

GENERAL NOTES

- 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: 410-313-2366
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: 410-787-4620
STATE HIGHWAY ADMINISTRATION: 410-313-5533
- 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 410-313-2880 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 APRIL 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. 34HB AND 34HC WERE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED RR-DEO IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE ON 7/28/06.
- TOPOGRAPHY SHOWN HEREON IS OBTAINED FROM CURRENT HOWARD COUNTY GIS DATA.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND 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 OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY, HOWARD COUNTY MARYLAND. THERE ARE EXISTING STRUCTURES LOCATED ON SITE.
- THE EXISTING HISTORIC HOUSE AND ITS ASSOCIATED OUTBUILDINGS AT #13032 HIGHLAND ROAD ARE LISTED ON THE HISTORIC SITES INVENTORY AS HO-20, HICKORY RIDGE AND HAVE A MHT EASEMENT DATING TO 6/9/77. THIS PLAN CAME BEFORE THE HISTORIC DISTRICT COMMISSION ON JUNE 7, 2012 FOR ADVISORY COMMENTS. ALL EXISTING STRUCTURES ARE TO REMAIN.
- ACCORDING TO THE HOWARD COUNTY CEMETERY INVENTORY, PARCEL 117 CONTAINS A CEMETERY KNOWN AS #34-4 - ID # 73-GS. BASED UPON WP13-140 (SEE NOTE 48) PLANNING BOARD APPROVAL FOR THE CEMETERY IS NOT REQUIRED.
- THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON PARCEL 78 - LOT 29.
- THERE ARE NO FLOODPLAIN, WETLANDS, WETLAND BUFFERS, STREAMS, STREAM BUFFERS OR STEEP SLOPES WITHIN PARCEL 117.
- PARCEL 78 (LOT 29) PREVIOUSLY PLATTED FLOODPLAIN ON EXISTING LOT 29 - KOANDAH GARDENS ESTATES (PLAT # 15371), IS SHOWN HEREON. NO DISTURBANCE IS PROPOSED.
- NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ON SITE.
- A TRAFFIC STUDY HAS BEEN PREPARED BY THE TRAFFIC GROUP, MAY 2012.
- HIGHLAND ROAD IS NOT A SCENIC ROAD.
- HIGHLAND ROAD IS CLASSIFIED AS A MAJOR COLLECTOR. THE PROPOSED ACCESS POINTS ARE LIMITED TO EXISTING DRIVEWAY LOCATIONS. DRIVERS SHALL BE IMPROVED AS DETAILED HEREIN.
- 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 PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE)
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
- LOTS 1-3, BUILDABLE PRESERVATION PARCEL "A" AND THE CEMETERY #34-4, 73-GS ACCESS WILL UTILIZE A USE-IN-COMMON DRIVEWAY. THE USE-IN-COMMON MAINTENANCE AGREEMENT WILL BE RECORDED SIMULTANEOUSLY WITH THE PLAT.
- LOTS 4-8, BUILDABLE PRESERVATION PARCEL "A", NON-BUILDABLE PRESERVATION PARCEL "B" AND LOT 1 - KOANDAH GARDENS ESTATES (PLAT # 6700) WILL UTILIZE A USE-IN-COMMON DRIVEWAY. THE USE-IN-COMMON MAINTENANCE AGREEMENT WILL BE RECORDED SIMULTANEOUSLY WITH THE PLAT.
- THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER AND SEWER FOR THIS PROJECT WILL BE PRIVATE WELLS & SEPTIC SYSTEMS. PERCOLATION CERTIFICATION PLAN WAS APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT 3/30/2012 (REVISED 3/11/2013).
- THE PROPOSED DWELLING SHALL BE 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, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- WETLANDS AND STREAMS SHOWN HEREON ARE BASED ON A FIELD INVESTIGATION PREPARED BY MCCARTHY & ASSOCIATES, INC. DATED FEBRUARY 2012 AND REVIEWED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) & THE CORPS OF ENGINEERS. 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 PLAN WAS PREPARED BY MCCARTHY & ASSOCIATES, INC. DATED MARCH 2012.
- NO SPECIMEN TREES TO BE REMOVED AS PART OF THIS PROJECT PROPOSAL. THE SPECIMEN TREES LOCATED ALONG THE EXISTING DRIVEWAYS SHOULD NOT BE AFFECTED BY THE WIDENING OF THE DRIVEWAYS PER THIS PLAN PROPOSAL.
- 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 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 1.96 AC. FINANCIAL SURETY IN THE AMOUNT OF \$ 42,689 (85,378 x 0.50) WILL BE POSTED AS PART OF DEPARTMENT OF PUBLIC WORKS DEVELOPER'S AGREEMENT.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$25,200 FOR THE REQUIRED 68 SHADE TREES AND 32 EVERGREEN TREES SHALL BE POSTED WITH THE DEVELOPER AGREEMENTS FOR THIS PLAN.
- LANDSCAPING WILL BE INSTALLED PRIOR TO CONSTRUCTION OF THE HOUSES SO THAT IT HAS TIME TO MATURE AND GROW.
- IN ACCORDANCE WITH SECTION 16.124(E) STREET TREES ARE NOT REQUIRED ALONG HIGHLAND ROAD AS NO IMPROVEMENTS ARE PROPOSED. NO INTERNAL STREETS ARE PROPOSED, USE-IN-COMMON DRIVEWAY SHALL BE WIDENED AS REQUIRED / DETAILED HEREIN TO CURRENT HOWARD COUNTY SPECIFICATIONS.
- TRAFFIC CONTROL DEVICES:
A. THE RT-1 (STOP) SIGNS AND STREET NAME SIGN (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETE.
B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MDMUTCD).
D. ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED QUICK PUNCH, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED QUICK PUNCH, SQUARE TUBE SLEEVE (12 GAUGE - 3" LONG). A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON THE TOP OF EACH POST.
E. ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL.
- TWO PRIVATE RANGE OF ADDRESS SIGNS SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-343-2430 FOR DETAILS AND COST ESTIMATES.
- TRASH AND RECYCLING COLLECTION WILL BE AT HIGHLAND ROAD WITHIN 5' OF THE EDGE OF THE COUNTY ROADWAY.
- STORM WATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING: ROOFTOP & NON-ROOFTOP DISCONNECTS, RAIN BARRELS, PERMEABLE SURFACES AND DRYWELLS. THE PERMEABLE SURFACES FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. IF REQUIRED, GEOTECHNICAL INVESTIGATIONS SHALL COMPLETED.
- 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 ON JANUARY 3, 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.
- THIS PLAN IS SUBJECT TO A DESIGN MANUAL WAIVER OF DESIGN MANUAL VOLUME III, SECTION 2.6.B. TO ALLOW A REDUCED WIDTH (MINIMUM 12 FEET) FOR THE PORTION OF A USE-IN-COMMON DRIVEWAY THAT TRAVELS THROUGH THE TREES. ON OCTOBER 11, 2013, THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION APPROVED THE REQUEST BASED UPON JUSTIFICATION PROVIDED IN THE WAIVER REQUEST LETTER AND GRANTING OF THE WAIVER WILL NOT IMPACT THE COUNTY'S EXISTING OR FUTURE INFRA-STRUCTURE SYSTEMS.
- THE PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON MARCH 5, 2012.
THE ENVIRONMENTAL CONCEPT PLAN (ECP12-048) WAS APPROVED ON JUNE 7, 2012.
THE PRELIMINARY EQUIVALENT SKETCH PLAN (SP13-005) WAS APPROVED ON APRIL 10, 2013.
HOUSING ALLOCATIONS WERE RECEIVED ON JUNE 12, 2013.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edwards 3-19-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kate Schuch 3-25-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

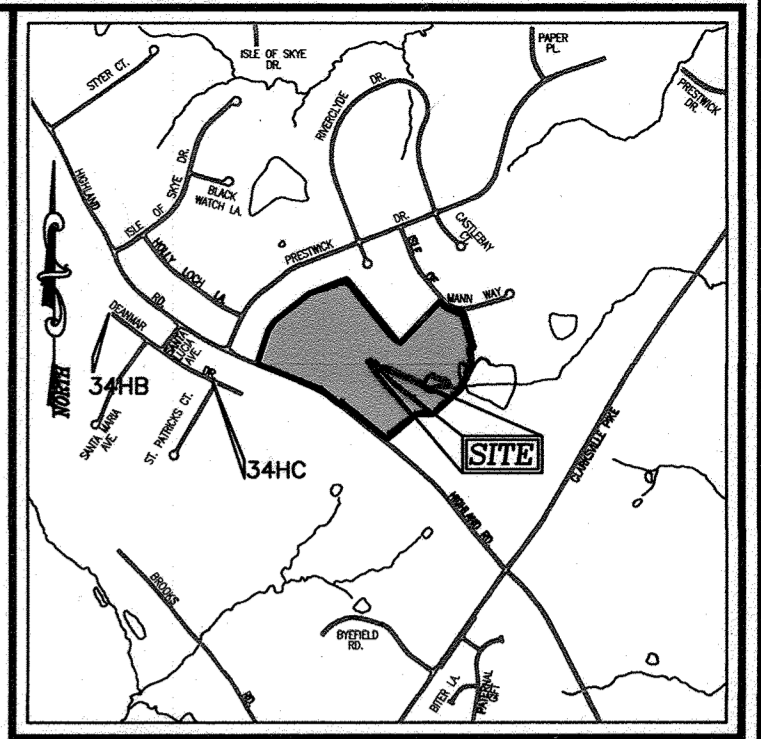
SUPPLEMENTAL INFORMATION PLAN

MCDANIEL PROPERTY

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

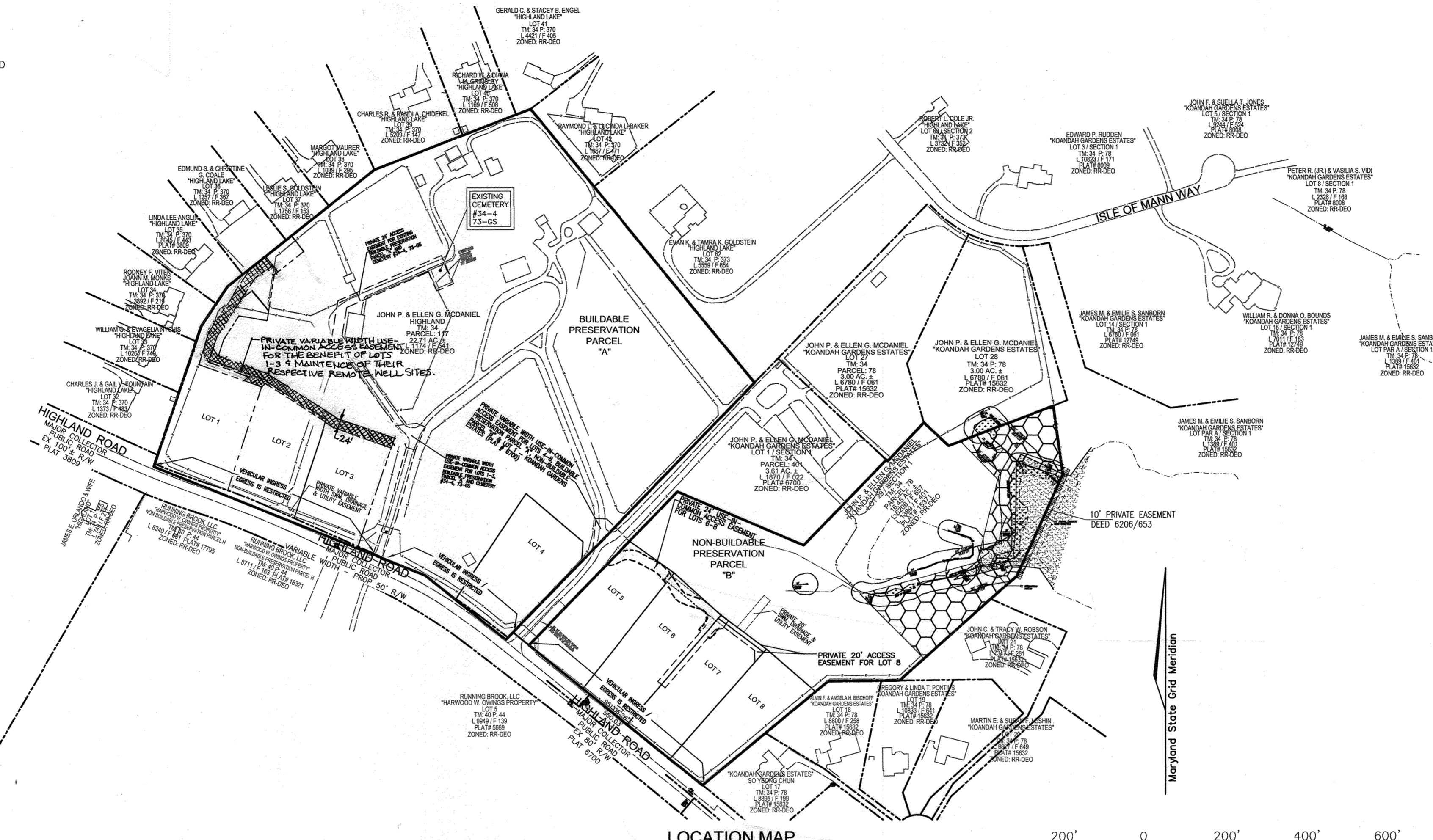
HOWARD COUNTY, MARYLAND

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VICINITY MAP
SCALE 1"=200'
ADC MAP COORDINATE: 31, B5

BENCHMARKS
HOWARD COUNTY BENCHMARK 34HB (CONC. MON.)
N 553449.1287 E 1320244.3459 ELEV. 549.850
HOWARD COUNTY BENCHMARK 34HC (CONC. MON.)
N 552735.3138 E 1321330.2220 ELEV. 553.078



SITE ANALYSIS DATA

- A. PRESENT ZONING DESIGNATION: RR-DEO
 - B. GROSS AREA OF PROPERTY TRACT: 38.27 AC.
 - AREA OF PLAN SUBMISSION: 38.27 AC.
 - AREA OF WETLANDS AND BUFFERS: 1.68 AC.
 - AREA OF STREAMS AND BUFFERS: 2.03 AC.
 - AREA OF FLOODPLAIN: 0.55 AC.
 - AREA OF FOREST: 0.00 AC.
 - AREA OF STEEP SLOPES (15% & GREATER): 0.00 AC.
 - C. ERODIBLE SOILS: N/A
 - C. NET AREA OF PROJECT TRACT: 37.72 (38.27 - 0.55 AC. = 37.72)
 - D. AREA OF PROPOSED LOTS OR PARCELS: 9.65 AC± (LOTS 1-8), 19.92 AC± PRESERVATION PARCEL 19.92 AC± BUILDABLE PRESERVATION PARCEL 6.55 AC± NON-BUILDABLE PRESERVATION PARCEL RESIDENTIAL SINGLE FAMILY DETACHED HOMES
 - E. AREA OF PROPOSED ROADS: 0.06 AC±
 - F. TOTAL NUMBER OF UNITS ALLOWED: 9 (38.27 GROSS AREA / 4.25 = 9.00)
 - G. TOTAL NUMBER OF UNITS PROPOSED: 9 (LOTS 1-8, BUILD. PRES. PARCEL "A")
 - G. PROPOSED WATER SYSTEM: PRIVATE WELL
 - G. PROPOSED SEWER SYSTEM: PRIVATE SEPTIC
 - H. DPZ FILE REFERENCES: SP 13-005, WP13-140 (SEE TITLEBLOCK FOR FULL LIST)
 - I. OPEN SPACE REQUIRED: N/A
 - J. LIMIT OF DISTURBED AREA: 6.5 AC.
 - K. GREEN OPEN AREA: 31.77 AC.
 - L. PROPOSED IMPERVIOUS AREA: 1.2 AC. +/- (SEE SHT 14)
- * WETLAND AND BUFFER ACREAGE IS PART OF STREAM & BUFFER ACREAGE

OWNER / DEVELOPER

JOHN P. MCDANIEL
13032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATtn: MR. JOE RUTER
443-367-0422

SWM PRACTICE CHART

ESD PRACTICES BY LOT - AREA 1	
LOT #	ESD PRACTICE
#1	DISCONNECT ROOFTOP RUNOFF (N-1), PERMEABLE SURFACE DRIVEWAY (A-2), RAIN BARREL (M-1), MICROBIORETENTION (M-6)
#2	DRYWELLS (M-5), PERMEABLE SURFACE DRIVEWAY (A-2), NON-ROOFTOP DISCONNECT (N-2)
#3	DISCONNECT ROOFTOP RUNOFF (N-1), PERMEABLE SURFACE DRIVEWAY (A-2), RAIN BARREL (M-1), MICROBIORETENTION (M-6)
ESD PRACTICES BY LOT - AREA 2	
#4	DISCONNECT ROOFTOP RUNOFF (N-1), PERMEABLE SURFACE DRIVEWAY (A-2), MICROBIORETENTION (M-6)
#5	PERMEABLE SURFACE DRIVEWAY (A-2), RAIN BARREL (M-1), MICROBIORETENTION (M-6)
#6	PERMEABLE SURFACE DRIVEWAY (A-2), RAIN BARREL (M-1), MICROBIORETENTION (M-6)
#7	PERMEABLE SURFACE DRIVEWAY (A-2), RAIN BARREL (M-1), MICROBIORETENTION (M-6)
#8	DISCONNECT ROOFTOP RUNOFF (N-1), PERMEABLE SURFACE DRIVEWAY (A-2), RAIN BARREL (M-1), MICROBIORETENTION (M-6)

SUPPLEMENTAL INFORMATION PLAN

COVER SHEET
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A" AND NON-BUILDABLE PARCEL "B"
A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)
TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
5TH ELECTION DISTRICT
PARCELS 117 & 78 (LOT 29)
HOWARD COUNTY, MARYLAND
ZONED: RR-DEO



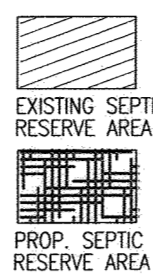
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2014.

DESIGN BY: RHY / EDS
DRAWN BY: EDS/RVE
CHECKED BY: RHY
DATE: FEBRUARY 2014
SCALE: AS SHOWN
W.O. NO.: 08-43

1 SHEET OF 14

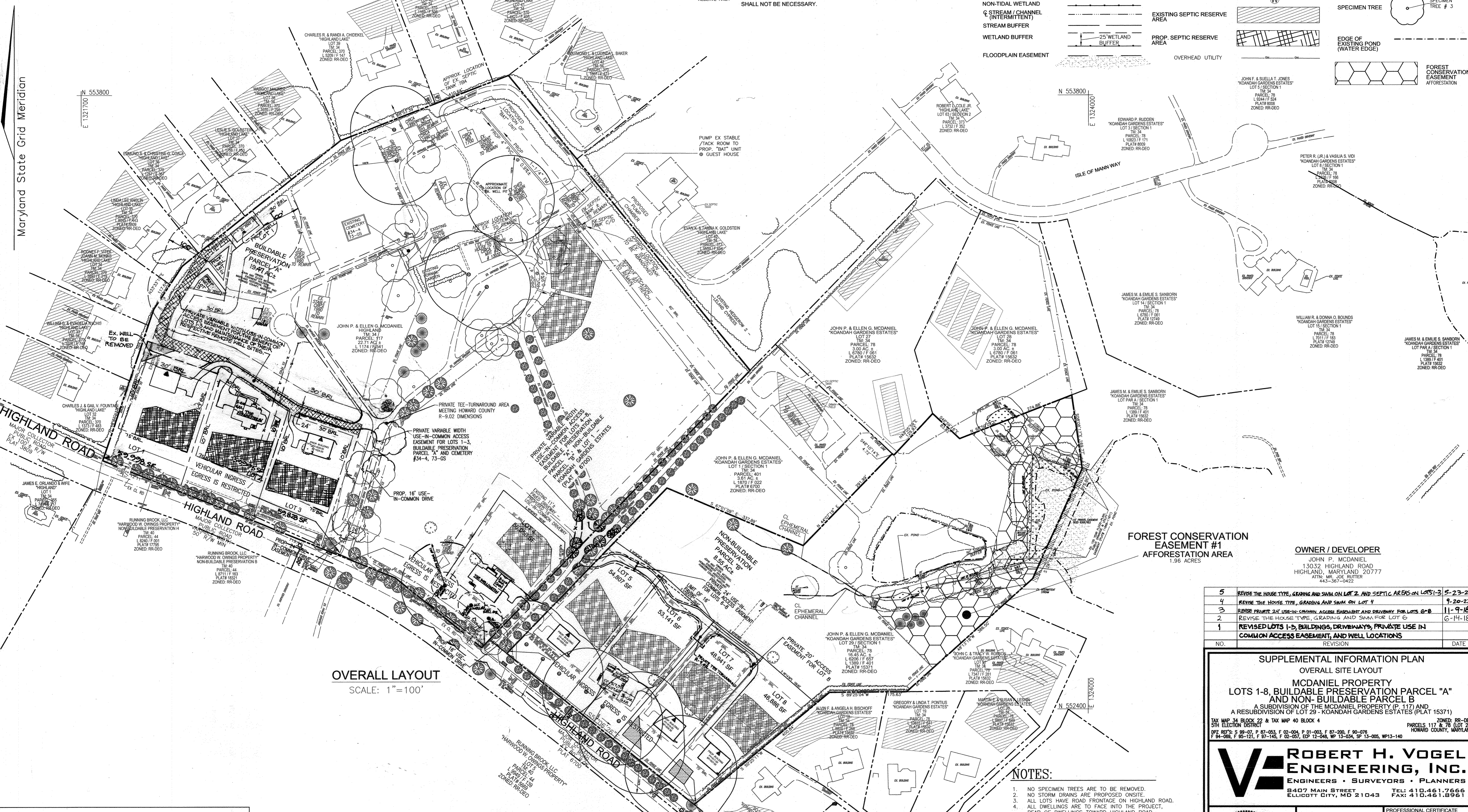
MAPPED SOILS TYPES						
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT SLOPES	K-FACTOR	TYPE SOIL POTENTIAL
GBA	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES
GBB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES
GBH	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY*	NO	0.37	NO
W	WATER					PARTIALLY*

TAKEN FROM: USDA, SCS-WEIB SOIL SURVEY, HOWARD COUNTY
 *BAILE COMPONENT OF GBH, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC



THESE AREAS DESIGNATE A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION TO A PUBLIC SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

LEGEND	
EXISTING CONTOUR	382 380
EXISTING TREELINE	GSA GEB
SOIL BOUNDARY	
NON-TIDAL WETLAND	
G STREAM / CHANNEL (INTERMITTENT)	
STREAM BUFFER	
WETLAND BUFFER	25' WETLAND BUFFER
FLOODPLAIN EASEMENT	
EXISTING WELL	EX WELL (W)
PROPERTY LINE	
PROP. WELL AREA	
PROP. WELL	W
EXISTING SEPTIC RESERVE AREA	
PROP. SEPTIC RESERVE AREA	
OVERHEAD UTILITY	
EXISTING VEGETATION TO REMAIN UNLESS NOTED OTHERWISE (APPROXIMATE LOCATION)	
SPECIMEN TREE	SPECIMEN TREE # 3
EDGE OF EXISTING POND (WATER EDGE)	
FOREST CONSERVATION EASEMENT AFFORESTATION	



OVERALL LAYOUT
 SCALE: 1"=100'

NO.	REVISION	DATE
5	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 2 AND SEPTIC AREAS ON LOTS 1-3	5-23-14
4	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 4	9-20-13
3	REVISE PRIVATE 24' USE-IN-COMMON ACCESS EASEMENT AND DRIVEWAY FOR LOTS 6-8	11-9-13
2	REVISE THE HOUSE TYPE, GRADING AND SWM FOR LOT 6	6-14-13
1	REVISED LOTS 1-3, BUILDINGS, DRIVEWAYS, PRIVATE USE IN COMMON ACCESS EASEMENT, AND WELL LOCATIONS	

SUPPLEMENTAL INFORMATION PLAN
 OVERALL SITE LAYOUT
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
AND NON-BUILDABLE PARCEL B
 A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND
 A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)
 TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4 PARCELS 117 & 78 (LOT 29)
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 REF: S 89-07, P 87-053, F 02-004, P 01-003, F 87-200, F 80-078
 F 84-006, F 85-121, F 87-145, F 02-057, E2 12-046, W 13-054, S 13-005, W 13-140

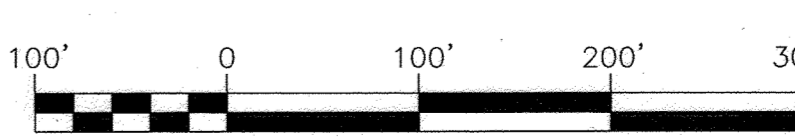
ROBERT H. VOGEL ENGINEERS, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-29-2014.

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/RVE
 CHECKED BY: RHV
 DATE: FEBRUARY 2014
 SCALE: AS SHOWN
 W.O. NO.: 08-43

2 SHEET OF 14

- NOTES:**
- NO SPECIMEN TREES ARE TO BE REMOVED.
 - NO STORM DRAINS ARE PROPOSED ONSITE.
 - ALL LOTS HAVE ROAD FRONTAGE ON HIGHLAND ROAD. REAR OF DWELLINGS ARE TO FACE INTO THE PROJECT.
 - EXISTING PASTURE FENCING WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Chubb 3-19-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION J.T. DATE

Kathleen 3-25-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

LEGEND:

- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREELINE
- EXISTING METAL FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SEPTIC RESERVE AREA
- PROPOSED WELL AREA
- EXISTING SEPTIC RESERVE AREA
- EXISTING SPECIMEN TREE
- TYPICAL (N-1) NON-STRUCTURAL PRACTICE - DISCONNECTION OF ROOFTOP RUNOFF
- EXISTING VEGETATION TO REMAIN UNLESS NOTED OTHERWISE (APPROXIMATE LOCATION)
- OH OVERHEAD UTILITY

THESE AREAS DESIGNATE A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION TO A PUBLIC SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

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N 553350

E 1321500

Maryland State Grid Meridian

E 1321500

N 553350

E 1322900

HIGHLAND ROAD
MAJOR COLLECTOR PUBLIC ROAD
EX. 100'-R/W
PLAT 3809

N 552950

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Elmer 3-19-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert H. Vogel 3-25-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NOTE:

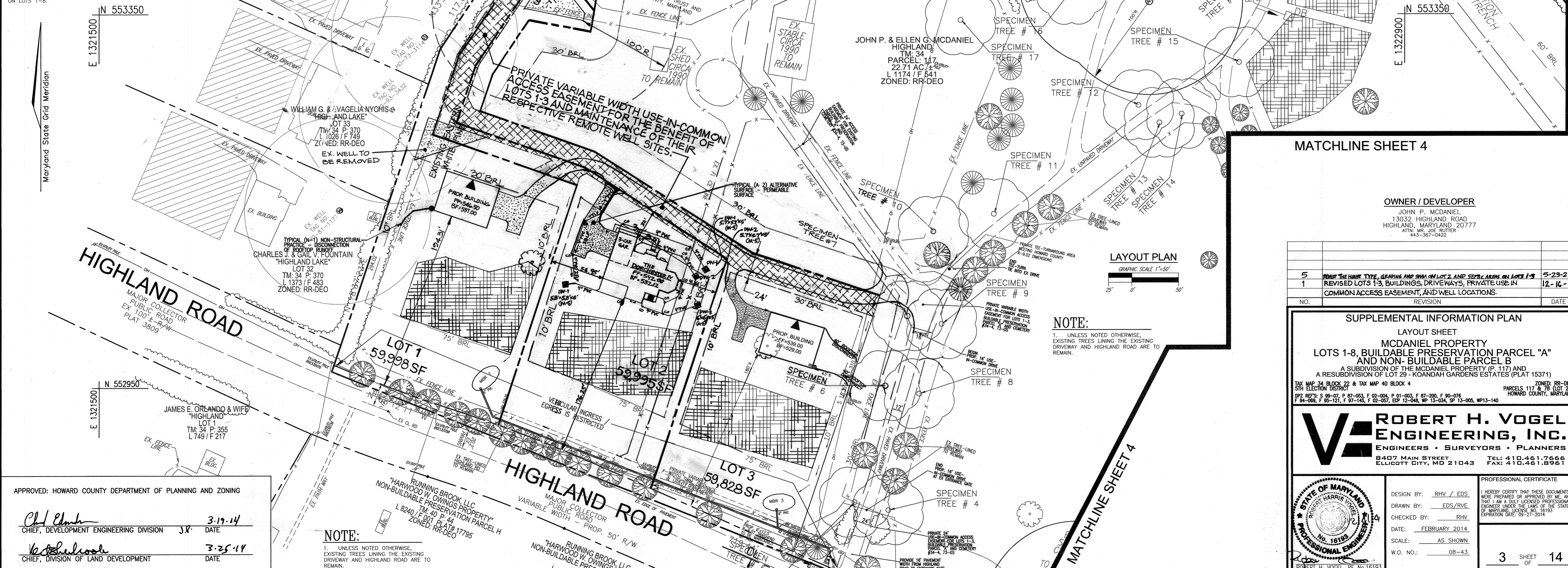
1. UNLESS NOTED OTHERWISE, EXISTING TREES LING THE EXISTING DRIVEWAY AND HIGHLAND ROAD ARE TO REMAIN.

RUNNING BROOK, LLC
"HARWOOD W. OWINGS PROPERTY"
NON-BUILDABLE PRESERVATION PARCEL
LOT 1
TM: 40 P: 44
L 8240 / F 1795
ZONED: RR-DEO

HIGHLAND ROAD
MAJOR COLLECTOR PUBLIC ROAD
EX. 100'-R/W
PLAT 3809

RUNNING BROOK, LLC
"HARWOOD W. OWINGS PROPERTY"
NON-BUILDABLE PRESERVATION PARCEL
LOT 2
TM: 40 P: 44
L 8240 / F 1795
ZONED: RR-DEO

RUNNING BROOK, LLC
"HARWOOD W. OWINGS PROPERTY"
NON-BUILDABLE PRESERVATION PARCEL
LOT 3
TM: 40 P: 44
L 8240 / F 1795
ZONED: RR-DEO



LAYOUT PLAN

GRAPHIC SCALE 1"=50'

NOTE:

1. UNLESS NOTED OTHERWISE, EXISTING TREES LING THE EXISTING DRIVEWAY AND HIGHLAND ROAD ARE TO REMAIN.

MATCHLINE SHEET 4

OWNER / DEVELOPER
JOHN P. MCDANIEL
13032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATTN: MR. JOE BUTLER
443-367-0422

NO.	REVISION	DATE
5	FOR THE HOME TYPE, GRADING AND SWM ON LOT 2, AND SEPTIC AREAS ON LOTS 1-3	5-23-14
1	REVISED LOTS 1-3, BUILDINGS, DRIVEWAYS, PRIVATE USE IN COMMON ACCESS EASEMENT, AND WELL LOCATIONS.	12-16-14

SUPPLEMENTAL INFORMATION PLAN

LAYOUT SHEET
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
AND NON-BUILDABLE PARCEL B
A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND
A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)
ZONED: RR-DEO
TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4 PARCELS 117 & 78 (LOT 29)
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
BPZ REF: S 99-07, F 87-028, F 02-004, P 01-083, F 87-000, F 99-076
F 84-068, F 82-121, F 87-143, F 02-057, E2P 12-046, P 13-034, S 13-005, WP13-140

ROBERT H. VOGEL ENGINEERS, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8951

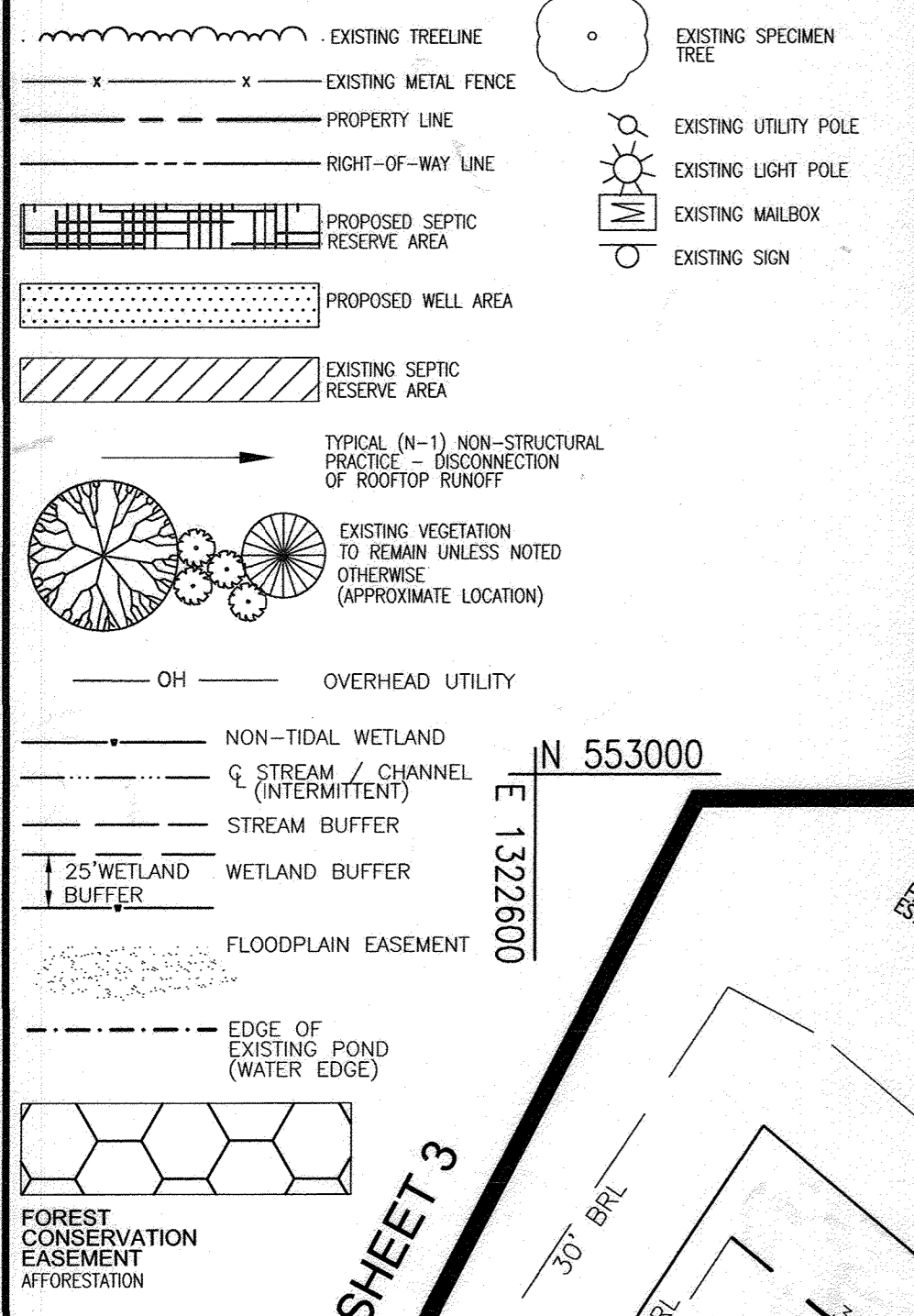
PROFESSIONAL CERTIFICATE

DESIGN BY: RHV / EDS
DRAWN BY: EDS/RVE
CHECKED BY: RHV
DATE: FEBRUARY 2014
SCALE: AS SHOWN
W.O. NO.: 08-43

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: 08-27-2014.

3 SHEET OF 14

LEGEND:



MATCHLINE SHEET 3

BUILDABLE PRESERVATION PARCEL "A"
19.92 AC±

JOHN P. & ELLEN G. MCDANIEL
"KOANDAH GARDENS ESTATES"
LOT 1 / SECTION 1
TM: 34
PARCEL: 401
3.81 AC ±
L 1870 / F 022
PLAT# 6700
ZONED: RR-DEO

NON-BUILDABLE PRESERVATION PARCEL "B"
8.55 AC±

JOHN P. & ELLEN G. MCDANIEL
"KOANDAH GARDENS ESTATES"
LOT 27
TM: 34
PARCEL: 78
3.00 AC ±
L 6780 / F 061
PLAT# 15632
ZONED: RR-DEO

JOHN P. & ELLEN G. MCDANIEL
"KOANDAH GARDENS ESTATES"
LOT 28
TM: 34 P: 78
3.00 AC ±
L 6780 / F 061
PLAT# 15632
ZONED: RR-DEO

JAMES M. & EMILIE S. SANBORN
"KOANDAH GARDENS ESTATES"
LOT PAR A / SECTION 1
TM: 34 P: 78
L 1389 / F 401
PLAT# 15632
ZONED: RR-DEO

JOHN P. & ELLEN G. MCDANIEL
"KOANDAH GARDENS ESTATES"
LOT 29 / SECTION 1
TM: 34
PARCEL: 78
16.45 AC ±
L 6206 / F 657
L 1389 / F 401
PLAT# 15371
ZONED: RR-DEO

JOHN C. & TRACY W. ROBSON
"KOANDAH GARDENS ESTATES"
LOT 21
TM: 34 P: 78
L 7347 / F 281
PLAT# 15632
ZONED: RR-DEO

ALVIN F. & ANGELA H. BISCHOFF
"KOANDAH GARDENS ESTATES"
LOT 18
TM: 34 P: 78
L 8900 / F 258
PLAT# 15632
ZONED: RR-DEO

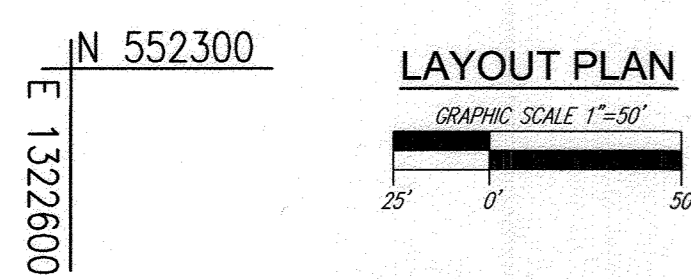
GREGORY & LINDA T. PONTIUS
"KOANDAH GARDENS ESTATES"
LOT 19
TM: 34 P: 78
L 10833 / F 841
PLAT# 15632
ZONED: RR-DEO

SO YEONG CHUN
"KOANDAH GARDENS ESTATES"
LOT 17
TM: 34 P: 78
L 8895 / F 489
PLAT# 15632
ZONED: RR-DEO

NOTES:

- NO SPECIMEN TREES ARE TO BE REMOVED.
- NO STORM DRAINS ARE PROPOSED ON-SITE.
- ALL LOTS HAVE ROAD FRONTAGE ON HIGHLAND ROAD.
- ALL DWELLINGS ARE TO FACE INTO THE PROJECT, REAR OF DWELLINGS TOWARD HIGHLAND ROAD.
- EXISTING PASTURE FENCING WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.

RUNNING BROOK LLC
"HARWOOD WOODS PROPERTY"
LOT 12, 13, 14
L 1389 / F 401
PLAT# 15632
ZONED: RR-DEO



NOTE:

1. UNLESS NOTED OTHERWISE, EXISTING TREES LINGING THE EXISTING DRIVEWAY AND HIGHLAND ROAD ARE TO REMAIN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3-19-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 3-25-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

THESE AREAS DESIGNATE A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION TO A PUBLIC SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

OWNER / DEVELOPER
JOHN P. MCDANIEL
13032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATTN: MRS. JOE FRUTER
443-367-0422

NO.	REVISION	DATE
4	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 4	9-20-23
3	REVISE PRIVATE 21' USE-IN-COMMON ACCESS EASEMENT AND DRIVEWAY FOR LOTS 6-8	11-9-18
2	REVISE THE HOUSE TYPE, GRADING AND SWM FOR LOT 6	6-14-18

SUPPLEMENTAL INFORMATION PLAN
LAYOUT SHEET
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
AND NON-BUILDABLE PARCEL "B"
A SUBDIVISION OF THE MCDANIEL GARDENS ESTATES (PLAT 15371)
A RESUBDIVISION OF LOT 29 "KOANDAH GARDENS ESTATES" (PLAT 15371)
TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4 PARCELS 117 & 78 (LOT 29)
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
REF: S 99-07, P 87-063, F 02-004, P 01-003, F 87-200, F 80-078
F 84-066, F 85-121, F 87-145, F 02-057, EOP 12-246, WP 13-004, SP 13-005, WP13-140

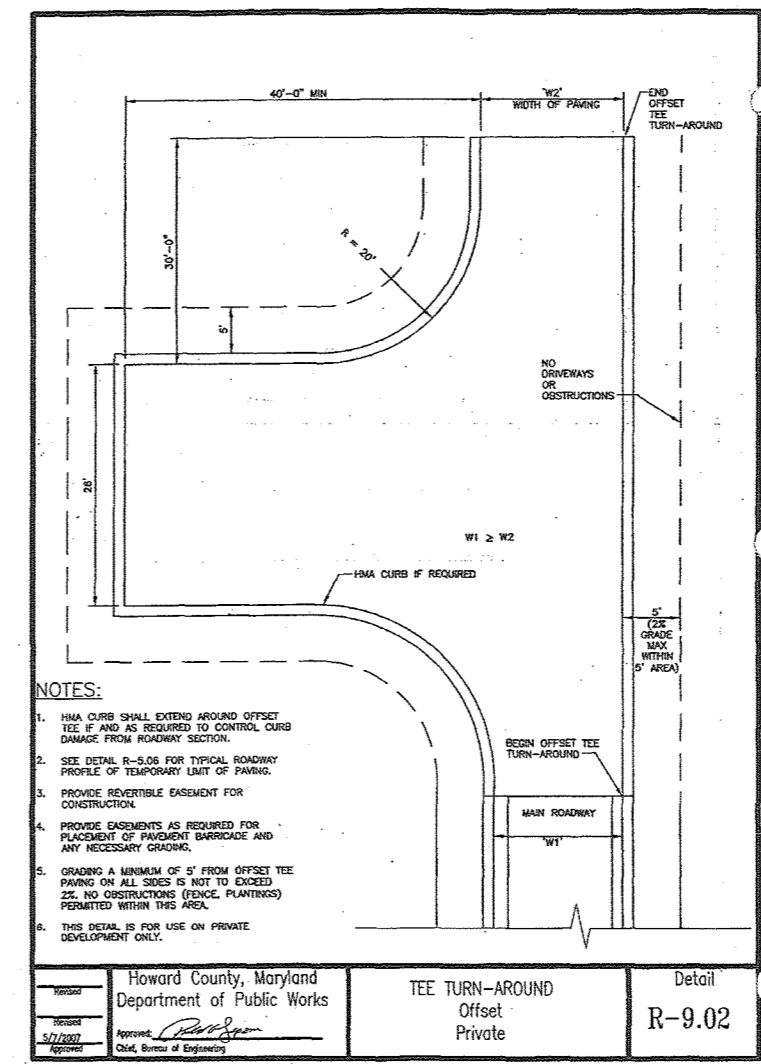
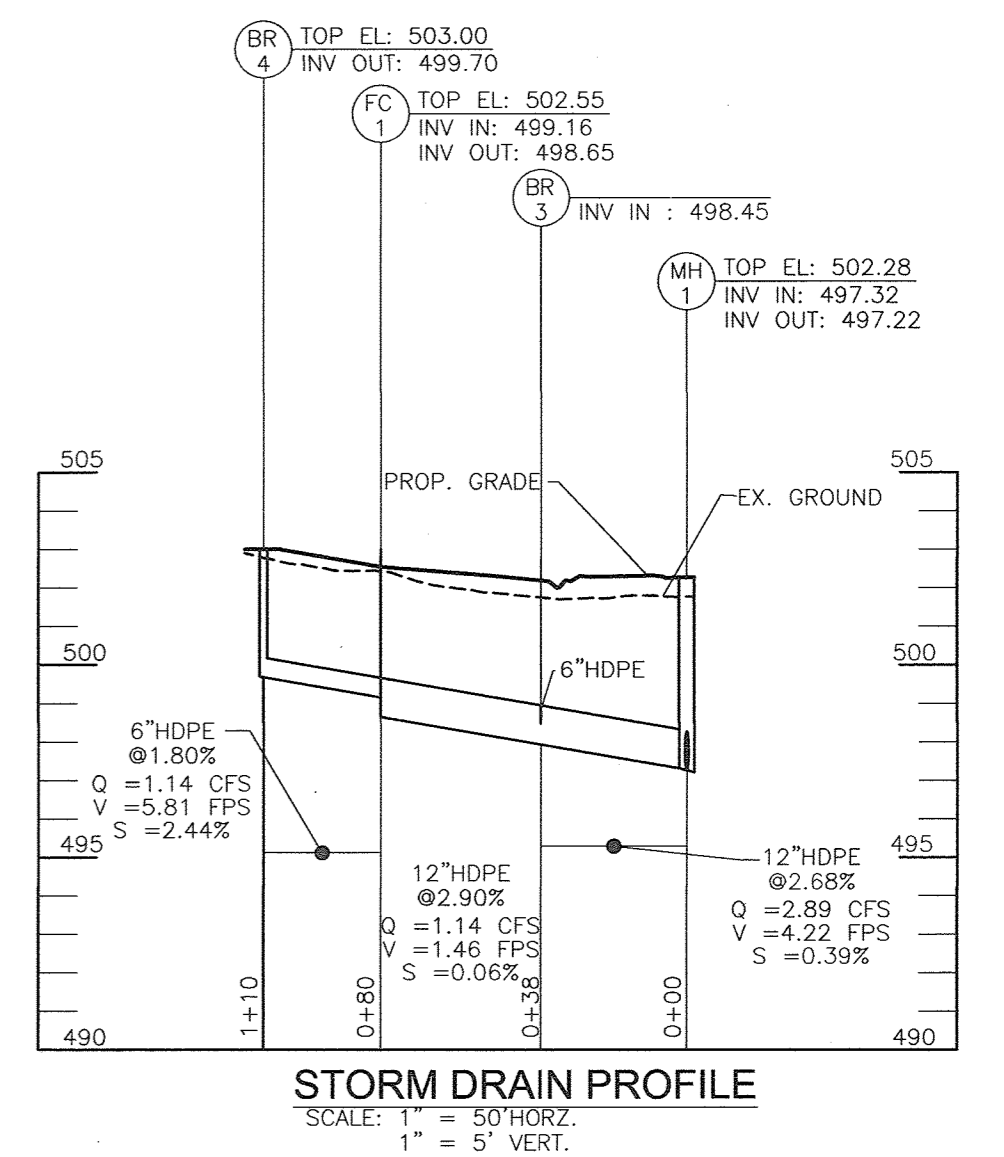
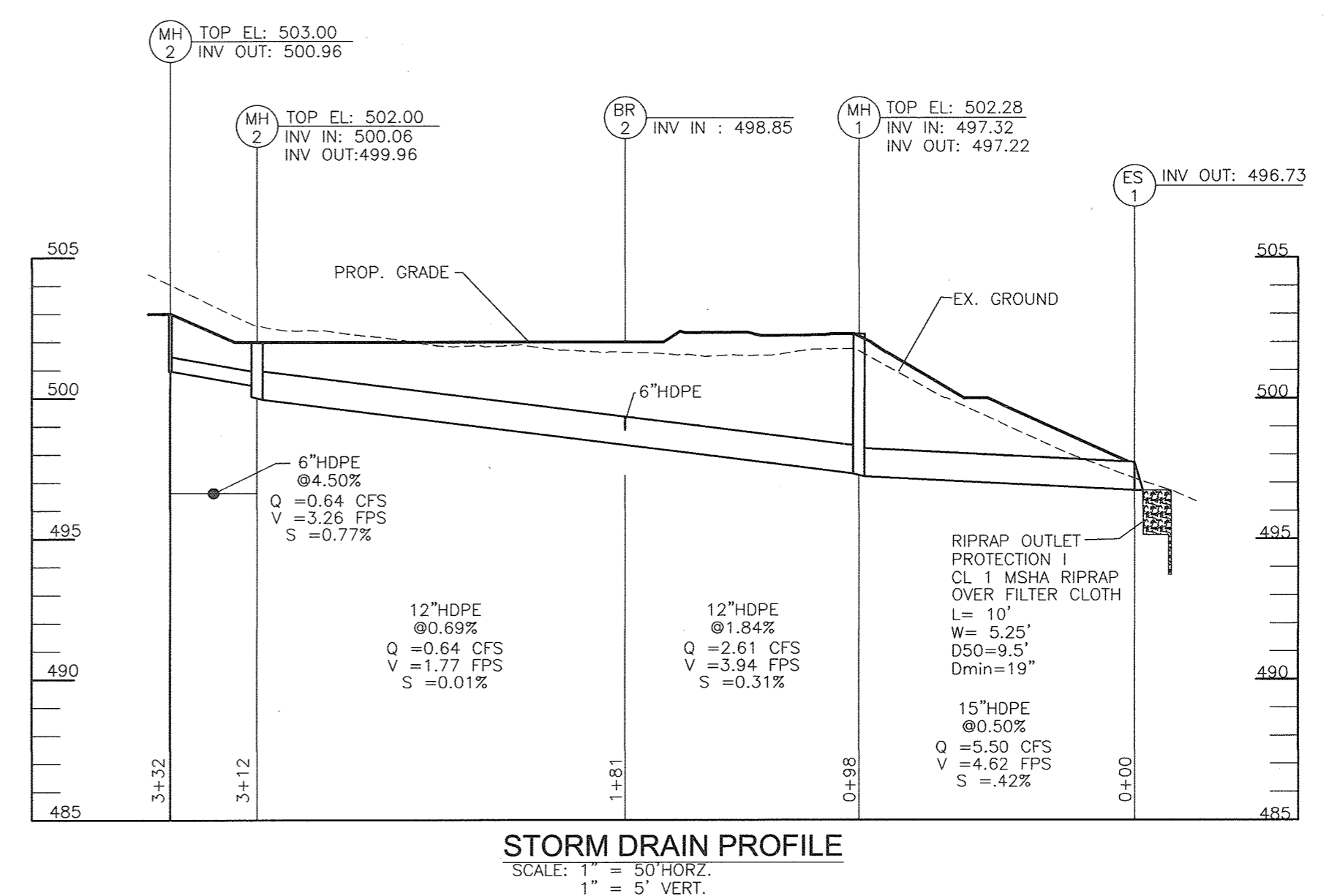
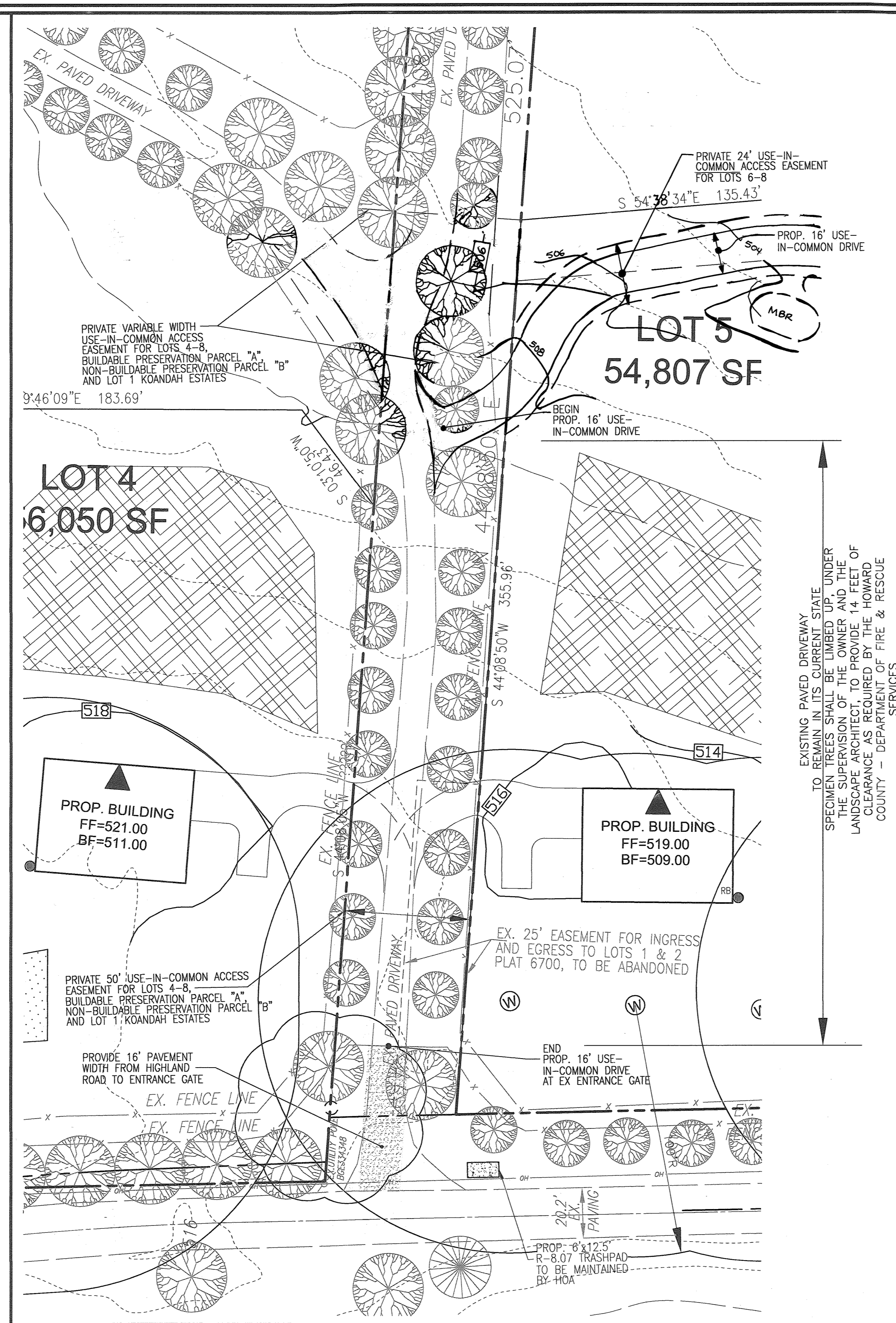
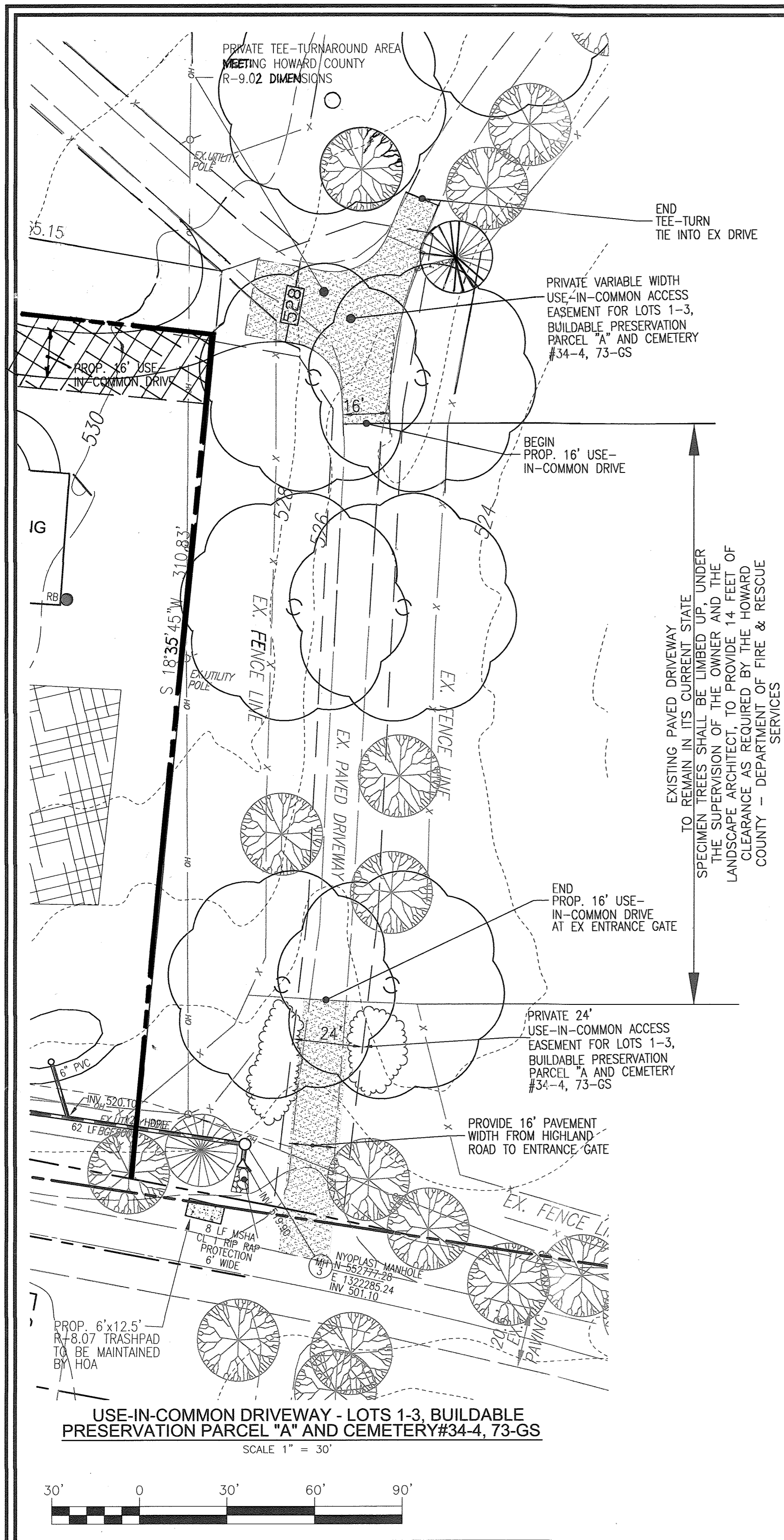
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELICOTT CITY, MD 21043 FAX: 410.461.8951

PROFESSIONAL CERTIFICATE

DESIGN BY: RHW / EDS
DRAWN BY: EDS/RVE
CHECKED BY: RHW
DATE: FEBRUARY 2014
SCALE: AS SHOWN
W.O. NO.: 08-43

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.

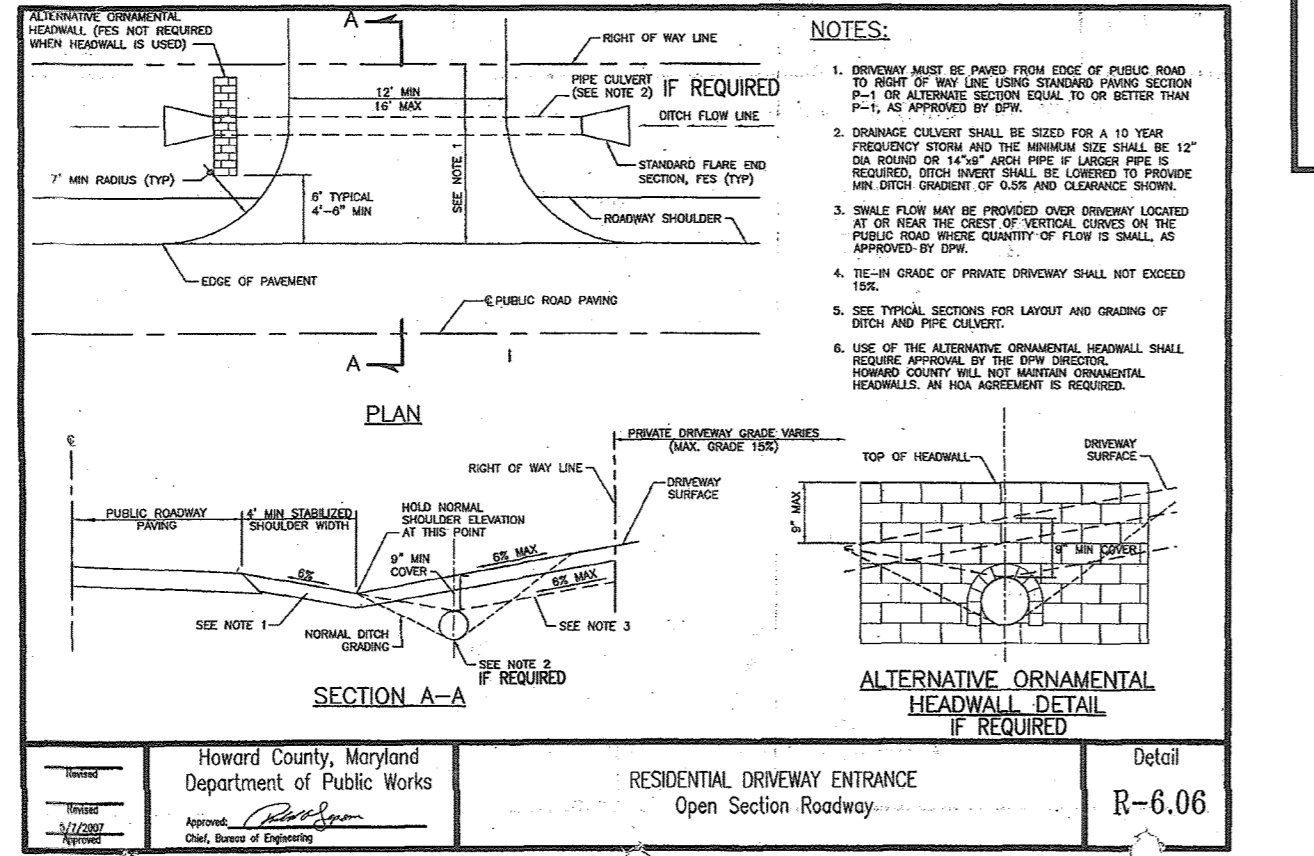
4 OF 14



OWNER / DEVELOPER
JOHN P. MCDANIEL
13032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATTN: MR. JOE RUTTER
443-367-0422

NO.	REVISION	DATE
3	REVISE PRIVATE 24' USE-IN-COMMON ACCESS EASEMENT AND DRIVEWAY FOR LOTS 6-8	11-9-18
2	REVISE THE HOUSE TYPE, GRADING AND SWM FOR LOT 6	6-14-18
1	REVISE LOTS 1-3, BUILDINGS, DRIVEWAYS, PRIVATE USE IN COMMON ACCESS EASEMENT AND WELL LOCATIONS.	12-16-14

TWO (2) PRIVATE RANGE OF ADDRESS SIGN ASSEMBLIES 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.

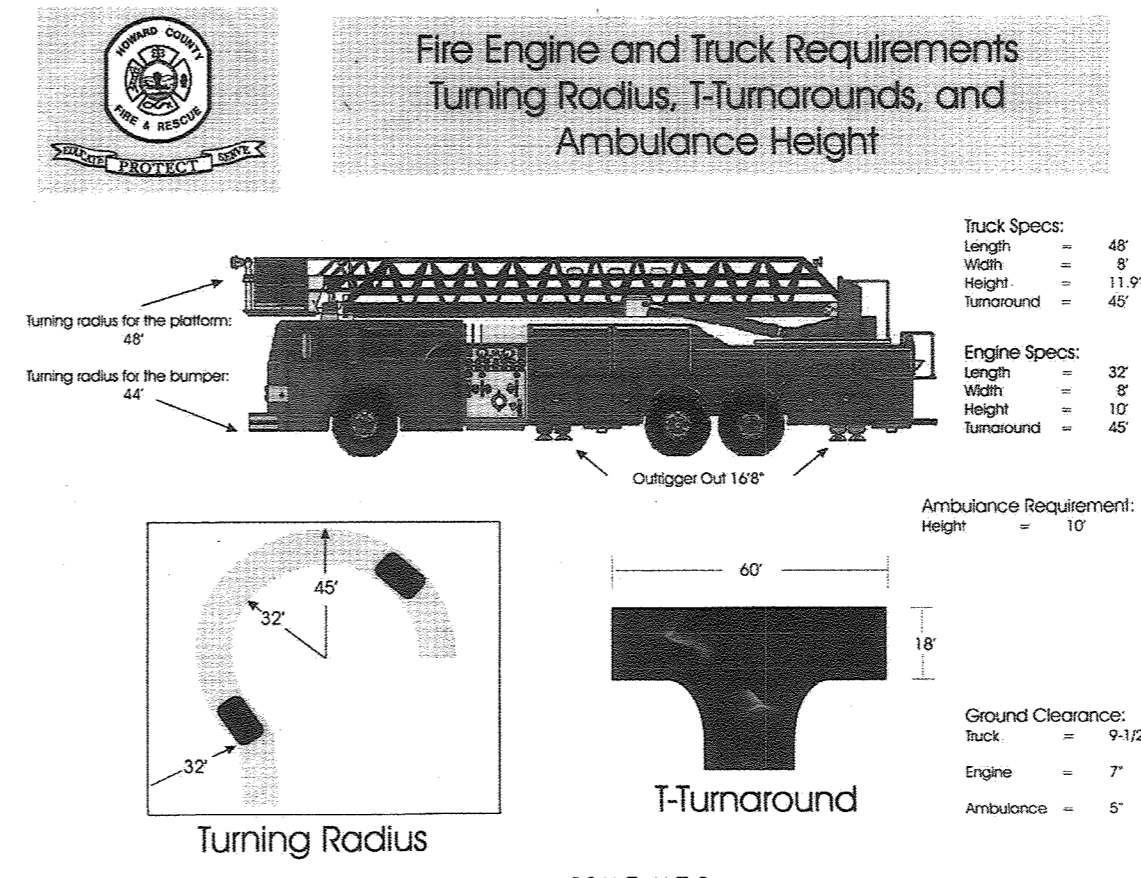


USE-IN-COMMON DRIVEWAY - LOTS 4-8, BUILDABLE PRESERVATION PARCEL "A", NON-BUILDABLE PRESERVATION PARCEL "B" AND LOT 1 KOANDAH GARDENS ESTATES (PLAT # 6700)

SCALE 1" = 30'

SECTION	ROAD AND STREET CLASSIFICATION	OUTLETING	2 TO 4.5 TO 10'	2.1 TO 4.5 TO 10'	2.1 TO 4.5 TO 10'	2.1 TO 4.5 TO 10'
P-1	PRIVATE DRIVEWAY	PRIVATE DRIVEWAY	6.6	1.5	4.5	1.5
P-2	PRIVATE DRIVEWAY	PRIVATE DRIVEWAY	6.6	1.5	4.5	1.5
P-3	PRIVATE DRIVEWAY	PRIVATE DRIVEWAY	6.6	1.5	4.5	1.5
P-4	PRIVATE DRIVEWAY	PRIVATE DRIVEWAY	6.6	1.5	4.5	1.5

DETAIL R-2.01



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 3-19-14
J.R. DATE

Chief, Division of Land Development 3-25-14
DATE

SUPPLEMENTAL INFORMATION PLAN
SITE DETAILS
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A" AND NON-BUILDABLE PARCEL "B"
A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)

TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
5TH ELECTION DISTRICT
F 94-066, F 95-121, F 97-143, F 02-057, EOP 12-048, WP 13-034, SP 13-005, WP13-140

ZONED: RR-DEO
PARCELS 117 & 78 (LOT 29)
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8901

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A BULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2014.

DESIGN BY: RHV / EDS
DRAWN BY: EDS/RVE
CHECKED BY: RHV
DATE: FEBRUARY 2014
SCALE: AS SHOWN
W.O. NO.: 08-43

5 SHEET OF 14

K:\PROJECTS\08-43\ENGR\DWG\FINAL_PLANS\08_43_01.DWG

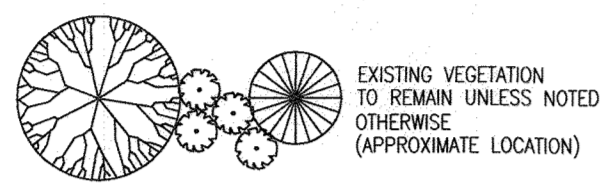
LEGEND:

- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- + 402.68 PROPOSED SPOT ELEVATION
- + 402.68 EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- GnB SOILS BOUNDARY
- GbB
- 100' SF
- 50' SF
- SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED SEPTIC RESERVE AREA
- PROPOSED WELL AREA
- EXISTING SEPTIC RESERVE AREA
- EXISTING SPECIMEN TREE

MAPPED SOILS TYPES									
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT ORGANIC	K-FACTOR	PERCENT SAND	PERCENT SILT	PERCENT CLAY	PERCENT ROCK
GnA	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO	NO	NO
GnB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO	NO	NO
GbB	GLENNVILLE-BAILE SILT LOAMS, 0 TO 6 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	PARTIALLY	NO	NO
W	WATER								

NOTE:
1. THE STANDARD SEDIMENT CONTROL PLAN SHALL NOT BE PERMITTED FOR THE CONSTRUCTION OF THE PROPOSED HOUSES FOR THIS PROJECT.

NOTE:
- SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART
- DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

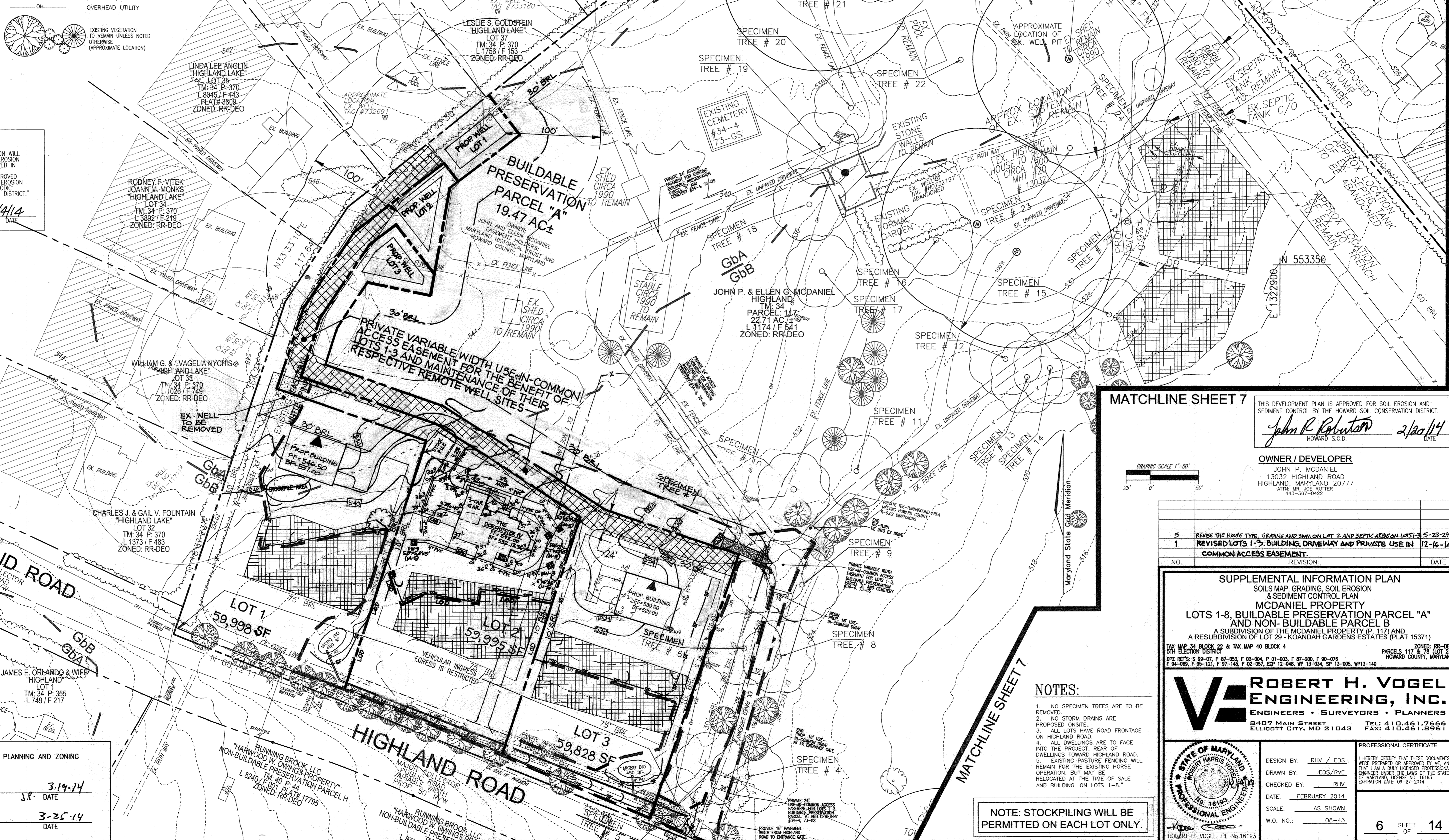


BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING 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.

John P. McDaniel 2/4/14
SIGNATURE OF DEVELOPER 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 2/4/14
SIGNATURE OF ENGINEER DATE



MATCHLINE SHEET 7
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John R. Robertson 2/20/14
HOWARD S.C.D. DATE

OWNER / DEVELOPER
JOHN P. MCDANIEL
13032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATTN: MR. JOE BUTTER
443-367-0422

NO.	REVISION	DATE
5	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 2 AND SEPTIC ABSORPTION LOTS 5-23-24	
1	REVISED LOTS 1-3 BUILDING, DRIVEWAY AND PRIVATE USE IN 12-16-14	
COMMON ACCESS EASEMENT:		

SUPPLEMENTAL INFORMATION PLAN
SOILS MAP, GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A" AND NON-BUILDABLE PARCEL B
A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND A RESUBDIVISION OF LOT 29 - KOANDAR GARDENS ESTATES (PLAT 15371)
TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4 ZONED: RR-DEO PARCELS 117 & 78 (LOT 29) 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DPZ REF: S 89-07, P 87-003, F 02-004, P 01-003, F 87-000, F 90-076, F 84-008, F 85-151, F 87-145, F 02-057, EP 12-048, WP 13-054, SP 13-005, WP13-140

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

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014

DESIGN BY: RHV / EDS
DRAWN BY: EDS/RVE
CHECKED BY: RHV
DATE: FEBRUARY 2014
SCALE: AS SHOWN
W.O. NO.: 08-43

6 SHEET OF 14

- NOTES:**
- NO SPECIMEN TREES ARE TO BE REMOVED.
 - NO STORM DRAINS ARE PROPOSED ON-SITE.
 - ALL LOTS HAVE ROAD FRONTAGE ON HIGHLAND ROAD.
 - ALL DWELLINGS ARE TO FACE INTO THE PROJECT, REAR OF DWELLINGS TOWARD HIGHLAND ROAD.
 - EXISTING PASTURE FENCING WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.

NOTE: STOCKPILING WILL BE PERMITTED ON EACH LOT ONLY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Paul Edmund 3-19-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert H. Vogel 3-25-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES**

1. 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).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RESTABILIZATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 3 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIVES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. BY 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-3), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-5). TEMPORARY STABILIZATION WITH MULCH CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

5. 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.

6. SITE ANALYSIS:

TOTAL AREA OF SITE	2.08 ACRES
AREA TO BE DISTURBED	0.12 ACRES
AREA TO BE PROTECTED OR PAVED	1.7 ACRES
AREA TO BE VEGETATED/STABILIZED	1.7 ACRES
TOTAL CUT	6,000 CU. YDS.
TOTAL FILL	5,900 CU. YDS.

OFFSITE WASTE/BORROW AREA LOCATION: _____

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF RESTORATION.

8. ANY ADDITIONAL SEDIMENT CONTROL WHICH IS PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

9. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PER LENGTH OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

11. 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 AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CONSECUTIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. 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-LEAVED 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. SEED MIXTURES
GENERAL USE
1. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.

2. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 542 - CRITICAL AREA PLANTING.

3. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES, USE AND SHOTABLE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

4. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 1-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

B. TURFGRASS MIXTURES
A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITION OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

1. KENTUCKY BLUEGRASS: FULL SUN MIXTURE; FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT TURFGRASS BY WEIGHT.

2. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE; FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MAINTENANCE. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRICKS, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH WIRE CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE THE CONDITIONS WILL NOT PERMIT MECHANICAL PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH FEWER THAN 3 INCHES OF SOIL EXPOSED TO THE SURFACE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND PLANNED. SEEDING LOSSENESS MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

C. SOIL AMENDMENTS
1. SOIL PH SHOULD BE 6.0 AND 7.0.
2. SOIL SHOULD BE LOOSE TO A DEPTH OF 3 TO 5 INCHES.
3. SOIL SHOULD BE FREE OF ROCKS AND PLANT PARTS SUCH AS BEMUDA GRASS, STONES, STICKS, SAND, CRACKS, FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
4. SOIL SHOULD BE FREE OF NOxious PLANTS OR PLANT PARTS SUCH AS BEMUDA GRASS, STONES, SAND, CRACKS, FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
5. SOIL SHOULD BE FREE OF NOxious PLANTS OR PLANT PARTS SUCH AS BEMUDA GRASS, STONES, SAND, CRACKS, FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
6. SOIL SHOULD BE FREE OF NOxious PLANTS OR PLANT PARTS SUCH AS BEMUDA GRASS, STONES, SAND, CRACKS, FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.

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

1. TEMPORARY STABILIZATION
A. 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 CRACK PLOWS, OR RIPPER MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR GRADED SMOOTH BUT LEFT IN THE ROCKY CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH WHEELS RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

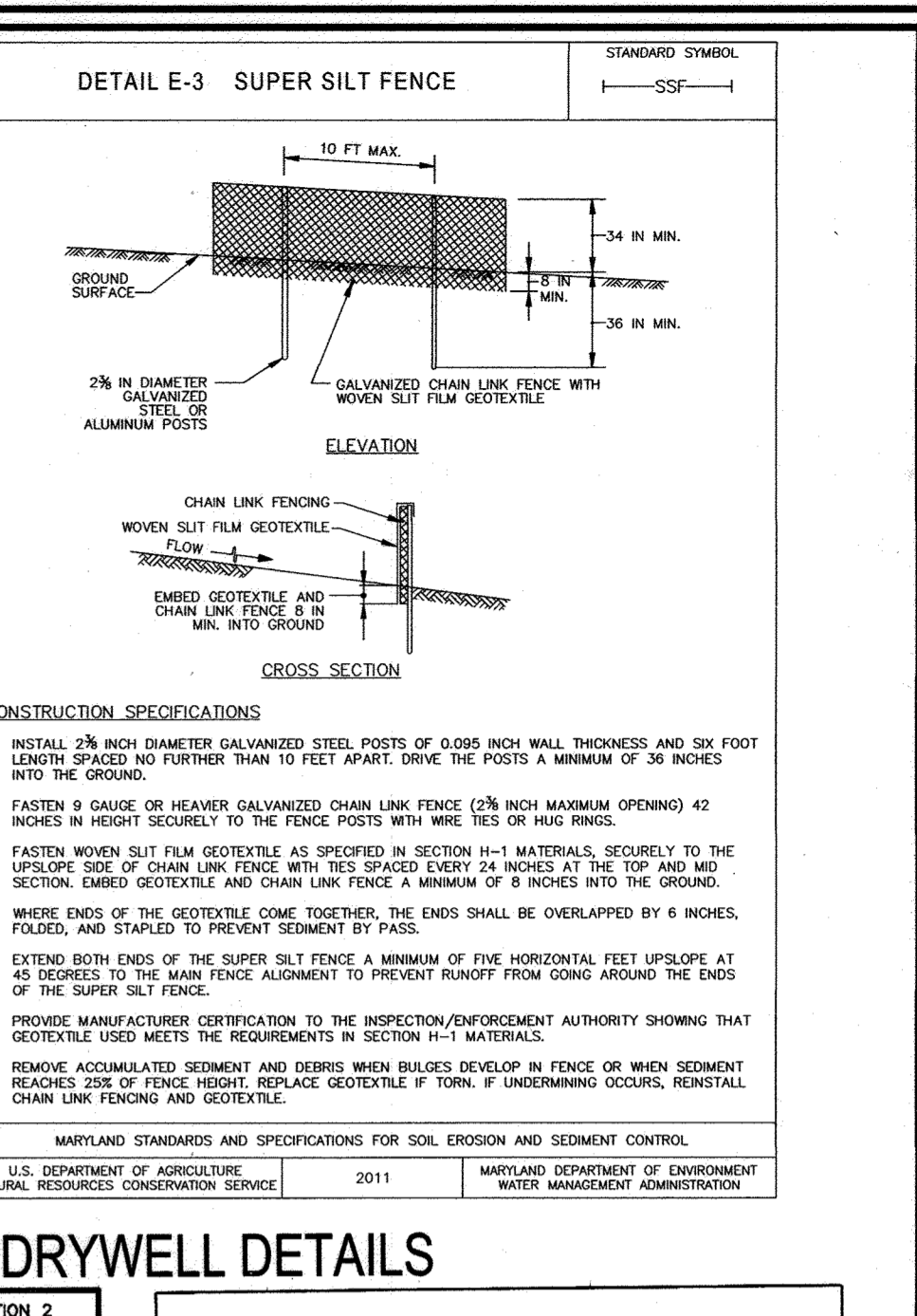
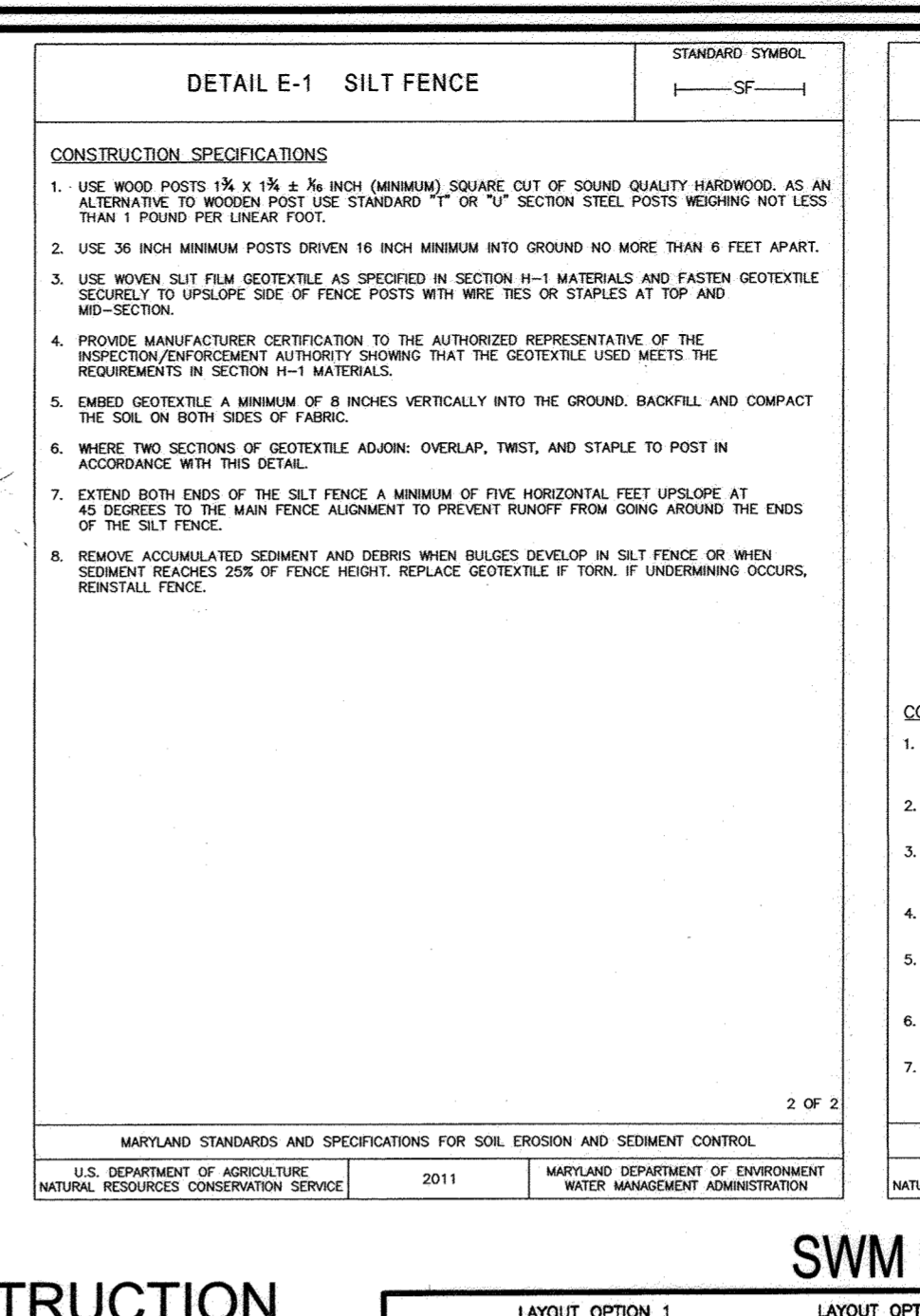
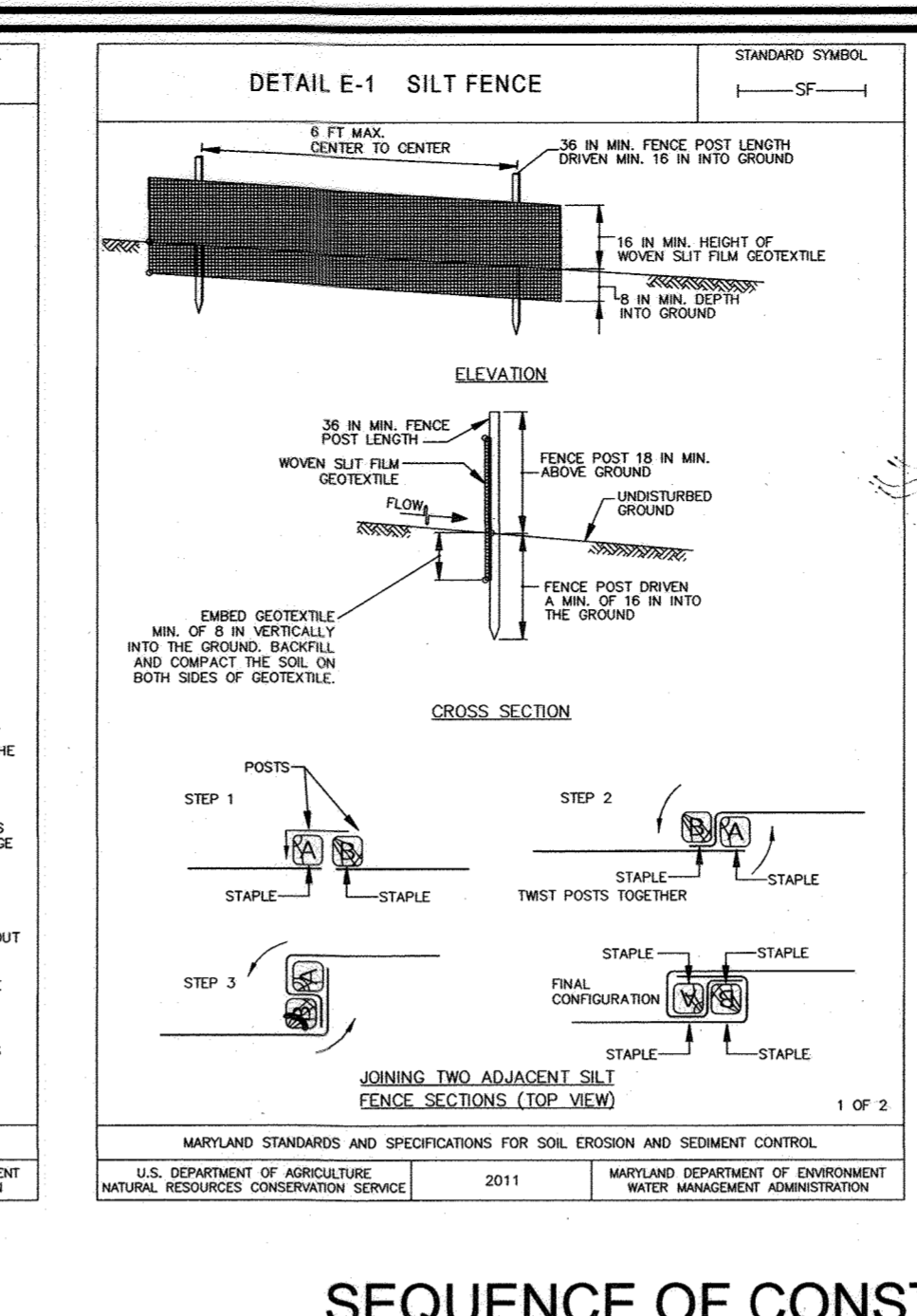
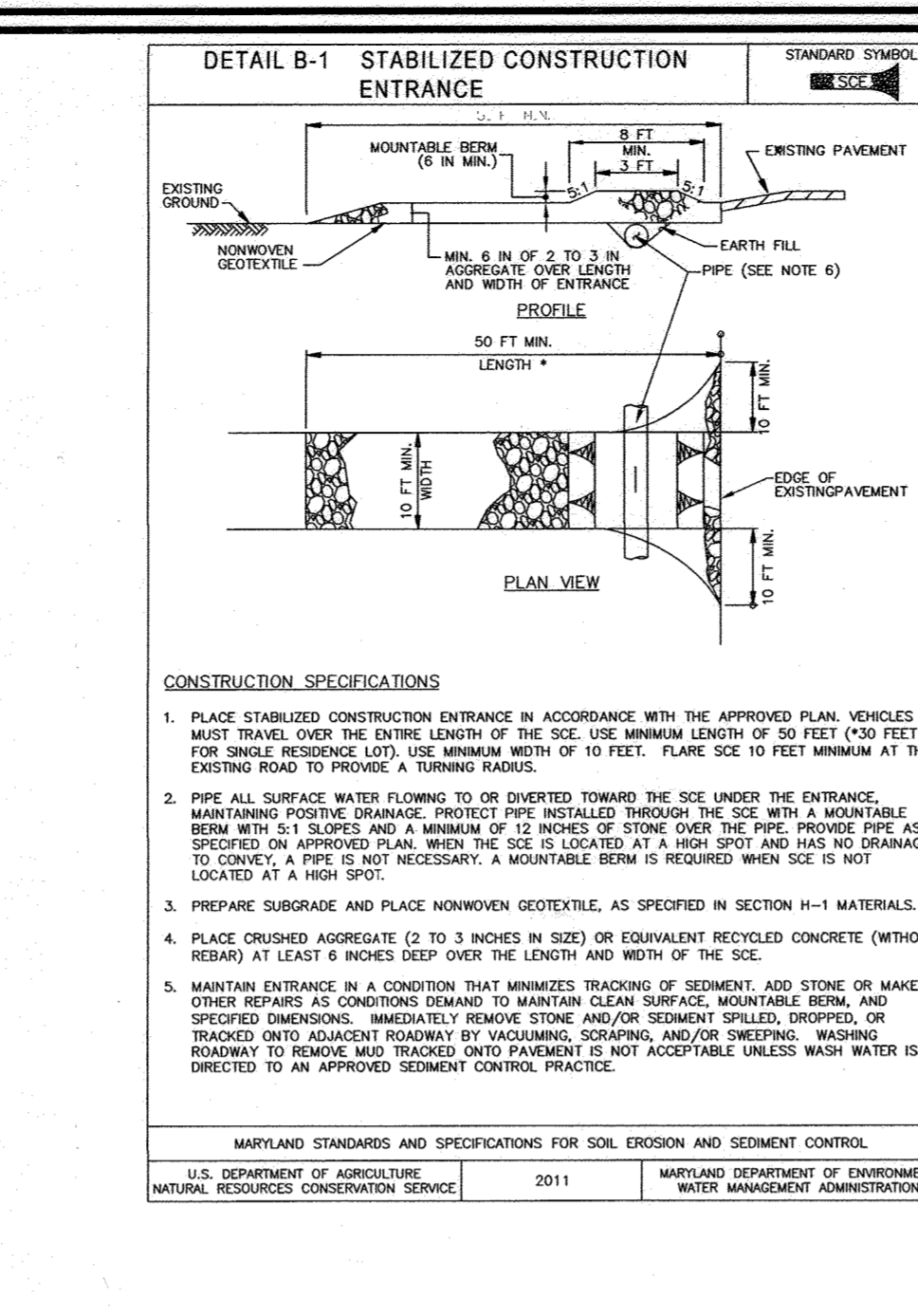
B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. 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:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 200 PPM PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAYED MATERIAL (GREATER THAN 30 PERCENT SILET PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE, AN EXCEPTION: IF LOOSENESS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
C. GRADED AREAS SHOULD BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SPORED OR COMBED TO A DEPTH OF 3 TO 5 INCHES.
D. SOIL AMENDMENTS ARE SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRICKS, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH WIRE CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE THE CONDITIONS WILL NOT PERMIT MECHANICAL PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH FEWER THAN 3 INCHES OF SOIL EXPOSED TO THE SURFACE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND PLANNED. SEEDING LOSSENESS MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. 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 CONSIDERABLE NUTRIENT DEFICIENCY, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADEATION.
2. TOPSOIL, SALVAGED FROM AN EXISTING SITE, MAY BE USED PROVIDED IT MEETS THE STANDARDS 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 SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXISTING SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS TO DEEP ENOUGH TO SUPPORT PLANTS OR FLUENTS OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. SOIL IS SO ACRYD THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND APPROVAL BY THE ENFORCEMENT AUTHORITY.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
A. TOPSOIL MUST BE A LOW, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED.
B. THE APPROPRIATE APPROVAL AUTHORITY, TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF STONES, STICKS, SAND, CRACKS, FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
C. TOPSOIL MUST BE FREE OF NOxious PLANTS OR PLANT PARTS SUCH AS BEMUDA GRASS, STONES, SAND, CRACKS, FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
D. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROVED AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. SOIL APPLICATION
A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SEEDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TOPSOILING. AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
C. APPLY TOPSOIL IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLYING THE SEEDING RATE IN EACH DIRECTION. SOIL THE SEEDER AREA WITH A MEDIUM TO FINE SEEDING GOOD SEED TO SOIL CONTACT.
D. CRIPPLE OR BACKDITCHING TO PROTECT MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. OUTPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FIRED AFTER PLANTING.
E. TOPSOIL SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY THE SEEDING RATE IN EACH DIRECTION.
6. APPLICATION
A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL, DROP OR BROADCAST SPREADERS.
B. SEED PREPARATION AND BROADCASTING: SEEDS TO BE USED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
C. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLYING THE SEEDING RATE IN EACH DIRECTION. SOIL THE SEEDER AREA WITH A MEDIUM TO FINE SEEDING GOOD SEED TO SOIL CONTACT.
D. CRIPPLE OR BACKDITCHING TO PROTECT MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. OUTPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FIRED AFTER PLANTING.
E. TOPSOIL SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY THE SEEDING RATE IN EACH DIRECTION.
7. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
I. 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: 40 PPM (PHOSPHORUS), 200 POUNDS PER ACRE. POTASSIUM, 200 POUNDS PER ACRE.
II. LIME: USE ONLY GRADE AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WITHOUT INTERFERENCE.
III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.



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 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. 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, THEIR USE IS NOT AUTHORIZED.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS PERFORMED AND REQUIRED FOR TEMPORARY SEEDING.

3. MULCHING IS REQUIRED OUTSIDE OF A SEEDING ZONE, APPLY SEED AND STABILIZE WITH STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	HARDNESS ZONE (FROM FIGURE B.3):		SEEDING RATES (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
		Zone 6a	Zone 6b					
1	COOL SEASON ANNUAL GRASS OR EQUAL	40 LB / AC	MAC	MAC 1 TO MAY 15	AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOLIAR GRASS OR EQUAL	30 LB / AC	MAC	MAY 16 TO JUL 31		1/2 IN.		

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

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

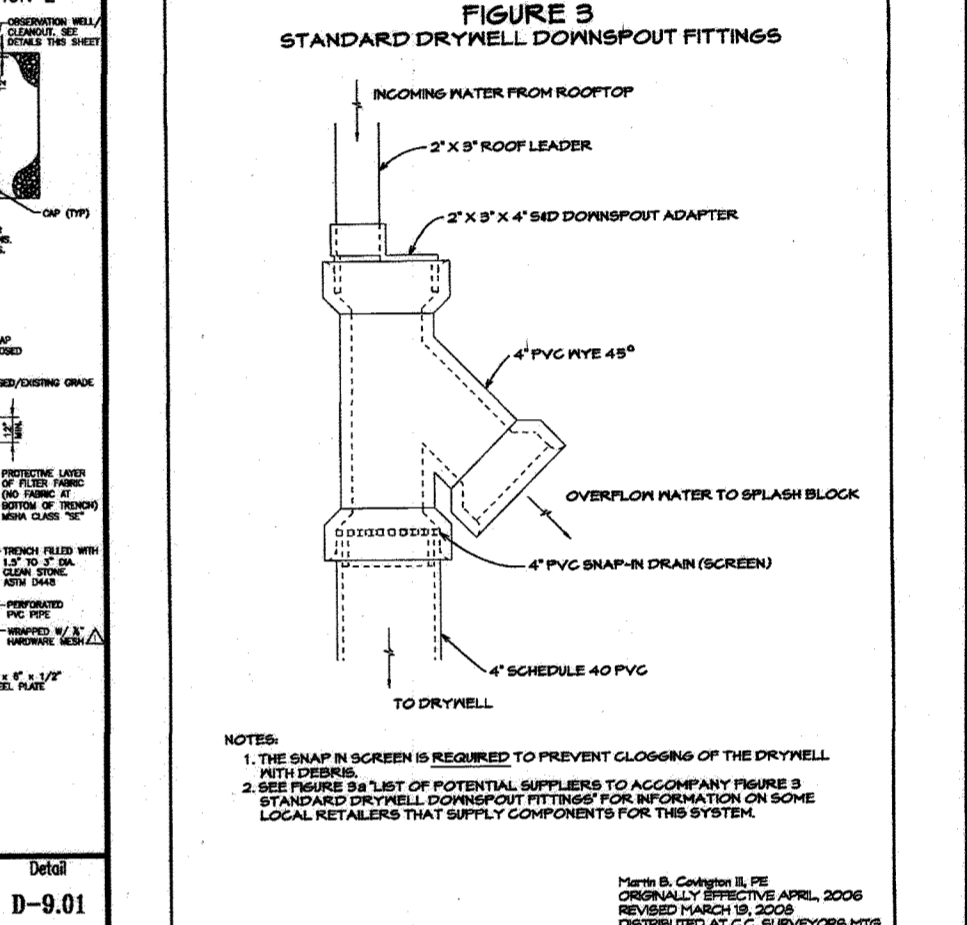
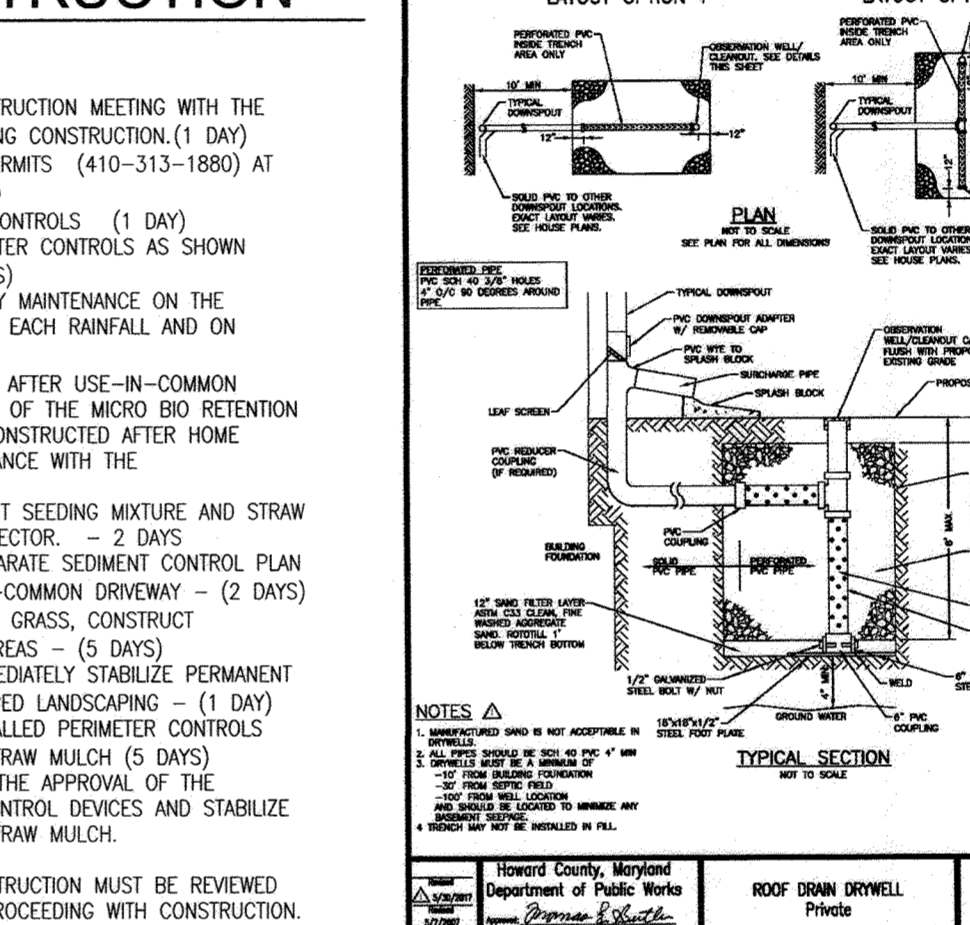
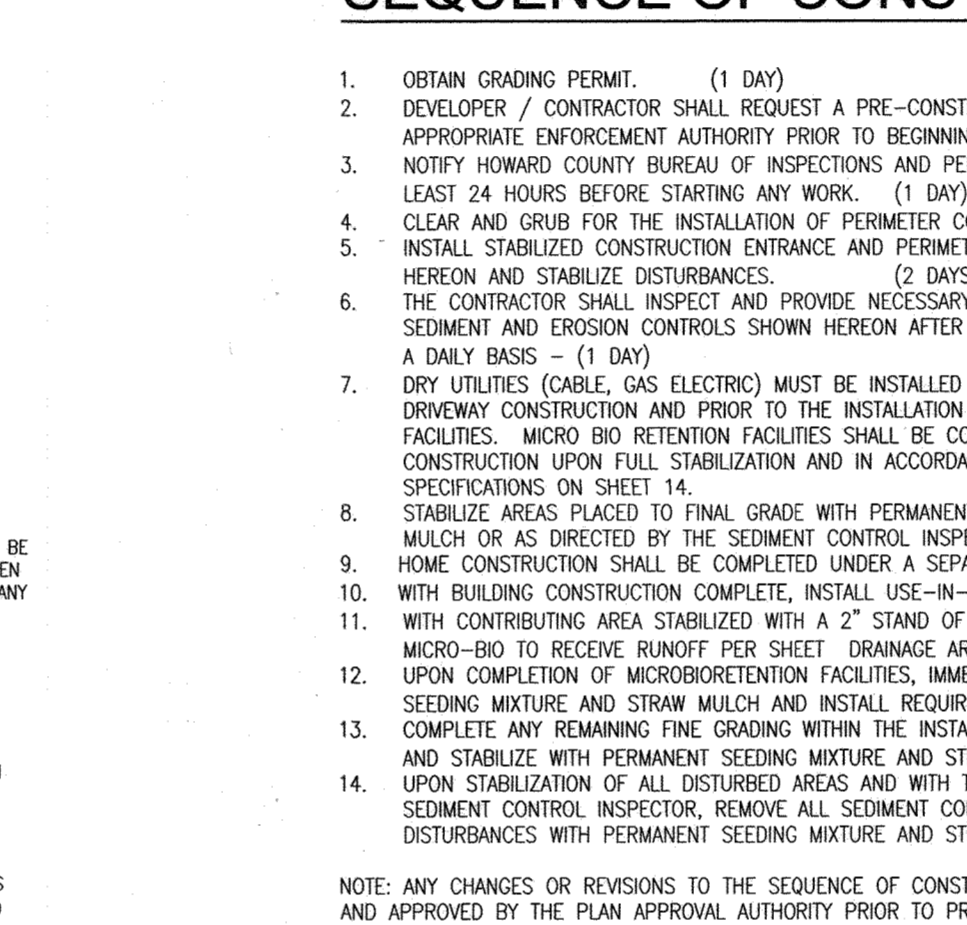
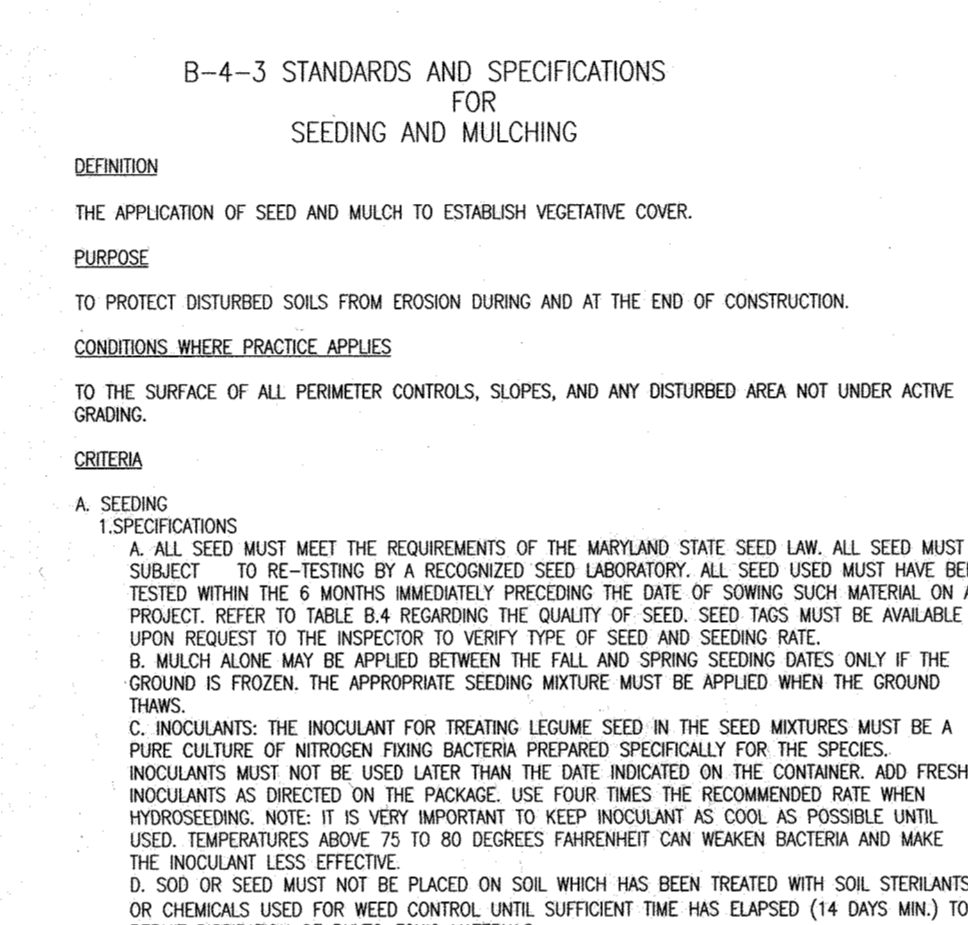
PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

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

CRITERIA

A. SEEDING SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE TESTED WITHIN 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 TYPE OF SEED AND SEEDING RATE.
B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAW.
C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF RHIZOBIA SPECIES PREPARED SPECIALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 70 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
D. SOIL OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DEGRADATION OF PHYTO-TOXIC MATERIALS.

B. MULCHING SPECIFICATIONS
1. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL, DROP OR BROADCAST SPREADERS.
2. SEED PREPARATION AND BROADCASTING: SEEDS TO BE USED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
3. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLYING THE SEEDING RATE IN EACH DIRECTION. SOIL THE SEEDER AREA WITH A MEDIUM TO FINE SEEDING GOOD SEED TO SOIL CONTACT.
4. CRIPPLE OR BACKDITCHING TO PROTECT MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. OUTPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FIRED AFTER PLANTING.
5. TOPSOIL SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY THE SEEDING RATE IN EACH DIRECTION.
6. APPLICATION
A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL, DROP OR BROADCAST SPREADERS.
B. SEED PREPARATION AND BROADCASTING: SEEDS TO BE USED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
C. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLYING THE SEEDING RATE IN EACH DIRECTION. SOIL THE SEEDER AREA WITH A MEDIUM TO FINE SEEDING GOOD SEED TO SOIL CONTACT.
D. CRIPPLE OR BACKDITCHING TO PROTECT MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. OUTPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FIRED AFTER PLANTING.
E. TOPSOIL SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY THE SEEDING RATE IN EACH DIRECTION.
7. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
I. 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: 40 PPM (PHOSPHORUS), 200 POUNDS PER ACRE. POTASSIUM, 200 POUNDS PER ACRE.
II. LIME: USE ONLY GRADE AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WITHOUT INTERFERENCE.
III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.



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 CONSTRUCTION PROJECTS WILL HAVE A CERTIFIED ATTENDING ENGINEER FROM THE ENVIRONMENT AND CONSTRUCTION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

John P. McDaniel 2/4/14
SIGNATURE OF DEVELOPER

PERMANENT SEEDING SUMMARY

NO.	SPECIES	HARDNESS ZONE (FROM FIGURE B.3):		SEEDING RATES (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
		Zone 6a	Zone 6b					
1	COOL SEASON ANNUAL GRASS OR EQUAL	40 LB / AC	MAC	MAC 1 TO MAY 15	AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOLIAR GRASS OR EQUAL	30 LB / AC	MAC	MAY 16 TO JUL 31		1/2 IN.		

B-4-2 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

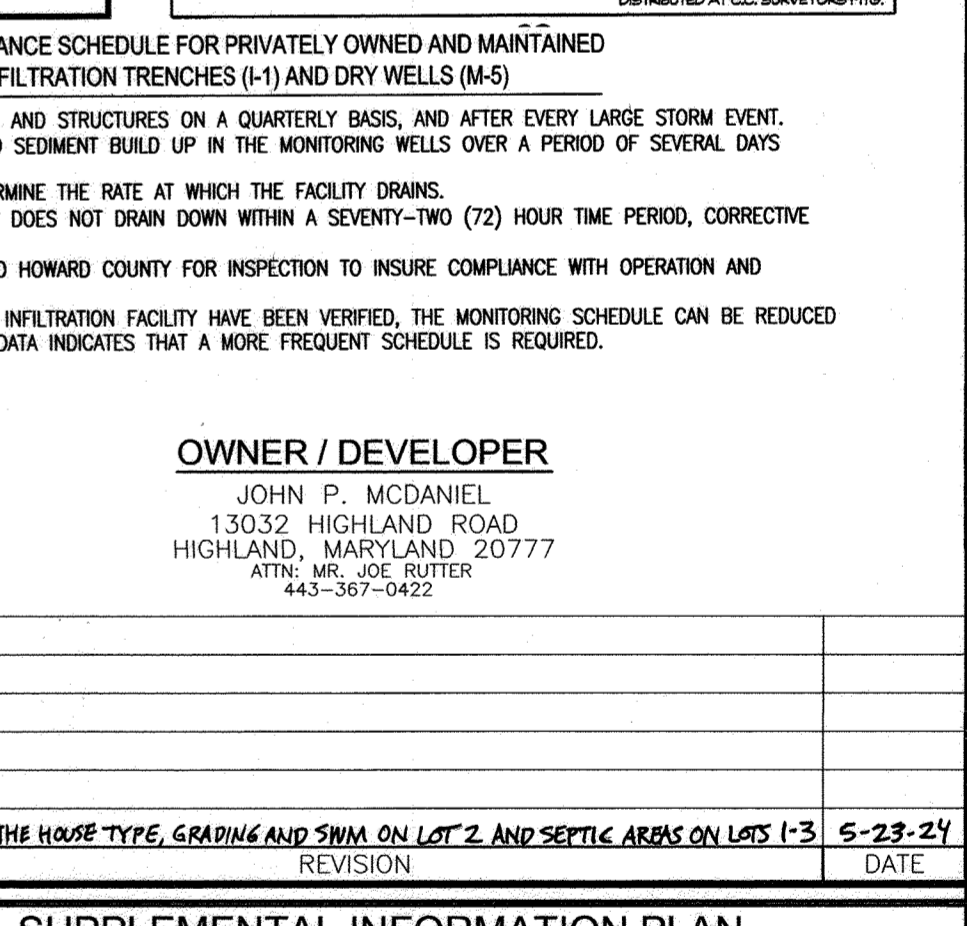
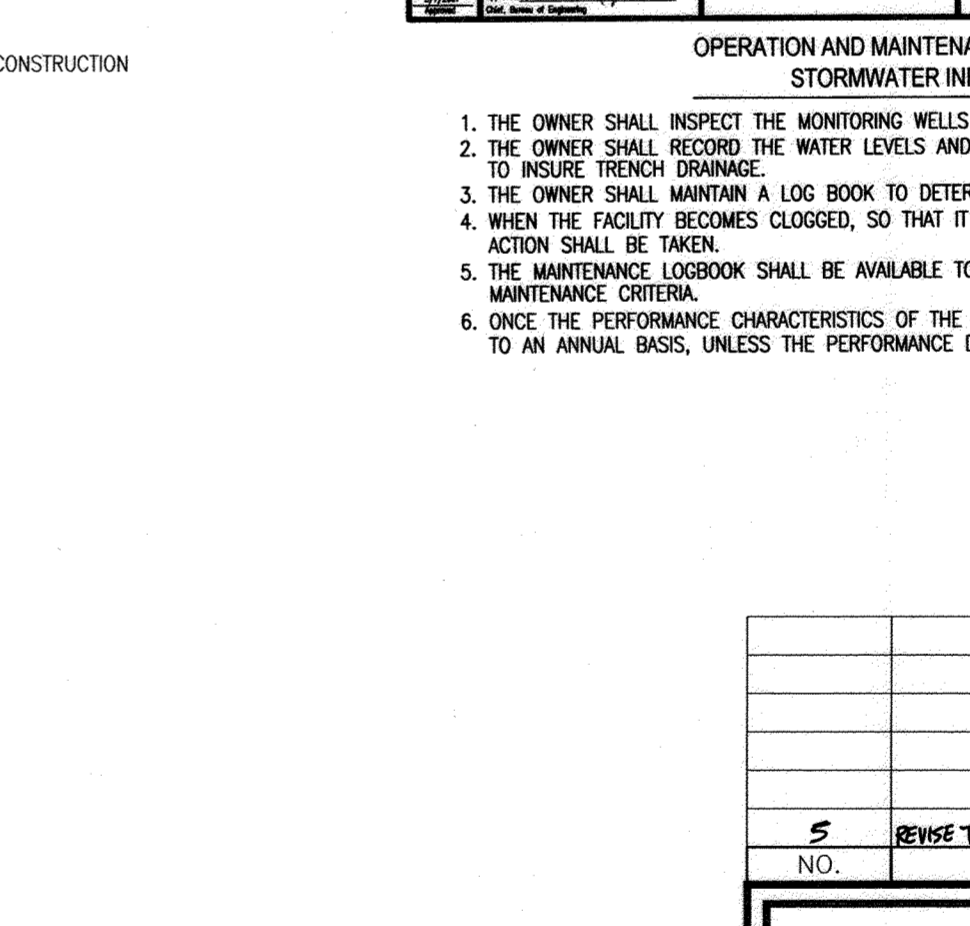
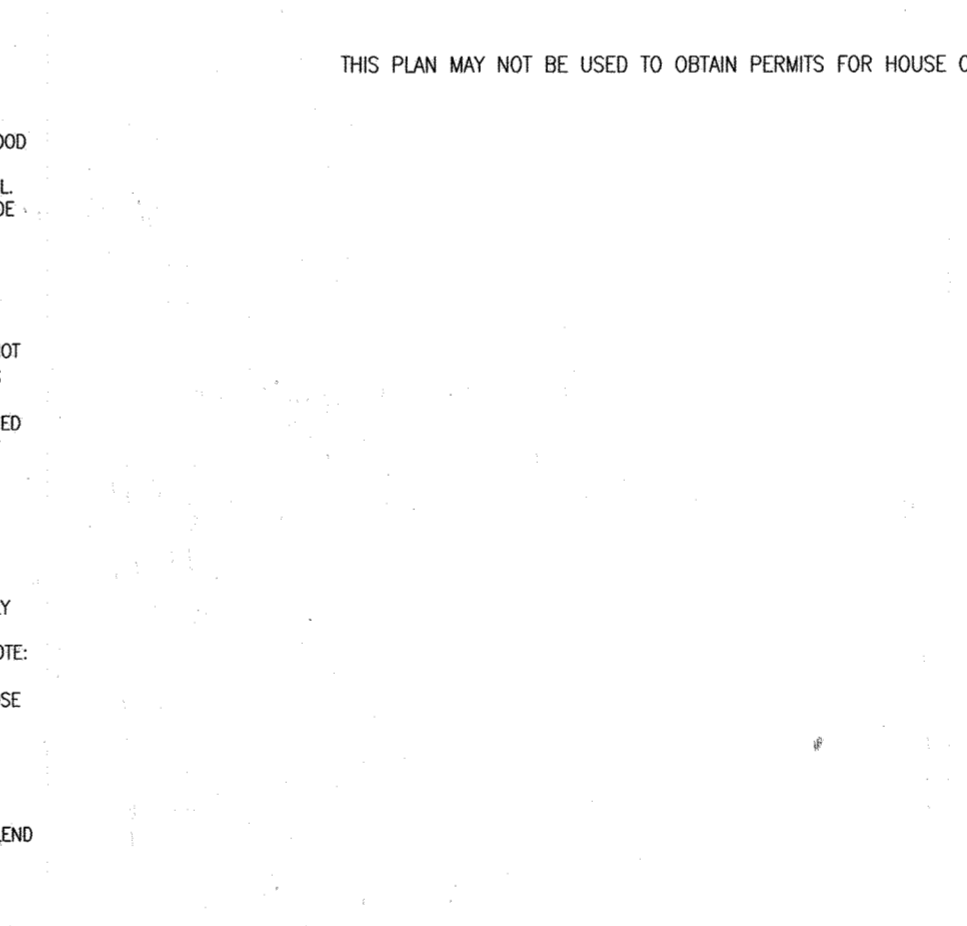
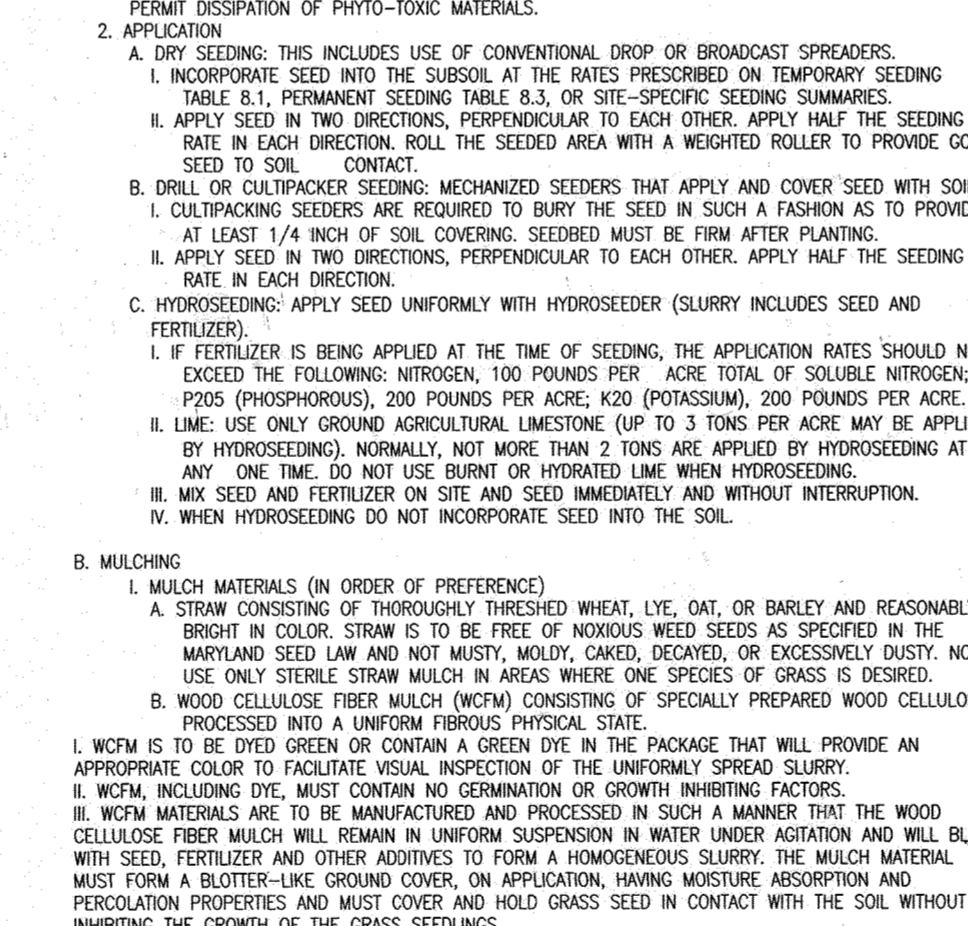
DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROVATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. EROSION MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3.1 LAND GRADING.
2. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT OR MOISTURE CONTROL STRUCTURE.
3. ACCESS THE STOCKPILE AREA FROM THE UPRIDE SIDE.
4. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIRT, TEMPORARY SMALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
5. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE RUNOFF.
6. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-4.1. INCIDENTAL STABILIZATION AND STANDARD B-4-4.1 TEMPORARY STABILIZATION.
7. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LEAK SHOULD BE MONITORED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILE CONTAINING CONTAMINATED MATERIAL SHALL BE COVERED WITH IMPERVIOUS SHEETING.



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.

John R. Robertson 2/20/14
SIGNATURE OF ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3-19-14
3-25-14

PERMANENT SEEDING SUMMARY

NO.	SPECIES	HARDNESS ZONE (FROM FIGURE B.3):		SEEDING RATES (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
		Zone 6a	Zone 6b					
1	COOL SEASON ANNUAL GRASS OR EQUAL	40 LB / AC	MAC	MAC 1 TO MAY 15	AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOLIAR GRASS OR EQUAL	30 LB / AC	MAC	MAY 16 TO JUL 31		1/2 IN.		

B-4-2 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

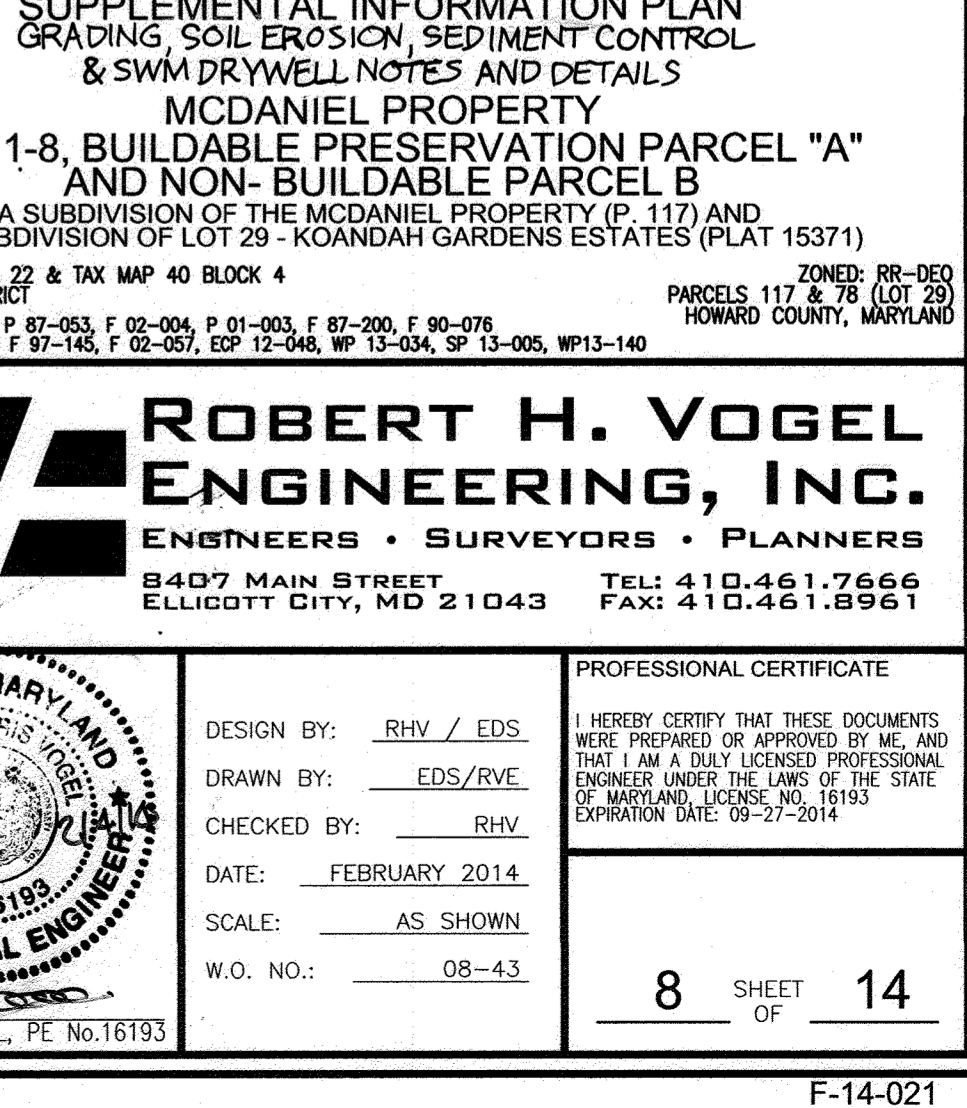
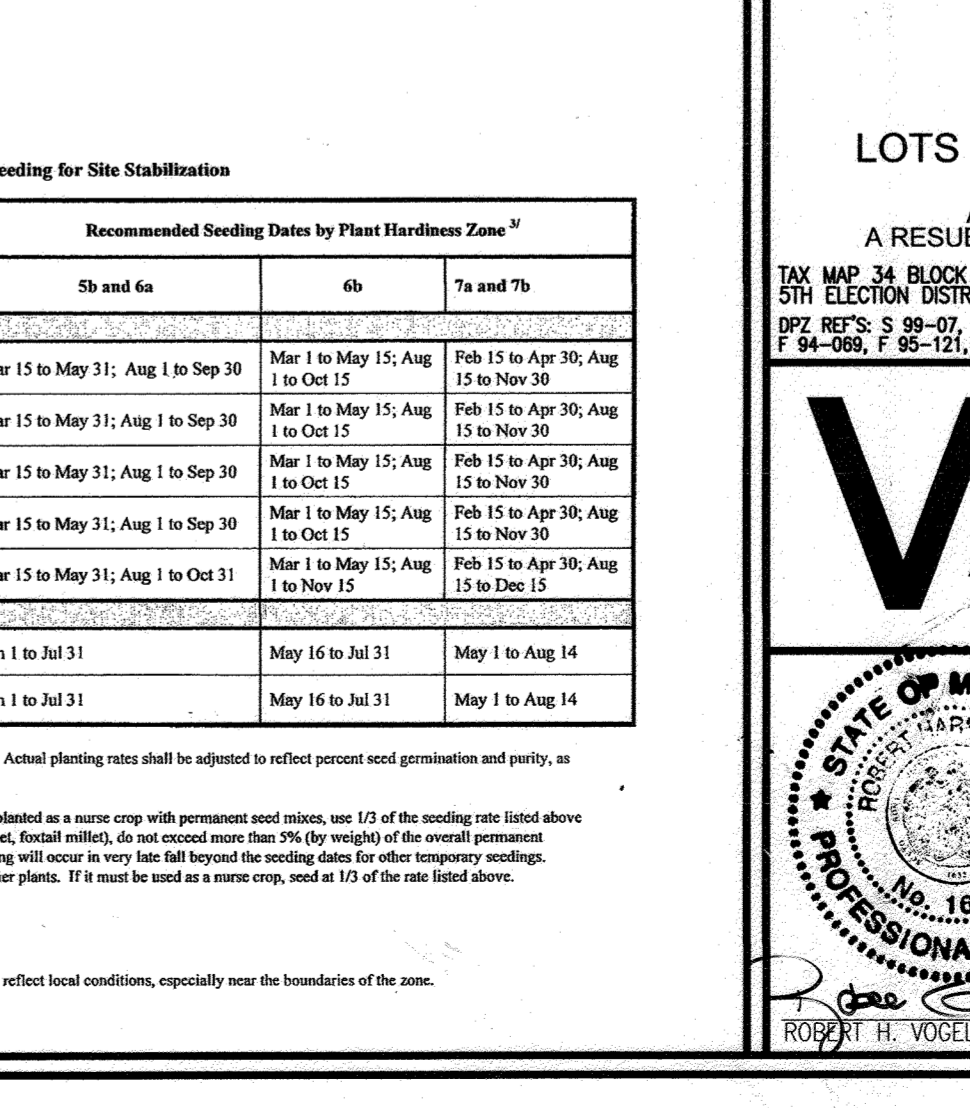
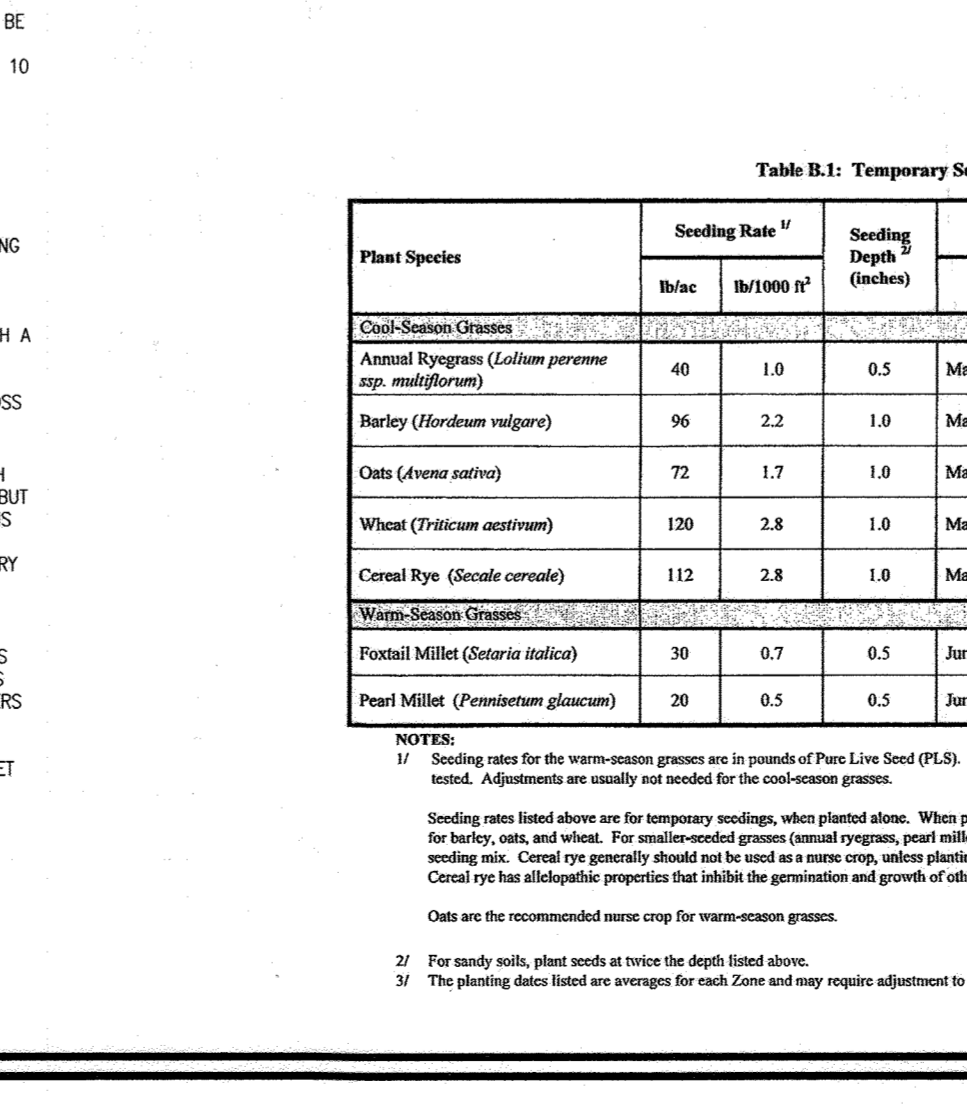
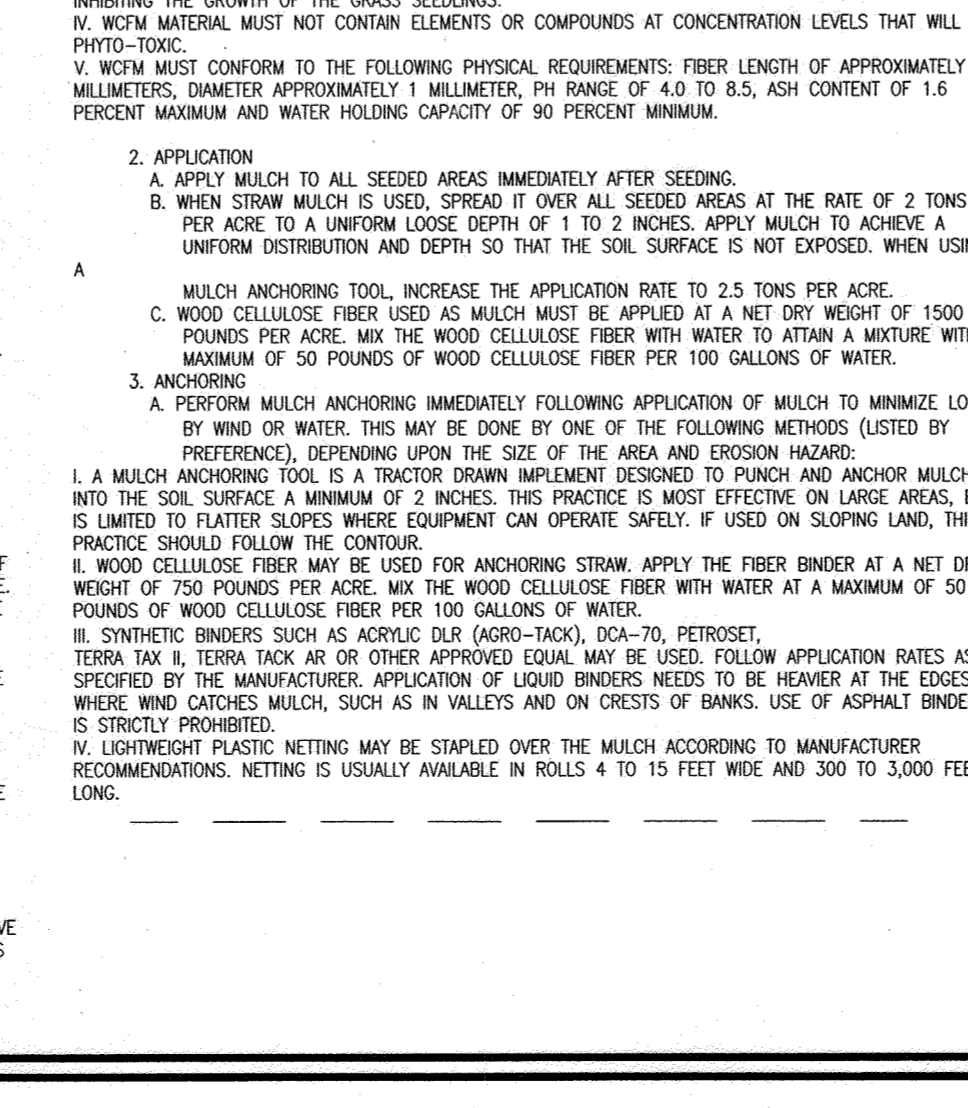
DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROVATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. EROSION MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3.1 LAND GRADING.
2. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT OR MOISTURE CONTROL STRUCTURE.
3. ACCESS THE STOCKPILE AREA FROM THE UPRIDE SIDE.
4. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIRT, TEMPORARY SMALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
5. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE RUNOFF.
6. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-4.1. INCIDENTAL STABILIZATION AND STANDARD B-4-4.1 TEMPORARY STABILIZATION.
7. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LEAK SHOULD BE MONITORED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILE CONTAINING CONTAMINATED MATERIAL SHALL BE COVERED WITH IMPERVIOUS SHEETING.



3-19-14
3-25-14

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3-19-14
3-25-14

MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT SAND	PERCENT SILT	PERCENT CLAY	PERCENT ORGANIC	PERCENT ROCK	PERCENT COBBLES	PERCENT GRAVEL	PERCENT STONES	PERCENT Boulders	PERCENT CEMENTATION	PERCENT GLASS	PERCENT METALS	PERCENT OTHER
GbA	GLADSTONE LOAM, 0 TO 8 PERCENT SLOPES	B	NO	NO	NO	0.20	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	NO	0.20	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
GbP	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	NO	0.37	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
W	WATER															

TAKEN FROM: USDA, SCS-NEB SOIL SURVEY, HOWARD COUNTY
 *SCALE COMPONENT OF GbB, EROSION FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

THESE AREAS DESIGNATE A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION TO A PUBLIC SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

LEGEND

- EXISTING CONTOUR
- EXISTING TREELINE
- SOIL BOUNDARY
- EXISTING WELL
- PROPERTY LINE
- PROP. WELL AREA
- PROP. WELL
- EXISTING SEPTIC RESERVE AREA
- PROP. SEPTIC RESERVE AREA
- SPOT ELEVATION
- SPECIMEN TREE
- EXISTING VEGETATION TO REMAIN UNLESS NOTED OTHERWISE (APPROXIMATE LOCATION)
- BG & E GREEN ZONE
- BG & E YELLOW ZONE
- OVERHEAD UTILITY
- PROPOSED SHADE TREE TYP.
- PROPOSED EVERGREEN TREE TYP.

- NOTES:**
- NO SPECIMEN TREES ARE TO BE REMOVED.
 - NO STORM DRAINS ARE PROPOSED ONSITE.
 - ALL LOTS HAVE ROAD FRONTAGE ON HIGHLAND ROAD.
 - ALL DWELLINGS ARE TO FACE INTO THE PROJECT, REAR OF DWELLINGS TOWARD HIGHLAND ROAD.
 - EXISTING PASTURE FENCING WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

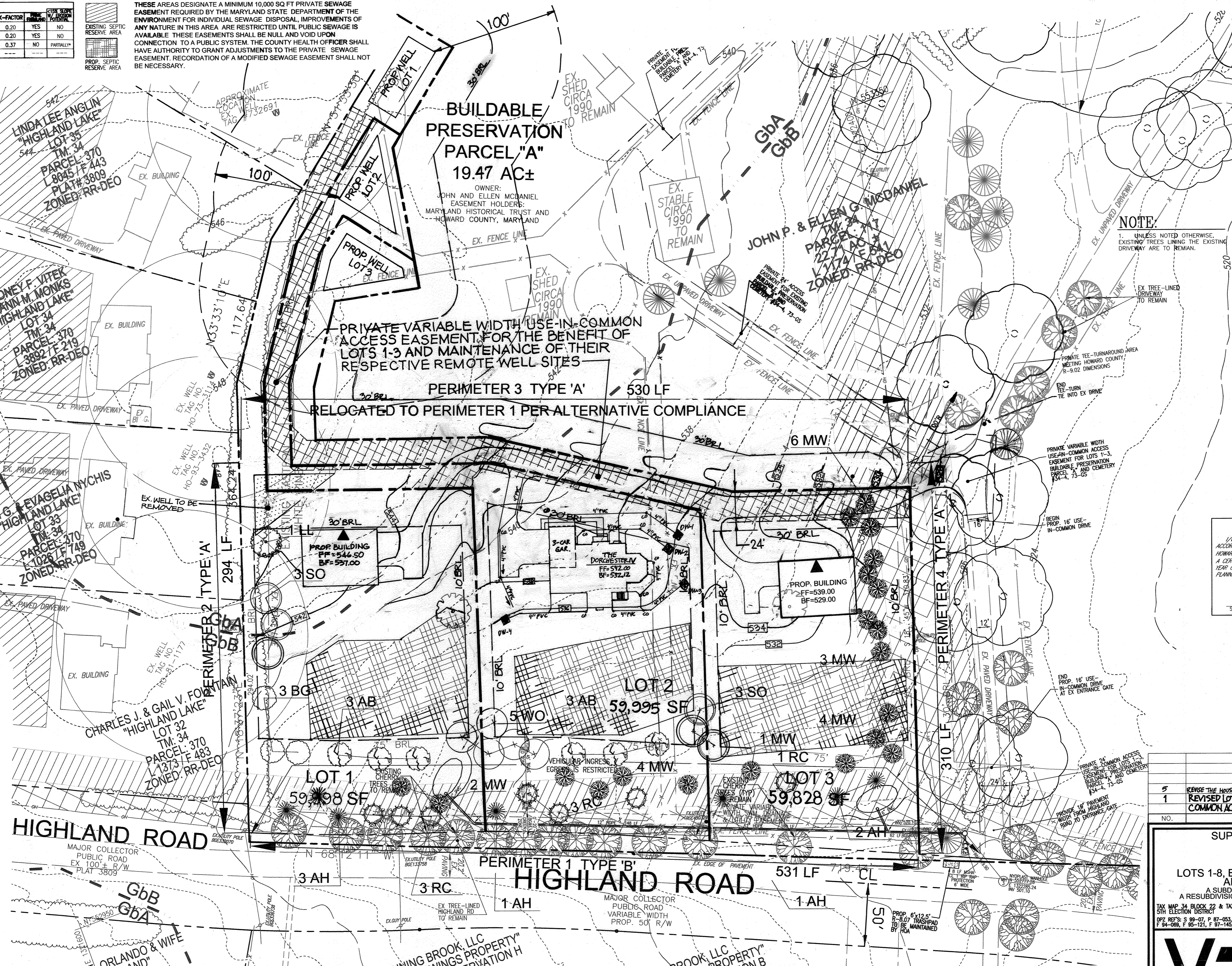
CATEGORY	ADJACENT TO PERIMETER AND ROADWAYS	TOTAL
PERIMETER/FRONTAGE DESIGNATION	1 2 3 4	A A A A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	531 294 530 310	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No* No No No	No
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No No No No	No
NUMBER OF PLANTS REQUIRED	1:50 11 1:60 5 1:80 9 1:60 6	31
SHADE TREES	1:40 14	14
EVERGREEN TREES		
SHRUBS		
NUMBER OF PLANTS PROVIDED	7 5 9 11	21
SHADE TREES	14(1)	14
EVERGREEN TREES		
SHRUBS (2:1 SUBSTITUTION)	8	20
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED		

* PERIMETER 1 ALONG HIGHLAND ROAD HAS 14 EXISTING TREES PROPOSED TO REMAIN PENDING BIR APPROVAL. CREDIT HAS NOT BEEN TAKEN FOR THESE EXISTING TREES
 ** PERIMETER 3 PLANTING REQUIREMENTS HAVE BEEN RELOCATED TOWARD PERIMETER 1 AS PART OF THE ALTERNATIVE COMPLIANCE REQUEST.
 (1) 14 EVERGREEN TREES SHALL BE BG ZONE COMPLIANT
 FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$11,400.00
 ** PERIMETER 3 PLANTING REQUIREMENTS HAVE BEEN RELOCATED TOWARD PERIMETER 1 AS PART OF THE ALTERNATIVE COMPLIANCE REQUEST.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 3.19.14
 J.P. DATE

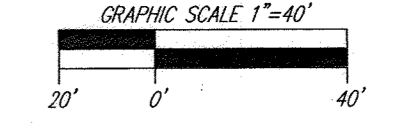
Chief, Division of Land Development 3.25.14
 DATE



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 AND CERTIFICATION OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXCLUDED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

John P. McDaniel 2/4/14
 SIGNATURE OF DEVELOPER DATE



OWNER / DEVELOPER
 JOHN P. MCDANIEL
 13032 HIGHLAND ROAD
 HIGHLAND, MARYLAND 20777
 ATTN: MR. JOE RUTHER
 443-367-0422

NO.	REVISION	DATE
5	REVISE THE HOUSE TYPE, GRADING AND SWIM ON LOT 2, AND SEPTIC AREA ON LOTS 1, 3, 5-23-24.	
1	REVISE LOTS 1-3, BUILDINGS, DRIVEWAYS, PRIVATE USE IN COMMON ACCESS EASEMENT, AND WELL LOCATIONS.	12-16-14

SUPPLEMENTAL INFORMATION PLAN LANDSCAPE PLAN

MCDANIEL PROPERTY LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A" AND NON-BUILDABLE PARCEL B
 A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)
 TAX MAP 34, BLOCK 22 & TAX MAP 40, BLOCK 4
 5TH ELECTION DISTRICT
 872 BETH S 09-07, P. 87-053, F. 02-004, P. 01-003, F. 87-200, F. 80-076
 F. 94-068, F. 80-121, F. 97-140, F. 02-057, ECP 12-048, WP 13-034, SP 13-005, WP13-140

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

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18183, EXPIRATION DATE: 09-27-2014.

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/RVE
 CHECKED BY: RHV
 DATE: FEBRUARY 2014
 SCALE: AS SHOWN
 W.O. NO.: 08-43

9 SHEET OF 14

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.	TYPE
LL	1	YUCCA CORAYATA 'GREEN SPIRE'	2.5" CAL.	B & B	SHADE
SO	6	QUERCUS COCCINEA SCARLET OAK	2.5" CAL.	B & B	SHADE
WO	5	QUERCUS PHELLOS WILLOW OAK	2.5" CAL.	B & B	SHADE
AB	6	ASCOSMUS HIPPOCASTANEUM 'BAUMANN'		B & B	SHADE
BC	3	RUSSIA SYLVATICA BLACK GUM	2.5" CAL.	B & B	SHADE
MW	20	CARPINUS CAROLINIANA MUSCLEWOOD		B & B	SMALL
AH	7	ILEX OPACA AMERICAN HOLLY	5-6' HT.	B & B	EVER.
RC	7	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	5-6' HT.	B & B	EVER.

PLANTINGS SPECIFIED HEREON PREPARED BY: GRAHAM LANDSCAPE ARCHITECTURE
 229 PRINCE GEORGE ST. ANNAPOLIS, MD 21401
 410-269-5886
 FAX 410-268-4032

PLANTINGS MUST MEET BGE ZONE REQUIREMENTS
 PERIMETER 3 PLANTINGS HAVE BEEN SHIFTED TO PERIMETER 1 PER THE ALTERNATIVE COMPLIANCE REQUEST

PLAN VIEW
 SCALE: 1" = 40'

NOTE:
 1. UNLESS NOTED OTHERWISE, EXISTING TREES LINING HIGHLAND ROAD ARE TO REMAIN.

K:\PROJECTS\08-43-ENGR\DWG\FINAL PLAN\08-43-ENGR-LANDSCAPE.DWG

MAPPED SOILS TYPES						
SYMBOL / DESCRIPTION	GROUP	HYDRO	HYDRO	K-FACTOR	PERCENT	PERCENT
GbA GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbB GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.20	YES	NO
GbC GLENVILLE-SALE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	PARTIALLY
W WATER						

LANDSCAPE SCHEDULE					
KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.	TYPE
AB	3	AESCULUS HYFROCASTANEUM "BAUMANN"	2.5" CAL	B & B	SHADE
BG	4	NYSSA SYLVATICA BLACK GUM	2.5" CAL	B & B	SHADE
SO	12	QUERCUS COCCINEA SCLET OAK	2.5" CAL	B & B	SHADE
WO	9	QUERCUS PHellos WILLOW OAK	2.5" CAL	B & B	SHADE
LL	4	LILIA CORDATA "GREENSPIRE" LITTLELEAF LINDEN	2.5" CAL	B & B	SHADE
MW	10	CARPINUS CAROLINIANA MUSCLEWOOD		B & B	SMALL
AH	12	JLEX OPACA AMERICAN HOLLY	5-6" HT.	B & B	EVER.
RC	6	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	5-6" HT.	B & B	EVER.

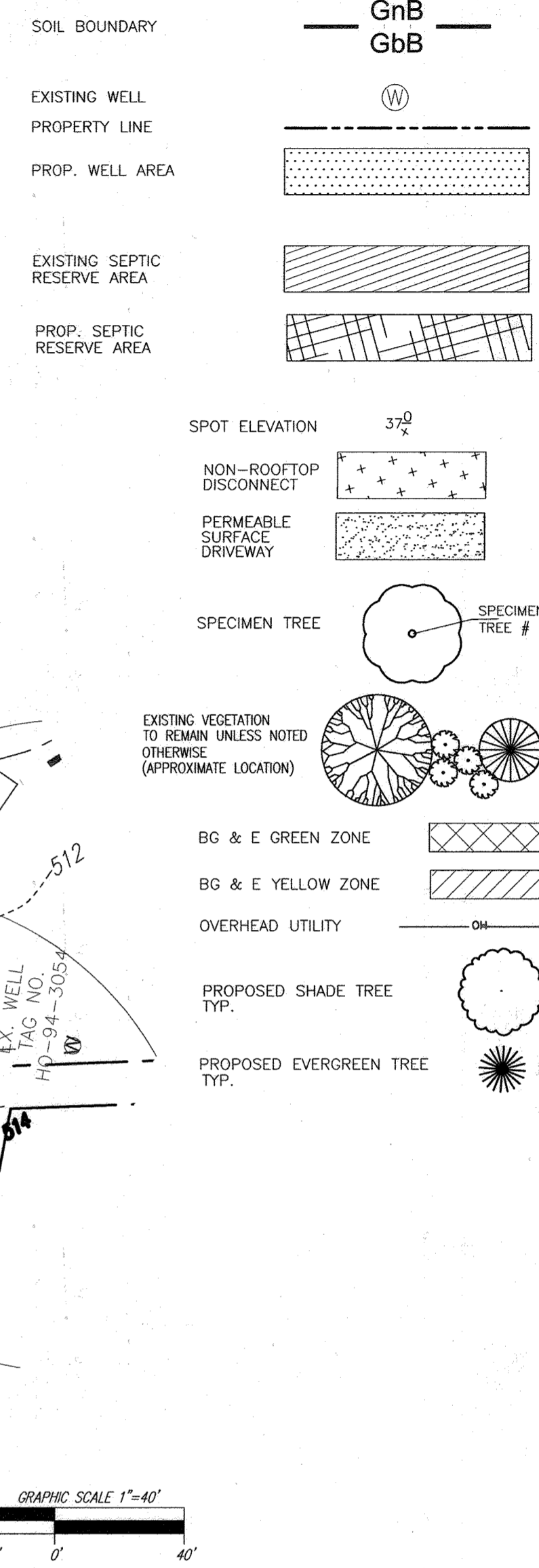
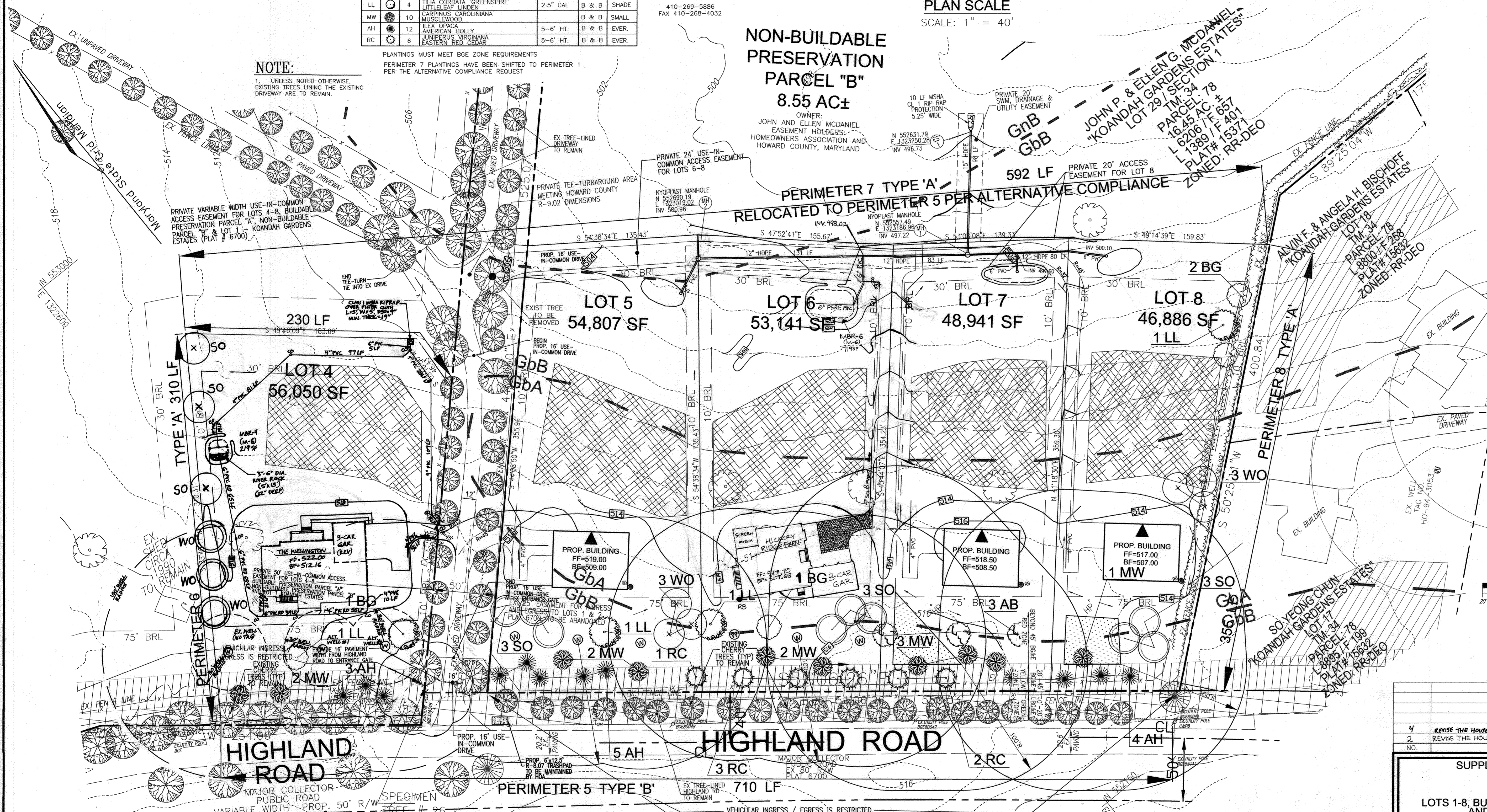
PLANTINGS SPECIFIED HEREON PREPARED BY:
 GRAHAM LANDSCAPE ARCHITECTURE
 229 PRINCE GEORGE ST. ANNAPOLIS, MD 21401
 410-269-5886
 FAX 410-268-4032

PLAN SCALE
 SCALE: 1" = 40'

LEGEND	
EXISTING CONTOUR	382 380
EXISTING TREELINE	
SOIL BOUNDARY	GnB GbB
EXISTING WELL	
PROPERTY LINE	
PROP. WELL AREA	
EXISTING SEPTIC RESERVE AREA	
PROP. SEPTIC RESERVE AREA	
SPOT ELEVATION	372
NON-ROOFTOP DISCONNECT	
PERMEABLE SURFACE DRIVEWAY	
SPECIMEN TREE	SPECIMEN TREE # 3
EXISTING VEGETATION TO REMAIN UNLESS NOTED OTHERWISE (APPROXIMATE LOCATION)	
BG & E GREEN ZONE	
BG & E YELLOW ZONE	
OVERHEAD UTILITY	
PROPOSED SHADE TREE TYP.	
PROPOSED EVERGREEN TREE TYP.	

NOTE:
 1. UNLESS NOTED OTHERWISE, EXISTING TREES LINING THE EXISTING DRIVEWAY ARE TO REMAIN.

PLANTINGS MUST MEET BGE ZONE REQUIREMENTS
 PERIMETER 7 PLANTINGS HAVE BEEN SHIFTED TO PERIMETER 1 PER THE ALTERNATIVE COMPLIANCE REQUEST



OWNER / DEVELOPER
 JOHN P. MCDANIEL
 13032 HIGHLAND ROAD
 HIGHLAND, MARYLAND 20777
 ATTN: MR. JOE RUTTER
 443-367-0422

NO.	REVISION	DATE
4	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 4	1-20-23
2	REVISE THE HOUSE TYPE, GRADING AND SWM FOR LOT 6	6-14-18

SUPPLEMENTAL INFORMATION PLAN
 LANDSCAPE PLAN
 MCDANIEL PROPERTY
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
 AND NON-BUILDABLE PARCEL B
 A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND
 A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)
 TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4 PARCELS 117 & 78 (LOT 29)
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 0972 REF'S: S 98-07, P 87-053, P 02-004, P 01-003, P 87-200, P 90-076
 P 94-066, P 95-121, P 97-143, P 02-057, 029-12-046, W 13-034, S 13-005, W 13-140

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 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

STATE OF MARYLAND PROFESSIONAL ENGINEER
 DESIGN BY: RHV / EDS
 DRAWN BY: EDS/RVE
 CHECKED BY: RHV
 DATE: FEBRUARY 2014
 SCALE: AS SHOWN
 W.O. NO.: 08-43
 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: 08-27-2014

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/FURTHER CERTIFY THAT I/WE WILL MAINTAIN A COPIATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 John P. McDaniel 2/4/14
 SIGNATURE OF DEVELOPER DATE

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.

CATEGORY	SCHEDULE 'A' PERIMETER LANDSCAPE EDGE				TOTAL
	ADJACENT TO PERIMETER AND ROADS	A	B	A	
PERIMETER/FRONTAGE DESIGNATION	5*	6	7**	8	
LANDSCAPE TYPE	B	A	A	A	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	710	310	592	355	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No*	No	No	No	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No	No	No	
NUMBER OF PLANTS REQUIRED	1:50	1:60	1:60	1:60	37
SHADE TREES	1:40	18			18
EVERGREEN TREES					
SHRUBS					
NUMBER OF PLANTS PROVIDED					
SHADE TREES	18(1)	6	10	6	32
EVERGREEN TREES					
OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)	10				10
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED					

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division 3-19-14
 Chief, Division of Land Development 3-25-14

RUNNING BROOK, LLC
 "HARWOOD W. OWINGS PROPERTY"
 LOT 5
 TM: 40
 PARCEL: 44
 L 9949 / F 139
 PLAT# 5669
 ZONED: RR-DEO

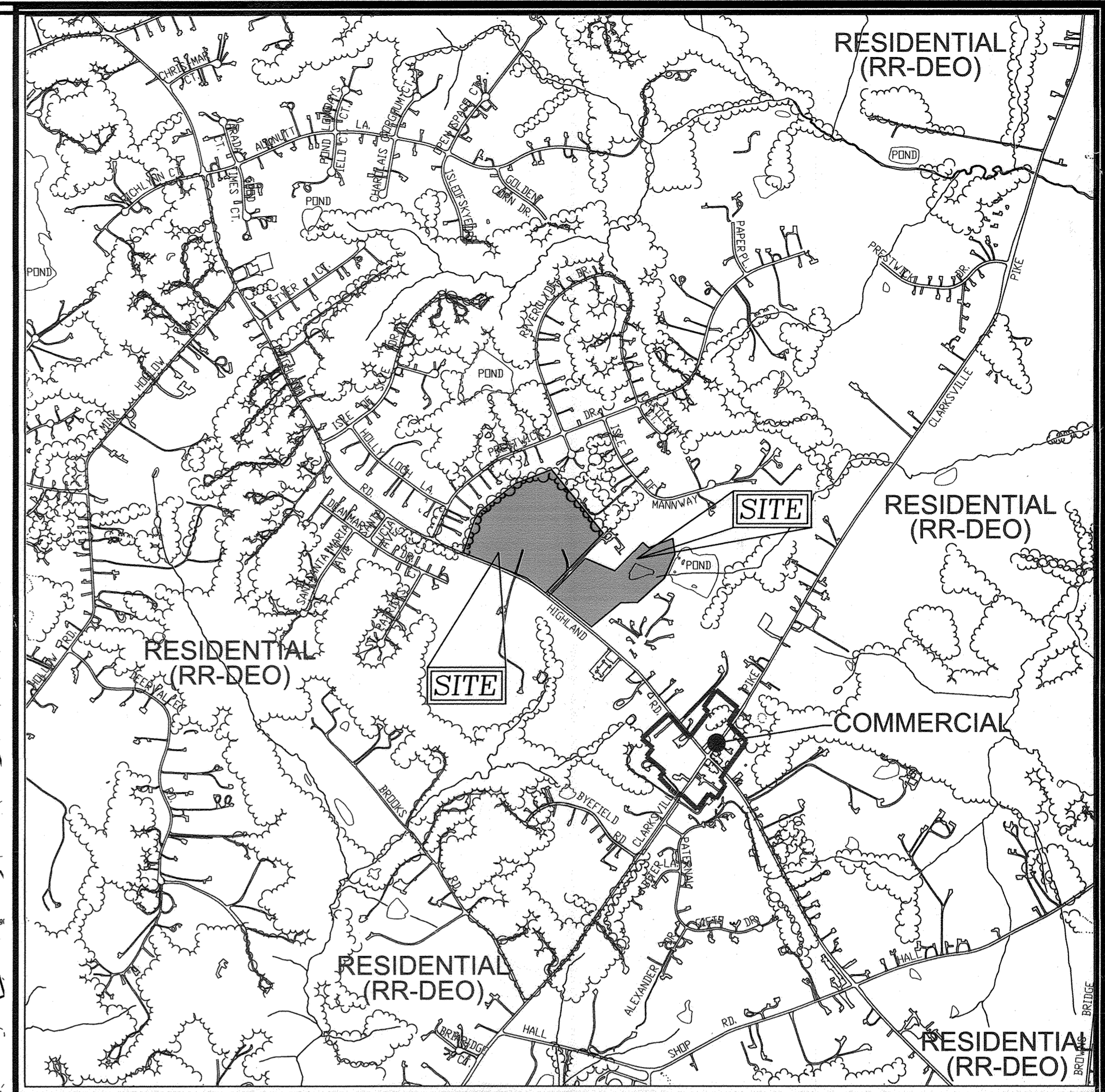
NOTES:
 1. NO SPECIMEN TREES ARE TO BE REMOVED.
 2. NO STORM DRAINS ARE PROPOSED ON-SITE.
 3. ALL LOTS HAVE ROAD FRONTAGE ON HIGHLAND ROAD.
 4. ALL DWELLINGS ARE TO FACE INTO THE PROJECT, REAR OF DWELLINGS TOWARD HIGHLAND ROAD.
 5. EXISTING PASTURE FENCING WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.

NOTE:
 1. UNLESS NOTED OTHERWISE, EXISTING TREES LINING HIGHLAND ROAD ARE TO REMAIN.

* PERIMETER 5 ALONG HIGHLAND ROAD HAS 28 EXISTING TREES PROPOSED TO REMAIN PENDING BGE APPROVAL. CREDIT HAS NOT BEEN TAKEN FOR THESE EXISTING TREES
 ** PERIMETER 7 PLANTING REQUIREMENTS HAVE BEEN RELOCATED TOWARD PERIMETER 5 AS PART OF THE ALTERNATIVE COMPLIANCE REQUEST.
 (1) 18 EVERGREEN TREES SHALL BE BGE ZONE COMPLIANT
 FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$13,800.00 FOR THE REQUIRED 37 SHADE TREES (11,100), 18 EVERGREEN TREES(2,700).

LEGEND

EXISTING CONTOUR	---	EXISTING WELL PROPERTY LINE	⊙	EDGE OF EXISTING POND (WATER EDGE)	---
EXISTING TREELINE	~	EXISTING SEPTIC RESERVE AREA	▨	FOREST CONSERVATION EASEMENT #FORESTATION	▨
SOIL BOUNDARY	---	FLOODPLAIN EASEMENT	▨	SPECIMEN TREE	⊙
Q STREAM / CHANNEL (INTERMITTENT)	---	EXISTING VEGETATION TO REMAIN UNLESS NOTED OTHERWISE (APPROXIMATE LOCATION)	⊙		
WETLAND BUFFER	---				
EXISTING NON TIDAL WETLAND	---				
NON-TIDAL WETLAND	---				



VICINITY MAP
SCALE: 1"=1000'
ADC MAP COORDINATES: 5051/F1

McCarthy & Associates, Inc.
Environmental/Regulatory Consultants
14458 Old Mill Road, Suite 201
Upper Marlboro, Maryland 20772
Phone: (301) 627-7505 FAX: (301) 627-5571
ENVIRONMENTAL CONSULTANT

FOREST CONSERVATION EASEMENT #1

LINE	COURSE	DIST.
F1	S 44-37-24 E	223.02
F2	N 49-13-18 E	306.02
F3	N 24-15-54 E	40.77
F4	N 65-42-59 W	27.74
F5	N 04-43-31 E	59.69
F6	N 00-53-57 E	148.44
F7	N 50-17-32 E	29.23
F8	S 73-11-30 E	78.86
F9	S 92-08-25 E	17.81
F10	N 24-15-54 E	12.99
F11	N 08-08-17 W	169.77
F12	S 68-50-07 W	244.00
F13	S 44-35-49 E	131.32
F14	S 13-59-09 W	210.23
F15	S 74-46-19 W	298.16

OWNER / DEVELOPER
JOHN P. MCDANIEL AND ELLEN G. MCDANIEL
13032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATTN: MR. JOE RUTTER
443-367-0422

FOREST CONSERVATION EASEMENT #1
AFFORESTATION AREA
1.96 ACRES

GENERAL NOTES

- THERE ARE NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ONSITE.
- IN ACCORDANCE WITH THE WILDLIFE & HERITAGE SERVICE, THERE ARE NO STATE OR FEDERAL RECORDS FOR RARE, THREATENED OR ENDANGERED SPECIES WITHIN THE BOUNDARIES OF THE PROJECT SITE AS DELINEATED.
- THERE ARE NO STATE CHAMPION TREES ON THE PROJECT SITE, SPECIMEN TREE # 15 IS 75% OF THE CURRENT STATE CHAMPION.
- CHANNELS ONSITE IDENTIFIED AS EPHEMERAL, REQUIRE NO BUFFER.
- STREAM SECTIONS IDENTIFIED AS INTERMITTENT, REQUIRE A 50 FT BUFFER.
- THE FOREST CONSERVATION EASEMENT SHALL BE A MINIMUM OF 35' WIDE.
- WATERSHED NAME: MIDDLE PATUXENT RIVER
DNR LISTING: 2131106

NOTE

- NO SPECIMEN TREES ARE PROPOSED TO BE REMOVED.

TABLE 2 Specimen Tree List for the McDaniel Property

Number	Common Name	Species Name	DBH (inches)	Condition
1	white willow	Salix alba	34	Good
2	white willow	Salix alba	37	Good
3	white willow	Salix alba	42	Good
4	catalpa	Catalpa speciosa	36	Fair
5	catalpa	Catalpa speciosa	36	Fair
6	catalpa	Catalpa speciosa	37	Good
7	catalpa	Catalpa speciosa	32	Good
8	catalpa	Catalpa speciosa	37	Good
9	catalpa	Catalpa speciosa	37	Good
10	black walnut	Juglans nigra	45	Fair
11	yellow-poplar	Liriodendron tulipifera	32	Good
12	catalpa	Catalpa speciosa	38	Good
13	catalpa	Catalpa speciosa	41	Fair
14	basewood	Tilia americana	34	Fair
15	catalpa	Catalpa speciosa	63	Good
16	basewood	Tilia americana	37	Good
17	catalpa	Catalpa speciosa	38	Good
18	catalpa	Catalpa speciosa	32	Good
19	catalpa	Catalpa speciosa	32	Good
20	catalpa	Catalpa speciosa	33	Good
21	eastern white pine	Pinus strobus	32	Good
22	American hock	Fagus grandifolia	35	Good
23	red maple	Acer rubrum	41	Good
24	black walnut	Juglans nigra	31	Good
25	black walnut	Juglans nigra	31	Good
26	catalpa	Catalpa speciosa	32	Fair

PLAN PREPARED BY:
KENNETH R. WALLIS
QUALIFIED PROFESSIONAL
COMAR 08.19.06.01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
3-19-14
3-25-14

MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRO INCLUSION	K-FACTOR	PERM. FABRIANO	CLAY	SLOPE
GQA	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO	
GQB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO	
GBC	GLENNVILLE-BAILLE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY*	PARTIALLY*	0.37	NO	PARTIALLY*	
W	WATER							

* TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
* BAILE COMPONENT OF Gbc, EROSION FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

PLAN SCALE
SCALE: 1"=100'

TABULATIONS

- TOTAL SITE AREA: 38.27 ACRES
 - 100-YEAR FLOODPLAIN: 0.55 ACRES
 - EXISTING FOREST: 0.00 ACRES
 - WETLANDS AND BUFFERS: 1.68 ACRES*
 - STREAM & BUFFER: 2.03 ACRES
- * WETLAND AND BUFFER ACREAGE IS PART OF STREAM & BUFFER ACREAGE

NO.	REVISION	DATE
5	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOTS 1-3 AND SEPTIC AREAS ON LOTS 1-3	5-23-21
4	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 4	9-20-23
3	REVISE PRIVATE 24' USE-IN-COMMON ACCESS EASEMENT AND DRIVEWAY FOR LOTS 6-B	11-9-18
2	REVISE THE HOUSE TYPE, GRADING AND SWM FOR LOT 6	6-14-18
1	REVISED LOTS 1-3, BUILDING, DRIVEWAY AND PRIVATE USE IN COMMON ACCL 30 EASEMENT.	12-16-14

SUPPLEMENTAL INFORMATION PLAN FOREST CONSERVATION PLAN

MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
AND NON-BUILDABLE PARCEL B
A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 117) AND
A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)
TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
FIFTH ELECTION DISTRICT
ZONED: RR-DEO
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410-461-7666
FAX: 410-461-8961

DESIGN BY: RHV / EDS
DRAWN BY: EDS
CHECKED BY: RHV
DATE: FEBRUARY 2014
SCALE: AS SHOWN
W.O. NO.: 08-43

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 08-27-2014

11 SHEET OF 14

AFFORESTATION PLAN

A. PLANTING PLAN AND METHODS
 PLANT SPECIES SELECTION WAS BASED ON OUR KNOWLEDGE REGARDING PLANT COMMUNITIES IN MARYLAND'S PIEDMONT PLANT 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. HERBICIDES TREATMENTS SHALL OCCUR ON 2 MONTH INTERVALS DURING THE FIRST GROWING SEASON AND ONCE EACH IN THE SPRING AND FALL FOR SUBSEQUENT YEARS. HERBICIDE USED SHALL BE MADE SPECIFICALLY TO ADDRESS WOODY PLANT MATERIAL AND SHALL BE APPLIED AS PER MANUFACTURERS 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 PROTECTION SIGNAGE. 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 STOCKPIILING, 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.
 7. SUBMIT CERTIFICATION OF INSTALLATION.
 8. MONITOR AND MAINTAIN PLANTINGS FOR 2 YEARS.

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

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

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

THE FOLLOWING ITEMS WILL BE INCORPORATED INTO THE PLAN:
 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. 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. QUALITY CONTROL
 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 PLAN.

D. FINAL INSPECTION
 AT THE END OF THE TWO YEAR POST-CONSTRUCTION MANAGEMENT PERIOD, ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL, WILL SUBMIT TO THE ADMINISTRATOR OF THE HOWARD COUNTY FOREST CONSERVATION PROGRAM CERTIFICATION THAT ALL RETENTION/AFFORESTATION REQUIREMENTS HAVE BEEN MET. UPON ACCEPTANCE OF THIS CERTIFICATION, THE COUNTY WILL RELEASE THE DEVELOPER FROM ALL FUTURE OBLIGATIONS AND RELEASE THE DEVELOPER'S BOND.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division J.P. DATE 3/19/14

Chief, Division of Land Development DATE 3/25/14

John P. McDaniel DATE 2/4/14

AFFORESTATION - PLANT SCHEDULE			
QUANTITIES FOR AFFORESTATION AREA			
BOTANICAL NAME	AREA 1	SIZE	SPACING (FT)
Platanus x acerifolia Sycamore	56	1" Cal.	15 X 15
Betula nigra River Birch	56	1" Cal.	15 X 15
Celtis occidentalis Common Hackberry	56	1" Cal.	15 X 15
Nyssa sylvatica Black Gum	56	1" Cal.	15 X 15
Taxodium distichum Common Baldcypress	56	1" Cal.	15 X 15
Ilex opaco American Holly	56	1" Cal.	15 X 15
Cercis canadensis Eastern Redbud	56	1" Cal.	15 X 15

ALL PLANTING SPECIES HAVE BEEN VERIFIED AS SAFE FOR THE ONSITE EQUINE OPERATION

AFFORESTATION PROVIDED - AREA-1

1.96 ACRES
 1" CALIPER TREES
 392 TREES @ 200 TREES PER ACRE

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

- 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.
- DISTURBED AREAS SHALL BE SEEDDED AND STABILIZED AS PER GENERAL CONSTRUCTION PLAN FOR PROJECT. PLANTING AREAS NOT IMPACTED BY SITE GRADING SHALL HAVE NO ADDITIONAL TOPSOIL INSTALLED.
- 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 PIT SHALL CONSIST OF 3 PARTS EXISTING SOIL TO 1 PART PINE FINES OR EQUIVALENT.
- 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.
- PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TARPEDED OR COVERED TRUCK. PLANTS SHALL BE KEPT MOIST PRIOR TO PLANTING.
- THE CONTRACTOR SHALL REMOVE ALL NON-ORGANIC DEBRIS ASSOCIATED WITH THE PLANTING OPERATION FROM THE SITE.

SEQUENCE OF CONSTRUCTION

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

MAINTENANCE OF PLANTINGS

- MAINTENANCE OF PLANTINGS SHALL LAST FOR A PERIOD OF TWO YEARS.
- 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.
- 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.
- 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.
- DEAD BRANCHES WILL BE PRUNED FROM PLANTINGS.

GUARANTEE REQUIREMENTS

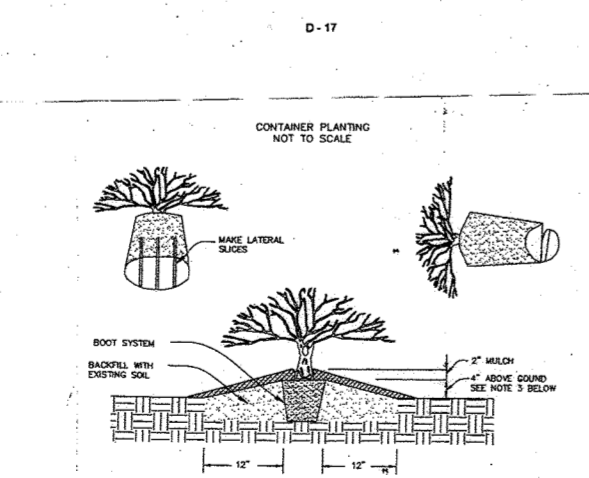
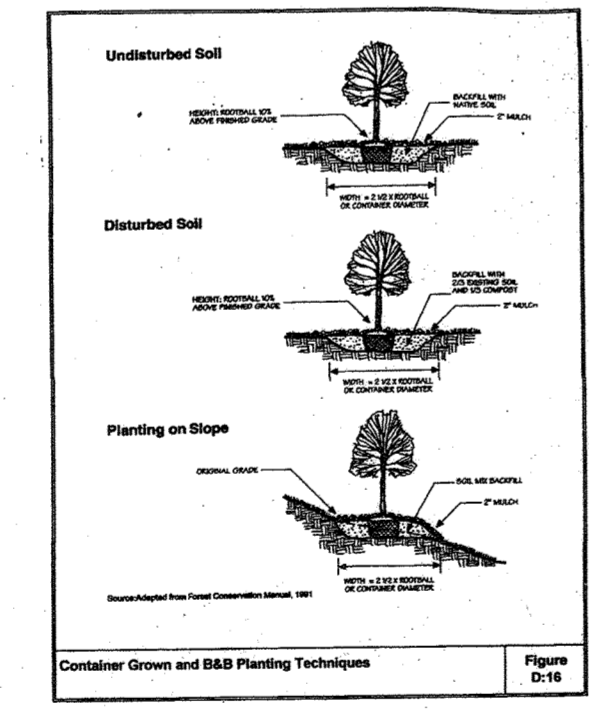
- A 90 PERCENT SURVIVAL RATE OF THE REFORESTATION PLANTINGS WILL BE REQUIRED AFTER ONE GROWING SEASON. ALL PLANT MATERIAL BELOW THE 90 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE SECOND GROWING SEASON. AT THE END OF THE SECOND GROWING SEASON, A 75 PERCENT SURVIVAL RATE WILL BE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

EDUCATION OF NEW OWNERS

- THE DEVELOPER SHALL PROVIDE EDUCATIONAL INFORMATION TO ALL PROPERTY OWNERS WITHIN THE NEW DEVELOPMENT/HOME ABOUT THE PROPER USE OF FOREST CONSERVATION AREAS.

FINAL INSPECTION AND RELEASE OF OBLIGATION

- 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 THE DEVELOPMENT OF FUTURE OBLIGATIONS RELATED TO THE FOREST CONSERVATION ACT.



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.

- NOTE:**
- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
 - SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
 - ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
 - A SIGN LOCATION SYMBOL.
 - PROTECTIVE SIGNAGE SHALL REMAIN IN PERPETUITY.

SIGNAGE DETAIL
 NOT TO SCALE

FOREST CONSERVATION PLANTINGS SPECIFIED HEREON PREPARED BY:
 GRAHAM LANDSCAPE ARCHITECTURE
 229 PRINCE GEORGE ST. ANNAPOLIS, MD 21401
 410-269-5886 FAX 410-268-4032

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED RR-DEO NET TRACT AREA:
 A. TOTAL TRACT AREA: 38.27 AC.
 B. AREA WITHIN 100 YEAR FLOODPLAIN: 0.55 AC (1)
 C. AREA IN PRESERVATION PARCEL: 28.47 AC (2)
 D. NET TRACT AREA: 9.80 AC

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

EXISTING FOREST COVER:
 A. EXISTING FOREST COVER: 0.00 AC
 B. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD: 0.00 AC
 C. AREA OF FOREST ABOVE CONSERVATION THRESHOLD: 0.00 AC

BREAK EVEN POINT:
 (2 X 1) + 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

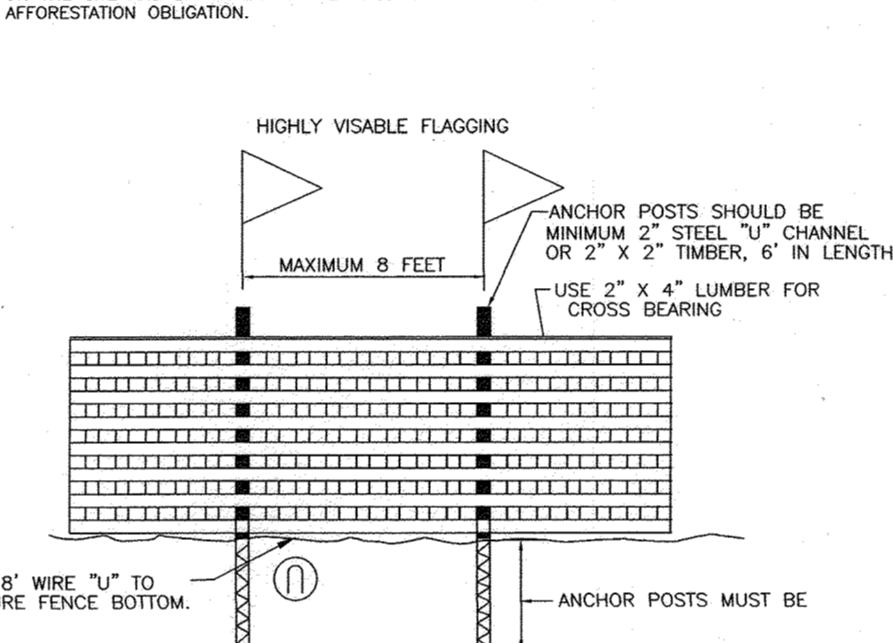
PLANTING REQUIREMENTS:
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25): 0.00 AC
 O. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD: 0.00 AC
 P. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F): 0.00 AC
 R. TOTAL REFORESTATION REQUIRED (N+P-Q): 0.00 AC
 S. TOTAL AFFORESTATION REQUIRED: 1.96 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED: 1.96 AC

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 ONSITE AFFORESTATION OF 1.96 AC. FINANCIAL SURETY IN THE AMOUNT OF \$ 42,689 (85,378 x 0.50) WILL BE POSTED AS PART OF DEPARTMENT OF PUBLIC WORKS DEVELOPER'S AGREEMENT.

(1) THE AREA OF FLOODPLAIN IS INCLUDED IN THE PRESERVATION PARCEL DEDUCTION
 (2) IN ACCORDANCE WITH THE HOWARD COUNTY FOREST CONSERVATION MANUAL, APPENDIX L - GUIDELINES FOR RURAL CLUSTER SUBDIVISION - OPTION A PRESERVATION PARCELS MAY BE EXCLUDED FROM ALL CALCULATIONS BECAUSE IT IS NOT PART OF THE LAND USE CHANGE CAUSED BY THE CLUSTER, THERE ARE NO OR FEW EXISTING RESOURCES TO THE SITE AND BY INCLUDING THE PRESERVATION PARCELS IT WOULD CREATE A LARGE AFFORESTATION OBLIGATION.

BLAZE ORANGE PLASTIC MESH TYPICAL TREE PROTECTION FENCE DETAIL



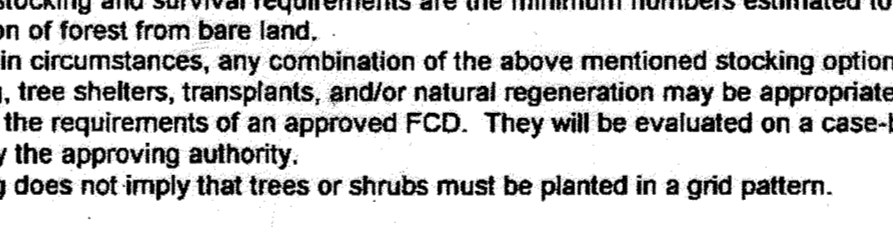
NOTES:
 1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. ROOF DAMAGE SHOULD BE AVOIDED.

BLAZE ORANGE PLASTIC MESH TYPICAL TREE PROTECTION FENCE DETAIL

Size	Number Required per Acre	Approximate Spacing feet on center	Survivability Requirement At the end of the second growing season
Container Grown 5, 7 Gallon or 1" Caliper B & B	200	15 x 15	75% 170

Site Stocking Figure A-18

Notes:
 1. These stocking and survival requirements are the minimum numbers estimated to meet the definition of forest from bare land.
 2. In certain circumstances, any combination of the above mentioned stocking options, dry seeding, tree shelters, transplants, and/or natural regeneration may be appropriate strategies to fulfill the requirements of an approved FCD. They will be evaluated on a case-by-case basis by the approving authority.
 3. Spacing does not imply that trees or shrubs must be planted in a grid pattern.

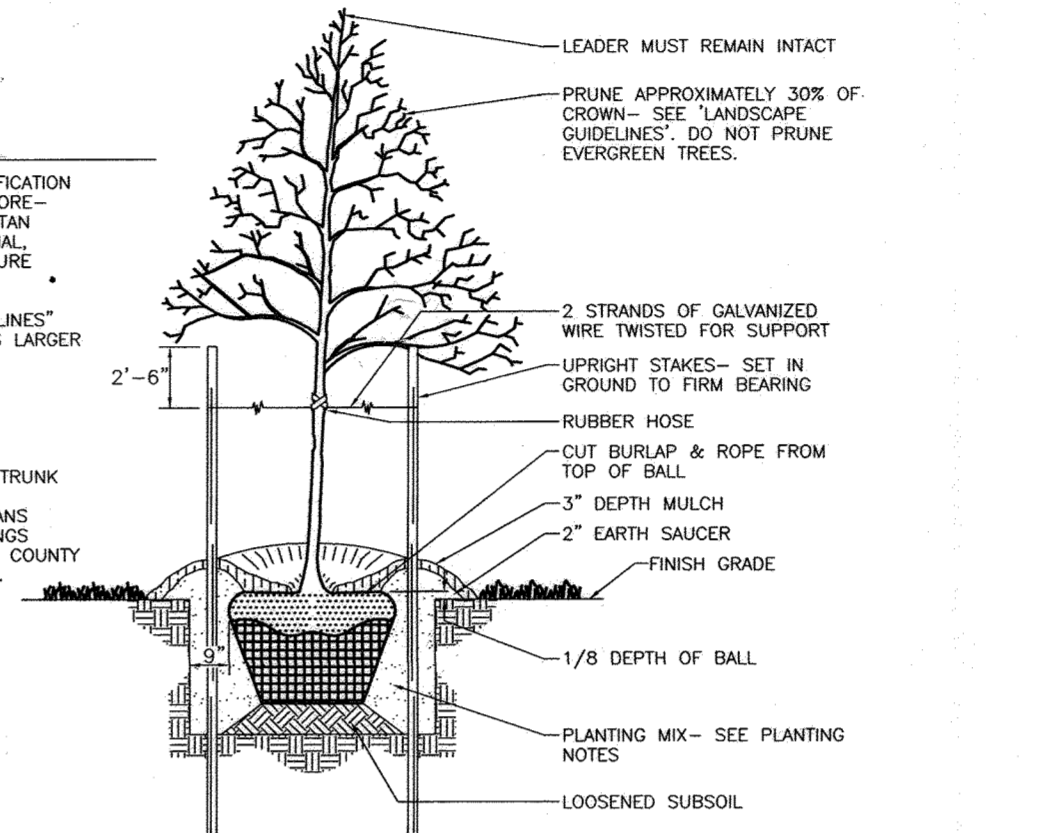


SHRUB PLANTING DETAIL
 NOT TO SCALE

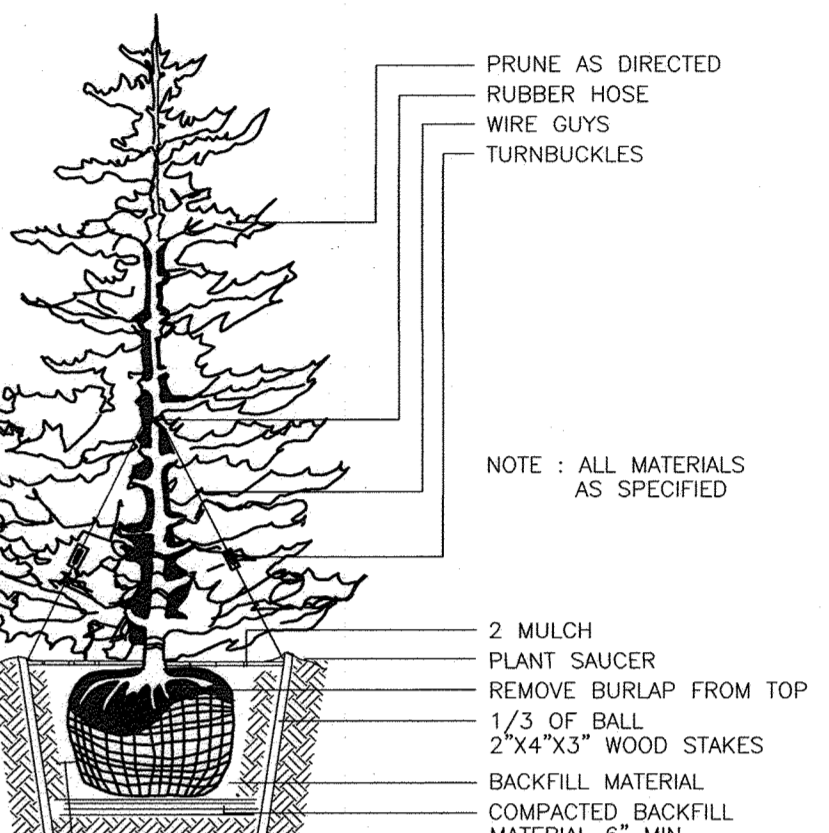
GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED INTERNAL AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 25,200 FOR THE REQUIRED 68 SHADE TREES AND 32 EVERGREEN TREES.
- THE OWNER AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH LAND MATERIALS AND BERMS, FENCES & WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN APPLICABLE REGULATIONS, ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLMENT, ALL PLANTINGS HEREWITH LISTED & APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW & APPROVAL FROM THE DEPARTMENT OF PLANNING & ZONING. ANY DEVIATION FROM THIS APPROVAL 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 APPLICABLE PLANS AND CERTIFICATES.

- 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 & GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER & INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- 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.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- 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.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.



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



TYPICAL EVERGREEN TREE PLANTING DETAIL
 NOT TO SCALE

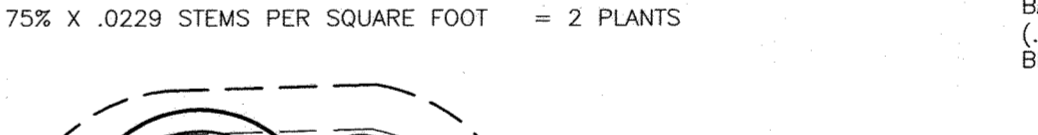
NOTES:
 1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
 2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
 3. PLACE UPRIGHT STAKES PARALLEL TO WINDS & BUILDINGS.
 4. KEEP MULCH 1" FROM TRUNK.
 5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
 6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

- 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.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- 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.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
- SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
- MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.

QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
7	CLADRASIS LUTEA 'SWEETSHADE' SWEETSHADE YELLOWWOOD	1 1/2"-2" CAL B & B	
60	KALMA LATIFOLIA MOUNTAIN LAUREL	5 GALLON	CONT
50	RHOIODOENDRON 'GLACIER' OR 'WHITE ROSEBUD' GLACIER OR WHITE ROSEBUD HYBRID AZALEA	3 GALLON	CONT

TYP. 100 SF X 75% X .0229 STEMS PER SQUARE FOOT = 2 PLANTS



TYPICAL PLANTING DETAIL FOR MICRO-BIORETENTION
 NOT TO SCALE

MBR FACILITY	SURFACE AREA	REQUIRED PLANTINGS	PLANTINGS
MBR #1	450 SF	8	1 SWEETSHADE YELLOWWOOD, 8 MOUNTAIN LAUREL, 6 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #3	450 SF	8	1 SWEETSHADE YELLOWWOOD, 8 MOUNTAIN LAUREL, 6 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #4	450 SF	8	1 SWEETSHADE YELLOWWOOD, 8 MOUNTAIN LAUREL, 6 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #5	550 SF	10	1 SWEETSHADE YELLOWWOOD, 10 MOUNTAIN LAUREL, 8 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #6	719 SF	13	1 SWEETSHADE YELLOWWOOD, 10 MOUNTAIN LAUREL, 10 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #7	500 SF	9	1 SWEETSHADE YELLOWWOOD, 8 MOUNTAIN LAUREL, 6 GLACIER OR WHITE ROSEBUD HYBRID AZALEA
MBR #8	450 SF	8	1 SWEETSHADE YELLOWWOOD, 8 MOUNTAIN LAUREL, 6 GLACIER OR WHITE ROSEBUD HYBRID AZALEA

OWNER / DEVELOPER
 JOHN P. MCDANIEL
 13032 HIGHLAND ROAD
 HIGHLAND, MARYLAND 20777
 ATTN: MR. JOE BUTLER
 443-367-0422

NO.	REVISION	DATE
5	REVISE THE HOUSE TYPE, GRADING AND SWM ON LOT 2 AND SEPTIC AREAS ON LOTS 1-3	5-23-24
2	REVISE THE HOUSE TYPE, GRADING AND SWM FOR LOT 6	6-14-18

SUPPLEMENTAL INFORMATION PLAN
 LANDSCAPE AND FOREST CONSERVATION NOTES & DETAILS
 MCDANIEL PROPERTY
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A" AND NON-BUILDABLE PARCEL B
 A SUBDIVISION OF THE MCDANIEL PROPERTY AND A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)

TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
 5TH ELECTION DISTRICT
 ZONED: RR-DEO
 PARCELS 117 & 78 (LOT 29)
 HOWARD COUNTY, MARYLAND

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 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.1991

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE

