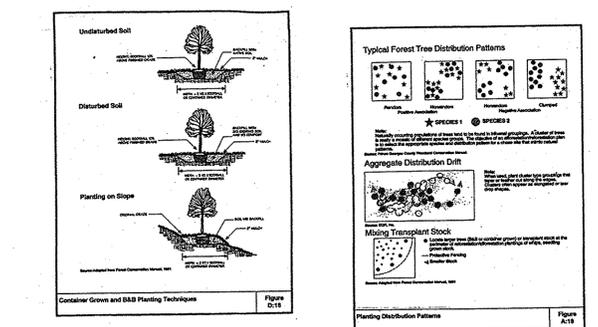
- TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT WILL BE FULFILLED BY ONSITE AFFORESTATION OF 5.03 AC. FINANCIAL SURETY IN THE AMOUNT OF \$ 109,504 (219,008 x 0.50) WILL BE POSTED AS PART OF DEPARTMENT OF PUBLIC WORKS DEVELOPER'S AGREEMENT.

AFFORESTATION PROVIDED - TOTAL

5.03 ACRES
 @ 200 TREES PER ACRE
 = 1,006 TREES REQUIRED
 USE 1" CALIPER TREES (1=3.5 UNITS)
 1006/3.5 = 288 TREES PROVIDED

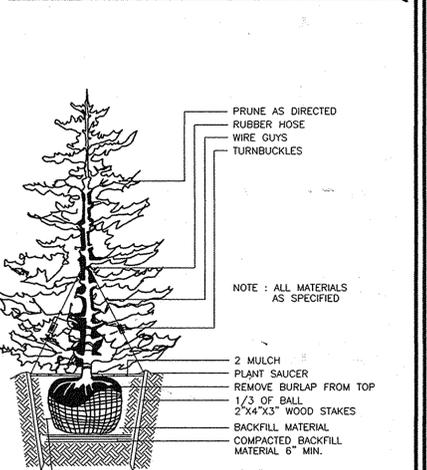
AFFORESTATION PLANT SCHEDULE FOREST CONSERVATION EASEMENTS 5.03 ACRES

EASEMENT #1: 178,607 SF = 4.10 AC. (AFFORESTATION) (@ 200 TREES/AC.)/3.5 = 235 TREES			
QTY.	BOTANICAL NAME	SIZE	SPACING
58	ACER RUBRUM RED MAPLE	1" CAL.	15' x 15'
58	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
58	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
61	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'
EASEMENT #2: 40,401 SF = 0.93 AC. (AFFORESTATION) (@ 200 TREES/AC.)/3.5 = 53 TREES			
QTY.	BOTANICAL NAME	SIZE	SPACING
13	ACER RUBRUM RED MAPLE	1" CAL.	15' x 15'
13	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' x 15'
13	CORNUS KOUSA KOUSA DOGWOOD	1" CAL.	15' x 15'
14	QUERCUS RUBRA RED OAK	1" CAL.	15' x 15'



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

DEVELOPER/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.



TYPICAL EVERGREEN TREE PLANTING DETAIL
 NOT TO SCALE

NOTE: ALL MATERIALS AS SPECIFIED

OWNER
 MARTY A. HOWARD
 P.O. BOX 740
 CLARKSVILLE, MD 21029

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR., SUITE 102
 ELLICOTT CITY, MD 21042
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edm 7-8-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JR. DATE

Keat Shal 7-09-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEVELOPER/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature] 4/2/14
 SIGNATURE OF DEVELOPER DATE

SIGNAGE DETAIL
 NOT TO SCALE

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.
3. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
4. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
5. ● SIGN LOCATION SYMBOL.
6. PROTECTIVE SIGNAGE SHALL REMAIN IN PERPETUITY.

BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL

SUPPLEMENTAL INFORMATION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN NOTES AND DETAILS
JACK'S LANDING
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL A, AND NON-BUILDABLE PRESERVATION PARCEL B
 A SUBDIVISION OF TAX MAP 34 PARCEL 414 (L. 3172/F. 336)

TAX MAP: 34 GRID: 03
 5TH ELECTION DISTRICT

PARCELS: 414
 ZONED: RR-DEO
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8966

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: MARCH 2014
 SCALE: AS SHOWN
 W.O. NO.: 13-31

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: 09-27-2014

12 SHEET OF 12